UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

UNOLS COUNCIL MEETING

SUMMARY REPORT

July 11-12, 1994

Darling Marine Center
University of Maine
Walpole, ME

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UNIVERSITY OF MAINE
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The UNOLS Council met on 11-12 July 1994 at the Darling Marine Center, University of Maine, Walpole, Maine. The meeting was called to order by Garry Brass, UNOLS Chair, at 0830 hrs. The Participants are listed in **Appendix I** and the meeting agenda is included as **Appendix II**. These minutes address the order in which items on the agenda were addressed.

APPENDICES

I. Attendance List
II. Meeting Agenda
III. FIC Membership Letter
IV. NSF FY 1995 Budget Request
V. ARCSS OAII Request Letter
VI. KNORR Conversion Status and Plans
VII. Draft Amendment to H.R. 3636
VIII. GPS Status
IX. UNOLS Budget

INTRODUCTION - Bob Wall welcomed the Council to the Darling Marine Center for the Director, Dr. Kevin J. Ickelbarger. Bob then reviewed the logistics planned for the meeting.

COUNCIL MINUTES - The minutes of the March 15-16 UNOLS Council meeting were accepted as written.

COMMITTEE REPORTS

RESEARCH VESSEL OPERATORS COMMITTEE - Mike Prince, RVOC Chair, provided the council with a preview of the agenda for the 25-27 October RVOC meeting scheduled for Savannah, GA, and hosted by Skidaway. The representative from U.K.'s National Environment Research Council (NERC) will present to the RVOC events that transpired during an effort to privatize their oceanographic fleet. NERC was successful in an open competition with the private sector. A workshop will be conducted on oil spill response plans. It is thought that a generic plan can be developed and each institution can then build a specific plan for their respective needs.

An Operating Budget workshop will look into shipyard reserves and the use of rotating crews. Optimum ship operating days will also be discussed as well as the accounting of operating days, sea days and maintenance days.

Garry Brass interjected that he has a funding support paradigm that will appear in the next UNOLS newsletter. This proposes that each ship have a federal sponsor that provides the fixed costs for operating and that the charge to the scientist would be only the variable cost. This scheme would make the UNOLS ship costs transparent to all federal agencies and make UNOLS ships more competitive throughout the federal ship use system.

Mike continued his report on the RVOC annual meeting plans. A third workshop is scheduled which will bring in an expert on emergency, safety and new fire fighting equipment for demonstration and discussion. The safety subcommittee will begin work on revisions to the UNOLS Safety Standards as part of the three year review cycle. If all goes as planned a revised manual will be available for UNOLS Council review at the 1995 fall meeting. The third day of the meeting will be a round table discussion for the ship operators only.

Mike indicated that invitations would go out to marine managers from the U.K., Canada and Mexico as in the past. This year marine managers from Chile and NATO (R/V ALLIANCE home ported in Italy) have indicated an interest in attending the RVOC meeting and have received invitations.

Don Heinrichs indicated that he will be tasking RVOC to look into marine operations shore costs and shore organizations. They will be asked to study the strengths and weaknesses of the different models.

DEEP SUBMERGENCE SCIENCE COMMITTEE - Jeff Fox, DESSC Chair, gave a summary of the recent DESSC meeting at WHOI. Jeff reported that ALVIN turned thirty and has recently passed its INSURV inspection by the Navy. This past year's operations have been very successful with only one day lost to mechanical failure. Three new pilots have been certified for a total of six operational pilots. This should reduce the stress and pilot burnout that has been experienced in the past. Jeff informed the committee that WHOI has now hired Dan Fornari as a science liaison to the operators and that his efforts have been very well received.

On the down side, the 1994 budget restrictions have caused the reduction of over one man year requested engineering shore support and have reduced requested equipment funding by 62 percent. The operator believes that any further cuts would jeopardize safety. This shortfall in funding could also affect WHOI's reputation as an operator, making it difficult to competitively and effectively bid for continued operation of the facility.

An Imagining Upgrade Proposal for approximately $300K has been funded in 1994 and is being carried out. Two main factors contributing to its success: (1) it incorporated an integrated community input and (2) the proposal identified a specific product. The proposal was submitted separately from the operating proposal. It included the purchase of a three-chip CCD camera as well as an additional one-chip camera. It also included the purchase of HMI lighting and ranging/scaling lasers. DESSC is working on a near and long term vision for the outfitting of the National Facility. It will be presented to the community at the December DESSC meeting to gain a consensus of the community. This vision will include the upgrade of navigation systems for ALVIN and will address the needs of both ROVs and AUVs.

A total of 33 new proposals were received in addition to six requests from last year for a total of 442 ALVIN dive days for the 1995 operating year. Of these dives approximately 200 are already indicated as funded. Because of scheduling constraints about 170 of these dives will be scheduled. This precludes the scheduling of any proposed dives submitted to NSF for review in May.

The 1994 operating year will end in Woods Hole with a stand down in December and January, 1995. Operations will resume with work in the central North Atlantic for the first part of 1995. Work will continue in the traditional areas of the eastern Pacific working northwards and then southwards. The year is scheduled to end with work in the equatorial waters of the eastern Pacific. A possibility of Southern EPR work could materialize based on proposal pressure and funding decisions for the early part of 1996. ATLANTIS II will then transit back to WHOI for retirement and the transferring of ALVIN handling equipment to KNORR.

In a DESSC analysis of the 33 proposals received for use of ALVIN, it was determined that approximately half of these could be done as or more effectively on ROVs. DESSC will communicate this message to the community and funding agencies encouraging users to consider alternative platforms.

Jeff reports that 1996 will be a defining moment for deep submergence science as KNORR becomes the submersible handling ship for the Deep Submergence Facility. This will provide a new threshold of capability. KNORR's conversion should take approximately three months to complete. During KNORR'S conversion period, ALVIN will undergo a six month overhaul. KNORR/ALVIN operations will resume in mid 1996. This schedule will not permit ALVIN to operate in the Juan de Fuca area during the 1996 weather window. Time series work will need to seek alternate platforms such as ROVs or other manned submersibles. KNORR's operation profile for 1996 will probably include work in the Atlantic and other traditional regions. Southern EPR operations are possible if proposal pressure dictates.

A discussion followed about ROVs and the lack of proposal requesting their use. Jeff suggested that there were two factors for this under utilization. First, the community is conservative in their selection of platforms. ALVIN is a familiar, proven capability;

whereas, with ROVs there is the fear of the unknown. Secondly, MEDEA/JASON's transition from a development tool to research tool was prematurely sold to the community. The capabilities of the ROV as a research tool may soon be presented to the community with the publishing of the results from two ROV field programs. This may increase credibility of the systems for future peer reviews. Another factor which may be affecting the number of requests for ROVs is the additional costs associated with using ROVs and towed vehicles. It was recommended that a "how to" capabilities video of MEDEA/JASON be presented at the DESSC fall meeting. It was also pointed out that AGOR 24 and 25, KNORR, MELVILLE and EWING will have traction winches, increasing the fly-away capability of the ROV system.

Don Heinrichs informed the Committee that a new tripartite (NSF/ONR/NOAA) MOA for support of the National DSF will be needed in 1995. The first meeting for this MOA will be scheduled in late 1994 with follow on meetings scheduled for next year.

Garry Brass reported that UNOLS hosted a NOAA/NURP review in June for proposals to use the Navy's submersible TURTLE and ATV. Approximately 14 dives will be funded for a September opportunity in the Juan de Fuca area. In March, UNOLS hosted a NOAA/NURP review for use of the Navy's research submarine, NR-1. Approximately 40 days of research were selected for funding.

Marty Mulhern reported that there is nothing new to report on the status of NOAA/NURP's Organic Act. It is still moving through Congress. Changes have been made that indicate that funding for NURP would only include support for ALVIN and the NURP centers.

FLEET IMPROVEMENT COMMITTEE - Marcus Langseth reported the progress of the Fleet Improvement Committee. The Coastal Workshop report has been completed and will be published as soon as the cover letter is ready. A Subcommittee with Don Wright as lead is working on Science Mission Requirements (SMR) for a coastal research vessel. Other members of this subcommittee are Peter Betzer, Tom Royer and Marcus. They plan to include case studies of coastal research operations and programs in the SMR.

Tom Royer gave the Council an update on the Arctic Research Vessel (ARV). A Preliminary Design Report has been completed and is about to be published. This will go out as a UNOLS report to the communities with a distribution of 400-500. The University of Alaska has submitted a proposal to NSF for funds to begin contractual designs, investigate potential shipyards and perform additional model testing. In the meantime, GAO is studying the pros and cons of lease vs purchase for the ARV. They will be looking at: 1) Lease Purchase; 2) Lease; 3) Capital Construction; and 4) Amortized Purchase. Their report was scheduled for completion by 31 August, however, it most likely will not be out until the end of October. The late receipt of the report may preclude funding in the 1996 NSF budget. The new NSF budget rules will place the ARV construction request in the line item of Major Research Equipment. To

qualify for this line item a separate Panel must review the request. It will probably not be possible to charter such a panel until late 1994 or 1995 suggesting that the 1997 budget would be the first opportunity to include the ARV construction request.

LCDR Bob Garrett of the USCG said that their two icebreakers plan a schedule of 185 operating days per year on a two year average and the Antarctic was their primary mission. Bob also said that their new icebreaker under construction, HEALEY, most likely will spend much of its time operating in the Arctic for the purpose of conducting science.

It was recommended that the UNOLS Annual Meeting could include an update from the PALMER Subcommittee on its progress.

Mark reported that the terms of Peter Betzer, Don Wright, Charlie Miller and Teri Chereskin as well as his own have expired. Peter and Don have agreed to stay on. Replacements for Charlie, Teri and the Chair would be presented to the UNOLS Chair for approval. A letter from Mark to the UNOLS Chair presenting two candidates is included as **Appendix III**. The next FIC meeting is scheduled for 3-4 October and will be held at Lamont-Doherty.

SHIP SCHEDULING COMMITTEE - The Ship Scheduling Committee report was provided by the Chair of that committee, Ken Palfrey. Ken reported that the 1994 schedules were well underway. The only issue unresolved at the time of the last Council meeting was the KNORR schedule and whether or not it would go to the Indian Ocean. KNORR is scheduled to work in the Mediterranean in the latter part of 1994 then proceed to the Indian Ocean for WOCE work. Ken reported that both WECOMA and ENDEAVOR were back in service and that OCEANUS had completed its yard period.

He also explained that the Scheduling Committee had implemented the new meeting plan in June whereby ship schedules and cost figures were submitted by electronic means and only the Scheduling Review Group would meet to resolve scheduling conflicts. The normal meeting procedure would be in effect for the September meeting. Ken felt that this new procedure seemed to work, however, several institutions failed to get their information posted in a timely manner. Track charts were not provided by two major institutions. More cooperation would be needed if this cost savings procedure is to succeed.

Ken reported that the largest ships were over-employed in 1995. This is caused primarily by the fact that three of the largest ships will be in the Indian Ocean where, for efficiency sake, very little down time is scheduled. The year of 1995 will see an under use of the intermediate ships with a need to lay up COLUMBUS ISELIN. The fall Scheduling meeting will be held at the NSF Building in Arlington, VA, on 15 September 1994. A new Ship Scheduling Committee Chair and Vice Chair recommendations will be forwarded to the Council and Chair. Ron Hutchinson and

Mike Prince make up the nominating committee for the candidates. A Schedule Review Meeting will follow the Scheduling Meeting.

RESEARCH VESSEL TECHNICAL ENHANCEMENT COMMITTEE - Rich Findley provided the report for the RVTEC committee. Rich informed the Council that the RVTEC Annual Meeting will be held in Miami on 19-21 October. A tour of General Oceanic is planned as well as tours of RSMAS, NOAA and the ships of both organizations. RVTEC is planning a half day workshop on NET CDF common data formatting. Workshops are also planned for salinometers and chirp sonar systems. Rich reported that nominations of an RVTEC Chair will be on the agenda.

AGENCY REPORTS

OFFICE OF NAVAL RESEARCH - The ONR report was provided by Keith Kaulum. Keith first reviewed personnel changes that were taking place at ONR. June Keller left ONR in June and Keith has set his retirement date at 26 August 1994. Annette DeSilva will be filling in for six month at ONR to help out with the transition. Advertisement for a permanent employee to the research facilities office is planned.

Keith reported that the thrusters on THOMPSON have had two gear failures. MELVILLE had also experienced a gear failure after its mid-life overhaul. NAVSEA was able to provide THOMPSON with the gears for AGOR-24 and are using this opportunity as a test bed to determine the cause of the failure. The gears were installed in THOMPSON and tested on Puget Sound. The tests have not been definitive to date, however, there is no reason to believe they are being over torqued. NAVSEA considers this a serious problem and is dedicated to its resolution. The gears in KNORR are scheduled for inspection prior to its deployment to the Mediterranean and Indian Ocean. The Council expressed concern since a gear failure on KNORR could impact the WOCE program.

Jim Andrews brought the Council up to date on the proposed House cut of $900M from the DOD 1995 academic research budget. The ONR portion of this cut would leave approximately $100M for basic research which would be devastating. Many iterations of this cut are expected before the final bill is passed. It will be necessary to stay tuned. Keith anticipates that ONR Ship Support will be level at $3.4 to 3.8M.

Keith completed the ONR presentation by stating his concern with the over-scheduling of the ships in the Indian Ocean. He believes there is no margin for error in the schedules and that it is likely that science will be lost if there is equipment failure.

NATIONAL SCIENCE FOUNDATION - Don Heinrichs provided the NSF update by first reporting personnel changes. Lisa Rom will be on maternity leave until mid September and Dolly Dieter's IPA ends in March 1995 unless it is extended. Grant Gross will be retiring from NSF on 1 October 1994. He will become the new head of the Chesapeake Research Consortium. Mike Reeve and Don Heinrichs will be rotating

as acting Division Director while a national search is performed. It is expected that the position will be filled in the fall.

A modest 5% increase in the 1995 NSF budget has been proposed. Ocean Science is requesting $207.9M which is an increase of $19M or 10.1%. The budget is now in the House and should go to the Senate in mid August. Don's viewgraphs of the NSF FY 1995 Budget Request are included as **Appendix IV**. Also included in the appendix are bar graphs reflecting the operating costs for the UNOLS fleet over the past six years. The graph reflects a steady increase in funding. Mark Langseth suggested that his figures, used in the Fleet Improvement Report, paint a different picture. Mark's figures covered a ten year period and factored in a 4% inflation factor. This resulted in a flat funding picture. Don also displayed viewgraphs which represented the 1994 costs of each of the ships divided by class.

Don reported that no science in 1994 was left on the beach for lack of ship funding. Three intermediate ships were given mid life refits out of the operating budget. Garry Brass related that in spite of the increase in NSF funding ($23M over the past six years) the ships were getting pinched for funding and that maintenance would suffer. It was also brought out that science funding has been growing faster than ship operations funding. Don related that over the past several years science funding has gone from 63% (verses 37% for ships ops) to 68% (verses 32% for ship ops). Don pointed out that while NSF funding for ship ops has been increasing, albeit not as fast as science funding, the non-NSF funding (e.g.ONR/NOAA/Other) has in total remained constant.

Don informed the Council that the language in the 1994 budget appropriations said that at least 60% of the NSF funds must be spent on "Strategic Research". This language will not affect the 1994 or 1995 budgets but will cause the 1996 budget to be restructured and centered on initiatives. A "Matrix Management System" will be installed to accommodate this requirement.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION - Captain Martin Mulhern provided the report for NOAA by first reviewing personnel changes. Charlie Kearse, the Director of the Fleet Replacement & Modernization Project Office, accepted a NOAA-wide retirement opportunity and retired this spring. Admiral Stubblefield and Captain Don Spillman will be jointly filling the role of the FRAM Project Office Director. Admiral Peterson, Director of the NOAA Corps, will be retiring in the October/November time frame. The selection process is underway for his replacement.

The NOAA FY 95 budget for marine and aircraft services is expected to be essentially level funded. A 1995-2005 NOAA-wide strategic plan has been developed. Beginning in FY 96 the NOAA budget will be constructed around the seven program elements of the strategic plan in essentially a "matrix management" approach.

An RFP has been issued to convert NOAA's T-AGOS to support the Tropical Ocean-Atmosphere (TAO) array in the equatorial Pacific. An RFP is expected later this year for the Repair To Extend (RTE) overhaul for DELAWARE II. This will take DELAWARE II out of service for one year during which time NOAA will need to charter a fishing type vessel as a substitute. Later this summer an RFP is expected to be issued to design a low endurance fisheries vessel which will be built to a Circular of Requirements. The recent Marine Board study of NOAA's Fleet Modernization and replacement plan is under review by a committee of Program Managers from the line organizations of NOAA, to consider the wide ranging recommendations of this study and propose action.

Marty said that National Ocean Survey of NOAA has dropped the comprehensive mapping of the EEZ for the present in favor of higher priority charting of inshore coastal areas. Marty passed on kudos to the State Department for assistance with foreign research clearances of two NOAA operations in Russian water. NOAA and NSF are working to resolve the ship time assigned to the GLOBEC program. Presently, 53 ship days have been assigned to NOAA ships, which is short of the days needed for GLOBEC. NMFS and the GLOBEC program are making a concerted effort to resolve the issue.

NOAA is working on the problem of pier space in Hawaii. Presently the NOAA ships are co-located with those of the University of Hawaii, an arrangement that has been very successful. Because the State has added a vessel and space is very limited, NOAA is searching for an alternative that will accommodate the planned addition of the T-AGOS vessel supporting the TAO array. They have been talking with the Navy about an interim solution at Pearl Harbor as well as the U.S. Coast Guard and others, but in the long run would like to continue the co-location with U of Hawaii at the new marine facility planned for the University.

UNITED STATES COAST GUARD - LCDR Bob Garrett provided a report from the USCG starting first with personnel matters. Admiral Robert Kramek has replaced Admiral Kime as Commandant of the Coast Guard. Admiral Pennington has replaced Admiral Bill Eckerd as Chief of the Office of Navigation. Captain Al Walker retired in June and will be replaced by Captain Alan Summy. LCDR Bill Davis has been replaced by LCDR Steve Wheeler.

Bob reported that the USCG will be taking a $100M cut and a reduction of 100 persons for 1995. Their Polar Programs funding will remain about the same, however, they will be cutting 10 persons per ship. Polar vessel support will be $39M. POLAR STAR is completing its overhaul and will sail to the Arctic for trials. Plans call for an operational level on each of their two icebreakers of 185 days/year on a two year average. POLAR STAR will commence an Antarctic cruise in October. The Arctic Ice Ocean Expedition (AIOE) is planning a 50-80 day expedition in 1995 to the Arctic with ODEN and POLARSTERN. USCG participation will depend on the availability of funding.

The design for the new USCG icebreaker HEALEY will be frozen in October. The ship is expected to be completed in 1997 and delivered in 1998

Garry Brass encouraged the Coast Guard to form a Standing Science Committee to assist with science issues during the construction and operation of HEALEY. Garry reiterated that input from sea going scientists is imperative for successfully operating a research platform.

DEPARTMENT OF STATE - The report from the State Department was presented by Tom Cocke. In reviewing coastal state problems, Tom reported that France has indicated an unwillingness to process late clearance requests. Since half of all requests are submitted late this could be a problem. Peru and Honduras have issued new regulations that require that they put three people aboard ships operating in their waters. Compliance with this requirement will be difficult if not impossible particularly considering many cruises pass through several coastal states. Chile has been trying to implement a 20 year old regulation that does not comply with the Law of the Sea. Tom informed the Council that the US plans to sign the Law of the Sea Treaty, however, ratification by Congress may be a different matter. Russian clearances have becoming more difficult to obtain. Russia has declined seven straight requests, even those that are joint ventures with Russian scientists. The NOAA cruises have been the only exception. Brazil may be easing their rules on data handling which should help the post cruise requirements.

ENVIRONMENTAL PROTECTION AGENCY - Jack Bash reported that dummy cruises were cost out by several UNOLS operators at the request of EPA to determine the cost effectiveness of using UNOLS ship. EPA is considering retiring ANDERSON and is looking for alternatives. The result of their study has not yet been published.

UNOLS ISSUES

Scientific Opportunities on Nuclear Submarines (SOONS)- Garry Brass led the discussion on recent activities to gain future opportunities on Navy nuclear submarines. He started by reviewing the experience of the work done in PARGO during a 40 day cruise in late summer of last year. Scientists from that cruise were pleased with the opportunity to participate. Planning is now underway for the follow-on effort. An MOA between the Navy, NSF, USGS and NOAA is making its rounds for signature. This MOA outlines the opportunities to use a nuclear submarine for Arctic Ocean science for 60-70 days per year for the next five years starting in 1995. A Science Steering Committee is being formed to put together the science programs on these cruises. Tom Curtin is the key science contact person. A Broad Area Announcement has been issued and is very specific to the 1995 cruise. The Council noted that the planning time available for the 1995 cruise is already tight and that 1996 planning should start at this time.

Garry continued with information on the "White Submarine" proposal being circulated by Dave McKinley and Paul Temple of the Naval Undersea Warfare Center (NUWC). The proposal suggests that the USS MENDELL RIVERS, a 637 class submarine, be converted to a research submarine for academic scientists rather than being decommissioned in 1999 as planned. This submarine was recommended because it has been stretched, recored and can be operated under the ice. The ship would need to go through a "Sub Safe" overhaul in 1999 for approximately $50M and would have a useful operating life of eight years. The sub would be available for under ice research as well as a myriad of tasks such as working in harsh environments (storms), drifting in the water column and extended sampling at depth not possible by surface ships. An annual operating cost of $9-10M is estimated. Garry reports that briefings on the concept have been well received to date.

UNOLS will work with NUWC to organize a workshop for the fall and develop a SOONS II report. NUWC has agreed to provide a portion of the funding for this workshop. UNOLS will submit a Supplemental proposal for the remainder of the funding.

Arctic System Science for Oceans/Atmospheric Ice Interaction (ARCSS OAII) Request - Garry discussed the letter from Richard Mortiz, Chair ARCSS OAII Steering Committee, **Appendix V,** that requested UNOLS formally establish an activity to collect and disseminate information on the use of ocean-going research platforms in the Arctic Ocean and its marginal and adjacent seas. Considerable discussion followed. It was finally concluded that UNOLS should work with the ARCSS OAII and jointly conduct a "Town Meeting" type event at the spring AGU ASLO Ocean Sciences Meeting. It was suggested that the format followed by DESSC at the fall AGU meeting could be used as a guide. After this trial meeting the role of UNOLS would be evaluated and the decision for future involvement would be determined. It was also suggested that as a first step the USCG Icebreaker schedules could be sent to UNOLS via OMNET and posted on the Ship Scheduling bulletin boards.

Fleet Improvement Plan Update - The UNOLS Office had mailed to the Council the latest draft of the Fleet Improvement Plan for review prior to this meeting. Marcus Langseth led the discussion on this review with the goal to collect the comments and, after a last distribution of the draft, publish the Plan. Discussion revolved mostly around the Arctic Research Vessel portion of the report. Don Heinrichs assured the Council that funds to support this ship would not be taken from the present fleet operations but would be designated from funds already marked for Arctic research or from new money. Marcus received several comments and encouraged the Council to send in any other comments within the next week. He would incorporate these comments, route around a final draft, then go to press. Garry will write a cover letter that will encourage the federal agencies to utilize UNOLS ships rather than chartering elsewhere or constructing their own vessels.

New Funding Paradigm for Support of National Deep Submergence Assets - Jeff Fox provided the Council with an update on the subcommittee (Fox, Karl and Wall) investigating a new funding paradigm for support of national deep submergence assets. Jeff reported that at present there are unresolved issues delaying further action in this area. Congress has pending legislation with a NOAA/NURP Organic Act which should strengthen the NOAA/NURP program and provide a budget line item ensuring their long term support. It is the desire of NOAA that this legislation would also give more support at the National level to allow a better coordinated effort of management. In addition, the DESSC Workshop report, *The Global Abyss: An assessment of Deep Submergence Science in the United States,* is soon to be published and provides a plan to coordinate the deep submergence assets. When these issues are in place, it will be time to schedule a meeting with NOAA's Ned Ostenso and explore possible funding paradigms.

DESSC Workshop Report - A final draft of the DESSC's Workshop report titled *The Global Abyss: An assessment of Deep Submergence Science in the United States* was distributed before the meeting. Jeff Fox explained that the report had two basic recommendations. First, the deep submergence community should increase its links and network its infrastructure in a more effective way and secondly federal agency cross-cutting is necessary for articulating increased and steady support for the deep submergence assets of the United States. A lead agency needs to be identified. Jeff opened the floor for comment. It was decided that any comments received would be incorporated and that the report would go to press when the executive summary was completed.

KNORR Conversion - Dick Pittenger provided slides, **Appendix VI**, and an update on the KNORR conversion to a submersible handling ship. KNORR should return from the Indian Ocean in the early part of 1996 when it would start the conversion. ATLANTIS II will also be returning to WHOI in this same time frame to permit cross-decking of the A-frame. ALVIN will enter a six month overhaul when it returns to WHOI. It is expected that the KNORR conversion will take about three months. The extent of the conversion is yet to be determined but will be driven by the funds available. The installation of SeaBeam in KNORR this summer has provided a good start to the conversion process. The preservation of the ship's ability to do general oceanography will have a high priority. Glosten & Associates will have the latest iteration of the conversion design options and associated costs ready by mid August for WHOI and the DESSC/FIC subcommittee to review. An increase in berthing is a priority of the science user community as well as increasing storage space and habitability (recreation area). The sale of AII will be the primary source of funds although WHOI is exploring the possibility of other monies.

Radio Officers - The radio officer issue was explained by Dick Pittenger. The House has passed a bill stating that ships operating in accordance with the Global Maritime Distress and Safety of Life at Sea Convention shall not be required to carry a radio officer. A quote of this draft amendment is included as **Appendix VII.** The Senate is

now looking at the amendment and indications are that the sea-going unions are not in favor of the amendment which could cause its demise. If the House version does not prevail it may be possible to insert during conference an exemption for research vessels.

GPS Status - Dick explained that the DOD-NSF MOU is in place permitting three institutions (WHOI, Scripps and U of Washington) to use P-Code receivers for GPS on their ships. After a year of trial, the MOU will be evaluated with the expectation that all UNOLS operating institutions will be able to use the P-Code receivers. Dick suggested that the security persons at WHOI, Scripps and U of Washington could be used as a resource to service other institution ships rather than setting up a full clearance process at each institution. A summary of the GPS status is included as **Appendix VIII.**

UNOLS Vessel in Hawaii - No confirmed information was available on the possible replacement for MOANA WAVE or the long range plans of the University of Hawaii. Some discussion followed on the Hawaii Ocean R & D newsletter that announced that ONR had provided $9.3M for the design and construction of a prototype SWATH vessel for the State of Hawaii. Jack Bash was informed that this vessel would not go to U of Hawaii but would go to the tourist trade business of Hawaii.

Security Measures for Indian Ocean Operations - Dick Pittenger brought to the attention of the Council his concerns for the need of security measures for the ships and scientists during the several ship years of work in the Indian Ocean. Bob Garrett provided Dick with extensive literature available to the Coast Guard on these issues. Dick will pass this information along to Scripps and U of Washington. It was also discussed that the State Department should be able to provide briefings for the scientists as they will be travelling in and out of countries known for terrorism and piracy.

Ship Refits/Construction - Ken Palfrey provided the Council with the latest information on the OCEANUS Class midlife refits and advertisement problems. All three ships have now completed their refits. The admeasurement problem has been solved, at least for the moment. WECOMA completed the physical changes required to bring the ship under 300 gross tons for admeasurement purposes by adding steel to the shaft alley and closing several lightning holes. The cost to make this fix was just under $300K. ENDEAVOR and OCEANUS have received letters from the USCG stating that "these ships are deemed to continue to measure less than 300 gross tons pending development and publication of an appropriate policy statement dealing with deep-framing techniques". It is not known whether or not the USCG will aggressively pursue this issue or just let it remain idle. No further action is planned by WHOI or URI at this time.

Keith Kaulum said that the gears in the Z-drive propulsion units for AGOR 24/25 were of concern to ONR and NAVSEA and that further study was in progress. It is not known if the failure of these gears in MELVILLE and THOMPSON are a design

problem or possibly a manufacturing problem. Keith said that AGOR 24 construction was on track and delivery is expected in early 1996. He said that NAVSEA was hesitant on issuing any additional change orders for this ship. The WHOI shipyard representative for construction of AGOR 25 is now in place. Dick Pittenger said that the keel laying ceremony for AGOR 25 is scheduled for 16 August and that the shipyard expects to be completed ahead of schedule with a tentative delivery date of April 1997.

Usefulness of Vans - Jack Bash suggested that a study be made concerning the usefulness of vans aboard research vessels. He said there are many successful vans in use and also some that are not so successful, but there is no definitive study laying out the pros and cons for van design and use. The Council recommended that the FIC take this study for action and that RVOC and RVTEC provide input.

SeaNet Update - Garry Brass reported that he understood that a proposal has been submitted by JOI to do a sea trial for SeaNet. Don Heinrichs said that the proposal was for a 90 day trial of SeaNet on both EWING and THOMPSON. The THOMPSON trial will take place during the JGOFS program in the Indian Ocean. Rich Findley said that it was the recommendation of RVTEC that if SeaNet was to be introduced into the fleet that it be provided to all UNOLS ships and not just the large ones. The Council seemed in general agreement with this.

UNOLS Office Budget - Jack Bash provided a brief review of the UNOLS budget and how the recently imposed 7% cut could be handled. DESSC has agreed to hold only two meetings vice the planned three. Garry suggested that UNOLS could cancel its winter Council meeting to save funds, however, he felt the new Chair should have input in this matter. Jack reported that these two efforts plus the reduced contract for the clipping service and careful management could satisfy the cut. Jack also reported that over $40K had been saved in the re-bidding of the medical advisory service contract prior to the recent cut. Don Heinrichs then provided several slides, **Appendix IX**, that divided the UNOLS budget into various components. He also discussed that the support from MMS would not be available this year and that NOAA and ONR had reduced their support by small amounts. The total of these three reductions equalled 7.7%. The Council agreed to study the UNOLS budget after the Annual meeting when a new chairperson would be in place.

UNOLS Council Membership - Dick Pittenger, Chair of the UNOLS Council Nominating Committee, reviewed the progress of that committee. The terms of Garry Brass, Chair; Peter Betzer, Vice Chair; Dennis Hayes, Rick Jahnke and Chuck Nittrouer are expiring. All positions except that of Garry's are eligible for a second term. The nominating committee has developed a partial slate and will have a full slate in time for the thirty day notice required by the UNOLS charter.

Annual Meeting - Garry informed the Council that the Annual Meeting is scheduled for 20 September 1994 with the next Council Meeting to be held on the preceding day, 19 September. The meeting location will be at the new NSF Building in Arlington, VA. Garry asked for recommendations for keynote speakers for the Annual Meeting.

UNOLS Meeting Calendar

Meeting	Dates	Locations
Ship Scheduling Committee	15 Sep 1994	Arlington, VA
Ship Scheduling Review	16 Sep 1994	Arlington, VA
UNOLS Council	19 Sep 1994	Arlington, VA
UNOLS Annual	20 Sep 1994	Arlington, Va
Fleet Improvement Committee	3-4 Oct 1994	Palisades, NY
RVTEC	19-21 Oct 1994	Miami, FL
RVOC	25-27 Oct 1994	Savannah, GA
DESSC	4 Dec 1994	San Francisco, CA

Adjournment

The meeting was adjourned at 1305 hrs.

APPENDIX I

ATTENDEES

NAME	INSTITUTION/AGENCY
UNOLS COUNCIL:	
Garry Brass, Chair	U of Miami
Peter Betzer	U of So Florida
Rich Findley	U of Miami
Jeff Fox	U of Rhode Island
Dennis Hayes	LDEO
Marcus Langseth	LDEO
Ken Palfrey	OSU
Dick Pittenger	WHOI
Mike Prince	MLML
Tom Royer	U of Alaska
Robert Wall	U of Maine
OTHER PARTICIPANTS:	
Jim Andrews	ONR
Jack Bash	UNOLS
Tom Cocke	DOS
Annette DeSilva	UNOLS
LCDR Robert Garrett	USCG
Don Heinrichs	NSF
Keith Kaulum	ONR
Martin Mulhern	NOAA

APPENDIX II

REV B - 7/8/94

TENTATIVE AGENDA
UNOLS COUNCIL MEETING
8:30 a.m. - July 11-12, 1994
Darling Marine Center
University of Maine
Walpole, ME

Call the Meeting: Garry Brass, UNOLS Chair, will call the meeting to order at 0830 Jul 11, 1994.

Accept Minutes of March, 1994 Council Meeting.

COMMITTEE REPORTS

Research Vessel Operators Committee - Mike Prince, Chair, will provide a summary of the plans for the 1994 meeting in Savannah, GA..

DEep Submergence Science Committee - Jeff Fox, Chair, will report on the status of the 1994 ALVIN operations along with a summary of the DESSC Meetings held in May and June. This will include a summary of DESSC's recommendations for operations in 1995 and beyond. Jeff will provide an update on the status of the imaging improvements for ALVIN.

Fleet Improvement Committee - Marcus Langseth, Chair, will report on the Fleet Improvement Committee activities. These include the status of the Coastal Workshop Report, Science Mission Requirements for a Coastal Vessel, and the Arctic Research Vessel design status.

Ship Scheduling Committee - Ken Palfrey, Chair, will update the Council on the 1994 ship schedules and the status of the fleet's schedule for 1995.

Research Vessel Technical Enhancement Committee - Rich Findley will report on the plans for the 1994 RVTEC meeting to be held in Miami, Florida.

AGENCY REPORTS: Reports from representatives of NSF (D.Heinrichs), ONR (J. Andrews & K. Kaulum), NOAA (W. Stubblefield), NURP (D. Duane) and USCG (LCDR R. Garrett) on funding outlooks and special projects. The State Department (T. Cocke) will provide an update on foreign clearance problems. Pat Dennis of the Oceanographer of the Navy Office will report on OON matters.

UNOLS ISSUES

Scientific Opportunities on Nuclear Submarines - Garry Brass will report on recent activities to gain future opportunities on Navy Nuclear Submarines.

ARCSS OAII Request - The ARCSS OAII has requested that UNOLS collect and disseminate information on the use of ocean-going research platforms in the Arctic Ocean, see Attachment 1. Garry Brass will lead a discussion on this topic.

Fleet Improvement Plan Update - Marcus Langseth will review the draft update of the Fleet Improvement Plan.

LOBSTER BAKE
Monday, July 11, 1994 - 6:00 p.m.

New Funding Paradigm for Support of National Deep Submergence Assets - Jeff Fox will report on the subcommittee's (Fox, Karl, and Wall) efforts to formulate views on developing a new funding paradigm for support of national deep submergence assets.

DESSC Workshop Report - Jeff Fox will provide a review of the draft DESSC report, *The Global Abyss: An Assessment of Deep Submergence Science in the United States.*

KNORR CONVERSION - Dick Pittenger will provide an update on the plans for the KNORR conversion to support ship for submersibles and ROVs.

UNOLS Vessel at Hawaii - A discussion on the status of the University of Hawaii's efforts to find a replacement for MOANA WAVE.

Security Measures for Indian Ocean Operations - Dick Pittenger will lead a discussion on the need for special security measures for the upcoming field programs in the Indian Ocean. Regions of this ocean have been known for incidents of piracy, thuggery and the like.

Ship Refits/Construction - Ken Palfrey and Jack Bash will update the Council on the status of midlife refits and admeasurement issue for the OCEANUS class ships. Keith Kaulum and Dick Pittenger will report on the progress of the construction of AGOR 24 and AGOR 25.

Usefulness of Vans - Jack Bash will lead a discussion on the topic of vans and their usefulness in seagoing operations. The discussion will determine if a UNOLS study should be performed to investigate this issue further.

SeaNet Update - Garry Brass will provide an update on the status of the proposal to install SeaNet on UNOLS Vessels.

UNOLS Office Budget - The UNOLS Office has been requested to reduce their proposed budget. Jack Bash will review various options to lower the budget.

UNOLS Council Membership: Dick Pittenger, Nominating Committee Chair, will review the preliminary slate of candidates to replace those Council members completing terms. The terms of Garry Brass, Chair; Peter Betzer, Vice Chair; Dennis Hayes; Richard Jahnke; and Chuck Nittrouer are expiring. Betzer, Hayes, Jahnke and Nittrouer are eligible for second terms.

Annual Meeting - Garry Brass will briefly discuss plans for the UNOLS Annual Meeting scheduled for September 20th.

Calendar for UNOLS Meetings

Meeting Schedule:

MEETING	DATES	LOCATION
UNOLS Council	July 11-12, 1994	Walpole, ME
" "	Sep 19, 1994	Washington, DC
UNOLS Annual	Sep 20, 1994	Washington, DC
Ship Scheduling Committee	Sep 15-16, 1994	Washington, DC
Fleet Improvement Committee	Oct 3-4, 1994	Palisades, NY
RVTEC	Oct 19-21, 1994	Miami, FL
RVOC	Oct 25-27, 1994	Savannah, GA
DESSC	Dec 4, 1994	San Francisco, CA

Adjournment

APPENDIX III

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

FLEET IMPROVEMENT COMMITTEE
Marcus G. Langseth, Chairman
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Telephone 914 365-8518
FAX 914 365-8156

June 30, 1994

Prof. Garrett Brass
Rosenstiel School of Marine and Atmospheric Science
4600 Rickenbacher Causeway
Miami, Florida

Dear Garry,

As you know a sizable number of the current members of the Fleet Improvement Committee are scheduled to rotate off of the Committee this fall. The list of those rotating off include Mark Langseth (Lamont Doherty, Chair), Charles Miller (Oregon State), Terry Chereskin (Scripps), Peter Betzer (Univ. Southern Florida) and Don Wright (Virginia Institute of Marine Science). Peter Betzer and Don Wright have agreed to stay on an additional term. I view the fact that Peter and Don are willing to stay as very positive since facilities for coastal research will a major concern of the FIC during the next few years.

At the March meeting we discussed possible replacements for Charley and Terry. I have spoken on the phone with each of the persons who were suggested by the Committee with regard to their interest and willingness to serve on FIC. The two candidates who showed strong interest and a willingness to serve were

Suzanne Strom (Western Washington University, vitae attached)

Robert Detrick (Woods Hole Oceanographic Institution)

I recommend these candidates to you with the assurance that they would make excellent and committed members of the FIC. With Charley Miller leaving, Suzanne Strom could continue to represent biological oceanography on the Committee, and Bob Detrick, would ably represent marine geophysics in my stead.

Best regards .
Mark Langseth

cc: UNOLS Council
Fleet Improvement Committee

APPENDIX IV

NSF FY 1995 BUDGET REQUEST

NSF

- **Total Request is $3.200 Billion**
- **Increase of $182.2 Million or 6.0%**

	Total	Increases
Research and Related Activities	**$2348.7 M**	**$180.0M or 8.3%**
Education and Human Resource	**586.0 M**	**16.4M or 2.9%**
Academic Research Infrastructure	**55.0 M**	**-45.0M or -45.0%**
Major Research Equipment	**70.0 M**	**18.0M or 34.6%**
Salaries, Expenses, IG Office, Relocation	**140.3 M**	**12.8M or 10.0%**
• Major Research Initiatives		
Advanced Materials and Processing Program	**313.2 M**	**5.2M or 2.7%**
High Performance Computing and Comm.	**328.6 M**	**61.6M or 23.1%**
Biotechnology	**205.7 M**	**6.2M or 3.1%**
U.S. Global Change Research Program	**207.5 M**	**65.6M or 46.2%**
Environmental Research	**156.0 M**	**11.6M or 8.0%**
Advanced Manufacturing Technology	**196.3 M**	**5.2M or 2.7%**
Civil Infrastructure Systems	**54.1M**	**3.0M or 5.9%**
	$1461.4M	**$158.4M or 12.2%**
• Other Research Activities	**887.3M**	**$ 21.6M or 2.5%**

NSF FY 1995 BUDGET REQUEST

Ocean Sciences

- Total Request is $207.9 million
- Increase of $19.0 million or 10.1%

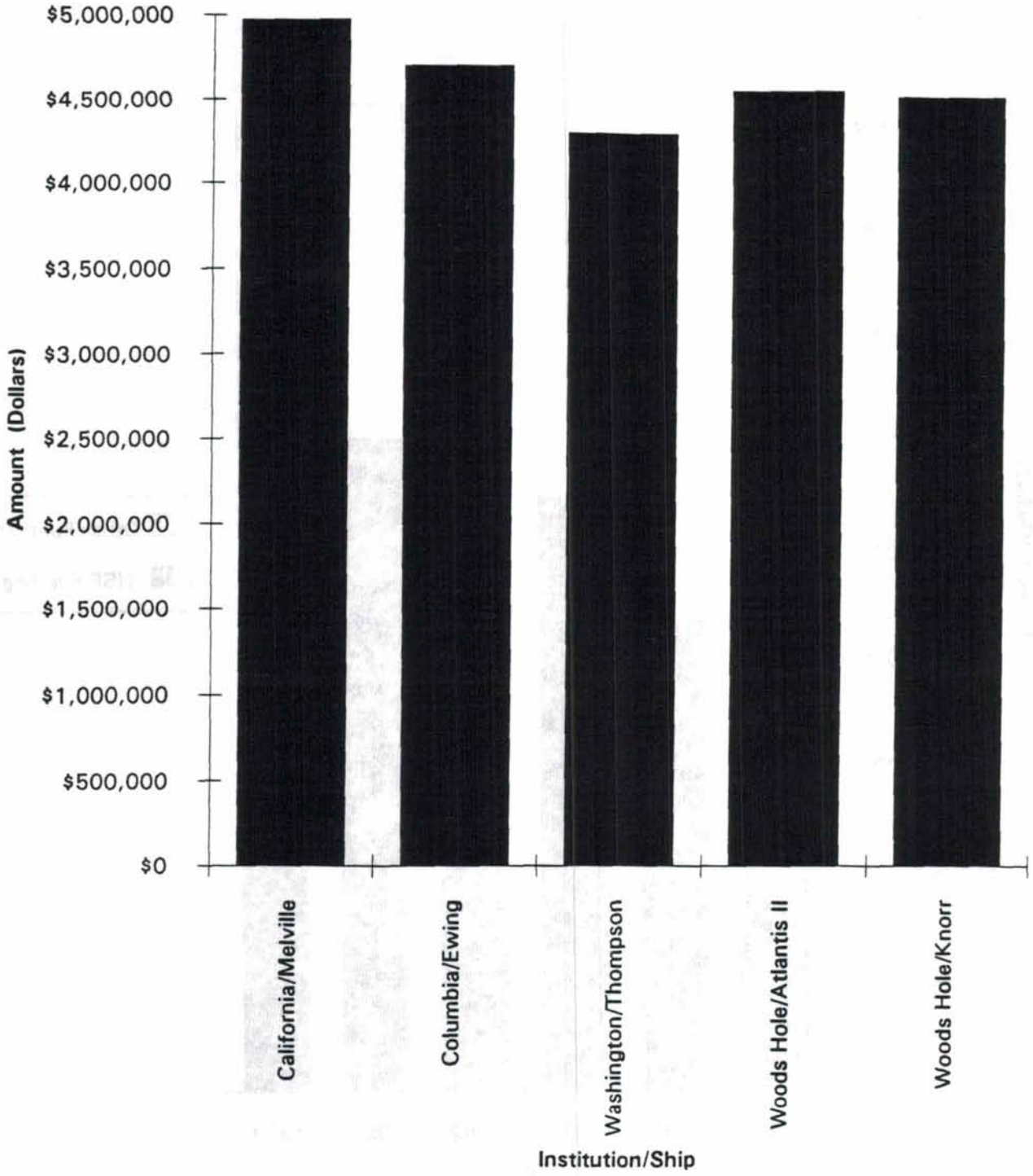
	Total	Increases
Ocean Science Research Support (OSRS)	$114.0M	$14.0M or 14.0%
Oceanographic Centers & Facilities (OCFS)	53.9M	3.7M or 7.3%
Ocean Drilling Program (ODP)	40.0M	1.3M or 3.4%

- Major Research Initiatives

Global Change Programs	71.4M	17.8M or 33.2%
Biotechnology	3.6M	-0.4M or -10.0%
High Performance Computing	1.6M	1.2M or 300.0%
Environmental Research	2.5M	0.5M or 25.0%
	$79.1M	$19.1M or 31.8%

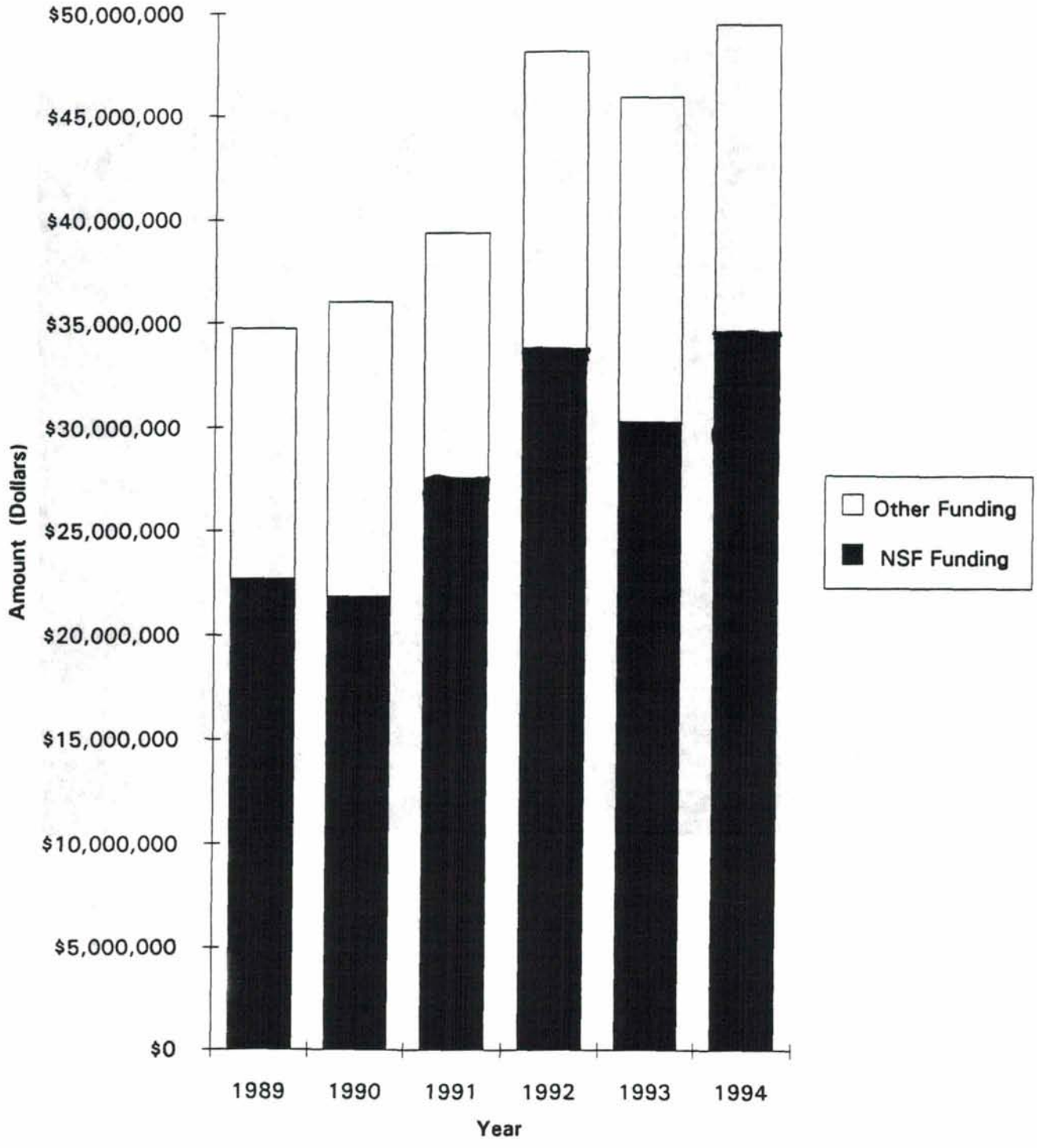
• Other Research activities	$128.8M	-$ 0.1M or 0.0%

Total Operating Costs, Large Class Ships, 1994



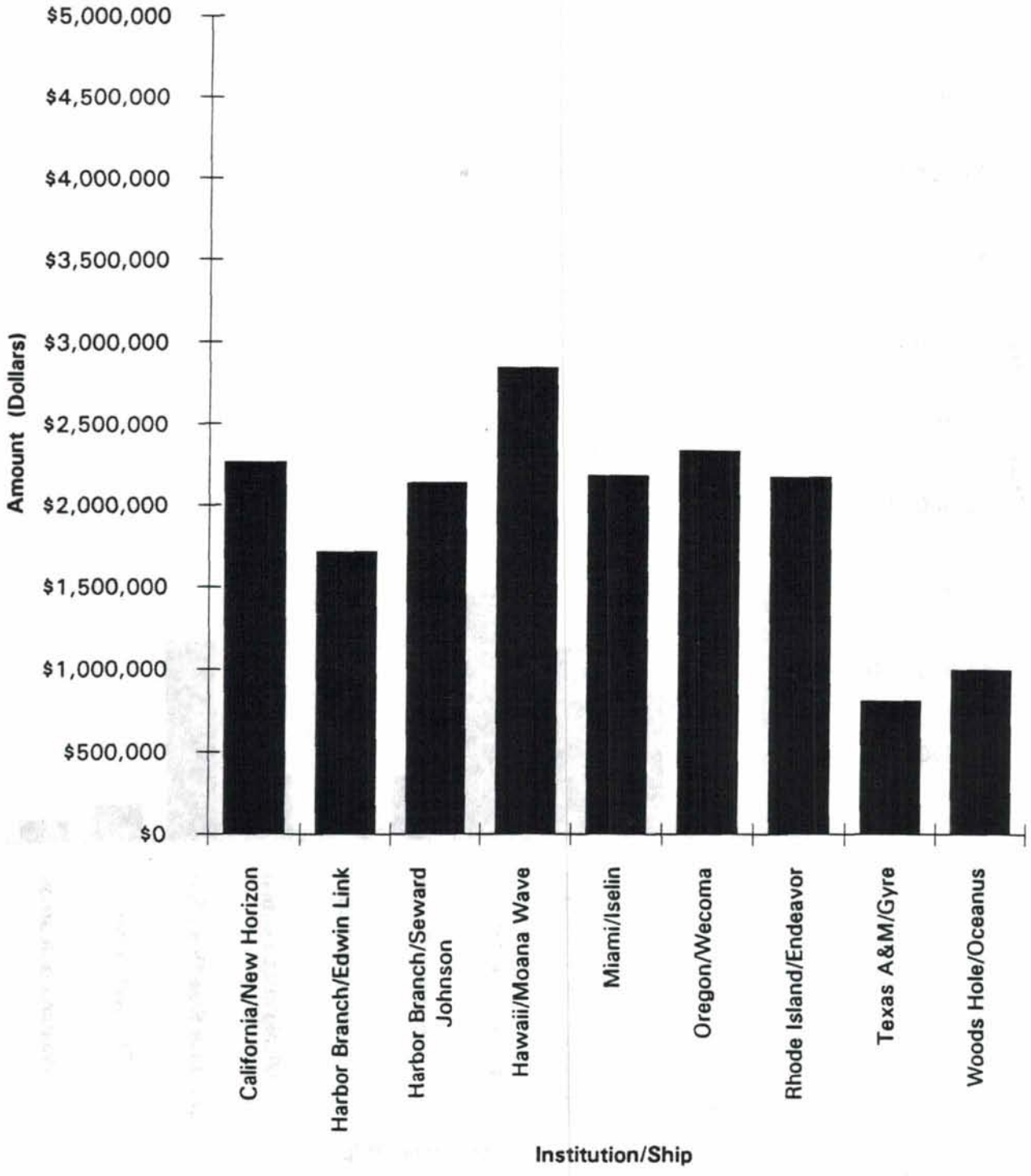
July 1994

Total Operating Costs, 1989-1994 (All Ships)



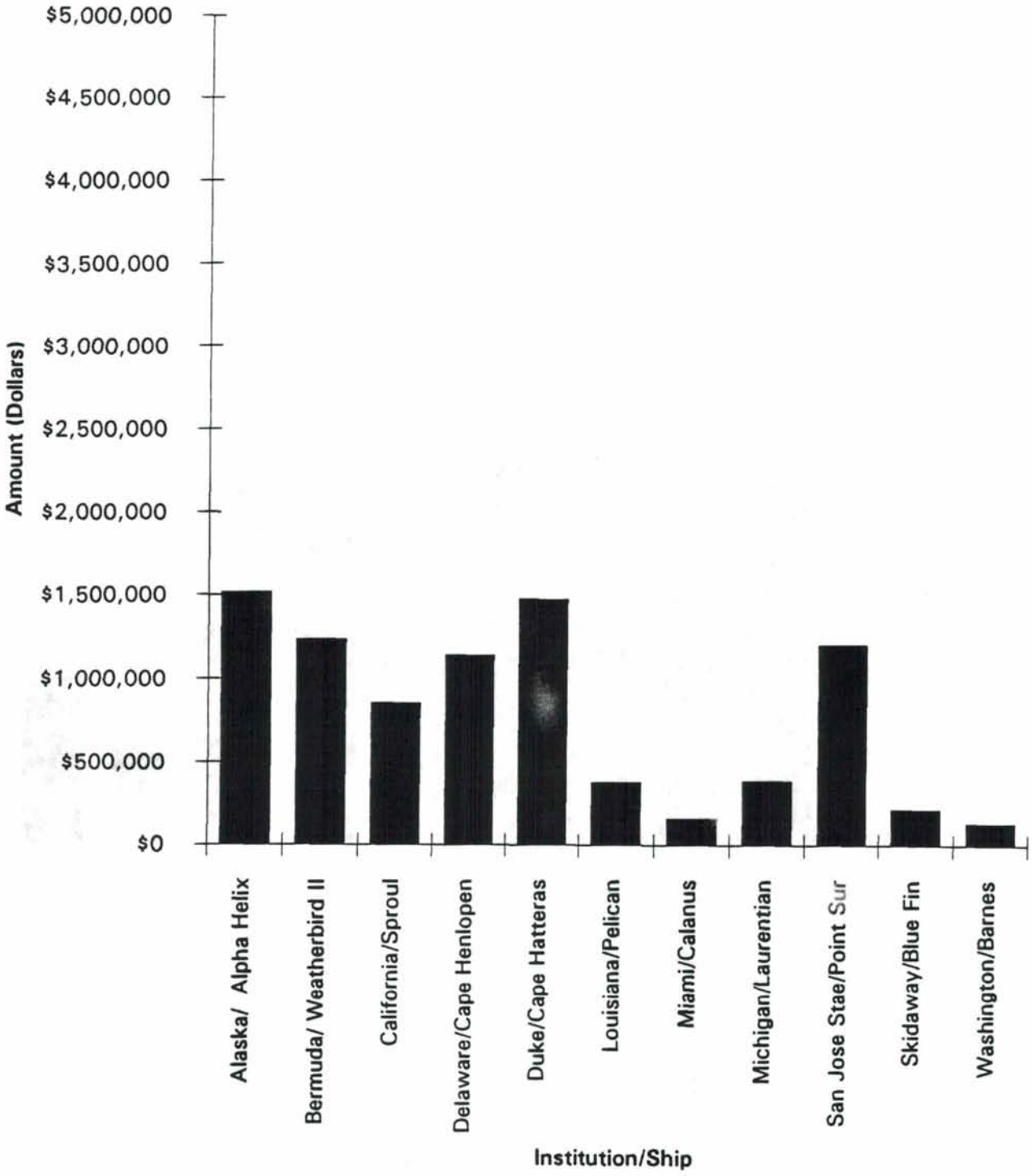
July 1994

Total Operating Costs, Intermediate Class Ships, 1994



July 1994

Total Operating Costs, Small Class Ships, 1994



July 1994

APPENDIX V

Attachment 1

Applied Physics Laboratory
College of Ocean and Fishery Sciences, University of Washington

AIR • SEA • ICE
Polar Science Center

15 April, 1994

Dr. Garrett Brass
Chair, UNOLS
RSMAS-MGG, Univ. of Miami
4600 Rickenbacker Csy.
Miami, FL 33149

Dear Dr. Brass:

During the past decade, there has been a significant increase of *in situ* oceanographic research operations in the Arctic Ocean and its marginal and adjacent seas. This change results from several factors: heightened awareness of the importance of the Arctic to the global environment; enhanced cooperation among national and international agencies and research groups concerned with the performance of research in the Arctic Ocean; greater availability of research platforms that can operate in the arctic marine environment. For example, the U.S. Coast Guard has upgraded its Polar Class icebreakers to support oceanographic research, and has conducted recent research cruises in the Bering, Chukchi and Greenland Seas, as well as in the Arctic Ocean proper; the U.S. Navy provided nuclear submarine support for gathering ocean and ice data during summer, 1993; and UNOLS has published design specifications for a new ice-capable research vessel to be used in support of arctic research.

The ARCSS OAII Science Steering Committee helps the scientific community define, prioritize, plan and implement effective research projects that address the important arctic issues relevant to global change and interdisciplinary system science. As part of this process, we believe it is vital to make efficient use of ocean-going research platforms in the Arctic, and to assure that pertinent information on research expeditions be made available to a broad community. This community includes research scientists, project science teams and steering committees, funding agencies, vessel operators and others. Effective communications and planning require that the community be international in scope.

Within the U.S. oceanographic community, UNOLS already plays a major role in collecting and coordinating information on proposed and planned ship operations, ship scheduling and facilities. **We are requesting that the UNOLS office formally establish an activity to collect and disseminate information on the use of ocean-going research platforms in the Arctic Ocean and its marginal and adjacent seas.** The scope of this activity would include facilitation of expedition planning, vessel scheduling and project

1013 NE 40th Street Seattle, Washington 98105-6698 (206) 543-6613 FAX (206) 543-3521

coordination relevant to ships and other facilities.

Although the details of the requested activity will have to be worked out by the UNOLS office and others, we suggest that the following three items be considered:

(1) Establish and continually update a data base that contains information on planned and proposed facilities operations in the Arctic, including participating projects, groups and agencies, primary uses of the facility, ability to accomodate additional personnel and ability to accomodate additional science investigations.

(2) Disseminate this information to the community by appropriate means.

(3) Organize and conduct an annual meeting on Facilities Planning for the Arctic Ocean and its Marginal and Adjacent Seas. This meeting might be most effective if conducted in conjunction with a large scientific gathering, such as the Spring AGU Meeting. To be most effective, such a meeting would be organized to include representatives from the U.S. research funding agencies, the U.S. Coast Guard, the U.S. Navy, non-U.S. organizations concerned with arctic ship operations, and interested scientists and project teams from the U.S. and other countries.

While we believe that the activity described above would be helpful to the Arctic System Science Program, its potential scope goes considerably beyond ARCSS. We are ready to work together with UNOLS to further define an optimal activity of this kind.

Sincerely yours,

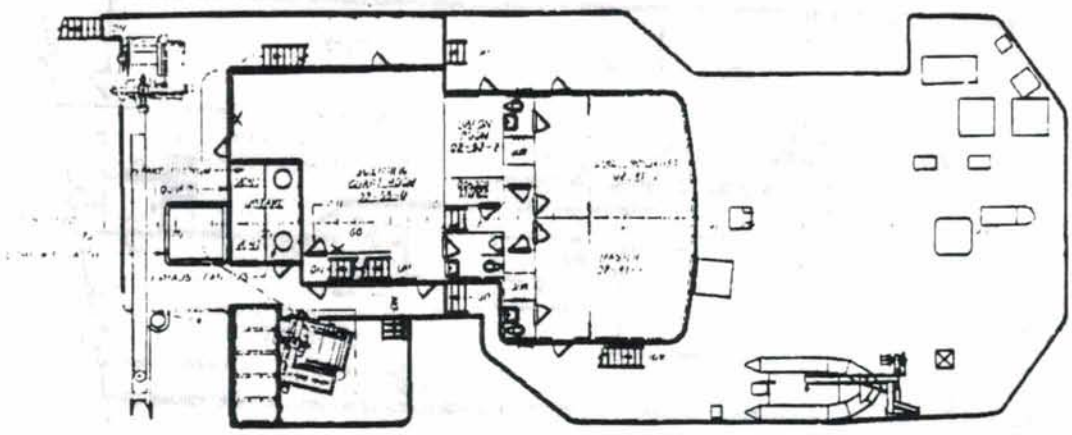
Richard E. Moritz
Chair, ARCSS OAII Science Steering Committee

cc:
J. Bash, UNOLS Office
Capt. Alan Walker, U.S.C.G. Ice Ops.
P. Webber, NSF-ARCSS
T. Curtin, ONR
H.L. Clark, NSF-OCE
Arctic Research Commission
Polar Research Board
ARCUS
OAII SSC members

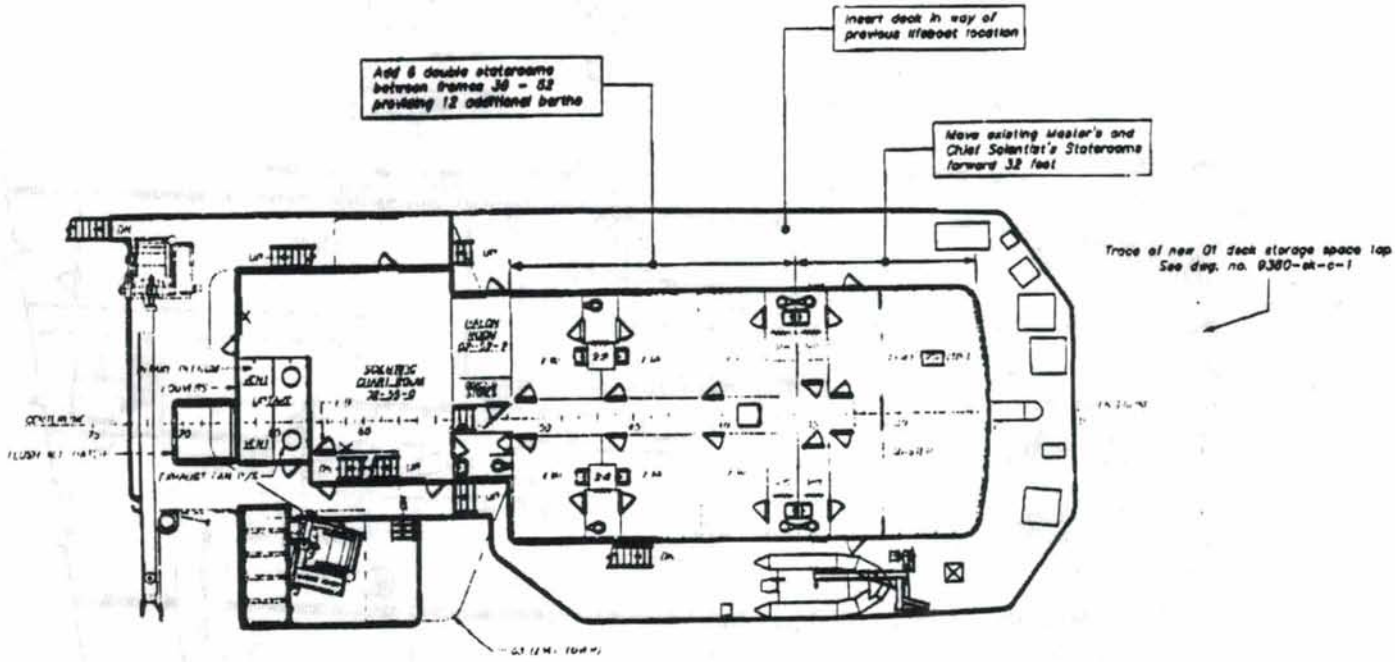
APPENDIX VI

KNORR CONVERSION PLANS

DSRV & ROV Facility Options	Weight long tons	Cost $K
1. Removable vans	170	1,790
2. Centerline hangar	170	1,450
3. Port side hangar	159	1,290
Additional Berthing Options		
1. 12 berths 02 level	24.3	845
2. 4 berths internal well	4.4	179
Additional Storage Options		
1. 315 sf 01 deck	13.5	245
2. 1600 sf internal well	2.0	124



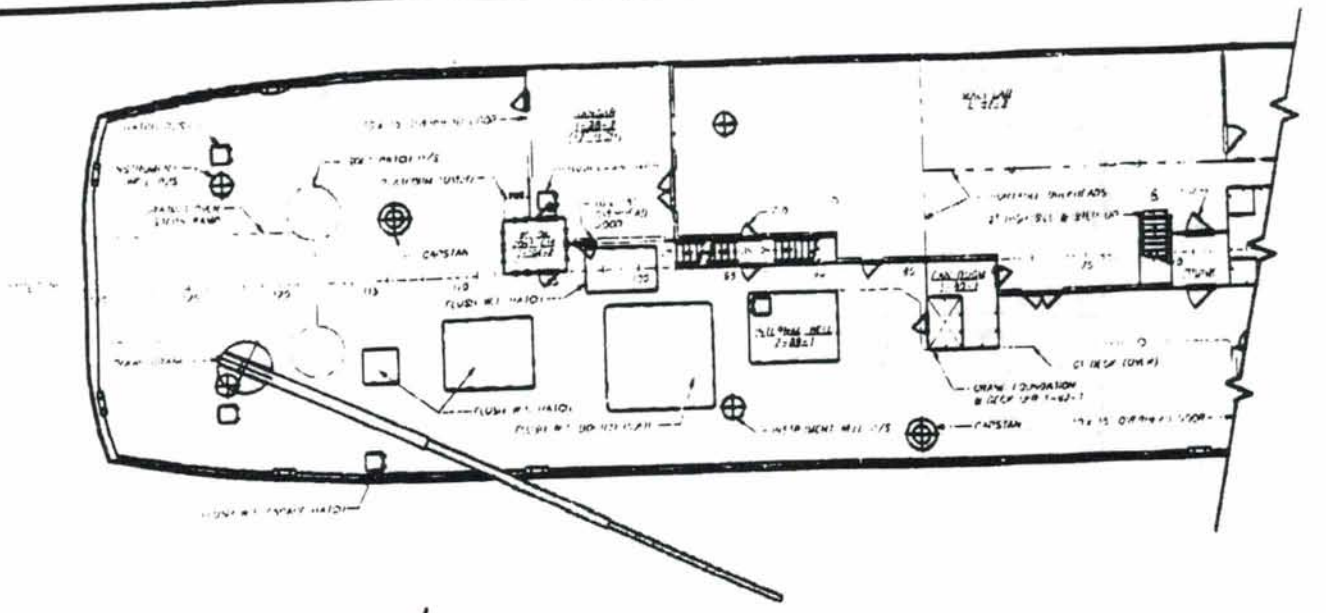
Existing Arrangement



R/V Knorr, Conversion To DSRV Alvin Support
Additional Berthing On 02 Level

THE GLOSTEN ASSOCIATES, inc.
CONSULTING ENGINEERS SERVING THE MARINE COMMUNITY

BY D. Kristensen	DWG. NO. Sheet 1 of 1
DATE April 1994	SCALE: N.T.S.



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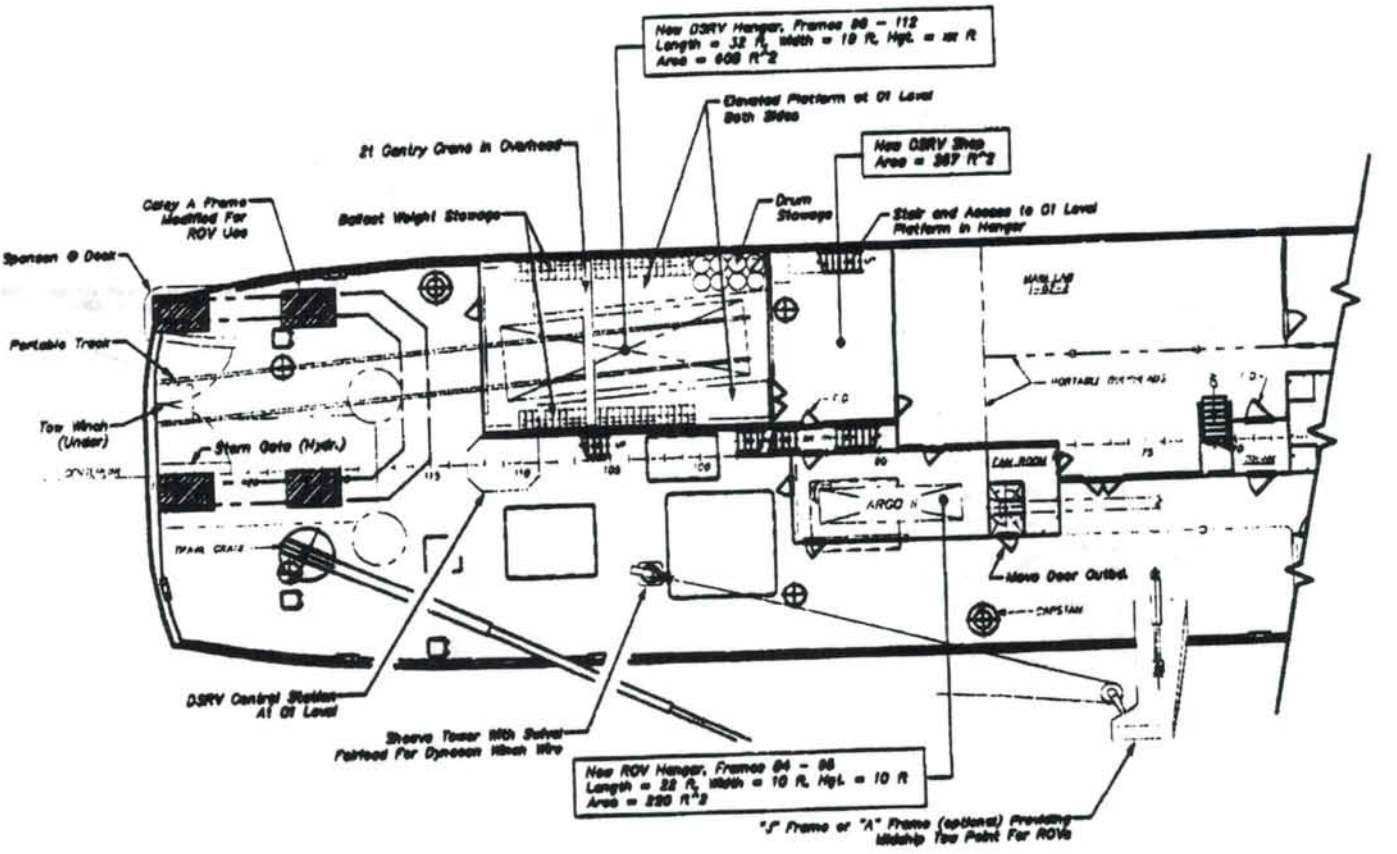
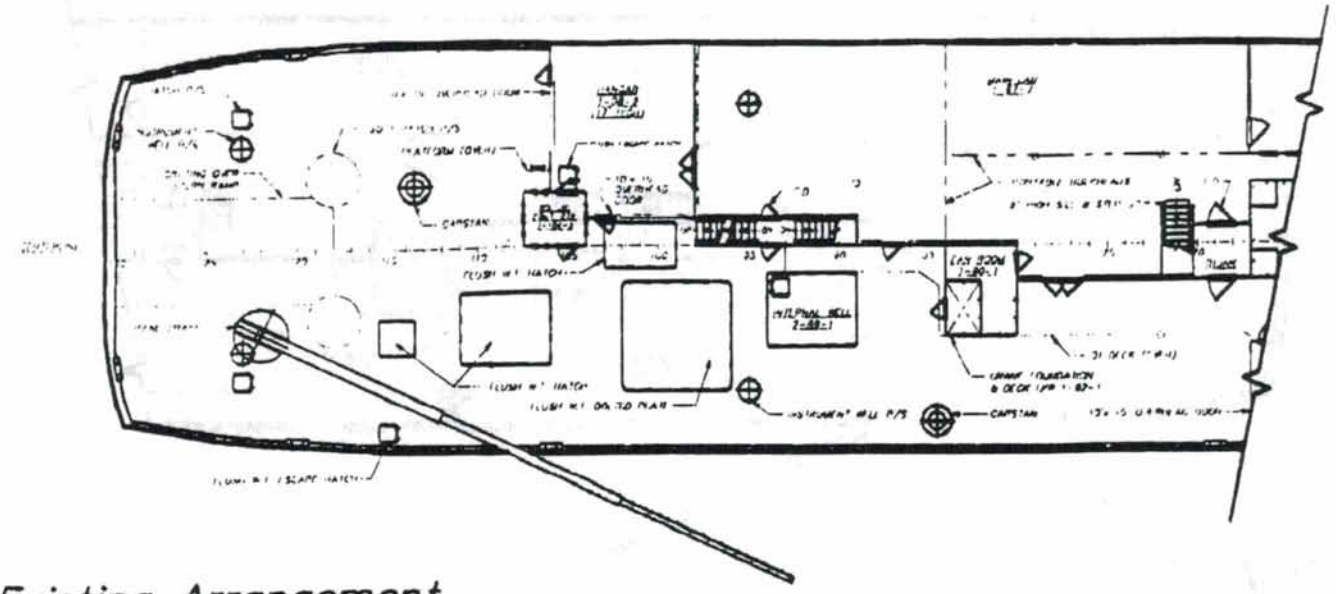


R/V Knorr, Conversion To DSRV Alvin Support

Option 3: Port Side DSRV Hangar

THE GLOSTEN ASSOCIATES, Inc. CONSULTING ENGINEERS SERVING THE MARINE COMMUNITY	BY D. Kristensen	DWG. NO. 9360-SK-A Sheet 1 of	
	DATE April 1994	SCALE: N.T.S.	



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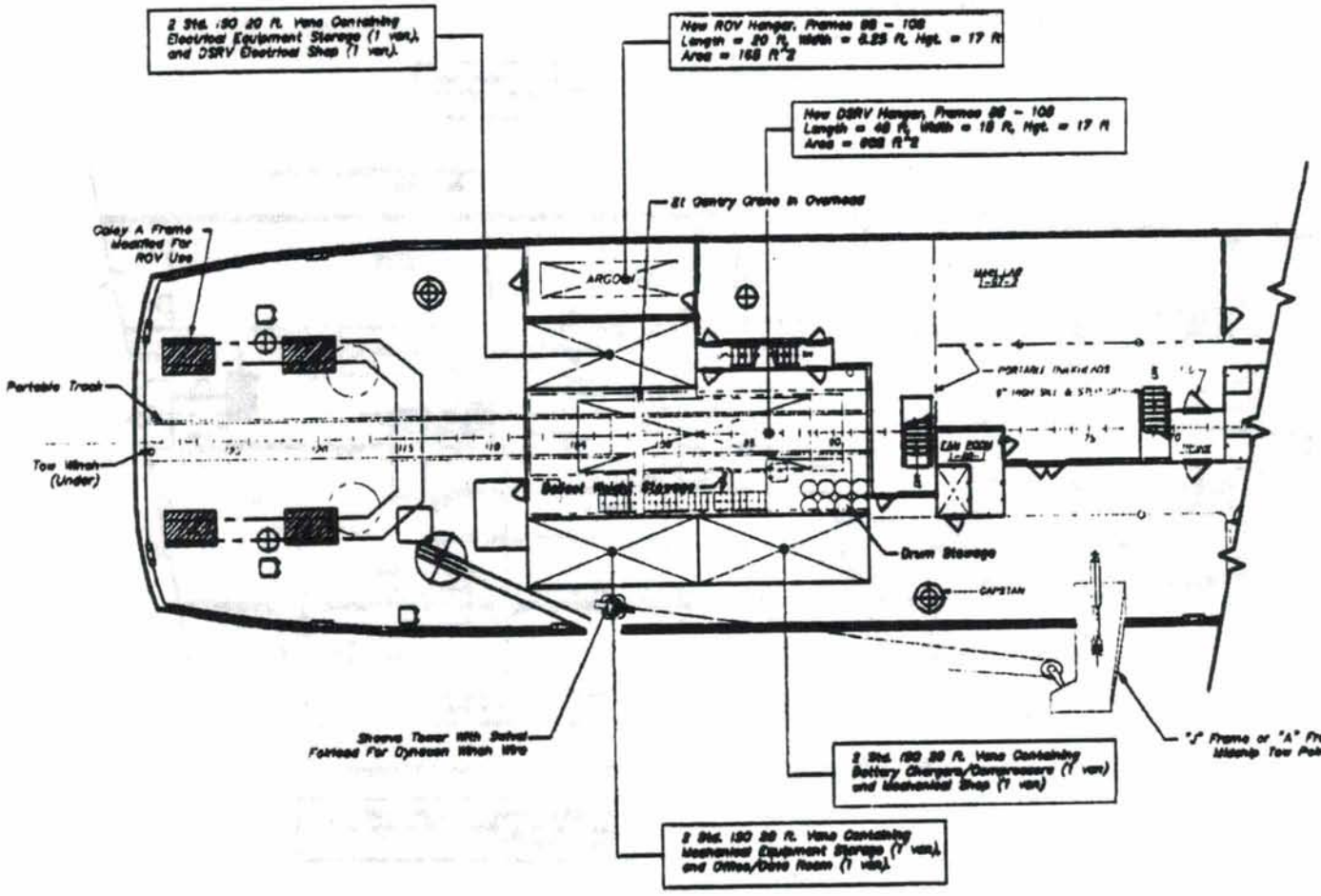
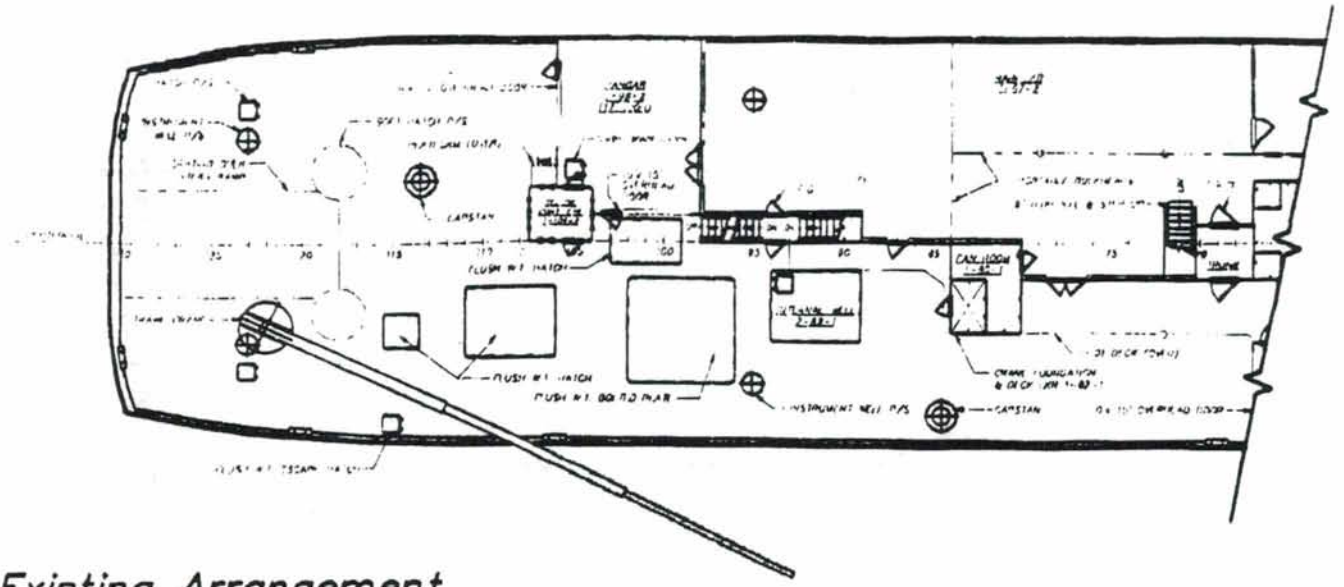


R/V Knorr, Conversion To DSRV Alvin Support

Option 1: Removable Containerized Handling Scheme

THE GLOSTEN ASSOCIATES, Inc. CONSULTING ENGINEERS SERVING THE MARINE COMMUNITY	BY D. Kristensen	DWG. NO. 9360-SK- Sheet 1	
	DATE April 1994	SCALE: N.T.S.	



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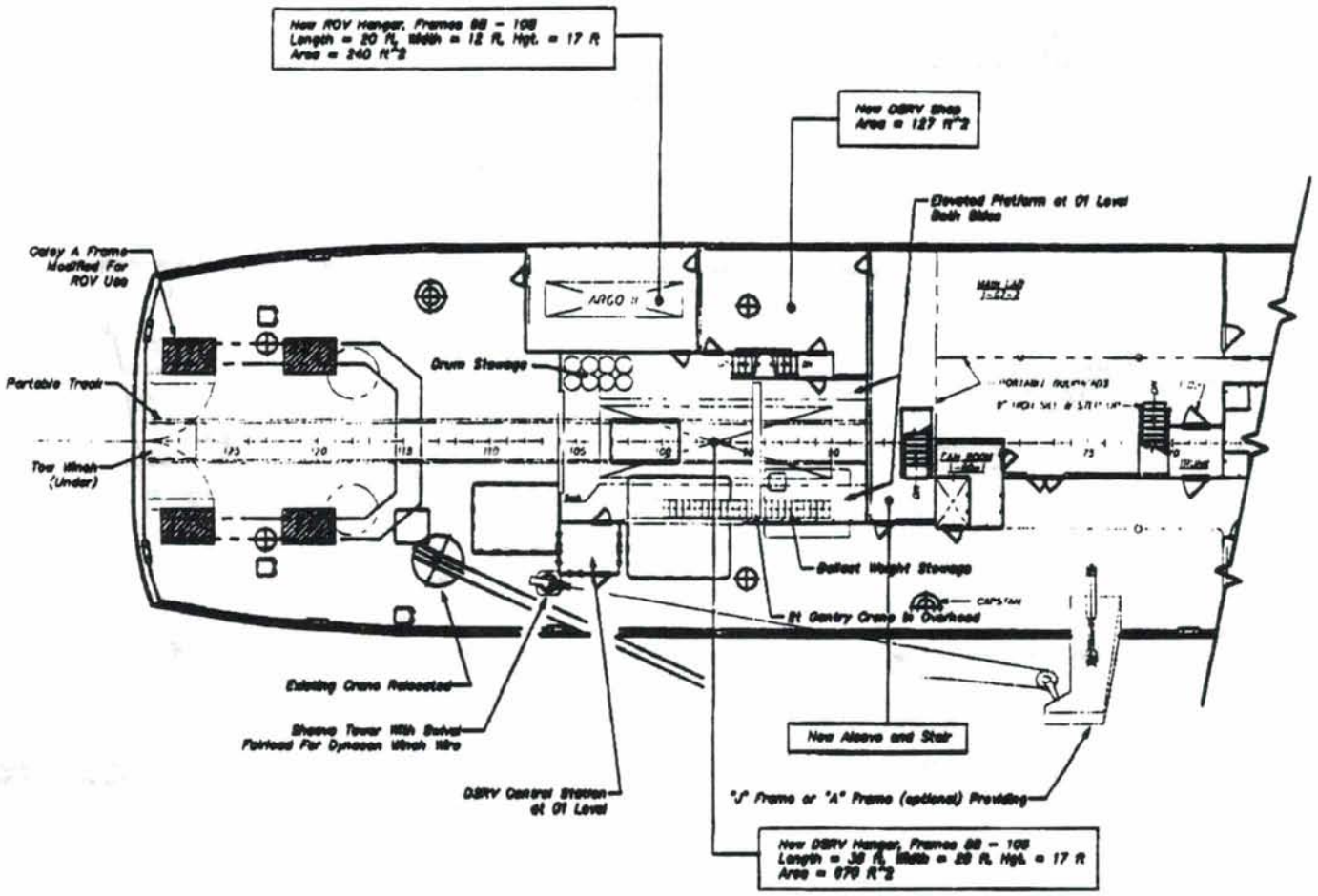

R/V Knorr, Conversion To DSRV Alvin Support

Option 2: Centerline DSRV Hangar

THE GLOSTEN ASSOCIATES, Inc. CONSULTING ENGINEERS SERVING THE MARINE COMMUNITY 600 Mutual Life Bldg. • 605 First Avenue • Seattle, Washington 98104-2224	BY D. Kristensen	DWG. NO. 936D-SK-A- Sheet 1 of 3
	DATE April 1994	SCALE: N.T.S.

APPENDIX VII

February 14, 1994

DRAFT AMENDMENT TO H.R. 3636

On page ___, line ___, insert the following:

"Title II of the Communications Act of 1934 (47 U.S.C. 201 et seq.) is amended by inserting at the end thereof the following new section:

'Sec. ___. Notwithstanding any other provision of this Act, a ship documented under the laws of the United States operating in accordance with the Global Maritime Distress and Safety System provisions of the Safety of Life at Sea Convention shall not be required to be equipped with a radio station operated by one or more radio officers or operators.'."

APPENDIX VIII

GPS STATUS

- All pieces of the NSF-DOD MOU are in place.

- WHOI has two commercial P-Code receivers operating.
  - ATLANTIS II now
  - KNORR in August

- Tricky path through bureaucracy being shared with U of W and SIO.

- WHOI suggests we plan for expansion along regional lines next year after DOD-NSF review the MOU.

  REGIONS
  * East Coast (WHOI)
  * West Coast (SIO and U of W)

- KNORR enjoying great success with Navy GPS.
  - Dynamic Positioning System works.
  - Track errors ~ 1 meter realized.

APPENDIX IX

UNOLS Office Support

1994-1996

Proposal	1994	1995	1996
	$696,916	$664,427	$687,193
Revised	$602,570	$612,184	#626,116 ~~$612,488~~
(ONR OBS)	($10,073)	($13,628)	($13,628)
Base Budget	$592,497	$598,556	$612,488

1994 Support (Base)

Agency	% Req.	Funds Req	Funds Provided*	Shortfall	% Support
NSF	60%	355,499	355,499	--	65.0%
ONR	20%	118,498	112,585	-5.0%	20.6%
NOAA	8%	47,400	39,114	-17.5%	7.2%
USGS	6%	35,550	29,330	-20.3%	5.2%
MMS	4%	23,700	--	-100.0%	0.0%
DOE	2%	11,850	11,267	-4.9%	2.0%
Total	100%	$592,497	$546,795	-7.7%	100.0%

*Letter of intent

UNOLS Office Support

Functions - 1994

UNOLS Office		Council	
Staff	168,380	Chair	20,000
Travel	22,120	Travel (3)	46,000
Office Costs	34,650	I.D.	12,210
Meetings/Pubs	30,750		
I.D.	47,342	Total	$78,810
	$303,242		

Workshops		Ship Sched.	
Travel	25,000	Travel (2)	4,000
I.D.	4,625	I.D.	740
	$29,625		$4,740

Medical Advis.		DESSC	
Subcontract	22,750	Chair	17,850
I.D.	4,209	Travel (3)	28,000
		I.D.	8,482
	$26,959		$54,332

Fed. Register		FIC	
Subcontract	10,000	Chair	17,850
I.D.	1,850	Travel (2)	20,000
		I.D.	7,002
	$11,850		$44,852

Risk Mgmt.		RVOC	
Staff	19,648	Travel (1)	4,000
Travel	5,000	I.D.	740
I.D.	4,560		
	$29,208		$4,740

		RVTCC	
		Travel (1)	4,000
		I.D.	740
			$4,740

Total	$400,984		$191,614

UNOL Office Support

Issues

- Core functions vs. Special tasks
    - Workshops
    - Medical Advisory Service
    - Federal Register Clipping Service
    - Risk Management Support

- Committee Support
    - Chair Support
    - Frequency of meetings
    - Special Function
    - DESSC
    - FIC

- Agency base
    - MMS
    - EPA
    - USCG
    - Navy laboratories