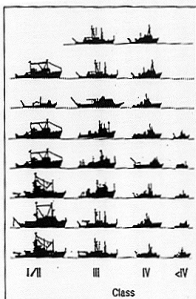


UNOLS NEWS

 VOLUME 14, No. 2 Summer 1997 *****



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Comments From The UNOLS Chair...

Dear Colleague,

The time since the last UNOLS Newsletter has been an active one. There are a number of issues present before UNOLS that have the potential to impact the sea-going community. I urge you to discuss these with UNOLS Council members and your institution's UNOLS representatives to ensure that we receive the widest range of input.

On the facilities side, the Woods Hole Oceanographic Institution and the DEep Submergence Science Committee (DESSC) are to be congratulated for their recent efforts on behalf of community. DSV ALVIN has completed a major overhaul and it has begun science operations on its new support ship, R/V ATLANTIS. ALVIN will operate with some significant new upgrades to its capabilities, as a result of input from DESSC and the deep-submergence community. WHOI brought the new ship and submersible to Washington, DC, on its transit to begin ALVIN certification dives. The presence of the facility has had an incredible impact on national policy makers.

A new UNOLS ship inspection program will begin operation in 1997 after a hiatus over a year. The inspections will be conducted by Jamestown Marine Services, Inc. They will provide an experienced team of inspectors to ensure that the UNOLS fleet maintains the highest level of reliability and safety. The recent failure of the Z-drive system on R/V THOMAS THOMPSON, and the subsequent impact on the science schedules, underscores the effects that mechanical failures may have. While the THOMPSON failure was not predictable, it is incumbent upon us to ensure that all ships in the fleet are maintained at the highest levels.

The Arctic Icebreaker Coordinating Committee (AICC) is making great strides with the U.S. Coast Guard and the science community to ensure that the new research icebreaker MICHAEL HEALY, which is under construction at the Avondale Yard in Louisiana, will proceed smoothly. Some very significant modifications to the science spaces on HEALY are being made by Avondale and the USCG, in response to input from the AICC.

The Fleet Improvement Committee has completed a set of Science Mission Requirements (SMRs) for a Central Pacific Research Vessel, as requested by the Office of Naval Research. Work on SMRs and designs for coastal and intermediate vessels will begin following an assessment of the

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impacts of current Federal regulations on ship design and crewing requirements. It is likely that new Class III and the largest Class IV vessels would be USCG inspected vessels under the current Federal regulations. This will have major impacts on design.

On the operations side, the UNOLS fleet continues operations in its busiest year ever. The fleet has completed a significant amount of work for the U.S. Naval Oceanographic Office. These cruises have been very successful and they prove that the Navy and academic community can work together in a very beneficial partnership. A Memorandum of Understanding between NOAA and UNOLS is also nearly completed. When it is done, it will greatly strengthen our informal partnership.

Ship schedules for the immediate future are not so bright, however. Few global science programs appear to be on the books and this is driving demand for Class I vessels down. It is possible that several vessels will not operate in 1998, due to reduced science demand.

Finally, we are taking a look at the basic structure of UNOLS, itself. Cindy Lee has agreed to chair an ad-hoc committee to re-examine the UNOLS Charter. Her committee will focus particularly on the composition of the UNOLS Council to ensure that we are doing the best possible job of representing the sea-going science community. If you have other concerns about the operation or make-up of UNOLS, either Cindy or I would be particularly interested in hearing them. Bob Wall is chairing another ad-hoc committee that is considering the role of small vessels within UNOLS. Some concern had been expressed that UNOLS should focus on major, national facilities, while the small (<100') research vessels were primarily regional and did not require a national scheduling process. However, issues of safety in small vessels impact scientists from all areas of the nation who use small R/Vs. It appears, as a result, that there will be no change in UNOLS policy regarding small vessels.

Best regards,
Ken Johnson,
UNOLS Chair

UNOLS COMMITTEE NEWS

Research Vessel Operators' Committee 1997 Annual Meeting Plans

The 1997 RVOC Annual Meeting will be hosted by Woods Hole Oceanographic Institution on October 21-23. Paul Ljunggren, RVOC Chair, is in the process of preparing the agenda and expects to have a preliminary draft out soon. The agenda will most likely include a workshop on satellite communication. The agenda, when complete, will be available for viewing on the UNOLS Web site.

Research Vessel Technical Enhancement Committee 1997 Annual Meeting Plans

The 1997 Annual Fall RVTEC Meeting is scheduled to be held on 27-29 October. The University of Washington will host the meeting. The agenda is starting to take shape and potential items for discussion include a presentation on marine corrosion. A presentation on the development status of SeaNet is also planned. The full agenda, when complete, will be posted on the UNOLS web site.

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News from the DEep Submergence Science Committee

by Michael Perfit, DEESC Chair

The first half of this year has been a very busy and satisfying one for me and the DEep Submergence Science Committee (DESSC). The fruits of the DESSC's deliberations and planning with the Deep Submergence Facility (DSF) operator, WHOI, and national funding agencies have resulted in an upgraded and completely overhauled ALVIN which has successfully been merged with the new R/V ATLANTIS. I was in Alexandria, Virginia in May, along with members of the Deep Submergence Operations Group (DSOG) and many Woods Hole scientists and staff members, to help display the community's new deep submergence National Facility resources to an endless stream of the public as well as many influential political and military personnel, and agency program managers and personnel.

Woods Hole Oceanographic Institution (WHOI) and the DSOG have done a fantastic job of getting ATLANTIS/ALVIN ready to sail on schedule after the overhaul and delivery of the new ship - no small feat considering that ATLANTIS underwent a

documented by a reporter from the New York Times who participated in the cruise (see <http://www.nytimes.com/library/cyber/week/071497dive.html>). Although there have been the expected growing pains and vestiges of the construction process with the new ship, all reports suggest that the facilities and capabilities of our new deep submergence support vessel are much improved over those on ATLANTIS II, and that ALVIN operations have been proceeding routinely with approximately five hours of bottom time for the initial science dives.

In addition to all the overhaul and new ship work done by WHOI, they successfully proposed an upgrade plan for navigation, imaging and operational equipment to the agencies which was approved for funding. That is great news, and will benefit all programs using the DSF vehicles. Other related initiatives on the DESSC agenda are to continue working with WHOI-DSF to upgrade the capabilities and data products of the vehicles, and to work on a policy and plan for archiving data from all of the DSF vehicles. I will have details of the new facilities, upgrades, and 1997 cruises to present to you at the DESSC meeting prior to the Fall AGU Meeting in San Francisco.

ALVIN and ROV Jason available. I appreciate that all of the scientists involved worked together with the ship operators to organize two multi-PI cruises that should satisfy the science programs. The remainder of the year will see ALVIN/ATLANTIS on the northern EPR before ATLANTIS must undergo a Navy Post Shipyard Availability period in San Diego that will last until approximately April 1998.

The ATLANTIS schedule after the PSA inspection is still in the process of being finalized, although resolution to the scheduling problems that have plagued us for the past few months are close at hand. The scheduling complexities have been compounded by the fact that ALVIN was in overhaul, so some programs have been waiting for it to be back in service. In addition, many scientists have been anxiously waiting for more than a year to use ATLANTIS and the deep submergence vehicles in many parts of the Atlantic and Pacific on programs that have been funded over the past two years. There is so much funded science (a very positive problem!) in diverse field areas, that arranging a schedule that meets all of the PIs needs/schedules/desires, funding agencies priorities and fiscal constraints, as well as the requirements for the Navy PSA in early 1998, has been complex; requiring extensive communication and coordination between all parties. DESSC has worked to facilitate communication and spent a significant portion of the July 16-18 DESSC meeting working together with funding agency representatives and

<p>mid-construction design change to allow it to be the deep submergence support ship. The ALVIN engineering dives and recertification which took place off Bermuda, went smoothly and ATLANTIS headed to the Mid-Atlantic Ridge (MAR) to complete two successful dive programs; one that included filming by the British Broadcasting Corp., another, headed by Bob Vrijenhoek of Rutgers U. that was in cooperation with U.K. BRIDGE scientists and focused on sampling biota from all known MAR hydrothermal vent sites for genetic studies. Some of the highlights of that cruise were vividly</p>	<p>ATLANTIS is now headed for the eastern Pacific where it will briefly work off the California coast before heading to the Juan de Fuca Ridge to accommodate several deep submergence research programs that were in serious jeopardy of being delayed for a year because of mechanical problems with R/V THOMPSON's Z-drive. Fortunately, WHOI and the funding agencies have worked together to make ATLANTIS,</p>	<p>the facility operator to achieve a workable</p> <p style="text-align: right;"><i>Continued on next page...</i></p>
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<p><i>Continued from previous page...</i></p> <p>schedule for 1998. The proposed schedule must now be approved by the funding agencies before it can be finalized. I have been working as an advocate of the PIs, but have seen first-hand how complicated the scheduling procedure is, particularly with many time-series programs being funded, the ability to use the ROV and tethered vehicles in different areas on other large UNOLS ships, and our new global approach to deep submergence science. A UNOLS ad-hoc review group is currently deliberating on ways to facilitate communication regarding proposed and funded projects, and implement improvements to the scheduling process. DESSC will continue to advocate for increased facilities support for the excellent scientific programs that are being funded.</p> <p>I would like to remind you that to facilitate planning and compilation of dive proposals and vehicle requests DESSC, UNOLS and WHOI developed an on-line "UNOLS/ National Deep Submergence Facility Vehicle Request Form - DSV ALVIN, ROV Jason, Argo-II, DSL-120 Sonar", that can be accessed via the World Wide Web through the Deep Submergence Operations Group at WHOI (http://www.marine.whoi.edu/webpub/unols/request.htm). Because it is important to continually update the database of vehicle proposals/requests, I urge you to please submit any new requests you may have as soon as possible, and to contact WHOI and the UNOLS Office regarding funding decisions on your proposals.</p> <p>Jason, Argo-II and the DSL-120 sonar are working well and ready to be used on ATLANTIS and other UNOLS platforms in the coming year.</p>	<p>Jason was used on a science cruise (headed by P. Fryer - U. Hawaii) in the western Pacific early this year which was affected by equipment, personnel and weather problems. Despite these setbacks, the science that resulted from the cruise will hopefully serve as a springboard to further work in the area. The full suite of ROV and tethered vehicles was then used to complete a first-of-its-kind, forensic survey program for the U.K. Dept. of Transport on the wreck of the DERBYSHIRE. That cruise was extremely successful. Jason was then used in the Mediterranean for an ONR funded cruise headed by R. Ballard (WHOI) which was also successful in mapping several Roman wreck sites near Sicily in conjunction with the U.S. Navy's submarine NR-1. The technical and personnel problems that negatively impacted some of the science objectives during the Fryer cruise were discussed at the most recent DESSC meeting. Many of the technical problems have been resolved, and WHOI-DSF is working on resolving outstanding issues. Jason capabilities and educating users on deep submergence field program approaches using the full suite of DSF vehicles will be a topic of discussion at the Fall DESSC meeting.</p> <p>As many of you are aware, the U.S. Navy is in the process of decommissioning its deep submergence vehicles, and have requested input from DESSC regarding the effective utilization of the SEACLIFF and the facility needs of the U.S. academic, deep submergence community. A preliminary response to these issues was provided to ONR in December 1996, and a specially convened Working Group met in March, 1997 to deliberate on these issues. The SEACLIFF Working Group completed a report that summarizes the responses by scientists who filled out a DESSC</p>	<p>questionnaire regarding the future of deep submergence science. This report provides ONR with recommendations pertaining to specific options regarding the disposition of Navy assets. The full report can be obtained from the DESSC web site (http://www.gso.uri.edu/unols/dessc/dessc.html) but the main conclusions of the report are that:</p> <ul style="list-style-type: none"> • There is significant interest in having a human occupied vehicle (HOV) capable of reaching 6000m available for use by the academic science community on a regular basis, • There are many important science questions to be answered and objectives to be met at depths greater than 4500m, • The Navy should transfer SEACLIFF to WHOI, the National Deep Submergence Facility Operator, and use it to improve HOV facilities available to the U.S. academic community. • The excellent HOV capabilities which now exist in ALVIN must be retained. • The development of a remotely operated vehicle (ROV) designed for science, with at least a 6000m depth capability should begin immediately. <p>The SEACLIFF Working Group and DESSC strongly recommended that ONR fund an engineering study to be carried out by WHOI so that well-constrained estimates of costs for the effective utilization of SEACLIFF for academic science can be made within the next 12-18 months.</p> <p>The Federal funding agencies also recently asked DESSC for input regarding interest in the academic community for using the Navy's ATV (Advanced Tethered Vehicle) that will</p> <p style="text-align: right;"><i>Continued on the next page...</i></p>
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<p>be retired in 1998. DESSC sent a memo to the agencies stating that there is community</p>	<p>safety information regarding the vehicle systems. Technical information and contact names are posted on the WHOI-DSOG website.</p>	<p>for us to progress on these important matters, it will require the community to achieve broad consensus on facility requirements, to make the case for the compelling deep</p>
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<p>interest in ATV, and supporting a meeting at NSF to discuss ATV. That meeting will be held prior to the Annual UNOLS meeting in late September. All interested parties should contact Bob Knox at SIO ((619) 534-4729 or knox@sio.ucsd.edu).</p> <p>DESSC, NSF, ONR and NOAA have agreed upon guidelines for the utilization and development of third-party tools for the National Deep Submergence Facility vehicles. Investigators considering submitting a proposal for developing a Third Party Tool are encouraged to read this document (http://www.marine.who.edu/marops) and contact the DSF vehicle operator for technical and</p>	<p>Finally, we must focus on topics associated with future (10-20 year) facility needs (submersible, ROV, AUV) for deep submergence science, science justifications for the facilities, and the potential fiscal impacts of various options for providing adequate deep submergence facilities that would serve academic research and possible strategic needs into the future. Fully exploring how to best utilize decommissioned U.S. Navy deep submergence assets certainly needs to be part of the deliberations, and these interrelated issues will continue to be prime topics for future DESSC meetings. However, in order</p>	<p>submergence science to be done down to 6000 m and beyond, and for the funding agencies to work with us in figuring out how to best meet the financial considerations for deep submergence facility needs into the 21st century. These are financial and infrastructural challenges that we have to meet head-on in the next few years in order to ensure the health and future of our research. I welcome your ideas and assistance in planning for a new century of deep submergence facilities and research.</p>
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Arctic Icebreaker Coordinating Committee News

<p>At the June UNOLS Council Meeting, Jim Swift, Arctic Icebreaker Coordinating Committee (AICC) Chair, reported that construction of the USCG icebreaker, MICHAEL HEALY is proceeding nicely. Although the shipyard anticipates a six-month delivery delay, they have agreed to complete most of the "top ten" science-related modifications requested by the AICC. Delivery of the ship is planned for December 1998 with most of 1999 to be used as a shakedown and testing period. The AICC plans to tour the vessel shortly after launch in late 1997. John Boaz, a senior technician at Scripps, has been contracted by the USCG for consulting on science systems.</p>	<p>The AICC has continued to build liaisons. John Freitag, Chair of the UNOLS Research Vessel Technical Enhancement Committee (RVTEC), is participating in AICC business. Additionally, the Coast Guard's Science Officer, Phil McGillivray, is attending RVTEC functions. The AICC and the Antarctic Research Vessel Oversight Committee (ARVOC) are exchanging attendance at meetings. The AICC e-mail networking list continues to expand.</p> <p>In other AICC activities, the Committee continues to move towards scheduling of USCG Arctic science missions in the UNOLS framework</p>	<p>The AICC has recommended that the Coast Guard take advantage of the on-line system, tracking, and other functions provided by the UNOLS Office. The Coast Guard icebreakers are now on the UNOLS on-line ship-time request site. The AICC expects continued incorporation into the UNOLS scheduling, notification, and tracking system. In practical terms, however, there will be only limited opportunities for scheduled USCG Arctic science missions (i.e. other than ship-of-opportunity) until January 2000 when USCGC HEALY becomes available.</p> <p>The dominant mode of operation now for USCG Arctic</p> <p style="text-align: right;"><i>Continued on the next page...</i></p>
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<p><i>Continued from previous page...</i></p> <p>science support is via ship-of-opportunity (SOO) cruises. These cruises are primarily tests of the vessel(s) and training missions for the USCG. An AICC responsibility is coordination of these SOO cruises. In 1997, AICC solicited requests for its first SOO program. The coordination process went well, but unfortunately, the cruise was canceled. There were a number of questions and concerns from the community regarding the AICC's role in the SOO cruise planning and these were largely anticipated by the AICC. The AICC has reformulated its SOO guidelines for 1998 and these should be issued soon.</p> <p>The AICC has recommended that there be no SOO on USCGC HEALY in 1999. Instead, the committee has requested the USCG to concentrate on tests and training. They hope to locate science groups who can use the tests to their advantage, but under control of the USCG</p>	<p>Ship Scheduling Committee Reviews 1998 Schedules</p> <p>The Ship Schedule Review Group met on 17 June at the National Science Foundation. Those present were Don Moller, Chair; Robert Hinton, Vice Chair; Jack Bash, UNOLS; and Federal agency representatives. Each UNOLS ship schedule for 1998 was reviewed. This year, for the first time, a ship schedule for a NOAA vessel was included in the review. NOAA's RON BROWN schedule was presented. The ship will conduct only NOAA funded work in 1998.</p> <p>NAVOCEANO anticipates the same level of funding for UNOLS ship use in 1998 as this year. Their first priority will be 180 days of gravity work in the Gulf of Alaska. This can be accomplished using two different ships. A continuation of the Physical Oceanographic work is their second priority. Third, is work in the Navy's AUTECH range. Two additional programs require ship time, but are unlikely to go to sea in 1998 because of funding limitations. NAVOCEANO ship riders have been pleased with the enthusiasm, cooperation and accommodations provided by UNOLS in their 1997 operations.</p> <p>For 1998, there are approximately 500 days less scheduled on UNOLS ships than in 1997, this includes all pending ship time. This is partially due to a high decline rate of proposals. Additionally, many of the large global field programs of previous years have wound down.</p> <p>On the whole, schedules for Class IV and <IV ships are healthy. However, all Class III vessel schedules are light with OCEANUS and ENDEAVOR having duplicate schedules. For the UNOLS Class I/II vessels, there are total of 21 programs, eight in the Atlantic and thirteen in the Pacific. As a result of the light 1998 schedules, efficiency will most likely dictate a re-alignment of some cruises in</p>
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and test team. The AICC is now working to help design science system tests during HEALY ice trials.

The availability of USCGC HEALY brings on new dedicated ship/science funds from the Federal agencies. The AICC hopes that via publicity and UNOLS ship scheduling that use of USCGC HEALY develops the number and type of excellent proposals envisioned by planners. The availability today of HEALY on the UNOLS on-line request system is one step in developing that list of proposals. The Committee is also reaching out through attendance at various science conferences. They have developed an AICC poster describing USCGC HEALY and Arctic Icebreaker Operations.

addition to full or partial lay-ups of multiple ships.

Improvements to the Ship Scheduling Process are Underway

An extensive revision to the UNOLS ship scheduling process is under development and should help to foster improved communications regarding proposed and funded ship time programs. It will include a two-part Ship Time Request Form which can be filled out and distributed via the web. Completing the form on the web will not only distribute the request to all concerned, but will also post the request on a world map in the appropriate operating area. The map will be accessible by all scientists to provide better coordination between programs and to promote collaborations. It also provides a means for tracking ship time requests. After completing an electronic ship time request, the Principle

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Investigator can print the form and attach it to their science proposal. This will substitute for the NSF 831 form traditionally required for a science proposal requesting ship time.

Part two of this electronic form is to be completed and submitted when the program is funded or when the program manager believes the submission would be important for planning. It will allow the PI to provide a more detailed description of cruise requirements.

The final part of the new procedure includes an on-line ship schedule form. This will be completed by the UNOLS ship schedulers. The consistent format will allow information to be used to develop cruise tracks for those ships venturing out of their local area. These tracks will be posted on the web to facilitate planning and to permit each PI on the schedule to keep abreast of changing schedules.

Another feature of the new schedule form will be the establishment of a "transit bank." Deposits will be automatically made when the scheduler believes a transit can be used as a ship of opportunity on a not-to-interfere basis. Persons interested in withdrawing from the bank can enter the UNOLS web site where it is posted and contact the scheduler for more detail and coordination. It is anticipated that the bank will be used by graduate students, teachers with students or possibly public relations efforts

CALL FOR NOMINATIONS TO THE UNOLS COUNCIL

The terms of three UNOLS Council Members are expiring this year. Elections to fill these positions will be held at the UNOLS Annual Meeting on September 18, 1997. A summary of the qualifications for each position to be filled is as follows:

POSITION	QUALIFICATIONS	TERM
Member	Designated representative from a UNOLS Operator Institution	3 years
Member	andidate affiliated with any UNOLS Institution	3 years
Member	Designated representative from a UNOLS Institution other than Operator	3 years

Dr. Kenneth Johnson, UNOLS Chair, has appointed a Nominating Committee to form a slate of candidates for the election. The Nominating Committee includes Dr. Dennis Hayes, Chair; Dr. David Karl and Dr. Clare Reimers. Nominations for the slate may be submitted by anyone affiliated with a UNOLS institution, in writing, to the Nominating Committee or the UNOLS Office. Addresses for the Nominating Committee and UNOLS Office are below.

In forming the slate, the Nominating Committee shall give due consideration to the qualifications required for each position as well as for maintaining an appropriate balance among institutions from different regions having different kinds of facilities. Individuals will be chosen to achieve a balance among scientific user disciplines.

A slate of at least two candidates for each position will be prepared and distributed 30 days in advance of the Annual Meeting.

NOMINATING COMMITTEE:

Dr. Dennis Hayes, Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY 10964
e-mail: deph@ldeo.columbia.edu

Dr. David M. Karl, School of Ocean and Earth Science and Technology, Department of Oceanography, University of Hawaii, 1000 Pope Road, Honolulu, HI 96822
e-mail: dkarl@soest.hawaii.edu

Dr. Clare Reimers, Institute of Marine & Coastal Sciences, P.O. Box 231, Rutgers, State University of New Jersey, New Brunswick, NJ 08903-0231
e-mail: reimers@imcs.rutgers.edu

SeaNet receives National Oceanographic Partnership Program Support

<p>Abstract The SeaNet partners* are pleased to announce that the 1997 National Oceanographic Partnership Program (NOPP) of the Office of Naval Research (ONR) recommended for funding the proposal, "SeaNet: Extending the Internet to the Oceanographic Fleet," in the amount of \$1.478M. This funding will be provided over two years, and will enable the SeaNet partners to create the shore-based and shipboard infrastructure capable of supporting both a high speed (e.g., INMARSAT-B HSD at 64 kbaud) and low speed (e.g., cellular or PCS modem at 4800 baud) access to the Internet from ships at sea. This infrastructure includes building a shore-based operations center; providing updated satellite and cellular communications for a number of UNOLS vessels; developing shipboard communications servers designed specifically for the support of shipboard science and technical support applications; and supporting the integration of emerging (less expensive) communications technologies in the future. Once this infrastructure is in place and operational, the incremental cost of adding more ships to the SeaNet network should be relatively small. A SeaNet Advisory Panel will provide guidance and advice to SeaNet operations, including recommending ships for SeaNet installation.</p> <p>Development Status In 1995, the National Science Foundation (NSF) funded a SeaNet</p>	<p>collaborative effort by Woods Hole Oceanographic Institution (WHOI), Lamont-Doherty Earth Observatory (L-DEO), and the Joint Oceanographic Institutions (JOI) to develop a prototype communications system to demonstrate a cost-effective use of INMARSAT-B High Speed Data for Internet connectivity between shore and a ship. The system was first installed and tested on R/V THOMPSON as part of a JGOFS cruise. This same communications system has been successfully redeployed on the Ocean Drilling Program research vessel, JOIDES RESOLUTION, and is in active use by the L-DEO Borehole Research Group to transfer large wireline logging data sets. The outcome of the latest testing over the NERA High Speed Data (HSD) link has shown an increase in transfer rates of close to ten times those of typical INMARSAT-A transfers using modern voice modems. While the cost of the INMARSAT-B link is twice that of the INMARSAT-A link, there is still substantial cost savings because of the efficiency of the B-link.</p> <p>What will SeaNet provide and who pays? Now that funding is in place for the next phase of SeaNet development, we will be moving the SeaNet Communications Node (SCN) from a prototype configuration to a production configuration including appropriate documentation, support, and testing. In addition we will be redesigning the new system in order to take advantage of what we have</p>	<p>learned from the prototype. In this realm we are considering (1) moving the SCN from a SPARC-5/Solaris platform to a PC/Linux platform, (2) using a MAGNAPhone INMARSAT-B system instead of the NERA INMARSAT-B system to take advantage of a new shared-channel feature that would further improve cost effectiveness of the system, (3) making the new system much smaller and more compact, (4) incorporating new communication link technologies under development at the Navy Research and Development (NRAD) facility, and (5) redesigning the structure of existing software modules (though we are happy with much of the original design).</p> <p>NOPP funding will provide for five production versions of the SCN to be built and deployed in the first year. Most of these will be installed on large research vessels with guidance from the SeaNet Advisory Panel (see later discussion). One, or possibly two, of these units will be available for temporary installation on ships and platforms of opportunity in support of science driven requirements. SeaNet will provide reduced rate and subsidized INMARSAT pricing (up to 50% subsidy on \$9.50/minute rate) in order to encourage investigators to begin to experiment with the use of shipboard Internet capabilities as part of their experiments.</p> <p>The design and implementation of an enhanced INMARSAT B/HSD Ship Earth Station will be done by MAGNAPhone in close coordination</p>
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<p>with the other SeaNet partners. The hardware, packaging and installation aspects of the shipboard equipment will be lead by Dale Chayes of L-DEO. Andrew Maffei of WHOI will take the lead in the software effort. It is expected that the first production units might be available for installation six months from the award date, which is expected in July 1997.</p> <p>The SeaNet collaboratory will provide comprehensive technical support for installing the initial SCNs working in close coordination with the vessel operator and/or the science program. The vessel operator or science program will be expected to cover some of the costs associated with their specific installations. At a minimum, this will include: crane and possibly welding costs associated with the installation; INMARSAT-B commissioning costs; and the travel expenses of a SeaNet engineer who will</p>	<p>the NOC, the SeaNet accounting office, and the onboard science party.</p> <p>Another aspect of the SeaNet collaboratory is technology monitoring. Rex Buddenberg at the Naval Postgraduate School (NPS) has been watching the leading edge technologies that will be more effective in supporting an Internet at sea. In his NPS graduate course titled, Internet at Sea, Buddenberg directly addresses the technological, infrastructure and managerial problems of a SeaNet. Class projects and follow-on theses by NPS students explore various facets of extending the Internet to sea and unifying several heretofore stovepipe communications systems, both inside the Department of Defense and in the commercial world. Buddenberg has recently been working with the NRAD laboratory which is, itself, deploying an Internet-at-Sea capability for Navy vessels based on the use of Navy satellites (and</p>	<p>JOI is forming a SeaNet Advisory Panel (SAP). The panel will:</p> <ul style="list-style-type: none"> • Review and recommend SeaNet unit installations on oceanographic research vessels and coordinate usage; • Recommend areas of further development of SeaNet; • Ensure coordination among scientists, ship operators, funding agencies, and SeaNet; and • Establish guidelines for evaluating requests for SeaNet equipment and services for science projects. <p>JOI will invite approximately eight people to join the SAP, and plans to draw membership from the oceanographic support community, including UNOLS RVTEC and RVOC, NAVOCEANO, the Coast Guard, NSF/CISE (Networking), and sea-going scientists. We also envision liaisons to</p>
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participate in the installation, do the on-board configuration and testing, and provide hands-on training of the operators.

SeaNet will handle radio licenses and billing accounts for all of the SCN communications channels. Usage charges will be billed against authorized access codes based upon pre-arranged accounts.

The Network Operations Center (NOC) at Omnet, Inc. will provide full time (7 day by 24 hour) monitoring of the performance of the remote SCNs and will be the first level point of contact for remote sites. A SeaNet engineer will be on call to provide backup support for resolving technical and operational problems. Software in the SCN will maintain a running estimate of usage and cost incurred per authorized user account. Usage updates will be distributed to

expensive shipboard components).

After the first year, we plan to begin to expand the number of ships that are part of SeaNet. New communications link options (Big-LEOS, HF Radio, Navy systems) will be integrated into the SeaNet infrastructure as our research and testing proves them to be both reliable and cost-effective. During Year Two we also plan to start moving SeaNet towards being a self-supporting venture. Subsidies will decrease as (we hope) prices become more competitive at the same time.

SeaNet Advisory Panel

It is important that those people who plan to use SeaNet have input into its design and future direction. To facilitate wide community involvement in SeaNet,

this panel being drawn from Federal agencies with interest in SeaNet, and SeaNet's commercial partners, as appropriate. The SAP will meet once a year, conducting most of its deliberations via collaboration software and e-mail with occasional teleconferences if necessary. The first SAP meeting will be in October or November 1997. Anyone interested in serving on this panel should contact Ellen Kappel (202-232-3900 ext. 216 or ekappel@brook.edu).

Let's Get Started: A Workshop

One task of the now-funded SeaNet project is to help improve shipboard electronic mail. As a first step in that effort, the SeaNet Collaborative plans to hold a shipboard electronic mail workshop on September 4 and 5 in Washington,

Continued on next page...

9.

DC. We plan to invite individuals who have been closely involved in the development and operations of the variety of shipboard e-mail systems used in the research fleet as well as technical representatives of other organizations with similar needs.

The goal of the workshop is three-fold. First we will document details about the variety of existing shipboard e-mail systems in use in the fleet. Second, we plan to generate the first draft of a specification that represents the workshop participants' rough consensus about features needed for a shipboard e-mail system that are different than shore-based systems. A third goal is to form a closer working relationship among the

technical personnel supporting the shipboard e-mail systems to learn from one another about common problems such as INMARSAT-A communications and billing for usage. A group visit to the COMSAT engineering labs is also in the works.

Travel support for this workshop is available to most participants through JOI's "SeaNet Lite" grant from NSF. Anyone interested in attending should send Ellen Kappel an e-mail summarizing your background and interests. Only one technical person from any institution may be fully supported. Partial support may be provided to others, depending on availability of funds. It will be assumed that all

attendees will have a technical understanding of shipboard and other e-mail systems.

In conclusion....

First and foremost, SeaNet is a community project. The SeaNet partners look forward to working with you on all phases of this effort. As a start, initial communications regarding SeaNet should be directed to Ellen Kappel at JOI (202-232-3900 ext. 216 or ekappel@brook.edu).

Finally, we are also pleased to announce that the U.S. Patent and Trademark Office has granted the SeaNet trademark to JOI. We are now official.

*SeaNet Partners and project roles:

- Joint Oceanographic Institutions (Dr. Ellen Kappel, PI): Liaison/coordination with Federal agencies and scientific community, and SeaNet Advisory Panel.
- Woods Hole Oceanographic Institution (Mr. Andrew Maffei, PI): Project coordination; Shipboard Communications Node (SCN) software development.
 - Lamont-Doherty Earth Observatory (Mr. Dale Chayes, PI): INMARSAT-B procurement; Shipboard systems installation and testing.
 - Omnet Inc (Mr. Robert Heinmiller and Ms. Susan Kubany, PIs): SeaNet operations center; Billing; Value-added services.
- Naval Postgraduate School (Mr. Rex Buddenberg, PI): Shipboard implementation laboratory; Emerging technology planning; NRaD and Navy liaison.
 - Other partners donating services or expertise to this project, but who are not receiving any NOPP funds include:
 - COMSAT: Providing greatly reduced rates, engineering support and, potentially, enhanced services.
 - MAGNAPhone: Providing 20% hardware discount, engineering support, and key input into their product design.
 - MCI: Free circuits and Internet Service.
 - NCCOSC (Navy) Research and Development Division (NRaD): Technology transfer through NPS.
 - NAVOCEANO: Technical support personnel.

10.

UNOLS SHIP NEWS

R/V ATLANTIS Enters the UNOLS Fleet

The 274-foot research vessel ATLANTIS, the nation's newest and most capable deep-sea research vessel and new support ship for the deep-diving three-person submersible ALVIN, left a Halter Marine shipyard in Pascagoula, MS, March 25 and arrived at its new homeport in Woods Hole, Massachusetts on 11 April. Construction of ATLANTIS began with the

into the Atlantic Ocean a variety of tests were conducted on various systems aboard the vessel. Brief port calls were made at Ft. Lauderdale, FL, March 29 and at Norfolk, VA, April 5 to disembark technicians involved in some of those tests. After arrival at WHOI, ALVIN (which recently completed a routine overhaul and upgrade) was loaded onboard ATLANTIS.

friends of ocean sciences. In both New York and Washington, selected groups of students and science teachers were invited to tour the ship, see the various exploration vehicles, and learn more about ocean sciences research and careers in oceanography. In all, approximately 1500 visitors toured the ship in Washington, DC. ATLANTIS returned to WHOI for additional

vessel's keel laying in August 1994 at Halter Marine in Moss Point, Mississippi. ATLANTIS is the first ship in the United States' academic research fleet built to conduct both human-occupied and unoccupied deep-sea exploration. It is one of the most sophisticated research vessels afloat, equipped with precision navigation, bottom mapping and satellite telecommunications systems and capable of supporting both submersible operations and general purpose oceanographic research worldwide.

During ATLANTIS' delivery trip through the Gulf of Mexico and

The ship then set sail for visits to New York City on 14-16 May and to Washington, DC on 19-21 May. Approximately 800 to 1,000 invited guests toured ATLANTIS in New York during its stopover. Among the invited groups that visited the vessel while in Washington, were participants of the 1997 Global Conference of the Advisory Committee on the Protection of the Sea (ACOPS). Approximately 45 nations participated in that conference. Other invited guests included members of Congress and Congressional staff that deal with scientific research, and Federal funding agency representatives, plus man

dockside outfitting before departing again on June 2 for ALVIN recertification dives near Bermuda. After successful completion of the recertification dives, the first science operations began with research in the North Atlantic exploring hydrothermal vents on the Mid-Atlantic Ridge. In August, ATLANTIS and ALVIN will head to the Pacific Ocean to begin an extended research voyage.

The UNOLS Council voted unanimously on 25 June to accept ATLANTIS into the UNOLS Fleet.



R/V ATLANTIS arrives in New York City, Photo by: R. LeMoine

UNOLS Ship Inspection Team is Selected

A tentative contract award has been made with Jamestown Marine Services (JMS) to conduct the National Science Foundation (NSF) Inspections aboard UNOLS ships (excluding Navy owned vessels which are inspected through the Navy's inspection program). The contract calls for approximately eleven inspections per year that

AGOR Z-drive Propulsion System Problems to be Studied

In light of the problems and failures experienced with the Z-drive propulsion systems on the AGOR research vessels, the Navy has decided to fund a study to investigate the problems to date, review operation/inspection protocols and consider any resultant recommendations.

KNORR, MELVILLE and THOMPSON all have experienced problems with their Z-drives. At least two of the casualties strongly indicated that bad metallurgy of the gears may have been the cause (the

will be conducted using the same format as in the past. Dick West (NSF) will coordinate and schedule all inspections. He will be contacting ship operators in the near future to establish this year's schedule. The contract to JMS will be for one year renewable for five years. They will be providing a team of two persons for ships under 100 feet, three for ships 100 to 199 feet and four persons for ships 200 feet and over. The lead inspector and science inspector will be common to all inspection teams. The UNOLS Office will administer the contract but will not be involved in the coordination or management of the inspections.

gears were insufficiently case hardened). In the case of THOMPSON, there is a possibility that a grounding of the ship while being moved by the shipyard may have overstressed the gears subsequently resulting in tooth failure. Yet another possible cause of one of the casualties may be the result of insufficient tooth contact of the gears.

The recent gear failure experienced on THOMPSON this summer has caused a major disruption in its scheduled operations. Fortunately, many of the programs were able to be accommodated by ATLANTIS.

CALANUS Replacement Plans

A catamaran design is planned for the replacement of University of Miami's research vessel CALANUS. Design and building bids are being evaluated by a naval architect firm.

AGENCY NEWS & REPORTS FROM WASHINGTON, DC

National Oceanographic and Atmospheric Administration Commissions R/V RON BROWN

On 19 July, NOAA's newest research vessel, RON BROWN was commissioned in Charleston, SC. The first cruise for BROWN is scheduled to start 1 August.

12.

Reinvention of the National Undersea Research Program

The reinvention of the National Undersea Research Program (NURP) continues to progress. The six undersea research centers and Headquarters are implementing the operational elements of the new program they have designed which includes new elements of competition and the addition of a National level Advisory Council. The Administration has shown its support for the new program by including it in the President's budget request for FY 1998 - the first time in 16 years. At the annual meeting of the NURP Directors, Under Secretary of Commerce Dr. Jim Baker congratulated NURP on the changes underway and expressed his support for efforts to raise future funding levels for the program.

The FY 1998 NURP budget will be comprised primarily of Core funding to support Center programs and a competitive fund to be allocated

among centers based upon the advice of a national level panel that considers national, NOAA, and regional priorities. All proposals for research will be reviewed by each Center's review panel to ensure that proposals recommended for funding reflect high scientific standards. Proposals may be supported from Center Core funding or from funds made available from the competitively-allocated fund.

Proposals for NURP support of research using DSV ALVIN in 1999, the U.S. Navy deep submergence resources in 1998 and other areas of overall national interest such as research related to improving safety and diving operations, will be solicited by the Centers, where and if appropriate, in their annual announcements this year. These proposals will also be subject to competitive review.

Beginning this year all investigators seeking NURP support for ALVIN projects are to submit proposals through one of the six NURP centers. Proposals for NURP funded ALVIN dives will be competitively reviewed and dive time will be allocated on the basis of available funding and recommendations of a national level review panel. Center schedules for proposal submittal deadlines were included in individual announcements sent out by the centers and are also on their web sites (see below).

The National Advisory Council will play an instrumental role in advising NURP regarding its commitments in future years to interagency agreements and national responsibilities for deep submergence support as well as other issues of national significance.

NATIONAL UNDERSEA RESEARCH PROGRAM CONTACTS AND WEBSITES:

North Atlantic and Great Lakes	Ivar G. Babb, Director http://www.ucc.uconn.edu/~wwwnurc/index.html
Southeastern U.S., Gulf Mexico	Robert Wicklund, Director http://www.uncwil.edu/nurc
Mid-Atlantic	Fred Grassle, Director http://marine.rutgers.edu/nurp/mabnurc.html
Caribbean	Jamie Serino, Director http://www.cmrc.org/
West Coast & Polar Regions	Ray Highsmith, Director http://www.wcnurc.alaska.edu:8000/
Hawaii and Pacific	Alexander Malahoff, Director http://www.soest.hawaii.edu/HURL/hurl.html
National Undersea Research Program	Barbara Moore, Director Headquarters http://www.ucc.uconn.edu/~wwwnurc/nurp.html

13.

<p align="center">United States Coast Guard Personnel Changes</p> <p>CDR. Rick Rooth will be relieved by CDR. George Dupree on 1 August 1997.</p>	<p align="center">Consortium for Oceanographic Research and Education (CORE) Hires new Policy Fellow</p> <p>Captain Daniel Schwartz has joined CORE as a Policy Fellow. Dan is not a newcomer to the oceanographic community. He served for many years as the captain of Harbor Branch Oceanographic Institution's research vessel, SEWARD JOHNSON.</p>
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Mark your Calendar!

UNOLS ANNUAL MEETING
8:30 a.m., September 18, 1997
National Science Foundation
4201 Wilson Boulevard
Arlington, VA

14.

UNOLS Calendar:

MEETING	LOCATION	DATES
Ship Scheduling Committee	NSF, Arlington, VA	15 September 1997
Schedule Review	NSF, Arlington, VA	16 September 1997
UNOLS Council	NSF, Arlington, VA	17 September 1997
UNOLS Annual	NSF, Arlington, VA	18 September 1997
RVOC	WHOI, Woods Hole, MA	21-23 October 1997
RVTEC	UW, Seattle, WA	27-29 October 1997
DESSC	AGU, San Francisco, CA	7 December 1997

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 e-mail, FAX or mail. The next newsletter is planned for Fall 1997.

*Thank you,
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