

UNOLS NEWS

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FEBRUARY 1993

1992 IN REVIEW

The past year has been an exciting time of change and growth for UNOLS. We've seen the retirement of THOMAS WASHINGTON, the addition of THOMAS THOMPSON and the reentry of MELVILLE and KNORR to the fleet in their new stretched configurations. The newsletter logo to the left has been modified to reflect these changes in the fleet profile. In 1992 the University of Southern Mississippi was welcomed into UNOLS, bringing the total membership to 56 institutions. UNOLS established a new committee, the Research Vessel Technical Enhancement Committee (RVTEC), to provide a network for enhancement of technical support of seagoing scientific research programs. Additionally, the ALVIN Review Committee was renamed the DEEP Submergence Science Committee (DESSC) to better reflect their increased role of advising on and investigating the latest developments in deep submergence technology and science.

The UNOLS Office saw a few temporary changes in 1992 as well. I took a four month leave to work in the Office of Naval Research. During that time Jenny Saltzman filled in for me, with additional contributions from Jim Griffin. Their efforts were greatly appreciated.

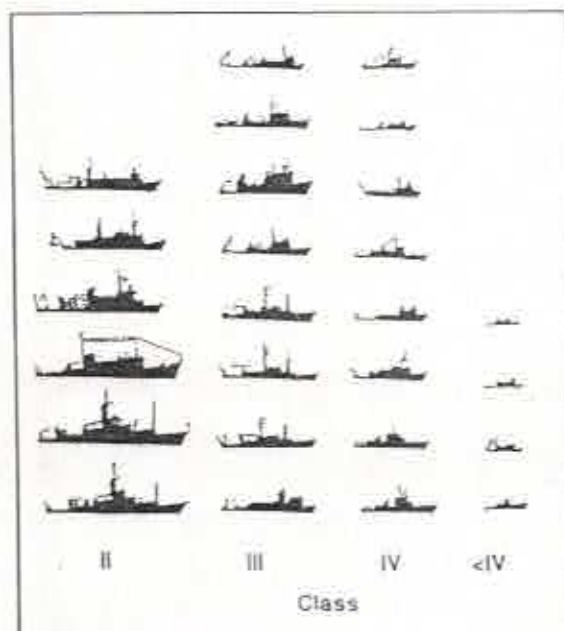
This newsletter will provide a review of UNOLS actions since the Annual Meeting in September. It includes announcements for a JASON Scientific Workshop and a Coastal Marine Workshop, updates of the Arctic vessel design and the Deep Submergence Facility MOA, future ALVIN operations, and UNOLS ship news. Also in this issue is the latest accomplishments and developments of the HSTR (Holloway-Stakes-Tengdin-Rajcula) drill. The newsletter opens with a message to the community from Garry Brass, UNOLS Chair.

Jack, Mary and I extend our wishes for a happy, healthy 1993!

Annette DeSilva
UNOLS Newsletter Editor

I would like to extend a thanks to all who helped contribute information and articles for this issue. Articles for the newsletter are always welcome and encouraged. Copy can be submitted via OMNET, FAX or mail.

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HIGHLIGHTS

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A message from the UNOLS Chair....

Dear Colleague,

UNOLS has been marching along and breaking new ground. The ALVIN Review Committee has been renamed the Deep Submergence Science Committee and its mandate broadened to cover all aspects of undersea exploration. As a kickoff, the new committee under Chair Jeff Fox of URI held a workshop in the Washington suburbs to help plan the future of ALVIN and other deep submergence assets. The community showed tremendous interest which was continued in a very large turnout for the winter planning meeting in San Francisco. Interest in deep submergence science is great and enthusiastic in the community and it looks as though ALVIN will have a continuing career after all.

In that regard it is worth noting that the Memorandum of Agreement (MOA) under which ONR, NSF and NOAA jointly guarantee the base funding for the Deep Submergence Group at WHOI has been renegotiated and awaits only some final budget adjustments before final signing by the three agencies. The stalwart efforts of Jeff Fox and Annette DeSilva made this agreement possible.

The Fleet Improvement Committee has a number of initiatives on its plate. They are working on a revision of the Fleet Improvement Plan which will update the previous version and map out our long range future. A sub-committee of the FIC has been working mightily on the Scientific Mission Requirements and preliminary design studies for an ice breaking research vessel for the Arctic Ocean and surroundings. The newest design studies are exciting but the financial implications are daunting. Nevertheless, the UNOLS effort goes forward in order to assure that the Arctic Research Vessel (ARV) will truly represent the needs of the community. Finally, as a result at least in part of the SOONS Report produced by a FIC sub-committee some time ago, there has been action by the US Navy on the submarine front and an ad hoc planning group headed by FIC Chair Marcus Langseth has been planning a 19 day science program under the ice in the Arctic Ocean aboard a US nuclear submarine. This cruise is a preliminary step and we will watch developments and hope for a continued and perhaps expanded program in the future.

The RVOC has published the new safety standards. All operators should have them in hand and scientists going aboard our vessels are being briefed using the new standards and manual. The RVOC is also working on guidelines for the inspection and certification of non-UNOLS vessels rented or leased by PIs at our institutions. Expect to see these in circulation fairly soon.

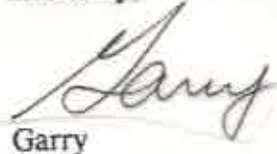
UNOLS has established a new standing committee for the coordination of the activities of shipboard technicians. RVTEC is chaired by Rich Findley at the University of Miami and all members are encouraged to participate. The committee is new and just getting started but, to judge by the Telemail traffic, is off to a fine start.

The funding situation this year is difficult. The schedulers have done a fine job in striving to produce an economical and efficient schedule but money is tight. Our discussions with NOAA on the possibility of selling them some ship time have not borne fruit. NOAA budgets are stressed and the funds for "charter" were not available. The Council has recommended that the agencies form a "Blue Ribbon Panel" to consider the future of the UNOLS Fleet in 1994 and beyond if it appears that budget troubles will not be alleviated. The committee is envisioned to be patterned after the base closing committee which the Congress uses to settle the question of which military bases to close without involving the congressional representatives in whose districts the effects of the cuts would be most severe. The Council is making a recommendation to NSF and ONR both for the charge to this committee and for potential members. Lets hope that their deliberations will not be required.

Jack Bash and I are working to produce a more interesting and useful annual meeting format which will provide incentives for participation by the member representatives. This fall we will hold the Council meeting separate from the Scheduling meeting (your Chairman will be at sea until the end of September) and it will not be possible to kill two birds with one stone and attend both meetings on one trip. In order to make the Annual Meeting more interesting Jack and I are working on a forum on an interesting topic; non-traditional operating mechanisms. We will attempt to bring together representatives of such operations as the NSF Icebreaker, Nathaniel Palmer; the ODP Drillship, JOIDES Resolution; perhaps a military ship operation from the Coast Guard or the Navy and a University Operator with a non-traditional operating mechanism like VICKERS at USC or GYRE at TAMU. Question and answer time will be abundant. We will also be seeking an interesting keynote speaker. (I think I'll try Al Gore first.)

Taken all in all, UNOLS is in good health and coping pretty well with our difficulties. The support of the community of marine scientists is gratifying and indicates continued success.

Sincerely,



Garry

UNOLS SHIPS IN THE NEWS

Shipyard is Selected for AGOR 24 Construction

A fixed price incentive contract for detail design and construction of AGOR 24 with the option for two additional ships has been awarded to Halter Marine of Gulfport, Mississippi for \$34,682,182. Construction of the ship is estimated to take 36 months and be complete by January 1996. On a separate note, AGOR-25 remains in the Navy's 1994 budget.

In other AGOR 24 news, the Navy has announced that the vessel will be named "REVELLE" after the late Dr. Roger R. D. Revelle. o

OCEANUS Class Mid-Life Refits are Underway

Preparations for the mid-life refits of ENDEAVOR, OCEANUS, and WECOMA are in full swing. Rodney Lay Associates has been developing the design package to be used by each of the three ships (there are a few differences that are unique to each hull). The preliminary design was completed on January 11 and distributed to the three operating institutions for review. The design was also sent to a company in the Netherlands for modeling and analysis of the vessel's exhaust dispersion. The analysis showed that the dispersion pattern would be unacceptable. As a result, Rodney Lay is redesigning the present configuration. The revised design should be complete in the very near future, with the final drawing package ready by mid February. A

call for proposals for ENDEAVOR's refit should go out by the end of February. Six shipyards have been pre-qualified to perform the vessel's refit. They include the original builder, Peterson Builder, as well as American, Atlantic Drydock, Avondale, Bender, and Norfolk Shipbuilding and Drydock. The yard should be selected by mid April.

It is estimated that each overhaul will take approximately 150 days. ENDEAVOR should be able to leave the yard by the end of September. A professional yard manager will be hired to oversee the project. OCEANUS and WECOMA are expected to begin their refits in the Fall, 1993. The estimated cost of each overhaul is \$2 million. o

KNORR and MELVILLE Successful in Southern Ocean Operations

KNORR and MELVILLE have been successfully operating on WOCE legs in the Southern Ocean, at times in heavy weather. Although stern slamming continues, it does not pose a threat to the safety of the ship. Glosten Associates recently performed a study on the stern slamming and deck distortions. Their report provides recommendations for some long term options to improve the condition.

In late 1992, KNORR completed a 50 day WOCE leg, originating in Tahiti on 6 October, and proceeding south to 62° 30' South before turning around. Although some compromises were necessary to conserve fuel, supplies and stores were adequate for a cruise of this duration. The ship's crew has continued to correct many of the deficiencies left over from the shipyard's workmanship. This included repairing the heating system

to a tolerable level of performance. A shipyard period will be necessary to properly repair the system.

MELVILLE appears to have fewer shipyard related problems. The Seabeam has been operating well at 12-13 knots. This is good news for coverage but bad news for fuel consumption. Operational compromises are being worked out. Both ships operate well on one engine which proves to be a fuel efficient operating mode. o

THOMAS THOMPSON (AGOR 23) Completes First Year of Operations

THOMAS THOMPSON has recently completed its first year of full operations. Overall the acquisition process of the vessel went well. Since construction, many changes and improvements have been incorporated. These include adding a second DUSH 5 winch, changing the J-Frame to a Hydro boom that uses less deck space and adding a mechanical rail system for CTD

handling. To improve the quality of water for science use aboard the ship, two small evaporators were added. Two fume hoods were also added so that there are now hoods in all labs. A bow crane was added to assist with loading the ship in port. In response to comments from the community, modifications were also made to reduce noise in the labs. o

THOMAS WASHINGTON is Retired

In September, the Navy transferred THOMAS WASHINGTON to the government of Chile. WASHINGTON had been successfully operated by Scripps for many years. The vessel now goes by the name VIDAL GOMEZ and will continue operations as a research platform. o

NOTES FROM BELOW

DESSC Workshop Energizes Community

The DEep Submergence Science Committee (DESSC) held a workshop on 13-14 October in Alexandria, VA to provide a forum in which the community could identify deep submergence science problems, review current assets, and address ALVIN's technology needs. Additionally, the workshop had an objective to initiate a coordinated effort by the community to assess the interest, maturity, and economic strategies for ALVIN research in remote areas. The workshop was attended by close to 100 people, representing approximately 60 scientists, 20 engineers and 20 federal agency personnel.

The community consensus of technology needs put imaging improvements and upgrades at the top of the list. Every attempt will be made to assure that any upgrade can be cross decked between ALVIN and ROVs.

The workshop report should be out by the end of January 1993. o

ALVIN In 1993

In 1993, 145 dive days on ALVIN are tentatively planned, corresponding to 235 operating days. After completion of ALVIN's overhaul in March, operations are scheduled to begin off Bermuda with five engineering dives planned for testing improvements to the HSTR drill. Work will continue in the Atlantic through July. ATLANTIS II will then transit through the Panama Canal for operations in the Juan de Fuca region. A shipyard period is scheduled for October in San Diego before finishing the year with operations along the East Pacific Rise. A significant portion of the work scheduled along the Mid-Atlantic Ridge is pending NOAA funding. If NOAA is unable to fund their dives, projects planned by NSF and the French could be impacted along with drilling plans for this area. o

MOA Awaits Final Signature

The Memorandum of Agreement (MOA) for support of the National Deep Submergence Facility (DSF) has been signed by Dr. Robert Corell of NSF and Dr. Fred Saalfeld of ONR. It is anticipated that once NOAA's reprogramming request is approved by Congress, they will also sign the agreement. The agreement will not go into affect until all agencies have signed. The MOA provides for a "safety net" of funding to support the DSF during lean years. o

ALVIN'S Overhaul Update

ALVIN's overhaul is proceeding on schedule. Inspections and tests are scheduled to be complete by mid March.

The request to increase ALVIN's depth capability has been put on hold. Approval of the increase would have required testing of ALVIN's variable ballast spheres. This testing would have delayed the overhaul schedule and impacted 1993 operations. o

MBARI ROV VENTANA MAKES SUBMERSIBLE HISTORY

by G. Leon Holloway, ODP; Jim McFarlane, MBARI; Debra Stakes, MBARI

Geologist Debra Stakes reports from the Monterey Bay Aquarium Research Institute that their Remotely Operated Vehicle (ROV) VENTANA has successfully used a small diameter double-barrel drill with a diamond bit to recover cores of granite and metamorphosed sediment from the walls of Monterey Canyon on Dec 30-31. Although the HSTR (Holloway-Stakes-Tengdin-Rajcula) drill had been successfully used by the submersible ALVIN in 1991 to drill into massive sulfide chimneys, this is the first time that it has been attempted from the smaller ROV and the first time coring into the harder igneous rock substrate (granite) has been attempted.

The core barrel is 2" in diameter and recovers a core that is 1.25" in diameter. The coring assembly is fully hydraulic with a hydraulic cylinder to smoothly advance the barrel being rotated by a hydraulic motor. A steady pressure is kept on the face of the diamond bit by observation of a spring that is calibrated to applied pressure. The deployment of the HSTR drill had only been performed from a large manned submersible, ALVIN, when the project was initiated for the deployment on the ROV VENTANA. First rotational torque was examined to ensure the vehicle did not rotate around the drill string. Secondly, bit force required for penetration was compared to the forward thrust available from VENTANA. Both of these criteria were met by the

ROV so mounting methodology was devised for the drill which would facilitate smooth deployment.

VENTANA is a medium-sized scientific ROV. The base vehicle size is 99 inches long, 56 inches wide and 53 inches high. These dimensions grow in length, by 24 inches, and in height, by 16 inches, when the toolsled to which the drill was mounted is installed on the ROV. Flotation for VENTANA is provided by a Syntactic Foam module which is affixed to the top portion of the vehicle frame. VENTANA's designed depth rating is 1850 meters but is presently restricted to 1000 meters because of the current tether length.

The HSTR drill was rigidly attached to the bottom of the ROV VENTANA in a horizontal configuration which permitted cores up to 14" in length. Three metal spikes on the front of the frame formed a tripod base for the ROV to drive into the outcrop to provide lateral stability during drilling. It was decided to mount the drill as low as possible for two reasons, first the toolsled is located on the bottom of the ROV and provides the greatest amount of available tool space on VENTANA. The second reason the drill was mounted low proved to be the most important, vehicle stability. Adapter mounting brackets were installed directly to the toolsled frame and the drill was bolted into the ROV in three places.

The drill motor and water pump were plumbed directly into the ROV's hydraulic network. The hydraulic rotary pump/salt water pump is run in series with the coring motor and permits water to flow through the core barrel and pass out the bit automatically as the core barrel is rotated. This was the initial deployment to use this fluid circulation system which flushes debris from the drillhole to reduce the risk of binding in hard substrates. The drill advance cylinder and the water flow adjustment system were actuated from existing rate valves. The pump output was controlled with a small hydraulically actuated cylinder connected to a flow control valve. The water pump circuit speed could be adjusted by a rate valve actuating a cylinder which in turn adjusted the flow through a quarter turn ball valve. This allowed the operator to adjust drill rotational speed while separately controlling the speed of the water pump, so the hydrostatic pressure did not push the bit out of the hole. The water pump assembly was located in the stern of VENTANA so none of the drill cuttings would be recycled through the pump and core barrel.

VENTANA is propelled by six hydraulic thrusters, two fore and aft, two vertical and two laterals. The power for these hydraulic thrusters is provided by a 40 hp 2300 VAC electric motor driving a 25 gpm 3000 psi hydraulic pump. This hydraulic system also provided the fluid power required to run the HSTR.

drill. The core/water pump motors were run from the spare servo valve which is capable of providing 10 gpm at 3000 psi. In addition to auxiliary hydraulic requirements of the core, the hydraulic system supports all of the other effectors which are utilized on the ROV. On full system pressure the core motor was infinitely controllable from 0 rpm to speeds in excess of 1200 rpm, confirmed by bench tests using a digital tachometer. These rotational rates, 2 to 10 times higher than those obtained on the submersible ALVIN, greatly reduced the time required to drill each core and will permit the future use of diamond-impregnated drillbits customized for faster penetration rates. The thin kerf diamond bit used for both cores had six water ways for fluid flow and was lightly surface-set with 15 stones per carat. The rotary pump allows salt water to be circulated through the core barrel to remove cuttings at volumes up to 5 gpm when fully opened. The drill was operated at about 100 rpm's until the drill bit was embedded in the rock face. Flow and rpm were then brought to an operational speed of 300-500 rpm with about 2 gpm of flow and a maintained tension of around 300 lbs. of force. Higher rotational speeds and flow rates did not enhance the coring rates with the bits that were being used.

Two long cores were drilled, one into the granodiorite basement and a second into a block of metamorphosed sediment that had not been previously reported in that area. The cores were drilled at 637 and 986 meters depth,

respectively, on vertical exposures in Monterey Canyon. The ROV pilots, Jim McFarlane and T.C. Dawe, were able to drill the cores while powering into the rock face a few meters off the bottom. Horizontal thrusters were used to keep the tripod stabilizing frame rigidly held against the surface of the outcrop and vertical thrusters were used to compensate for the residual buoyancy of the vehicle. Even at the full weight on the bit produced by the hydraulic feed cylinder, the ROV was not pushed away from the rock face. Both cores are near the maximum permitted by the core barrel length and included continuous pieces 6-8" in length. Drilling the 12-14" cores required 30-45 minutes.

On the second day, a core orientation device was inserted to test whether oriented cores could be obtained. The device consists of a collar with tungsten carbide scribes that mark the sides of the core as it enters the barrel. The scribe lines are at 90, 120, and 150 degrees around the circumference of the core. These lines, when combined with a mark on the rock face and a measure of its orientation, will permit oriented cores for structural and paleomagnetic work. The initial results of obtaining oriented cores are positive, but it has yet to be adequately tested in igneous rock.

A microwave link permitted real-time audio-video communication between land-based scientists and engineers and the mother ship, the R/V PT. LOBOS. Control for VENTANA is provided by a GESPAC telemetry system, a 486 surface unit and a 68000 processor on the

vehicle. Communication between the two processors is provided via a fiber optic link. Video signals as well as other telemetry and data information are also transmitted through the tether via fiber optic conductors. The umbilical is comprised of five #12AWG wires, eight multi-mode fiber optics and two single-mode fiber optics which is encased with inner and outer layers of TPR with four intermediate layers of contrahelically wound Kevlar. The video signals are furnished from the following cameras; Sony DXC-3000 broadcast quality 3 chip, Osprey 1323 SIT, two Osprey 1359 low light monochrome, Photosea NDT 4000 (macro video sighted stereo still), Panasonic GP-CD1 and an EOS ultra low light monochrome filterable zoom system.

The ease of the drilling operation from the ROV, the possibility of high rotational speeds, and the lack of problems drilling into hard substrates have convinced Stakes and the MBARI ROV Operations Group to adapt a multiple coring system with high speed drillbits for future operations in Monterey Canyon. Artificial diamond-impregnated bits customized for the maximum rotations speeds would greatly reduce the time required to obtain each core. The multiple coring system will enable the ROV to obtain up to eight cores per dive, limited only to the drill penetration rate. Both the drill and the two days of VENTANA use were supported by grant OCE90-19300 to Stakes from NSF's Ocean Science Division.

~ ANNOUNCEMENT ~

Teleconference Workshop on Remotely Operated Vehicles and Deep Submergence Research in the 1990's

Members of the Deep Submergence Community are invited to participate in a unique teleconferencing workshop on March 6 to demonstrate the scientific capabilities of the state-of-the-art remotely operated underwater research vehicle known as the *Jason-Medea* System. *Jason-Medea* has been developed over the past decade by the scientists, engineers and technicians of the Deep Submergence Laboratory at Woods Hole Oceanographic Institution.

The United States Navy Deep Submergence Systems Division, the Office of the Chief of Naval Research, and the National Science Foundation are sponsoring a workshop to explore the roles that modern computational, communications and robotics technologies can play in deep-sea oceanographic research.

Through the cooperation of Electronic Data Systems, Inc., the JASON Foundation, and Turner Broadcasting System, Inc., two and a half hours of air time have been made available from 3:00 to 5:30 PM EST on this date. Twenty-seven satellite downlink sites will link one operating research vessel and the land-based operation with workshop participants in the United States, Canada, the United Kingdom and Bermuda. The research ship *Laney Chouest* will be in the midst of a three-week educational/research program located in the Sea of Cortez, between Baja California and mainland Mexico. This effort is focused on active hydrothermal vents driven by heat flow from the volcanically active East Pacific Rise, which underlies the sediment-covered Guaymas Basin. The project combines into a single operation newly-developed robotic systems, state-of-the-art mapping and sampling tools, fiber-optic data transmission from the seafloor, instantaneous satellite communication from ship to shore, and a sophisticated array of computational and telecommunications networks. During the March 6 workshop, land-based scientists will observe and participate directly with their seagoing colleagues as they conduct seafloor research operations.

The workshop will include two components: (a) an initial phase involving real-time demonstrations of the mapping, maneuvering, and manipulative capabilities of *Jason-Medea*, and (b) a follow-on teleconferencing dialogue between workshop participants and the scientists, engineers and technicians conducting research in the Guaymas Basin.

A. Demonstration

At all downlink sites, workshop participants will have direct visual and audio access to research activities at hydrothermal vent fields nearly two kilometers below sea level in the Guaymas Basin. Acoustic and optical sensors mounted on *Jason* will push the state of the art in near-to real-time mapping and visualization of the seafloor at a variety of scales. This activity will provide the geological framework within which all other research in the area is conducted during the three week program.

Using results of the mapping effort, a team of marine scientists--both on land and at sea--will work together during the broadcast to sample, photograph, and experiment with benthic faunal and bacterial communities supported by hydrothermal fluxes of heat and nutrients. The program will provide a critical test of whether direct satellite-linked control of the *Jason* vehicle by land-based investigators is a viable mode of research.

"SeaNet", a new program sponsored by JOI, Inc., will connect the local area net on board the *Laney Chouest* via satellite to Internet during portions of the three-week research period. Real-time capabilities to be demonstrated at the workshop include 2-D/3-D visualizations of underwater terrain, and limited audio/video teleconferencing between the ship and the workshop broadcast.

Researchers interested in participating as an Internet network site during the rest of the Guaymas research program will require software packages for Sun and Silicon Graphics workstations. Further information is available from kens@jargon.whoi.edu.

A computer-controlled, high-precision, three-dimensional survey using *Jason*-mounted sensors will allow direct observation of and measurements on turbulent thermal/chemical plumes rising from clusters of black smoker vents. These data will be used to analyze processes of entrainment of hydrothermal heat and fluids into surrounding seawater. An experiment of this type is possible only because of the feed-back loop control on vehicle position provided by automatic thrusters, which readjust every fifth of a second in response to the high frequency long-baseline positioning system.

B. Dialogue

The final phase of the workshop will include an on-line question/answer period involving at-sea researchers, on-land participants, and observers. This will be an opportunity for scientists, researchers, and educators interested in using or knowing more about *Jason-Medea*-type systems to query the research crew.

If time allows, discussion will shift to the challenges and potentials confronting the deep submergence science community, including resource optimization for both research and education. Seafloor research is now in a time of transition from decades dominated by the use of occupied submersibles to a period in which increasingly sophisticated ROV's can significantly enhance and, with appropriate development, possibly replace human presence on the seafloor. We must determine how best to manage this transition. In a time of limited budgets, our challenge is to maintain an essential deep-submergence capability while fostering development of the next generation of technology. These tools will become necessary to more fully explore and work routinely in the deep ocean: the last true frontier on this planet. As the cost of putting ships to sea rises, and the price of satellite time declines, it is appropriate that we begin to reexamine the manner in which deep-sea research is conducted. Participation in this teleconferencing workshop will provide a first-hand taste of critical paths along which deep-submergence research may move in the next ten years.

Contact Points

Please view this memorandum as an invitation to join us on March 6. The location and contact points of the active satellite downlink sites are listed below. The downlink sites will be reserving a number of positions for working scientists until February 25. If you wish to participate in the workshop, first contact the JASON Project, fax (617) 487-9999, indicating your name, your institution, the closest network (downlink) site, your field of expertise and any specific topics you are interested in having addressed by the workshop. You should then complete arrangements directly with the downlink site of your choice by fax or by telephone to insure that a seat is reserved for you at the site you have chosen. Please refer to "Teleconference Workshop" when communicating with the downlink sites.

Primary Interactive Network (Downlink) Sites

Bell Museum of Natural History
Gordon Murdock (612) 624-6380
Amy Torgerson - JASON Coordinator
10 Church Street
Minneapolis, Minnesota 55455
(612) 626-2220
(612) 626-7704 (FAX)

**University of Wisconsin - Milwaukee
Center for Great Lakes Studies**
Caroline Joyce - Education Coordinator
Barbara Duffy - JASON Coordinator
600 East Greenfield Avenue
Milwaukee, WI 53204
(414) 382-1700
(414) 382-1705 (FAX)

Denver Museum of Natural History
Diana Lee Crew
2001 Colorado Blvd.
Denver, Colorado 80205
(303) 370-6307
(303) 331-6492 (FAX)

The Maritime Center at Norwalk
Jerry Sawyer, JASON Coordinator
10 North Water Street
South Norwalk, CT 06854
(203) 852-0700 x218
(203) 852-0700 x245 (FAX)

**Harbor Branch Oceanographic
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(Continued on next page....)

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ARCTIC RESEARCH VESSEL NEWS

NSF Arctic Vessel Design Update

The Conceptual design for the Arctic Research Vessel is being completed and distributed to the research community for their review and comment. The Fleet Improvement Committee (FIC) Arctic Research Vessel (ARV) subcommittee has selected an "innovative" hull form that should combine the best characteristics of the ODEN and THYSSEN/WAAS hulls with more recent refinements. Two independent icebreaker consultants have evaluated the design and made recommendations.

The latest design specifies an ABS A3 ice capability. The length is approximately 343 feet overall, with a beam greater than 80 feet, and tonnage of 10,000. The ship can accommodate a crew of approximately 27 and 36 scientists. The beaminess of the hull configuration makes for an especially

roomy ship. The new design includes two "Baltic" rooms; one amidships for hydro work and another forward for work and access to the ice surface.

The chairs of the congressional committees responsible for VA, HUD and independent agencies (includes NSF), Mikulski(D-MD) and Traxler(D-MI) directed NSF to proceed with the engineering design and initial construction of this vessel. Some funds are in the NSF FY93 and FY94 budgets for this work. The estimated construction costs are now \$120 million. Various methods for obtaining these construction costs are being explored.

The preliminary design should be completed later this year and construction might start in 1994.

COAST GUARD Arctic Vessel Update

The Coast Guard is proceeding with the design process of their icebreaker. They have prepared a revised set of requirements and have awarded contracts to two shipyards, Ingalls and Avondale, to perform "Baseline design" studies. Icebreaking capability is designed to be 4 1/2 feet at 3 knots and 8 feet with ramming. Each shipyard is to provide a design concept which will keep construction costs within the funding cap. The best design will be selected for the construction contract.

The designs are expected to be completed in March with the yard selection planned for August of this year. Construction should start immediately after award with completion planned for 1997. The vessel's primary mission is to support research.

UNOLS COMMITTEES & ISSUES

RVTEC Holds First Meeting

The Research Vessel Technical Enhancement Committee (RVTEC) held their first organizational meeting on October 18-19 in Washington, DC. Eighteen participants representing fifteen UNOLS institutions attended, in addition to representatives from federal agencies. Rich Findley from the University of Miami was elected Chair and Doug Biggs of Texas A&M was elected Vice Chair. By-laws were

drafted and accepted with the main objectives for the Committee to include promotion of technical information exchange, enhancement of technical skills, and keeping abreast of the latest technological advancements. The Committee has already achieved some successes by networking over telemail and issuing a newsletter. Two areas the group plans to tackle in the near term are handling of ADCP data and cruise coordination with scientific users.

RVTEC plans to hold their meetings in conjunction with existing scientific forums. The 1993 meeting is planned for September 20-21 in Southern California. The first day will take place in San Diego immediately followed by a facility tour of USC in Long Beach. The meeting will coincide with the fall MTS meeting.

RVOC Develops Guidelines for Inspection of Chartered Vessels

An RVOC subcommittee of Tom Smith, U. Alaska, Robert Hinton, U. Washington, and Mike Prince, MLML was formed to prepare guidelines for inspecting non-UNOLS vessels chartered by UNOLS institutions. When a vessel is chartered using federal funds it must be able to meet the UNOLS safety standards. The preliminary guideline was completed and forwarded to the UNOLS Council for review and comment at their January 1993 meeting.

Risk Management Update

It appears that at the present time full implementation of a UNOLS group insurance plan will not be executed, but that interim measures will be adopted. These will probably include a minimum coverage for all ships, a minimum deductible for all ships and the elimination of hull insurance as a reimbursable expense. NSF has drafted a letter indicating the new requirements and is in the process of reviewing it. The letter will then be routed through ONR before being released to the community. Further movement on the group plan will come at a later date.

Coastal Workshop Announcement

A Coastal Workshop to assess the future vessel and facility needs of coastal marine science is scheduled for February 22-24 in Williamsburg, Virginia. Approximately 100 participants plan to attend. The first day will begin with a keynote address on "Perspectives on Multidisciplinary Coastal Marine Science". Working groups will be convened to discuss the various coastal research needs and facility needs. Needs will include large research ships, aircraft, satellites, moorings and fixed platforms, small research ships, and instrumentation. A final report of the workshop can be expected in late 1993.

PUBLICATIONS

RVTEC Delivers First Newsletter

The newly formed RVTEC has already put out their first newsletter titled, *Interface*. This issue gets right down to business with articles on XBTs and ADCPs.

Technical groups are encouraged to exchange information via the newsletter relating to technical support for seagoing science. Cheers to Doug Biggs, editor and Vice Chair of RVTEC, for a job well done! o

Research Vessel Safety Standards are Distributed

The UNOLS Safety Standards were approved by UNOLS at their annual meeting in September. The manuals have been printed and distributed. Praise goes out to the Safety Committee headed by Mike Prince for their many hours spent drafting the updated standards. o

The Fleet Improvement Committee Prepares Fleet Plan

The Fleet Improvement Committee is in the process of preparing an up-to-date document to replace the 1990 Fleet Improvement Plan. The new plan will provide the background of the UNOLS fleet, the present composition of the fleet and the fleet as it is expected to look in the out years. It will also address non-UNOLS assets and non-ship assets used by scientists.

The plan will take a look at the academic fleet over a time period of twenty years, and examine the on-

going major programs such as WOCE, RIDGE, JGOFS etc, projecting them into the future. Coastal oceanography and arctic research needs will also be addressed as well as new and exotic technical advances that might impact the way oceanography will be conducted. An important element of the new plan will address the funding of the fleet. It will examine past and current usage versus availability of ships, as well as the current and future cost of operating the fleet.

The study will forecast the fleet composition at the turn of the century. It will recommend the ways to best utilize anticipated resources. Finally, the study will recommend methods for monitoring the fleet and its needs.

The first draft of the updated UNOLS Fleet Plan is due by this spring. The final report is expected to be complete by the end of the year. o

AGENCY NEWS

NATIONAL SCIENCE FOUNDATION

NSF's funding picture for ship's operations in 1993 is looking grim. It appears that presently there is a \$2.5 million shortfall of available funds to support ship operations. This may result in having to reduce all operating budgets by as much as 10% to accommodate the shortfall.

In other NSF news, the Division of Polar Projects at NSF has been reassigned to fall under the Office of the Director. Additionally, it has been confirmed that NSF will move from their DC location to office space in Arlington, Virginia. The move is expected to be completed by the end of this calendar year.

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OFFICE OF NAVAL RESEARCH

The Office of Naval Research (ONR) reports that their budget is up from last year. The Chief of Naval Research (CNR) Office received a 15 percent increase. The Facilities group, however, has not seen much of this increase.

In December, ONR was reorganized to consolidate the Office of Naval Technology and the Office of Advanced Technology with their office. They will all go under the title of Office of Naval Research. The new organization will help to transition laboratory findings into technology and product development.

It will also allow shifting of some personnel and funding for support of high priority programs in laboratories, universities, and U.S. industry. A new civilian Deputy Chief of Naval Research will be hired to help provide technical direction and continuity to ONR. ONR will retain ownership and management of its vessels.

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OCEANOGRAPHER OF THE NAVY

Best wishes are extended to Stewart Nelson, who will be leaving the Oceanographer of the Navy's Office in the near future. He plans to stay active by pursuing a consulting career and teaching at George Mason University. Good Luck!

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Calendar for 1993 UNOLS Meetings

<u>Meeting</u>	<u>Dates</u>	<u>Location</u>
UNOLS Council	14-15 Jan	Scripps, La Jolla, CA
FIC Coastal Workshop	22-24 Feb	Williamsburg, VA
FIC	15-16 Mar	St. Petersburg, FL
DESSC	14-16 Jun	Woods Hole, MA
Ship Scheduling	23 Jun	Washington, DC
UNOLS Council	15-16 Jul	OSU Newport, OR
Ship Scheduling	9 Sep	Washington, DC
RVTEC	20-21 Sep	San Diego/Long Beach, CA
UNOLS Council	30 Sep	Washington, DC
UNOLS Annual	1 Oct	Washington, DC
RVOC	Sep/Oct	TBA
FIC	TBA	TBA
DESSC	Dec	San Francisco, CA

UNOLS COUNCIL AND COMMITTEE APPOINTMENTS

UNOLS COUNCIL

Garry Brass, U. Miami, Chair
Peter Betzer, U South Florida, Vice Chair
Dennis E. Hayes, L-DGO
Richard Jahnke, Skidaway
David Karl, U Hawaii
Robert A. Knox, Scripps
Charles A. Nittrouer, SUNY, Stony Brook
Richard Pittenger, WHOI
Robert Wall, U Maine
Richard Findley, U Miami (ex-officio, Chair RVTEC)
Paul Jeff Fox, URI (ex-officio, Chair DESSC)
Marcus Langseth, L-DGO (ex-officio, Chair FIC)
Ken Palfrey, OSU (ex-officio, Chair Ship Scheduling)
Michael Prince, MLML (ex-officio, Chair RVOC)

DEEP SUBMERGENCE SCIENCE COMMITTEE (DESSC)

Paul J. Fox, URI (Chair)
Daniel Fornari, L-DGO
Hugh Milburn, NOAA
James (Casey) Moore, UC Santa Cruz
Mary Scranton, SUNY, Stony Brook
Gary Taghon, Rutgers
Karen Von Damm, UNH
Carl Wirsén, WHOI
Richard Pittenger, WHOI (ex-officio)

FLEET IMPROVEMENT COMMITTEE (FIC)

Marcus Langseth, L-DGO (Chair)
Peter Betzer, U South Florida
Teresa Chereskin, Scripps
Eric Firing, U Hawaii
Kenneth Johnson, MLML
Charles Miller, OSU
Thomas Royer, U Alaska
L. Donelson Wright, VIMS

RESEARCH VESSEL OPERATORS' COMMITTEE (RVOC)

Michael Prince, MLML (Chair)
Paul Ljunggren, L-DGO (Vice Chair)

RESEARCH VESSEL TECHNICAL ENHANCEMENT COMMITTEE (RVTEC)

Richard Findley, U Miami (Chair)
Douglas C. Biggs, Texas A&M (Vice Chair)

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