

**UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM**

# **UNOLS COUNCIL MEETING**

## **SUMMARY REPORT**

**July 16, 17 1991**

**University of Washington  
South Campus Center  
Seattle, Washington**



**UNOLS COUNCIL MEETING REPORT**  
**University of Washington**  
**July 16, 17, 1991**

UNOLS Council members, representatives from the NSF, ONR, NOAA, the Department of State, USC, and other observers met at the South Campus Center, University of Washington on July 16 and 17, 1991. The meeting was called by Garry Brass, Chair, at 8:30 a.m. Items on the Agenda (Appendix I) were called in the order reported herein.

**ATTENDEES**

**UNOLS COUNCIL:**

Garry Brass, UNOLS Chair  
Larry Atkinson  
Peter Betzer  
Jeff Fox  
Donn Gorsline  
George Grice  
Feenin Jennings  
David Karl  
Worth Nowlin  
Ken Palfrey  
Jim Williams

**Participants, observers:**

Chris Andreasen, NOAA  
Bill Barbee, UNOLS Office  
Jack Bash, UNOLS Office  
Tom Cocke, DOS  
Annette DeSilva, UNOLS Office  
Grant Gross, NSF  
Don Keach, USC  
Mike Reeves, NSF  
Neil Sullivan, USC

**APPENDICES**

- I. UNOLS Council Meeting Agenda, July 16-17, 1991
- II. ARC Chairman's Summary of June 24-28, 1991 ARC Meeting in Woods Hole
- III. Compendium of Small Research Vessels - Outline
- IV. W. Nowlin memorandum dated 3/11/91, "FIC Subcommittee to improve Scientific Mission Requirements."
- V. NOAA FY 1992 Allocation Plan.
- VI. M. Langseth letter to Capt. D. Yeager dated 5/21/91 enclosing the FIC review of NOAA's Fleet Modernization Plan.
- VII. Letters addressing NOAA's Fleet Improvement Issues.
- VIII. Letter from J. Maurer to J. Bash dated 7/10/91 regarding Laney Chouest leasing.
- IX. Guidelines for Requesting/Becoming a UNOLS Vessel.
- X. Smithsonian Tropical Research Institute letter dated June 19, 1991 requesting information regarding UNOLS membership.
- XI. Rutgers University request for UNOLS membership.
- XII. Tasking to Review UNOLS drafted by G. Grice.
- XIII. Bermuda Biological Station for Research request for becoming a UNOLS Vessel.
- XIV. R. West letter dated 4/1/91 regarding NSF Ship Inspection Program.
- XV. George Shor letter dated 7/14/91 to Garry Brass regarding NEW HORIZON.
- XVI. Profile of Cruise Assessments 1990.

## COMMITTEE REPORTS

### RESEARCH VESSEL OPERATORS COMMITTEE:

Jim Williams, RVOC Chair, reported on the upcoming RVOC meeting and on other ship-operations-related issues.

**RVOC Fall Meeting 1991.** The RVOC Fall meeting will be held in Victoria, BC on 10-12 September. Speakers will include Sam Applegarth who will discuss NSF inspection reviews. Rich Finley from the University of Miami will speak on shipboard computers and data collection. A representative from USCG will provide a lecture on "Ship Communications of the 90's". A Hazardous Materials Workshop and a Handicap Workshop are also scheduled to be held at the meeting.

**Hazardous Material Subcommittee.** A subcommittee was formed to incorporate a section in the RV Safety Manual to address hazardous material. The subcommittee is chaired by Bruce Cornwall and includes Bill Hahn, and Linda Goad.

**Random Drug Testing.** The Coast Guard issued their final rules regarding random drug testing in their instruction titled, "*Chemical Drug Testing Programs for Commercial Vessel Personnel*". The rule establishes random drug testing requirements for all crewmembers who serve in positions which affect the safe operation of a commercial vessel. These regulations reduce the number of crewmembers subject to random testing under the maritime transportation drug testing program and remove industrial personnel on industrial vessels from the requirements for drug testing. The new regulations will become effective October 1, 1991. It appears that there are still discrepancies concerning which crewmembers are required to be subjected to the random testing program. This topic will be addressed at the Fall RVOC meeting.

### ALVIN REVIEW COMMITTEE:

Feenan Jennings, ARC Chair, reported on the status of ALVIN operations and program planning for 1992.

**June ARC Meeting 1991.** The ARC met on June 24 - 28, 1991 at WHOI to review requests for ALVIN dives and to make scheduling recommendations for ALVIN/ATLANTIS II in 1992. Fourteen proposals were reviewed for a total of 239 dives. WHOI charted the recommended 1992 dives. The Committee recognized the recommended total far exceeded the number of dives that could be accommodated in 1992. It was noted; however, that some dive projects would be denied or curtailed in the science funding process.

The ARC reviewed its on-going responsibilities and identified tasks to be addressed during the coming year and in the future. A full description of each task is provided as Appendix II. A brief summary is list below:

1. Identify probable ALVIN operating areas for out-years.
2. Review SEA CLIFF and Turtle proposals when received.
3. Perform annual review and assess comments from ALVIN scientific users.
4. Work with newly established UNOLS Committee on undersea technology.
5. Organize two-day workshop to discuss ALVIN's present technology capabilities.
6. Develop a white paper on scientific and programmatic needs for ALVIN during the next three to five years for submission to the funding agencies.
7. Work with WHOI ALVIN Archivists on a proposal to preserve deteriorating scientific film footage.

**CURV3 Rescue.** Recently ALVIN participated in and was successful in rescuing the Navy's ROV CURV3. CURV3 had been lost in the Pacific when its cable broke.

#### **FLEET IMPROVEMENT COMMITTEE:**

Peter Betzer reported on the April FIC meeting (Marcus Langseth, FIC Chair was at sea), the FIC Subcommittee report on NOAA's Fleet improvement Plan, and the polar research vessel design study.

**FIC April Meeting.** FIC met in New Orleans on April 8, 1991 for visits to the R/V's KNORR and MELVILLE under modernization in McDermott Shipyard and to the RBIB NATHANIEL B. PALMER under construction in Edison Chouest Shipbuilding. A regular committee meeting was held on April 9 and 10. The Contractor had experienced electrical problems on KNORR. KNORR was originally scheduled to be complete in June 1989, it is now scheduled to be complete by the end of 1991. MELVILLE has had fewer problems than KNORR and is running closer to schedule.

The NATHANIEL B. PALMER tour was impressive. The vessel is being constructed in two halves, with the bottom half being built upside down. The bottom, when completed, will be rolled into the water and the top half will be welded in place. The 308-foot ship is designed to operate year-round in antarctic waters. The Government will lease the vessel from Chouest for \$10 million a year.

**Arctic Research Ship.** At the FIC April meeting Tom Royer reported on the concept design for an ice-capable Arctic research vessel. Early projected Arctic research needs called for a small vessel to work mostly in the western Arctic. He will develop a more comprehensive evaluation of the vessel's capabilities for long, demanding missions into the central Arctic.

**NOAA's Fleet Modernization Plan.** David Yeager from NOAA provided a review at the FIC April meeting summarizing the current status of the NOAA fleet. Eighteen vessels, were assessed to find that 3 are in poor condition requiring a refit within the next four years, 4 are fair requiring refits between 4 and 6 years, and 6 were in good condition and would not require a refit for another six to ten years. NOAA is receptive to the idea of working with UNOLS and using the UNOLS assets to meet their future needs.

**SWATH Vessels.** A review of the SWATH designs under consideration by MBARI was presented at the April FIC meeting by Bruce Robinson and Derek Baylis of Monterey Bay Aquarium Research Institute.

**Middle Atlantic Research Consortium (MARCO).** At the FIC meeting, Don Boesch, Director for Environmental and Estuarine Studies, University of Maryland, described efforts of mid-Atlantic UNOLS institutions to improve management of UNOLS ships in the mid-Atlantic and to develop coastal oceanography research vessel requirements. A group of nine universities and research institutions have moved to form MARCO. They include: Stony Brook State University of NY, Rutgers, University of Delaware, University of Maryland, William and Mary, Old Dominion University, Duke University, University of North Carolina, and the Bermuda Biological Station for Research. Garry Brass stated that the consortium will attend the UNOLS Annual Meeting in October.

**AGOR-24.** Tom Royer documented the concerns of FIC regarding AGOR-24. FIC took a strong position that the AGOR-24 Circular of Requirements should be changed to correct deficiencies recognized during the construction of AGOR-23. Most of the changes will be required since they are essential to the ship's mission. It would be more cost efficient to make design changes prior to construction than constructing as-is and then retrofitting.

**R/V NATHANIEL B. PALMER Operation.** There was a discussion by the Council regarding the operation of the NATHANIEL B. PALMER. David Karl posed the question as to who will be responsible for the operation of the Palmer. Would the PALMER be available for UNOLS science. Both he and Peter Betzer suggested that UNOLS should attempt to gain responsibility for scheduling the vessel.

**Compendium of Small Research Vessels.** Worth Nowlin distributed an outline for the Compendium of Small Research Vessels (Appendix III). All items on the outline have been addressed with the exception of items 6 and 10. Item 6 addresses the elements of ship design; various hull types and forms and their applications to research vessels. Item 10 is to provide a discussion on the application of catamarans as small research vessels.

**Scientific Mission Requirements.** Worth Nowlin distributed a copy of his memorandum dated March 11, 1991 to Marcus Langseth and Garry Brass regarding FIC Subcommittee to improve Scientific Mission Requirements (Appendix IV). The memorandum explains the tasking of the subcommittee which is to formulate quantitative seakeeping and station keeping requirements for intermediate research vessels. It was hoped that the UNOLS database of cruise assessments would be useful in performing this task. Unfortunately, Worth

Nowlin pointed out that the forms seem more designed for bookkeeping than with acquiring operational data. Additionally, the scientists using the vessels do an incomplete job of completing these forms. As a result, the subcommittee will explore alternate sources of information on intermediate vessel operating profiles.

**SOONS.** Garry Brass has written two letters regarding the "Scientific Opportunities Offered by a Nuclear Submarine (SOONS)" report generated by the FIC Subcommittee, one to Dr. Allan Bromley from the Office of Science and Technology Policy; and the other to the Honorable H. Lawrence Garrett, III from the Office of the Secretary, DON. The letters express UNOLS support for efforts to encourage scientific research onboard a nuclear submarine.

#### **SHIP SCHEDULING COMMITTEE:**

Ken Palfrey, Ship Scheduling Committee Chair, reported on the progress of the scheduling procedure for 1992 and the results of the East and West Coast Spring scheduling meeting.

**June Scheduling Meeting.** The June scheduling meetings went very well. The concept of regional scheduling for the East and West was effective. The thought of continuing with these separate meetings but at a Washington, DC location seemed to have support. This would make it easier for NSF and ONR representatives to attend the meetings.

**Form 831, NSF-UNOLS Ship Time Request.** Many ship time request forms are not sent directly to the UNOLS Office and a few fail to get logged into the system. Each operator/scheduler should insure requests for his/her institution get appropriate distribution, including the UNOLS Office.

**Ship Scheduling Comments.** Three major concerns were brought to the attention of the schedulers at the Spring meetings. (1) With the delay in commencing operation of three of the large ships, we now have a backlog of big-science, and big ship activity demand. (2) The mid-Atlantic institutions with small ships (CAPE HENLOPEN, CAPE HATTERAS, WARFIELD, and WEATHERBIRD II) need to coordinate schedules for more efficiency in ship operation. They once again have a soft-schedule. (3) The ALPHA HELIX has a weak schedule.

**Fall Meeting.** The Fall Ship Scheduling meeting will be in Washington, DC on 4 September. It is uncertain whether or not NSF will have the budget finalized at that time. A Scheduling Review Meeting will be held on 5 September.

## AGENCY REPORTS

### NSF:

Grant Gross reported that the NSF 1992 budget looks good and that nothing has been cut to date. If approved it will represent a 14 percent increase from 1991. It appears, however, that the Antarctic Program will take a big cut of greater than \$5 million.

**Arctic Research Vessel.** A meeting was held on June 28, 1991 in regard to the Arctic Research Vessel. Three vessels were addressed: (1) The UNOLS design effort of a 230-foot vessel was discussed by Tom Royer, (2) Chouest's clone of the NATHANIEL B. PALMER for operation in the Arctic, and (3) University of Alaska's request to replace the ALPHA HELIX.

An Arctic vessel designed and constructed by Chouest would require a Congressional appropriation of \$20 million, \$10 million of which would be for Arctic research and the other \$10 million would be for leasing the vessel from Chouest. Grant Gross pointed out that the yearly operation cost of PALMER is expected to be \$10 - \$12 million. NSF emphasized that there will be additional cost on top of that for research. This request for funding is not expected until 1992. Grant Gross stated that a budget item to study the concept of leasing versus the traditional NSF appropriation method of operation can be expected.

There was considerable discussion among the Council concerning the Chouest lease arrangement. It was felt that UNOLS needs to have a united stand regarding this issue. Does UNOLS want to assume the \$10 million yearly lease cost of a Chouest vessel? It will be a cost that will be taken from funds budgeted for UNOLS research. In funding the Arctic vessel, Chouest will look better on paper because the vessel would be ready for use for \$10 million. To acquire a vessel through UNOLS, the funding agencies would have to build a vessel and assume all costs associated with the construction. Initial costs for a UNOLS vessel would be much higher than leasing costs, but over time the UNOLS vessel should be more cost efficient. Bill Barbee suggested assessing the needs of Arctic research to determine what type of vessel would be the most suitable to meet these needs.

The discussion broadened into the issue of a contractor such as Chouest operating all of UNOLS vessels versus UNOLS operating its vessels. It was noted that if Chouest operated all UNOLS vessels, they would draw business away from many districts countrywide. Central management looks good on paper, however, you would lose local expertise.

As a result of this discussion, Garry Brass tasked Bill Barbee and Worth Nowlin to prepare Terms of Reference to address **Alternate Modes of Operation of the Academic Fleet**. The terms will examine alternate modes of operations of the Fleet, economic factors, the role of education on ship operations, and the integration of science ship users with the ship. The Terms of Reference will be discussed on the second day of UNOLS Council meeting.

**ONR:**

An ONR representative was not present at the meeting. No report was provided.

**NOAA:**

Chris Andreasen of NOAA reported on NOAA's funding status of 1991 and on their funding outlook for 1992.

**1991 NOAA Funding.** NOAA experienced unexpected additional costs amounting to \$4 million for fuel, taxing of retirements and data management. The funds allocated to reactivation ALBATROSS and DAVIDSON were reprogrammed to cover the expense of the taxes.

NOAA requested SEA OPS not to plant additional buoys without first notifying NOAA authorities. Once planted, a buoy must be retrieved at a later date. This becomes an automatic expense for NOAA which then must be taken from their budget. Many times these expenses are not budgeted since NOAA was unaware that the buoy had been planted initially.

**1992 NOAA Funding.** The NOAA budget for 1992 was severely cut. The House issued no funding increases for Fleet Modernization, Global Change, and Coastal Ocean research. Global Change had requested a \$38 million increase from 1991. The GOES Satellite program is in serious financial difficulties. There is only one operational satellite at this time.

The Senate is reporting a \$100 million appropriation for Fleet Modernization, which is over and above what NOAA requested. This appropriation would include the UNOLS ship time request funding.

The FY 1992 Allocation Plans were provided at the meeting and are included in Appendix V. The allocation by program is 521 DAYS for OAR, 1137 DAYS for NOS, and 1711 DAYS for NMFS. This represents a total of 3369 ship DAYS.

**Navy/NOAA Interfaces.** The Navy has an option for AGOR-26 with NOAA.

The Navy is planning on releasing a TAG vessel. The vessel has the potential to meet a variety of NOAA's needs. It can serve as a potential replacement for MT MITCHELL. It could be converted to a fisheries vessel. The vessel can also be used to meet the NOAA hydrographic needs.

**Ship Manning.** NOAA has plans to examine restructuring ship manning to reduce ship crew size. They will assess the manpower needs for housekeeping, science, technical support, mechanical engine room, and bridge personnel. There will be a crew of fourteen on the VICKERS.



### State Department:

Tom Cocke reported on State Department funding, clearance requests, and post cruise obligations. The Research Vessel Clearance Tracking funds for software were received. NSF will provide personnel support.

**Clearance requests.** Approximately 50% of the requests for clearances are late.

**Post Cruise Obligations.** Post Cruise obligations were not presenting a big problem to the State Department; however, approximately 25% of the final reports are not being submitted by the Principal Investigators (PI). The State Department requests a preliminary report from investigators, but these reports are also quite often delinquent. Tom Cocke stated that many final reports are low quality and are not satisfying the needs of the coastal states. Additionally, he is seeing many requests for extensions to submitting the reports. He has proposed to hold up clearances for those Principal Investigators who do not submit reports. UNOLS Council members were concerned that vessel clearances would be held up rather than those of the PI. Tom Cocke stated that this would not be the case.

## UNOLS ISSUES

### NOAA/UNOLS INITIATIVES:

**NOAA Fleet Improvement Plan.** The FIC reviewed NOAA's Fleet Modernization Plan and provided a report critiquing the Plan (Appendix VI). The Council was in agreement with the FIC comments. Appendix VII includes letters from Heinrichs, Stubblefield, Corell, Brass, Spillman, Barbee, and Pittenger addressing various issues of NOAA Fleet Improvement. These letters were provided to the Council at the meeting, but were not discussed.

**NOAA/USC VICKERS Arrangement.** Chris Andreasen reported on the status of the NOAA/USC arrangement for operation of the R/V VICKERS. He stated that there will be a two-day meeting in Washington DC between NOAA and USC representatives to discuss the philosophy of the arrangement. He seemed to feel that everyone would like to see the arrangement happen.

If the NOAA/USC contractual agreement is successful, Andreasen reported that the VICKERS would most likely be operated under a Demised Charter in which NOAA would hold total navigation control of the vessel. This differs from a bare-boat charter. The lawyers for NOAA, USC, and UNOLS are currently working out the details of an acceptable contractual agreement.

The NOAA/USC agreement will be a cooperative agreement in which NOAA will supply the vessel's crew. They will operate the vessel using commissioned officers, but they

will not assume any of the financial responsibilities. USC will be responsible for scheduling and maintaining the vessel. VICKERS will undergo a NOAA inspection and an ABSTECH inspection prior to being turned over to NOAA. The VICKERS will be considered a public vessel during the period of operation period by NOAA. It is currently classified as a privately owned vessel of USC. The level of success of this operation will be measured by the response of the user scientists.

**SEA CLIFF and TURTLE.** Garry Brass reported that NOAA/NURP has offered to coordinate 60 days of research time aboard SEA CLIFF and TURTLE. These facilities could be of great benefit to the UNOLS community. SEA CLIFF has a depth capability of 6000 meters. It is the UNOLS feeling that it would be best if the 60 days were scheduled in a manner similar to that of ALVIN. Submersible requests for time would most likely be reviewed by ARC. This proposal will be submitted at the next FOFCC meeting in September.

#### **LANEY CHOUEST LEASE AGREEMENT:**

Garry Brass discussed the status of the Navy's lease renewal with LANEY CHOUEST. Because of financial priorities of the Navy, the LANEY CHOUEST lease may not be renewed (Appendix VIII). The LANEY CHOUEST has been the dedicated support ship for SEA CLIFF and TURTLE. The ship's operational range, accommodations, and well-equipped maintenance facilities allow the submersibles to reach their full potential. The alternatives to LANEY CHOUEST can be extremely limiting on the capabilities of the submersibles. It was the consensus of the Council that we should support the retaining of this support vessel. Garry Brass will write a letter in support of the LANEY CHOUEST lease renewal. Donn Gorsline stated that the letter should state that this is a unique situation for UNOLS support of CHOUEST.

#### **GUIDELINES FOR BECOMING A UNOLS VESSEL:**

Jack Bash reported on the published and unpublished guidelines for becoming a UNOLS vessel. A draft copy of the guidelines as prepared by the UNOLS Office was distributed to the Council at the meeting for their review and comment. An updated copy of the guidelines which incorporate the comments of the Council is enclosed as Appendix IX. The guidelines will be used and distributed by the UNOLS Office when institutions request application for membership as a UNOLS vessel operator.

**Smithsonian's Tropical Research Institute.** Jack Bash reported that a letter was received from Smithsonian's Tropical Research Institute requesting information regarding membership into UNOLS and designation as an operator institution with their vessel, R/V BENJAMIN (Appendix X). Jack will send a letter to Smithsonian forwarding an application form, a copy of the UNOLS Charter, and a copy of the amended guideline for becoming a UNOLS vessel.

#### APPLICATION FOR UNOLS MEMBER:

**Rutgers.** The Institute of Marine and Coastal Sciences of Rutgers University submitted an application requesting UNOLS membership (Appendix XI). The UNOLS Council recommended approval of the application. The application will be brought to a vote before the UNOLS membership at the UNOLS Annual meeting in October.

#### REVIEW OF UNOLS:

George Grice provided a draft copy of tasking to perform a UNOLS review (Appendix XII). It was agreed by the Council that the review should be performed as tasked. Only one minor modification was recommended and that was to replace the word "perception" in the second paragraph with "image". Garry Brass will appoint a committee for this review. Grant Gross suggested that the review should have input from the sponsoring agencies.

#### APPLICATION FOR BECOMING A UNOLS VESSEL:

**WEATHERBIRD II.** Bermuda Biological Station for Research has requested that their vessel, WEATHERBIRD II become a UNOLS Vessel (Appendix XIII). Their application material was reviewed by the Council. It was commented that they are indeed a United States Institute and that they have participated extensively in the UNOLS scheduling process.

George Grice reviewed the WEATHERBIRD II ABSTECH inspection and commented that it was incomplete. The trim and stability tests were never conducted. Garry Brass suggested that a letter be written to Bermuda Biological Station stating that they can resubmit their application for becoming a UNOLS vessel after addressing the deficiencies noted in the ABSTECH Inspection. Their application can be resubmitted for review at the UNOLS Council meeting in October.

#### REVIEW OF NSF SHIP INSPECTION PROGRAM:

Dick West, NSF, has requested that UNOLS review the NSF Ship Inspection program to evaluate whether or not it fulfills the criteria for which it was established (Appendix XIII). The general consensus of the Council indicated that the ABSTECH did not provide a quantitative evaluation in which the actual degree of safety of the vessel could be determined. Larry Atkinson expressed great concern over this matter. He feels that it is UNOLS's responsibility to assure safe vessels to the scientific community. Garry Brass suggested that a panel be formed to review ABSTECH inspections reports as they are received.

Jack Bash suggested that the ABSTECH charge be modified to provide a quantitative evaluation. The report would score each inspection with a "pass", "fail", or "conditionally

pass" grade. The RVOC could be tasked to compile a list of critical items UNOLS would like to see addressed by the ABSTECH.

Grant Gross suggested a "Safety Hotline" to receive a first hand report of ship safety problems. He also suggested an outside review team to examine the NSF Inspection Procedures. NSF stated that cost will not be a problem.

After considerable discussion on this topic, three tasks were developed:

- 1) **Form a Safety Panel** as a permanent subcommittee to review ABSTECH and compile a list of critical items which the ABSTECH Inspection should address. The Safety Panel will review incoming ABSTECH inspections in regard to their safety aspects.
- 2) **Modify the Cruise Assessment Form** to include a section which will address Ship/Operation Safety. This task was assigned to the RVOC.
- 3) **Develop an Operator's Cruise Assessment Form** to be completed by the ship's master reflecting his comments and those of the resident technician on the scientific operations. This task was assigned to the RVOC.

#### **R/V THOMAS THOMPSON STATUS:**

**Bill Jeffers Report.** Bill Jeffers visited the Council meeting to report on the status of the THOMAS THOMPSON and to extend an invitation to visit the French research vessel NADIR.

THOMAS THOMPSON was received by the University of Washington from the Navy on July 8. Sea trials are going along fine. A relatively small number of deficiencies were cited in the INSURV inspection. The average cruising speed of the vessel is expected to be 12 -1/2 knots with a full speed capability of 15 knots. The ship is scheduled to depart with the University of Washington crew on July 30.

#### **SUBMERSIBLE SCIENCE COMMITTEE:**

Garry Brass will provide the names for the Submersible Science Committee for the Council's approval at the October meeting. There will be five or six members assigned to the committee. Feenan Jennings will stand on both this committee and the ARC. The tasks will include the development and application of new technologies for submersible science.

### REVIEW OF ALVIN PROGRAM:

Jeff Fox reported on the status of the ALVIN Program Review. The Review team was chaired by Fred Spiess and includes Brad Mooney, Bob Hessler, Bob Embley and Jeff Fox. The team met in San Diego at the site of ATLANTIS II and ALVIN in June. A rough draft report has been written which focuses on ALVIN and identifies ways in which ARC can take on responsibilities to better serve ALVIN. The report also identifies problems and potential solutions to these problems. No comments regarding the report will be provided until the final report is submitted to WHOI.

### SHIP CONSTRUCTION AND RENOVATION:

**NATHANIEL B. PALMER.** Grant Gross reported on the status of ship construction on PALMER. The two halves of the vessel have not yet been welded together. Construction is two months behind schedule and \$4 million over budget.

**KNORR.** The status of ship renovations for KNORR and MELVILLE were reported in a memo from Dick Pittenger. KNORR is essentially complete. The bow thruster had been damaged requiring three dry dockings to repair. A mid-September delivery is expected.

**MELVILLE.** The SEABEAM Sonar Dome was crushed during launching. The shipyard is responsible for this damage. All in all, the learning curve experienced during renovation of KNORR appears to have been beneficial to MELVILLE'S renovation. A November delivery of MELVILLE is expected.

The original estimated cost of renovation for both ships was \$34.5 million. The actual cost is \$38 million. Additionally, costs associated with delays and problems are under negotiation.

### AGOR 24-25 SOLICITATION:

Keith Kaulum was not present at the Council Meeting, but he called in to report that the panel selection of the AGOR 24/25 operator will be announced next week.

**Deep Sounding System Technology.** Jeff Fox led a discussion regarding deep sounding systems to be installed on new vessels. He commented that Hydro-sweep performs poorly in comparison to other available technologies. SEABEAM 2000 works well if the vessel's thruster is enclosed. The SIMRAD system has had an outstanding performance record. Jeff Fox will write a letter to Al Sutherland in regard to the choice of the deep sounding system to be installed on NATHANIEL B. PALMER.

### NEW HORIZON:

A letter was received from George Shor regarding the refit schedule of NEW HORIZON and its omission from the FIC report titled "*UNOLS Fleet Improvement Plan*" (Appendix XV). Worth Nowlin stated that the omission was intentional and that only federally funded vessels were included in the FIC report.

Garry Brass stated that he would write a letter to George Shor explaining that NEW HORIZON will be included in mid-life planning. However, Garry will emphasize that although a ship is part of the planning cycle it does not guarantee federal funds for refit.

### FLEET MANAGEMENT:

**Long Range UNOLS Planning.** FIC was tasked to develop a Long Range UNOLS planning Report.

**Academic Fleet Planning - 1991 Status.** A copy of Don Heinrichs slides from the January UNOLS Council meeting were provided. There was no discussion of this topic.

### R/V NADIR TOUR:

A tour of the French vessel NADIR was provided. NADIR is the support platform for the submersible, NATILLE, which was onboard for our tour. The tour was informative in that it gave us an outlook of another country's facilities in regard to space requirements for both habitability and science laboratory space.

### SHIP SCHEDULING COMMITTEE - CHANGE TO ANNEX:

Jack Bash and Ken Palfrey will rewrite the Ship Scheduling Committee's Annex to the UNOLS Charter. The Annex will be written to concur with the operation of the Committee. Modifications will be made to the sections regarding membership and meetings. The terms of the Chair and Vice Chair will be established. A draft copy of the modified Annex will be distributed prior to the October Council meeting.

### MODES OF FLEET ACQUISITION AND OPERATION:

Bill Barbee and Worth Nowlin prepared Terms of Reference for an ADHOC Committee to analyze alternate methods for acquiring, managing and operating a fleet of research vessels in support of academic oceanography. The charge is as follows:

To compile, compare and analyze costs of operation for the UNOLS fleet under various modes of operation including operation by academic institutions (UNOLS operators), operation by consortia, operation by private segment, operation by single agency (including Federal). To assess the purpose of the Fleet and significance to the national oceanographic endeavor. To assess and compare scientific effectiveness, non-cost benefits and disadvantages of each mode of operation.

To assess, compile, compare and analyze costs and benefits among distinct modes of vessel acquisition such as: Purchase with federal funds, purchase with private funds and amortize using daily rate differential, lease/purchase arrangements and gifts.

The ADHOC Committee will be made up of five members to be appointed by Garry Brass. They should tap sources such as ODP, MMS, and Don Keach in their analysis. The membership representation will have backgrounds in the following areas:

- (1) A marine-operations type
- (2) A UNOLS-institution manager
- (3) A marine-architect consultant
- (4) A chair/editor/author
- (5) A user of UNOLS.

#### **UNOLS COUNCIL NOMINATIONS:**

The terms of three council members will expire in October. These are Larry Atkinson (non-operating institution representative), Jeff Fox (member at-large), and Donn Gorsline (operating institution representative). Additionally a resignation from Worth Nowlin was received. There is one year remaining on his member at-large term.

Garry Brass appointed a nominating committee of Peter Betzer, Dave Karl, and himself. The nominating committee will provide a slate of candidates prior to the October Annual meeting.

#### **CRUISE ASSESSMENT REPORT:**

Bill Barbee reported on the Cruise Assessments for 1990 (Appendix XVI). The rate of return was very similar to that of 1989. Of the 497 total cruises of 1990, responses were received from 51% of the cruises. Jack Bash will write letters to the nine institutions with return rates of less than 50% to request more participation.

A discussion was held on the value of the cruise assessment forms. It was pointed out that these forms are a means for the chief scientists to communicate to the ship operators and to the community.

Grant Gross suggested that summaries submitted more frequent than annually would be useful. The UNOLS Office will examine the feasibility of quarterly cruise assessment summaries. Jack Bash will provide copies of the 1990 Summary Report to NSF, ONR, and NOAA.

**ROGER REVELLE:**

Jim Williams reported that Roger Revelle passed away. The UNOLS office will write a letter to the widow of Roger Revelle extending our regrets.

**CLOSING REMARKS:**

Grant Gross requested that FIC examine the current status of vessel laboratories. He suggested that the labs of foreign countries are superior to those of UNOLS vessels. Additionally, Grant Gross requested a review of ship habitability. The study should examine the needs and level of importance given to habitability. Has it progressed with time? With the length of cruises increasing, habitability will become a higher priority.

The UNOLS Office will write a letter to Marcus Langseth tasking FIC with the following charges:

- (1) Review the laboratory conditions aboard UNOLS ships and recommend improvements as deemed appropriate and compare to the laboratories of other research fleets.
- (2) Review the habitability standards and conditions aboard ships of the UNOLS fleet and compare to those of other research fleets.

**Meeting Adjourned:** There being no further business, the meeting was adjourned at 3:15 o'clock, July 17.



## **APPENDICES**

**AGENDA**  
**UNOLS COUNCIL MEETING**  
**JULY 16-17, 1991**  
**8:30 A.M.**  
**UNIVERSITY OF WASHINGTON**  
**SOUTH CAMPUS CENTER**  
**ROOM 322**  
**SEATTLE, WASHINGTON**

Appendix I

**Call the Meeting:** Garry Brass, UNOLS Chair, will call the meeting.

**Accept Minutes of January, 1991 Council meeting.**

**COMMITTEE REPORTS**

**Research Vessel Operators Committee:** Jim Williams, Chair, will report the plans for the 1991 RVOC meeting scheduled for 10-12 September at The Institute of Ocean Sciences, Victoria, B.C.. He will advise the Council on the progress of the Hazardous Material subcommittee, the status of the Safety Training Manual, current drug testing requirements and future problems with garbage disposal aboard ships.

**ALVIN Review Committee:** Feenan Jennings, Chair, will report on ALVIN programs scheduled for 1992 as recommended at the June ARC meeting at WHOI.

**Fleet Improvement Committee:** Peter Betzer (Mark Langseth, Chair, will be at sea) will report on the April FIC meeting in New Orleans. He will review the FIC subcommittee report on NOAA's Fleet Improvement Plan. Peter will also provide an update on the polar research vessel design study.

**Ship Scheduling Committee:** Ken Palfrey, Chair, will review the progress of the scheduling procedure for 1992 with the results of the East and West Coast scheduling meeting.

**AGENCY REPORTS**

**Agency Reports:** Reports from representatives of NSF (G. Gross), ONR (K. Kaulum), and NOAA (C. Andreasen) on funding outlook and special projects.

**UNOLS ISSUES**

**NOAA/UNOLS Initiatives:** A discussion of the ongoing dialogue with NOAA on their Fleet Improvement Plan (See enclosure 1, letters from Heinrichs, Corell, Brass, Barbee, Pittenger, and Langseth). Discussion of discrepancy in UNOLS ship days available to NOAA (Heinrichs/Pittenger). Update on the NOAA/USC contractual agreement (NOAA representative will report). Council response to the plan.

A report by G.Brass and C. Andreasen on the NOAA (NURP) committee for coordination of Sea Cliff and Turtle.

**Guidelines for Becoming a UNOLS Vessel:** J.Bash will report on the published and unpublished guidelines for becoming a UNOLS vessel. Discussion on the Smithsonian's Tropical Research Institute's letter requesting information regarding membership into UNOLS and designation as an operator institution with their vessel, R/V Benjamin (see letter- handout).

**Application for becoming a UNOLS Vessel:** Bermuda Biological Station has requested that Weatherbird II become a UNOLS Vessel. (see enclosure 2).

**Application for Becoming a UNOLS Member:** Rutgers has submitted a request to become a UNOLS Member. (see enclosure 3).

**Cruise Assessments:** Bill Barbee will provide a summary of 1990 Cruise Assessments.

**Review of UNOLS:** George Grice has provided a tasking for a UNOLS review (see enclosure 4). A committee will be appointed by Garry Brass for this review.

**Submersible Science Committee:** A Submersible Science Committee will be formed by the Garry Brass. The UNOLS membership will be asked to approve the establishment of a standing committee during the October Annual Meeting.

**Review of NSF Ship Inspection Program:** Dick West has requested that UNOLS review the NSF Ship Inspection program to evaluate whether or not it fulfills the criteria for which it was established (see enclosure 5).

**Ship Construction and Renovation:** Discussion on the status of the new ship construction (Thompson and Palmer) and ship renovations (Knorr and Melville).

**AGOR 24-25 Solicitation:** The current status of the AGOR 24-25 solicitation will be discussed.

**Laney Chouest Lease Renewal:** Discussion on the status of the Navy's lease renewal for Laney Chouest (see letter - handout).

**Fleet Management:** A discussion on Academic Fleet Planning for the 1990s and beyond. A follow up of the slides presented by Don Heinrichs at the January Council meeting (see enclosure 6).

**UNOLS Council Elections:** The terms of three council members will expire. These are L. Atkinson (non-operating institution), P. Fox (at large), and D. Gorsline (operation institution). A nominating committee is to be formed for elections at the annual meeting in October.

Chairman's Summary of  
June 24-28, 1991 ARC Meeting  
in Woods Hole

During the meeting the ARC reviewed its on-going responsibilities and identified a number of tasks requiring attention during the coming year and in the future. These are summarized as follows:

1. Identify probable operating areas for out-years through solicitation of interests from academic institutions and a meeting each December between ARC and interested scientists. Solicit proposals for ALVIN use, review them and develop a tentative use schedule for subsequent years during committee meeting in June of each year.
2. When agreement has been assigned between NOAA and Navy, for scheduling use of Sea Cliff and Turtle by scientific community, ARC to review proposals and recommend to NOAA/Navy which projects should be given priority.
3. On a yearly basis, review and assess comments from ALVIN scientific users and identify meaningful themes that warrant attention by Woods Hole management.
4. Work with the newly established UNOLS Committee on undersea technology to identify and prioritize technology development needed for ALVIN, and support requests to sponsoring agencies for needed developments.
5. Organize a two-day workshop to discuss ALVIN's present technology capabilities, identify options for improving equipment and outline a long-term upgrading program. Coordinate the workshop with the new UNOLS undersea technology committee.
6. Develop a white paper on scientific and programmatic needs for ALVIN during the next three to five years for submission to the funding agencies as they consider renewal of the memorandum of agreement concerning support for ALVIN. The present agreement expires in December of 1992. The white paper should be completed by early 1992 and should include comments on status of ALVIN support ship.
7. Work with WHOI ALVIN Archivists on a proposal to preserve deteriorating scientific film footage and provide strongest possible endorsement of the proposal to the funding agencies. The proposal should also include support for archivists to contact all past scientific project leaders for their dive note and logs which will be incorporated into archives computerized data base on ALVIN dives.

COMPENDIUM OF SMALL RESEARCH VESSELS

Outline

1. Introduction - Purpose and use of the Compendium; definition of research vessel. Description of UNOLS. Brief history of U.S. research vessels.
2. Requirements & Capabilities - Discussion of the scientific and operational requirements for research vessels and the capabilities expected for each of several size ranges:  
    . 60-75 ft                      . 90-105 ft  
    . 75-100 ft                     . ~~105-120 ft~~  
  
(These sizes have been selected based on the experience that vessels in each of these size ranges usually have characteristics - and costs - in common with that range.)
3. Regulatory - Discussion of USCG, ABS, and other statutory effects on the size, design, manning, and operation of research vessels.
4. Safety - Follows on to Section 3 above, but expands on the safety aspects of design, outfitting, and operations with special emphasis on UNOLS Safety Standards. Risk management and insurance included in this section.
5. Stability & Seakeeping - A user friendly section on stability with emphasis on understanding the definitions, calculations, and overall principles of ship stability. Same with the dynamics of seakeeping, maneuverability, roll suppression, etc.
6. Design and Construction - Discussion of elements of ship design; various hull types & forms and their applications to research vessels. Advantages/disadvantages of steel, aluminum, fiberglass for size ranges. Machinery arrangements and data. Glossary of construction terminology.
7. Conversion vs. New Construction - Advantages/disadvantages; relative costs; experience; case histories.
8. Outfitting and Equipment - Subsections on winches, overside handling gear, cranes, electronics, communications, installed scientific outfit, accommodations, etc. Optimized equipment for various size ranges. Selected data and cost listings.
9. SWATH Vessels - Discussion of the applications of small water-plane twin-hulls as small research vessels. Several selected designs.
10. Catamarans - (Same as Section 9, above)
11. Selected New Designs - About 3-4 design studies in each size category with discussions of the characteristics for each of the designs. About half of the designs to be existing vessels, and the remainder on paper.
12. Inventory - Listing of existing small research vessels giving characteristics, design drawing (if available), and brief discussion where appropriate.

March 11, 1991

MEMORANDUM

TO: Marcus Langseth, Chairman, UNOLS Fleet Improvement Committee  
Gary Brass, President, UNOLS

FROM: Worth Nowlin *Worth Nowlin*

SUBJECT: FIC Subcommittee to improve Scientific Mission Requirements

A subcommittee of the UNOLS FIC, chaired by Mr. Bruce Hutchinson of The Glostin Associates, Inc., is attempting to formulate quantitative seakeeping and station keeping requirements for intermediate research vessels. To do this Hutchinson has asked the subcommittee to prepare detailed descriptions of the various classes of activities which are commonly performed aboard intermediate vessels, including: shipboard analytical chemistry, box coring, use of bottom landers and tripods, food preparation, communication/data exchange via satellite, trawling, visual observations, biological laboratory work, towing Mocness etc., bathymetric surveying, single channel seismic, seismic shooting, piston coring, deep tow, dredging, ROV handling, moored current meter deployment, moored current meter recovery, CTD/rosette cast, rosette sampling, acoustic Doppler current profiling, large-volume water sampling, towed undulating systems, Fast Fish, Pegasus, hand deployment of expendables, marine meteorology, atmospheric chemistry, and large surface moorings.

These descriptions include assessments of the factors (human or equipment) related to motion which adversely affect and ultimately limit the operation. These descriptions are prepared or being prepared by the subcommittee members: Bruce Barber, Bruce Hutchison, Jim Murray, Worth Nowlin, Ken Palfrey, Dale Pillsbury, and Nick Pisasias.

The next step envisioned is to prepare a typical operational profile of the use of U.S. intermediate vessels by operating region, time of year, and class of activity. Following that, the task is to assess the environmental conditions at the time various classes of activities were aborted. It was realized that this latter information might ultimately have to be obtained by new data collected from our intermediates, but it was thought that some indication of scientific losses could be obtained from the UNOLS records. Thus, to prepare the operational profile and to obtain some indication of the loss of scientific data or equipment due to ship motions, the UNOLS forms for the intermediate vessels were carefully examined for one recent year. This was done as a test with the expectation that the data would be useful, and that if so the complete information set then would be examined. I am sorry to report that the UNOLS information base is woefully inadequate for this task.

I believe this is due to two reasons. First, the forms seem designed more for bookkeeping (e.g., funding source, days of usage) than with any thought to acquiring operational data. (As an aside, the operational data that are available may not be responded to, based on the repetitive reports of deficiencies on the same vessels.) Second, the scientists using the vessels generally do a poor and incomplete job of completing the forms. Thus, the subcommittee will explore alternate sources of information on intermediate vessel operating profiles.

March 11, 1991  
page 2  
Memo from W. Nowlin

One alternate source of information being considered is the use of self-contained instrumentation to measure directly the six degrees-of-freedom. When work is curtailed, the captain could fill out a simple form giving the details of the environmental conditions which led to cessation of scientific or other activities. Later analysis of data from the self-contained instrument would give the ship's motion during the period when work was impossible.

# FY 1992 ALLOCATION BY PROGRAM

OAR	521	
NOS	1137	
NMFS	<u>1711</u>	
TOTAL	3369	DAS

DAS available on SURVEYOR



# FY 1992 NOAA FLEET ALLOCATION PLAN

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
<b>PMC</b>													
OCEANOGRAPHER						PMC - INACTIVE							
→ DISCOVERER	215	EPOCS OAR 60				TOGA NOS 40			VENTS OAR 55		EPOCS/TOGA/CO2 OAR 60		
→ SURVEYOR	144	ICE OAR 22		AMLRP ANTARCTIC				NMFS 122					
FAIRWEATHER						PMC - INACTIVE							
RAINIER	180	N. CHARTING ALASKA NOS 45			SHIPYARD		N. CHARTING ALASKA NOS 45			NAUTICAL CHARTING ALASKA NOS 90			
FREEMAN	243	RESOURCE ASSESSMENT NMFS 41				RESOURCE ASSESSMENT NMFS 61	FOCI NMFS 31	OAR/20 11	TSUN	FES ASSMNT NMFS 30	OCSEAP NOS 22	FOCI 18 & 9	27
McARTHUR	180	MARINE MAMMALS NMFS 65			PMC	DOCKSIDE			STATUS & TRENDS WEST COAST NOS 55		PORPOISE SURVEY E. TROP. PACIFIC NOS 60		
DAVIDSON						PMC - INACTIVE							
CROMWELL	243	RESOURCE ASSESSMENT NMFS 62	HONOLULU		RESOURCE ASSESSMENT NMFS 75	DOCKSIDE		RESOURCE ASSESSMENT NMFS 125					
JORDAN	243	RESOURCE ASSESSMENT NMFS 60				RESOURCE ASSESSMENT CALIFORNIA-MEXICO COAST NMFS 123		DOCKSIDE		PORPOISE SURVEY E. TROP. PACIFIC NOS 60			
COBB	140	RES. ASSESSMENT NMFS 5	DOCKSIDE		RESOURCE ASSESSMENT NMFS 82	SHIPYARD	RESOURCE ASSESSMENT NMFS 75						
<b>AMC</b>													
→ BALDRIGE	180		SHIPYARD		ACCY OAR 40	EPOCS/CO2 OAR 88		RITS OAR 52					
→ MT. MITCHELL	215		SHIPYARD		EEZ GULF OF MEXICO NOS 80		NECOP OAR 35	EEZ NOS 100					
PEIRCE						AMC - INACTIVE							
WHITING	180	N. CHARTING G. OF MEXICO NOS 50		AMC	DOCKSIDE		AMC	EEZ GULF OF MEXICO NOS 90		N. CHARTING E. COAST NOS 40			
OREGON II	243	RESOURCE ASSESSMENT GULF OF MEXICO NMFS 108				SHIPYARD	RESOURCE ASSESSMENT GULF OF MEXICO NMFS 140						
ALBATROSS IV						AMC - INACTIVE							
DELAWARE II	243	RES. ASSESSMENT NMFS 50				RESOURCE ASSESSMENT NMFS 213							
CHAPMAN	180	RESOURCE ASSESSMENT NMFS 40		PASCAGOULA	RESOURCE ASSESSMENT GULF OF MEXICO NMFS 80		SHIPYARD	RESOURCE ASSESSMENT GULF OF MEXICO NMFS 80					
FERREL	180	S&T G. OF MEX NOS 20		AMC	DOCKSIDE	SEAGRANT OAR 30	S&T NE COAST NOS 50	SEAGRANT OAR 30	S&T SE COAST NOS 50				
RUDE	180	N. CHARTING NEW ENGLAND NOS 40		AMC	DOCKSIDE	NAUTICAL CHARTING NEW YORK NOS 140							
HECK	180	N. CHARTING G. OF MEXICO NOS 40		AMC	DOCKSIDE	NAUTICAL CHARTING GULF OF MEXICO NOS 140							

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

FLEET IMPROVEMENT COMMITTEE  
Marcus G. Langseth, Chairman  
Lamont-Doherty Geological Observatory  
Palisades, NY 10964  
Telephone 914 359-2900 X518 or 585  
FAX 914 365-0718

May 21, 1991

Capt. David Yeager  
Chief of Program Services  
NOAA Corps Operations  
NC-3  
11400 Rockville Pike, Rm 610  
Rockville, Maryland 20852

Dear Captain Yeager,

Enclosed please find the UNOLS Fleet Improvement Committee's review of NOAA's Fleet Modernization Plan. In view of the very short time in which the study was carried out and the report prepared, we appreciate the significant amount of critical information contained in the report, and the evidence of refreshing new thinking about how to meet future research ship needs of NOAA. Our comments may sound rather blunt in places, but we want the review to be useful to NOAA's preparation of the modernization plan. We wish you good luck with this initiative.

Yours truly



Marcus G. Langseth  
Chairman, UNOLS Fleet Improvement Committee

cc: William Stubblefield, NOAA  
Jack Bash, UNOLS Office  
Garry Brass, Chairman UNOLS  
Don Heinrichs, NSF

# UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

FLEET IMPROVEMENT COMMITTEE  
Marcus G. Langseth, Chairman  
Lamont-Doherty Geological Observatory  
Palisades, NY 10964  
Telephone 914 359-2900 X518 or 585  
FAX 914 365-0718

## Review of "NOAA's Ocean Fleet Modernization Study by UNOLS Fleet Improvement Committee, responding to a request from NOAA

*This review was prepared by a subcommittee of the Fleet Improvement Committee with the membership, Charles Miller (Chair), Teresa Chereskin, Peter Betzer and Marcus Langseth.*

The "OFMS" is a three volume (labelled as Phases I, II, and III) report on the current problems of the NOAA fleet. An array of solutions to these problems is presented. Clearly, substantial thinking and negotiation have gone into generating these documents. They are valuable as a record for the participants in those negotiations of what has been said. Unfortunately, they are very difficult for outsiders to read and interpret. We feel that those of us outside the process will know the upshot of this work when NOAA comes forward with a concrete, specific proposal for fleet renewal. We see no value in wide dissemination of these bulky tomes. It might actually hinder the aim of upgrading the NOAA fleet.

### Summary of NOAA OFMS:

A much simplified summary of the documents was assembled by drawing elements from each of the volumes (Phases I, II, and III):

(1) NOAA ships are all reaching the end of their service life together, now. Both Phase I and Phase II volumes demonstrate that this problem is severe. Phase I gives a spirited rendition of the good work involving ships that NOAA can and should be doing. There are chapters on charting, fisheries research, and aspects of general oceanography including global change studies.

(2) NOAA will continue to require ships in the future. In fact, the anticipated demands from statute-mandated research could expand the required days at sea from the 3600 of 1990 to 11,000 (Phase-II, Table 1-1, page 5). Apparently (Phase II, page 15), the 11,000 would

be needed now, if NOAA were actually doing all it is supposed to be doing.

(3) OFMS defines four classes of ships that the authors would like to see in the NOAA fleet of the not too distant future. In highly simplified terms these are:

- Large, high-endurance, multidisciplinary
- Large, high-endurance, multidisciplinary, ice-capable
- Pretty large, medium-endurance, multidisciplinary
- Smaller, low-endurance, multidisciplinary

All sorts of things that different NOAA units hope these classes will do are specified in separate chapters in Phase I. That leads to separate tables of desiderata for oceanography, charting, and fisheries. The fisheries chapter specifies an estuarine class, which probably is comparable to "smaller, low-endurance," provided that the vessels are shallow draft.

Phase I desires for speed had to give way in Phase II to good sense (high speed means large, space-filling engines and forces designs toward destroyer configuration).

(4) Design considerations were developed by a comparative study of existing, modern oceanographic ships. The result is presented as tables in Phase II. Many sensible compromises appear in these tables, especially the commitment to 15 knot operational speed as a general standard. Phase II (pages 37 and 38) includes informative cost vs. size curves for construction and instrumentation. These will be useful to NOAA in budgeting and justifying fleet renewal.

(5) Recommendations for NOAA fleet organization include:

- centralize NOAA fleet management. Boats over 40' should also be included in this central scheduling and management due to increasing sophistication and capability of smaller vessels.
- increase days at sea each year for larger ships to the order of 250 (up from current NOAA practice) by greater rotation of crew and rigorous scheduling of yard time.
- mostly pay for ship operations from a single budget separate from program budgets (so that it will be large enough to be a visible line item, well defended from predatory program costs).
- seek a scientist:crew ratio of at least 2:1 by changing NOAA

traditions about separate messes, changing to substantial automation, etc.

- all possible alternative funding plans for fleet replacement should be examined, including build-to-lease with option to buy.

(6) Chapter III of Phase III identifies different "levels" of action for dealing with the degradation of the NOAA fleet. They say that greater spending will buy more ship capability for NOAA. The guesses comparing costs of current operating days vs. several options for much larger fleets are shown in Table 3-2 (Phase III, page 26). The minimum 15 year expenditure would be for maintaining something like the current fleet at about 3600 operating days. This cost wasn't actually calculated.

The "worst" (least ambitious) case with calculated costs is the "slow degradation option", which actually is an increase to 4320 operating days. Its project cost is \$60M/year (present costs) plus \$22M/year (refit and replacement investment). It isn't clear how inflation has been calculated in that, except that it says,

"Six ships will be replaced and 12 repaired to extend the service life at a 15-year cost of \$332M...in addition to present funding for marine services.... approximately \$60M per year."

Thus, NOAA would get 4320 days per year (at some point) over 15 years for  $\$60M \times 15 \text{ years} + \$332 = \$1.23B$ .) A most ambitious alternative costs \$1.9B above current funding level (again, \$0.9B), or \$2.8B. This would be, it says, 10,215 days. The ratios are fair ( $10,215/4320=2.36$ ;  $\$2.8/\$1.23=2.27$ ) counting only very slightly on economy of scale to make additional days cheaper in a larger fleet.

#### Comments on OFMS:

##### A. Good aspects of the report:

We are convinced by OFMS that the NOAA fleet is in need of extensive refitting and replacement. The condition of NOAA vessels and the prospects for continued deterioration are problems not just for NOAA, but for the oceanographic community at large which relies on the NOAA fleet. New global programs, such as WOCE and GOFs, which NOAA, NSF, DOE, NASA, and ONR are supporting make a modern, capable NOAA fleet more

crucial than ever.

There is evidence of new thinking within NOAA on how to meet their shiptime needs in the future. Most of the management options listed in item (5) of our summary strike us as positive. Reducing crews relative to scientific party, elimination of multiple messing arrangements, and increasing operating days for each vessel are all important changes. We support them.

We support the intention for NOAA to look outside the agency for charter and lease arrangements to cover some ship needs. This will be particularly beneficial for one-time efforts and programs requiring highly specialized facilities. It will be less suitable for recurring surveys and monitoring. We applaud the suggestion that new federal-state and multi-agency partnerships can provide some of the shiptime needed by NOAA. We would add that UNOLS vessels are historically underutilized and can be a resource to NOAA investigators and programs.

#### B. Criticisms of the report:

→ The overall notion that NOAA should increase operations (to fulfill statutory obligations) by a factor greater than 2 over very few years in the immediate future strikes us as self-serving and perhaps dangerous in the face of general demands on the federal budget. It could backfire badly. Congress may well chose to reduce the "statutory requirements" on NOAA, rather than provide radically enhanced facilities.

→ Moreover, the need for increased days at sea isn't well documented in the report. There is no clear case in OFMS of the NOAA ship time requirements, apart from the ambitions of the program offices. A more useful document would contain a breakdown of how NOAA shiptime is used, how usage compares to availability, and how demonstrated demand compares to usage. A convincing case for a modernization plan, particularly an ambitious increase in fleet size, will have to lay out these data. We would like to see a summary of ship utilization by division (LMR, OAR and CGS) for the past decade including number of scientists participating. The comparison to ship availability should be explicit.

→ We heartily endorse the intention to use ships more days per year. In fact, we do not see why a large agency like NOAA, given capability for excellent logistic planning, could not get more than the proposed 240 days per year per vessel. With careful management of yard time and rotating crews, schedules close to 300 days per year should be possible. Further

work on the future of the NOAA fleet should consider fully maximizing the time at sea.

→ While we agree with most of the conclusions in OFMS with respect to fleet management, we are not convinced by anything it said that boats in the 40 to 65 foot size range should be under central management. They will only be capable of local operations, and they probably will be most useful if locally managed. A centralized overview of their operations is needed; scheduling and management should be local.

→ There is continued interest in the oceanographic community in the potential of SWATH ship designs for scientific service. SWATH vessels are considered in OFMS, but not very effectively. NOAA could be the agency that brings a SWATH on line to allow full evaluation of their potential.

→ OFMS does not very fully consider the impact of the increasing scientific effectiveness of each ship-day at sea. Improved instrumentation now allows each observational day to produce a huge mass of highly varied, intercorrelatable data. Ultimately this will be richly revealing of ocean processes. However, analysis has become ever more complex and time consuming. The balance between program investment and shiptime investment must be very carefully considered to take advantage of the full power of modern observing gear. Not only must current requirements for ship days be considered in the final plan, but the multiple effects of increasing scientific punch per day must be calculated.

→ The bulk of Phase III is undigested tables, figures, bar graphs. They are not supported with explanatory text to draw the conclusions. It feels like somebody had a field day with a spreadsheet program.

→ We cannot imagine the events that would lead to acceptance of Planning Levels B or C considered in Phase III. Level A shows about the most generous increase that can be expected. It should be compared to full cost analysis for either 1) sustaining the present fleet capability (ca. 3600 DAS) or 2) an increase to about 4500 DAS. The 6100 DAS of Level A is already extremely optimistic, but we believe within reason and the means of the American people. An optimistic report will be acceptable outside NOAA. An unrealistically inflated request will do NOAA damage. Calling only Levels B and C "investment" strategies is exactly the sort of hyperbole that can hurt you.

→ A few specific questions about the vessel requirement tables:

### High endurance, multidisciplinary:

1) Cruise speed should be 14 to 15 knots, not "15-20 knots". The lower speeds are more economical. Hull and engine requirements for lower speeds are much more "science-friendly." The Phase II volume recognizes this; its conclusion should receive final emphasis, not the Phase I tables.

2) Vans are an undesirable way to accommodate extra people on larger ships. They are expensive to acquire, store, and maintain. People detest being berthed in them. We suggest that all new ships of 250' or longer have 40 scientific berths.

3) Stern ramps on UNOLS ships are never used. NOAA should be certain that general purpose vessels will be used for fishery studies before ramps are included.

### Ice-capable high endurance:

Four feet of first year ice requires an ice-breaker, not just an "ice-capable" vessel. It will produce an extended list of requirements for this vessel, and it will detract more than is clear in OFMS from its general oceanographic capability.

### Medium endurance, multidisciplinary:

1) Seakeeping and speed requirements are offscale. 2) The deck space proposed is excessive 3) Again, is a stern ramp really going to be used?

### Reiteration

The NOAA Ocean Fleet Modernization Study report is repetitive and badly organized. It is not a coherent document cleanly presenting the problem of the aging NOAA fleet and suggesting a remedy. However, it contains much valuable thinking and shows important, constructive negotiations going forward within NOAA. We strongly agree with most of the directions of these negotiations. Since so much good work is being done, we urge that this document only be distributed internally. A better document selling NOAA's solution to its marine operations problems will surely emerge from the continuing discussion in the agency. We look forward to that stronger report.



DIVISION OF OCEAN SCIENCES

Capt. W.L. Stubblefield  
Coordinator  
NOAA's Fleet Modernization Plan  
Office of Oceanic and Atmospheric Research  
Silver Spring, MD 20910

RECEIVED

JAN 22 1991

UNOLS OFFICE

Dear Bill:

The major purpose of the academic research vessels operated by member institutions of UNOLS is to support oceanographic research. The vessels are available to the entire oceanographic community and normally support research activities funded by NSF, ONR, NOAA and other federal and state agencies. Research activities include monitoring e.g. time series work and fisheries oceanography in addition to a wide variety of air-sea, water column and sea floor studies.

All the UNOLS vessels are outfitted with basic capabilities for multidisciplinary studies - ie. laboratory space, instrument handling winches, wires, cranes and A-frames, navigation systems for precise location, various analytical and sampling systems and access to shared-use instrument pools for specialized studies. They are operated by marine departments experienced with changing demands for different types of research. The ship crews and technical staff are experienced and knowledgeable in operations and procedures for research at sea. All the UNOLS ships are included in regular inspection programs for safety, operations, material condition and scientific capability. They also must meet all applicable U.S. Coast Guard and ABS regulations.

In short, the academic research vessels (physical capabilities, crewing, and operations mode) are designed to meet many of NOAA's requirements outlined in your letter. This includes most aspects of fisheries research and resource assessment, multidisciplinary oceanography research (coastal and open ocean), and time-series data collection.

Attached is a list of the UNOLS research ships, Class I through Class IV, expected to be in operation in CY 1992. I have not included detailed specifications on scientific berths, science outfitting or special capabilities. These can be provided if needed. No major changes in fleet composition are expected for CY 1993. NSF expects to support mid-life refits on the three OCEANUS-class ships in 1992 - 94. In addition, Navy plans call for an additional Class I ship (AGOR-24) to be available in 1994. This ship will replace an existing research vessel in the UNOLS fleet.

In 1992, I estimate up to 1300 days of additional support can be provided for NOAA programs by UNOLS ships. Although some trade-offs are possible between ships classes, general projections are:

Class I ships (3)	180 days
Class II ships (5)	390 days
Class III ships (8)	370 days
Class IV ships (7)	<u>360 days</u>
	1300 days

These estimates do not include current use of the ATLANTIS II and EDWIN LINK/SEWARD JOHNSON by NOAA for submersible and ROV support.

For 1993, a similar number of days should be available (1000-1200 days) provided no ships are retired. If additional support by NOAA or other sources does not become available in 1992, it is possible one Class II, one Class III and one Class IV ship will cease operation by 1993. In this case, approximately 500 - 600 days of ship time would be available for NOAA projects.

Projections beyond 1993 depend strongly on future agency budgets but the academic research fleet should be able to continue to provide 500-600 days per year of support for NOAA studies.

Two additional tables list my estimates of the amount of time available for use by NOAA with the academic fleet and approximate costs by ship class. The "daily rate" estimates are based on current costs, including the recent run-up in diesel fuel prices. Major changes in fuel costs, up or down, would affect these estimates. The estimated costs include all elements of ship operations - i.e. Salaries and Wages for ship's crew and marine operations staff, Repair, Maintenance and Overhaul, Other expenses (Fuel and Lube Oil, Food, Insurance, Supplies, Crew Travel, Shore Facility Support and Miscellaneous), and Indirect costs. No additional charges for maintenance of the ships are made. UNOLS institutions do not operate as "bare boat" charterers.

NSF, with some support from ONR, maintains active instrumentation, shipboard scientific support equipment, and technical support programs to enhance the scientific productivity of the research vessels. All UNOLS institutions require some support beyond the ship day rate to maintain, calibrate, repair, schedule and provide expendable supplies for institutional supplied science systems. Some institutions require support be provided for at least one marine technician familiar with the shared-use systems. NOAA - supported projects must provide for their pro-data share of these costs. If NOAA becomes a major user of the UNOLS vessels, NSF will request NOAA participate in the instrumentation and shipboard scientific support equipment programs. The capabilities provided meet the needs/requirements of all users of the ships.

Finally, we (NSF and the academic institutions) do not view NOAA use of the UNOLS ships as "commercial charters" but rather as part of the overall national oceanographic research effort. Although NOAA is delinquent in providing agency support for UNOLS Office operations (i.e. \$29,181 for FY 89 and \$30,610 for FY 90), NOAA is one of the six federal co-sponsors of UNOLS. A key element of this partnership is timely planning and commitment. Planning for multiyear projects, e.g. time-series data collection or servicing mooring arrays, must have adequate lead time for other projects to fit around the fixed time points. The UNOLS institutions have primary responsibility for their ship schedules. They work through the UNOLS Ship Scheduling Committee, with input from funding agencies, to develop an integrated effective and efficient "national" schedule.

The basic framework for any UNOLS ship schedule begins early in the calendar year preceeding the operating year (i.e. early 1991 for 1992 operations). Schedules at this time include many "to-be-funded" projects along with firm commitments. Schedules become more refined at the summer UNOLS scheduling meeting and address remote location and/or time constraint issues. Final schedules are established in conjunction with the fall UNOLS meeting (with a few loose ends/late projects to be decided). Major requests for specific cruise times/locations late in the process often cannot be met. Early requests, within total available time, almost always are met.

If you have additional questions or need clarification of any points, I will be happy to provide additional information.

Sincerely,



Donald F. Heinrichs  
Head

cc: UNOLS Office  
G. Brass, UNOLS Chair  
S. Ramberg, ONR  
OFS Program Directors

DIVISION OF OCEAN SCIENCES

January 10, 1991

NOTES : 1992 Operations

Class I ships

THOMPSON expected to support Equatorial Pacific JGOFS experiment (Spring and Fall). Potential for logistically compatible NOAA cruises in Equatorial and/or North Pacific regions.

KNORR and MELVILLE expected to support WOCE hydrographic program for significant part of one-ship operating year. Schedule flexibility exists to trade-off between ships. Potential for NOAA cruises in Atlantic (KNORR) or Pacific (MELVILLE).

Comment:

KNORR and MELVILLE in yard undergoing major refit. Expect both to be available for full operating year in 1992. Important that potential NOAA use be identified by June 1991 so that schedule options can be resolved.

Class II ships

EWING starts 1992 operating year in western Pacific with expected (working) return to North Atlantic. Potential for support of NOAA FARA cruises to Mid-Atlantic ridge.

ATLANTIS II will provide normal support for NSF/NOAA/ONR ALVIN programs.

MOANA WAVE, plus WECOMA/WASHINGTON (?), expected to support TOGA/COARE in western Pacific in first quarter. NOAA COARE projects possible on combination of two or three ships. Additional time available later in year on MOANA WAVE and WASHINGTON for other Pacific work. VICKERS expected to have light schedule operating out of U.S. west coast. Potential for significant NOAA use.

Comment:

NSF estimates academic fleet has excess capacity of one ship in this group for Pacific projects based on ONR/NSF research support. If significant NOAA and/or other support not available, NSF will recommend WASHINGTON be considered for retirement.

Class III ships

WECOMA and NEW HORIZON are only Pacific-based ships in their class. As noted above, potential for NOAA use of WECOMA in conjunction with TOGA/COARE. Later in year there are possibilities for eastern Pacific NOAA studies on both ships.

ENDEAVOR, OCEANUS, GYRE and ISELIN all operate in the Caribbean, Gulf of Mexico and equatorial, central and North Atlantic. Potential for up to one full ship year of NOAA projects from this set of ships.

EDWIN LINK and SEWARD JOHNSON have limited science outfitting and general purpose work. They are excellent support ships for HBOI ROV and submersible systems. NOAA is currently largest federal user and can continue in this role.

Comment:

NSF estimates academic fleet has excess capacity of one ship from ENDEAVOR, OCEANUS, GYRE, ISELIN group for Atlantic/Caribbean projects based on ONR/NSF research support. If significant NOAA and/or other support not available, ONR (with NSF concurrence) will recommend GYRE be considered for retirement.

Class IV ships

These ships primarily provide support for regional coastal studies although PT SUR, CAPE HATTERAS and ALPHA HELIX can work in open ocean areas. Potential for NOAA coastal cruises off California (PT SUR), Caribbean to Gulf of Maine (CAPE HATTERAS and Gulf of Alaska, Bering Sea and western Arctic Ocean (ALPHA HELIX). R. Sproul suitable for coastal work from Mexico to Central California. CAPE HENLOPEN and R. WARFIELD are available for work in Chesapeake and Delaware Bay region. WARFIELD only suited for bay work -- short cruises. HENLOPEN also capable of short duration off-shore coastal work from New Jersey to Carolinas. WEATHERBIRD II is stationed in Bermuda and supports JGOFS time series station. Time available for short cruises in Bermuda region.

Comment:

WARFIELD, CAPE HENLOPEN and CAPE HATTERAS expected to have up to 180 days available for NOAA mid-Atlantic region projects in 1992. ALPHA HELIX also expected to have up to 120 days available for NOAA studies in 1992.

UNOLS Research Vessels : 1992

Ship

Region

Class I

THOMPSON (U. Washington)	Pacific, Global
MELVILLE (Scripps)	Pacific, Global
KNORR (WHOI)	Atlantic, Global

Estimated daily rate: \$16,000  
Potential NOAA use: 180 days

Range: \$14,500 - \$16,500

Class II

EWING (Lamont)	Global
ATLANTIS II (WHOI)	Alvin operations
WASHINGTON (Scripps)	Pacific, Global
MOANA WAVE (Hawaii)	Pacific
VICKERS (USC)	Pacific

Estimated daily rate: \$12,600  
Potential NOAA use: 390 days

Range: \$9,800 - \$16,000

Class III

ENDEAVOR (Rhode Island)	N. Atlantic
OCEANUS (WHOI)	N. Atlantic, Caribbean
WECOMA (Oregon State)	N. Pacific
GYRE (Texas A&M)	Caribbean, Eq. Atlantic
ISELIN (Miami)	Atlantic, Caribbean
NEW HORIZON (Scripps)	E. Pacific
EDWIN LINK (Harbor Branch)	ROV Operations
SEWARD JOHNSON (Harbor Branch)	Submersible Operations

Estimated daily rate: \$8,800  
Potential NOAA use: 370 days

Range: \$8,000 - \$9,400

Class IV

PT. SUR (Moss Landing)	E. Pacific, Coastal
CAPE HATTERAS (Duke)	N. Atlantic, Coastal
CAPE HENLOPEN (Delaware)	Coastal, Chesapeake/ Delaware Bay
WEATHERBIRD II (Bermuda)	Coastal, Bermuda
R. WARFIELD (Maryland)	Chesapeake Bay
R. SPROUL (Scripps)	Coastal, Calif/Mexico
ALPHA HELIX (Alaska)	N. Pacific, Bering Sea, Coastal

Estimated daily rate: \$5,600  
Potential NOAA use: 360 days

Range: \$4,800 - \$7,100



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
Silver Spring, MD 20910

OFFICE OF OCEANIC AND ATMOSPHERIC SURVEILLANCE

DEC 11 24 1990

Dr. Donald Heinrichs  
Director of Oceanography  
National Science Foundation  
1800 G. Street, NW, Rm 609  
Washington, D.C. 20550

Dear Don:

NOAA is conducting a market survey to determine the capability, availability, and annual charter cost of existing research and survey vessels in the United States. Information regarding the UNOLS fleet would be most valuable to this survey.

The charter vessel missions of interest to NOAA are bathymetric and hydrographic surveys, fisheries research and resource assessment, and multidisciplinary oceanography. These missions are carried out in much of the world's oceans. Of interest to NOAA are vessel capabilities that range from low endurance coastal and estuarine work to high endurance open ocean research. These vessels should be available with mission equipment and U. S. Coast Guard qualified operating crew for short-term charters (less than one year). The operating crew will not be responsible for scientific or survey data collection and analysis.

NOAA's oceanographic mission, for which the UNOLS vessels are best suited, is mostly monitoring. The monitoring involves time-series data collection, which requires a vessel being available at a given position within fairly narrow time windows. An example is the semi-annual servicing of moored arrays near the equator in support of the EPOCS project. The desired servicing is about every 6 months.

It would be most useful if you could provide:

- Potential availability of UNOLS vessels, by ship class, for periods of 100, 101 - 200, 201-500, 501 - 1000, and greater than 1000 Days At Sea (DAS) per year.
- Please approximate cost per day for each of these groupings. The costs should reflect any maintenance charges which NOAA could be expected to assume if we become a major user of the UNOLS vessels.

A reply by January 4, 1991 would be very much appreciated.

Sincerely,

*Bill*

W. L. Stubblefield  
Coordinator,  
NOAA's Fleet Modernization Plan



MAR 14 1991

Dr. John A. Knauss  
The Under Secretary for  
Oceans and Atmosphere  
US Department of Commerce  
Washington, DC 20230

Dear John:

Thank you for the opportunity to review and comment on your recent assessment of NOAA's future programmatic requirements and the recommendations for a major modernization of the NOAA oceanographic fleet. As you note in your letter, the renewal of the NOAA fleet will greatly impact the nation's marine science capability. And, I would add, greatly strengthen the national marine science program and provide opportunities for increased collaboration between agency programs.

My overall reaction to the full study, Phases I, II and III, is that your staff and outside participants did an excellent job defining the fundamental parameters, identifying the scope of key issues and providing a framework for the needed renewal of the NOAA fleet. I have attached a review and analysis by my Ocean Sciences Division staff that provides additional comments, particularly regarding NOAA/UNOLS interactions. I will actively seek to coordinate our facilities planning to ensure an appropriate balance between the new NOAA fleet and the UNOLS oceanographic fleet. It is to our mutual benefit and essential to maximize support for the overall U.S. science effort.

There are three specific items we need to address early in the process as you proceed toward the implementation phase. They are:

Arctic Ice Capable Research Vessel

We have in our facilities plans provisions for an Arctic research vessel with operations starting in 1995. The acquisition of the vessel is coordinated with plans for increased support of global change and other research in the Arctic. The design goal is to meet national science mission requirements in the Arctic. The research vessel must have:



- ability to work independently in seasonal ice zones of the Arctic.
- ability to work in the central Arctic basin with icebreaker support.
- capability for general purpose research both for water column and seafloor studies.
- capability for work in ice-free as well as ice-covered regions.

The NSF/UNOLS requirements are similar to the NOAA requirements identified in your report. To avoid confusion in the community and in Congressional committees, we need to agree on a coordinated approach to this much needed Arctic research facility.

#### Coastal/Near Shore/Estuarine Vessels

Although there are some differences in the terms different groups are using to describe research vessels needed to meet coastal ocean science requirements, there is universal agreement that next-generation vessels are needed. Both the UNOLS Council and UNOLS Fleet Improvement Committee are examining issues and capabilities for research in the coastal zone. At recent meetings of the Council on Ocean Affairs and Joint Oceanographic Institutions Board of Governors, NOAA staff indicated potential significant use of academic research vessels to meet NOAA requirements in the coastal zone. In addition, NSF, MMS, EPA, DOE and USGS have presented plans for augmented work in the coastal zone over the next several years.

The UNOLS Council is planning to invite the federal agencies to a one-day workshop on the future role of UNOLS in coastal zone research. This meeting would be in July in conjunction with the next Council meeting. UNOLS member institutions and some regional consortia are interested in providing and operating the research platforms needed for the collective federal and state coastal zone activities. The role of NOAA as potential sponsor/co-sponsor of new coastal vessels for academic operation needs to be addressed.

Similar to the Arctic research vessel, we need to agree upon a coordinated approach to address this much needed national capability.

UNOLS/NSF/NOAA/Others

There is a perception by a number of people in the federal agencies, including NOAA, that UNOLS and the academic research fleet exist solely to meet NSF and ONR research requirements. In part this is understandable since NSF and ONR together currently provide about 90 percent of UNOLS fleet operations support.

We believe the purpose of the academic research vessels operated by member institutions of UNOLS is to support the national oceanographic research effort. The vessels are available to the entire oceanographic community, including all federal agency, state and local government projects. NOAA use of the UNOLS ships is not viewed as a "commercial charter" but rather as part of the overall national oceanographic research effort.

As part of your planning effort, we need to explore the existing perceptions, examine possible modifications to current practice, and work to appropriately include the UNOLS institutions in NOAA's future.

If you want me to provide additional information on any specific points, I will be glad to respond. I expect this is the beginning of a long process and I will assist you in working toward meeting our common goal of an effective, efficient and first-rate national capability in marine science studies.

Sincerely,

/s/ Robert W. Corell

Robert W. Corell  
Assistant Director

Enclosure

bcc: EO/GEO w/incoming letter  
AD/GEO w/incoming letter  
OCE/GEO w/incoming letter  
OCE/DFHeinrichs/vb/nr/3/5/91/79639  
chron file  
reading file

## NOAA'S OCEAN FLEET MODERNIZATION STUDY

### Phase I: Mission Requirements

The basic description of NOAA's mission in terms of Oceanographic Research and Monitoring, Fishery Research, and Charting and Applied Oceanographic Research is well done. The evolving requirements for (1) remote operations, including ice-covered regions, (2) multidisciplinary work, (3) enhanced capability for data and sample collection, including underway data and communications and (4) more seakindly and productive research vessels parallel needs identified by the academic community. The scientific requirements for research vessels to meet these requirements parallel the science mission requirements identified by UNOLS in their Fleet Improvement Plan.

In general, the NOAA requirements for large-size or high-endurance multidisciplinary research vessels correspond with UNOLS large high-endurance vessel capabilities (except for fan tail area); NOAA medium-endurance vessels correspond with UNOLS large medium-endurance vessels; and NOAA low-endurance vessels and coastal-class fisheries research vessels correspond to UNOLS intermediate class vessels. The NOAA "Estuarine-class" vessels have no counter part descriptions in the UNOLS plan but correspond to the small coastal vessels.

The overall correspondence between NOAA requirements (science systems and ships) and UNOLS/academic requirements is not a surprise. The working group position papers describing oceanographic research, monitoring, fisheries research and applied ocean research incorporate goals that encompass both in-house NOAA activities and the broader academic community studies. Identified studies include WOCE, TOGA, JGOFS, GLOBEC and others that clearly require involvement from both communities.

In two areas, there are NOAA mission requirements that are not needed in the academic research fleet - fisheries stock assessment and mapping and charting survey capabilities. The fisheries stock assessment ships need trawling winches, stern ramp, analysis labs and other systems of a dedicated nature. As described, these requirements would limit use to this NOAA mission function. The mapping and charting survey ships, with two or four launches and associated cartographic laboratory, also fulfill a NOAA mission requirement not shared by the academic community.

In summary, the academic research vessels (physical capabilities, crewing, and operations mode) operated by UNOLS institutions are designed to meet many of NOAA's requirements outlined in the report. This includes most aspects of fisheries research and resource assessment, multidisciplinary oceanographic research

(coastal and open ocean), and time-series data collection. As NOAA acquires new ships to meet their needs, the converse will also be true. They will be able to provide at-sea research capabilities to the academic community to extend those possible from UNOLS ships alone.

NSF will actively continue to work with NOAA and coordinate facilities planning to ensure an appropriate balance between the new NOAA marine science fleet and the UNOLS oceanographic fleet. All parties, NSF, NOAA and academic community, will benefit.

#### Phase II: Ship Specifications and Management

This part of the study does an excellent job consolidating and quantifying the Phase I "science requirements" into an orderly description of ship capabilities. This includes interjecting a needed degree of realism on potential operating speeds, i.e. 15 knot design speeds vs. 20 knot suggested. One anomaly proposed for NOAA high-endurance vessels vs. UNOLS large high-endurance vessels is a 7000 sq. ft. fan tail area vice 3000 sq. ft. for the UNOLS plan. Reason is unclear. Overall, as noted in comments on Phase I, there are many similarities proposed for the NOAA Fleet and UNOLS academic fleet.

The approach to defining "projected ship needs" was programmatic vs budget based. This method suggests that days at sea need to be tripled to fulfill all defined NOAA mission requirements. NSF, in contrast, uses a budget-based ship requirement approach. This tends to result in lower estimated requirements since desired but not affordable time at sea is excluded. The Funding and Staffing section of the report suggests NOAA also start to use budget-based projecting methods, at least in part. We do not dispute the NOAA projections for required days at sea but believe they must remain in context of overall agency priorities and available funds.

The Funding and Staffing section of the report addresses ten issues. Issues 3, 4, 7, 9 and 10 are of particular interest to NSF and the interaction of NOAA ship acquisition and operation with respect to the UNOLS or academic fleet.

Issue 3: Funding Ship Requirements for major new program initiatives. We fully support the recommendation that major new initiatives identify major ship support requirements as the programs are being developed. As noted in the text, early identification of needs is required to adequately determine whether they should be met by non-NOAA ships or the core NOAA fleet. The report uses the phrase "short-term charter" which implies a simple buying of time. NSF does not view NOAA use of UNOLS ships as "commercial charters" but rather as part of the overall national oceanographic research effort. Early planning,

3

participation in UNOLS scheduling, and the overall availability of time in the UNOLS fleet coupled with program funds should enable the academic ships to meet appropriate NOAA needs. For joint NOAA/academic studies this could be most requirements.

Issue 5: Other Chartered Vessels. We agree NOAA should not attempt to restrict projects and studies to only those able to be done on NOAA ships. Special capabilities and/or short-term needs beyond those that can be met by NOAA ships should be included in program budget planning. Once again we point out the UNOLS academic ships as part of the overall federal capability may meet some of the requirements. Early identification and planning are required to coordinate with NSF, ONR and other agency use of the UNOLS ships.

Issue 7: Scientific Staff Levels. We fully support the recommendation for NOAA to design and acquire new research ships with the lowest crew-to-scientist ratio that enables safe, effective and efficient ship operations. The identified goals are similar to those in use in the UNOLS fleet now. The strong support for this recommendation is based in part on potential use of the new NOAA ships by NSF-supported scientists. Comparable levels of scientific capability, and the ship operation costs that should result with reduced crewing, will improve opportunities for interagency exchanges. Currently the "incremental costs" for use of the larger NOAA vessels equal the total costs for a UNOLS vessel with similar science capabilities.

Issue 9: National and International Roles. We agree NOAA must aggressively pursue cooperative work with other national and international agencies conducting marine operations. NOAA must have a modern and efficient fleet to meet the broad earth system responsibilities of the agency. Capabilities for civil mapping and charting, fisheries stock assessment and the ability to support ocean monitoring and other oceanographic research are essential if NOAA is to fulfill its important national role. As noted earlier, coordination in both the acquisition of modern research vessels and the operational activities is essential to maximize support for the overall U.S. science mission.

Issue 10: Interagency Cooperation in Ship Use. The description of the issues, constraints and current practice for interagency cooperation by NOAA are well described in the report. Implementing the recommendations for Issues 1 to 9 will enable most constraints on interagency cooperative use of research ships to be removed.

NSF will actively work with NOAA to coordinate facilities planning, operational scheduling, and establish needed organizational structures to maximize cooperative use of UNOLS and NOAA fleet ships.

In summary, the report identifies a number of major issues, opportunities and approaches to improving the needed capabilities of the NOAA fleet and enhancing interagency and international coordination. NSF should support NOAA in this effort.

Phase III: Long-term Strategy.

We agree with all major findings in the report, i.e.:

- . Research and survey vessels are essential for NOAA's marine and atmospheric missions.
- . The condition of NOAA's fleet is a major problem in the conduct of NOAA missions.
- . NOAA mission requirements require modern, technically capable, functionally sound vessels.
- . New technologies allow significant increases in mission performance, productivity and efficiency.
- . New, cooperative approaches to business allow increased flexibility and efficiency in fleet operations.
- . Replacement of the NOAA fleet is a major opportunity for NOAA to provide a leadership role in national and international marine sciences.

We have not attempted to analyze the various financial and planning level models in detail. We fully agree with the conclusion that NOAA has to develop and obtain support for a multi-year, multi-ship modernization program that will require large amounts of capital funds.

The report recommends NOAA management implement a number of actions to address both internal and external issues. NSF strongly supports the recommendation NOAA establish and maintain a policy of coordination with other vessel operators and coordinate ship design and construction plans with other federal agencies.

As noted in earlier comments, there is an overall correspondence between NOAA and UNOLS requirements and capabilities in many areas. We believe a coordinated facilities plan should ensure an appropriate balance between the new NOAA marine science fleet and the UNOLS oceanographic fleet. This includes the need for all parties to review, modify and/or establish needed organizational structures to enhance cooperative interagency and international use of UNOLS and NOAA fleet ships.

Overall conclusion: NSF should strongly support NOAA in their efforts to renew the NOAA marine science fleet.

Rear Admiral Geoffrey L. Chesbrough  
Oceanographer of the Navy  
US Naval Observatory  
34th & Massachusetts Ave., NW  
Washington, DC 20350-2000

20 March 1991

Dear Admiral Chesbrough,

It was a pleasure to meet you at the FOFCC meeting. I am grateful for the opportunity to represent the university fleet's interests at this important, inter-agency meeting.

We have recently concluded a meeting of the UNOLS Council and I wanted to take this opportunity to pass on to you some items of interest concerning the Federal Fleet which the Council expressed. Let me make it clear that these are my impressions of the Council's discussion and do not represent formal positions by UNOLS except as noted. This is just in the way of a heads up for FOFCC.

First, the Council took a relatively dim view of plans to place Navy Deep Submergence research assets under the aegis of NOAA NURP. The Council felt that the stringent scientific reviews by the UNOLS Alvin Review Committee were essential to assuring that worthwhile science is done by Alvin. Whatever the new arrangement for Sea Cliff, Turtle and later NRL the Council believes that it will be extremely important that the program be provided with the kind of scientific guidance provided for Alvin by UNOLS.

Second, the Council expressed concern that coordination between the mission agencies and UNOLS in efficiently scheduling UNOLS vessels was weak. They were particularly concerned that NOAA appears to be moving rapidly with plans for a new fleet without having carefully explored the opportunities presented by the important assets, both federal and private, available through UNOLS. The cost accounting procedures used to determine operating costs or daily rates needs examination. The example of NOAA charging NOAA programs only marginal cost rates in competition with UNOLS operators required (by GAO rule) to charge all projects a "full-cost" day rate was cited. The result of this difference in accounting rules is that large and expensive NOAA ships appear less costly than more economical (over the course of an operating year) UNOLS ships. Some study of total costs leading to a resolution of this conflict is sorely needed.



The Council is concerned that plans are being made by federal agencies not usually involved in UNOLS operations which will require UNOLS assets which do not, in fact, exist. In particular, the Council perceives a rapidly growing interest in the coastal zone. Such agencies as the Minerals Management Service, EPA, DOE, NOAA and the USCS appear to have plans for augmented work in the coastal zone. The Council believes that the UNOLS fleet may not, currently, have any ships truly capable and appropriate for work in these areas. In addition, it is clear that state governments and regional consortia have plans for research in the coastal zone. A unified plan for studies in the coastal zone which covers all federal agencies and the needs and intentions of state and regional agencies is urgently needed with, from the UNOLS point of view, and emphasis on research platforms to be provided and/or used by universities. In order to gather information and open lines of communication I will invite these agencies and others to come to the Summer UNOLS Council meeting for a one day workshop on the future role of UNOLS in coastal zone research.

The Council considered the proposition put forward by ONR that there be a Federal Fleet in UNOLS which is guaranteed funding, and a fleet of "others" who are subject to the vicissitudes of the marketplace. The Council strongly disagreed with this proposition and defeated (by a large majority) a motion that they adopt such a policy. The Council felt that such a policy would actively discourage others who might bring important assets to the UNOLS fleet. Under such a policy it is, for example, unlikely that Lamont-Doherty would have brought Ewing into the fleet with the result that UNOLS would be virtually without the capability to carry out modern marine seismic reflection studies. Similarly, interaction between the States and the Federal agencies will be an essential part of the new partnerships discussed above. A Federal only UNOLS Fleet policy would destroy these partnerships just as they are being born. In addition, it can only serve to keep inefficient platforms in the fleet while cutting off their more efficient competitors from the opportunity to compete on a level playing field for operating funds. Clearly the right thing to do is not to protect part of the fleet, but to stop protecting the low quality, under-performing part of the fleet. A brief look at schedules is enough to identify these vessels.

Please feel free to call on me at any time if I or UNOLS can be of help to you.

Sincerely,

Garrett W. Brass  
UNOLS Chair

(301) 443-8247  
FAX FTS 443-8733



Office of NOAA Corps Operations  
Systems Technology Division  
11400 Rockville Pike, Room 630  
Rockville, MD 20852



To: Bill Barbic

Telephone #: 206-543-2305

From: Don Spillman

Telephone #: 301-443-8013

Date: 3/2/91

This FAX contains 8 page(s). Not including the cover sheet.

Message:

Bill,  
Mr Fox # is at the top of the page.  
Thanks,  
DS

NOAA-UNOLS SHIP COST COMPARISON  
SUMMARY

- o NOAA AND UNOLS SHIP OPERATIONS ARE DIFFERENT:  
EACH SUPPORTS DIFFERENT PROGRAMS;  
EACH USES DIFFERENT CREWING APPROACHES; AND  
EACH USES DIFFERENT ACCOUNTING SYSTEMS.
- o THE NSF-UNOLS COST MODEL WAS USED TO COMPARE EQUIVALENT ITEMS:

THE MODEL INCLUDES:

SHIP OPERATING CREW;  
OTHER OPERATING EXPENSES;  
ANNUAL SHIP MAINTENANCE;  
AND SHORESIDE SUPPORT  
(NOAA MARINE CENTERS  
AND UNOLS MARINE  
OPERATIONS STAFF).

THE MODEL EXCLUDES:

MISSION SUPPORT PERSONNEL;  
MAJOR SHIP CONVERSION OR  
REHABILITATION; AND  
SCIENTIFIC & ELECTRONIC  
EQUIPMENT & SUPPORT.

- o CLASS I SHIPS WERE CHOSEN FOR COMPARISON:  
CLASS I SHIPS ARE THE ONLY NOAA AND UNOLS SHIPS THAT WILL PERFORM COMPARABLE PROJECTS;  
UNOLS WILL OPERATE CLASS I SHIPS WHEN THE KNORR CONVERSION IS COMPLETED AND THE NEW THOMAS G. THOMPSON IS DELIVERED; AND  
NOAA OPERATES THE CLASS I MALCOLM BALDRIGE, DISCOVERER AND SURVEYOR.
- o THE COSTS/DAS ARE NEARLY EQUAL EXCEPT FOR THE NEW THOMPSON WHICH HAS LOWER MAINTENANCE COSTS.

<u>UNOLS SHIPS</u>		<u>NOAA SHIPS</u>		
KNORR	THOMPSON	BALDRIGE	DISCOVERER	SURVEYOR
\$20.5K	\$16.5K	\$20.0K	\$21.2K	\$21.1K

- o NOAA SHIPS HAVE A LARGER CREW BUT LOWER PAY AND BENEFITS THAN UNOLS BECAUSE OF FEDERAL PAY CAPS.
- o NAVY OCEANOGRAPHIC SHIP COSTS WERE NOT ANALYZED TO ENSURE EQUIVALENT ITEMS WERE INCLUDED BUT 3 CLASS II NAVY SHIPS APPEAR TO HAVE SIMILAR COSTS (\$20K TO \$30K/DAS).

## NOAA-UNOLS SHIP COST COMPARISON

Management and Funding Differences Between NOAA and UNOLS ShipsNOAA FleetUNOLS Fleet

## 1. Funding Source

NOAA

NSF	60-70%
ONR	15-20%
Other e.g.	10-20%
State & local agencies	

## 2. Output Measure (for funding purposes)

Days-at-sea (DAS) - generally any day when the ship is at sea.

Operating days - generally any day that the ship is away from its home port whether at sea or in port except when in the shipyard.

Both organizations track DAS which were used for NOAA and UNOLS for the cost comparison.

## 3. Programs Supported

Mapping and Charting  
 Fisheries Stock Assessment and Research  
 Oceanographic Research

Almost exclusively  
 Oceanographic Research

#### 4. Ship Crewing Approach

For mapping and charting mission, the ships crew includes:

ship operating personnel; and

all mission personnel necessary for the data product with

many operating and mission duties performed by the same personnel.

For oceanographic research mission, the ships crew includes:

ship operating personnel; and

some mission support and technician personnel with

some operating and mission duties performed by the same personnel and

most scientific personnel brought aboard for each mission.

ship operating personnel with

mission and technical support personnel (includes some students) and all scientists brought aboard for each mission.

Fisheries stock assessment and research ship crew approach is similar to oceanographic research crew approach.

Steward Department personnel duties include:

cooking; cleaning rooms, toilets; showers; and making beds for mission personnel with

cooking and providing weekly linen exchange for mission personnel with

NOAA ships carrying a larger Steward Department than UNOLS ships and

mission personnel performing more hotel services, e.g., making beds, cleaning rooms, etc. for themselves.

the additional NOAA steward personnel are included in the NOAA costs for the NOAA-UNOLS ship cost comparison.

4. Ship Crewing Approach (Continued)

Ship maintenance is conducted by:

both ship personnel and contractors with

both ship personnel and contractors.

NOAA ships carrying additional (above UNOLS) deck and engine department personnel for maintenance and, as a result, performing a higher percentage of total ship maintenance and

the additional maintenance personnel are included in the NOAA costs for the NOAA-UNOLS ship cost comparison.

Crew salary:

increases have been capped to not exceed federal pay raises; and

increases have not been capped, generally follow union trends; and

are typically lower than comparable positions on UNOLS ships; except

are typically about 20% higher than comparable positions on NOAA ships; except

commissioned officer salaries and benefits are about 15% higher than comparable UNOLS mates but this is offset because commissioned officers receive no overtime.

mates salaries are lower than NOAA's commissioned officers but this is offset by overtime paid to mates.

Crew benefits:

do not include a sea pay premium; and

typically include a 15% sea pay premium for each day at sea; and

include 8 hours of shore leave for every 15 days at sea.

include 8 hours of shore leave for every 7 days at sea.

## 5. Allocation Process

Program managers review and set priorities for mapping and charting, fisheries, and oceanographic research projects. Senior NOAA managers then allocate projects to the NOAA ships. After allocation is approved by the NOAA Administrator or Deputy Under Secretary, the marine centers in concert with project managers develop detailed sailing schedules. Explicit project instructions that provide project details are then prepared by program managers and reviewed and approved by fleet managers and issued to the ships.

Universities propose oceanographic research projects to NSF, ONR and other funding agencies. After proposal evaluation and selection, time is scheduled by operators. UNOLS Scheduling Committee recommends resolutions to any conflicts. After ship operators develop final schedules with funding agency approval, the project scientist or principle investigator (PI) and local university marine superintendent work out the project details.

## NOAA-UNOLS ship Cost Comparison Using the NSF-UNOLS Cost Model

The NSF-UNOLS ship cost model includes the annual cost of the ship's operating crew, excluding any mission support personnel; includes fuel cost; food; insurance; stores and minor equipment; travel for ship's crew; and other miscellaneous ship operating costs; the annual repair and maintenance costs for the ship and ship's systems; the appropriate portion of the shore support (marine operations) staff and other, e.g., shoreside utilities, costs at the university that are attributed to the particular ship; and the indirect university costs that cover items such as piers and buildings. The NOAA ship costs were computed to fit this model, i.e., the cost of mission support personnel that are part of the ship's crew were excluded, and the cost of the NOAA marine centers were proportioned to the ships and are included in the marine operations staff, shore support, and indirect cost categories.

The NOAA Marine Services budget also supports scientific and electronic equipment, e.g., multibeam swath sounding systems and data acquisition and processing systems purchase, repair and maintenance; a fleet inspection program; the mission support personnel mentioned above; and NOAA's operational diving program. These functions are not included in either the NOAA or UNOLS costs for the NSF-UNOLS cost model.

The NOAA Ships MALCOLM BALDRIGE, DISCOVERER and SURVEYOR and the UNOLS ships KNORR and THOMAS G. THOMPSON were chosen for comparison because they will perform comparable projects. The three NOAA Ships are Class I ships (ship class is determined by a combination of shaft horsepower and gross tonnage) and the two UNOLS Ships will be Class I ships. The KNORR is presently undergoing a major conversion which includes adding 30 feet to its length. The THOMAS G. THOMPSON is still under construction and is scheduled for delivery within the next few months.

A table of ship costs is attached. The KNORR and THOMAS G. THOMPSON costs are estimates for 1991 and 1992, respectively. The NOAA Ship costs are actuals for 1990. The actual NOAA costs per day-at-sea (DAS) were inflated from 1990 to 1992 at 5% annually. The KNORR 1991 cost per DAS estimate was inflated at 5% to 1992 and the THOMPSON 1992 estimate was used. These 1992 DAS costs are nearly equal except for the new THOMPSON which has a lower projected maintenance cost.

As a rough comparative check, cost summaries for three Navy oceanographic research ships, the Class II LYNCH, BARTLETT and DESTIEGUER, were reviewed but not analyzed to determine if comparable items were included or excluded. It appears that the costs for comparable items of the three Navy ships are about \$20-30K/DAS.



NOAA-UNOLS Ship Cost Comparison Using the  
NSF-UNOLS Cost Model (Continued)

In summary:

NOAA and UNOLS ship costs are nearly equal as determined with a cost model that counts equivalent items for both organizations;

NOAA and UNOLS conduct ship operations in response to different program mandates;

NOAA ships support marine mapping and charting, fisheries stock assessment and research; and oceanographic research;

UNOLS ships support oceanographic research almost exclusively;

the organizations use different approaches to accomplish the at-sea portion of their programs;

NOAA ships include some or all of the mission personnel as part of the ships crew and combine some ship operation and mission duties;

UNOLS maintains technician pools separate from the ship and bring technicians and some students aboard to provide mission support for each project; and

NOAA ships typically carry more crew than comparable UNOLS ships but total ship costs are similar because NOAA crew salary increases have been capped and are generally lower than UNOLS ship salaries for similar positions.

3/18/91  
REV. 3/22/91

COST COMPARISON - UNOLS AND NOAA  
(Dollars in Thousands)

	UNOLS		NOAA		
	1991 Est. KNORR	1992 Est. THOMPSON	1990 Actual M. BALDRICE	1990 Actual DISCOVERER	1990 Actual SURVEYOR
I. Salaries & Wages:					
A. Ship's Crew					
1. Salaries	564.2	658.9	899.5	998.9	954.4
2. OT/Premium Pay	630.7	677.9	398.9	369.3	432.7
3. Benefits	430.5	238.7	322.4	321.0	309.8
TOTALS	1,625.4	1,575.5	1,620.8	1,689.2	1,706.9
Crew FTE (including Relief Crew)	31	26	42	44	45
1/ Cost per FTE (inflated to FY92 at 5%)	55	60	43	42	41
B. Marine Ops Staff					
1. Salaries	130.4	88.6	206.7	186.4	177.3
2. Benefits	56.7	24.8	38.4	30.1	28.6
TOTALS	187.1	113.4	245.1	216.5	205.9
II. Repair, Maint & OV:					
A. Normal Repair	150.0	78.0			
B. Major Overhaul	300.0	263.0			
TOTALS	450.0	341.0	506.0	439.2	504.5
			(5-YEAR AVERAGE)		
III. Other Expenses:					
A. Fuel/Lube Oil	409.6	2/ 967.5	623.4	592.1	700.5
B. Food	190.0	203.9	157.2	83.7	122.1
C. Insurance	31.2	122.5	0.0	0.0	0.0
D. Stores, Minor Ed.	200.0	120.0	156.0	377.5	126.5
E. Travel	51.9	70.4	19.8	26.2	13.4
F. Shore Support & Indirect Costs	416.1	404.9	296.3	537.7	510.9
G. Miscellaneous	143.5	120.0	177.7	136.6	189.8
TOTALS	1,442.3	2,009.2	1,430.4	1,753.8	1,752.9
TOTAL OPERATING COSTS	3,704.8	4,039.1	3,802.3	4,098.7	4,169.9
Days-At-Sea (DAS)	190	245	209	213	217
Cost/DAS	19.5	16.5	18.2	19.2	19.2
Cost/DAS in FY92 \$ (est. 5% annual inflation)	20.5	16.5	20.0	21.1	21.1

1/ Higher UNOLS salaries (about 20%) and benefits such as sea pay premium (15%) and shore leave (8 hours/7 DAS UNOLS vs. 8 hours/15 DAS NOAA) contribute to the 30 - 40% difference between UNOLS and NOAA.

2/ Fuel for THOMPSON includes initial fillup and should decrease by \$100K in 1993.

# UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

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

UNOLS Office, WB 15  
School of Oceanography  
University of Washington  
Seattle, Washington 98195  
Tel (206) 543 2203  
Fax (206) 585 3697

April 3, 1991

Captain Don Spillman  
Office of NOAA Corps Operations  
Systems Technology Division  
11400 Rockville Pike, Room 630  
Rockville, MD 20852

Dear Don:

I have looked at your cost comparison, and it looks fine, except for one problem: the use of the NOAA in the comparison is very misleading, and would, I am sure, be challenged by UNOLS, Woods Hole, NSF and ONR

Here's why. The KNORR estimate for 1991 is a poor basis. When those estimates were made (in 1990), it was anticipated it would operate for April 1 through December, 1991. Operations would have been fairly intense, but nevertheless for only three quarters of the year, after KNORR's release from shipyard. However, the KNORR is not to be available until as late as September, 1991. Budget estimates for this curtailed KNORR 1991 operation are still being negotiated; I don't have any numbers. Even if the revised 1991 numbers were available, they would provide a poor basis for projecting a full year's operation in 1992. I would expect that for 1992, the KNORR will operate on the order of 245-255 days at sea. Although costs for salaries, fuel and expendables might rise modestly, over 1991 estimates, fixed costs would not. Thus, although the annual costs might rise to as much as \$4.1-\$4.2 million, daily rate would be only about \$16,600. Thus, not only is the basis for KNORR annual costs unsound, when it is used to calculate a daily rate it is misleading.

The problem with using daily rates is that they are very sensitive to the number of days at sea. This is certainly true for UNOLS ships; I suspect is equally true for the NOAA fleet.

I recognize that your cost review would serve NOAA best if a UNOLS-NOAA comparison showed parity. Note that annual costs for THOMPSON, BALDRIDGE, DISCOVERER and SURVEYOR are comparable. Use annual costs for those ships, and leave KNORR out (saying that transition to new, larger ships in UNOLS leaves only one ship with reliable cost data). If you want to rationalize NOAA's limit of 210-220 days at sea, do so by estimating increase necessary for fuel, expendables, etc. Annual costs will still all be within 10%.

Call me if you want to discuss more.

Sincerely,

William D. Barbee  
Executive Secretary, UNOLS

WDB:bf

**JOI**

JOI Oceanographic Institutions  
INCORPORATED

Suite 800  
1755 Massachusetts Ave., NW  
Washington, DC 20036-2102 USA

Telephone: (202) 232-3900  
Telemail: JOI.INC/Omnet  
Telex: 7401433 BAKE UC  
FAX: (202) 232-8203

May 20, 1991

Dr. John A. Knauss  
Undersecretary for Oceans and Atmosphere  
Administrator, National Oceanic  
and Atmospheric Administration  
U.S. Department of Commerce, Room 5128  
14th Street and Constitution Avenue, NW  
Washington, DC 20230

Dear John:

On behalf of the JOI Academic Fleet Committee, I am writing to thank you for the opportunity to review and comment on the NOAA study for modernization of the NOAA fleet. The study clearly makes the point that the NOAA fleet must serve a variety of programs from fisheries and ocean charting to the conduct of basic research, and thus must be diverse. Since JOI member institutions are primarily involved in basic research, we will reserve our main comments for that portion of the NOAA study dealing with vessels to be used as general purpose oceanographic research platforms. However, we understand your operational mission needs and can state now that we support the NOAA effort to modernize and replace vessels needed for operational efforts in charting and fisheries management.

At the same time, we believe that caution should be exerted in the capitalization of new research vessels. As you know, the existing academic oceanographic research vessel fleet is currently being modernized through a mix of new construction and major life-extension overhauls. This program is well under way and provides for a robust mix of research ships designed to support ocean science well into the 21st century. In addition, with changing international relations, there may well be ship time available for research programs on Navy-owned platforms in the future.

The existing plans for capitalizing and operating research vessels from all agencies depend strongly on the influx of new funds for both ships and programs. We are concerned that the previously envisioned funding for major programs, such as the

initiatives for Global Change Research, is not growing at the pace projected only a few years ago. Research budgets in some agencies, for example ONR, are not growing apace with the needs projected. Thus we feel strongly that a conservative approach to the addition of more new research vessels to the oceanographic fleet is warranted.

We suggest that it may be most prudent at this time to move more slowly in the addition of more large platforms to the oceanographic research fleet than is proposed in the NOAA plan. As it stands now, the NOAA study alone does not present a definitive plan of action which would permit a reviewer to estimate the fiscal impact of the modernization effort through time or exactly how a proposed mix of platforms would fit within the current federal oceanographic fleet.

We believe that a careful coordination effort is needed among all the agencies responsible for capitalizing and operating vessels for research. We suggest that a joint strategy of the overall fleet requirements be developed by the relevant agencies and the academic community. Such a joint strategy would include special purpose platforms for such uses as high latitude and high sea state research.

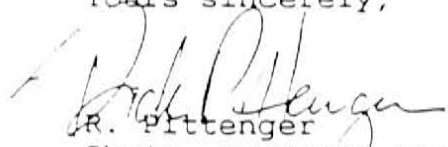
To assist NOAA in conducting oceanographic research in the short term while this evaluation of total federally funded fleet needs is balanced, we support the proposal that NOAA buy open time on the current and modernized academic oceanographic fleet and consider options with available Navy vessels. I appreciate your informing me that NOAA plans to propose to buy up to 500 ship days per year from the UNOLS fleet. We would like to discuss this further because we believe that, with careful planning and coordination, the buying of time on UNOLS vessels, particularly the larger ones, would avoid cost and would permit NOAA additional time for the critical examination of its ship requirements such as the days at sea requested in Phase II of the NOAA study. This evaluation of the validity and priorities of these ship days, critical to the final choice of a fleet mix, has not yet taken place as is noted on page 15 of Volume II of the study.

In order to begin this process, we propose that there be a meeting of the principal funders of oceanographic research platforms (including but not necessarily limited to NOAA, NSF, Navy, USGS, USCG, and DOE) and the academic community (JOI and UNOLS) to confer on the capitalization issue regarding large oceanographic research vessels and also on special purpose platforms which might be funded and shared community-wide to reduce costs. The meeting could be organized under the auspices of the Federal Oceanographic Fleet Coordination Council.

We share your concern that the federal government have an adequate fleet to carry out its ocean research. We are prepared to

work with you and the other agencies to develop the overall plan and to sell it to the policy makers. We hope that we can develop a close partnership on these issues and look forward to working with you.

Yours sincerely,

  
R. Pittenger  
Chair, Academic Fleet  
Committee

cc: JOI Board of Governors

- J. Bash
- G. Brass
- R. Corell
- P. Dennis
- G. Gross
- E. Hartwig
- D. Hayes
- D. Heinrichs
- M. Moss
- A. Nowell
- T. Pyle
- F. Saalfeld
- R. Tipper

JACK MAURER  
DEEP SUBMERGENCE ENGINEERING  
9103 HAMILTON DRIVE  
FAIRFAX, VIRGINIA 22031  
(703) 273 2235

Fax available. Call in voice mode first.)

\* \* \* \* \*


July 10, 1991

From: Jack Maurer  
To: University of Rhode Island

Good evening!

Here is the information that I promised Mr. Bash's assistant earlier this afternoon. If you would pass it to Mr. Bash, your help will be much appreciated!

Thank you,



Total FAX pages, including this sheet: five

Mr. Jack Bash  
University of Rhode Island  
Kingston, Rhode Island

July 10, 1991

Dear Mr. Bash,

I spoke with David Graham earlier today, and he suggested that I advise you of the situation we face. Your secretary indicated that you have an important UNOLS meeting coming up shortly, and because we only have a couple of weeks to resolve our problem, I promised to get this information to you as soon as possible. I believe you may be in a position to help.

A quick introduction: I am a retired Navy submariner, and my last operational billet was as the Commander of Submarine Development Group One in San Diego, in 1984-86. I now work for Bob Ballard (in his Marquest Group role). For purposes of this discussion, I would like you to know that I am also a consultant for the Edison Chouest Offshore corporation, the owners of the LANEY CHOUEST.

While I was at the Development Group, my most important project was the acquisition of a capable support ship to take the deep submergence vehicles to sea safely. Prior to that time, our DSVs operated from marginally sea-worthy coastal platforms with jury-rigged launching systems. We initiated formal procurement efforts in May of 1984 and saw the issue go to bids just before I left in 1986. Two years later, the LANEY CHOUEST reported aboard.

The ship's services to the deep submergence fleet have been superb. I am sure you are familiar with the successes on the Gorda Ridge, and I suspect that you may be more current than I on some of her other accomplishments. These accomplishments have come in large measure through the growing partnership between Navy Deep Submergence and the scientific community. Nurturing this relationship, which had often suffered when the Navy had to renege on vehicle commitments, was one of the major thrusts of the Development Group when I left in 1986. It has gradually begun to bear fruit.

Unfortunately, because of an unrelated fiscal crisis in Pearl Harbor, the Submarine Force Commander is being forced to prioritize the mission claimants for the remaining funds. The scientific contributions of SEA CLIFF and TURTLE, which are so heavily reliant upon being able to go to sea on the LANEY CHOUEST, fare poorly when rated against the demands of combatant ship programs.

As a result, the lease on the LANEY CHOUEST may not be renewed. If this happens, the Nation will lose a capability that has been years in the making, and which could not be reinstated without equivalent years of work.



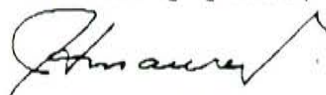
We are openly trying to bring the influence of the academic and scientific communities to bear to preserve the operational capabilities of the deep submergence vehicles. You and your associates in the UNOLS organization can provide valuable inputs.

I am not an accomplished lobbyist, so I am not sure what I should request you to do. I will say that I have asked Bob Ballard to address the issue with the Secretary of the Navy, and with the Pacific Fleet Commander, Admiral Charles R. Larson, USN. (Interestingly enough, Admiral Larson was the Commander of the Development Group when I was in command of one of the squadron submarines in 1977.)

If you decide you wish to help, I suspect that you will know the best way for your voice to be heard.

I have enclosed a brief position paper that provides a little more background information. In any event, if you have any questions, I will be happy to place myself at your disposal. I may be reached at 703 273 2235; please feel free to call.

Sincerely yours,



J. H. MAURER, JR.  
Captain, USN (Ret)

Enclosure

## THE LANEY CHOUDEST, AND ITS IMPORTANCE TO DEEP SUBMERGENCE OPERATIONS

In 1984, the Submarine Development Group in San Diego initiated formal procurement efforts to obtain a dedicated ship to support underway operations for SEA CLIFF and TURTLE, the Navy's two manned deep submergence vehicles (DSVs). Prior to that time, launch and recovery operations were conducted from a series of temporary platforms of varying, and usually unsatisfactory, capabilities.

The platforms employed were generally self-propelled barges equipped with temporary cranes. In one case, an actual tracked construction crane was loaded on the vessel and lashed down. Vehicle launch and recovery operations were only possible in minimal sea states, and the single-point lift from the crane was often referred to as "the wrecking ball mode of DSV operations." Operations away from the immediate San Diego area were not possible, since the support platforms were not sufficiently seaworthy for long range open ocean transit. None of these platforms had adequate personnel accommodations for prolonged operations, nor could they support vehicle maintenance or scientific laboratory operations.

The arrival of the LANEY CHOUDEST in 1988 dramatically enhanced the Navy's deep submergence capabilities. Equipped with substantial accommodations and well-equipped maintenance facilities, the ship provided an extraordinary advance over the previous systems. Most important was the engineered A-Frame on the transom that permitted safe and expeditious launch and recovery operations, in seas to state three and beyond.

The ship's operational range permitted the exercise of the Development Group's world-wide charter for deep submergence operations for the first time. Combined with the 20,000 foot capable SEA CLIFF, the Navy was finally able to routinely operate a DSV on the sea bottom almost anywhere in the world.

At the same time, the Navy inaugurated a new emphasis on sharing the capabilities of SEA CLIFF and TURTLE with the nation's scientific and academic communities. From the very beginning, a new partnership was nurtured that applied the Navy's physical and operational resources to the research requirements of the Nation. The highly successful SEA CLIFF deployment to the Gorda Ridge confirmed the Navy's growing commitment to the partnership, and it presaged the successes that were to follow.

The LANEY CHOUDEST is owned and operated for the Navy by Edison Chouest Offshore, of Galliano, Louisiana. Permanently stationed in San Diego with the DSVs, the ship has become an integral part of the Navy deep submergence community. Over the last three years, the LANEY CHOUDEST has consistently provided safe, effective, and extraordinarily capable support to the DSVs themselves, to their Navy crews, and to the scientific teams that sailed with them.

Unfortunately, deep submergence operations and scientific research do not share the priority which the Fleet must assign to combatant ships. When an unexpected funding shortfall presented a financial dilemma to the Pacific Fleet Submarine Force Commander, the funds originally assigned for the lease renewal of the LANEY CHOUEST were identified as a possible solution. If this intention becomes final, LANEY CHOUEST will depart San Diego, leaving behind a significant operational void.

In fairness, it must be recognized that a smaller support ship (the DOLORES CHOUEST) normally devoted to the training requirements of the Deep Submergence Rescue Vehicles can also launch and recover a DSV. Compared to the A-Frame launch on the LANEY CHOUEST, this operation is significantly slower, more hazardous, and restricted to near millpond sea conditions. In addition, the ship has none of the accommodations, laboratory and maintenance space, or long range sea-worthiness of the LANEY CHOUEST.

Should the services of the LANEY CHOUEST be lost, only the single, smaller ship will remain to provide launch and recovery to four submersibles (the two DSRV's, SEA CLIFF, and TURTLE). The submarine rescue mission of the DSRV's requires that they have a priority claim on the sea time necessary to maintain their operational proficiency. In addition, the DOLORES CHOUEST has repeatedly been directed to deploy to the Pacific Northwest to provide sea trials services to ships completing overhauls at the Puget Sound Naval Shipyard. This mission further reduces her availability to provide even rudimentary services to SEA CLIFF and TURTLE. The Navy may very well be forced to lay up one of the DSVs simply because it cannot maintain even minimum crew proficiency.

The loss of the LANEY CHOUEST would create a void not easily filled even if funds were to be later identified. Significant modifications were required to give LANEY CHOUEST her extraordinary capabilities. The A-Frame launch and recovery installation alone, engineered specifically for SEA CLIFF, represents a major investment. The structural frame of TURTLE was specifically upgraded to permit her to operate from that same system. These interrelated installations cannot easily be replicated. Thus, a decision to allow the LANEY CHOUEST to depart essentially cripples Navy deep submergence vehicle operations for years to come. The loss could only be recouped through the time-consuming and expensive process we went through in 1984-88.

The Fleet Commanders' emphases on combatant ships is understandable and proper. Similarly, a careful prioritization of mission requirements, with an intent to guide resource allocation, is reasonable. Unfortunately, however, Navy Deep Submergence has only a limited constituency on operational fleet staffs, and scientific capabilities that look to the future are all too easily lost amid concerns for the current crisis. It is incumbent upon the Nation's scientific and academic communities to ensure that these capabilities are not lost.

**UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM****GUIDELINES FOR REQUESTING/BECOMING UNOLS VESSEL****1. INTRODUCTION**

This instruction provides a guideline for requesting the designation of an institution's vessel as a University National Oceanographic Laboratory System (UNOLS) vessel. Included in this guideline is a description of the objective of UNOLS Operator Institutions, the relationship of UNOLS vessels to research and academia, the relationship of UNOLS operating institutions as UNOLS members, and the responsibilities of UNOLS operating institutions.

**2. OBJECTIVES OF UNOLS OPERATOR INSTITUTIONS**

The objective of a UNOLS Operator institution is to provide an oceanographic vessel to scientists from both within and outside of their institution, provided that funding is available from the sponsor of the research or from the user.

**3. RELATIONSHIP TO RESEARCH AND ACADEMIA**

UNOLS vessels are those United States research vessels generally operated in support of national oceanographic research programs by academic institutions and are significantly funded by the federal government.

**4. RELATIONSHIP OF UNOLS OPERATING INSTITUTION AS UNOLS MEMBER**

UNOLS institutions that operate UNOLS vessels are, in addition, designated as Operator Institutions.

UNOLS vessels are designated by the UNOLS Council. The list of designated UNOLS vessels will be reviewed regularly for additions or deletions by the UNOLS Council. If a vessel ceases to meet the UNOLS standards, the UNOLS Council will recommend termination of such designation.



## **5. RESPONSIBILITIES OF A UNOLS OPERATING INSTITUTION**

The responsibilities of the UNOLS Operating Institution include, but are not limited to:

- a. Assuring that ships are regularly available to all federally funded users.
- b. Maintaining their vessels to accommodate the needs of the academic oceanographic programs.
- c. Operating their UNOLS vessels in accordance with UNOLS Research Vessel Safety Standards, October 1989.
- d. Subjecting to regular, recognized ship inspection procedures, such as ABSTECH or INSURV.
- e. Participating fully in the UNOLS scheduling process. The operating institution will receive, acknowledge, and structure requests for ship-time use in consultation with the UNOLS Office.
- f. Submitting cruise reports and cruise assessments according to UNOLS uniform practices.
- g. Adhere to cost accounting and performance standards according to UNOLS uniform procedures.
- h. Requesting funds for operation of their vessels. UNOLS membership does not guarantee federal funding.

## **6. REQUIREMENTS FOR BECOMING A UNOLS VESSEL**

An institution requesting designation of their vessel as a UNOLS vessel must be a qualified UNOLS member institution. If they are not a member, they must submit an application for membership in accordance with the guidelines established in the UNOLS Charter. These applications can be submitted in tandem with their requests to designate a vessel as a UNOLS vessel. Application forms can be obtained from the UNOLS Office.

The requirements for designating a vessel as a UNOLS vessel include:

- a. The institution must operate the vessel for research purposes.
- b. There must be evidence of three or more years of continuous operation of shared research facilities.

- c.. The operating institution must be able to provide a projection of the vessel's use for the next year, including user charges.
- d.. The vessel must successfully complete an appropriate safety inspection (either ABSTECH or INSURV) at the institution's expense.
- e. The vessel must be capable of operation under the UNOLS Research Vessel Safety Standards, October 1989.
- f. The vessel must be regularly available to all federally funded users.
- g. The vessel must be maintained to accommodate the needs of the academic oceanographic programs.
- h. The operating institution must be willing to participate fully in the UNOLS scheduling process. The operator will receive, acknowledge, and structure requests for ship-time use in consultation with the UNOLS Office.
- i. The operating institution must be willing to submit cruise reports and cruise assessments according to UNOLS uniform practices.
- j. The operating institution must adhere to cost accounting and performance standards according to UNOLS uniform procedures.
- k. The operator institution must be capable of requesting the necessary funds to support operation of their vessels. UNOLS membership does not guarantee federal funding.
- l. The operator institution must submit a written application to the UNOLS Office addressing all of the requirements listed above.

## **ELECTIONS TO MEMBERSHIP**

Requests for designation of a vessel as a UNOLS vessel will be considered by the UNOLS Council upon receipt for evaluation of a written application by the operation institution. The application should address all requirements outlined in the previous section. Elections to membership will be held at a regular UNOLS meeting and require a majority vote of the Member Institutions present or by proxy if absent.



## SMITHSONIAN TROPICAL RESEARCH INSTITUTE

## R/V BENJAMIN

BOX 2072  
BALBOA, REPUBLIC OF PANAMA  
OR  
APO. MIAMI 34002-0011  
U. S. A.

SHIP'S OFFICE:  
Tels: 011-507-28-4709  
011-507-52-2579  
Fax: 011-507-28-0516

TELS 52-5539 - 27-6022  
27-6014 - 27-2930  
CABLE STRI  
FAX (507) 62-5942 (507) 62-6084  
WASHINGTON OFFICE: 202-786-2817

June 19, 1991

Jack Bash  
Executive Secretary  
U.N.O.L.S. Office  
P.O. Box 392  
Saunderstown, RI 02874

Dear Jack:

First of all I would like to thank you for taking the time to talk with me during my visit to Rhode Island last month. I was pleasantly surprised to learn of the possibility of our participating in UNOLS as a member.

By the end of my trip I was able to visit the Knorr, the AGOR 23, as well as a number of smaller RV's along the Gulf Coast, and to talk with quite a few individuals who gave me many valuable ideas which we shall consider in the final details of our new vessel. At this point it appears that I have prevailed on the question of detailed design versus performance spec (COR) and that we are back on track with Rodney Lay chosen to do the latter. I have perused all of the materials you gave me and will insure that our design takes all safety and other general UNOLS standards into account.

Since my return here I have discussed with all but the Director our possible membership in UNOLS and have found so far universal acceptance of the idea. I will be meeting with the Director and the Assistant Director for Marine Programs soon to discuss this topic and will have a better idea of their stance after that. In the meantime, it would benefit us to have as much information as possible on UNOLS and the RVOC to answer any questions we might have. The materials you gave me include a copy of the 1984 RVOC bylaws, the safety standards (1989), the diving workshop, and the scientific mission requirements for ORVs. If possible, I would like a copy of the Charter and bylaws for UNOLS, the Charter for the RVOC, meetings schedules for both, fee (dues) schedules, and any other pertinent organizational information.

At this time I would like to be able to attend meetings as a non-member observer and get on the mailing list for the two organizations. I seriously doubt we can attend the October RVOC meetings, but with a schedule of the meetings after that in hand we can plan for future events.

Michael Lang was here last week and we briefly discussed the diving workshop vis-a-vis our programs here. He was excited about our possibly joining UNOLS and sends his regards. The two of us are going to try to meet with Dolly Dieter in Washington to continue discussing this subject.

I have sent, as promised, under separate cover a copy of our Concept Design.

Thank you again for your help and I look forward to our working together in the future.

Sincerely,



David A. West  
Captain

RECEIVED

RECEIVED



UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

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

UNOLS Office, WB 35,  
School of Oceanography,  
University of Washington  
Seattle, Washington 98195  
Tel. (206) 543-7200  
Fax (206) 543-7201

April 19, 1991

TO: Gary Brass  
Jack Bash

FROM: William D. Barbee *Bill*  
Executive Secretary, UNOLS

SUBJECT: Application for UNOLS Membership.

We have received an Application for UNOLS Membership from Rutgers University, Institute for Marine and Coastal Sciences. Fred Grassle would be the Designated Representative.

I solicited this application at the TOS meeting in St. Petersburg. Suggest that it be on the U/C agenda at the July, 1991 meeting.

WDB/cml  
Enclosure: 1

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM  
RECEIVED

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

APR 18 1991

UNOLS Office, WB-1  
School of Oceanography  
University of Washington  
Seattle, WA 98195

UNOLS

UNOLS OFFICE  
APPLICATION FOR ASSOCIATE MEMBERSHIP

Pursuant to the UNOLS Charter the below named organization hereby submits application for associate membership in the University-National Oceanographic Laboratory System. In doing so the applicant understands and agrees to work for the objectives set forth in the UNOLS Charter.

Name of Institution: Institute of Marine and Coastal Sciences - Rutgers University

Name of person delegated to act as representative to UNOLS  
Name: Frederick Grassle  
Title: Director, IMCS  
Address: Box 701  
Rutgers University, New Brunswick, NJ 008903-0131  
Telephone Number: (908) 932-6435

General Information on organization, its grant and other marine science programs:  
No. Professional Personnel 15 No. Graduate Students 90  
Approximate Annual Budget \$3 Millions  
List of research vessels owned or operated:

<u>NAME</u>	<u>SIZE</u>
<u>SEVERAL SMALL BOATS</u>	

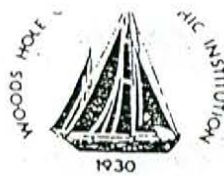
NOTE: Please attach copies of brochures, bulletins, photos, etc. which describe the institution and its facilities.

Please attach a brief list of the names and addresses of key individuals to whom the following information sent out by UNOLS would apply (Note: The Institution UNOLS Representative receives all):

- Ship user information - research ship schedules, ship availabilities, etc. (intended for scientists and ship users);
- Research ship operations and maintenance - for marine superintendents and port captains.

SEND TO:  
William D. Barber  
Executive Secretary  
UNOLS Office, WB-15  
School of Oceanography  
University of Washington  
Seattle, Washington 98195

SUBMITTED:  
Signature Frederick Grassle  
Name: Frederick Grassle  
Title: Director  
Date: 4/14/91



11 February 1991

Dr. Garrett W. Brass  
Rosenstiel School of Marine &  
Atmospheric Science  
University of Miami  
4600 Rickenbacker Causeway  
Miami, Florida 33149.

Dear Gary:

The enclosed task (draft) for the UNOLS Visiting Committee is for your review. My concern, given what I think Don was saying at the Miami meeting, NSF/ONR will want to play a major role in the selection of the committee. I hope not. I believe that you should identify the members of the committee and with advice and consent of NSF/ONR, make the appointments yourself.

It was very nice of your wife and you to have us to dinner. I enjoyed the evening.

Call if I can help.

Sincerely,

*George*

George Grice

GG/kal

cc: Bill Barbee (Bill, please check dates when ALVIN was made a National Facility.)

Enclosure

D R A F T

Review Committee

for

University-National Oceanographic Laboratory System

UNOLS was established by a group of academic oceanographic institutions to provide a mechanism for coordinated utilization and planning for oceanographic facilities that are supported by Federal funds. The organization's major objective is to coordinate and review the utilization of facilities for academic oceanographic research, access to those facilities, and current match of facilities to the needs of academic oceanographic programs. The UNOLS Charter was originally adopted in 1971. It was amended several times, and in 1988 a revision effecting the organizational structure and membership was adopted. Since its establishment twenty years ago, the central focus of UNOLS has been the academic fleet, its operation, scientific capabilities, safety and upgrading. ALVIN was designated a national facility in 1974 and there is a UNOLS Committee (ALVIN Review Committee) which schedules and reviews the ALVIN. Other current UNOLS committees are the Research Vessel Operators Committee and Fleet Improvement Committee. UNOLS is supported predominantly by the National Science Foundation and the Office of Naval Research.

It is timely, given the twenty years UNOLS has been functioning, that an independent assessment be made of the organization's effectiveness in meeting the objectives defined in the Charter and specified above. The review should also include consideration of all activities that UNOLS coordinates through its committees, the role and operation of the UNOLS office, the relationship between UNOLS and its sponsors (NSF, ONR, NOAA, MMS, U.S.G.S., DOE) and the perception UNOLS has in the academic community. The report of the committee including its recommendations should be submitted to the Chairman of UNOLS within six months of its convening.



Bermuda Biological Station for Research, Inc.

1, Biological Line, Ferry Road, St. David's, Bermuda, B.S.R. 1926

RECEIVED

APR 16 1991

UNOLS OFFICE

March 26, 1991

William D. Barbee  
UNOLS Office WB-15  
School of Oceanography  
University of Washington  
Seattle, WA 98195

Dear Bill:

Enclosed please find our application from the Bermuda Biological Station for Research Inc (BBSR), proposing Member status in the University National Oceanographic Laboratory system.

I believe that the commitment BBSR has made to building and operating excellent research resources, our participation in UNOLS and RVOC activities as an Associate member and the success we have enjoyed in our vessel operations, support our application for UNOLS membership.

I would appreciate your submitting this application for consideration of the UNOLS Advisory Committee and the UNOLS members at your next opportunity.

Sincerely,

Howard S. Barnes  
Assistant Director - Operations.

*PS Bill, Thanks for all your help over the years  
good luck on your retirement*

ib/HSB

Encl.

*(Handwritten notes and scribbles)*

Application for Membership in the

**UNIVERSITY NATIONAL OCEANOGRAPHIC LABORATORY  
SYSTEM**

by the

**BERMUDA BIOLOGICAL STATION FOR RESEARCH, INC.**

17 Biological Lane  
St Georges GE 01  
Bermuda

Anthony H. Knap, Ph.D.  
Director, BBSR

and

Howard S. Barnes  
Assistant Director - Operations

and

Susan B. Cook, Ph.D.  
Assistant Director - Education

March 25 1991

## INTRODUCTION

The Bermuda Biological Station for Research, Inc. was established in Bermuda in 1903 through the joint efforts of individuals with the Bermuda Natural History Society, New York University, Harvard, and Princeton. In 1926 the organization was incorporated in the State of New York as a US non-profit research and educational institution.

BBSR's mission is threefold: to conduct research of the highest quality from the special perspective of a mid-ocean island; to educate future scientists; and to provide well-equipped facilities and responsive staff support for resident scientific staff, visiting scientists, faculty and students from around the world.

Over the last decade, BBSR has become an internationally recognized center for high quality marine and atmospheric research and education. Scientific work done by resident staff has grown dramatically while research done by visiting investigators and students (from over 20 countries in a typical year) has remained an important cornerstone of the institution's overall scientific contribution. In 1990, projects focused on the biological, chemical, and physical oceanography of the mid-Atlantic, the physiological ecology of symbiotic organisms, the chemistry and biological impact of oil spills, as well as studies of atmospheric pollution and transport, coral bleaching and carbonate geology.

Educational programs include undergraduate and graduate level summer and winter term courses, research internships, and an array of public education programs. During the academic year BBSR provides facilities for visiting educational groups from high school to graduate level, and also hosts scientific conferences, meetings and workshops.

Increased success in the federal funding arena has been the key to much of BBSR's recent growth. In 1990, for the first year in the institution's history, BBSR was included on NSF's list of top US institutions receiving support from the Ocean Sciences division; BBSR ranks 27th with a total of \$555,700 for research, equipment and educational programs. Overall, institutional funding for research comes primarily from the United States government (from NOAA, ONR, DOE, MMS, as well as NSF) with additional support from the Bermuda government as well as from private gifts and grants from individuals, corporations and foundations.

BBSR was an Associate Member of UNOLS for many years and has operated the RV WEATHERBIRD I and II in accordance with UNOLS standards. We are now seeking to become a full member of the University National Oceanographic Laboratory System. In the remainder of this document, we provide more detailed information in support of this application with material on facilities, graduate academic programs, research activities, management and finance as well as research vessel operations.

# BBSR FACILITIES AND OPERATIONS

## Shore Facilities

The BBSR complex, on 15 acres near St. George's, Bermuda, comprise laboratories, offices, library, warehouse, workshop and residential units. Research laboratories accommodate in the order of 50 investigators and include a new floor (3,600 square feet) of laboratories recently constructed in part with NSF funds to provide additional space for BBSR oceanographers and visiting scientists. NSF funds have also been committed to assist with the renovation of the first two floors of the Conklin Laboratory, scheduled for 1991-1992, as well as the construction of new visiting science accommodation which will be finished May, 1991. This will provide short term accommodation for up to 24 additional visiting scientists.

Three teaching laboratories accommodate up to 50 students. Additional instructional facilities include Hanson Hall with seating for 200-250, and 3 smaller lecture and conference rooms seating from 10-80 people. As Bermuda is an isolated island, the Station's E.L. Mark Library is a vital resource for both research and education with holdings of 20,000 volumes, 150 marine and atmospheric science journals, expedition reports, handbooks, unpublished material on local flora and fauna, as well as collected reprints and special publications. The Library and BBSR administration are linked to the US via a computer link to Dialog Information Services in California and the Omnet telemail system for communication with other ocean scientists and marine science libraries.

Over the past decade, BBSR has completed a major physical plant upgrade which has renovated all existing housing facilities. Accommodations include fully furnished cottages (with 1 to 3 bedrooms) for groups of investigators and families as well as apartments and rooms for single investigators and students in Wright Hall. Of the total 120 beds, 85 are available for visitors and 35 are reserved for resident scientists, research assistants and their families. A cafeteria style dining room serves 3 meals a day.

## Marine Facilities

In addition to the oceanographic vessel WEATHERBIRD II, BBSR operates three other vessels. The 41' BBS II, which is equipped with a winch and stern A frame for working to depths of 300 meters, is licensed to carry up to 40 people. The Station also has a 16' and a 32' boat available for resident scientists and graduate interns for inshore waters research.

As SCUBA diving is an integral part of much of the science performed at BBSR, the Station has made the commitment to maintain high standards of safety by adding a diving safety officer to the permanent staff. BBSR conforms to the rules and is a member of the American Academy of Underwater Sciences (AAUS).

## Research Vessel Operations

BBSR has operated oceanographic vessels since the 1930's. However, it was not until 1983, when the 65' WEATHERBIRD was brought into service, that the Station became more involved in UNOLS and with NSF. Prior to '83, BBSR vessels did not meet UNOLS standards and users paid for ship usage directly from their grants. In 1983 and 1984 the NSF funded grants for shipboard equipment. In 1985, following an NSF/ABSTECH inspection, the NSF started funding the ship operating costs directly (see fig. 1).



The presence of a well equipped and capable oceanographic platform in Bermuda, funded by NSF, greatly increased the interest in BBSR as a location for oceanographers from which to work. This resulted in a rapid increase in ship usage (see fig. 2). This increase, coupled with the demand for larger scientific parties on cruises, resulted in BBSR acquiring the larger, 115' WEATHERBIRD II purchased with a mixture of private donations and long-term bank financing.

Since 1984, when BBSR hosted the annual meeting of the Research Vessel Operator's Committee (RVOC), the Station has played an active roll in RVOC. Both WEATHERBIRD and WEATHERBIRD II have been part of the NSF/ABSTECH inspection program and BBSR has been involved in the UNOLS ship scheduling processes.

Fig. 1 Vessel operating funds, shown by source

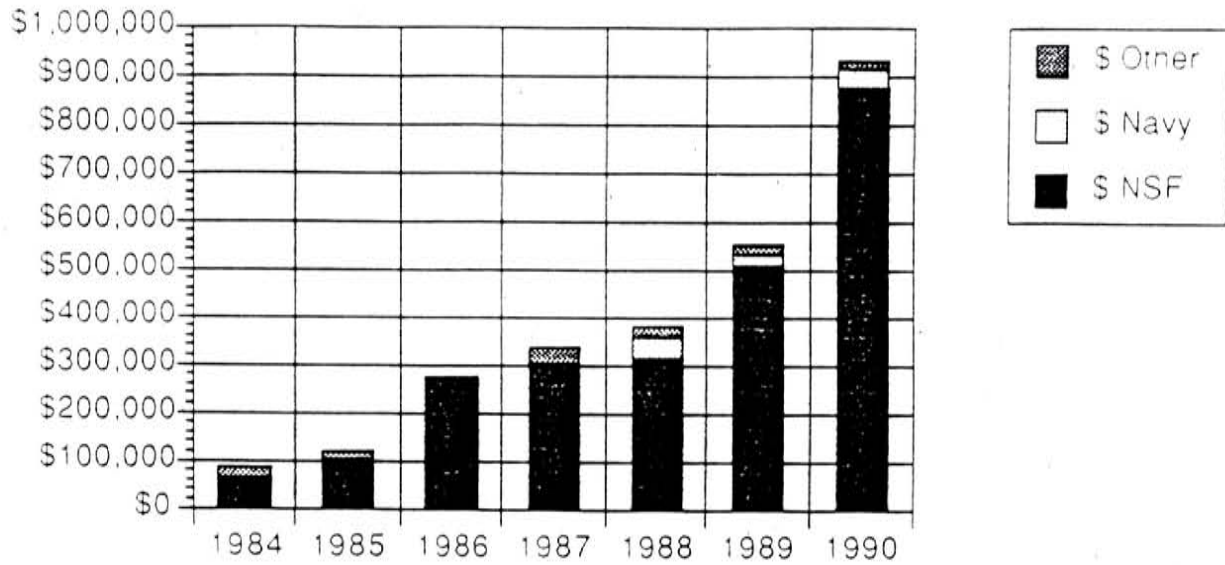
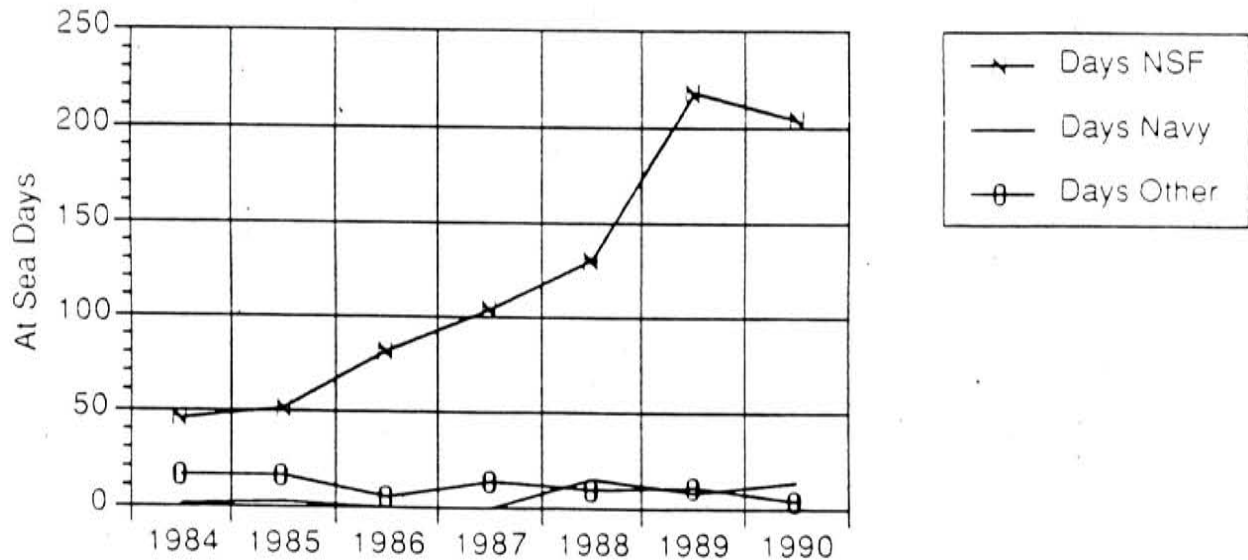


Fig. 2 Ship usage, shown by funding agency



## WEATHERBIRD II

The 115 foot WEATHERBIRD II is a converted oil field supply ship. She is set up as a general purpose oceanographic research vessel capable of performing CTD and hydrographic casts to 7,000 meters. The ship is primarily used to perform time-series measurements with a chemistry lab, radiation lab, electronics lab and a Sea Bird CTD system. The stern A frame and winches are designed to deploy mooring arrays, launch benthic landers, sound sources etc. There are 8-10 scientific and 6-8 crew berths.

WEATHERBIRD II was purchased and partially converted in 1989. However, due to financial constraints, the first phase of the conversion could only go as far as making her fit to conduct the work at hand. A "Phase II" conversion is planned to bring WEATHERBIRD II as close as possible to the UNOLS goals for a "small general-purpose oceanographic research ship" (*UNOLS Fleet Improvement Committee, "Scientific Mission Requirements for Oceanographic Vessels, Sept. 1988*). Phase II is also designed to make the ship more capable of performing her mission under more adverse weather conditions, thus increasing the number of possible days at sea and the types of research that can be conducted. A proposal is currently with NSF for this remaining conversion work.

The "Phase I" conversion consisted of adding a 10 ton capacity loading crane, 10 ton capacity stern A frame and side A frame. Three winches were installed for CTD, hydrographic and mooring work. Portable laboratories were installed and an extensive hydraulic system was added to power the new crane, A frames, winches and various equipment. In order to dampen the roll and improve station keeping, a 12" extension to the keel and port/starboard rolling chocks were installed. No changes were made to the existing accommodations.

Phase II will involve removing the forward ballast tanks and replacing them with permanent fixed ballast, state rooms, heads, showers, and a bow thruster. Living quarters will be further improved by modifying the mess area to accommodate the full complement of scientists and crew. The galley will be modernized to meet UNOLS standards and increase meal serving capacity. The total berthing capacity of the ship will be increased from 16 to 22 bunks.

The following systems and equipment will be upgraded: the hydraulic system, generators, water makers, ventilation system, navigation and communications equipment, safety equipment, monitoring equipment, sewage handling system, and air conditioning/heating system.

Research capabilities will be increased by converting present crew quarters on the main deck to an electronics/dry lab. In addition, a permanent lab will be installed to port on the main weather deck, with a stern control station and a 01 winch deck. New deck equipment (e.g. an A frame hoist, CTD winch and sea crane) will be added. Finally, a special transporting system and CTD lab will be added.

## **RESEARCH & EDUCATION PROGRAMS**

### **RESEARCH PROJECTS**

#### Bermuda Atlantic Time-series

The most prominent resident project is the NSF-funded US Joint Global Ocean Flux Study (US JGOFS). BBSR was chosen as the Atlantic base of operations for US JGOFS because of the island's isolation from the mainland and proximity to the deep ocean. The present time-series work

is performed by WEATHERBIRD II on a five day long, once a month cruise schedule, 50 miles off Bermuda. This work was built on the firm foundation provided by Hydrostation S, BBSR's 35-year continuous deep-water time-series. This data set continues and is another mainstay of the BBSR open-ocean research program. It is now the longest time-series in the world and provides oceanographers with a historical record for comparison with on-going measurements so that Bermuda can be used as a 'barometer' for observing global change. The US JGOFS site is known as BATS (Bermuda Atlantic Time-Series Station)

A growing number of projects at BATS have been superimposed on this time-series platform. Below is a list of researchers who took advantage of the time-series cruises as ancillary users in 1990.

Mark Altabet (WHOI) - Natural abundance  $^{15}\text{N}$   
Sandy Moore, Steve Ellis (Oregon State Univ) - Zooplankton dynamics  
Fred Lipschultz (BBSR) - Nitrogen cycling  
Anthony Michaels (BBSR) - Planktonic sarcodine ecology  
John Tokar (NOAA) and party - field testing of new electrode technology  
Jim Murray (U. Washington) - Vanadium profiling  
Ed Boyle (MIT) - Surface Lead sampling  
John Kidder (URI) - Oxygen isotopes  
C. Dave Keeling (Scripps) - Carbon dioxide time series  
Robert Olson (WHOI) and Penny Chisholm (MIT) - Picoplankton dynamics  
Franklin Ormaza-Gonzalez (U. Southampton) - Phosphate cycling  
Giselher Gust (U. South Florida) - Sediment trap hydrodynamics

Below is a list of proposals that have been funded by NSF for ancillary research associated with the GOFS Bermuda Atlantic Time-series Station for 1991.

Ammerman: Bacteria phosphate cycling.  
Andersen, Keller and Bidigare: Ultraplankton pigments and distribution  
Buesseler: Thorium and colloids.  
Brzezinski and Nelson: Silica cycling.  
Chisholm and Olson: Picoplankton dynamics.  
Ducklow: Bacteria Research.  
Keeling:  $\text{CO}_2$ .  
Giovannoni: Bacteria molecular biology.  
Langdon & Sambrotto: In situ production  
Lipschultz: Nitrogen cycling.  
Michaels, Caron & Swanberg: Symbiotic protzoa.  
Marra: Biooptical mooring  
Sholkovitz: Rare earth element distribution.  
Siegel, Smith and Michaels: Bio-optics.  
Zafiriou: Deep nitrite.

Below is a list of proposals that have been funded by other than NSF for ancillary research associated with the GOFS Bermuda Atlantic Time-series Station for 1991.

Ferrari: Copepod sex ratios  
Glasspool: Larval fish  
Gundersen: Bacteria nitrogen cycling  
Gust: Sediment trap hydrodynamics  
Johnson: Biological-Physical modelling  
Kidder: Oxygen isotope ratios

Moran: Colloids and trace metals  
Sherriff-Dow: DOC  
Thierstein: Coccolithophore species distributions  
Tokar: Fiber-optic sensors for CO<sub>2</sub>  
Waser: Natural <sup>32</sup>P and <sup>33</sup>P cycling

The following abstracts are principal programs that have used the WEATHERBIRDS since 1988 (not including those listed above)

NITROGEN CYCLING AND PARTICLE DYNAMICS IN THE SARGASSO SEA: THE USE OF <sup>15</sup>N NATURAL ABUNDANCE AS AN IN-SITU TRACER. Dr. M. Altabet. OCE-8516296.

PRODUCTIVITY AND NUTRITION OF PELAGIC SARGASSUM. Dr. B. Lapointe. OCE-8515492.

SUBMARINE CAVE SURVEY USING A REMOTELY OPERATED VEHICLE. Dr. T. Illiffe.

DEPLOYMENT OF AN IN-SITU SAMPLER FOR THE ANALYSIS OF ORGANIC CONSTITUENTS IN DEEP WATER. Drs. J. Farrington, A. Knap & K. Burns. NOAA.

FORMATION OF DISSOLVED FREE AMINO ACID IN SEAWATER AND ITS COUPLING TO UPTAKE. Dr. J. Fuhrman. OCE-8711132.

DIAGENESIS AND THE EXCHANGE OF SOLUBLE SUBSTANCES BETWEEN THE OCEAN AND THE SEDIMENTS. Dr. F. Sayles. OCE-8412142.

PARTICULATE FLUXES IN THE DEEP SARGASSO SEA: SEASONALITY AND TRANSPORT/REMOVAL MECHANISMS. Dr. W. Deuser. OCE-8417909.

PRODUCTION AND FATE OF PARTICULATE MATTER IN THE UPPER OCEAN: A PIGMENT BASED ANALYSIS. Dr. N. Welschmeyer. OCE-8309755.

TEMPORAL VARIABILITY OF LEAD IN THE ATLANTIC OCEAN. Dr. E. Boyle.

APPLICATION OF FLOW CYTOMETRY TO STUDY DISTRIBUTION & PROPERTIES OF PHYTOPLANKTON. Dr. R. Olson. OCE-8614332.

EQUIPMENT TESTING. Dr. M-Y Su. NORDA. ONR.

GROWTH RATE AND BIOLOGICAL INVESTIGATIONS OF MARINE PHYTOPLANKTON USING DNA-CELL CYCLE ANALYSIS. Dr. E. Carpenter. OCE-8816584.

ORGANIC GEOCHEMISTRY AND MICROBIOLOGY, AMINO ACID TURNOVER AND UPTAKE BY PHYTOPLANKTON VS. BACTERIA. Dr. J. Fuhrman. OCE-8996136.

#### Non-Ship using projects at BBSR

- Work on the physiology and biology of several ecologically important marine symbiosis, including NSF and ONR supported research on the coral-zooxanthellae symbiosis, graduate thesis work on sulphur symbiosis in lucinid clams and open ocean protozoan-zooxanthellae associations (NSF).

- Studies of the intercontinental transport of atmospheric pollutants including acid rain over the Atlantic ocean such as the Western Atlantic Ocean Experiment (WATOX, NOAA) and the Air Atmosphere Chemistry Experiment (AEROCE)
- The Marine and Atmospheric Program (MAP) which examines the quality of Bermuda's groundwater, inshore waters, and air, and is funded by the Bermuda Government.
- Projects on the effects of pollution on subtropical and tropical marine communities including the potential impact of incinerator ash (Bermuda government) and the chemistry of tropical oil spills (Minerals Management Service).

In addition to resident research programs and visitors who come to BBSR principally to use the research vessel, the Station also hosts numerous visiting researchers who use the laboratories and near-shore vessels. These visiting scientists conduct research at BBSR for periods ranging from a few days to several months, and either work cooperatively with the resident staff or conduct their own independent research. For both oceanographers and non-oceanographic visitors, BBSR's shore-side facilities offer access to a well equipped shared use equipment pool as well as technical staff assistance. Recent visitor research projects include studies of the microbial activity in carbonate sediments, coral aggression, and many others.

## EDUCATIONAL PROGRAMS

Educational programs at BBSR have more than quadrupled since the mid 1980's. Since the formal creation of an Education Department in 1983, the institution's historical emphasis on graduate and undergraduate level summer courses and research training in the marine sciences has been strengthened and expanded. Programs in public education, adult education, and teacher education have been added and there is increased staff support for visiting faculty running their own field courses at BBSR. The Education Department comprises an Assistant Director in charge of education (who is also a member of the scientific staff), an Education Officer, a Department Secretary and the BBSR Librarian.

Although BBSR is not a degree granting institution and has no formal legal ties with any degree granting college or university, a number of affiliations exist. In the United States, students enrolled at Gettysburg College, Reed College and Clark University receive automatic credit for summer courses satisfactorily completed at BBSR, while similar arrangements exist for Southampton, Nottingham and Reading University students in the United Kingdom. A degree-granting affiliation similar to the MIT-WHOI joint program has been established with the University of Southampton in England. Outside of these affiliations, undergraduate and graduate students normally receive independent study credit from their home institutions if they have made prior arrangements with their Department Head or Registrar.

## GRADUATE PROGRAMS

Approximately half of the courses taught each summer are graduate level programs aimed at bringing students up to date on the latest research findings and techniques in the course subject area. In 1990 and 1991, a number of advanced courses were taught which demonstrate the BBSR commitment to graduate training in ocean sciences; such courses include Analysis of Marine Pollution, Global Environmental Change, Zooplankton Ecology, Marine Microbial Ecology, Biological Oceanography, and Ecophysiology of Corals, Seagrasses and Mangroves.

Both the number of graduate students in residence at BBSR and funding opportunities for thesis research have increased substantially over the last 5 years. In 1990, 14 graduate students were at

BBSR; 8 for a full year, 6 for part of the year; of these, 2 were M.S. candidates and 12 were Ph.D. candidates.

BBSR's small endowment provides funds for a grant-in-aid program that helps graduate students and visiting faculty with on-site research costs. Twenty-four individuals (both students and visiting Ph.D.s) received such aid for 1-4 week long projects during 1990. In 1991, this number is expected to increase, and the first year of a four year Mellon Foundation grant will provide additional support for a faculty member and associated research students in the global geosciences. Over the past 5 years, oceanography related projects have received from 5-20% of this total internal funding.

To help graduate students cover the costs of thesis work in Bermuda, BBSR established a visiting graduate intern program in 1987. This program waives laboratory and housing fees for students enrolled in recognized degree programs in exchange for part-time service as teaching assistants in BBSR's educational programs. The number of students in this program has grown from 3 in 1987 to 9 students in 1991. Awards cover from 3-12 months of research at BBSR.

To foster scientific interactions between residents, visitors and members of the public, BBSR sponsors weekly scientific seminars, monthly lectures and an annual Marine Science Day open house.

### ADVANCED UNDERGRADUATE PROGRAMS

The remaining summer courses are taught at the advanced undergraduate level and share a common focus on either biodiversity (Tropical Marine Invertebrates; Biology of Fishes; Tropical Marine Algae) or marine ecology (Tropical Marine Ecology; Tropical Marine Biology).

At both the undergraduate and graduate level, BBSR is committed to providing generous scholarships to all qualified students with financial need. In 1990, \$57,000 in scholarship funds were awarded to 73 students from 11 countries.

BBSR also provides opportunities for 18-20 undergraduate science students per year to gain practical scientific experience by working as laboratory assistants in resident scientific programs. Room and board are provided in exchange for scientific work and assistance with routine marine laboratory operation.

An application to the NSF REU Site program is pending. If funded, this proposal will provide additional funds to help us improve and expand these opportunities for U.S. students with special emphasis on minorities and women.

### VISITING FIELD COURSES, PUBLIC EDUCATION AND CONFERENCES

Last year BBSR hosted 30 academic groups. This figure includes programs for middle school, high school, college, and graduate level students. An additional 3 adult level programs were held; 16 Elderhostel short courses in environmental and marine science for senior citizens, while 3 were run under the auspices of non-traditional educational organizations such as museums, aquariums, and environmental societies.

BBSR's involvement in education also extends to the training of teachers - both in a special summer workshop for U.S. educators, and programs for science teachers in the local Bermuda school system.

April 1, 1991

Dr. Garry Brass  
President, UNOLS  
University of Miami, RSMAS  
4600 Rickenbacker Causeway  
Miami, FL 33149

Dear Dr. Brass:

A UNOLS review of the NSF Ship Inspection Program is requested.

The NSF Ship Inspection Program was established in 1980 to examine the seaworthiness and material condition of NSF owned and/or built research vessels. Eighty six (86) inspections of twenty nine (29) ships have been conducted from 1980 through 1990.

The purpose of NSF ship inspections is to assure that the seaworthiness and safety of research vessels supported by NSF meet or exceed the standards set forth by the UNOLS Safety Standards, and applicable requirements of the American Bureau of Shipping, the code of Federal Regulations, and the U.S. Coast Guard. Another purpose is to ensure that NSF-owned ships as capital assets, are being adequately maintained. In addition the inspection examines the scientific capabilities of research vessels in accordance with accepted community standards and expectations. Guidelines for the NSF Ship Inspection of Research Vessels to assist ship operators in preparing for an inspection and the NSF Ship Condition Form, (modelled after the UNOLS Ship Characteristics Form and the Material Condition Review Part I) created by the inspection team, are now in their third edition.

Inspections are presently conducted on a two-year cycle. The inspection examines the ship's hull, tanks, decks, propulsion machinery, auxiliary electrical systems, auxiliary machinery, navigation and communication equipment, habitability, pollution control, damage control and safety. The inspection includes a dockside and an at-sea component to exercise all ship systems, scientific capabilities and emergency procedures.

From its inception, NSF relied upon an interagency agreement with the U.S. Maritime Administration (MARAD) to supply the necessary survey expertise. MARAD met this need via a subcontract with the American Bureau of Shipping, Worldwide Technical Services (ABSTECH). Beginning in January 1990, NSF now directly contracts ABS Americas (formally ABSTECH and now a Division of ABS) to supply this expertise.

The Program has evolved from inspections of NSF ships to the inclusion of institution-owned vessels, from a one-day, at-the-dock inspection to two-days with an at-sea component, from two inspectors to three with science equipment tested in simulated research conditions, from just the ship to inclusion of crew training and safety drills, and from exclusively satisfying NSF needs to becoming part of UNOLS' requirements for certification as a UNOLS Vessel.

RECEIVED

APR 05 1991

UNOLS OFFICE

After a decade of evolution and improvement, the NSF thinks that an external review of the NSF Ship Inspection Program is in order to further its usefulness to the NSF and the community it serves. We request that UNOLS undertake a review of the Program and suggest that an ad hoc group representing inspectees, other Federal Agencies and other inspection programs (e.g., INSURV and NOAA) be formed to carry out this task. We stand ready to assist UNOLS with information on how and what the Program inspects together with copies of inspection reports, the Guidelines, Ship Condition Form and any other documents deemed helpful.

Sincerely yours,



Richard W. West  
Program Manager  
Oceanographic Facilities

cc: Capt. William Barbee  
Mr. Jack Bash



UNIVERSITY OF CALIFORNIA, SAN DIEGO

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093

July 14, 1991

Gary Brass  
UNOLS Chairman

Dear Gary,

Last year the Fleet Improvement Committee published its "UNOLS Fleet Improvement Plan," which discussed the need for ship replacement and for mid-life refits in order to provide for continued upgrading of the UNOLS fleet to match the needs of science. This report, in tables 6 and 7, lists the dates at which each vessel should be due for a refit. R/V New Horizon, the newest of the six vessels listed, is due according to this table for a refit in 1995. We have, indeed, been planning to carry out such a refit in FY 1995.

It is therefore with some concern that we note that various recent discussions of refits for intermediate ships have shown schedules only for "federally-owned" ships, and have in each case omitted the R/V New Horizon. This omission seems to have originated in the Executive Summary of that FIC report, which discusses a replacement schedule for all of the intermediate vessels, but discusses refits only for federally-owned vessels.

We assume that this omission was only an editorial error. New Horizon is one of the most heavily used vessels in its class, one of the least expensive to operate, has the most deck working area, second highest lab space, is the newest of the group listed, and has had steady upgrade of outfitting. We could almost consider the omission a curious sort of compliment.

However, in view of the statements by some individuals about giving "preferred status" for operational funding to the federally-owned vessels, we are concerned about the perpetuation of this error. The ship will need a refit, to solve existing problems of load-carrying capacity, stability, winch capabilities, and size of scientific party. The use is about 80% federal.

We would therefore appreciate it very much if the Council could clarify the situation, with a statement that "the omission of the New Horizon or other Institutional ships from the FIC list of ships requiring a midlife refit does not represent UNOLS policy."

Sincerely yours,

A handwritten signature in dark ink, appearing to read "George G. Shor Jr.", written over the typed name.

George G. Shor Jr.  
Associate Director

cc: Jim Williams, SIO  
Richard West, NSF  
Dolly Dieter, NSF

PROFILE OF UNOLS CRUISE ASSESSMENTS

1990

June 28, 1991

	Number of Cruises	Reports Received		Success				Problems			Remarks
		No.	%	Full	Part	Marg.	Not Succ.	Weather	Ship/Crew	Science Equip.	
MAURICE EWING	11	5	45	4	1			1	1		Time lost to weather (1) & crew emergency (1) on same cruise.
MOANA WAVE	13	6	46	4	2						Ship's equipment--winches (3); CTD (1); SeaMarc streamer (1).
ATLANTIS II	14	8	57	5	3			1	2		Dives lost to weather (1); ALVIN navigation (1); Scheduling/clearances (1).
T. WASHINGTON	16	8	50	8					1	1	Dredge (1); SeaBeam degradation (1).
WECOMA	11	6	54	6						1	Deck handling equipment (1); Mooring component failure (1).
ENDEAVOR	16	7	44	7							Ship and technical support praised.
OCEANUS	13	5	38	4	2						Ship's equipment-winch/wire (1); Data logger/wet sensors (2); Fumes/smoking (1).
SEWARD JOHNSON	13	0	0								Designated a UNOLS' vessel during 1990.
GYRE	18	0	0								No reports.
NEW HORIZON	17	12	71	11	1				2	1	Ship's equipment--trawl winch (2); Science equipment (1).
COLUMBUS ISELIN	16	16	100	10	6				5	1	Winch (2); Engines (2); Propeller pitch control (2); Coring (1); Science equipment (2).
EDWIN LINK	12	0	0								Designated a UNOLS' vessel during 1990.
POINT SUR	45	31	69	27	4			1	3	3	Loran nav. (1); A-frame (1); 3.5 and/or 12 khz depth profiler (3); Small boat ops (1).
CAPE HATTERAS	15	15	100	14	1			1			Weather Impeded (1). Sea and shore support excellent.
ALPHA HELIX	10	3	30	3							Crew and shore support praised.
ROBERT SPROUL	29	15	52	13	2					2	Fully successful on one unusually long deployment.
CAPE HENLOPEN	17	7	41	5	2			1		1	Weather prevented servicing buoy (1); Home-made box corer didn't work (1).
RIDGELY WARFIELD	36	32	89	29	3			1	1		CTD probe (1); Weather (3); Laboratory air conditioning (1).
PELICAN	31	12	39	10	2			1	1	1	Weather (1); Ship's equipment--clean electric power (1).
LAURENTIAN	21	20	95	10	10			2	5	3	Weather (2); Ship's equipment--computer, CTD, meter wheel (5); Science equipment (2).
LONGHORN	10	0	0								No reports.
BLUE FIN	44	34	77	32	1	1		2			Large seas from Hurricane Bertha (1); Box coring prevented by weather (1).
CLIFFORD BARNES	54	0	0								No reports.
CALANUS	15	10	67	6	4				4		Small boats (2); Winch failure (1); Autopilot and steering (1).
TOTALS	497	252		208	44	1	0	11	25	13	
PERCENT		51		83	17	0	0	4	10	5	

- Notes: 1. Percentage of reports received is of Number of Cruises.  
 2. Percentages of Full, Partial or Marginal Success is of Number of Reports Received.

Totals for 1989

TOTALS	447	220		182	35	0	3	43	37	26	
PERCENT		49		83	16		1	19	17	12	