UNOLS ANNUAL MEETING REPORT
Room 1235
National Science Foundation
4201 Wilson Boulevard
Arlington, VA
18 September 1997

Appendices

Thursday, 18 September 1997

INTRODUCTION - The UNOLS Annual meeting was held in Room 1235 of the National Science Foundation on 18 September 1997. The items of the agenda, ***Appendix I***, were addressed in the order as reported below. The meeting was called to order at 8:30 a.m. by Ken Johnson, UNOLS Chair. The participants of the meeting are listed in ***Appendix II.***

ACCEPTING MINUTES - The minutes from the September 1996 Annual meeting were accepted as written.

KEYNOTE ADDRESS:

Dr. Kenneth H. Brink, Chair of the Ocean Studies Board of the National Research Council, provided the keynote address. His viewgraphs are provided as ***Appendix III.*** Ken explained that the purpose of the OSB is to advise the Federal Government on ocean science and policy. They provide studies on coastal issues, national security, living marine resources, international activities, status of science, observation systems and global change. OSB studies are unique because of the makeup of their committees, bias statement requirements and their review process. Objectivity is carefully guarded. Examples of studies include: Global Ocean Observing Systems (GOOS), U.S. Mexico

Collaboration for Ocean Studies and Major U.S. Oceanographic Research Programs. OSB maintains a good relationship with the Consortium for Oceanographic Research and Education (CORE). They also share interests with UNOLS and see a need to work closely together on a variety of issues.

Ken's view is that a phase in large research programs, such as, JGOFS and WOCE is ending and that a new ocean science agenda is needed. He challenged the membership to bring forth compelling science issues and to work hard to develop a consensus on science directions. He explained that it is also necessary to educate the public and our Congressional representatives on the importance of ocean science.

COMMITTEE REPORTS - The Committee reports, except for the DESSC report, were summarized by Ken Johnson:

Research Vessel Operators' Committee (RVOC) - The 1997 RVOC meeting is scheduled to be held at Woods Hole Oceanographic Institution in Woods Hole, Massachusetts on 21-23 October 1997. A variety of presentations are planned. Jamestown Marine Services (JMS) will be on hand to introduce their inspection team to the community. JMS was awarded the contract to conduct the NSF ship inspection on all non-Navy owned vessels of the UNOLS Fleet. Eleven inspections are planned this year. The Glosten Associates will preview their study on the impact of new regulations on ship manning and crewing requirements. These new regulations may also impact future mid-life refit plans and designs for ship replacements. There will be a presentation by SeaNet representatives on marine communications. Ken reported that other activities of the RVOC include development of a Safety Training Video. A proposal to develop the video was submitted to NSF and funded. It is presently in the early stages of production with a planning meeting scheduled for 1 October at the University of Rhode Island. The video will cover the subject matter of Chapter 1 of the safety training manual. It is intended to be viewed by the science party before and during the cruise.

DEep Submergence Science Committee (DESSC) - Mike Perfit, DESSC Chair, provided the report. He began by stating that this has been a busy and satisfying year. 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. In the spring, prior to beginning science operations, ATLANTIS with ALVIN aboard made public relations visits to New York City and Washington, D.C. The facilities were well received in both cities.

In June, ALVIN engineering dives and re-certification took place off Bermuda. ATLANTIS/ALVIN then completed two successful dive programs on the Mid-Atlantic Ridge; one that included filming by the British Broadcasting Corp. and another that was in cooperation with UK BRIDGE scientists. ATLANTIS has also completed work off the California coast and is now on the Juan de Fuca Ridge completing 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. The remainder of the year will see ALVIN/ATLANTIS on the northern EPR before ATLANTIS must undergo a NAVY Post Shakedown Availability (PSA) inspection in San Diego that will last until approximately April 1998.

JASON, ARGO-II and the DSL-120 sonar are working well and are ready to be used on ATLANTIS and other UNOLS platforms in the coming year. The ROVs have been busy this year. A very successful operation was carried out in early 1997 to survey the wreck of the DERBYSHIRE in the Western Pacific. All three of the DSF ROVs were used during the survey. The ROVs were operated from THOMPSON.

Scheduling problems have plagued the deep submergence vehicles for the past few months and were hopefully resolved at this week's UNOLS Ship Scheduling Meeting. Deep submergence facilities scheduling problems were compounded by the fact that ALVIN was in overhaul and many scientists have been waiting for more than a year to use ATLANTIS, and by the addition of unscheduled programs on the Juan de Fuca Ridge. There is so much funded science in diverse field areas, that arranging a schedule that meets all of the needs/schedules/desires, funding agencies priorities and fiscal constraints, as well as the requirements for the Navy inspection in early 1998, has been complex; requiring extensive communication and coordination between all parties.

DESSC and WHOI are working on methods to educate the community about JASON capabilities and the optimal operational approach for deep submergence field programs using the full suite of DSF vehicles. DESSC, UNOLS and WHOI have developed an on-line UNOLS/National Deep Submergence Facility vehicle request form for DSV ALVIN, ROV JASON, ARGO-II, DSL-120 Sonar, that can be accessed on the World Wide Web through the Deep Submergence Operations Group at WHOI and the DESSC Homepage.

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 the facility operator to achieve a workable schedule for 1998. Mike provided a summary of the ALVIN and ROV requests for use in 1998, see ***Appendix IV***. The scheduling procedure is becoming more complicated with many more 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. Mike asked the question on how the community can conduct expeditionary work while at the same time fulfilling the facility needs required for time series work. DESSC will continue to advocate for increased facilities support for the excellent scientific programs that are being funded.

Mike continued by reporting that last year, FOFCC asked DESSC for input regarding the effective utilization of the SEACLIFF and the facility needs of the US academic, deep submergence community. A preliminary response to these issues was provided to Fred Saalfeld 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 questionnaire regarding the future of deep submergence science. Mike reviewed the results by referring to a series of charts. The survey showed that there is a good deal of interest in having access to a depth range of 6000 m by deep submergence vehicles for the next twenty years. The majority of responses to the report indicated that SEACLIFF should not replace ALVIN, citing SEACLIFF's poor track record and ALVIN's proven capabilities. They did not want to compromise ALVIN's performance for increased depth capability. Responses were very positive for transferring SEACLIFF's equipment to WHOI for use in enhancing ALVIN and preserving the titanium sphere for later use. The report provided the agencies with recommendations pertaining to specific options regarding the disposition of Navy assets. The full report can be obtained from the DESSC web site. The SEACLIFF Working Group and DESSC strongly recommended WHOI be funded to conduct an engineering study so that well-constrained estimates of costs for the effective utilization of SEACLIFF for academic science can been made within the next 12-18 months.

Over the summer, the federal funding agencies asked DESSC for input regarding the academic community's interest in using the Navy's Advanced Tethered Vehicle (ATV) which is scheduled for retirement in 1998. DESSC sent a memo to the agencies stating that there is community interest in ATV. A meeting was hosted by Scripps on 16 September at NSF to discuss the operational capabilities of ATV. DESSC, WHOI, and funding agency representatives participated in the meeting.

Mike concluded by noting that DESSC plans to 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.

Fleet Improvement Committee (FIC) - Ken Johnson continued the committee reports with a summary of FIC activities. Chris Mooers has stepped down as FIC Chair and Larry Atkinson of Old Dominion University will be stepping up. In December 1996, The FIC convened with a group of invited sea-going scientists to develop Science Mission Requirements for a Central Pacific research vessel (AGOR 26) at the request of ONR. The SMRs were then passed to the UNOLS Council for endorsement. The Council approved the SMRs with a few changes and passed them along to ONR. At the recent Council Meeting, Chris Mooers presented the draft Interim Fleet Improvement Plan (IFIP). The report will be taken under advisement. The next FIC meeting is scheduled for 6-7 November in Seattle. The FIC will be reviewing the interest of the community in fisheries oceanography and looking at mission requirements for such a vessel. An additional action item for the FIC will be updating the Fleet Improvement Plan last updated in 1995.

Ship Scheduling Committee (SSC) - Ken Johnson began the Ship Scheduling Committee Report by providing a viewgraph, ***Appendix V***, with the statistics of ship usage

1995 to 1998. This reflected the reduction in ship use over this period. It also depicted the increase of ship time for the smaller ships with a decrease of large ship time. Ken gave a summary by class of the scheduling scenarios for 1998. The Class I/II vessels will be underutilized and as a result EWING is planned to lay-up in May/June and MELVILLE planned to lay-up in June/July for the remainder of the year. Although ship use pressure is low, the pressure for the use of the deep submersible tools has increased. Scheduling of these assets has been a complex, iterative process. As a result, ATLANTIS' 1998 schedule is still pending while priorities and logistical concerns are sorted out. In the Class III, ENDEAVOR will not operate in 1998. The schedules of the remaining vessels in Class III are not particularly healthy with appriximately 65% utilization. The total days for the Class are down approximately 400 days from 1997. The Class IV schedules are close to optimal. The Class <IV are seeing increasing use in the coastal zone and as a result have healthy schedules. Ken noted that the Class <IV as a whole is getting old. BLUE FIN replacement plans are well underway and CALANUS replacement plans are also moving along. In summary, Ken noted that total ship use in 1998 will be down almost 700 days from last year.

Ken presented a ship cost summary for 1998, ***Appendix VI***. This summary was provided by the individual ship operators representing their anticipated costs based on the schedules presented at the 15 September Ship Scheduling Committee Meeting. In past years, the total costs exceeded the anticipated funds available by $3M to $10M. For 1998, the total cost for operating the fleet was nearly $5M less than the anticipated funds available for 1998. Ken raised the question of what may be the cause of the low utilization. Are scientists meeting their objectives through modeling? Are the ships more efficient platforms, thereby requiring less time at sea? It was also recognized that two major field programs are winding down. It was suggested that we need to determine if the lower ship time pressure is a trend. If so, should we maintain the fleet to a reduced size?

Next Ken reviewed the ship time support by agency over the past four years. NSF continues to be the greatest supporter of ship time; however, in 1998 their funding level is lower than previous years. ONR's funding level and ship time totals is significantly lower in 1998. Fortunately, Ken noted that both NAVO and NOAA ship time levels are high. Ken warned, however, that future NAVO ship time is uncertain and will be determined by their mission.

Ken concluded by announcing that UNOLS plans to hold a Town Meeting at The Ocean Sciences meeting in San Diego in February. The future directions of the Fleet will be discussed.

Research Vessel Technical Enhancement Committee - The RVTEC Annual meeting is scheduled for October 27-29 at the University of Washington in Seattle. A presentation is planned on marine corrosion and its impact on shipboard systems and overboard instruments. A tour of the Sea-Bird Instruments Facility is scheduled. Also scheduled is a presentation by Rex Buddenberg and Dale Chayes of the SeaNet group to explain plans to bring the internet to sea.

Arctic Icebreaker Coordinating Committee - Ken Johnson reported on activities of the Arctic Icebreaker Coordinating Committee (AICC) chaired by Jim Swift. The AICC provides scientific oversight of Arctic polar science support on US surface vessels, with primary focus on USCGC Polar Star, USCGC Polar Sea, and the new USCGC HEALY. They have developed a good working relationship with the Coast Guard resulting in significant changes to the HEALY science spaces. HEALY is scheduled to be launched on 15 November. The committee has been working with the Coast Guard to coordinate science participation in training cruises of POLAR SEA and POLAR STAR. The Committee has established a liaison with AVARC and has a RVTEC member attend its meetings.

No new dedicated science funding is currently available for Arctic programs. HEALY is scheduled for delivery in late 1998 or early 1999 with one year planned for shakedown. The UNOLS RVTEC group has been requested to assist in the science system testing to be carried out on HEALY in 1999. The ship is scheduled to be ready for full operations in 2000.

FEDERAL AGENCY REPORTS:

Department of State - Tom Cocke reported that clearance difficulties remain with Mexico and Russia. There have been more coastal states providing late responses to clearance requests. Also troubling are been jurisdictional disputes between countries which then cause delays in issuing clearances. More coastal states are requesting to participate in cruises. This often causes additional expenses for the science and creates a need for more space aboard ship. Tom expressed the importance of the United States signing the Law of the Sea (LOS) treaty. As a non-signature the U.S. may be having more difficulty with clearances and can not participate in the "Implied Consent" aspect of the treaty. "Implied Consent" permits clearance to coastal states when a response has not been received after six months of submittal of the request.

Tom provided statistics reflecting the trend toward fewer clearance requests being submitted on time. In 1997 only 37% of the requests to date were submitted on time. These late requests could be some of the problem for late coastal state responses. There was a discussion on how PIs could be encouraged to submit their clearances on-time. It was suggested that electronic reminders could be sent to PIs.

Naval Oceanographic Office - The first year of the NAVO/UNOLS partnership has been a success (see ***Appendix VII***). Approximately $6.3M was provided for 432 UNOLS ship days and $769K for data processing. The year was very productive providing cost effective surveys and cross fertilization. The number one requirement of two fleet commanders were met. The UNOLS effort ensured an earlier forward deployment of two T-AGS 60 ships. Tactically significant data and Fleet requirements were accomplished.

National Oceanic and Atmosphere Administration - Scott McKellar provided the report for NOAA. NOAA's budget had not gone to conference at the time of this meeting. Fisheries will have $2.1M in the 1998 budget for a concept design of the next generation fisheries research vessel. NOAA is hopeful that the 1999 budget will include funding to start the construction of these ships. NOAA expects to charter 330 ship days of UNOLS ships in 1998 costing $2.8M. RON BROWN successfully completed its first cruise and is presently on the first leg of a Vents cruise. BROWN will participate in the Year of the Ocean with a visit next year to Lisbon. KA'IMIMOANA continues its work in the Pacific with the TOGA TAO buoys.

Office of Naval Research/Naval Research Laboratory/Oceanographer of the Navy - Sujata Millick followed with a report for Navy (ONR/NRL/OON). Level funding is expected for the ONR Facilities budget which should be $5M. KNORR is having its INSURV this week. THOMPSON is scheduled for October. The NAVSEA ship construction funding ends in September for REVELLE and May 1998 for ATLANTIS.

This past year, ONR worked with FIC in developing mission requirements for AGOR 26. An announcement has been published in the Congress Business Daily for operator selection of AGOR 26. A deadline of 17 October was set for interested parties to request the Request for Proposal (RFP). The operator must be a member of UNOLS. They must offer a Class I/II vessel for retirement and they must provide financial support for the new vessel.

Sujata reported that the Navy League of the Unites States is offering a "Name This Ship" contest. The ship to be named is the T-AGS 64 vessel currently under construction by the Navy. The ship will be part of NAVO's oceanographic survey fleet. The contest is open to students in grades K through 12.

Lastly, Sujata reported that studies have been funded to evaluate the AGOR Z-drive problems and fuel efficiencies for these ships.

National Science Foundation (NSF)- The NSF report was provided by Don Heinrichs. His viewgraphs are included as ***Appendix VIII.*** Lisa Rom has returned to NSF and will be working part time as Assistant Program Director for the Oceanographic Technology and Interdisciplinary Coordination (OTIC) Program. Sandy Shor will continue as Program Director for Instrumentation and Technical Services for the rest of the year. This position will be advertised in the near future. The 1998 NSF budget is in conference. An increase over 1997 of 2.1% is likely which would bring the Ocean Science budget to $206.2M. The Facilities budget would most likely remain level funded at $52.3M. Don reported that at least one UNOLS ship would be laid up in 1998. Additional lay-ups are anticipated for 1999.

The UN has designated 1998 as the Year of the Ocean. EXPO '98 will be held in Lisbon, Portugal. Mike Reeve has been designated as official coordinator for NSF. NSF will encourage "outreach" activities associated with this event.

Don provided the details of the Government Performance and Results Act (GPRA) as it relates to NSF Facilities, see ***Appendix VIII.*** The NSF required documents for the GPRA will include 1) a Strategic Plan; 2) an Annual Performance Plan (goals and objectives) and 3) Documentation of Workforce Issues. Significant effort will be necessary to keep these plans current. Facility goals will focus on efficient, effective operation of multi-user facilities. An update is underway for a facilities strategic plan for FY99 and beyond. The performance plan and report are under development. A pilot report was conducted in FY98 for CY96 activities. Changes to the cruise reporting form may be necessary to assist in collecting the data. An NSF Committee of Visitors (COV) will review the plans every three years.

Don announced that a new publication "Grant Proposal Guide" has been published. Also available is the publication "Instruction for Preparation of Proposals". The guidelines for operators of ships is being updated. Don reported that operators can submit suggestions and comments regarding the update to him, Dick West, Sandy Shor, and Dolly Dieter.

United States Coast Guard - CDR George Dupree reported aboard in August as Chief, Ice Operations Division replacing CDR Rick Rooth. CDR Dupree explained that POLAR STAR has completed a 10 month overhaul and is now on a Deep Freeze deployment to Antarctica. POLAR SEA is entering a 6 month shipyard period and should be available for a Science of Opportunity cruise in the Antarctic during spring/summer. A two months cruise is planned for equipment shakedown and crew training. The Coast Guard would like to allow 4 weeks for science.

CDR Dupree made a call to the UNOLS Operators regarding cross-training of USCG marine science technicians. When feasible, he would like to send Coast Guard technicians aboard UNOLS vessels. He felt that this would help the USCG technicians gain first hand knowledge and experience in supporting sea-going science. HEALY is scheduled for launch on 15 November 1997 with a delivery date scheduled for December 1998. Unrestricted operations are scheduled for 2000. The Coast Guard will investigate getting civilian billets on HEALY. The decision of homeport has yet to be made. CDR Dupree concluded his report by remarking that the formation of the AICC was a terrific idea and the interaction has been very positive.

Consortium for Oceanographic Research and Education - Dan Schwartz presented the CORE report. He began by noting that CORE now has approximately 50 members. UNOLS has an open invitation to all of CORE's official meetings. Dan reported that Congressional support is robust for ocean sciences these days. CORE maintains a current listing of appropriation information on their web page.

Dan's devoted the remainder of his report to providing information on NOPP (see ***Appendix IX***). The history of NOPP, its goals, and structure were reviewed. At the highest level is the National Oceanographic Research Leadership Council (NORLC), who is responsible for establishing policy. In 1997, NOPP was funded at $20.5M with $7.5M

for NAVO's use of UNOLS ships and $13M for partnership projects. In January 1997, 215 preproposals were received for the partnership projects. Of these, 55 submitted full proposals in March 1997. The partnerships involve industry, government (70 states) and academia (70 institutions). Some of the activities of NOPP include establishment of a "Virtual Ocean Data Center Workshop" which will be a web-based forum. Also supported by NOPP, is the SeaNet project which is working to bring the internet to sea. In July 1997, the NOPP Program Office was awarded to CORE. The office staff positions are being filled.

Dan concluded his report by reviewing the status of NOPP for 1998 and projections for 1999. The 1998 NOPP program will have many of the same elements as in 1997 and is expected to be funded at $28.5M with $7.5M for the Navy use of UNOLS vessels. A new item is being added for support of ocean observation. Dan noted that for FY99, the NOPP elements should be included in the various agency budgets. Ten agencies have expressed interest in supporting the Partnership Program in out years.

UNOLS ISSUES

Navy Construction Plans for a Central Pacific Research Vessel - Sujata Millick reported on this item in her ONR report. The Commerce Business Daily advertisement for operator of the vessel (AGOR 26) has been posted. UNOLS has been involved in the process by provided Science Mission Requirements for such a vessel. FIC will continue to work with ONR on this effort.

NOAA/UNOLS Cooperation - RON BROWN was included in the 1998 UNOLS scheduling process as part of the cooperative efforts between NOAA and UNOLS. BROWN's schedule for 1998 contains only NOAA funded science. However, in 1999 BROWN will likely be scheduled into the Indian Ocean and could accommodate programs of NSF, ONR and/or NAVO that would traditionally be the work for UNOLS ships. In return, NOAA programs in the Atlantic and Pacific would likely be scheduled on UNOLS ships. It was noted that NSF has funded work in the Indian Ocean in 1999. NOAA is planning approximately $2.8M for UNOLS ship time in 1998 which could increase in 1999.

CORE/UNOLS MOU- A Memorandum of Understanding has been signed by CORE and UNOLS that agrees to increase cooperation and communications between the two organizations.

NOPA 2 - The NOPA 2 program was discussed in the CORE report above by Dan Schwartz.

SEA CLIFF Retirement and Future Uses - SEA CLIFF retirement and future uses was discussed by Mike Perfit in the DESSC report above. A full report on DESSC's

recommendations can be found in the Working Group Report posted on the UNOLS/DESSC web page, <http://gso.uri.edu/unols/dessc/dessc.html>.

ATV Retirement - In the spring, the Navy announced the possible retirement of the Advanced Tethered Vehicle (ATV). Scripps indicated an interest in operating the ROV and hosted a meeting on 16 September to discuss some of the options for use and operation of the vehicle. WHOI, DESSC and agency representatives attended this meeting. WHOI also expressed an interest in being the operator for ATV. DESSC recommended to the agencies that ATV should be made available to the academic community if it is retired from the Navy. DESSC requested additional information on the vehicle to determine its capabilities. Community input will be solicited at the San Francisco AGU Meeting. Costs for operation are of concern. DESSC, SIO, and WHOI will continue to assess the viability of operating this vehicle after receiving community input and evaluating its capabilities and operating costs.

NOAA Fishery Needs - NMFS is presently utilizing eight NOAA ships for in-house fish assessment and research. In addition they are charter approximately 400 days. They are interested in build six new fishery research vessels to replace their aging fleet of eight. These will be capable of both stock assessment and oceanographic research. With the new vessels, NMFS estimates that they will still have a shortage of platforms to complete their annual missions. They are looking to universities for potential cooperative efforts. The UNOLS Fleet Improvement Committee has been tasked to investigate adding a fisheries capability to existing or new UNOLS general purpose oceanographic vessels.

The 1998 NOAA budget includes $2.1M for a concept design of the new fisheries vessels. Low acoustic signatures are considered very important for these vessels. NOAA will be working with the Navy for the newest quiet ship technology. NOAA is hopeful that the 1999 budget will contain construction money for this new class of ships.

SeaNet Receives NOPP Funding - SeaNet has received funds through NOPP to progress with their plans to bring internet to sea. The SeaNet effort is being lead by representatives from the Joint Oceanographic Institutions, Lamont-Doherty Earth Observatory, Woods Hole Oceanographic Institution, Naval Post Graduate School, and OMNET. The funding will permit further development of the program and the purchase of five SeaNet units.

Ship Inspection Program - Jack Bash reported that a contract has been let to Jamestown Marine Services (JMS) to conduct the NSF inspection on the non-Navy vessels of the UNOLS Fleet. Dick West, NSF, will administrate the contract and oversee the scheduling of the inspections. The first inspection has been completed on LAURENTIAN. This inspection went well. An aggressive inspection schedule is planned. JMS representatives will attend the RVOC meeting in October to introduce the inspection team to the UNOLS Operators.

Rethinking the Status of a UNOLS Research Vessel - The Council has been studying the status of a UNOLS vessel and particularly whether or not UNOLS should have a

minimum size limitation. After considerable discussion it was decided that the status quo should be maintained. UNOLS will continue to accept applications for research vessels of all sizes.

Improvements in the UNOLS Scheduling Process - Jack Bash provided a summary of the Ship Scheduling Procedure Review Committee efforts. This subcommittee, chaired by Rich Jahnke, was charged to look at perceived weaknesses in the ship scheduling process. A summary of Jack's remarks are included in the viewgraph appended as ***Appendix XI***. The viewgraphs include the committee's recommendations along with actions to date. Their full report is posted on the UNOLS web page.

One of the actions that is currently underway is a revised electronic ship time request process. The new electronic form will have two parts. The first part is a one page form that will provide the basic ship time request information. This form will be sent to UNOLS, the potential operator(s), the agencies and the PI. The PI can attach the electronic printout of the form to their science proposal for submission to the agencies. After funding, or at the request of the Program Manager, the PI should complete Part 2 of the ship time request form. This part will be used to provide specific requirements for the cruise such as time constraints, equipment availability and operational conflicts.

All ship time requests will be automatically filed onto an electronic world chart located on the UNOLS web page. The chart can be used as a planning tool for PIs to determine where ocean research is going to be conducted and the parties involved. Neil Bouge from the University of Washington has been developing this web feature.

Also under development is a form to be used by the UNOLS schedulers to post ship schedules on the web. The new process will automatically notify PIs of any schedule changes. Another feature of the scheduler's form will be a "transit bank." This feature will allow schedulers to bank any transit cruises which they feel can be used for a variety of purposes; such as, press opportunities, education programs, bird and marine mammal observations, etc.

The aim of the revised electronic scheduling process is to increase communications between all parties involved in the cruise planning. A demonstration of the new scheduling form is planned for the Fall AGU Meeting at the UNOLS Booth.

White Paper on Crewing Requirements - A contract was let to Glosten Associates to write a paper on crewing, admeasurement and new international rules with respect to new ship construction and mid-life refits. A preliminary presentation of this paper is scheduled for the RVOC meeting in October.

UNOLS Charter Review - A subcommittee of Bob Knox, Rich Jahnke and Claire Reimer has been established to review the UNOLS Charter, including annexes, define what an "Institution" is as used in the Charter, and how consortium fits into this definition.

AGOR Z-drive Thruster Update - Dick Pittenger provided an update on the AGOR Z-drive thruster problems. Glosten Associates have been funded by the Navy and NSF to study the cause of these failures. It would appear that there have been several different causes for the various failures including defective manufacturing. Where no spares are available, as with the upper unit on THOMPSON, it takes 13 weeks for delivery of new units. This is an unacceptable situation. After receiving the results of the Glosten study a course of action will be recommended to ensure greater reliability.

New Ship Construction - Skidaway will soon let a contract for a new research vessel to be named R/V SAVANNAH that will replace BLUE FIN. Construction should start late this year (1997). The ship will be a conventional design mono-hull with a length of 91 feet. The design was driven by it planned mission as a "coastal ship" for waters off Georgia. A range of 350-miles is planned. The construction phase should take nine to 11 months with an additional three to four months for outfitting. The BLUE FIN will be put up for sale as SAVANNAH comes on-line.

The design plans for the CALANUS replacement are in the final stages, however, a construction date has not been set.

Additions/Deletions to the UNOLS Fleet - UNOLS welcomes ATLANTIS, AGOR 25, as the newest addition to the UNOLS Fleet.

UNOLS Dues - Jack Bash reported that the balance of UNOLS dues for 1996 was $3,603.86. A total of $1450.00 was collected for 1997. To date, in 1997 $1,300.00 has been expended leaving a current balance of $3,753.86. The 1997 expenditures included $100.00 to Hospice in memory of Marcus Langseth, $1000.00 for a Marcus Langseth memorial and $200.00 deposit on the 15 September evening reception.

Other UNOLS Business - Considerable concern was expressed as to the low attendance at this year's Annual Meeting. Ken Johnson will contact UNOLS members not attending the Annual Meeting to try to get a sense of the cause for their absence. New meeting formats were discussed that might encourage greater participation.

Ancient Albatross Award - Tom Royer, who moved from the University of Alaska to Old Dominion University this year, passed along the Ancient Albatross Award to Tom Weingartner the new UNOLS Representative from U.Alaska. The award is presented to the institution of the ship that has been in the UNOLS Fleet the longest. ALPHA HELIX has been in the Fleet since the origin of UNOLS.

UNOLS Membership Votes - The application for UNOLS membership of Southern California Marine Institute was tabled pending the results of the Charter review subcommittee.

UNOLS Elections - The Nominating Committee, chaired by Dennis Hayes, offered the following slate for election to the UNOLS Council, see ***Appendix XI***:

Operator Representative:	John Diebold	Lamont-Doherty Earth Observatory
	Richard Hey	University of Hawaii
	Thomas Shipley	University of Texas
Non-Operator Representative:	Barbara Prezelin	University of California, Santa Barbara
	Cindy Lee	State University of New York
At-Large:	Robert Knox	Scripps Institution of Oceanography
	Thomas Lee	RSMAS/University of Miami

Prior to the meeting, Cindy Lee requested that her name be removed from the slate. Nominations from the floor of the meeting were invited. Doug Hammond from the University of Southern California was nominated.

Elected to the UNOLS Council were: Thomas Shipley, Barbara Prezelin and Robert Knox.

UNOLS Appointments to Committees - Larry Atkinson was appointed chair to the Fleet Improvement Committee. A full list of UNOLS Committees is included in ***Appendix XII.***

The meeting was adjourned at 4:00 p.m.

APPENDIX I

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ANNOUNCEMENT OF AGENDA

UNOLS ANNUAL MEETING

Thursday - September 18, 1997 - 8:30 a.m.
National Science Foundation, Room 1235
4201 Wilson Boulevard
Arlington, VA

This meeting is open to all investigators, users, operators and sponsors of university oceanographic facilities. It is a public forum for discussing the utilization and scheduling of research vessels and other facilities as well as their support and future planning.

Kenneth S. Johnson, Chairman

John F. Bash, Executive Secretary

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University-National Oceanographic Laboratory System

The University-National Oceanographic Laboratory System is a planning mechanism for oceanographic facilities. It is a joint effort of the academic community and the Federal funding agencies, principally the NSF, ONR, NOAA, DOE, MMS, and USGS.

UNOLS provides for community-wide cooperation and review of the utilization of facilities and opportunities for access to those facilities. It assesses the match of programs to the needs of academic programs and makes recommendations of priorities for replacing or improving the numbers and mix of facilities.

UNOLS serves as a focus for new ideas and requirements for specialized facilities.

UNOLS does not replace direct contact between the investigator and institution's operating facilities. It does, however, serve as a backup and clearinghouse for information and coordination that might not otherwise be available to the researcher and his/her laboratory.

UNOLS is composed of institutions and laboratories which use or operate and use sea-going facilities and maintain an academic program in the marine sciences. It is composed of the operator institution, several standing committees dealing with ship scheduling, marine operations, their regulations and logistics, fleet improvement and replacement and national facilities. Member institutions' representatives are individuals whose role is to provide oceanographic facility services or use those facilities. Membership does not ensure Federal funding.

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AGENDA

UNOLS ANNUAL MEETING

8:30 A.M., Thursday, 18 September 1997
National Science Foundation, Room 1235
4201 Wilson Boulevard
Arlington, VA

Introduction and Welcome: Ken Johnson, UNOLS Chair will call the meeting to order and report on 1996-1997 activities, current issues and issues continuing into 1998.

Accept Minutes the 1996 Annual Meeting.

KEYNOTE ADDRESS

Dr. Kenneth H. Brink, Chair of the Ocean Studies Board of the National Research Council, will provide the keynote address for the 1997 UNOLS Annual Meeting.

COMMITTEE REPORTS

Research Vessel Operators' Committee - Paul Ljunggren, Chair, will review the activities of RVOC for 1996-1997 and plans for the 21-23 October Annual RVOC meeting.

DEep Submergence Science Committee - Mike Perfit, Chair, will report on the DESSC activities, 1997 ATLANTIS/ALVIN/ROV operations, and equipment/instrumentation upgrades and improvements for the National Deep Submergence Facility. He will also report on deep submergence operations planned for 1998 and beyond.

Fleet Improvement Committee - Ken Johnson will report on the FIC activities in 1997 and plans for the upcoming year including an update on the Fleet Improvement Plan Update.

Ship Scheduling Committee - Don Moller, Chair, will review the recommendations of the September Ship Scheduling and Schedule Review meetings. He will summarize the UNOLS ship operation plans and total days for 1998.

Research Vessel Technical Enhancement Committee - John Freitag, Chair, will report on plans for the RVTEC Annual Meeting scheduled for 27-29 October at the University of Washington.

Arctic Icebreaker Coordinating Committee - Ken Johnson will report for Jim Swift, Chair, on the activities of the AICC in their first year. He will provide the status of science modifications for the USCG Ice Breaker HEALY.

FEDERAL AGENCY and CORE REPORTS

Federal Agency Reports - Information from Federal Agencies (DOE, DOS, MMS, NAVO, NOAA, NOO, NRL, NSF, ONR, USCG and USGS) on 1997 activities and forecasts for 1998 and beyond.

Consortium for Oceanographic Research and Education - Capt. Daniel Schwartz, CORE Policy Fellow, will report on CORE activities of interest to UNOLS.

12:00 - 1:00 Lunch Break 12:00 -1:00

Issues Before UNOLS: Various issues of interest to UNOLS Members have arisen during the year. The UNOLS Chair will introduce these issues for discussion:

- Navy Construction Plans for a Central Pacific Research Vessel
- NOAA-OAR/UNOLS Cooperation - R/V BROWN enters UNOLS Scheduling Process
- CORE/UNOLS Sign MOU
- NOPA 2 - Status and Outlook
- SEA CLIFF Retirement and Future Uses
- ATV Retirement Plans
- NOAA's Fishery Needs
- SeaNet Receives NOPP Support
- UNOLS Ship Inspection Program is Resumed
- Rethinking the Status of a UNOLS Research Vessel
- Improvements to the UNOLS Ship Scheduling Process
- White Paper on Crewing Requirements
- UNOLS Charter Review
- AGOR Z-Drive Thruster Update
- New Ship Construction - Replacement plans for BLUE FIN and CALANUS
- Additions/deletions to the UNOLS Fleet
- UNOLS Dues Accounting

UNOLS Members may wish to raise additional issues.

UNOLS Membership Votes: The following issues require a membership vote for approval:

- **Application for UNOLS Membership** - Southern California Marine Institute has applied for membership as a UNOLS Institution.

UNOLS Elections: Election for the following UNOLS Council positions will be held (the slate of nominees is enclosed (**Enclosure 1**):

- **UNOLS Council Member,** (3-year term) At-large, affiliated with any Member Institution
- **UNOLS Council Member,** (3-year term) Operator representative, from among designated representatives of UNOLS Operating Institutions.
- **UNOLS Council Member,** (3-year term) Non-Operator representative, from among designated representatives of UNOLS Non-Operator Institutions.

UNOLS Appointments to Committees: The UNOLS Chair will announce new appointments to AICC, DESSC, FIC, RVOC, RVTEC, and SSC in accordance with the UNOLS Charter.

Calendar for UNOLS Meetings:

MEETING	LOCATION	DATES
Ship Scheduling Committee	Arlington, VA	15 September 1997
Scheduling Review	Arlington, VA	16 September 1997
UNOLS Council	Arlington, VA	17 September 1997
UNOLS Annual	Arlington, VA	18 September 1997
RVOC	Woods Hole, MA	21-23 October 1997
RVTEC	Seattle, WA	27-29 October 1997
FIC	TBD	Fall, 1997
DESSC	San Francisco, CA	7 December 1997
AICC	New Orleans, LA	Jan/Feb 1998

Adjournment

APPENDIX II

Annual Meeting - Sep. 18, 1997

NAME	AFFILIATION	TELEPHONE	FAX	EMAIL ADDRESS
Tim Askew	HBOI	(407) 465-2400 x262	(407) 2116	taskew@hboi.edu
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David Brooks	Texas A&M	(409) 845-7211	(409) 845-6331	dbrooks@ocean.tamu.edu
Ken Buesseler	NSD/OCE	(703)306-1589	(703) 306-0390	kbuessel@nsf.gov
Doug Capone	U of Maryland	(410) 326-7250	(410) 326-7341	
Steven Carignan	Skidaway	(912) 598-2456	(912) 598-2310	steve@skio.peachnet.edu
W. Thomas Cocke	Department of State	(202) 647-0240	(202) 647-1106	tcocke@state.gov
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Cheryl Dybas	NSF	(703) 306-1070	(703) 306-0159	cdybas@nsf.gov
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Linda Frizzell-Makowski	Johns Hopkins	(301) 953-6000x7985		frizzlj1@jhuapl.edu
Douglas Hammond	U of So California	(213) 740-5837	(213) 740-8801	dhammond@usc.edu
Dennis Hansell	BBSRI	(441) 297-1880 x210	(441) 297-8143	dennis@bbsr.edu
Dennis Hayes	LDEO	(914) 365-8470	(914) 365-8156	deph@ldeo.columbia.edu
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Ken Johnson	MLML	(408) 755-8657	(408) 753-2826	johnson@mlml.clastate.edu
Robert Knox	SIO/UCSD	(619) 534-4729	(619) 535-1817	rknox@ucsd.edu
Michael Lang	Smithsonian	(202) 786-2815	(202) 357-4048	mlang@si.edu
Scott McKellar	NOAA	(301) 713-3435x135	(301) 713-1541	Scott.McKellar@noaa.gov
Sujata Millick	ONR	(703) 696-4530	(703) 696-2007	millics@onrhq.onr.navy.mil
Don Moller	WHOI	(508) 289-2277	(508) 457-2185	dmoller@whoi.edu

Brad Mooney	Consultant	(703) 415-4535	(703) 415-4535	bmooney@snap.org
Chris Mooers	RSMAS/U of Miami	(305) 361-4825	(305) 361-4797	cmooers@rsmas.miami.edu
Michael Perfit	U of Florida	(352) 392-2128	(352) 392-9294	perfit@geology.ufl.edu
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Edwin Shaar, Jr.	Texas A&M	(409) 862-3290	(409) 845-6331	eshaar@ocean.tamu.edu
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Al Sutherland	NSF/OPP	(703) 306-1032	(703) 306-0139	alsuther@nsf.gov
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Robert Wall	U of Maine	(207) 799-7734		
Tom Weingartner	U of Alaska	(907) 474-7993	(907) 474-7204	weingart@ims.alaska.edu
Richard West	NSF	(703) 306-1579	(703) 306-0390	rwest@nsf.gov
Denis Wiesenburg	Stennis Space Center	(228) 688-3177	(228) 688-1121	denis@sunfish.st.usm.edu

APPENDIX III

The Ocean Studies Board

Kenneth H. Brink
(Chair)

Woods Hole Oceanographic Institution

September 18, 1997

Purpose:

Advise the federal government and the nation on issues of ocean science and policy.

Specifically:

- **Exercise leadership.**
- **Undertake studies, e.g.**
  - **Coastal studies.**
  - **National security.**
  - **Living marine resources.**
  - **International activities.**
  - **Observing systems and global change.**
  - **Status of the science.**

What makes OSB studies different?

- **Committee membership.**
- **Bias statements.**
- **Review.**

Examples:

- **Global Ocean Observing System (GOOS).**

  [Worth Nowlin, Texas A&M]

- **U.S.–Mexico Collaborations for Ocean Science.**

  [Robert Knox, Scripps]

- **Major U.S. Oceanographic Research Programs.**

  [Rana Fine, RSMAS]

A Thought:

- **A phase in research is ending.**
- **New major programs being discussed.**
- **We need to have a new ocean science agenda, and work for prioritization.**

What to do?

- **Work for a consensus on directions.**

- **Write your congressional delegation.**

APPENDIX IV

1998

FUNDED *Alvin* & ROV DIVE PROGRAMS

Program	Agency	Vehicle(s)	Days on Sta.	
Southern EPR				
Ballard	ONR	Alvin & Jason	7	
Lilley	NSF	Alvin	27	
Lupton	NURP	Alvin & Jason	20	(1)
Hey	NSF	DSL-120	29	
Sinton	NSF	Alvin & DSL-120	25	
Urabe	Japan	Alvin	7	(2)
Vrijenhoek	NSF	Alvin	14	
		Total	129	
9 North. EPR				
Cary	NSF	Alvin	4	(3, 4)
Lutz	NSF	Alvin & Jason	23	
Manahan	NSF	Alvin	8	(3, 4)
Mullineaux	NSF	Alvin	14	
		Total	49	
California Coast				
Eckman	NSF	Alvin	12	
Eng'r Dives	3 agency	Alvin & Jason	6	
		Total	18	
Juan de Fuca				
Becker	NSF	Alvin	8	
Carson,B	NSF	Alvin or Jason	4	
Chave	NSF	Alvin	6	
Chadwick	NSF	Jason	5	
Cowen	NSF	Jason	17	
Delaney	NSF	Jason	20	(5)
Fisher	NSF	Alvin	10	
Stakes,D	MBARI	DSL-120	5	
		Total	75	
Other Regions				
Jannasch	NSF	Alvin	8	(Guaymas)
Chave	NSF	Jason	14	(H_2O)
Karson	NSF	Alvin & Jason	20	(Hess Deep)
Smith,D	NSF	DSL-120 & Argo	36	(Puna)
		Total	78	
		Grand Total	~~349~~ 329	

(1) Lupton funding limited to $500K.
(2) Urabe w/ Lupton.
(3) Manahan + Cary require a total of 15 days on station
(4) Manahan + Cary time series, possible 2 cruises in 1998
(5) Delaney recovery of 1997 experiment + education

7/15/97 - DAM

106 QUESTIONNAIRES SUBMITTED
PRIMARY FIELD OF RESEARCH

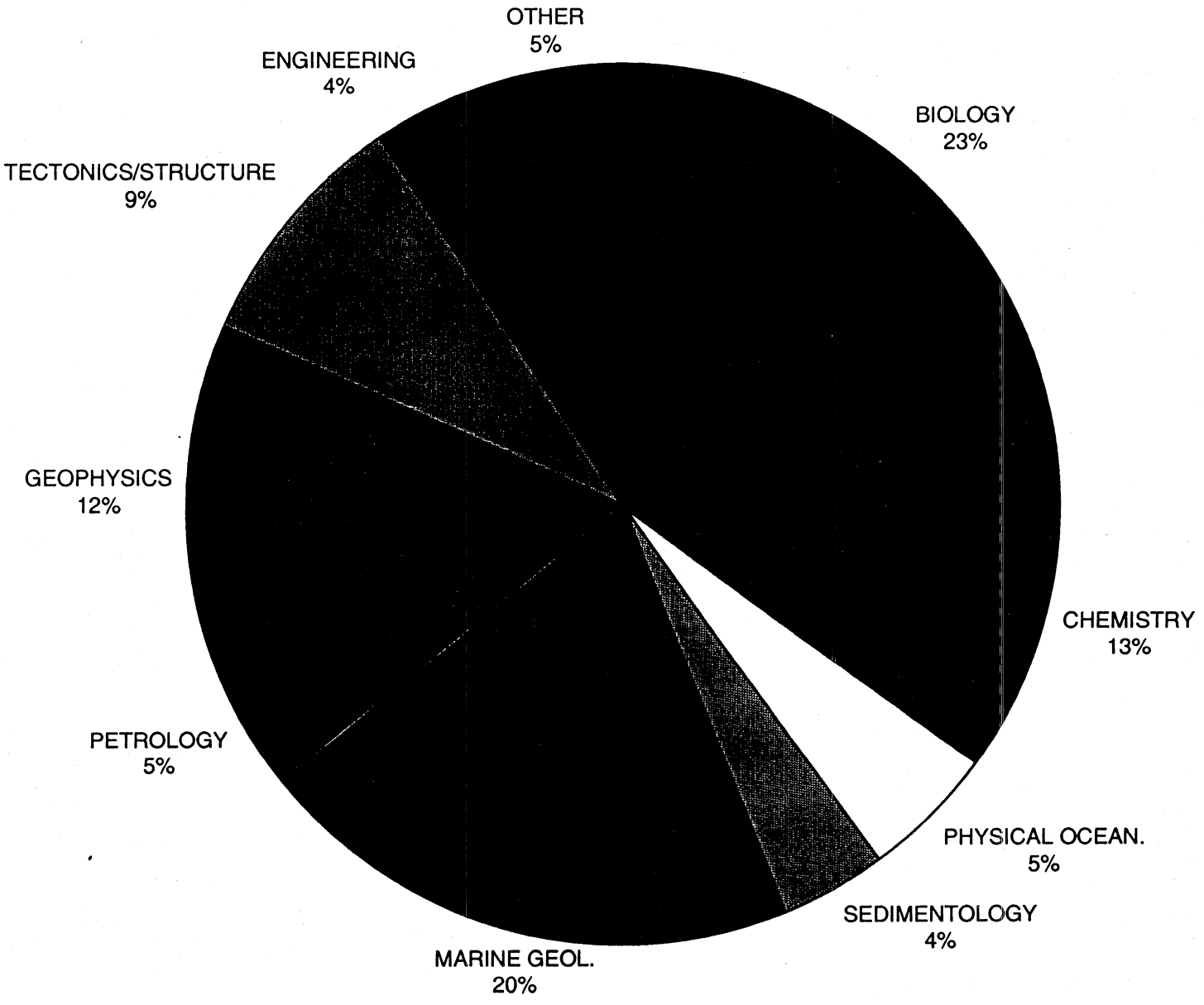


FIGURE 1

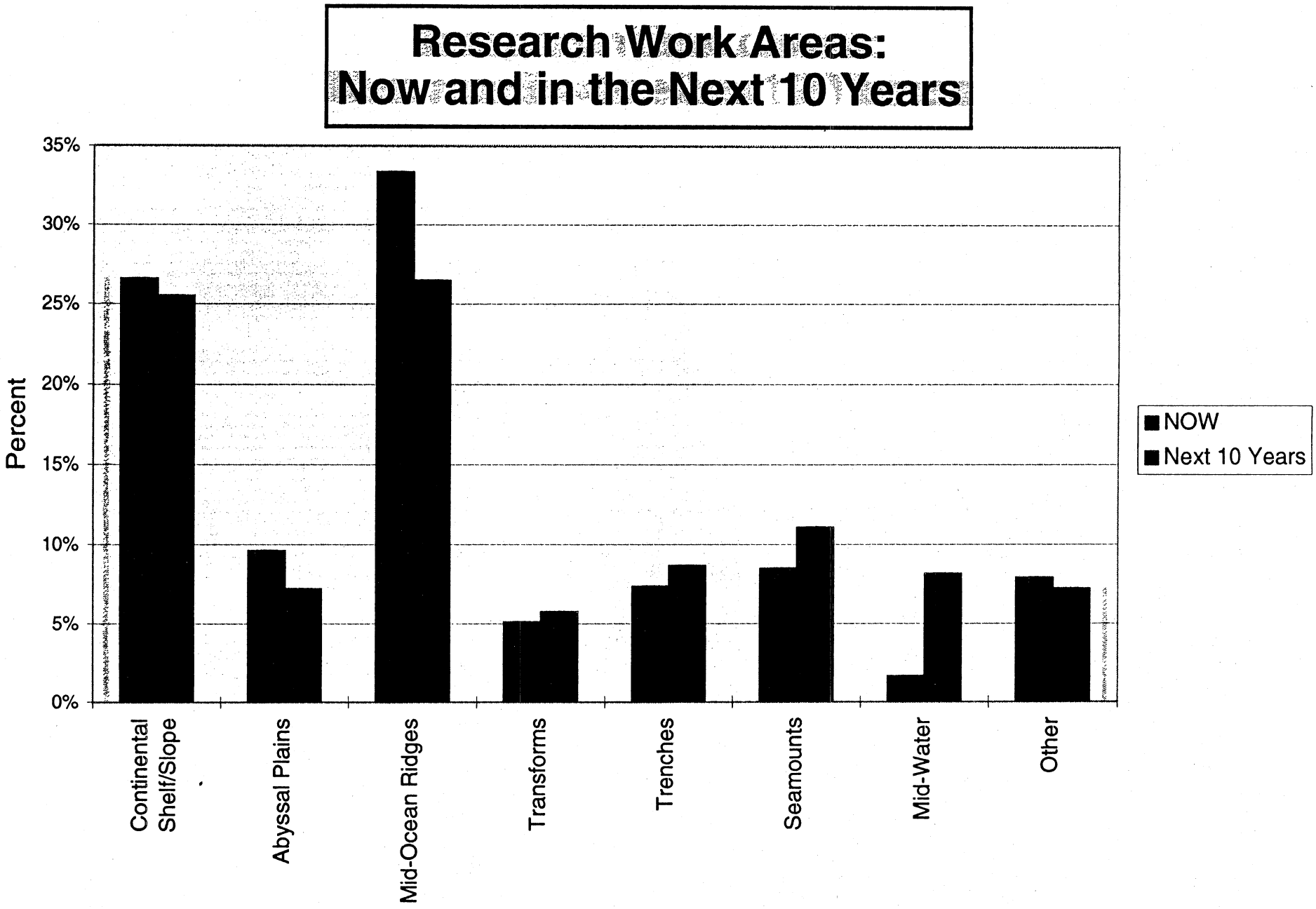

Research Work Areas:
Now and in the Next 10 Years
Percent
35%
30%
25%
20%
15%
10%
5%
0%
Continental Shelf/Slope
Abyssal Plains
Mid-Ocean Ridges
Transforms
Trenches
Seamounts
Mid-Water
Other
NOW
Next 10 Years

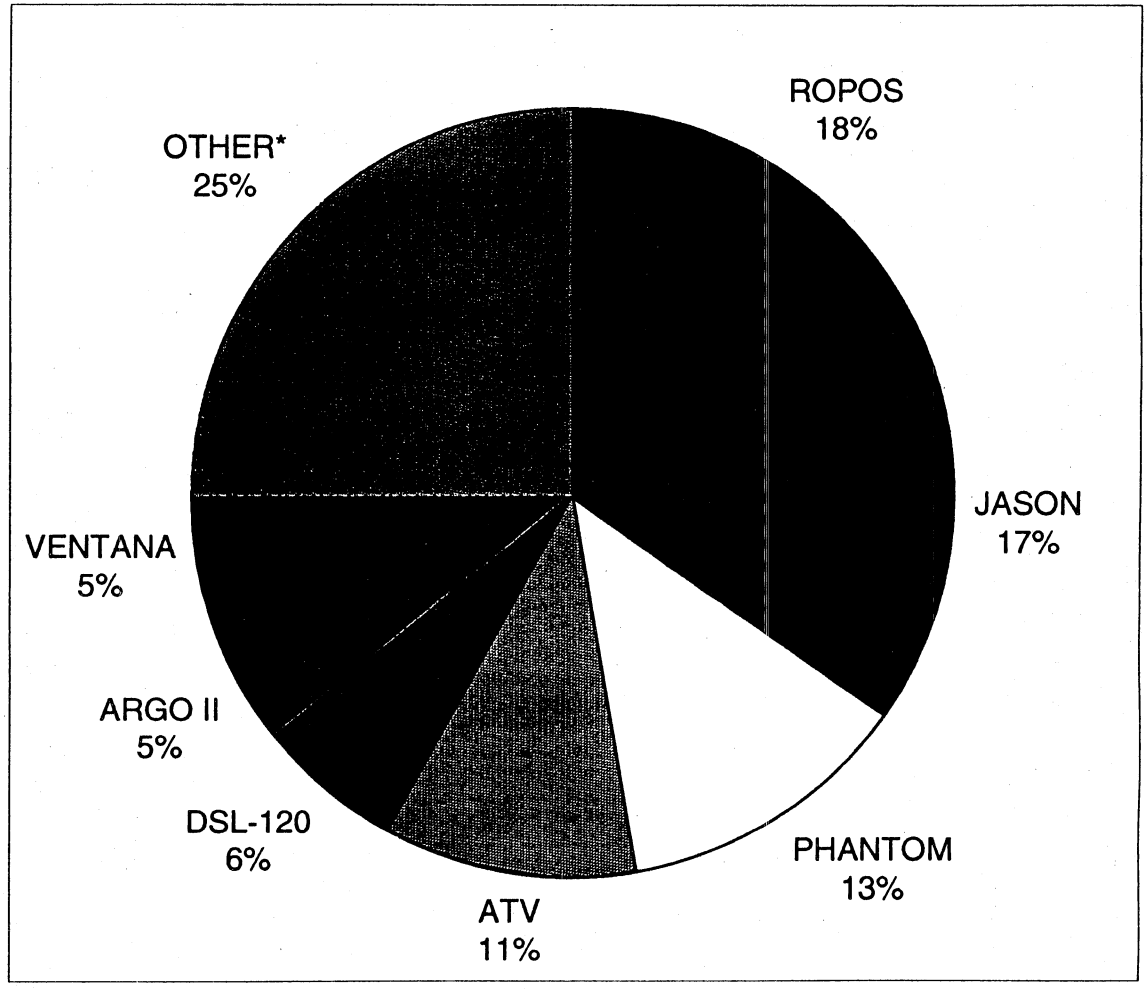
FIGURE 2

ROV/TETHERED VEHICLE USE

VEHICLE	CRUISES
ROPOS	20
JASON	19
PHANTOM	14
ATV	12
DSL-120	7
ARGO II	6
VENTANA	6
OTHER*	28
TOTAL	**112**

* Twelve other vehicles were listed as being used.

51% of those responding to the survey had not used an ROV



HUMAN OCCUPIED VEHICLE USE

VEHICLE	CRUISES
ALVIN	115
SEA LINK	38
TURTLE	14
PISCES V	13
NAUTILE	12
SEACLIFF	11
SHINKAI 650	10
OTHER*	27
TOTAL	240

* Six other HOVs were listed as being used.

22% of those responding to the survey had not used an HOV.

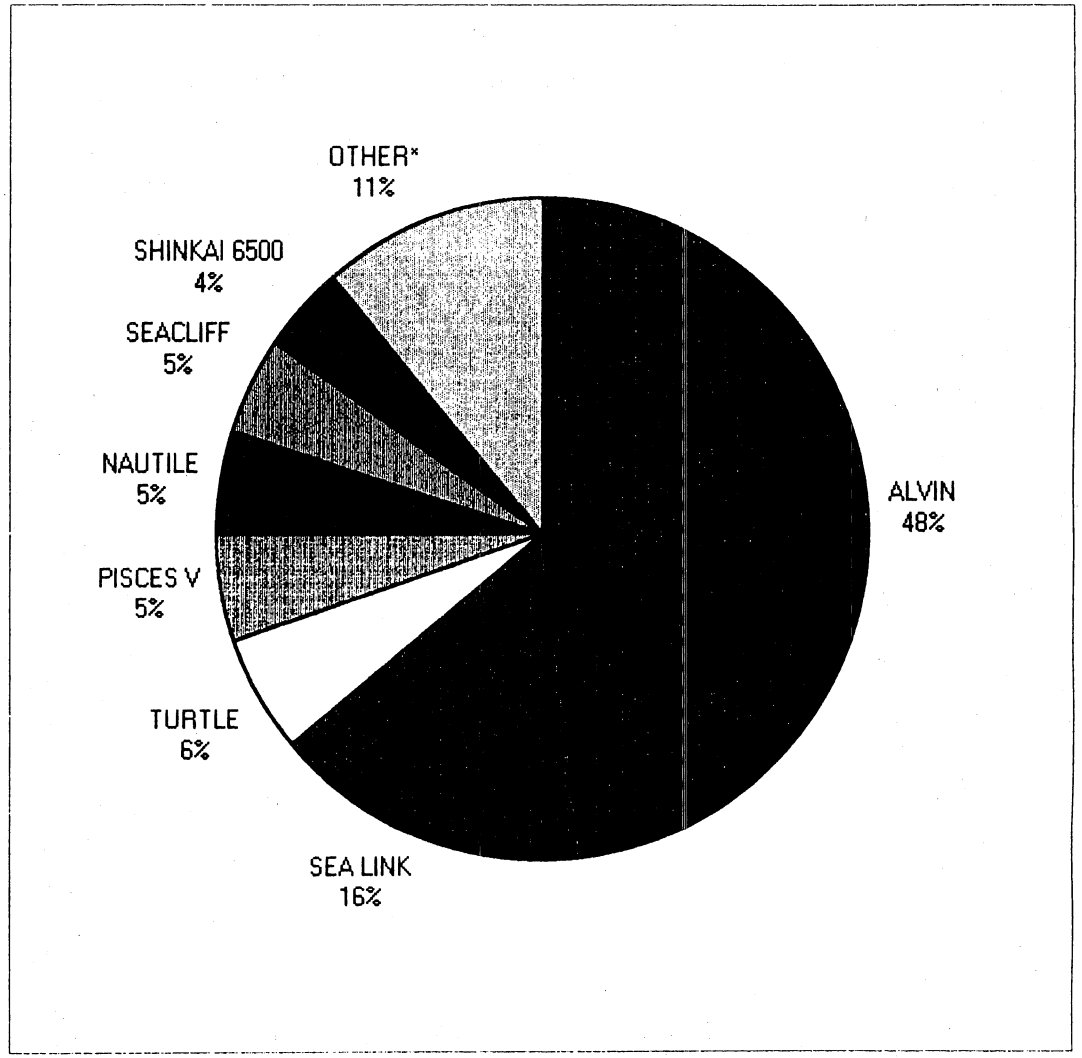


FIGURE 4

MAXIMUM DEPTH RANGE THAT DEEP SUBMERSIBLE VEHICLES SHOULD HAVE IN TERMS OF FUTURE SCIENCE REQUIREMENTS

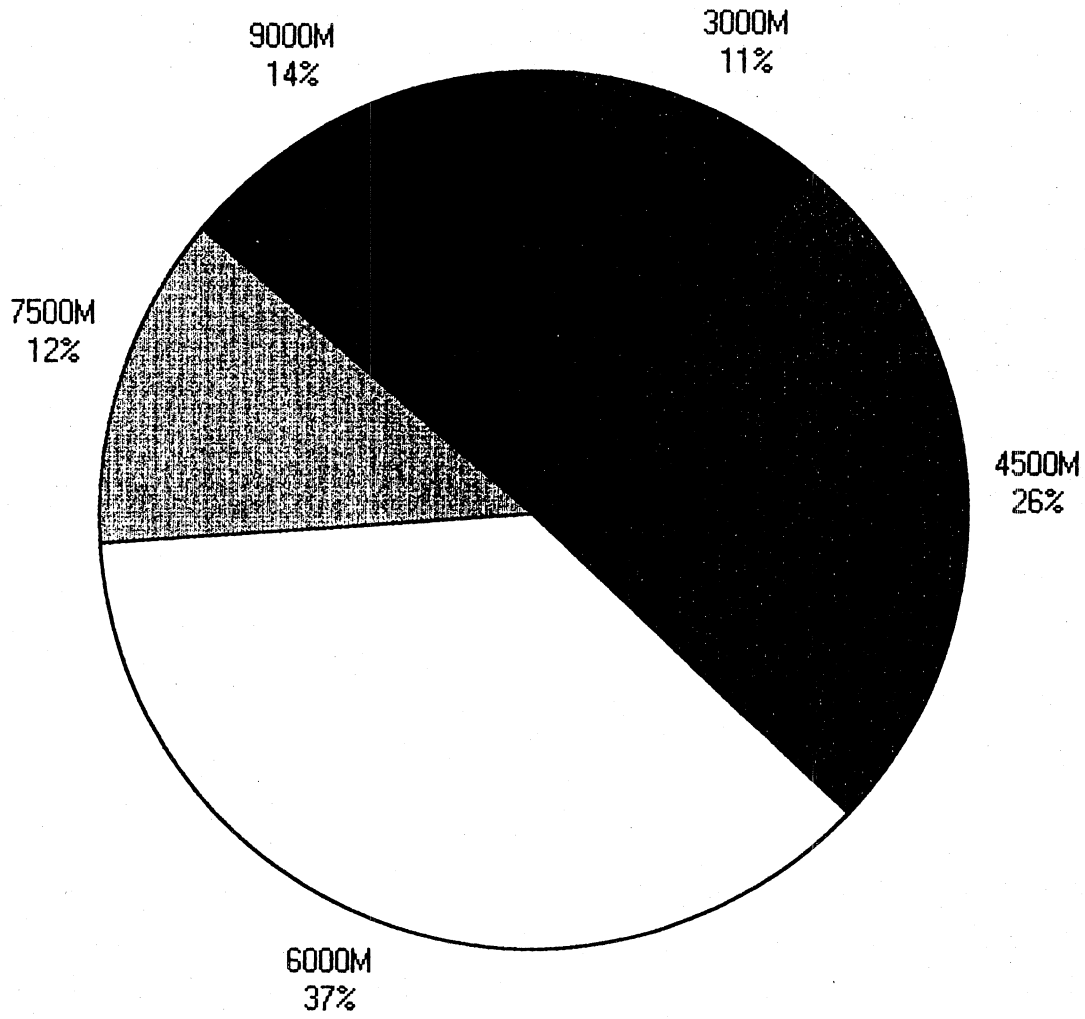


FIGURE 5

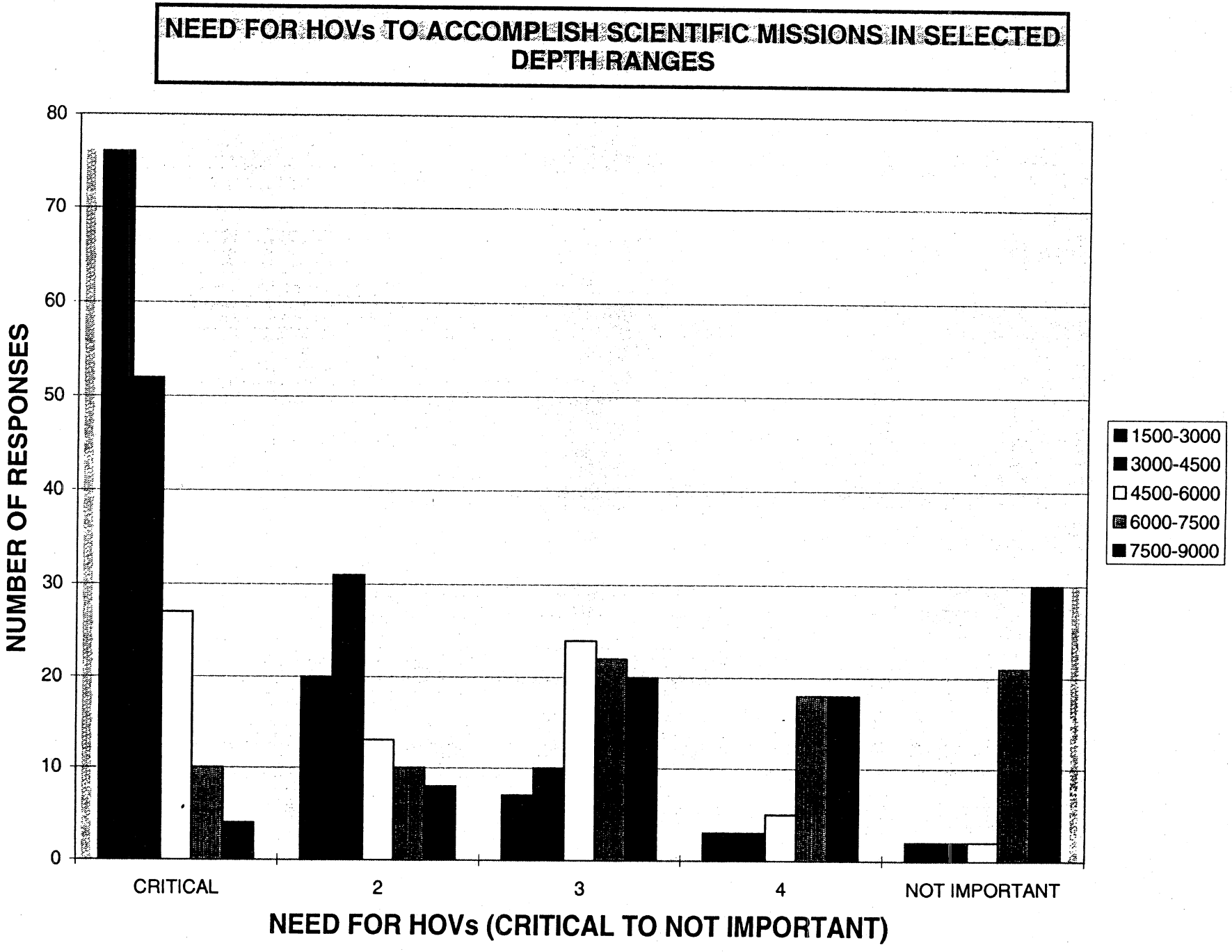

NEED FOR HOVs TO ACCOMPLISH SCIENTIFIC MISSIONS IN SELECTED DEPTH RANGES
NUMBER OF RESPONSES
80
70
60
50
40
30
20
10
0
CRITICAL
2
3
4
NOT IMPORTANT
NEED FOR HOVs (CRITICAL TO NOT IMPORTANT)
1500-3000
3000-4500
4500-6000
6000-7500
7500-9000

FIGURE 6

DEGREE OF IMPORTANCE TO HAVE AN HOV CAPABLE OF WORKING BETWEEN THE DEPTHS OF 4500 AND 6000(+)m (CRITICAL TO NOT IMPORTANT)

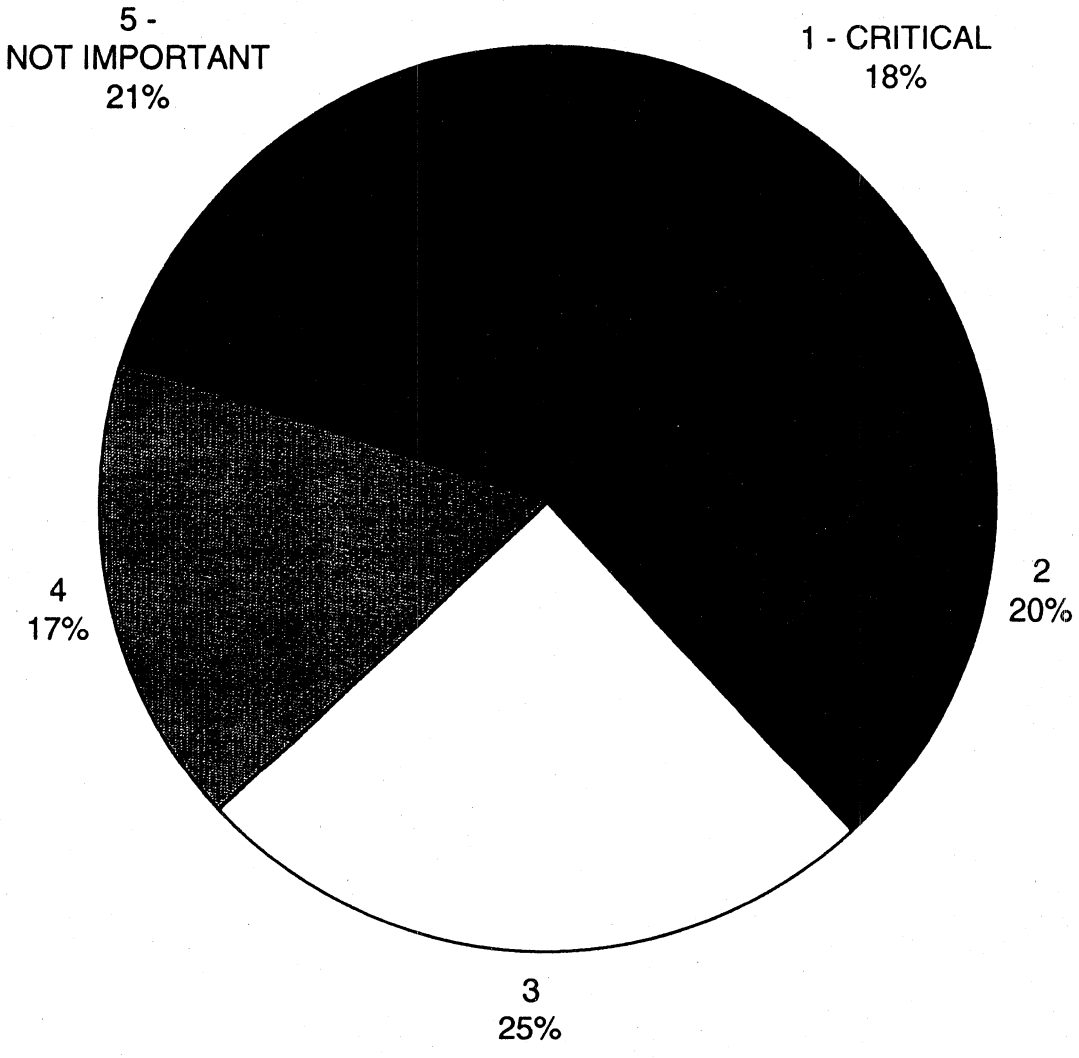


FIGURE 7

SCIENCE OBJECTIVES ACCOMPLISHED AT DEPTHS >4500M BY HOVs, ROVs OR AUVS

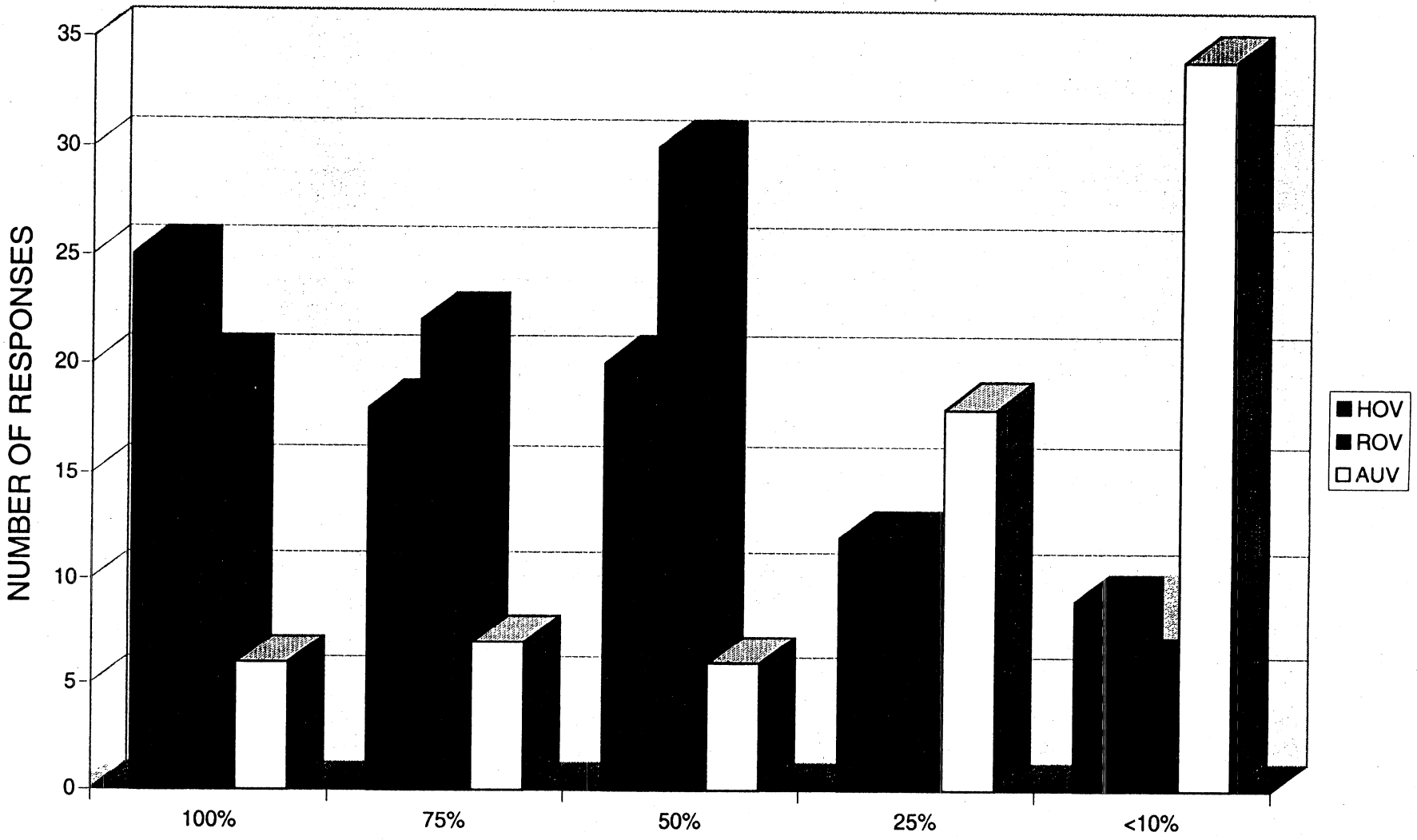


FIGURE 8

SURVEY RESULTS OF CATEGORY B

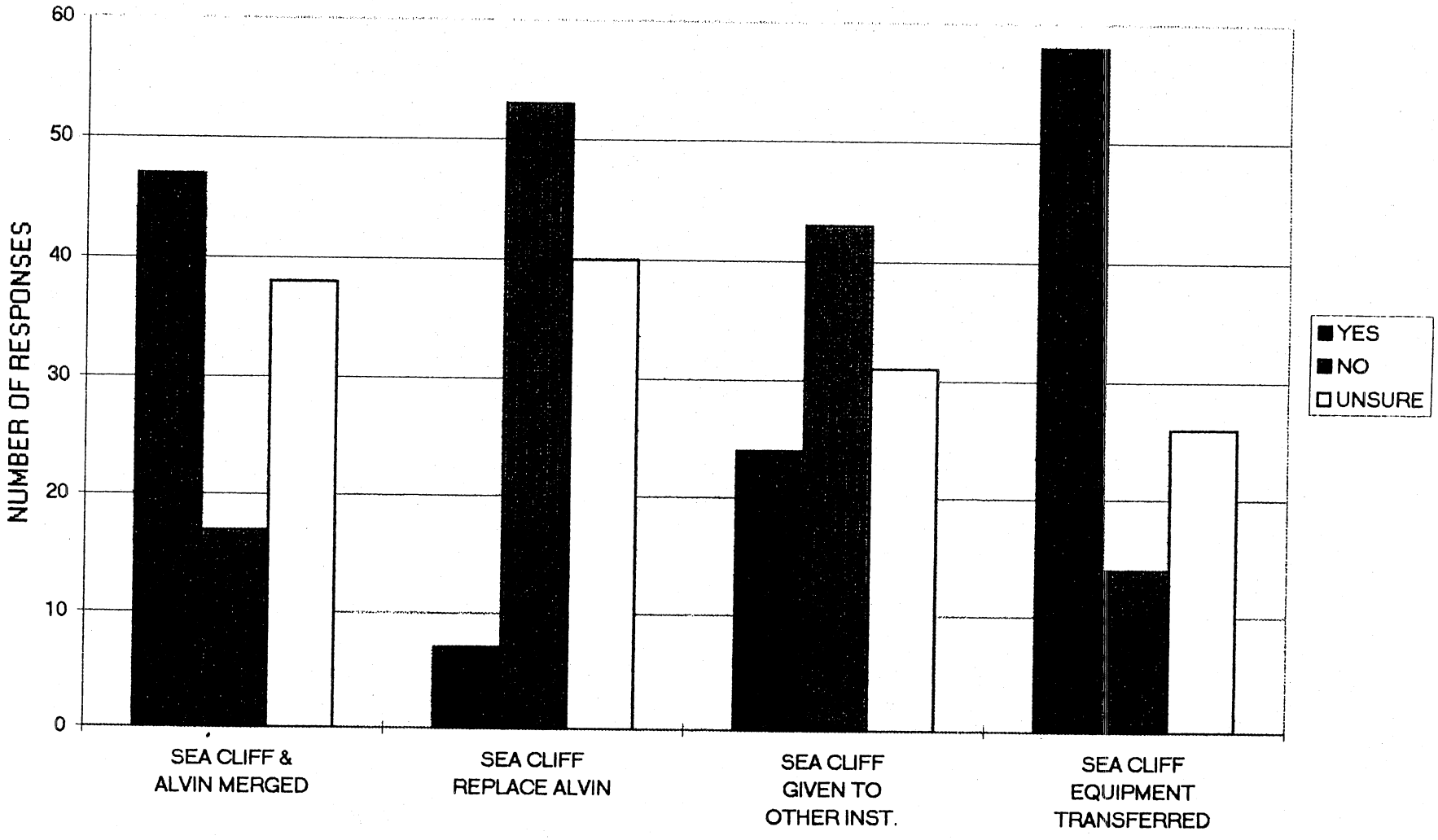


FIGURE 9

APPENDIX V

SHIP/CLASS	1995	1996	1997	1998	
ATLANTIS	319	93	185	272	
EWING	310	315	273	91	
KNORR	350	279	293	257	
MELVILLE	297	297	308	179	
R. REVELLE		80	287	280	
T.G. THOMPSON	333	246	260	290	
CLASS I/II	1609	1310	1606	1369	
AVERAGE	268	218	268	228	
EDWIN LINK	175	186	212	238	
ENDEAVOR	228	147	201	199	**
GYRE	122	219	148	18	
MOANA WAVE	195	144	203	185	
NEW HORIZON	240	174	262	180	
OCEANUS	187	168	201	199	
SEWARD JOHNSON	271	304	290	233	
WECOMA	145	198	200	217	
CLASS III	1563	1540	1717	1469	
AVERAGE	195	193	215	184	
ALPHA HELIX	144	73	120	180	
CAPE HATTERAS	175		230	242	
CAPE HENLOPEN	198	185	206	188	
LONGHORN	72	130	53	40	
PELICAN	182	201	211	192	
POINT SUR	164	118	197	195	
R. SPROUL	180	132	88	75	
SEA DIVER	145	155	185	168	
WEATHERBIRD II	154	167	150	154	
CLASS IV	1414	1161	1440	1434	
AVERAGE	157	145	160	159	
BARNES	77	86	133	100	
BLUE FIN (b)	75	96	105	146	
CALANUS	48	50	115	140	
LAURENTIAN	91	72	44	146	
URRACA				173	
< CLASS IV	291	304	397	705	
AVERAGE	58	61	79	141	
Fleet Total	4877	4315	5160	4977	
Average	174	154	184	178	
Fleet Total without	4586	4011	4763	4272	
<Class IV					
**ENDEAVOR or OCEANUS will not operate					

UNOLS FLEET CHARGE DAYS

(by Agency & Year)

		1995	1996	1997	1998
NSF	Days	3249	2738	2965	2848
	%	66.6	63.5	58.0	57.7
ONR	Days	403	454	511	386
	%	8.3	10.5	10.0	7.8
NOAA	Days	354	145	366	330
	%	7.3	3.4	7.2	6.7
NAVO	Days	0	0	398	478
	%	0	0	7.8	9.7
OTHER	Days	872	978	872	891
	%	17.9	22.6	17.1	18.1
TOTAL	Days	4877	4315	5112	4933

9/15/97 - DAM

APPENDIX VI

SUMMARY OF SHIP USE AND COSTS

YEAR 1,998

As of: 9/12/97

SHIP/CLASS	NSF DAY	NSF $	NAVY DAY	NAVY $	OTHER DAY	OTHER $	TOTAL DAY	TOTAL $	DAILY RATE
R. REVELLE	127	2,121	135	2,255	18	301	280	4,677	16,704
MELVILLE	172	3,044	0	0	7	124	179	3,168	17,698
KNORR	185	3,034	53	869	19	312	257	4,215	16,400
ATLANTIS	223	3,524	11	174	38	600	272	4,298	15,801
EWING	73	1,278	48	840	18	315	139	2,432	17,496
T.G. THOMPSON	112	1,773	76	1,203	1,615	4,591	290	4,591	15,831
MOANA WAVE	104	1,452	16	224	65	907	185	2,583	13,962
CLASS I/II	996	16,226	339	5,565	1,780	7,150	1,602	25,964	- -
AVE: (7)	142	2,318	48	795	254	1,021	229	3,709	- -
EDWIN LINK	29	261	0	0.0	209	1,881.0	238	2,142	9,000
ENDEAVOR	0		0		0		0	0	0
OCEANUS	152	1,611	40	424	7	74	199	2,109	10,600
GYRE							0	0	0
NEW HORIZON	77	754	97	950	37	362	211	2,066	9,791
SEWARD JOHNSON	173	1,678	34	330	26	252	233	2,260	9,700
WECOMA	71	703	58	574	86	851	215	2,128	9,898
CLASS III	502	5,007	229	2,278	365	3,420	1,096	10,705	- -
AVE: (8)	63	626	29	285	46	428	137	1,338	- -
PELICAN	62	233	25	94	105	394	192	721	3,755
LONGHORN	54	216	0	0	30	120	84	336	4,000
POINT SUR	121	762	28	176	46	290	195	1,228	6,297
CAPE HATTERAS	104	724	81	564	57	397	242	1685	6,963
ALPHA HELIX	132	1,417	0	0	12	129	144	1546	10,736
R. SPROUL	81	482	44	262	20	119	145	863	5,952
CAPE HENLOPEN	104	593	68	388	16	91	188	1,072	5,702
WEATHERBIRD II	139	1,043	0	0	0	0	139	1,043	7,504
SEA DIVER	18	86	22	105	45	214	85	405	4,761
CLASS IV - TOTAL	815	5,556	268	1,589	331	1,754	1,414	8,899	- -
AVE: (9)	91	617	30	177	37	195	157	989	- -
BLUE FIN (b)							0	0	1,816
LAURENTIAN	140	630	0	0	6	27	146	657	4,500
BARNES	65	99	17	26	18	27	100	152	1,520
CALANUS	80	248	0	0	60	186	140	434	0
URRACA							0	0	0
< CLASS IV TOTAL	285	977	17	26	84	240	386	1,243	- -
AVE: (5)	57	195	3	5	17	48	77	249	- -
Fleet Total	2,598	27,766	853	9,458	2,560	12,564	4,498	46,811	- -
AVE: (29)	90	957	29	326	88	433	155	1,614	- -

APPENDIX VII

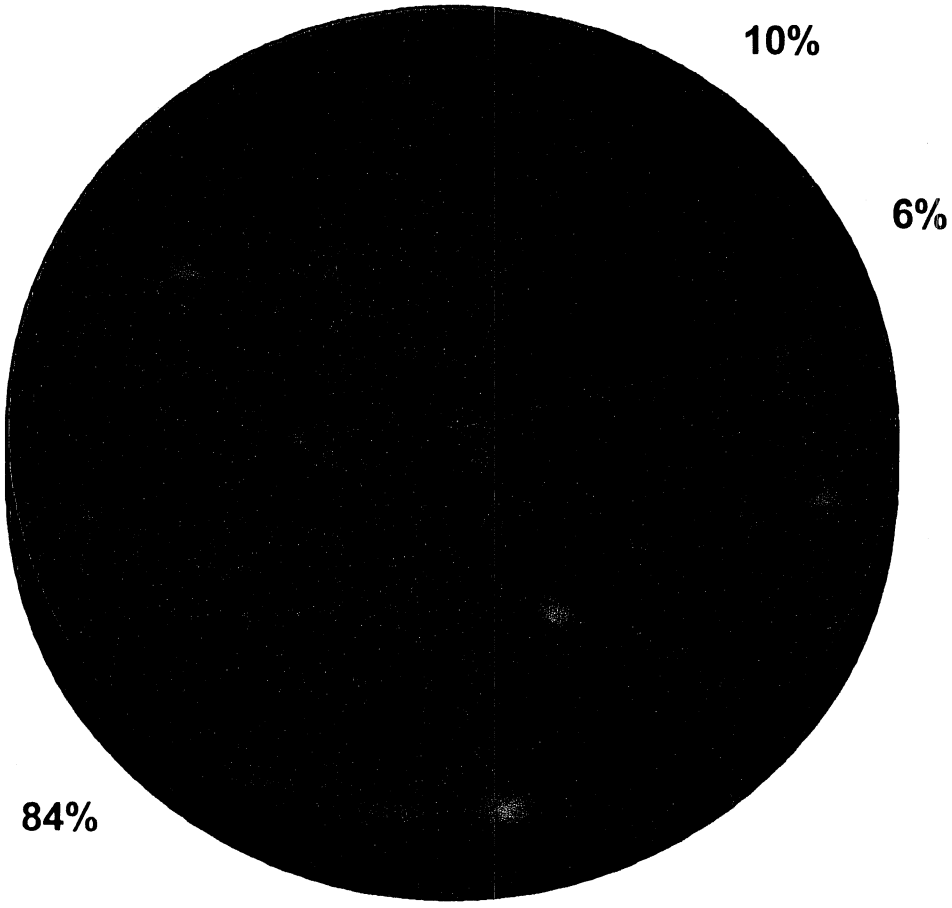
First year Partnership success

- **1.6 Ship years performed (432 days)**
  - Contrasted to normal USNS optempo for NAVO
  - Processing was included--alleviated potential NAVO backlog

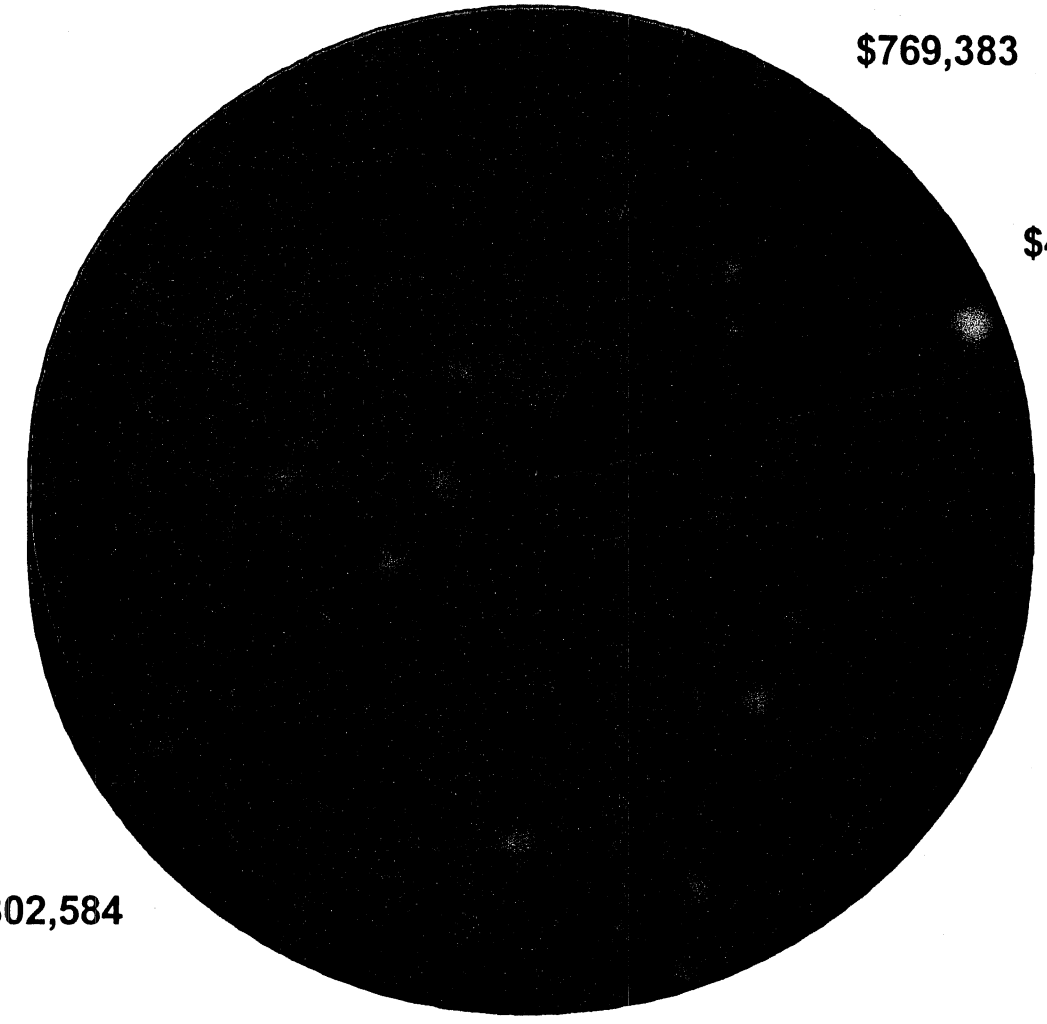
- **#1 requirement of 2 FLEET Commanders satisfied**
  - Likely to have been further deferred without UNOLS
  - Ensured earlier forward deployment of 2 TAGS-60's

- **Allowed earlier test and evaluation of 2 important sensor upgrades**
  - Tactically significant data and FLEET requirements accomplished

97 UNOLS/NAVO Planned Operations



97 UNOLS/NAVO Planned Operations



APPENDIX VIII

NSF Report
UNOLS Council and Annual Meeting
September 1997

Staff Changes

- Lisa Rom has returned to NSF as Assistant Program Director for the Oceanographic Technology and Interdisciplinary Coordination (OTIC) program.

- Sandy Shor will continue as Program Director for Instrumentation and Technical Services (ITS) for the rest of the year.

- Recruitment of a permanent Program Director for the program will be initiated shortly.

NSF Report
UNOLS Council and Annual Meeting
September 1997

FY 1998 Budget

- House and Senate conference to resolve budget differences expected this week.

- FY 1998 budget request for Ocean Sciences is $206.2M, or a 2.1% increase over FY1997.

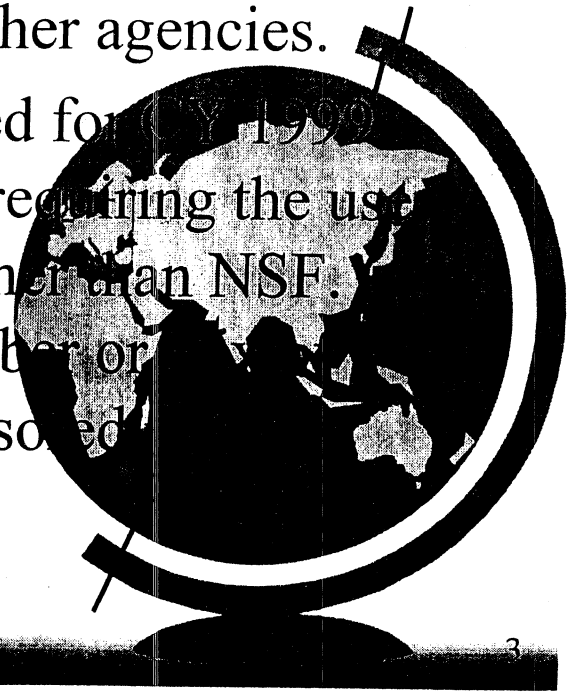
- Ocean Sciences Centers and Facilities request is $52.3M, the same as FY1997.

Stay tuned.

NSF Report
UNOLS Council and Annual Meeting
September 1997

Fleet Planning and Operations

- More than one ship is expected to be out of service for all or most of CY 1998 operations.
- Specific decisions are being made following the Ship Scheduling meeting this week and consultations with operating institutions, science program managers, and other agencies.
- Additional or continuing lay-ups are anticipated for CY 1999 operations unless additional research projects requiring the use of UNOLS ships are sponsored by agencies other than NSF. NSF does not anticipate major changes in number or type of research vessels required to support NSF-sponsored projects in the near future.



NSF Report
UNOLS Council and Annual Meeting
September 1997

Year of the Ocean (YOTO)

- The UN has designated 1998 as YOTO.
- "World Fair" in Lisbon, Portugal
- Much preliminary activity, few funds
- NSF Ocean Sciences will participate
  - Mike Reeve, Head of research section is "official" coordinator
- Expect to encourage "outreach" activities related to NSF-sponsored research cruises. Specific plans will depend on FY 1998 appropriation still pending in Congress.

GPRA
(Government Performance and Results Act)
NSF Implementation: Facilities

Required GPRA Documents

- Agency Strategic Plan - updated every 3 years.
- Annual Performance Plan - must contain measurable performance goals.
- Annual Performance Report - identifies achievements and compares actual performance to stated goals.

GPRA
(Government Performance and Results Act)
NSF Implementation: Facilities

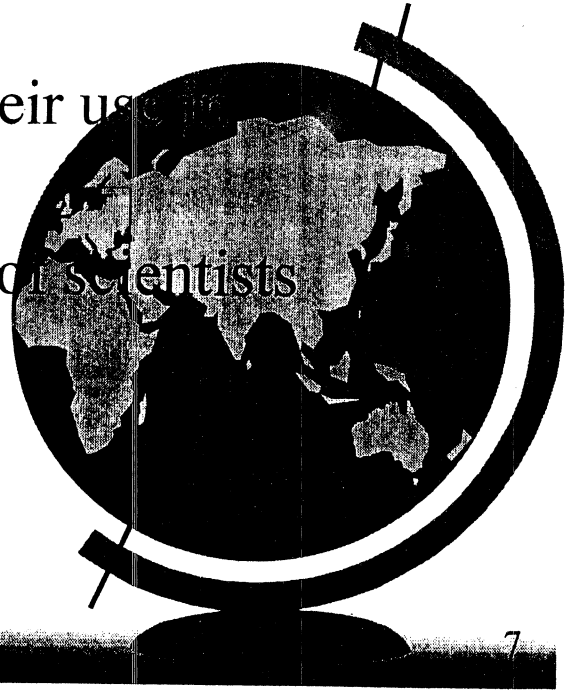
NSF Strategic Plan

- Update underway for FY1999 and beyond.
- Integrated portfolio of investments in key functions
  - Research project support
  - Research facilities
  - Education and training
  - Administration and Management

GPRA
(Government Performance and Results Act)
NSF Implementation: Facilities

NSF Performance Plan

- Under Development
- Major themes/outcome goals
  - Discoveries at and across the frontier of science and technology
  - Connections between discoveries and their use for service to society
  - A diverse, globally-oriented Workforce of scientists and engineers



GPRA
(Government Performance and Results Act)
NSF Implementation: Facilities

Facilities included, e.g., academic research fleet

- contributes to Discovery by enabling world-class research in geosciences
- facilitates Connections by disseminating information through international and interagency partnerships.
- enhances the scientific Workforce through providing research experience to graduate and postdoctoral students.

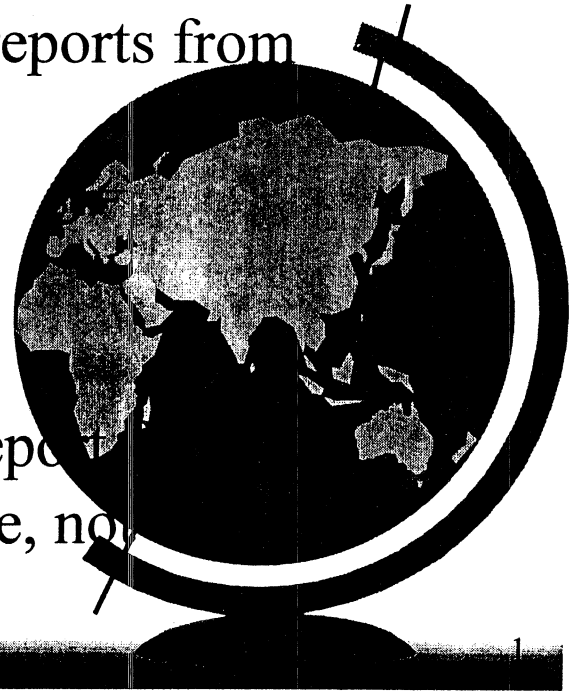
GPRA
(Government Performance and Results Act)
NSF Implementation: Facilities

- Facilities goals also focus on efficient, effective operation of multi-user facilities.
  - Construction and upgrades on schedule
  - Construction and upgrades within budget
  - Fraction of user use lost due to breakdown low
  - Demand for facility use for first rate science and engineering exceeds capacity.
- Specific measures to be determined.

GPRA
(Government Performance and Results Act)
NSF Implementation: Facilities

NSF Performance Report

- Under development
- Pilot report in FY 1998 for FY 1996 activities
- UNOLS provided data for academic fleet
  - Thank you Annette!
- Will be continuing requirement for annual reports from major multi-user facilities.
  - Academic Research Fleet
  - Ocean Drilling Program Operations
  - Accelerator Mass Spectrometry center
- Ocean Sciences expects to request annual repo[illegible] academic research fleet from UNOLS Office, no[illegible] individual operators.



GPRA
(Government Performance and Results Act)
NSF Implementation: Facilities

NSF Committee of Visitors (COV) will review every three years.

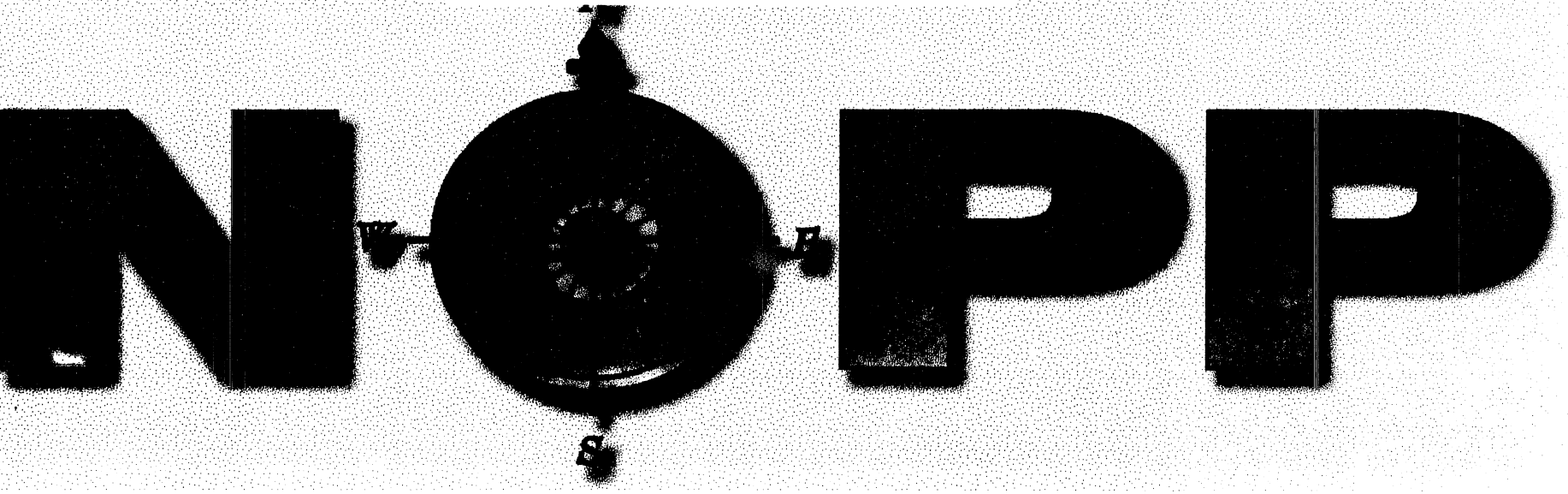
- Pilot review this year.
- Have copy of UNOLS report for 1996.

Stay tuned!

- Draft documents exist but specific measures and goals are still being negotiated.
- Will be public documents prior to submission of FY 1999 budget to Congress (Jan/Feb 1998).

APPENDIX IX


National Oceanographic Partnership Program
NOPP
NOAA
Navy
NASA
NSF
DoE
DARPA
Academia
Industry
OMB
EPA
OSTP
USCG
DoI/USGS
DoI/MMS
Government


NOPP

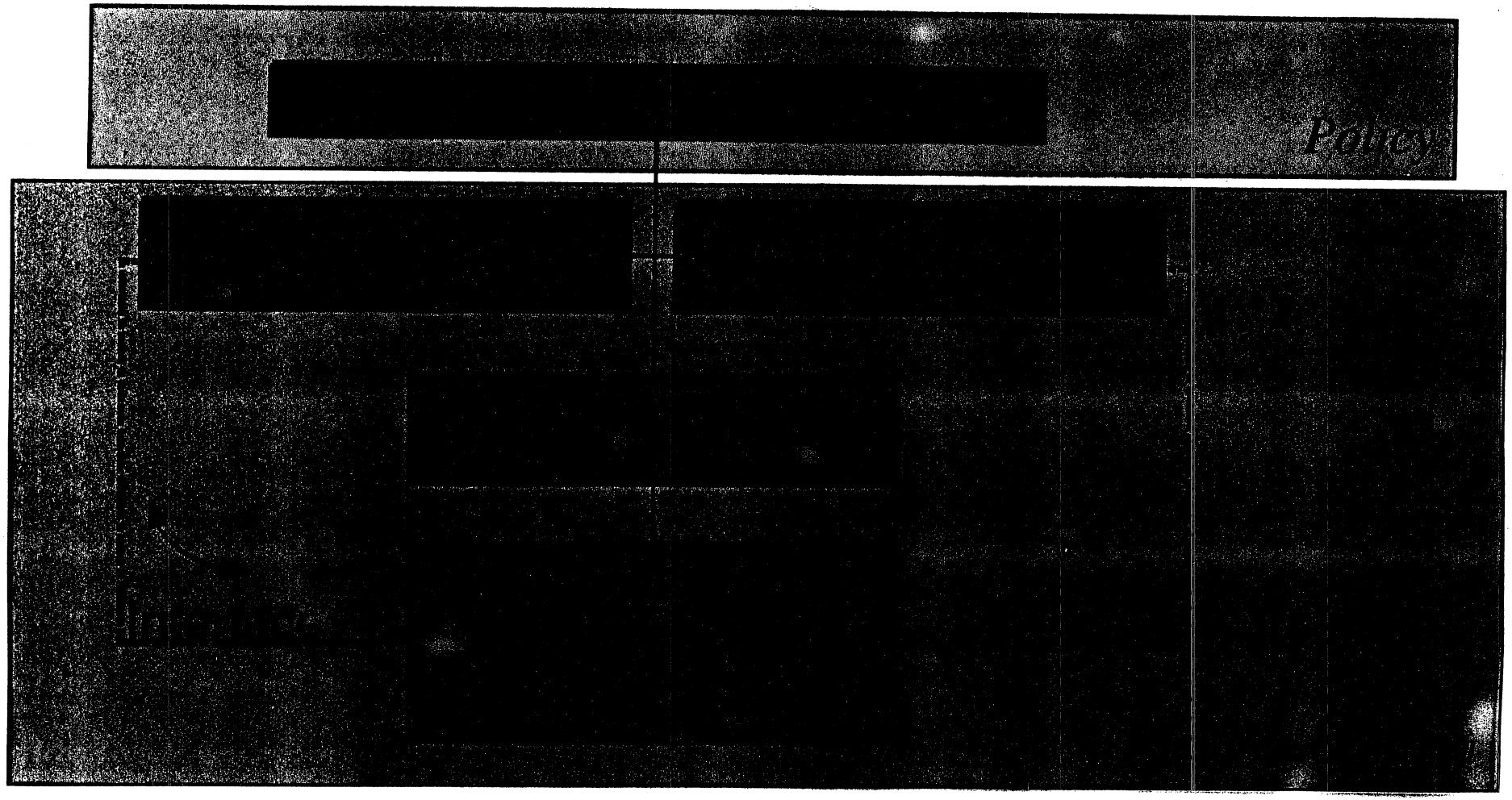
National Oceanographic Partnership Program (NOPP)

Codified in FY 1997 National Defense Authorization Act with reference to S. Rpt 104-267

The Secretary of the Navy shall establish the National Oceanographic Partnership Program....to:

- a) promote national security, quality of life, science education through knowledge of the ocean
- b) identify partnerships among Federal agencies, academia, industry....
- c) report annually to Congress

Structure of NOPP



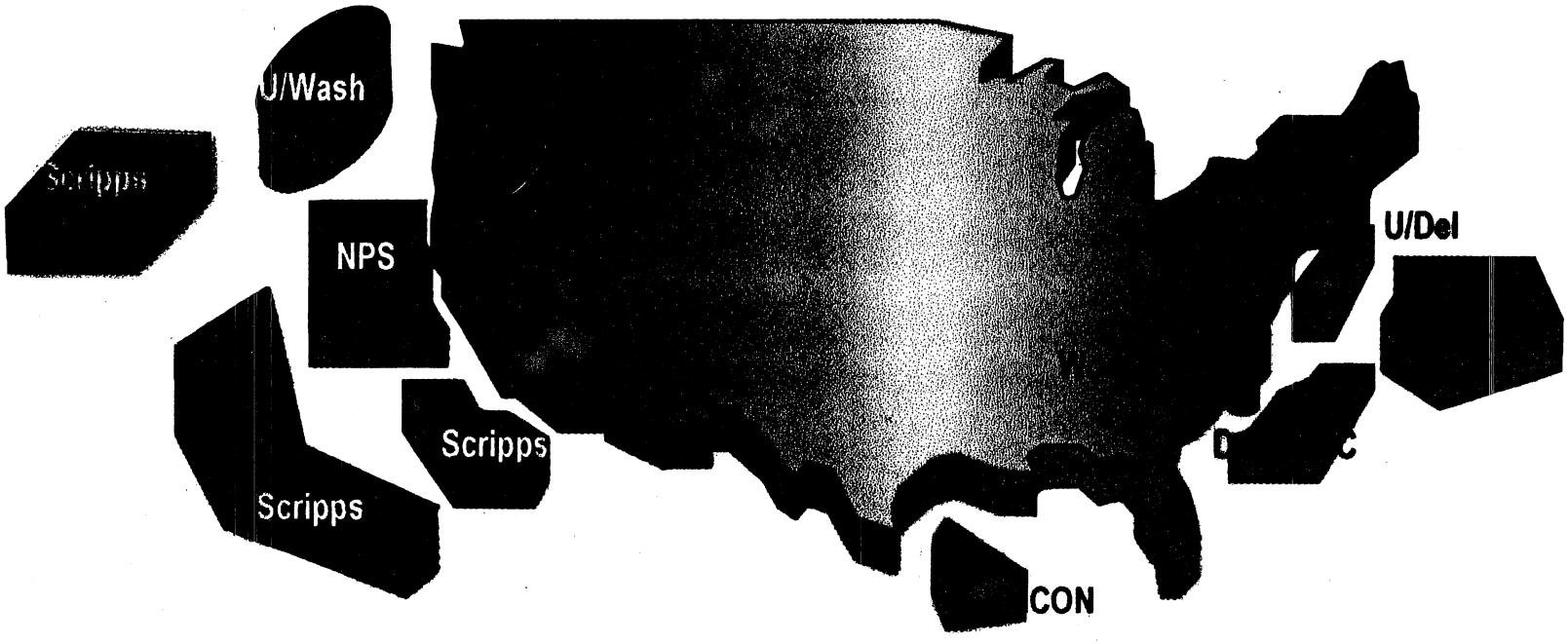
1997 National Oceanographic Partnership Program Projects

- **Education**
  - *Marine Education Clearinghouse ($0.34M)*
    - Virginia Institute of Marine Science
      - National Marine Education Association, Industry
  - *JASON IX - Student/Teacher Access to Ocean Science ($1.1M)*
    - JASON Foundation
      - U NE, CN Department of Education, J. L. Scott Marine Ctr (MS), Bridgewater State College (MA), U WI, Mote Marine Lab (FL), Monterey Bay Aquarium, Bermuda Biological Research Station, Inst.. for Exploration (MA), NASA, Navy, Nat'l Geographic, Industry

1997 National Oceanographic Partnership Program

- **Oceanographic Surveys using Academic Ships ($7.5M)**
  - **UNOLS** and **NAVOCEANO** collaboration
  - 426 Ship Days
  - 9 Universities & NAVOCEANO
  - Addresses validated Navy requirements

1997 NOPP Surveys with UNOLS vessels



NOPP Program Office Status

- Competitively Awarded to CORE, Jul 1997
- Handover from SCG: in progress
- Two of three additional positions filled
- Virtual Ocean Data Center Workshop
- NORLC Terms of Reference
- ORAP Charter and membership
- Annual Report to Congress

The National Oceanographic Research Leadership Council

SECNAV	NOAA Admin.
NSF Dir.	NASA Admin.
DEPSEC Energy	EPA Admin.
Coast Guard Comm.	USGS Dir.
MMS Dir.	DARPA Dir.
OSTP Dir.	OMB Dir.

- 7 others (NAS, NAE, IoM, State Gov., Academia, Industry, TBD)--*Maybe*.

1997 National Oceanographic Partnership Program

Leadership Council Appointment Issue
(Non-Federal Members)

- Legislative correction (FY 1998 DoD Authorization Bill)

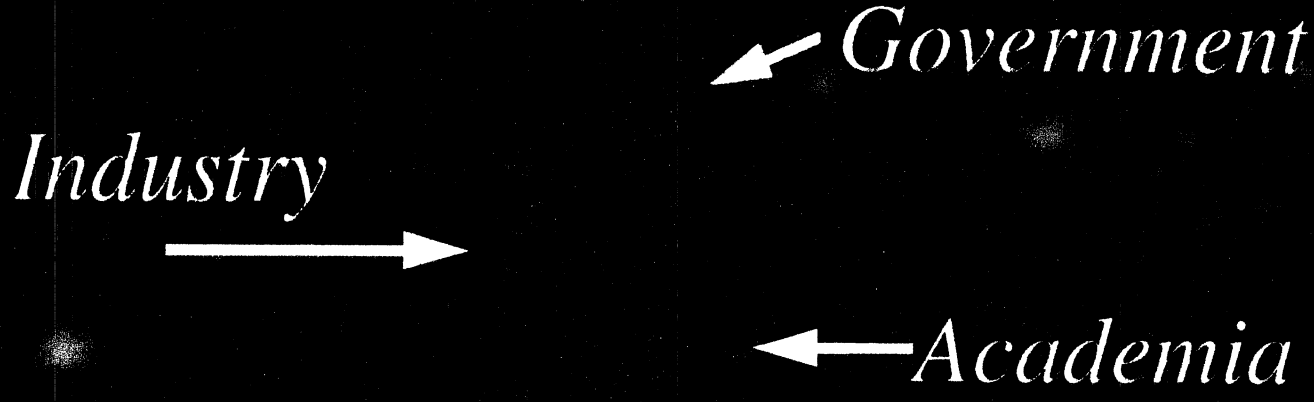
Partnership Projects ($13M)

- ONR Broad Agency Announcement **Dec 1996**
- 215 Preproposals **Jan 1997**
- 55 full Proposals **Mar 1997**
  (reviewed by 16 external peer reviewers and 30+ Federal science managers)

Projects Approved **May 1997**

Program Office awarded to CORE, July 1997

FY97 NOPP Program



- $11.5M (plus $7.5M for UNOLS use by NAVO; $1M to MEDEA; $0.5M for program office)
- > 70 institutions involved
- 19 States

1997 National Oceanographic Partnership Program Projects

- **Virtual Data Center**
  - *Sept 1997 Workshop held in Boulder, for 1998 Award ($2M)*
- **National Littoral Laboratories**
  - *National Littoral Ocean Observation/Prediction System ($1M)*
    - Harvard University
      - MIT, UC Santa Barbara, U Mass/Dartmouth, Johns Hopkins, NUWC (RI), NOAA, Industry
  - *Model-Driven Sampling with Autonomous Systems ($1M)*
    - Rutgers University
      - Woods Hole Oceanographic, NUWC (RI), Industry

1997 National Oceanographic Partnership Program Projects

- **General Partnership Projects**
  - *Gulf of Mexico Monitoring System ($3M)*
    - Dynalysis of Princeton
      - Texas A&M, Industry, Naval Research Laboratory(MS), U CO, U TX, Naval Oceanographic Office, FSU, Army Waterways Experiment Station, Scripps Institution of Oceanography
  - *Coastal & Marine Aerosol Transformation Processes ($0.6M)*
    - Naval Research Laboratory(DC)
      - U NY/Buffalo, U WA, NCAR, U RI, U CO, U DE, Atm Environ Service of Canada

1997 National Oceanographic Partnership Program Projects

- *SEANET - Internet to the Oceanographic Fleet ($1.5M)*
  - Joint Oceanographic Institutions, Inc..
    - Columbia Univ., Woods Hole Oceanographic Institution, Industry, Naval Postgraduate School

- *Monitoring the North Pacific ($3.1M)*
  - University of Washington
    - NOAA/Pacific Marine Environmental Lab, Scripps Institution, Naval Research Lab(MS), NOAA/NESDIS

1997 National Oceanographic Partnership Program Projects

- *Consortium for Ocean Activities for Students/Teachers ($2M)*
  - University of Southern Mississippi
    - MS St, St. Norbert College (WI), Smithsonian, U HI, U WA, U WI, U DE, OR St, Cornell, William & Mary, U NH, Industry, Navy, National Science Teachers Association
- *Pre-college Classroom ($0.1M)*
  - Rutgers
    - MA State School System, Industry, Navy
- *K-12 Ocean Science ($0.5M)*
  - University of South Florida
    - FL State School System, Industry

NOPP - Status

- Congress working on "NOPA 2" - FY98
  - Same fundamental components, plus additional element - Ocean observations ($10M)
  - Navy requested $5M in the FY98 PRESBUDG
  - FY98 Defense Authorization provides Navy additional $16M for NOPP in 6.2 and $7.5M in O&MN for University ships to work on Navy operational surveys
  - NORLC Structure - in resolution
- Linkage to intn'l efforts - Year of the Ocean
- Next BAA: out in October

NOPP - Status

(as of mid-Sept. 1997)

- FY 99 and outyears
  - Ten agencies have indicated interest in supporting the Partnership Program in the outyears
  - Agencies developing budgets (Navy, NSF, NOAA indications)
  - Mechanism for budgeting: *An NORLC Agenda Item at next meeting*

APPENDIX X

SCHEDULING PROCEDURE REVIEW

A Ship Scheduling Procedure Review Committee chaired by Rick Jahnke met 7 January 1997 to address perceived weakness in the ship scheduling process. These were:

1. Information Exchange
2. Insufficient Project Tracking
3. Cost Benefit Analysis
4. Timing of Science Meetings and Milestones
5. Other Factors (additional charges caused by shifting ships)

The following recommendations were presented:

1. Revise the ship-time request form
2. Develop a ship request tracking system relational data base
3. Automate the procedure for PI input on preliminary schedules and schedule changes
4. Standardize procedures for all users
5. Optimize scheduling meeting and procedure times (encourage more regional communications)
6. Cost benefit analysis system
7. Variable costs should be handled by Program Managers on an individual basis

ACTION TO DATE:

Revised Electronic Ship Time Request form (work in progress).

Two parts, single page for proposals and scheduling followed by an extensive second part for cruise planning. Part one submitted with proposal, part two after funding or special request. Each request will have a backup archive file of pertinent traffic.

Posted by year to web on world chart, geographically located in pull down box.

On-line ship schedule form. Auto cruise track posted to web on world chart. All PIs automatically notified at posting and for subsequent changes.

Transit bank auto-update for no cost cruises of opportunity.

Future work. Program ship daily cost, distance and fuel use into ship track program to provide a first level cut at a cost analysis.

APPENDIX XI

UNOLS COUNCIL ELECTIONS

September 18, 1997

The UNOLS Nominating Committee has assembled the following slate of candidates for the UNOLS Council positions to be filled at the 1997 Annual Meeting. This election will be held in accordance with the UNOLS Charter as readopted September 1995. The current membership of the Council and a UNOLS Directory are attached.

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

UNOLS COUNCIL SLATE

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

John Diebold	Lamont-Doherty Earth Observatory
Richard Hey	University of Hawaii
Thomas Shipley	University of Texas

NON-OPERATOR REPRESENTATIVE (3-year term) - from among designated representatives of Member Non-Operator institutions:

Cindy Lee	State University of New York, Stony Brook
Barbara Prezelin	University of California, Santa Barbara

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

Robert Knox	Scripps Institution of Oceanography, University of California, San Diego
Thomas Lee	RSMAS/University of Miami

VITAE

John Diebold

Research Scientist, Lamont-Doherty Earth Observatory
Research interests include application of Multichannel seismic and wide angle seismic techniques to study genesis and development of oceanic crust, plateaus, and continental accretion.
Participated in more than 50 legs on various research ships as technician, scientist, and chief scientist.

Richard Hey

Professor, Hawaii Institute if Geophysics and Planetology, School of Ocean and Earth Science and Technology/University of Hawaii
Plate Tectonics.
Seagoing scientist with extensive experience using UNOLS research vessels.

Robert Knox

Associate Director, Scripps Institution of Oceanography Ship Operations and Marine Technical Support
Research Oceanographer, Physical Oceanography Research Division, Scripps Institution of Oceanography, University of California, San Diego
Physical Oceanography; Global and equatorial ocean circulation and acoustic remote sensing.

Cindy Lee

Professor, Marine Sciences Research Center, State University of New York, Stony Brook
Chemical Oceanography; Marine organic geochemistry; production and decomposition of biogenic organic matter; organic nitrogen cycle biogeochemistry; analytical chemistry of amino acids and amines.

Thomas Lee

Research Professor, Rosentiel School of Marine and Atmospheric Science/University of Miami
Chair, RSMAS Ship Operations Committee
Chair of the Harbor Branch Oceanographic Institution/RSMAS Joint Marine Operations Oversight Committee
Physical Oceanography

Thomas Shipley

Research Scientist, University of Texas, Institute for Geophysics
Marine Geology and Geophysics: Research specializations include convergent margin tectonics and deep ocean seismic stratigraphy. Most experience has been with geophysical remote sensing tools, including multichannel seismic techniques.
Participated in over 30 cruises in the last 25 years.

Barbara Prezelin

Professor, University of California, Santa Barbara
Biological Oceanography: Phytoplankton ecology, with an emphasis on light regulation of photosynthesis and primary production in diverse ocean regions. Publication of close to 120 scientific publications and environmental assessment and policy reports. Served on numerous science policy boards.

APPENDIX XII

UNOLS DIRECTORY (with designated representatives)

Operator Institutions in **BOLD**

Rev. 9/97

ALABAMA MARINE ENVIRONMENTAL SCIENCES CONSORTIUM
Dr. George F. Crozier

UNIVERSITY OF ALASKA Dr. Thomas Weingartner

BERMUDA BIOLOGICAL STATION for RESEARCH, Inc. Dr. Dennis Hansell

BIGELOW LABORATORY FOR OCEAN SCIENCES
Dr. David Townsend

BROOKHAVEN NATIONAL LABORATORY Dr. Creighton D. Wirick

UNIVERSITY OF CALIFORNIA, SAN DIEGO, SCRIPPS INSTITUTION OF OCEANOGRAPHY
Dr. Robert Knox

UNIVERSITY OF CALIFORNIA, SANTA BARBARA
Dr. Steven Gaines

CAPE FEAR COMMUNITY COLLEGE Mr.Raymond P. Brandi

COLUMBIA UNIVERSITY, LAMONT-DOHERTY EARTH OBSERVATORY Dr. Dennis Hayes

UNIVERSITY OF CONNECTICUT Capt. Lawrence Burch

UNIVERSITY OF DELAWARE Dr. Carolyn A. Thoroughgood

DUKE UNIVERSITY/UNIVERSITY OF NORTH CAROLINA Dr. Daniel B. Albert

FLORIDA INSTITUTE FOR OCEANOGRAPHY Dr. John C. Ogden

FLORIDA INSTITUTE OF TECHNOLOGY Dr. Richard Gerlick

FLORIDA STATE UNIVERSITY Dr. William C. Burnett

HARBOR BRANCH OCEANOGRAPHIC INSTITUTION
Mr. Richard Herman

HARVARD UNIVERSITY Dr. Michael B. McElroy

UNIVERSITY OF HAWAII Dr. Brian Taylor

HOBART & WILLIAM SMITH COLLEGES Dr. Donald L. Woodrow

THE JOHNS HOPKINS UNIVERSITY Dr. Stephen L. Root

LEHIGH UNIVERSITY Dr. Bobb Carson

LOUISIANA UNIVERSITIES MARINE CONSORTIUM
Dr. Michael Dagg

UNIVERSITY OF MAINE Dr. Robert E. Wall

THE MARINE SCIENCE CONSORTIUM Dr. Darlene Richardson

UNIVERSITY OF MARYLAND Dr. Tom Malone

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Dr. John M. Edmond

UNIVERSITY OF MIAMI, ROSENSTIEL SCHOOL OF MARINE & ATMOSPHERIC SCIENCES
Dr. Otis Brown

UNIVERSITY OF MICHIGAN, CENTER FOR GREAT LAKES & AQUATIC SCIENCES Dr. Theodore C. Moore, Jr.

MONTEREY BAY AQUARIUM RESEARCH INSTITUTE
Dr. Bruce Robison

MOSS LANDING MARINE LABORATORIES
Dr. Kenneth Johnson

NAVAL POSTGRADUATE SCHOOL Dr. Robert Bourke

UNIVERSITY OF NEW HAMPSHIRE
Dr. Wendell Brown

STATE UNIVERSITY OF NEW YORK AT STONY BROOK
Dr. Charles A. Nittrouer

UNIVERSITY OF NORTH CAROLINA AT WILMINGTON
Mr. Robert I. Wicklund

NOVA UNIVERSITY Dr. Julian P. McCreary

OCCIDENTAL COLLEGE Dr. John S. Stephens, Jr.

OLD DOMINION UNIVERSITY Dr. Larry Atkinson

OREGON STATE UNIVERSITY Dr. G. Brent Dalrymple

UNIVERSITY OF PUERTO RICO Dr. M.L. Hernandez-Avila

UNIVERSITY OF RHODE ISLAND Dr. Jeffrey E. Callahan

RUTGERS UNIVERSITY Dr. Clare Reimers

SAN DIEGO STATE UNIVERSITY Dr. Clive Dorman

SEA EDUCATION ASSOCIATION Capt. Philip Sacks

SMITHSONIAN TROPICAL RESEARCH INSTITUTE
Mr. Howard Barnes

UNIVERSITY OF SOUTH CAROLINA Dr. Robert Thunell

UNIVERSITY OF SOUTH FLORIDA Dr. Peter R. Betzer

UNIVERSITY OF SOUTHERN CALIFORNIA Dr. Douglas Hammond

UNIVERSITY OF SOUTHERN MISSISSIPPI Dr. Denis Wiesenburg

UNIVERSITY SYSTEM OF GEORGIA, SKIDAWAY INSTITUTE OF OCEANOGRAPHY Dr. Richard Jahnke

UNIVERSITY OF TEXAS Dr. Terry E. Whitledge

TEXAS A&M UNIVERSITY Dr. Ed Shaar, Jr.

VIRGINIA INSTITUTE OF MARINE SCIENCE Dr. L. Donelson Wright

UNIVERSITY OF WASHINGTON Dr. Richard Sternberg

UNIVERSITY OF WISCONSIN AT MADISON Dr. Anders W. Andren

UNIVERSITY OF WISCONSIN AT MILWAUKEE
Dr. David E. Edgington

UNIVERSITY OF WISCONSIN AT SUPERIOR Dr. Mary Balcer

WOODS HOLE OCEANOGRAPHIC INSTITUTION
RADM Richard Pittenger

UNOLS COUNCIL/COMMITTEES

UNOLS COUNCIL (UC)

(408) 755-8657	Kenneth Johnson, MLML, (Chair)	10/94-10/98
(757) 683-5547	Thomas Royer, ODU, (V-Chair)	10/93-10/98
(914) 359-2900	Dennis E. Hayes, L-DEO	10/91-10/97
(619) 534-4729	Bob Knox, SIO	10/94-10/97
(516) 632-8741	Cindy Lee, SUNY	10/94-10/97
(508) 289-2597	Richard Pittenger, WHOI	09/92-10/98
(207) 581-1110	Robert Wall, U Maine	09/92-10/98
(908) 932-6555 x236	Clare Reimers, Rutgers	09/96-09/99
(441) 297-1880 x210	Dennis Hansell, BBSR	09/96-09/99
(401) 874-6579	John Freitag, URI, (Chair, RVTEC)	11/96-11/9X
(352) 392-2128	Mike Perfit, U Florida (Chair, DESSC)	04/95-10/9X
(305) 361-4088	Christopher Mooers, U Miami (Chair, FIC)	10/94-10/9X
(508) 289-2277	Don Moller, WHOI, (Chair, Ship Scheduling)	10/94-10/9X
(914) 359-2900 x245	Paul Ljunggren, L-DEO, (Chair, RVOC)	10/96-10/9X
(619) 534-3387	J. Swift, SIO, (Chair, AICC)	09/96-09XX

DEEP SUBMERGENCE SCIENCE COMMITTEE (DESSC)

(352) 392-2128	Mike Perfit, U Florida (Chair)	07/95-06/98
(617) 253-7136	James Bellingham, MIT	07/93-06/99
(541) 737-4367	Robert Collier, OSU	07/93-06/99
(206) 526-6169	Hugh Milburn, NOAA	07/92-06/98
(408) 775-1761	Dan Orange, MBARI	07/93-06/99
(206) 543-0895	Marvin Lilley, U Washington	06/96-06/99
(907) 474-5870	Cindy Van Dover, NURP/U Alaska	06/95-06/98
(508) 289-2307	Carl Wirsen, WHOI	07/92-06/98
(808) 956-3146	Patricia Fryer, U Hawaii	02/96-06/99
(508) 289-2597	Richard Pittenger, WHOI, (ex-officio)	06/91-XXXX
(508) 289-2857	Daniel Fornari, WHOI, (ex-officio)	07/92-XXXX

RESEARCH VESSEL OPERATORS' COMMITTEE (RVOC)

(914) 359-2900 x245	Paul Ljunggren, L-DEO, (Chair)	10/96-10/98
(504)-851-2808	Steve Rabalais, LUMCON, (V-Chair)	10/96-10/98

FLEET IMPROVEMENT COMMITTEE (FIC)

(305) 361-4088	Christopher Mooers, U Miami, (Chair)	10/94-10/97
(360) 293-2188	Suzanne Strom, Western Washington U	10/94-10/97
(808) 956-7894	Eric Firing, U Hawaii	02/92-05/98
(757) 683-4926	Larry Atkinson, ODU	07/95-10/96
(408) 459-3171	Bess Ward, UCSC	09/95-09/98
(907) 474-7993	Tom Weingartner, U Alaska	09/95-09/98
(409) 845-0795	Tom Crowley, Texas A&M	10/96-10/99
(914) 365-8566	Bill Smethie, LDEO	10/96-10/99
(508) 289-2624	Joseph Coburn, WHOI, (ex-officio)	10/92-10/9X

RESEARCH VESSEL TECHNICAL ENHANCEMENT COMMITTEE (RVTEC)

(401) 874-6579	John Freitag, URI, (Chair)	10/96-10/98
(541) 737-4622	Marc Willis, OSU	02/96-11/97

(over)

UNOLS COUNCIL/COMMITTEES

SHIP SCHEDULING COMMITTEE (SSC)

(508) 289-2277	Don Moller, WHOI, (Chair)	10/94-10/98
(206) 543-5062	Robert Hinton, U Washington, (V-Chair)	10/94-10/98

ARCTIC ICEBREAKER COORDINATING COMMITTEE (AICC)

(619) 534-3387	Jim Swift, SIO, (Chair)
(919) 328-1834	Lisa Clough, East Carolina U
(508) 289-2624	Joe Coburn, WHOI
(804) 683-5835	Glenn Cota, ODU
(541) 737-3625	Kelly Falkner, OSU
(512) 471-0433	Larry Lawver, U Texas
(619) 534-6369	Dan Lubin, SIO
(907) 474-7993	Tom Weingartner, U Alaska

9/97

MARINE OPERATIONS CONTACT

THE UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM
LIST OF RESEARCH VESSELS (>20M) OPERATED BY UNOLS INSTITUTIONS

UNOLS Hompepage: http://www.gso.uri.edu/unols/unols.html

Rev. (9/97)

OPERATOR	NAME	LOA (FT/M)	BUILT/ CONVERTED	CREW	NO. of SCI.	OWNER	MARINE OPS. CONTACT
University of Hawaii Marine Center #1 Sand Island Road Honolulu, HI 96819 Homepage: http://www.soest.hawaii.edu/umc/	MOANA WAVE	210/64	1973/1984	16	19	NAVY	Capt. J.W. Coste Marine Superintendent PHONE: (808) 847-2661 FAX: (808) 848-5451 INTERNET: bcoste@poha.soest.hawaii.edu
University of Alaska Seward Marine Center PO Box 730 Seward, AK 99664 Homepage: http://www.ims.alaska.edu:8000/helix.html	ALPHA HELIX	133/41	1966	9	15	NSF	Mr. Thomas Smith Marine Superintendent PHONE: (907) 224-5261 FAX: (907) 224-3392 INTERNET: fnts@aurora.uaf.edu
University of Washington School of Oceanography, WB-10 Seattle, WA 98195 Homepage: http://www.ocean.washington.edu/ships/ships.html	T. G. THOMPSON C.A. BARNES	274/84 66/20	1991 1966/1984	22 2	36 6	NAVY NSF	Mr. Robert Hinton Marine Superintendent PHONE: (206) 543-5062 FAX: (206) 543-6073 INTERNET: hinton@ocean.washington.edu
Oregon State University College of Oceanography PO Box 429 South Beach, OR 97366-0429 Homepage: http://lubber.oce.orst.edu/Wecoma/WecomaHome.html	WECOMA	185/56	1976/1994	13	20	NSF	Capt. Fred Jones Marine Superintendent PHONE: (541) 867-0224 FAX: (541) 867-0294 INTERNET: jonesf@ucs.orst.edu
Moss Landing Marine Laboratories PO Box 450 Moss Landing, CA 95039 Homepage: http://color.mlml.calstate.edu/www/	POINT SUR	135/41	1981	9	12	NSF	Mr. Michael Prince Marine Superintendent PHONE: (408) 633-3534 FAX: (408) 633-4580 INTERNET: prince@mlml.calstate.edu
University of California, San Diego Scripps Institution of Oceanography Nimitz Marine Facility 297 Rosecrans Street San Diego, CA 92106 Homepage: http://sio.ucsd.edu/supp_groups/shipsked	MELVILLE ROGER REVELLE NEW HORIZON R.G. SPROUL	279/86 274/84 170/52 125/38	1969/1990-1 1996 1978 1981/1985	23 22 12 5	38 37 19 12	NAVY NAVY U.C U.C.	Capt. Thomas S. Althouse Marine Facilities Code P-0705 PHONE: (619) 534-1643 FAX: (619) 534-1635 INTERNET: capt@mpl.ucsd.ed
University of Michigan Center for Great Lakes & Aquatic Sciences 2200 Bonisteel Boulevard Ann Arbor, MI 48109-2099 Homepage:	LAURENTIAN	80/24	1974	6	8	U.M.	Dr. Linda Goad Marine Superintendent PHONE: (313) 763-5393 FAX: (313) 647-2748 INTERNET: linda.m.goad@umich.edu
Texas A&M University Department of Oceanography PO Box 3145 Galveston, TX 77843 Homepage: http://www.ocean.tamu.edu/gyre.html	GYRE	182/55	1973/1980	10	23	TAMU	Dr. Ed Shaar, Jr. Operations Manager PHONE: (409) 862-3290 FAX: (409) 845-6331 INTERNET: eshaar@ocean.tamu.edu

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OPERATOR	NAME	LOA (FT/M)	BUILT/ CONVERTED	CREW	NO. of SCI.	OWNER	MARINE OPS. CONTACT
University of Texas Marine Science Institute Port Aransas, TX 78373 Homepage: http://www.utmsi.zo.utexas.edu/hornspec.htm	LONGHORN	105/32	1971/1986	4	12	U.T.	Mr. John Thompson Assoc. Director, Admin. PHONE: (512) 749-6760 FAX: (512) 749-6777 INTERNET: thompson@ utmsi.zo.utexas.edu
Louisiana Universities Marine Consortium Marine Research & Education Center 8124 Highway 56 Chauvin, LA 70344 Homepage: http://www.lumcon.edu/educate.html	PELICAN	105/32	1985	5	15	LUMCON	Mr. Steve Rabalais Marine Ops. Supervisor PHONE: (504) 851-2808 FAX: (504) 851-2874 INTERNET: srabalais@ lumcon.edu
Harbor Branch Oceanographic Institution 5600 US 1 N Ft. Pierce, FL 34948 Homepage: http://www.hboi.edu/	SEWARD JOHNSON EDWIN LINK SEA DIVER	204/63 168/51 113/34	1984/1994 1982/1988 1959/1992	11 10 6	29 20 12	H.B. H.B. H.B.	Mr. Tim Askew Marine Operations PHONE: (561) 465-2400 x262 FAX: (561) 465-2116 INTERNET: taskew@hboi.edu
University of Miami, RSMAS Marine Department 4600 Rickenbacker Causeway Miami, FL 33149 Homepage: http://www.rsmas.miami.edu/support/calanus.html	CALANUS	64/20	1971	2	6	U.M.	Mr. David Powell Marine Operations PHONE: (305) 361-4832 FAX: (305) 361-4174 INTERNET: dpowell@ rsmas.miami.edu
University System of Georgia Skidaway Institute of Oceanography 10 Ocean Science Circle Savannah, GA 31411 Homepage: http://www.skio.peachnet.edu/bluefin.html	BLUE FIN	72/22	1972/1975	5	8	U.G.	Mr. Steven Carignan Supt. of Plant & Marine Ops PHONE: (912) 598-2456 FAX: (912) 598-2310 INTERNET: steve@skid. peachnet.edu
Duke/UNC Oceangraphic Consortium 135 Duke Marine Lab Road Duke University Marine Laboratory Beaufort, NC 28516 Homepage: http://www.env.duke.edu/marinelab/vessels.html	CAPE HATTERAS	135/41	1981	10	12	NSF	Mr. Quentin Lewis Marine Superintendent PHONE: (919) 504-7580 FAX: (919) 504-7651 INTERNET: quentinl@ duncoc.ml.duke.edu
University of Delaware College of Marine Studies 700 Pilottown Road Lewes, DE 19958 Homepage: http://www.udel.edu/marine_operations/	CAPE HENLOPEN	120/37	1976	7	12	U.D.	Mr. Tim Pfeiffer Director, Marine Operations PHONE: (302) 645-4341 FAX: (302) 645-4006 INTERNET: pfeiffer@ udel.edu
Lamont-Doherty Earth Observatory Columbia University Palisades, NY 10964 Homepage: http://www.ldeo.columbia.edu/Ewing/home.html	MAURICE EWING	239/73	1983/1990	18	32	NSF	Capt. Paul Ljunggren Marine Superintendent PHONE: (914) 365-8845 FAX: (914) 359-6817 INTERNET: pwl@ ldeo.columbia.edu
University of Rhode Island Graduate School of Oceanography Narragansett, RI 02882 Homepage: http://www.gso.uri.edu/endeavor/endeavor.html	ENDEAVOR	184/56	1977/1993	12	18	NSF	Mr. William Hahn Marine Superintendent PHONE: (401) 874-6554 FAX: (401) 874-6574 INTERNET: b_hahn@ gso.uri.edu

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Woods Hole Oceanographic Institution	KNORR	279/85	1970/1989	25	34	NAVY	Capt. Joe Coburn
Woods Hole, MA 02543	ATLANTIS	274/84	1997	35*	24	NAVY	Manager, Marine Ops.
	OCEANUS	177/54	1976/1994	12	18	NSF	PHONE:(508) 289-2624
	DSRV ALVIN	25.8	1964			NAVY	FAX: (508) 540-8675
Homepage: http://www.whoi.edu/marine-ops/							INTERNET: jcoburn@whoi.edu
Bermuda Biological Station for Research Inc.	WEATHERBIRD II	115/35	1993	10	12	BBSR	Capt. C. Lee Black
17 Biological Station Lane							Marine Superintendent
Ferry Reach							PHONE: (441) 297-1880 x208
St. George's GE-01 BERMUDA							FAX: (441) 297-1839
Homepage: http://www.bbsr.edu/wbird.html							INTERNET: lblack@bbsr.edu
Smithsonian Tropical Research Institute	URRACA	96/30	1986/1994	5	10	STRI	Mr. Howard Barnes
Box 2072							Assistant Director
Balboa, Republic of Panama							PHONE: 011-207-227-5211
APO AA 34002-0948							FAX: 011-027-232-6197
Homepage:							INTERNET: STRI.TIVOLI. BARNESH@ic.si.edu

* Includes 22 Crrew
11 DSG
2 Technicians

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THE UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM
LIST OF RESEARCH VESSELS (>20M) OPERATED BY UNOLS INSTITUTIONS

UNOLS Homepage: http://www.gso.uri.edu/unols/unols.html

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University of Hawaii Marine Center #1 Sand Island Road Honolulu, HI 96819 Homepage: http://www.soest.hawaii.edu/umc/	MOANA WAVE	210/64	1973/1984	19	NAVY	Capt. Stan Winslow Ship Scheduler PHONE: (808) 847-2661 FAX: (808) 848-5451 INTERNET: snug@poha.soest.hawaii.edu
University of Alaska Institute of Marine Science PO Box 757220 Fairbanks, AK 99775 Homepage: http://www.ims.alaska.edu:8000/helix.html	ALPHA HELIX	133/41	1966	15	NSF	Dr. Thomas Weingartner PHONE: (907) 474-7993 FAX: (907) 474-7204 INTERNET: weingart@ims.alaska.edu
University of Washington School of Oceanography, WB-10 Seattle, WA 98195 Homepage: http://www.ocean.washington.edu/ships/ships.html	T. G. THOMPSON C.A. BARNES	274/84 66/20	1991 1966/1984	36 6	NAVY NSF	Mr. Robert Hinton Marine Superintendent PHONE: (206) 543-5062 FAX: (206) 543-6073 INTERNET: hinton@ocean.washington.edu
Oregon State University College of Oceanography PO Box 429 South Beach, OR 97366-0429 Homepage: http://lubber.oce.orst.edu/Wecoma/WecomaHome.html	WECOMA	185/56	1976/1994	20	NSF	Capt. Fred Jones Marine Superintendent PHONE: (541) 867-0224 FAX: (541) 867-0294 INTERNET: jonesf@ucs.orst.edu
Moss Landing Marine Laboratories PO Box 450 Moss Landing, CA 95039 Homepage: http://color.mlml.calstate.edu/www/	POINT SUR	135/41	1981	12	NSF	Mr. Michael Prince Marine Superintendent PHONE: (408) 633-3534 FAX: (408) 633-4580 INTERNET: prince@mlml.calstate.edu
University of California, San Diego 9500 Gilman Drive, Dept. 0210 Scripps Institution of Oceanography La Jolla, CA 92093-0210 Homepage: http://sio.ucsd.edu/supp_groups/shipsked	MELVILLE ROGER REVELLE NEW HORIZON R.G. SPROUL	279/86 274/84 170/52 125/38	1969/1990-91 1996 1978 1981/1985	38 37 19 12	NAVY NAVY U.C U.C.	Ms. Rose M. Dufour/ Elizabeth Rios Ship Scheduler(s) Code A-0210 PHONE: (619) 534-2841 FAX: (619) 535-1817 INTERNET: shipsked@ucsd.edu
University of Michigan Center for Great Lakes & Aquatic Sciences 2200 Bonisteel Boulevard Ann Arbor, MI 48109-2099 Homepage: http://	LAURENTIAN	80/24	1974	8	U.M.	Dr. Linda Goad Marine Superintendent PHONE: (313) 763-5393 FAX: (313) 647-2748 INTERNET: linda.m.goad@umich.edu
Texas A&M University Department of Oceanography PO Box 3145 Galveston, TX 77843 Homepage: http://www.ocean.tamu.edu/gyre.html	GYRE	182/55	1973/1980	23	TAMU	Dr. Ed Shaar, Jr. Operations Manager PHONE: (409) 862-3290 FAX: (409) 845-6331 INTERNET: eshaar@ocean.tamu.edu

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Louisiana Universities Marine Consortium Marine Research & Education Center 8124 Highway 56 Chauvin, LA 70344 Homepage: http://www.lumcon.edu/educate.html	PELICAN	105/32	1985	15	LUMCON	Mr. Steve Rabalais Marine Ops. Supervisor PHONE: (504) 851-2808 FAX: (504) 851-2874 INTERNET: srabalais@ lumcon.edu
Harbor Branch Oceanographic Institution 5600 US 1 N Ft. Pierce, FL 34948 Homepage: http://www.hboi.edu/	SEWARD JOHNSON EDWIN LINK SEA DIVER	204/63 168/51 113/34	1984/1994 1982/1988 1959/1992	22 20 12	H.B. H.B. H.B.	Mr. Tim Askew Marine Operations PHONE: (561) 465-2400 x262 FAX: (561) 465-2116 INTERNET: taskew@hboi.edu
University of Miami, RSMAS Marine Department 4600 Rickenbacker Causeway Miami, FL 33149 Homepage: http://www.rsmas.miami.edu/support/calanus.html	CALANUS	64/20	1971	6	U.M.	Mr. David Powell Marine Operations PHONE: (305) 361-4832 FAX: (305) 361-4174 INTERNET: dpowell@ rsmas.miami.edu
University System of Georgia Skidaway Institute of Oceanography 10 Ocean Science Circle Savannah, GA 31411 Homepage: http://www.skio.peachnet.edu/bluefin.html	BLUE FIN	72/22	1972/1975	8	U.G.	Mr. Steven Carignan Supt. of Plant & Marine Ops PHONE: (912) 598-2456 FAX: (912) 598-2310 INTERNET: steve@skid. peachnet.edu
Duke/UNC Oceanographic Consortium 135 Duke Marine Lab Road Duke University Marine Laboratory Beaufort, NC 28516 Homepage: http://www.env.duke.edu/marinelab/vessels.html	CAPE HATTERAS	135/41	1981	12	NSF	Mr. Quentin Lewis Marine Superintendent PHONE: (919) 504-7580 FAX: (919) 504-7651 INTERNET: quentinl@ duncoc.ml.duke.edu
University of Delaware College of Marine Studies 700 Pilottown Road Lewes, DE 19958 Homepage: http://www.udel.edu/marine_operations/	CAPE HENLOPEN	120/37	1976	12	U.D.	Mr. Tim Pfeiffer Director, Marine Operations PHONE: (302) 645-4341 FAX: (302) 645-4006 INTERNET: pfeiffer@ udel.edu
Lamont-Doherty Earth Observatory Columbia University Palisades, NY 10964 Homepage: http://www.ldeo.columbia.edu/Ewing/home.html	MAURICE EWING	239/73	1983/1990	32	NSF	Mr. Michael Rawson Marine Sci. Coordinator PHONE: (914) 365-8367 FAX: (914) 359-6817 INTERNET: rawson@ ldeo.columbia.edu
University of Rhode Island Graduate School of Oceanography Narragansett, RI 02882 Homepage: http://www.gso.uri.edu/endeavor/endeavor.html	ENDEAVOR	184/56	1977/1993	18	NSF	Mr. William Hahn Marine Superintendent PHONE: (401) 874-6554 FAX: (401) 874-6574 INTERNET: b_hahn@ gso.uri.edu

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Woods Hole Oceanographic Institution Woods Hole, MA 02543 Homepage: http://www.whoi.edu/marine-ops/	KNORR ATLANTIS OCEANUS DSRV ALVIN	279/85 274/84 177/54 25.8	1970/1989 1997 1976/1994 1964	34 35* 18	NAVY NAVY NSF NAVY	Mr. Donald Moller Marine Ops. Admin. PHONE: (508) 289-2277 FAX: (508) 457-2185 INTERNET: dmoller@whoi.edu
Bermuda Biological Station for Research Inc. 17 Biological Station Lane Ferry Reach St. George's GE-01 BERMUDA Homepage: http://www.bbsr.edu/wbird.html	WEATHERBIRD II	115/35	1993	12	BBSR	Capt. C. Lee Black Marine Superintendent PHONE: (441) 297-1880 x208 FAX: (441) 297-1839 INTERNET: lblack@bbsr.edu
Smithsonian Tropical Research Institute Box 2072 Balboa, Republic of Panama APO AA 34002-0948 Homepage:	URRACA	96/30	1986/1994	5	STRI	Mr. Howard Barnes Assistant Director PHONE: 011-507-227-5211 FAX: 011-507-232-6197 INTERNET: STRI.TIVOLI.BARNESH@ic.si.edu

*Includes: 22 Crew
11 DSG
2 Technicians