UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

UNOLS COUNCIL MEETING

SUMMARY REPORT

January 14-15, 1993

Room 114, Scripps Building
Scripps Institution of Oceanography
La Jolla, California

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JANUARY 14-15, 1993
ROOM 114, SCRIPPS BUILDING
SCRIPPS INSTITUTION OF OCEANOGRAPHY
LA JOLLA, CALIFORNIA

The UNOLS Council met on January 14-15, 1993 in Room 114 of the Scripps Building at the Scripps Institution of Oceanography in La Jolla, California. The meeting was called to order at 0830 by Garry Brass, Chair. The attendees are listed in Appendix I and the meeting agenda is included as Appendix II. Many of the UNOLS issues were addressed during the Committee and Agency Reports. These minutes reflect the order in which the items were reported.

APPENDICES

I. Attendance List
II. Agenda
III. USCG bulletin, "Radiobeacons for DGPS"
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XIII. Ship Lay-up and Maintenance Policy Paper

WELCOME

Ed Frieman, Director of Scripps, extended a welcome on behalf of Scripps to the participants of the Council Meeting.

INTRODUCTION

Garry Brass updated the Council on UNOLS activities since their September meeting. The RVOC held their fall meeting in October, at which time Garry requested that the committee recommend ship issues which need to be brought up before Congress and their staffs. These issues would be passed along to Kerry Bolognese from the Council on Ocean Affairs. On January 12, Garry attended the SFOFC meeting in Washington, DC. UNOLS matters of interest included GPS, future SEA CLIFF operations, and the Coast Guard Arctic Vessel.

As a result of the low success of the 1992 SEA CLIFF operations, Navy and NOAA are reviewing their plans to continue this process. UNOLS also plans to conduct a review of the 1992 SEA CLIFF operations. NOAA had contributed approximately $400,000 in support of this operation. At the December DESSC meeting, the community questioned the value in this effort and queried NOAA as to their intent to continue with a second year of operations. Bill Stubblefield reported that David Duane and Marsh Youngbluth would make this decision but for the present the issue is on hold. Jeff Fox suggested that the SEA CLIFF funding might be more efficiently spent if operations could be combined with WHOI's ALVIN operations. The Navy would gain an experienced operational team increasing reliability and safety. They would be able to retain trained pilots and the submersible would be available for emergency Navy projects. WHOI would gain a larger pilot pool to ease some of their operational problems and would gain flexibility in their deep submergence program. Garry Brass, Jeff Fox, Pat Dennis and Dick Pittenger will draft a letter to the Navy encouraging them to consider the efficiencies of consolidating SEA CLIFF with ALVIN's support operations.

On other issues, Garry has recommended to SFOFC that UNOLS form an oversight committee to assist the Coast Guard in planning science operations aboard their planned arctic vessel.

Captain Alan Walker, USCG, sent a FAX to Garry which would be of interest to the operators of the UNOLS Fleet regarding the Differential Global Positioning System (DGPS), Appendix III. The paper describes the capabilities of the system along with the status of its development and installation through 1996. A representative from the Coast Guard plans to attend the upcoming UNOLS Coastal Workshop.

COUNCIL MINUTES: The minutes of the September 1992 Council meeting were accepted as written.

COMMITTEE REPORTS

RESEARCH VESSEL COMMITTEE REPORTS (RVOC): Mike Prince, Chair, reported on the RVOC 1992 Annual Meeting held in Lewes, Delaware. The meeting was well attended from both operators and agency representatives. George Ireland, USCG Captain (retired), advised on regulatory issues pertaining to the UNOLS fleet including new admeasurement regulations, the Oil Pollution Act of 1990 and the American's with Disabilities Act. RVOC intends to prepare an oil spill response plan. Dolly Dieter encouraged Mike to send an RVOC representative to an upcoming workshop in Seattle on the American's with Disabilities Act.

The RVOC meeting included a workshop on winches and wires. Dupont gave a presentation on Kevlar rope. Don Moller, WHOI, reported on the UNOLS wire pool and fiber optic cables. RVOC plans to keeping abreast of new traction winch technologies and developments. Other areas of RVOC discussion included navigation equipment, Electronic Charting and Digital Information Systems (ECDIS). RVOC would like to see GPS as the standard for navigation on all vessel; however, the problem of Selective Availability would first need to be

resolved. RVOC recommended that this issue be forwarded to Kerry Bolognese for COA action.

Dennis Nixon briefed RVOC on risk management matters and gave an update on the UNOLS group insurance plan.

Tom Smith, University of Alaska and chairman of the Safety Committee, prepared and distributed to RVOC a detailed check-list for inspection of Chartered Vessels (non-UNOLS). RVOC has reviewed the list and their comments have been incorporated, Appendix IV. The UNOLS Council will review the list and provide their comments via telemail. The Council recommended that the checklist be referred to as "guidelines" in future references. After some discussion of the guidelines and insurance/liability matters, Garry Brass recommended that a subcommittee of Dennis Hayes, Dennis Nixon and an RVOC representative be formed to investigate and outline the responsibilities of Chief Scientists in relation to safety issues while at sea.

Mike reported that RVOC would like to have someone serve as a liaison between FIC and RVOC. This person would attend the meetings of both committees. Garry recommended that Mike select a member of RVOC to serve as the liaison.

The RVOC would like to see a resolution in which shiptime funding from all sources be filtered through NSF for distribution to the respective operating institutions. The Council understood the problem, but decided that this was a matter which should be institutionally resolved.

In other RVOC matters, Paul Ljunggren was elect Vice Chair. The 1993 annual meeting is tentatively planned for Catalina Island.

The Council expressed their thanks to Jim Williams for his many years of UNOLS involvement.

DEEP SUBMERGENCE SCIENCE COMMITTEE (DESSC): Jeff Fox gave the report of DESSC activities since the last Council meeting. His slides are included as Appendix V. In the spring 1992 meeting, DESSC appointed three new members to the group: Dan Fornari, G&G; Hugh Milburn, Engineer; and Carl Wirsen, Biology. With the addition of an engineer, the DESSC hopes to keep abreast of the latest deep submergence technologies. The full committee roster is included in Appendix V.

The DESSC held a workshop in November to provide a forum in which the community could identify the deep submergence science problems, review current assets, and address ALVIN's technology long and short term needs. Additionally, the workshop initiated a coordinated effort to assess the interest, maturity, and economic strategies for ALVIN research in remote areas. The workshop was attended by almost 100 participants from academia, federal agencies, and the industry sector. In December, the DESSC held their planning meeting and again it was well attended with close to 100 participants. A major objective of this meeting

was to plan the most efficient, beneficial ways to utilize our deep submergence assets from now until 1996 when the ATLANTIS II/KNORR conversion is planned. Every attempt will be made to avoid another 1992 scenario when only 76 dive days took place. In 1993, 145 dive days are tentatively planned, corresponding to 235 operating days. However, this schedule is still in jeopardy due to the uncertainty of NOAA's funding situation.

After completion of ALVIN's overhaul in March, operations are scheduled to begin off of Bermuda with five engineering dives. Work will continue in the Atlantic through July. ATLANTIS II will then transit through the Panama Canal for operations in the Juan de Fuca region. A shipyard period is scheduled for October in San Diego before finishing the year with operations along the East Pacific Rise. A significant portion of the work scheduled along the Mid-Atlantic Ridge is pending NOAA funding. If NOAA is unable to fund their dives, projects planned by NSF and the French could be impacted along with drilling plans for this area. The Council agreed that Garry Brass, Jeff Fox, and Dick Pittenger should travel to Washington, DC to express the magnitude and dangers of what a funding short fall could mean.

Jeff continued to report that prior to the DESSC planning meeting over 70 letters of interest were received, corresponding to over 1000 dive days for 1994 and 1995. Approximately half of these requests were for work in the traditional ALVIN areas with the remaining half distributed among remote regions of the globe. Considering that: 1) NSF has an interest with Japan to work in the Souther East Pacific Rise (EPR) in late 1995, 2) the high maturity level of science in the familiar areas, some of which has been funded in the out years, and 3) RIDGE will be targeting Juan de Fuca for future research; DESSC has recommended that proposals for work in the traditional areas with a trip to Southern EPR in 1995 will be encouraged. Aware of the concerns and interests of the operator and community as a whole, DESSC will also encourage portfolios focusing research intents for each remote area. Depending on the level of maturity and coordination of the science programs in these areas, this work might be entertained in place of the traditional work. DESSC also encouraged the community to use 1994 and 1995 to accomplish necessary survey work in the remote regions. During this same period, DESSC will explore strategies for applying shared international systems for the remote regions.

In other news, WHOI has put out an announcement for a science advisor position to address deep submergence science and technology at their institution.

On March 6, the community can participate in a Jason Workshop to premier the scientific capabilities of MEDEA/JASON. There will be four down link sites: USC Irvine; GSO-URI; National Geographic, DC; and Liverpool, England. The workshop will be funded by NSF, ONR, and National Geographic.

Jeff reviewed the Consensus Equipment Upgrade list, Appendix V. Imaging improvements and upgrades were at the top of the list. Dan Fornari and Jeff Milburn will put together a white paper for these upgrades and review their suggestions with the WHOI operators before

preparing a technology proposal. Every attempt will be made to assure that any upgrade can be cross decked between ALVIN and ROVs.

Dick Pittenger reported that ALVIN's overhaul is proceeding on schedule and should meet the certification inspection schedule. The request to increase ALVIN's depth capability has been put on hold for the near future. Before approving the increase, NAVSEA would have required additional testing of ALVIN's variable ballast spheres. The testing would have delayed the overhaul schedule and impacted 1993 operations.

FLEET IMPROVEMENT COMMITTEE (FIC): Peter Betzer reported for Marcus Langseth (FIC Chair), on FIC issues and plans. The Coastal Workshop scheduled for February 22-24 in Williamsburg, Virginia is coming along. Approximately 70 participants plan to attend. Don Wright has prepared an agenda which has been distributed to the community, Appendix VI.

The next review meeting for the Arctic Vessel is scheduled for February. The latest conceptual design combines the features of the ODEN and THYSSEN/WAAS designs to minimize slamming in open water. The length of the vessel is 343 feet 9 inches and has an estimated cost of $120 million. Dolly Dieter indicated that the design will most likely need to be scaled down, but NSF plans to proceed with the design process. At the JOI Board of Governors meeting in November concern was expressed over the costs associated with bringing a new Arctic vessel into the fleet. JOI has decided to hold a workshop to study the matter; however, nothing has proceeded since November. The Council strongly expressed their concern that UNOLS and JOI should coordinate their efforts. NSF has indicated that if funds are available to build the vessel, additional funding would be appropriated to support operations. On other Arctic Issues, Dolly reported that the Division of Polar Projects at NSF has been reassigned to fall under the Office of the Director.

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

SHIP SCHEDULING COMMITTEE: Ken Palfrey, Chair, updated the Council on ship scheduling for 1993 and 1994. The 1993 schedule is on the whole firmed up. ISELIN was able to pick up additional cruise days. Shiptime requests for 1994 are slowly filtering in and schedules should start being posted soon on telemail. The spring scheduling meeting is planned for June 23 in Washington, DC.

UNOLS has been invited for the first time to attend NOAA's fleet allocation meeting. It is scheduled for January 21 in Washington, DC. Jack Bash will attend for UNOLS.

RESEARCH VESSEL TECHNOLOGY ENHANCEMENT COMMITTEE (RVTEC): Rich Findley, Chair, reported on the activities of the newly formed RVTEC. They held their first organizational meeting on October 18-19. Eighteen participants attended representing fifteen UNOLS institutions, thirteen of which were operating institutions. Rich Findley was elected

Chair and Doug Biggs of Texas A&M was elected Vice Chair. By-laws were drafted and accepted. The main objectives for the Committee will include promoting the exchange of technical information, enhancement of technical skills, and keeping abreast of the latest technological advancements. The Committee has already achieved some success by networking over telemail and exchanging information among the institutions. The next meeting is planned for September 20-21, 1993 at Scripps and USC. A tour of the USC facilities is planned. The meeting will coincide with the MTS fall meeting in Long Beach, California.

AGENCY REPORTS

NATIONAL SCIENCE FOUNDATION: Dolly Dieter provided the agency report for NSF. She reported that the decision had been made for NSF to move from their DC location to office space in Arlington, Virginia. The move is expected to be completed by the end of this calendar year. Dolly announced that a new grant letter would be coming out. The letter would be similar to the old one but would also include new items such as: proof of insurance; UNOLS Safety Standards compliance and signature requirements for items costing in excess of $1500. Dolly also reminded the Council of her constant battle with other agencies that think NSF will fund ship time for their science projects. This NSF will not do.

Dolly passed out two memos from Don Heinrichs. One addressed large ship comparative costs (Appendix VII) and the other provided cost figures for operating the UNOLS fleet (Appendix VIII). The NSF funds for 1993 are expected to be about $2 million less than those for 1992. This is not a reduction in funding but rather reflecting the carry-over of 1991 KNORR/MELVILLE operating money not used in that year but expended in 1992. The operating needs for 1993 are currently $2.5 M short of the funds available. This is taking into account the layup of ENDEAVOR and the short schedules of EWING, GYRE and VICKERS. Dolly suggested that she is planning to reduce all operating budgets by 10% to accommodate the shortfall.

The Council discussed this issue at some length and decided to provide to the federal agencies their view of the funding problem. (Discussion later in the meeting expands on this action item).

OFFICE OF NAVAL RESEARCH: Steve Ramberg provided the information for ONR. Steve reported that ONR is in the process of a reorganization. The previous Office of Naval Technology and the Office of Advanced Technology have now been consolidated with the Office of Naval Research. The effect to the science community is that ONR has been strengthened by the reorganization. A new civilian Deputy Chief of Naval Research will be hired to help provide technical direction and continuity to ONR. ONR will retain ownership and management of its vessels.

ONR continues with its plan to reduce the seven ships in the UNOLS fleet to five. The ending configuration will be KNORR, MELVILLE, THOMPSON (AGOR-23), REVELLE (AGOR-24) and AGOR-25.

Steve indicated that the retiring of Navy Lab ships will necessitate these labs to acquire time on UNOLS ships or charters. The last of the Navy lab ships, BARTLETT, is scheduled to be removed from the fleet in August of this year. NRL has identified 60-90 days of shipboard science (relating to approximately $.75 million support) that could be offered to the UNOLS fleet during this calendar year. Steve was urged to encourage NRL to identify their requirements as soon as possible to take advantage of the open time presently available on UNOLS ships. Delays could make it very difficult for the UNOLS fleet to accommodate NRL's needs.

It was reported that the contract for construction of AGOR-24 has been let to Halter Marine, the same yard that built THOMPSON. AGOR-24 has been named "REVELLE". See Appendix IX. Construction of the ship is estimated to take 36 months. AGOR-25 remains in the Navy's 1994 budget.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION: Bill Stubblefield provided the NOAA report. He announced that NOAA is shifting to a two year allocation schedule for ship time planning to get in better sync with the UNOLS system. Bill provided a series of overheads, Appendix X, to reflect NOAA ship use. Fisheries uses over 50% of the NOAA ship time with the second largest use going to National Ocean Survey at 29%. Oceanic and Atmosphere Research (OAR) ship use was 475 days at sea for 1992 representing 14% of the total NOAA usage. The Charter summary shows the use of UNOLS ships VICKERS, PELICAN and LONGHORN in 1992 and 1993. For 1994, no funds are presently in the budget for charters. A revision of the 1994 funding is under consideration which could add from 97 to 115 charter days, however, no charter funds have been identified.

UNITED STATES COAST GUARD: Larry Jendro of the USCG provided the Council with an update of the proposed USCG icebreaker. A revised set of requirements has been written and a "Baseline design" study awarded to two shipyards, Ingalls and Avondale. The shipyards are to provide their concept of a design that can stay within the funding cap. The best design will be awarded the construction contract. These designs are expected in March with the yard selection planned for August of this year. Construction should start immediately after award with completion planned for 1997. Construction costs are expected to be capped at $240 million.

Garry Brass suggested, as he had to the SFOFC, that UNOLS could provide academic community interface with the Coast Guard to better facilitate science planning and execution aboard the icebreaker. This might be modeled after the DESSC and its relationship with WHOI, ALVIN and the funding agencies.

DEPARTMENT OF STATE: The State presentation was given by Tom Cocke. Tom proposed that a plan be worked out between NSF, ONR and NOAA to fund the part time position of his assistant, Patsy Brown. Patsy's computer efforts provide help and assistance for the entire academic community going well beyond the duties required by State. The representatives for these agencies indicated that they would take this proposal under advisement. Dolly took the coordination effort for action.

Tom reported the continuing problem of getting the post cruise reports from the scientists. This is a particular problem where major programs, such as JGOFS and WOCE, have many multiple leg cruises and the data collected are part of a grand program. This type cruise does not lend itself well to the way in which information was traditionally provided.

Tom provided the following clearance denial rates:

1987	10%
1988	10%
1989	4%
1990	1.7%
1991	1.2%
1992	0.6%

Keep up the good work Tom!

OCEANOGRAPHER OF THE NAVY: Pat Dennis provided several overheads for the Council. Copies are included as Appendix XI. The overheads reflect the modernization of the Navy's NOP-096 fleet. Four new ships have been built since 1989 and four more are in the budget (TAGS 60 through 63) for construction with TAGS 64 planned for the 1996 budget. Three ships were retired without replacement. These nine ships plus the three UNOLS's AGORs represent an investment of $718.7 million. The 1987 five year Defense Plan (FYPD) had budgeted for these ships at $716.5 million. Not bad planning. The third overhead presented reports the disposition of the retired ships.

UNOLS ISSUES

SEA CLIFF OPERATIONS: As discussed earlier in the meeting, 1993 plans are on hold while NOAA and Navy evaluate problems. A letter will be drafted to the Navy by UNOLS encouraging them to consider consolidating SEA CLIFF with ALVIN operations at WHOI.

MID-LIFE REFIT FOR OCEANUS CLASS SHIPS: Ken Palfrey and Jack Bash provided the Council with an update on the refit plans for the three OCEANUS class ships. The preliminary designs are near completion. It was recently discovered that the new MACK (mast and stack) design affected the exhaust dispersion onboard the ship. The MACK has

been redesigned and is presently being retested in the Netherlands. The three operating institutions are scheduled to meet at the end of this month to review the final design. ENDEAVOR will be the first in the shipyard which should be in early spring. URI is completing the bid package that is to go out to six pre-qualified shipyards. OCEANUS and WECOMA are scheduled to enter the yard late this year. All appears to be on track for this $2 million per ship refit project.

CALENDAR FOR UNOLS MEETINGS: Dates were set for the fall Scheduling Meeting, 9 September; UNOLS Council Meeting, 30 September; and the Annual Meeting, 1 October 1993. The updated schedule of meetings is included as Appendix XII.

MEXICO AND UNOLS: Jack Bash presented the proposal of Dr. Vivianne Solis-Weiss from the Oceanograficas Instituto de Ciencias Del Mar Y Limnologia of Mexico. This proposal encouraged U.S. investigators to use Mexican research vessels when working in Mexican waters. Dr. Solis had been advised that the UNOLS fleet was already under prescribed and that we were laying up ships as a result. The Council discussed the matter and concluded that it does not seem possible to expend funds to put U.S. investigators onboard Mexican research ships considering the current funding climate. It was suggested that exchange programs with Mexican investigators might be an acceptable alternative.

FUNDING SHORTFALL FOR 1993/4: The Council had a lengthy discussion on the funding shortfall for 1993 and the potential shortfall for 1994. The 1993 shortfall will be handled with one layup, several short schedules and a 10% operational funding cut for the remainder of the fleet. The operators can not take repeated years at this funding level. Maintenance will be cut short and the overall condition, reliability and safety of the fleet will be affected.

The Council decided to address this issue in two steps, short term and long term. For the short term the Council plans to send an alert to the fleet of the anticipated '94 funding shortfall. The fleet schedulers will be encouraged to seek outside funding where possible and prepare for layups where weak schedules are signaled. The alert suggests that the Council will address this problem in a pro-active way at the July Council meeting when the funding picture is more clear.

For the longer term the council will propose that the two funding agencies, NSF and ONR, form a Blue Ribbon panel to look at the funding shortfall and to recommend fleet adjustments as necessary to address the anticipated funding level. The Council will provide the agencies with a proposed tasking to the panel as well as suggested panel members.

The council revisited the RVOC "Ship Lay-up and Maintenance Policy" developed in 1987 designed to address this problem. This policy is a bit dated, however, provides a "strawman" from which to work. A copy is included as Appendix XIII.

MEMBERSHIP APPLICATION DISCUSSION: The membership request of the Smithsonian Tropical Research Institute (STRI) was discussed with the Council recommending their

admission to UNOLS. The UNOLS Office will notify STRI of the Council action and put this action on the Annual Meeting agenda for a membership vote.

RISK MANAGEMENT UPDATE: Jack Bash and Dolly Dieter provided the Council with the latest information on the proposed group insurance plan. Presently NSF is reviewing a draft letter to the community which must then be routed through ONR before being released. It is expected that the full implementation of the insurance plan will not be executed at this time but that interim measures will be adopted. These will probably include a minimum coverage for all ships, a minimum deductible for all ships and the elimination of hull insurance as a reimbursable expense. Further movement on the group plan will come at a later date.

RADIO OFFICER/ISSUES FOR COA: Two issues were discussed that might be appropriate for COA to consider. These are 1) an exception for the need to carry a radio officer in the UNOLS Fleet and 2) UNOLS access to the P code for GPS or better still a removal of the dither in the GPS signal. Radio officers are no longer required by International agreement but remain a requirement in the Communications Act of 1934. An amendment to this law or a special exception will be sought. Dick Pittenger has taken both of these items for action.

KNORR/MELVILLE: Dick provided the Council with an update of the KNORR/MELVILLE operations. The ships have both been successfully operating well in arduous WOCE legs in remote regions of the Pacific. The stern slapping vibration continues to be an irritant but not perceived as a serious problem. MELVILLE appears to have fewer shipyard related problems as both ships work out the crick of their extended overhaul. The Seabeam on MELVILLE has been operating well at 12-13 knots. This is good news for coverage but bad news for fuel consumption. Operational compromises are being worked out. Both ships operate well on one engine which proves to be a fuel efficient operating mode. Legal negotiations continue in settling the shipyard contract disputes.

DEEP SUBMERGENCE FACILITY MOA STATUS: Steve Ramberg reported that the MOA had been signed by Robert Corell of NSF and Fred Saalfeld of ONR. It is presently on John Knauss' desk awaiting his signature. The agreement will provide a "safety net" of funding during lean years. A recompete clause for the facility has been included.

USGS ARCTIC VESSEL: This subject was covered by Larry Jendro in the Agency Reports above.

SHIP CONSTRUCTION: This subject was covered by Steve Ramberg in the Agency Reports above.

The meeting was adjourned at 11:30 on January 15, 1993.

APPENDIX I

ATTENDANCE LIST

NAME	INSTITUTION/AGENCY
Garry Brass, Chair	RSMAS
Peter Betzer, Vice Chair	Univ. of South Florida
Jack Bash	UNOLS Office
Tom Cocke	Dept. of State
Patrick Dennis	Navy/JOI
Annette DeSilva	UNOLS Office
Dolly Dieter	NSF
Rich Finley, RVTEC Chair	RSMAS
Jeff Fox, DESSC Chair	GSO/URI
Dennis Hayes	Lamont-Doherty/C.U.
Richard Jahnke	Skidaway
Larry Jendro	USCG
Dave Karl	Univ. Hawaii - SOEST
Bob Knox	SIO
Ken Palfrey, Ship Sched. Chair	OSU
Dick Pittenger	WHOI
Mike Prince, RVOC Chair	MLML
Steve Ramberg	ONR
Bill Stubblefield	NOAA
Bob Wall	Univ. Of Maine

APPENDIX II

UNOLS COUNCIL MEETING AGENDA
8:30 a.m. - JANUARY 14-15 1993
Room 114, Scripps Building, SIO
LA JOLLA, CALIFORNIA

Call the Meeting: Garry Brass, UNOLS Chair, will call the meeting to order at 0830 January 14, 1993.

Accept Minutes of September, 1992 Council Meeting.

COMMITTEE REPORTS

Research Vessel Operators Committee: Mike Prince, Chair, will report on the progress of RVOC action items and the results of the 1992 Annual meeting at Lewes, Delaware (**Appendix I**).

DEep Submergence Science Committee: Jeff Fox, Chair, will provide the status of ALVIN operations for 1993 and the results of the DESSC planning meeting in San Francisco. Jeff will discuss the technical upgrades being recommended for ALVIN.

Fleet Improvement Committee: Peter Betzer, will report for Marcus Langseth, Chair, on the Fleet Improvement Committee activities. These include planning for a Coastal Workshop, Arctic Research Vessel plans, Fleet Improvement Plan update and the review of shipboard laboratory facilities and accommodations.

Ship Scheduling Committee: Ken Palfrey, Chair, will update the Council on the 1993 ship schedules and discuss the planning for the 1994 year.

Research Vessel Technical Enhancement Committee: Rich Findley will provide the Council with the progress in its current action items.

AGENCY REPORTS

Agency Reports: Reports from representatives of NSF (E. Deiter), ONR (S. Ramberg), and NOAA (W. Stubblefield) on the 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

Membership Application Discussion: A discussion is needed to determine whether or not the Smithsonian Tropical Research Institute is eligible for UNOLS membership (**Appendix II**).

Risk Management Update: Jack Bash will provide the Council with the latest status of the group insurance plans.

Issues for COA: Kerry Bolognese, Staff Director for the Council of Ocean Affairs, is requesting oceanographic issues that need to be brought up before Congressional Committees, Subcommittees or Congressional staff. RVOC has been requested to provide issues from the ship perspective. The Council needs to review these and other issues that might be germane.

SeaNet: A proposal is about to surface that will introduce a new communications link named SeaNet. To date JOI has been coordinating the effort in the community. What role, if any, should UNOLS have?

Mexico and UNOLS: Dr. Vivianne Solis-Weiss, Secretario de Operaciones Oceanograficas Instituto de Ciencias Del Mar Y Limnologia, has proposed a closer relationship between UNOLS and the Mexican academic ships. Dr. Solis will be at the meeting to answer questions concerning the Mexican proposal.

SEA CLIFF Operations in 1993: Bill Stubblefield will discuss NOAA's plans for SEA CLIFF operations in 1993.

Deep Submergence Facility MOA Status: Steve Ramberg will provide the status of the MOA.

USCG Arctic Vessel: Larry Jendro (USCG) will report to the Council on the progress in the design and construction of the Coast Guard Arctic vessel.

Ship Construction: Steve Ramberg and Bob Knox will update the Council on the status of AGOR 24/25.

Mid-life Refit for Oceanus Class Ships: Ken Palfrey and Jack Bash will update the Council on the status of Mid-life refits with the Oceanus class ships.

Radio Officer: Dick Pittenger will provide an update on the Radio Officer issue.

Calendar for UNOLS Meetings: Dates for fall meetings must be set. (See **Appendix III**)

APPENDIX III

RADIOBEACONS FOR DGPS

This article was contributed by
LCDR R. J. Wilson,
EECEN (DGPS Section),
Phone: Comm. (609)523-7223,
(FTS)346-7223

1. INTRODUCTION

The Global Positioning System (GPS) provides a new way to navigate anywhere on the earth more accurately than ever before. The Department of Defense has 19 GPS satellites in orbit as this is being written, and expects initial operational capability when 21 satellites are in orbit in 1993. To calculate your position on a map or chart, GPS receiving equipment finds the ranges from GPS satellites that are orbiting overhead. The receiver you could buy today will give your position to within about 100 meters of where you really are.

Coast Guard Differential GPS (DGPS) is simply the broadcast of real-time local corrections to GPS satellites. These corrections are transmitted by modulating the carrier signals of existing radiobeacons; the Minimum Shift Keying (MSK) modulation technique is used to convey this digital information without interfering with marine ADF users. For offshore radionavigation, GPS by itself gives plenty of accuracy. However, for positioning buoys, or navigating in U.S. harbors, it is desirable to be ten times this precise. This is where Coast Guard DGPS comes in: by supplying "differential" corrections to the satellite ranges, DGPS can improve the accuracy of a position to within about 10 meters of where you really are. Furthermore, DGPS will be designed to warn users immediately if there is a problem with GPS satellites, or the DGPS broadcast; this is something the GPS satellites themselves can be slow to do.

For the Coast Guard, the most immediately useful application of DGPS applies to buoy-tending cutters, which can use DGPS for positioning aids-to-navigation much faster (and in worse visibility) than they could with sextants. In the early days of the project, the BITTERSWEET evaluated an experimental broadcast from Montauk Point, NY: "Our [illegible] in a day was 5. With the DGPS, we have increased that to 18."

2. MISSION: IMPLEMENTATION

The Electronics Engineering Center (EECEN) has been directed to engineer and deploy an operational, supportable DGPS for Coast Guard missions and to enhance safety of harbor navigation. DGPS service must provide accuracy normally within ten meters to suitably equipped vessels. Marine radiobeacons will typically provide coverage out to 125 nautical miles from the coastline. EECEN has installed prototype DGPS radiobeacon equipment at Portsmouth Harbor (NH), Montauk Point (NY), Cape Henlopen (DE), and Cape Henry (VA). These four form an experimental testbed, which we will use to engineer a nationwide coastal DGPS. Additionally, continuous prototype broadcasts are being sent from Galveston (TX), Port Aransas (TX), and Whitefish Point (MI). EECEN is experimenting with and refining many of these equipment setups; therefore, the broadcasts may be expected to fail from time to time without notice. For now, they should NOT be used under any circumstances where a sudden system failure or inaccuracy could cause a safety hazard. The basic technology is available off-the-shelf; this test and evaluation is needed to implement it as a highly reliable system available for widespread use as a safety-oriented public service. We expect to commence operational installations in July '94, and to have a complete operational system by January '96.

3. THE RADIOBEACON BASE

In our experience with the DGPS prototypes, it has become clear that the weak point in our equipment suites isn't commercial off-the-shelf receivers, or even prototype equipment not designed for field use. The biggest problem has consistently been the existing Coast Guard radiobeacons. Although solid availability figures aren't in yet, it's clear at first glance that radiobeacons used for the new DGPS service will require a much higher level of support than they were given when intended for simple direction finding.

Many surprising difficulties arose from putting in DGPS at the sites we now have. In two of the [illegible]

the most promising had to be abandoned in light of critical problems at the site. At some of the prototype sites, stubborn problems have taken months to resolve and a few are still being vigorously pursued (e.g., grounding and bonding, backup power, high reflected power). While EECEN is responsible for installing DGPS upgrades and maintaining new DGPS equipment at the radiobeacon sites, the existing support structure has the primary task of tracking and eliminating radiobeacon-basic discrepancies.

For the planned DGPS/radiobeacons listed in the table on page 35, COMDT (G-NRN-2) is in the process of obtaining and reviewing preliminary site-surveys done by MLC commands. Considering the time it has taken to get this far, MLC/District commands should anticipate a time-consuming cooperative effort with EECEN to prepare these sites for the nationwide DGPS system. In order for operational units to have DGPS on schedule, action must begin NOW to leave time to select alternative sites, and correct basic radiobeacon problems well before the actual DGPS installations. We hope to avoid project delays by informing local electronics personnel early and facilitating their efforts. It may be possible to arrange TAD for a key technician to EECEN for at least a month, to participate in technical preparations and staging for a DGPS equipment installation or retrofit. Experience has proven that this facilitates later installations in the responsible command's area, provides valuable training, and adds skilled expertise for EECEN's implementation effort.

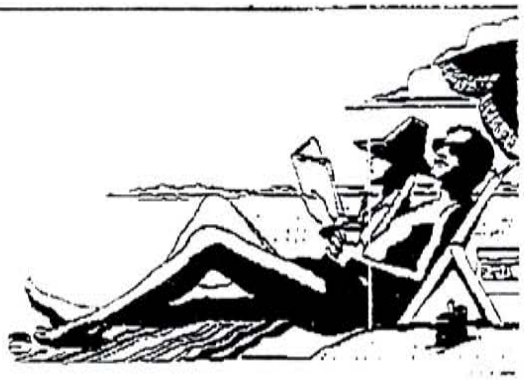
4. REPORTING AND LOGISTICS

We expect to need at least 99.9% availability from the radiobeacon portion of the DGPS broadcast sites to meet overall service requirements. Meeting this will require field units to put increased emphasis on radiobeacon CASREP reporting, to track what is NOW available under the existing radiobeacon infrastructure. This will allow the MLCs and EECEN to identify weak points for improvement.

Also, we know that additional radiobeacon spares will need to be available in the field. We anticipate giving G-TEC/SUPCEN the information needed to set u; and ERPAL for DGPS/radiobeacons. Units would submit requests for ERPAL items, or better yet, they could receive an upgraded spares allowance automatically. These would be ultimately funded using DGPS project funds.

5. CONCLUSIONS

DGPS is on the way, and buoy tender crews can look forward to saving a lot of time and effort when it arrives in their areas. However, a major hazard to the implementation timetable is the troubled condition of the existing nationwide marine radiobeacon system. If you maintain (or are in a position to influence) a potential DGPS/radiobeacon site, take a hard, suspicious look at it now; it should be brought up to prime condition using the CASREP or SSMR process. It's too late to start when the EECEN team shows up for the DGPS pre-installation visit. Any field unit with questions should ask their EMD or ESU; EMD/ESUs can contact MLCA(tst/tfs) or MLCP(tes-3) for more information on site requirements and correcting radiobeacon problems, if necessary. EECEN(Ng) is responsible for engineering and fielding DGPS service installations. No new sites (beyond the existing seven) are planned before 1994, although there will be several retrofits to standardize installations. The EECEN POC is LCDR Wilson or ENS Feigenblatt, (609)523-7232.



Ho, hum...Just another day at Headquarters!

DGPS BROADCAST SITES							
NAME	LAT.	LONG.	RANGE	NAME	LAT.	LONG.	RANGE
GREAT LAKES REGION				ATLANTIC AND GULF COASTS (Continued)			
EAGLE HARBOR, MI	47 27.7	88 09.5	220mi	FORT MACON, NC	34 41.5	76 41.0	130mi
WHITEFISH PT., MI	46 46.3	84 57.5	80mi	CAPE HENRY, VA	36 55.6	76 00.5	125mi
LOCKOUT 4, MI	46 17.1	84 12.7	30mi	CAPE HENLOPEN, DE	38 46.8	75 05.3	175mi
SEUL CHOIX PT., MI	45 56.3	83 54.7	120mi	TBD - NY HARBOR	TBD	TBD	TBD
STURGEON BAY, WI	47 47.7	87 18.8	60mi	MONTAUK PT.,NY	41 04.0	71 51.8	125mi
MILWAUKEE, WI	43 01.8	87 52.9	140mi	PORTSMOUTH, NH	43 04.2	70 42.5	TBD
PRESQUE ISLE LT., MI	45 21.4	83 29.5	80mi	TBD - CEN. MAINE	TBD	TBD	TBD
GRAVELY SHOAL, MI	44 01.2	83 32.3	40mi	PACIFIC COAST, ALASKA, & HAWAII			
PORT GRATIOT, MI	43 00.3	82 52.4	140mi	BARBERS POINT, HI	21 18.0	158 05.5	170mi
DETROIT(BELLE IS.), MI	42 20.4	82 57.8	70mi	UPOLO POINT, HI	20 14.8	155 53.2	170mi
SANDUSKY, OH	41 30.0	82 40.5	130mi	POINT LOMA, CA	32 40.0	117 14.6	150mi
BUFFALO, NY	42 52.2	78 54.2	120mi	POINT ARGUELLO, CA	34 34.7	120 38.8	190mi
ROCHESTER, NY	43 15.4	77 36.2	100mi	SF BAY, PT. BLUNT	37 51.2	122 25.2	30mi
TIBBETS PT., NY	44 06.1	76 22.2	40 mi	POINT ARENA, CA	38 57.3	123 48.8	125mi
ATLANTIC AND GULF COASTS				CAPE BLANCO, OR	42 50.3	124 33.8	130mi
ARANSAS PASS, TX	27 50.0	97 03.5	175mi	GRAYS HARBOR, WA	46 54.2	124 07.8	150mi
GALVESTON, TX	29 19.7	94 44.6	175mi	EDIZ HOOK, WA	48 08.4	123 24.1	70mi
MOBILE PT., AL	30 13.8	88 01.4	165mi	ROBINSON POINT, WA	TBD	TBD	TBD
TBD - NEW ORLEANS	TBD	TBD	TBD	GUARD ISLAND, AK	55 25.3	131 52.8	300mi
EGMONT KEY, FL	27 36.0	82 45.7	210mi	CAPE SPENCER, AK	58 12.0	136 38.8	300mi
KEY WEST, FL	TBD	TBD	150mi	C.HINCHENBROOK,AK	60 14.3	146 38.2	TBD
TBD - PUERTO RICO	TBD	TBD	TBD	POTATO POINT, AK	61 03.	146 42.0	TBD
JUPITER INLET, FL	26 56.9	80 04.9	125mi	COOK INLET, AK	TBD	TBD	250mi
CAPE CANAVERAL, FL	28 27.6	80 32.6	250mi	KODIAK, AK	59 00.0	156 30.0	275mi
CHARLESTON, SC	32 45.5	79 50.5	150mi	COLD BAY, AK	TBD	TBD	300mi

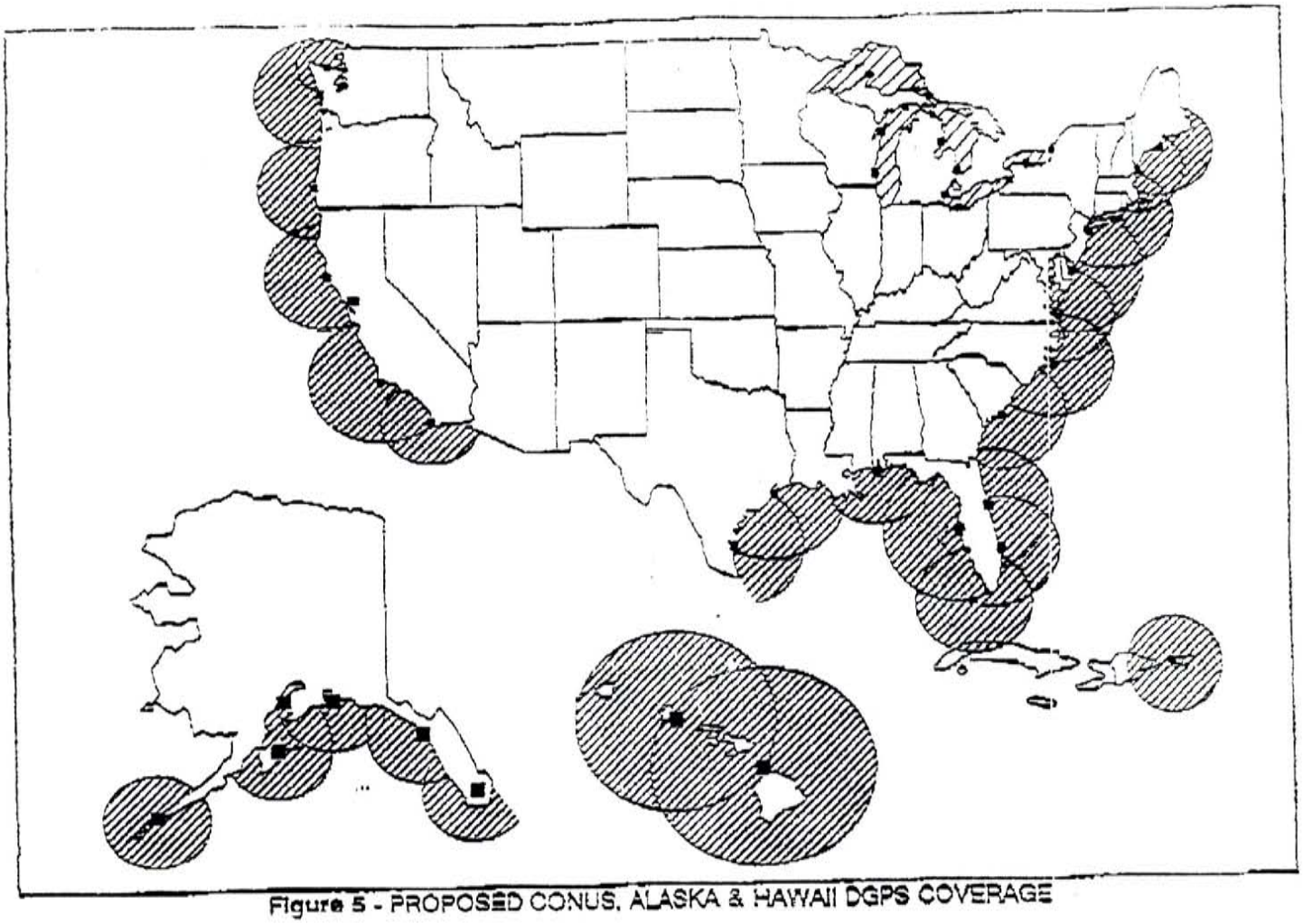


Figure 5 - PROPOSED CONUS, ALASKA & HAWAII DGPS COVERAGE

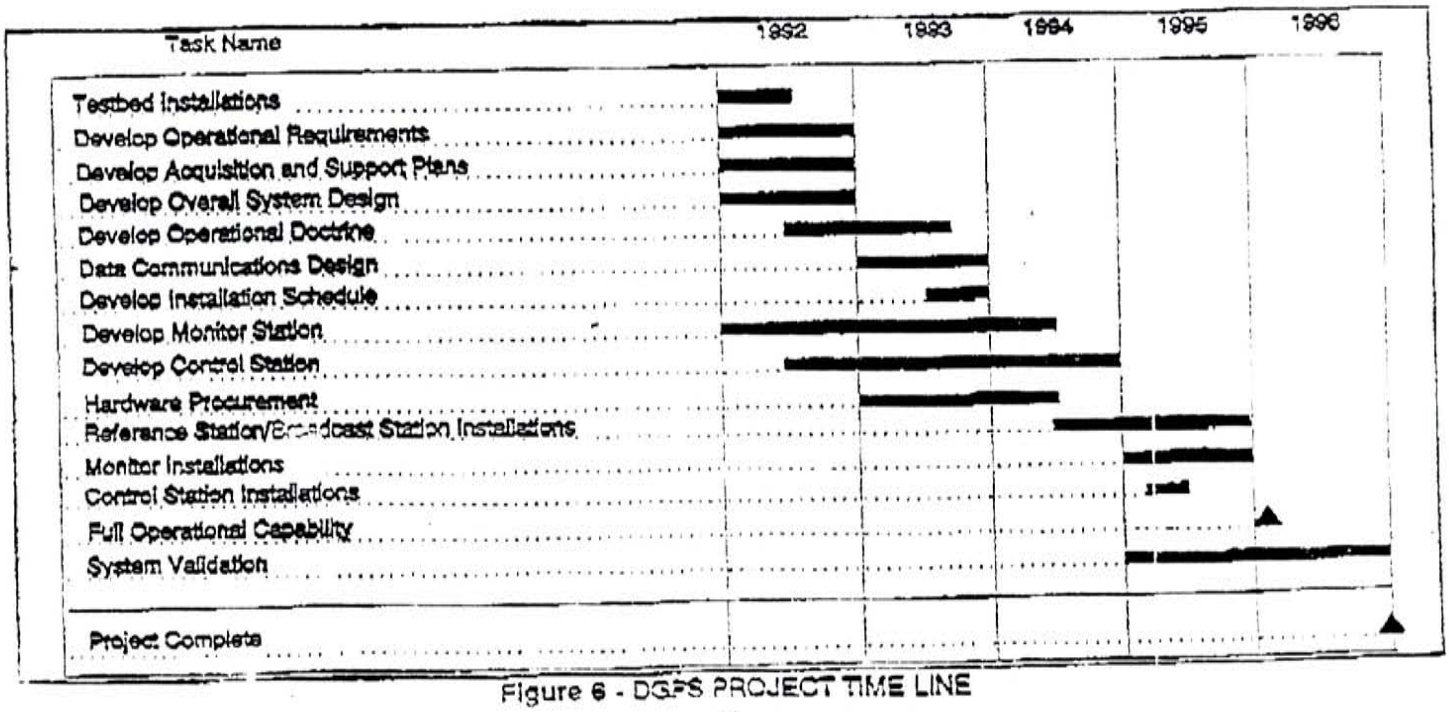


Figure 6 - DGPS PROJECT TIME LINE

APPENDIX IV

Moss Landing Marine Laboratories
CALIFORNIA STATE UNIVERSITY [illegible]

MARINE OPERATIONS
P.O. BOX 450
MOSS LANDING, CA 95039-450
(408) 633-3534 FAX NO. 633-4580

January 11, 1993

Dr. Garrett Brass, UNOLS Chair
University of Miami, RSMAS
4600 Rickenbacker Causeway
Miami, FL 33149-1098

Dear Dr. Brass:

As requested in your letter to Jim Williams dated May 5, 1992 the RVOC has developed an inspection check list to be used by UNOLS institutions when chartering a non-UNOLS vessel. The enclosed draft has been reviewed by the members of the RVOC and approved as a good starting point. It is our belief that this list can be used as a guide for ensuring that important items are checked. The exact level of compliance, or whether or not a particular item is applicable, would be determined by the inspector, taking into account factors such as type of science mission, operating area, number of persons involved and size of vessel. With experience in using this check list improvements can be incorporated.

Included as part of the check list is a cover letter that gives some general guidance. One of the practical issues that must be determined is the method by which this policy and checklist are promulgated. The most often made suggestion has been that this policy be given wide dissemination by UNOLS and the funding agencies and that the funding agencies make adherence a condition of any grants or contracts.

Sincerely,

Mike Prince
Chairman, RVOC

DRAFT # 3, 1/11/93

Chartering non-institutional vessels by UNOLS institutions

When a UNOLS institution charters a vessel not operated by that institution for marine research the guidelines given in chapter 17 of the UNOLS Research Vessel Safety Standards must be followed. When federal funding from NSF, ONR and other agencies are involved then it is mandatory that the vessel be physically examined prior to chartering to verify the vessel's safety, material condition and crew competency in accordance with the UNOLS Research Vessel Safety Standards.

Inspected vessels that possess a current U.S. Coast Guard, SOLAS or U.S. Navy INSERV inspection certificate have been physically inspected by competent marine personnel and such inspections may be used to satisfy the Chapter 17 UNOLS Research Vessel Safety Standard's Inspection. Certain large projects or those involving international co-operation may require a contract inspection by a team such as the NSF/ABSTECH team. Small vessels, carrying less than six scientists, that possess a current U.S. Coast Guard safety inspection performed under the Federal boating Safety Act of 1971 or the Commercial Fishing Industry Vessel Safety Act of 1988 may also satisfy this inspection requirement if these safety requirement are considered sufficient for the expected area of operation and mission by the chartering institution's marine staff.

Any other non-inspected vessel that fails to meet the above criteria, should be physically inspected by the chartering institution's marine staff, a naval architect, a marine surveyor or other competent marine personnel to insure the proposed vessel meets UNOLS Research Vessel Safety Standards. Attached is a vessel charter inspection check list that should be used as guidance during these inspections. Discrepancies should be corrected prior to entering into a charter agreement and vessels rated unsatisfactory should not be chartered.

Draft #3, January 11, 1993

Inspection Check List
for
Chartering Non-UNOLS Vessels per Chapter 17
UNOLS R/V Safety Standards

Check each category listed below as appropriate for the charter mission and operating area. Ensure necessary equipment is aboard and operates properly.

Bridge and Navigation Equipment:

_____Compass, deviation table posted
_____Auto pilot
_____LORAN/GPS/TRANSIT/OMEGA
_____Depth Sounder
_____Radar
_____Navigation Lights, task lights, day shapes, signal flags.
_____Ships Bell
_____Whistle or Sound Device
_____Emergency Alarm
_____Pyrotechnics Expiration Date Not Exceeded?_____
_____Navigational Charts and Publications

Communications Equipment:

_____Radios, VHF and/or SSB
_____INMARSAT or Teletype
_____Cellular Phone
_____Emergency Radio with backup battery or power
_____EPIRBs, battery expiration date

Documentation:

_____Check terms of Charter Agreement
_____Ensure vessel can be legally chartered based on certificate of inspection, letter of designation or limitation of charter to less than 6 persons.
_____Ensure documentation, ownership, inspection certificate, load line certificate and stability letter are current and appropriate for planned mission.
_____Ensure Master's license is current and appropriate for vessel being chartered or that the operator is otherwise qualified for the mission..
_____Ensure crew size and credentials are appropriate for charter's mission.
_____Ensure appropriate insurance coverage is in effect for charter duration.

Life Saving Equipment:

_____PFDs, properly marked, good condition, accessible to passengers.
_____Immersion Suits
_____Inflatable Life Rafts Inspection Date Current?_____
_____Lifering Buoys
_____Rescue Boats

Fire Fighting Equipment:

_____Fixed and Portable Fire Extinguishers Inspection Dates Current?_____
_____Smoke and Fire Detectors
_____Fire Stations and Hoses
_____Self Contained Breathing Apparatus
_____Fire and Damage Control Locker
_____Emergency Stations Bill
_____Remote shut downs for Galley stove, other equipment

Draft #3, January 11, 1993

Inspection Check List for Chartering Non-UNOLS Vessels per Chapter 17 of UNOLS R/V Safety Standards

Exterior Decks and Equipment:

_____Anchors and Associated Equipment
_____Watertight Doors and Hatches
_____Freeing Ports
_____Loose equipment, gear properly stored
_____Through hulls, sea valves, etc.
_____Deck Vents
_____Cargo and Weight Handling Equipment (Safe Work Load posted & tested)
_____Deck Surfaces Non-Skid
_____Life Lines and Safety Chains
_____Deck lighting, adequate
_____Condition of small boats and motors
_____Proper storage of gasoline

Engineering

_____Gas Engines - Check flame arrestor, vents, gas hoses and no sparking devices in bilges.
_____Diesel Engines - Check oil and exhaust leaks, starting system, maintenance and hours since last overhaul.
_____Inspect overall cleanliness and condition of engine spaces.
_____Inspect batteries, battery box ventilation and emergency power sources.
_____Check emergency lights.
_____Check bilge and ballast systems and pumps.
_____Check fueling system and pumps.
_____Check refrigeration systems.
_____Check fire pump.
_____Check engine room fire suppression capability.
_____Check all manifolds for saltwater, fuel, etc.
_____Check condition of switchboards, wiring and auxiliary generators.
_____Check belts, other exposed moving parts for condition and shrouds
_____Alarms, oil pressure, water temp, high bilge water, fire

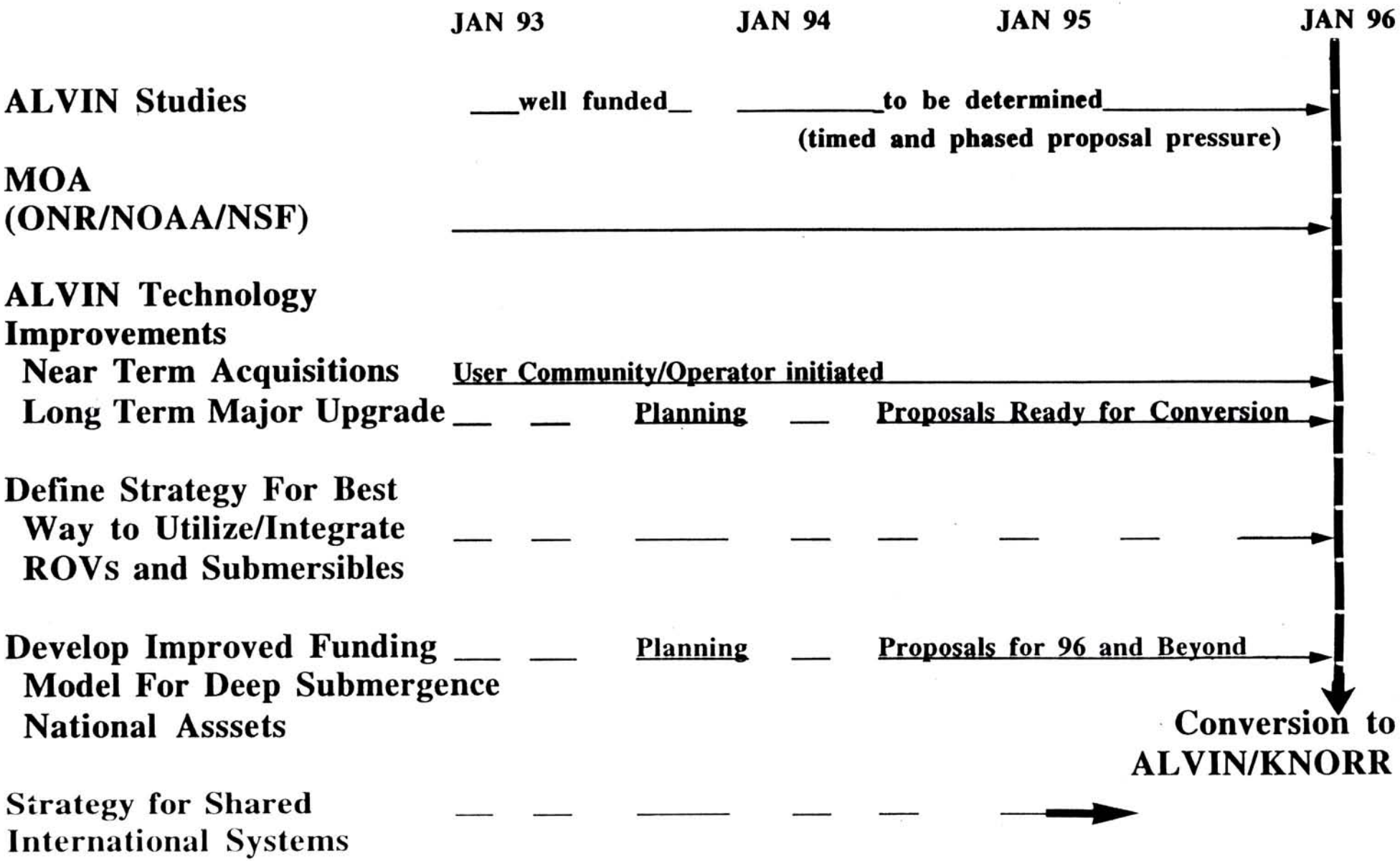
Miscellaneous:

_____First Aid Kits and Medical Supplies
_____Damage Control Equipment
_____Emergency Steering
_____General Appearance and Cleanliness
_____Oil Pollution Placard and other required notices are posted.
_____Sanitary System Operations
_____Assess vessel's overall stability.
_____Assess vessel's overall ability to perform charter mission. Include laboratory and deck space, berthing and feeding capability, scientific equipment and winches, etc.
_____Ensure the operator plans to file a float plan (cruise plan) with a sailing list of all POB's, communications plan and loss communications procedures.

APPENDIX V

DESSC

Dan Fornari	LDGO	G&G
Hugh Milburn	NOAA/Seatle	Engineer
James Moore	(Casey) UCSC	G&G
Mary Scranton	SUNY Stonybrook	Chem.
Gary Taghon	Rutgers	Biol.
Karen Von Damm	Univ. of NH	Chem.
Carl O. Wirsen	WHOI	Biol.
Dick Pittenger	WHOI	ex officio Admiral


JAN 93
JAN 94
JAN 95
JAN 96
ALVIN Studies
well funded
to be determined
(timed and phased proposal pressure)
MOA
(ONR/NOAA/NSF)
ALVIN Technology
Improvements
Near Term Acquisitions
User Community/Operator initiated
Long Term Major Upgrade
Planning
Proposals Ready for Conversion
Define Strategy For Best
Way to Utilize/Integrate
ROVs and Submersibles
Develop Improved Funding
Model For Deep Submergence
National Asssets
Planning
Proposals for 96 and Beyond
Conversion to
ALVIN/KNORR
Strategy for Shared
International Systems

Consensus Equipment Upgrade

Imaging

Pan/tilt/zoom 3-chip high resolution color video

CCD imaging system (camera and data management)

Improved pan/tilt SIT black and white video system with in hull monitors and observer control

Laser scaling for all external cameras

Improved lighting

In-Hull Systems

Navigation and display system that can be referenced to existing base maps

Upgraded altimeter

Acoustic data link to surface

Improved side-scan sonar (real time link to surface-constrained images)

Sampling

Oriented core (~ 50 cm) igneous rock sampler (advanced Stakes/ Holloway drill)

- multiple cores
- faster drilling (> hydraulic rpm)
- adjustable orientation

APPENDIX VI

WORKSHOP TO ASSESS THE FUTURE VESSEL AND FACILITY NEEDS OF COASTAL MARINE SCIENCE

Williamsburg Hospitality House
Williamsburg, Virginia
February 21-24, 1993

Updated Schedule

Saturday and Sunday, February 20 and 21, participants arrive in Williamsburg.

Sunday, February 21

1330 hrs- 1630 hrs	Workshop steering committee and coastal subcommittee members meet at the Virginia Institute of Marine Science
1700 hrs- 1900 hrs	Wine and cheese reception, Wren Gallery, College of William and Mary (Host: Virginia Institute of Marine Science, College of William and Mary)

Monday, February 22

0815 hrs	Welcome and opening remarks, M. Langseth, Chairman, UNOLS Fleet Improvement Committee

Keynote addresses "**Perspectives on Multidisciplinary Coastal Marine Science**"

0845 hrs	Don Scavia, NOAA
0945 hrs	Coffee break
1000 hrs	C. Yentsch
1030 hrs	D. Atwood
1100 hrs	W. Boicourt
1130 hrs	P. Biscaye
1200 hrs	Charge to working groups
1230 hrs	Lunch break
1330 hrs	Convene first set of working groups: research needs (4 concurrent sessions)

A1	Synoptic Observations Chair: L. Atkinson Rapporteur: J. Grassle
A2	High Resolution Time Series Chair: C.N.K. Mooers Rapporteur: C. Flagg
A3	Interdisciplinary Studies Chair: C. Wirick Rapporteur: C. Nittrouer
A4	Information Management and Communication Chair: F. Grassle Rapporteur: J. Paul

1730 hrs	Break for dinner
2000 hrs	Chairs and rapporteurs prepare reports

Tuesday, February 23

0800-0900	Chairs and rapporteurs of first set of working groups complete reports and prepare presentations
0900-1215	Working groups present their results in plenary session; general discussion (coffee break when convenient)
1215 hrs	Charge to new working groups
1230 hrs	Lunch break
1330 hrs	Convene second set of working groups: Facilities (4 concurrent sessions)

B1 Large Research Ships
Chair: P. Betzer
Rapporteur: R. Jahnke

B2 Aircraft, Satellites, Moorings and Fixed Platforms
Chair: G. Geernaert
Rapporteur: L. Harding

B3 Small Research Ships
Chair: E. Durbin
Rapporteur: R. Geyer

B4 Instrumentation (including ROVs and data acquisition)
Chair: R. Sternberg
Rapporteur: M. Patterson

1730 hrs	Break for dinner
2000 hrs	Chairs and rapporteurs prepare reports

Wednesday, February 24

0800-0900	Chairs and rapporteurs of second set of working groups complete reports and prepare presentations
0900-1215	Working groups present their results in plenary session; general discussion
1215 hrs	Closing remarks
1230 hrs	Workshop adjourned

Friday, March 5

Completed reports of working groups submitted to L.D. Wright for incorporation into full report

Mid to Late 1993

Draft report distributed to workshop participants and others for review and modification

Late 1993

Final report published and distributed

APPENDIX VII

DIVISION OF OCEAN SCIENCE
M E M O R A N D U M

January 12, 1993

TO: Distribution

FROM: D. Heinrichs, OCFS/NSF

SUBJECT: Large Ship Operating Costs.

Background:
The issue of operating costs for the large ships in the UNOLS system and the potential impact on overall fleet support was raised in several ways in late 1991 and 1992. NSF provided comparative operating cost data based on 1992 operations proposals and requested the involved institutions to address the issues. The response was submitted at the UNOLS meetings in September 1992. I stated at that time NSF would wait until 1993 operations proposals were received before responding. The proposal are in hand and budget negotiations are in process.

Response to 14 September 1992 letter:

1&2. Existing system works to a large degree; comparative costs fall in range of +/-8%; institutions are making changes; incentives to operate with attractive rates are real. Endorse (1) noting cost differences and (2) keeping community aware of comparative cost. Oppose specific federal costs-cutting mechanisms as "micromanagement".

NSF response: Agree the existing system works to a large degree. Concern is whether or not institutions have allowed crew compensation and other operational costs to exceed community norms. A range of +/-8% is a 16% or $670k annual difference from low to high for nominal $4.2 million operating cost. Simply noting cost differences without institutional commitments to work toward comparable standards is insufficient. Agree federal "micromanagement" is not desirable.

3. NSF has tightest imaginable control over costs. Declining to fund ship, or threatening to do so, is sufficient leverage.

NSF response: Disagree with the tone of this statement. Idle threats are worthless! All or nothing is an extreme sort of "micromanagemt"! The system and community/federal interactions are more complex than implied.

4. Budget exercise was instructive; various items vary legitimately between institutions; salary and other compensation items for crew are very different from institution to institution; major elements in bottom line costs are overall crew compensation; no hidden subsidies exist.

NSF response: Agree there are legitimate differences between institutions and ship operations costs. Agree overall crew compensation is a major factor in differences -- this was the central point in April 1992 NSF memorandum. Identifying differences, and reasons, is only a first step, next step is to learn from more efficient operations to see what changes can be made. Institutional inertia and slow growth in non-essential functions are difficult to overcome.

5 RVOC provides forum for information - trading about cost elements and should be encouraged to continue

NSF response: Agree but RVOC does not review or recommend changes to operating budgets for individual institutions.

6. Requirement for licensed radio officers increases costs by $300 to $400/day for large ships; solicit agency support to eliminate this requirement

NSF response: Support UNOLS/RVOC position that this requirement should be dropped.

7. Pressures to economize on operations could compromise ability to ensure ship maintenance and/or other fundamental capabilities; some level of cost differences needs to be recognized as acceptable; and distributed UNOLS operations is a historic strength of the system.

NSF response: Agree with basic principles as stated. Does not resolve the issue of change or improved institutional management, however.

The concluding paragraph notes that forces are already in motion to produce significant positive results for comparative operational costs and encourages NSF to accept legitimate differences and support the operators.

<u>1993 proposed budgets:</u>
The proposed 1993 operating budgets for the 5 large ships were submitted with strong schedules for all ships. (ATLANTIS II a little weak at 262 days). Scheduling changes have occurred since proposal submissions and NSF is negotiating revised budgets. The analysis below <u>reflects the original 1993 Submissions only</u> and should show institutional response to the 1992 review and self - analysis process.

Crew costs:

	EWING	KNORR	1992 AII	THOMPSON	MELVILLE
Salaries	825	936	702	770	490
OT/Leave	754	887	660	612	246
Fringe	349	496	379	258	108
	$1,928K	$2,320K	$1,741K	$1,640K	$844K
Per Op. Day	$6,405	$8,561	$9,781	$5,921	$4,965
			1993		
Salaries	767	882	889	828	950
OT/Leave	791	840	841	518	360
Fringe	357	334	336	363	247
	$1,915K	$2,056K	$2,066K	$1,709K	$1,557K
Per Op. Day	$6,964	$7,294	$7,889	$5,568	$5,190

Comments: The relative cost (rank order) of crew compensation for each ship remains the same for 1992 to 1993 i.e. ATLANTIS II, KNORR, EWING, THOMPSON, MELVILLE. The major break in crew costs continues to be between WHOI/LDGO (high) and U. Wash/SIO (low) based on costs per operational day. The overtime/shore leave costs are a major factor. A comparison of the percentages for 1993 follows:

	EWING	KNORR	AII	THOMPSON	MELVILLE
Salaries	$767K	$882K	$889K	$828K	$950K
OT/Shore	103.1%	95.2%	94.6%	62.6%	37.9%
Fringe	46.5%	37.9%	37.8%	43.8%	26.0%
Total change 1992/1993 per op. day	+8.7%	-14.8%	-19.3%	-6.0%	+4.5%

The most visible signs of "forces in motion" are reduction in fringe benefit cost percentages at WHOI and reduced overtime/shore leave cost percentages at U. Washington and Scripps. Lamont, in contrast, is up 11.7% in OT/shore-leave projected cost.

If one "adds" costs for Radio Operators at $300 - $400 per operational day for EWING and THOMPSON (and some equivalent number for the ONR apprentice on MELVILLE) the basic parameters do not change dramatically. The EWING approaches the KNORR in costs per operational day and MELVILLE/THOMPSON difference may increase slightly. The major separation between WHOI/LDGO and U. Wash./SIO remains.

Marine Operations/Shore Facility/Indirect Costs:
These three items collectively cover shore staff costs, billing and accounting, pier and shore facility maintenance, and other general costs.

	EWING	KNORR	AII	THOMPSON	MELVILLE
Marine Ops.	417	201	203	192	411
Shore facility	150	64	64	75	229
Indirect Costs.	-	528	532	374	506
	$546K	$793K	$799K	$641K	$1,146K

The Scripps operation is significantly above the others, followed by Woods Hole, then U. Washington and Lamont as lowest cost. An obvious question is whether or not indirect cost funds should cover items being direct charged at the two large multiple ship operating institutions.

Repair and Maintenance:
Requested funds range from $274K (THOMPSON), $400K (KNORR), $510K (MELVILLE), $550K (EWING) to $700K (ATLANTIS II). New ship (THOMPSON) is low, ancient ship (ATLANTIS II) is high

Other Expenses:
There is the usual scatter in the sub-categories with two items of note:

- Insurance costs. The projected insurance costs for Lamont is reduced from $353K in 1992 to $252K in 1993 reflecting lower amounts of hull insurance. This remains an added cost factor for Lamont compared to the other institutions. U. Washington is also relatively high at $126K versus the "Fleet policies" of Scripps and Woods Hole ($35K to $78K/ship).

- Fuel costs. An interesting calculation is fuel and lube oil costs per sea day to examine relative efficiency (and/or mix of station vs. steaming time).

EWING - $2528/sea day	up +18.9% from 1992
KNORR - $1348/sea day	down -6.6% from 1992
ATLANTIS II $1000/sea day	up +00.6% from 1992
THOMPSON - $2238/sea day	down -12.5% from 1992
MELVILLE - $2412/sea day	up +40.6% from 1992

  EWING and MELVILLE increases more than offset KNORR and THOMPSON decreases. Reasons for the changes??

Overall costs/day rates:
The bottom - line of the proposal submission is that, in rank order, requested support was:

KNORR	- $4.156M	at $14,739/day	for 282 days (down -12.6%)
THOMPSON	- $4.174M	at $13,596/day	for 307 days (down -6.7%)
ATLANTIS II	- $4.353M	at $16,615/day	for 262 days (down -16.1%)
MELVILLE	- $4.553M	at $15,177/day	for 300 days (up +13.5%)
EWING	- $4.700M	at $17,432/day	for 275 days (up +10.1%)

Day rate range is +/-12.4% from midpoint.

Summary comments:
This memorandum fulfills one of the recommendations of the September letter to NSF, i.e notes cost differences and keeps community aware of comparative costs It is not a detailed analysis of "legitimate" costs differences. I am aware that changes, particularly in staff and staff compensation levels, take time if disruption is to be minimized. I encourage continued discussion and development of improved management approaches among the operators. Formal comment (or informal comment) by the RVOC or UNOLS Council on the basic parameters of large ship operations are welcome.

Donald F. Heinrichs

Distribution:
D. Hayes, Lamont
R. Pittenger, WHOI
R. Knox, SIO
A. Nowell, U.Wash
J. Baker, JOI
UNOLS Council
S.Ramberg, ONR

APPENDIX VIII

NATIONAL SCIENCE FOUNDATION
1800 G STREET, N.W.
WASHINGTON, D.C. 20550

DIVISION OF OCEAN SCIENCES
OCEANOGRAPHIC CENTERS & FACILITIES SECTION
M E M O R A N D U M

January 12, 1993

TO: UNOLS Council

FROM: D. Heinrichs, SH/OCFS

SUBJECT: UNOLS Ship Operation - 1991 - 1993

General

The attached tables are an update to the material provided last year (21 February 1992 memo to UNOLS Council). The data source is the Ship Operations proposals submitted to NSF in October 1992. Points to remember include:

- Actual support costs for 1990 and 1991 should be final. Sources of support and amounts are as reported by operators.
- Estimated Support for 1992 should be close to final numbers.
- Requested support for 1993 will have significant changes. A number of schedules have changed since the October submission date. Costs are institutional requests not negotiated final budgets.
- Available funds at NSF are less than requested amount. This is also true for NOAA.

I have not done the crew cost, overtime, etc or shore staff, etc. analysis this year. We will update our data base later when final revised budgets are in hand from all institutions.

Large Ship Operation Cost

The data from last years' analysis was provided to the large ship operators along with a "charge" to the institutions to either defend the cost with cogent arguments acceptable to their peers or to modify institutional practices to be comparable with community standards. You have a copy of their response (14 September 1992 letter). My response to the letter is enclosed. I welcome any comments the Council wishes to provide regarding the "system" and existing mechanisms. (I do not expect detailed budget reviews.)

Overall Ship Operations Costs/Funds

Requested/projected support for UNOLS research ship operations in 1993 is down from 1992 estimates, i.e. $48.5M vs $49.1M. A major reduction in intermediate ship costs (- $1.7M) with modest reduction for local ship costs (- $0.2M), and Harbor Branch operations (- $0.6M) are partially offset by increased regional/open ocean operations (+ $0.4M) and large ship operations requests (+ $1.6M).

The reduction in intermediate ship operating costs reflect the ENDEAVOR out-of-service for the year following a mid-life refit and short schedules for OCEANUS and WECOMA preparing for mid-life refits. Available operating days in this class of ship will increase in 1994

As usual it is difficult to make forecasts for 1994 operations support funds at this time of the year. The NSF request prepared for the new Administration calls for significant growth beyond inflation, however. A number of efforts by research community call for new and expanded partnerships with other federal agencies and other sponsors of oceanographic research. These potential programs may provide additional support required to maintain the existing academic research fleet, particularly if the programs include use of intermediate and large ships.

NSF currently provides about 70% of total UNOLS operations costs but over 75% of the large and intermediate ship costs. These two ship categories consume over 75% of total operations cost. Thus to achieve healthy overall support levels, there must either be real growth in support for research projects, and the required ship time, using the larger ships or the fleet size in these classes should be reduced. NSF will monitor progress on any new "partnerships" and update outyear budget projections following the FY 1994 budget proposals by the new Administration.

Arctic Research Vessel

NSF is continuing support for the design and acquisition of an Arctic Research Vessel. As noted repeatedly in the past, the acquisition planning includes the requirement for new operating funds to support the vessel (and additional research funds to support scientific projects).

ACADEMIC FLEET OPERATIONS SUPPORT*
(1990-1993)

UNOLS TOTAL	Actual 1990	Actual 1991	Estimate 1992	Request 1993
NSF	21,188	26,179	35,664	33,890
NOAA	2,535	2,490	4,199	5,231
ONR	5,545	5,211	4,061	5,161
OTHER	2,514	3,129	3,140	2,064
INST	2,504	2,117	2,089	2,190
	$34,286	$39,126	$49,153	$48,536

* Source: NSF Ship Operations Proposals (1993) / October 1992 versions

Proposed Ship Operations - 1993
Heinrichs Classification

	Op days	Costs	Ave
Large			
Thompson	307	4,174,067	
Knorr	282	4,156,398	$4.4M
Melville	300	4,553,008	285 days
Ewing	275	4,700,382	
Atlantis II	262	4,353,130	
	1426	21,936,985	
Intermediate			
Vickers	207	2,587,504	
Moana Wave	262	2,844,732	$2.3M
Oceanus	152	1,577,456	210 days
Wecoma	196	2,335,873	(Gyre &
Endeavor	-	1,200,502	Endeavor
Iselin	214	2,197,352	omitted)
Gyre	103	822,000	
New Horizon	226	2,088,063	
	1360	15,653,482	
Special Purpose			
Seward Johnson	186	1,450,800	$1.1M
Edwin Link	90	702,000	138 days
	276	2,152,800	
Regional/open ocean			
Point Sur	205	1,205,709	$1.4M
Cape Hatteras	228	1,406,545	199 days
Alpha Helix	163	1,575,972	
	596	4,188,226	
Regional			
Sproul	146	741,922	$1.0M
Cape Henlopen	164	1,046,320	150 days
Weatherbird	163	1,226,451	
	473	3,014,693	
Local			
Pelican	169	612,118	
Longhorn	- no data	-	
Laurentian	104	378,456	$0.4M
Blue Fin	182	237,475	148 days
Barnes	67	121,936	(Barnes
Calanus	136	298,928	omitted)
	656	1,648,913	
TOTAL	4787	$48,595,099	

* Source: NSF Ship Operations Proposals (1993)/October 1992 versions

ANNUAL OPERATIONS COSTS BY SHIP CATEGORY (1993)
(HEINRICHS CLASSIFICATION)

LARGE SHIPS

MELVILLE, KNORR	$4.4M
THOMPSON, EWING	285 days
ATLANTIS II	

INTERMEDIATE SHIPS*

MOANA WAVE, VICKERS	$2.3M
OCEANUS, WECOMA	210 days
ENDEAVOR, ISELIN	
NEW HORIZON, GYRE	

REGIONAL/OPEN OCEAN

POINT SUR, ALPHA HELIX	$1.4M
CAPE HATTERAS	199 days

REGIONAL

SPROUL, HENLOPEN	$1.0M
WEATHERBIRD	158 days

LOCAL**

PELICAN, LONGHORN	$0.4M
LAURENTIAN, BLUE FIN	148 days
BARNES, CALANUS	

JSL/ROV

SEWARD JOHNSON	$1.1M
EDWIN LINK	138 days

* GYRE and ENDEAVOR excluded from intermediate ship average owing to short schedules

** BARNES and LONGHORN excluded from average owing to short schedules

1991 ACADEMIC FLEET OPERATIONS SUPPORT*
(HEINRICHS CLASSIFICATION)

SPONSOR	LARGE SHIPS	INTERMEDIATE SHIPS	REGIONAL/OPEN OCEAN
NSF	11,924	8,2[illegible]	4,978
NOAA	389	82	110
ONR	1,174	3,761	267
OTHER	659	1,040	797
INST	61	338	285
	$14,207	$13,520	$6,437

SPONSOR	LOCAL SHIPS	JSL/ROV SHIPS	ALVIN SUPPORT
NSF	674	304	1,564
NOAA	401	1,333	175
ONR	9	--	159
OTHER	319	314	--
INST	370	1,063	--
	$1,773	$3,014	$1,898

* Source: NSF Operations Proposals (1993); October 1992 versions

1992 ACADEMIC FLEET OPERATIONS SUPPORT*
(HEINRICHS CLASSIFICATION)

SPONSOR	LARGE SHIPS	INTERMEDIATE SHIPS	REGIONAL/OPEN OCEAN
NSF	17,659	11,882	4,898
NOAA	515	1,872	34
ONR	1,279	2,591	110
OTHER	198	681	1,567
INST	701	334	196
	$20,352	$17,360	$6,805

SPONSOR	LOCAL SHIPS	JSL/ROV SHIPS	ALVIN SUPPORT
NSF	773	452	1,100
NOAA	351	1,427	394
ONR	81	--	82
OTHER	312	382	--
INST	328	530	--
	$1,845	$2,791	$1,576

* Source: NSF Operations Proposals (1993); October 1992 versions

1993 ACADEMIC FLEET OPERATIONS SUPPORT*
(HEINRICHS CLASSIFICATION)

SPONSOR	LARGE SHIPS	INTERMEDIATE SHIPS	REGIONAL/OPEN OCEAN
NSF	16,679	10,337	5,660
NOAA	814	2,937	102
ONR	3,684	1,043	364
OTHER	133	890	769
INST	721	478	264
	$22,031	$15,685	$7,159

SPONSOR	LOCAL SHIPS	JSL/ROV SHIPS	ALVIN SUPPORT
NSF	980	234	1,131
NOAA	247	1,131	384
ONR	70	--	377
OTHER	272	140	69
INST	80	647	--
	$1,649	$2,152	$1,961

* Source: NSF Operations Proposals (1993); October 1992 versions

APPENDIX IX

DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
2531 NATIONAL CENTER BUILDING 3
WASHINGTON, DC 20362-5160

IN REPLY REFER TO

5730
OPR: 00D1E
N00024-93-C-2302

FOR OFFICIAL USE ONLY (Until release)

TO BE ANNOUNCED ON 11 JANUARY 1993

Halter Marine, Incorporated, 13085 Industrial Seaway Road, Gulfport, Mississippi 39503, is being awarded a $34,682,182.00 fixed-priced incentive contract for the detail design and construction of one (1) AGOR-24 Oceanographic Research Ship with options for two (2) additonal ships. Work will be performed in Gulfport, Mississippi and is expected to be completed January 1996. None of the contract funds would have expired at the end of the current fiscal year. The contract was competitively procured. Thirteen proposals were solicited and four were received. The Naval Sea Systems Command is the contracting activity (N00024-93-C-2302).

Further Explanation of Contract:

The AGOR-24 ship will be a modern oceanographic research vessel providing general purpose oceanographic capabilities in coastal and deep ocean areas. The ship will be capable of collecting oceanographic, acoustic, and geophysical data. The AGOR-24 will have the speed, endurance, and seakindliness to meet worldwide ocean research and data collection requirements year-round. The ship will be under the sponsorship of the Office of Naval Research and operated under a long-term lease by the Scripps Institution of Oceanography of the University of California. Funding: SCN

Industry point of Contract:

Mr. Anil Raj	Director of Military Projects	(601) 896-0029
Name	Title	Telephone

NAVSEA Point of Contact: Dottie Myers, (703) 602-1574/5

Kevin Ross Carman
CDR, SC, USN
By Direction

NEWS RELEASE

OFFICE OF ASSISTANT SECRETARY OF DEFENSE
(PUBLIC AFFAIRS)
WASHINGTON, D.C. - 20301
PLEASE NOTE DATE

No. 527-92
697-5342 (Info)
697-3189 (Copies)
697-5737 (Public)

IMMEDIATE RELEASE December 9, 1992

SECRETARY OF THE NAVY ANNOUNCES NAMES OF 11 NEW SHIPS

Acting Secretary of the Navy Sean O'Keefe has announced the names of 11 new ships authorized for construction in the current ship building program.

WASP class amphibious assault ships are named after famous former ships. The amphibious assault ship LHD-6 will be named "BONHOMME RICHARD." The original "BONHOMME RICHARD" was commanded by John Paul Jones. A second ship of that name (although spelled as three words -- BON HOMME RICHARD) was an Essex class aircraft carrier commissioned in 1945 and saw service during World War II and Korea.

OSPREY class coastal minehunters were named by Secretary O'Keefe. Ships of this class are named for birds. Three of the new ships will be MHC-58 "BLACK HAWK," MHC-59 "FALCON," and MHC-60 "CARDINAL."

SUPPLY class fast combat support ships are named for famous former supply ships. One of [illegible] new ships, AOE-10, will be named "BRIDGE." The original BRIDGE (AF- [illegible] the first ship built from the keel up as a storeship. She serv[illegible]h distinction during World War II and was named after Commodore Horatio Bridge, USN, who was the Chief of the Bureau of Provisions and Clothing before the Civil War and as a pioneer of comprehensive fleet supply.

CYCLONE class patrol craft are named for weather elements. Four of these new ships are PC-9 "CHINOOK," PC-10 "FIREBOLT," PC-11 "WHIRLWIND," and PC-12 "THUNDERBOLT."

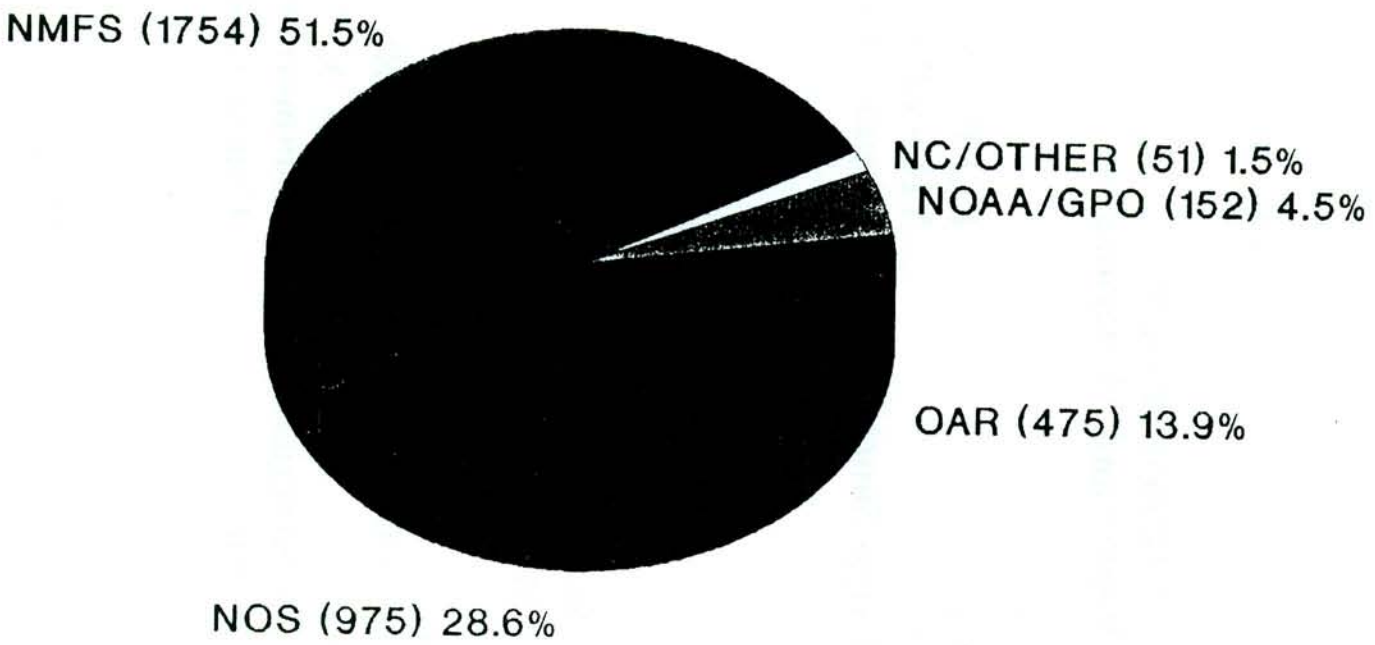
STALWART class ocean surveillance ships are named after positive quality traits. T-AGOS 24 will be named "INTEGRITY."

An oceanographic research ship AGOR-24 will be named "REVELLE" honoring the late Dr. Roger R.D. Revelle, one of the nation's most prominent oceanographers.

-END-

APPENDIX X

FY 1992 DAYS AT SEA
PROGRAM SHARE



CHARTER SUMMARY

FY 1992

Funding:

Office of Global Program	$ 500 K
Fleet Repair and Modernization	900

Programs:

NECOP	PELICAN/LONGHORN	60 DAS
TOGA	VICKERS	91
Key Largo Sanctuary	Commercial	28

FY 1993

Funding:

carry forward from FRAM - FY 1992	$ 2100 K
Office of Global Programs	600

Programs:

TOGA COARE	VICKERS	115+ DAS
NECOP	PELICAN/LONGHORN	60
Monitor Sanctuary	Commercial	23
TUNA Safe	Commercial	30

FY 1994

Funds requested for charter by DOC: $ 0

In addition, approx. 625 days at sea ($ 4.5 M) are chartered by NURP per year

UNOLS CHARTER TIME

	DAS	$ K
FY 1993:		
NECOP, TOGA COARE & WOCE	175+	1,630
FY 1994 - Proposed at 1992 Allocation:		
WOCE	80	960
TOGA TAO	109	1,300
FY 1994 - Revision being considered by Fleet Working Group: *		
TOGA TAO	57 ?	770 ? **
Satellite Ground Truth	40-58	($ 12-15 K/day) **

* Reasons for Revision:

- o Delay of Indian Ocean Expedition until FY 1995
- o Desire to use DISCOVERER for WOCE Cruise

** As yet, funding for charter in FY 1994 has not been identified.

APPENDIX XI

Navy (NOP-096) Ship Report

January 1993

Current Fleet	IOC	Replaced /Replacement
[New Ships]		[Replaced Ships]
USNS MAURY (TAG 39)	1989	BOWDITCH
USNS TANNER (TAGS 40)	1990	DUTTON
USNS MCDONNEL (TAGS 51)	1991	CHAUVENET
USNS LITTLEHALES (TAGS52)	1991	HARKNESS
[Ships to be replaced]		[New Ships]
USNS BENT (TAGS 26)	1964	TAGS 60 SCN FY90
USNS KANE (TAGS 27)	1965	TAGS 61 SCN FY90
USNS WILKES (TAGS 31)	1969	TAGS 62 SCN FY92
USNS WYMAN (TAGS 33)	1969	TAGS 63 SCN FY94
USNS BARLETT (TAGOR 13)	1969	TAGS 64 SCN FY96
		[Ships retired w/o replacement]
		HESS
		LYNCH
		DESTEIGUER

HISTORICAL. The following is used to illustrate the relative success achieved in the 096 ship replacement program despite the frequent budget cuts/changes during annual budget process:

THIS WAS THE 1987 FIVE YEAR DEFENSE PLAN (FYDP)
(Budget profile reflects Number of ships/$ in millions)

	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92
JAN87 FYDP	2/220.0	--	3/68.0	--	1/49.0	2/127.4	4/452.1	--

Total for the FYDP: **12 Ships/ $716.5M**

THIS IS THE STATUS AS OF JANUARY 1993

Year	$Millions	#Ships	Ship Names (hull#)	
FY85	220.0	2	MAURY	(TAGS 39)
			TANNER	(TAGS 40)
FY87	72.1	3	MCDONNELL	(TAGS 51)
			LITTLEHALES	(TAGS 52)
			THOMPSON	(AGOR 23)
FY90	122.5	2	PATHFINDER	(TAGS 60)
			SUMNER	(TAGS 61)
FY92	108.7	2	BOWDITCH	(TAGS 62)
			REVELLE	(AGOR 24)
FY93	8.9	-	(added to AGOR 24)	
Subtotal	**$532.2M**	**9 Ships**		
President's FY94 Budget				
FY94	115.9	2	xxxxxxxx	(TAGS 63)
			xxxxxxxx	(AGOR 25)
FY96	70.6	1	xxxxxxxx	(TAGS 64)
Subtotal	186.5	3		
Total	**$718.7M**	**12 Ships**		

NAVY (NOP-096) SHIP REPORT

Status of Ship Transfers and TAGOS Conversion Program

* Ship Transfers Completed
  - DESTEIGUER to Tunisia
  - CHAUVENET to MARAD (Texas Maritime Academy, TAMU)
  - S.P. LEE to Mexico
  - WASHINGTON to Chile
  - HESS to MARAD (California Maritime Academy)

* Ship transfers pending
  - BARTLETT to Morocco
  - HARKNESS to MARAD (Maine Maritime Academy)
  - LYNCH to Turkey
  - GYRE to Texas A&M

* Status of TAGOS conversions
  (not a 096 program but frequently impacts 096)

  TAGOS not capable of meeting NOP-096 multi-mission requirements.

  One TAGOS to NSWC Det Ft Lauderdale; FY93 SCN $19.5M for conversion to a range ship; in process of ship being returned.

  One TAGOS to NOAA.

APPENDIX XII

CALENDAR FOR 1993 UNOLS MEETINGS

The following dates have been set for 1993 UNOLS meetings.

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

APPENDIX XIII

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

An association of Institutions
for the coordination and support
of university oceanographic facilities

September 30 1988

To: RVOC

Subject: Ship Lay-up and Maintenance Policy

The Chairman of UNOLS has asked the Advisory Council to review the Ship Lay-up Policy which RVOC developed at its last meeting. An ad-hoc Committee constituted as shown in the attached letter of July 19th is reviewing available information in order to report to the next Advisory Council meeting.

The RVOC Policy was circulated to UNOLS and generally received highly favorable reactions. There were, however, disappointly few written responses. What has been received to date is attached. Another circular is going out to UNOLS Members requesting comments.

I have asked Jack Bash to convene a working group at the forthcoming RVOC Meeting to go over these responses and determine what effect any of them might have on the existing policy draft. Special attention should be given to the following considerations:

1. What if either, or both, of RVOC Steps #2 and #4 were not available?

2. Should the "optimum" number of days be amemded?

3. Should a formal "Long-Range" layup/refit plan be established UNOLS wide?

4. Noting that at the July scheduling meeting, 17 of 24 Class II, III, and IV ships were lay-up candidates under the RVOC Policy, is Step #7 realistic?

5. Is Step #8 the final decision making process? Is it in "Open Forum"? Is there an appeal?

6. Other Considerations?

Jack has been asked to collect the comments of RVOC on the above for inclusion in a report to the Advisory Council.

R. P. Dinsmore

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

An association of institutions
for the coordination and support
of university oceanographic facilities

Oregon State University
Research, Graduate Studies
and International Programs
Administrative Servcies A312
Corvallis, OR 97331-2140
(503) 754-3437

July 19, 1988

Jack Bash
Bob Dinsmore
Tom Malone
George Shor

Dear Jack, Bob, Tom and George:

Thank you for being willing to serve on an Ad Hoc Committee to provide a follow-up review of the RVOC White Paper dealing with Vessel Lay-ups and Maintenance. The RVOC put a fine effort forward on this issue, certainly better than we have seen before. Criteria for defining an effective schedule is very important. The formula in the White Paper has already been put to use by NSF, but can certainly use some refinement. Although comments on the RVOC White Paper were solicited from the UNOLS community, very few responded. There were, however, a number of important comments from Don Heinrichs and Keith Kaulum. I have enclosed here the original White Paper and the four sets of comments that were received.

There are obviously a good number of variables in dealing with this issue, with some of the major ones like federal commitment of maintenance funds being a tough nut to crack. It would be helpful to look at the expected life of the ships in the fleet and the prescribed rehab times as one point of reference to work from. Clearly, any proposed lay-up and maintenance plan needs to couple in the long-term perspective of the fleet. I am hopeful that with some serious effort and imagination an effective guide can be developed.

I have asked Bob Dinsmore to chair this committee, and he will take it from here. There are funds in the UNOL's office for you to hold a meeting if that is your wish.

I would like to have your recommendation in hand for the October meeting of the Advisory Council. Again, thank you for your assistance. I appreciate it very much.

Regards,

George

George H. Keller
Chairman

ms
Enc
xc: W. Barbee
A. Maxwell

RESEARCH VESSEL OPERATORS' COUNCIL

RVOC OFFICE
University of Rhode Island
P.O. Box 145
Saunderstown, R.I. 02834

Oct. 19, 1987

Dr. George H. Keller
Chairman UNOLS
Oregon State University
Research Office
Corvallis, OR 97331-2135

Dear George:

In your letter of 9 December 1986 you requested that RVOC develop a position paper on ship lay-ups. The following is that paper which has received the endorsement of the full RVOC at our meeting in New Hampshire 12-14 October 1987.

We believe that lay-ups will be a way of life for ship operators for the forseeable future. This is partly the nature of the business because of the need to maintain a complete inventory of oceanographic vessels with different capabilities and the inherent mismatch of funding and hull availability. Recent history suggests that science has not been left ashore for want of a research vessel and that one to two ship years of ship time can not be funded annually. The types and sizes of ships which come up short of science seems to change to some extent from one year to the next. The focus of science to different geographic areas also changes. Ship mobility can often compensate for this but not always. Some years ships with special capabilities (such as Seabeam) are overworked while other years specialized ships and/or equipment go unused.

An optimum number of operating days for the various size vessels has been developed. This optimum number provides the best mix of operating days and maintenance days for the most cost effective ship operations. We believe that an effort should be made to maintain an optimum number of operating days on all "fully" utilized ships. Our operating experience suggests that this optimum number is as follows:

Class I & II	270 Days
Class III	250 Days
Class IV	220 Days

(Note: Smaller ships and Class IV ships for which some operational constraints apply, such as many short cruises in a given year, may be exempted from the minimum day rule.)

These numbers seem to balance dollar inflow with operating patterns and adequate maintenance time.

Ship's schedules which have significantly fewer days than the optimum are candidates for lay-up. What constitutes "significantly fewer days" is an arbritrary number, however, 80% of the optimum would seem to be a reasonable working figure.

Lay-ups are only effective if funds can be saved. It is believed that anything less than three months is not a lay-up but an extended inport period. Ship lay-ups in excess of 12-14 months (cold lay ups) create another problem and that is major start up costs. This paper will only address lay-ups of more than three months but less than fourteen. This we call a "warm" lay-up. Cost savings increase with months of lay-up to the point of becoming a cold lay-up.

The management of the lay-up must vary with the monies available. There are fixed costs of approximately one third the total annual operating cost which must remain. This includes insurance, security and shore staff. Approximately a third of the costs can be saved outright such as fuel, travel and food. The variable cost savings is in the middle third and is made up of crew costs, maintenance and supplies. Managers vary in their approach to this middle third. Some would prefer to keep as many of the crew in tact and perform maintenance in house. The other approach is laying off the crew and contracting out maintenance work. In any case all or a portion of this middle third is highly desirable for preserving the integrity of the ship.

During the life cycle of a research vessel periods of major overhaul or refit are necessary. If a vessel has an expected life of thirty years it could logically have a mid life refit at about the 15-18 year time frame. With the advances in science and science equipment a major science refitting might be expected every 10 years or at the 10 and 20 year time. This suggests at least three major down periods might be expected in a ship's life cycle. These down periods could be worked into the lay-up planning.

Besides the major refits above, ships can use a rest for general maintenance. This could be a welcome respite from extended operations or a down time needed to repair or replace equipment. If maintenance money was made available for lay-ups they would become less distasteful and even welcomed.

Lay-ups have been traumatic partly because of the short notice given. This causes turmoil with the crew and prevents orderly maintenance planning. Learning of a lay-up in October for the following calendar year is not adequate warning. This has been known to be a problem for some time. In 1986 it was agreed that the lay-up decision would be made in July. In fact the decision came in October as in the past. The uncertainty of funded cruises plays a major part in this delay. Operators hang on in hopes that the August panel will provide funding for a goodly number of their cruises. In most cases this does not happen. The signs are normally clear in mid-summer with maybe 10-20% of cruises unfunded. This would suggest that ships with schedules including 60% or less of funded cruises will not likely "get well" with the August panel results.

Coupled with the short notice given is the long lead time necessary to properly engineer major repair work and then go through the full proposal process with its peer review. If this process does not start until October it is reasonable to expect that funding can not be made available until July or August of the lay-up year. Then it becomes difficult to get the work completed in the remaining time. Some of this time line can be shortened by advance planning. If all ships were encouraged to do advance engineering studies on a long range work package significant time could be saved. These work packages could also be reviewed by the ABSTECH or INSURV inspections. This process would assist the funding agencies with their priorities and probably cull out some of the plans. It could also streamline the proposal review procedure. Another idea to streamline the review process is to establish a review team for on site review. It would seem that any speed up in receiving upgrade money would be beneficial.

We believe the lay-up decision should be made based on an open forum discussion using logical criteria. The principal candidates in lay-up should be given the first opportunity to resolve the issue. If there were some assurances that upgrade funding would be made available it is likely that prospective lay-up operators would be willing to volunteer for lay-up.

The following procedures towards lay-ups are recommended:

Yr-15 mos 1) All institutions should be encouraged to establish a prioritized upgrade plan that has completed at least preliminary engineering.

Yr-12 mos 2) ABSTECH and/or INSURV should review these upgrades and make recommendations as to the viability of each item, possibly prioritizing the upgrade list.

Yr-8mos 3) Funding agencies advise the community as early as possible (Apr-Jun) as to the number of ship days that will be funded. The short fall can then be calculated.

Yr-6mos 4) Funding agencies pledge maintenance or upgrade funds for lay-up ships prior to 1 July.

Yr-6mos 5) Ships with light schedules in July become designated candidates for lay-ups. The following formula would apply:

Total Funded cruises scheduled	=	F
Total proposed but unfunded cruises scheduled	=	P
Optimum Days	=	0

$F + .33P \geq .8 \times 0$

This presupposes that only 1/3 of the unfunded cruises, in July, will be funded by the August panel.

Optimum days are:

Class I & II	270
Class III	250
Class IV	220

(See note on Page 2 about smaller ships)

Yr-6mos 6) Operators are now given an opportunity to volunteer for a lay-up.

Yr-6mos 7) Those operators in the lay-up candidate category now get together, without outside assistance, to attempt to resolve the ship day shortfall.

Yr-5mos 8) Chairperson of the East and West Coast scheduling groups plus the funding agencies resolve shortfall unanswered by 6 and 7 above.

4yr-4mos 9) Lay-up operator will circulate to active operators the resumes/vitae of all marine personnel who cannot be supported under anticipated lay-up funding. Active operators will make every reasonable effort to place these laid off personnel when vacancies occur and will co-operate in enabling them to return to the laid up operator when that vessel re-enters service.

Sincerely,

Jack

John F. Bash
Chairman RVOC

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D C 20550

DIVISION OF OCEAN SCIENCES
OCEANOGRAPHIC CENTERS AND FACILITIES SECTION

25 NOVEMBER 1987

Dr. George Keller
UNOLS Chairman
Research Office
Oregon State University
Corvallis, OR 97331

Dear George:

The following is my synopsis of the RVOC position paper:

- Research ship lay-ups will continue.
- Optimum operations are 270 days (Class I & II), 250 days (Class III), and 220 days (Class IV).
- Any ship with 80% or less of optimum schedule is candidate for lay-up.
- Lay-ups effective only if funds are saved.
- Lay-ups defined as 3-14 months out-of-service (warm lay-up).
- Life cycle of research vessel requires periods of major overhaul or refit.
- At least three major vessel and/or science equipment upgrade periods should be incorporated into lay-up planning.
- Lay-ups traumatic because of short notice for crew and maintenance planning.
- Advance plans should be required for major overhaul or refit of all ships.
- Lay-up decisions should be in open forum discussion using logical criteria.
- Principal candidates for lay-up should have first opportunity to resolve issues.
- Final solution by UNOLS ship schedule chairmen and funding agencies.
- Ships Layed-up!

cc Barbee
Bash

The "procedures" section of the report outlines a rigorous time schedule for commitments and decisions by federal agencies and UNOLS institutions. Overall the RVOC position paper builds on the existing UNOLS system by adding a "maintenance/upgrade" component during lay-ups.

I see a number of difficulties in making the RVOC model work with the present UNOLS committee structure and federal agency constraints. My thoughts and concerns include the following.

Annual maintenance/upgrade proposals

If I understand the report correctly, each institution would assemble in December/January a general maintenance and upgrade work package including ship and/or science outfitting. These would be reviewed and priorities established for each ship in the fleet every year. Funding agencies would pledge maintenance or upgrade funds for whatever ships are to be out of service. Funds flow later in response to scheduling decisions.

Major problems include:

- Annual proposal and review for all ships excessive work for lay-up problem.
- Ships are owned by different agencies and institutions. Unclear uniform policies can be established.
- "Pledge of support" may fall all on one sponsor.
- Maintenance and upgrades driven by scheduling not by long range fleet planning.
- Federal agencies do not have approved budgets by July.

I believe the basic concept behind much of this section of the report is sound, however. We need to develop procedures (and commitments) for long range planning of major overhauls, upgrades and refits related to the life cycles of the research ships. An integrated analysis of the overall fleet profile, required timing, etc. is needed to prioritize individual ships. With needs and priorities known, the candidate ships for refits can be identified before detailed scheduling is done. These ships should be scheduled for operation last.

Support Level Estimates

Funding agencies are to advise operators by April to June of number of ship days that will be funded. Ship days per se is the wrong measure -- too diverse mixture of possible ships, transits, non-UNOLS vessels, etc. to estimate specific number. The anticipated resources to support field operations i.e. the budget is the best predictor. NSF has provided UNOLS with budget estimates (updated as the budget cycle proceeds) for years. The UNOLS scheduling committees have routinely calculated "shortfalls" and then waited for them to go away. If the RVOC procedures are to work, reasonable estimates of support from all sources are needed and the shortfall calculation has to be believed. This is the time sound recommendations on lay-up procedures are needed using logical criteria.

Schedule Resolution

I do not believe that "lay-up candidates" without outside assistance can resolve ship day shortfalls. This implies a closed system involving only those operations. The solutions must include options from the entire fleet.

Final Decisions

RVOC recommends UNOLS Ship Schedule Chairmen and funding agencies provide final resolutions. Two things are mixed here -- advice and management. The key issue is how is UNOLS as an organization is going to provide its final recommended set of actions -- actions, that will result in funds being saved by putting ships and personnel out-of-service.

This is a weak point in the present system. The Schedule Committee chairmen make recommendations now but they are not empowered to speak as the final voice of UNOLS. I doubt that many UNOLS institutions will be willing to delegate the final "lay-up authority" to the chairmen. Advisory Council role? UNOLS Executive Committee?

I am encouraged by the renewed effort to address the lay-up problem. The system at present retains too much emphasis on the mechanics of the scheduling process and not enough emphasis on overall resource allocations.

Sincerely,

Donald F. Heinrichs
Head

cc: E. Silva, ONR

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL RESEARCH
ARLINGTON, VIRGINIA 22217-5000

IN REPLY REFER TO

5000
Ser 1121SP/10
9 February 1988

Dr. George Keller
Chairman, UNOLS
Oregon State University
Research Office
Corvallis, OR 97331-2135

Dear George:

As per your request, I offer the following comments regarding the RVOC Position Paper on ship lay-ups dated 19 October 1987.

Page 2, Paragraph 6:

Using refit periods as convenient lay-up periods sounds great, but we should remember that this is a period during which ONR is presently either replacing or doing major refits. When they are completed, it will be ten plus years before any of the large expensive ships require refits. Also, these refit periods are long shipyard programs when crew are of no value and must be layed off.

Page 3, Paragraph 1:

Funding agencies don't like "welcome respites from extended operations" because this most likely means paying expensive crew members including masters and chief engineers to do repair or refurbishment which could be more quickly accomplished by a shipyard. More importantly, in most cases the ship is being layed-up because the federal agencies don't have funds to operate the ship and are trying to save funds. Therefore, in most situations they don't have funds for repairs and refits. ONR has been an exception to this because we have had separate funds for refit programs.

Page 3, Paragraph 2:

The problem of not deciding on lay-up until late in the year is tough to solve. Obviously lay-ups could be more efficient and less traumatic if planned well in advance, but this is difficult to achieve for the following reasons:

- As discussed, the operators with thin schedules hang on past the July and even October scheduling meetings in hopes for the appearance of a miracle 100 day user. A good example is TAMU this year. They had a very weak schedule for GYRE in July and it had not improved in October. The scheduling committee said that it was weak, but no recommendation for a lay-up was considered, probably because Tex Treadwell made a big fuss last year when the committee did make a recommendation regarding the GYRE. I think the proposed test for a viable schedule on page four may be a practical means for the UNOLS scheduling committee to make lay-up recommendations since it becomes impersonal and quantitative.

- The other problem regarding early lay-up is that the funding agencies, particularly NSF, don't know their budgets in July, and now it's more likely to be January as a result of the slow congressional budget process. Even at this late date ONR doesn't have a firm budget and we are limited to 85% of the last adjusted value. This situation is now probably a way of life for federal agencies, including NSF, and any scheme to deal with lay-up should be able to accommodate budget uncertainty.

Page 3, Paragraph 3:

The general idea here is reasonable and I would support advance planning for major upgrades, however, the concept presumes that funds will be available which is unlikely to be true as I have discussed above.

Page 3, Paragraph 4:

I agree with the idea that lay-up decision should be based on "open discussion using logical criteria". I have yet to see this approach work well in the UNOLS scheduling process. It may be just too hard for the oceanographic facilities community to deal with such a threatening situation. As it is now, NSF usually waits until January, then makes a decision not to fund any time on the victim institutions ship, and spreads any residual time on to other ships schedules. This arrangement presents problems when NSF selects ONR owned ships and maintains a policy that the owner agency pays the lay-up costs. As you know, ONR and NSF have been negotiating this issue for some time, but as yet have not reached an acceptable resolution.

Pages 4 and 5, The Proposed Procedure:

Generally, the procedure appears to be OK except for two steps which I will comment on. In step 4 the funding agencies are asked to pledge maintenance funds for an unknown ship or ships in July. I don't know about NSF, but as the ONR Program Manager for Oceanographic Facilities, I am not prepared to make such a commitment. First, I don't know my budget at that point, and second my policy is to fund maintenance only on ONR owned ships. The eventual ship to be layed-up and receive funding could well be an institutionally owned ship. With a large portion of the fleet and a small budget ONR just can't afford to act as a patron for the entire UNOLS fleet.

Regarding step 7, I think this step would be improved if the lay-up candidates met together with the Scheduling Committee Chairmen and the results were then included in the report on the general scheduling meeting. If there is no progress, we would all know it very soon. Then when the follow up meeting (step 8) takes place a month later with the agencies, we would have good solid information available to all so we could potentially reach a funding arrangement for the necessary lay-ups.

I hope these comments will be of value to you in structuring a new process to schedule the UNOLS ships which effectively deals with the lay-up problem. You should note that lay-up of larger ships should not be a problem

for the next several years since KNORR and MELVILLE will be undergoing overhaul/refit programs and THOMPSON is expected to be retired in late FY-88. I am sure we will be discussing the whole issue, plus a few other items, at the next Advisory Council Meeting.

Best Regards,

Keith W. Kaulum

KEITH W. KAULUM
Program Manager
Special Projects

Copy to:
Code 112
Code 10P
UNOLS Office

INSTITUTE FOR GEOPHYSICS
THE UNIVERSITY OF TEXAS AT AUSTIN

Director • Austin, Texas 78713-7456 • (512) 471-4860

November 17, 1987

Dr. George Keller
Chairman UNOLS
Oregon State University
Research Office
Corvallis, OR 97331-2135

Dear George:

This letter is in response to the request for comments on the RVOC position paper on research ship lay-ups. First, I would like to comment on the overall policy. I think RVOC has done a first rate job in attacking a perennially tough problem. I like the basic assumptions they have made e.g., an optimun number of operating days for each class of ship, definition of "warm" lay-up, need for advance notice of lay-up, taking advantage of this time for overhaul, refit, etc., making the lay-up more attractive to operator and the development of logical criteria and a schedule for lay-ups. Consequently, my comments will only refer to some of the details rather than the overall concept.

The most important comment that I have is, that to make the plan work and to have it supported by the funding agencies, the plan really must save money when a ship is laid-up. I don't feel that it is reasonable to expect about half of the full operating cost for a ship in lay-up. Somewhere between a quarter and a third is more logical. This means, of course, that more drastic savings need to be taken in the insurance, shore-side support, security and crew costs. This should be the situation for a ship requiring only limited work. If the ship requires major overhaul, the cost of that needs to be added to the above amount.

cc Bash
Barber

Next comment is that all UNOLS ships should be considered in such a plan. There should be developed a long-term overall schedule that includes all ships, so that it is clear well in advance which ships will be laid-up. Not only would this keep some ships from being laid-up an abnormally high percentage of the time, but it would be viewed as a fair procedure that equally affects all. If this were done, then items 5 and 6 of the procedures would need to be revised to reflect there is a natural schedule that needs to be given consideration along with a calculated formula and volunteers.

If the above considerations could be worked into the plan, I feel it would receive more support from both the community and funding agencies.

Lastly, I would like to compliment RVOC on what they have come up with and I hope the community can pull together to get something like this into operation.

Sincerely,

cc W. Mitchell

Posted: Fri Nov 13, 1987 1:12 PM EST Msg: BGIH-3231-8960
From: D.MENZEL
To: G.Keller
Subj: ROVC document

I have 2 comments related to the criteria suggested by RVOC to help identify UNOLS vessels that may be candidates for lay up and refitting. These are: 1st.-(for fun and games only)--The suggested number of "optimum" operating days for the various classes of ships range from 220-270. This leaves 95-145 days in port, figures which could increase to 146-189 if the suggested formula is applied. All figures exceed those used to define "extended inport periods" (3 months). Thus, if strictly applied all "fully used" UNOLS vessels could be candidates for lay up. The term "extended inport periods" obviously means in one stretch. This is ok but sure invites other games-eg.-a four month cruise with one day cruise every 28 days thereafter?

2. It may be a mistake to couple lay ups with upgrading and refitting (last sentence pgs 3). Seperate criteria should be developed for each. Light schedules result from a lack of need whereas the need for refits and upgrading should relate directly to need. Only in accidental cases will the two apply to the same ship at the same time. Long lead time planning for refits/upgrading, similar to that proposed, is a manditory requirement for proper management. The lead times suggested, however, seem much too short. This type of planning should be looking ahead at least 3-5 years. Scheduled refits could then be coupled with the scheduling of active ships using a much shorter time frame for the latter (1 yr?) This, of course, is something UNOLS has done quite efficiently for many years. It also could be argued, with some justification, that the UNOLS fleet should include 1 or 2 ships formally designated and operated as "rotaters". These ships could be scheduled a year or two in advance to substitute for vessels in line for refit (if the 15 year midlife refit is adhered to 1+ ships/yr will not be available for research purposes), those tied up on extended cruises, or when the requirement for frequent short cruises collides with other proposed uses. The availability of "rotaters" could also help relieve the problem, which is certain to come up, when refits are required on ships at institutions with a one ship operation. Assuming an adequate budget for ship ops and refits (feds) such an arrangement could also relieve the problem of "surplus ships".

Have fun, you've latched on to a tuffie especially if others who respond mix up, as I have, what can be expected from RVOC and what is properly left to the AC.