

# UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

SUMMARY REPORT OF THE MAY, 1984

UNOLS SEMIANNUAL MEETING

NATIONAL ACADEMY OF SCIENCES  
2101 Constitution Avenue N.W.  
Washington, D.C.

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May 1984



Summary Report of UNOLS Semiannual Meeting

May 24, 25, 1984

National Academy of Sciences  
2101 Constitution Avenue N.W.  
Washington, D.C.

General: Issues and items considered at the May, 1984 Semiannual Meeting are reported in the order that they were addressed. Unless otherwise noted, all items are from the published agenda (Appendix I).

A list of registered attendees (Appendix II) has been compiled from registration forms available before and during the meetings. Information from the UNOLS Office was distributed during the meeting: UNOLS Directory (May 1984), List of Research Vessels and Summary of UNOLS Vessel Fleet Operation - 1983 (Appendices III, IV, V).

Introduction and Welcome: The UNOLS Semiannual Meeting, May, 1984 was called to order by Chairman, Dr. Ferris Webster. After welcoming the UNOLS membership, speakers, guests, agency representatives and others from the oceanographic community, Dr. Webster introduced the meeting's principal speaker, Dr. Edward A. Knapp, Director, National Science Foundation.

Dr. Edward A. Knapp, Director of the National Science Foundation was the principal speaker for the meeting. Dr. Knapp expressed his pleasure at being able to meet with UNOLS, a part of the oceanographic community. He characterized oceanography as an important segment of the United States' and the world's scientific endeavor, one that includes many exciting scientists. He noted that Roger R. Revelle, one of the country's leading oceanographers has recently been selected as the fifth recipient of the Vannevar Bush Award by the National Science Board. And also two members of the oceanographic community, Mimi Koehl, University of California, Berkley, and David Karl, University of Hawaii are among the recipients of this year's Presidential Young Investigator Awards through the National Science Foundation.

Dr. Knapp paid particular attention to NSF's commitment to ocean sciences by saying "It is a long-term commitment, one which has grown with the field over the past 25 years. And it is a significant commitment to a very important part of our planet. The oceans that cover two-thirds of the earth's surface hold answers to fundamental questions in many scientific disciplines from biology to geology to meteorology and to important problems of environmental concern such as climate, pollution, and resources."

Dr. Knapp also commented with pleasure on how UNOLS, as a community, has supported NSF in valuable ways. "As an organization, you have provided valuable advice and council to many people at the Foundation. For example,

your Submersible Science Study is being used to upgrade the ALVIN system by the three funding agencies--NOAA, ONR, and NSF ... UNOLS has been indispensable in scheduling the research fleet. And your periodic assessments and evaluation of the fleet and the need for replacement vessels helps ensure that we will have an adequate fleet for ocean scientists in the future."

Part of the Director's speech focussed on research instrumentation and equipment. NSF recognizes that, to be in the forefront of research, scientists and engineers must have the best, most advanced equipment, yet at many colleges and universities, it is outmoded. Increases in the NSF 1984 budget have partially restored equipment purchases as an important share of grant and university budgets. But, Dr. Knapp noted, improving scientific instrumentation capabilities must parallel those in shipboard equipment and instrumentation. "Shipboard laboratories must use the newest and best nautical equipment. Such things as the Global Positioning System and the integration of this new precision navigational capability into on-board data acquisition systems could tremendously improve the work you do."

He also addressed several initiatives at NSF, one of which involves supercomputing. NSF will provide in FY 1985 initial support at NCAR (the National Center for Atmospheric Research) for a class-VII supercomputer. Twenty percent of its time is dedicated for use by ocean scientists.

Closing out his comments, Dr. Knapp noted that studies for ship replacements are being coordinated by UNOLS. He recognized the importance of involving ship operators and users in the planning process. He then charged UNOLS to provide NSF with a set of clear and unified priorities not only in this area but also in all other areas of funding that effects the UNOLS community.

Following a short discussion between the speaker and UNOLS representatives, Chairman Webster thanked Dr. Knapp for addressing UNOLS and for the sentiments expressed.

Paul M. Wolff, Assistant Administrator for National Ocean Services in the National Oceanic and Atmospheric Administration next addressed the meeting on management of the NOAA fleet.

There have been recent changes in the management of the NOAA fleet. Responsibility for fleet in management has been assigned to the National Ocean Service, (NOS) one of five principal line organizations in NOAA. As a critical part in achieving NOS's goal of providing user-oriented ocean services, revised guidelines for fleet (and ocean program) management are being implemented. These guidelines cover NOS efforts to

- modernize instrumentation on ships,
- increase cooperation with other government agencies and with the private sector,
- increase efficiency of vessel use, and
- increase effectiveness of data management and disposition.

Right now, the material condition of the fleet is good, but instrumentation is antiquated. Efforts to improve instrumentation include installation of SEAS units (autonomous systems for acquiring marine meteorological data),

acquisition and installation of additional multibeam sonar systems for soundings, acquisition of GPS navigation systems, upgrading computer capabilities and standardizing software.

New procedures have been established for setting priorities for ship use within and among NOAA programs. Ship use, especially of the research part of the fleet, by academic research is being encouraged. *Proposals for ancillary projects to be conducted on NOAA ships have been solicited and will be accommodated to the maximum extent.*

Two ships, the SURVEYOR and DAVIDSON, both equipped with multibeam sonars for sounding, are being largely committed to an Exclusive Economic Zone (EEZ) survey program that will produce 1:250,000 scale bathymetric charts with magnetics and gravity coverage. This program is cooperative with the U.S. Geological Survey.

A scientific review of NOS programs has recently been completed. Among the review recommendations were those for fewer ships with more modern equipment and instrumentation, revise operating practices to result in longer seasons for the ships operated and to involve more outside scientists in investigations.

Mr. Wolff's remarks were followed by a brief discussion among him, his staff and the audience concerning procedures for and conditions on use of NOAA ships by outside scientists and on other aspects of Mr. Wolff's talk.

UNOLS Advisory Council Report: Harris B. Stewart, Jr., Vice-Chairman, delivered the Advisory Council report instead of Charles B. Miller, Chairman, who was at sea.

During 1983-84 the Advisory Council's main activities have dealt with the composition, management, effectiveness and so, the well-being of the UNOLS fleet. *By the Council's appraisal, the UNOLS fleet is in good health.* There is good balance between science program needs and fleet capacity, and the fleet is almost fully utilized. *Use of the fleet has increased from the 4494 use-days reported in 1983 to 5,210 days estimated for 1984 and 5,999 days projected for 1985.* The increases realized in funding for ships, particularly from the National Science Foundation are providing adequate resources for fleet operation. Overall well-being notwithstanding, there remain critical problems facing the fleet: the average age of ships, especially the larger ones is high and many will need replacement before the end of the century; some individual ships are no longer capable of meeting present needs; and some individual units have difficulty in maintaining effective schedules. For these reasons, and in response to an explicit charge from NSF's Oceanographic Facilities Support Section to review and provide recommendations on all major actions that would affect the UNOLS fleet, the Council has undertaken an update of their 1982-1983 evaluations of the fleet. This update will be completed by May, 1985. The Council is working closely with the UNOLS Fleet Replacement Committee and with individual institutions in their study.

UNOLS Cruise Assessments have been returned, reviewed and summarized, thus providing for the sponsoring agencies and operating institutions a basis for evaluating the effectiveness of individual ships.



The scheduling process, centered in UNOLS' East and West Coast Ship Scheduling Groups is proceeding smoothly. Also, efforts of the UNOLS National Expeditionary Planning Committee are beginning to provide valuable advanced planning information for out-year operations (currently for 1985 and 1986).

Through the Advisory Council, UNOLS NEWS has been established. It is distributed through the UNOLS Office to a broad selection of seagoing oceanographers, and provides communication on oceanographic facilities, schedules, operations and plans.

The Council has examined the UNOLS Charter and recommended modifications on the definitions governing Members and Associate Members, and an addition that would provide a definition of a UNOLS vessel. These recommended changes have been placed before UNOLS. The Council has also undertaken a review of UNOLS membership, aimed to assure that membership reflects criteria in the Charter.

In closing, Dr. Stewart thanked Advisory Council members who had served in 1983-84 and especially recognized those whose terms expire:

Robert W. Corell, University of New Hampshire  
Donn S. Gorsline, University of Southern California  
Roger Larson, University of Rhode Island  
John Van Leer, RSMAS, University of Miami  
Joseph R. Curray, *ex-officio*, Scripps, University of California  
San Diego

The Advisory Council Report is Appendix VI.

At their May 24, 1984 meeting the Advisory Council discussed the schedule projected for the R/V ISELIN in 1985. Estimates have been made (in UNOLS scheduling meetings) that the ISELIN's use in 1985 would be low. The East Coast Ship Scheduling Group, in their March, 1984 meeting made a tentative recommendation that the ship be reassigned on a trial basis. The Council noted that ISELIN's 1983 and 1984 schedules had been satisfactory, and that RSMAS, University of Miami is making efforts to augment its seagoing program (and thus, ISELIN use). The Advisory Council then *recommended to the National Science Foundation, the temporary relocation, for at least two years, of the R/V COLUMBIS ISELIN to the West Coast by 1985, if the projected level of underutilization is realized.*

Acquisition of POLAR DUKE by NSF's Division of Polar Programs: Recent actions by NSF's Division of Polar Programs (DPP) are of such interest to UNOLS that a special presentation was inserted into the agenda. Alfred N. Fowler, Deputy Director, DPP, informed UNOLS of the recent acquisition of the POLAR DUKE. Since the vessel HERO was no longer serviceable for polar operations, DPP conducted a search to identify a replacement vessel. As a result on May 9, 1984 they contracted for the POLAR DUKE to support their Antarctic and South American geology work. The ship will be committed to support of Palmer Peninsula operations for 5-6 months annually, but has capability and should be available for some oceanographic research (although a schedule of availability is not yet available). The POLAR DUKE was built in 1983, is 219 feet LOA, beam 43 feet, draft 19 feet. The vessel has ABS ice classification IAA, space for 14 crew and 27 scientists, speeds 13 knots cruising and 15

knots full, and can maneuver at very slow speeds. Vans can be placed in protected locations to provide special laboratory facilities. DPP is considering participation in UNOLS scheduling procedures to help develop the vessel's schedule for ocean research. For more details contact DPP.

In the ensuing discussion Dr. Fowler was asked what effect the POLAR DUKE would have on DPP use of UNOLS vessels for Southern Ocean work. His response was that since the vessel had been acquired so recently, DPP plans were not yet sufficiently developed to define such effect.

Reports from Federal Agencies: Ron R. La Count, in commenting on the National Science Foundation's FY-1985 budget in oceanography said that the outlook remained as he had reported to the Advisory Council in February, 1984. (For that budget information, see the minutes of the UNOLS Advisory Council Meeting, February 2, 3, 1984 or UNOLS NEWS, Winter, 1983-1984.)

For other matters of concern to the National Science Foundation, Mr. La Count deferred to the address already delivered by the Director, Dr. Knapp and to the report on acquisition of the R/V POLAR DUKE given by Division of Polar Programs, Deputy Director, Alfred N. Fowler.

Keith Kaulum also chose not to comment on Office of Naval Research budget projections for FY-1985, since those projections were consistent with information that he had already passed to UNOLS.

The R/V MOANA WAVE, operated by the University of Hawaii, is presently in shipyard undergoing a 30 feet stretch. The modified vessel will have more deck space as well as a larger deckhouse. When the MOANA WAVE returns to service in late 1984 it should significantly augment the large ship capability of the UNOLS fleet. Mr. Kaulum, speaking for ONR, recognized "the good job by the University of Hawaii" in managing the shipyard work on the MOANA WAVE.

UNOLS was again advised of the availability for research use of the submersibles NR-1, SEA CLIFF and TURTLE. Up to 70 days per year on the NR-1 are available for research use in Federal agency programs (and so, by extension to investigators sponsored by Federal agencies). Thus far the number of proposals received has been disappointing. The SEA CLIFF completed the shipyard phase of modifications in February, and Navy intent is to receive certification to 6000 meters. The vessel LULU will soon be transferred to the West Coast as support for SEA CLIFF and TURTLE.

Decisions have been made on 1984 and 1985 awards under the Department of Defense Instrumentation Program and notifications will be made soon. Proposals for the next phase of this program will be due in about a year.

Robert Rowland reported on oceanographic programs and ship needs in the U.S. Geological Survey.

The President's March 10, 1983 Proclamation on the Exclusive Economic Zone (EEZ) is a significant factor in USGS's oceanographic plans and activities. One consequence is that GS Ocean Program funds are up about \$5 million. Field investigations have been conducted on the Gorda-Juan de Fuca spreading system, in Alaska, and later among Pacific Island.

GLORIA surveys of the West Coast EEZ are underway. These surveys produce a 30 mile wide side-scan swath. Processing will be done at the GS lab in Flagstaff, Arizona.

This intense work off the West Coast has caused some East Coast work to be deferred. In FY-1985 the USGS anticipates more investigations along the East and Gulf Coasts, less in the Pacific. USGS total funding for oceanography is approximately \$19 million per year.

Following the EEZ Proclamation and Department of Interior EEZ Workshops and panels held Winter, 1983-1984 the Secretary of Interior and DOI continue to place strong emphasis on work in the EEZ. Thus there is potential for a significant funding increase for the EEZ program. Much of the work would be left to outside organizations: to academic investigators, for facilities use (ships and equipment) and to NOAA or other Federal agencies. The USGS and NOAA are cooperating on swath bathymetric surveys of the EEZ.

Rear Admiral R. C. Munson noted that plans and programs in the National Oceanic and Atmospheric Administration had already been covered in remarks by Paul Wolff.

In the absence of Robert Corell, ALVIN Review Committee (ARC) Chair, a report for ARC was made by William D. Barbee.

The ARC met May 14 and 15, 1984 at Woods Hole Oceanographic Institution to review requests for ALVIN dives. Requests were in response to an announcement of opportunities for submersible research in the Pacific in 1985. Thirty-five requests for a total of 402 ALVIN dives were reviewed. The Committee rated 25 requests for approximately 275 dives either outstanding or excellent *and recommended that they be completed*. Estimates from the W.H.O.I. operators was that in order to complete those approximately 275 dives the ALVIN/ATLANTIS II would have to remain in the Pacific for all of 1985 and for three to six months in 1986. The Committee also considered a letter from the Chairman, NECOR, affirming requirements for ATLANTIS II to conduct conventional oceanographic investigations and SEA BEAM work. Although the Committee will consider in more detail the demand for some portion of ATLANTIS II time for non-ALVIN work *they recommended that ALVIN/ATLANTIS II remain in the Pacific through 1985 and for several months into 1986 in order to complete the 25 recommended requests.*

The Committee discussed the continuing strong demand for deep submersible time, a demand that currently exceeds ALVIN capacity. Although the current demand may in part reflect a backlog built up during ALVIN/ATLANTIS II conversion in 1983, estimates are that oversubscription will continue. The committee urges continuing efforts to use the Navy-operated submersibles NR-1, SEA CLIFF and TURTLE as possible solutions.

ARC efforts to extend advanced planning, especially workshops to elicit notices of intent to use ALVIN have proven effective and will be continued. The committee also commends those principal investigators who submitted their science proposals promptly and funding agency program officials, especially in the National Science Foundation's Ocean Sciences Research Section, for their timely funding decisions. Those timely decisions allow for more sensible and orderly schedule recommendations than has recently been the case.



The UNOLS membership endorsed the efforts of Chairman Robert Corell and members of the ALVIN Review Committee in providing reviews and recommendations to guide the ALVIN program and commended them for their service to UNOLS and to the oceanographic research community.

The ALVIN Review Committee:

Robert W. Corell, University of New Hampshire, Chair  
Robert C. Aller, University of Chicago  
Peter A. Jumars, University of Washington  
Daniel E. Karig, Cornell University  
Frederick L. Sayles, Woods Hole Oceanographic Institution  
Jeffrey Weissel, Lamont-Doherty Geological Observatory  
Mark Wimbush, University of Rhode Island  
A. A. Yayanos, Scripps Institution of Oceanography  
George D. Grice, *ex-officio*, Woods Hole Oceanographic Institution

UNOLS Office Activities: The agenda was modified to hear a report on UNOLS Office activities by William Barbee on the first day rather than as scheduled.

The UNOLS Office continues to operate at the School of Oceanography, University of Washington funded by a grant from the National Science Foundation. Program oversight for the grant is through NSF's Oceanographic Facilities Support Section, with funding from NSF, ONR, NOAA, USGS, MMS and DOE. Funds for the third increment for the three year grant were just recently awarded.

UNOLS Office functions are to provide support for UNOLS activities, to act as UNOLS secretariat and to enhance communications both within UNOLS and with other elements in the oceanographic community. Office activities included:

A. Staffing UNOLS general (Semiannual) meetings and meetings of the Advisory Council, Committees and Scheduling and Planning Groups, and

B. Activities reports on UNOLS general membership Council, Committee and sub-body meetings.

UNOLS' activities are conducted and policy is set mainly at their general or sub-body meetings. Further, reports of these meetings are the main vehicle for recording UNOLS activities. The UNOLS Office supported and reported on sixteen meetings, reviews and workshops in 1983-84.

C. Ship Schedule Coordination. Activities in support of ship schedule coordination include support and reports for Scheduling Group meetings, supporting development of the ALVIN schedule, providing input to the *National Oceanographic Fleet Operating Schedules for 1984*, and implementing the UNOLS Ship Schedule Bulletin Board on electronic mail.

D. The UNOLS Office supported planning efforts toward effective fleet utilization in 1986 and beyond. The Office supported both the ALVIN Review Committee and the UNOLS National Expeditionary Planning Committee in their efforts to develop a comprehensive planning base for outyear use of ALVIN/ATLANTIS II and for UNOLS ships in expeditionary mode.



E. Ship Use Statistics and Ship Assessment. The Office compiled and summarized UNOLS institution reports on ship use and assessments reports from principal investigators. Summaries of UNOLS fleet utilization are used by funding agencies, UNOLS officers and operating institutions in individual vessel and fleet management. Summaries of cruise assessments help provide a basis for both operating institutions and funding agencies to judge the efficacy of operations.

F. Communications and Information Service. The UNOLS Office has emphasized its role as a center for communications and information concerning the UNOLS fleet and its operation. The *UNOLS NEWS* was first published in 1983, and the first three issues were each distributed to nearly 600 addresses.

Solicitations, workshop announcements and reports concerning UNOLS advanced planning are typically sent to 600-700 managers and investigators in the oceanographic community.

G. Special Studies and Tasks. The UNOLS Office continued support for the Advisory Council on their studies and updates of *Composition, Distribution and Management of the UNOLS Fleet*. (The second update will be prepared during 1984-85.)

Through a subcontract with W.H.O.I., staff support was provided to the Federal Oceanographic Fleet Coordinating Council (FOFCC) for their study of the national oceanographic fleet.

To meet the increasing need, a handbook explaining procedures for applications to conduct research in waters under foreign jurisdiction was commissioned in December, 1983. That handbook was in the final drafting stage in May, 1984.

The UNOLS Office fulfilled its obligations and responsibilities during 1983-84 without major problems. New developments or refinement anticipated for the coming year include:

- continuing development and tuning of UNOLS advanced planning efforts,
- expansion of the Ship Scheduling Bulletin Board to include current operating year, first subsequent year and plans for outyears,
- support to fleet replacement and fleet management studies, and
- expansion of communications and information services as appropriate.

The first day's meeting was adjourned at 4:20 p.m.

The meeting was reconvened by Ferris Webster at 8:30 a.m., May 25.

Fleet Replacement Committee Report, Robertson P. Dinsmore, Chairman: The Fleet Replacement Committee is fully engaged in the early stages of a plan for the orderly replacement of the UNOLS Fleet. A compilation of existing and ongoing studies is providing a basis for scientific requirements and types of

ships needed. In accordance with Advisory Council recommendations, initial efforts are being directed toward the larger ships. Here all five ships will approach obsolescence in the decade 1990-1999, and the capability for those ships to support ongoing science until then is questionable.

A review of foreign research ship construction world-wide shows that at least thirteen new large general purpose vessels have recently been completed or are now building in eight nations. In the United States new construction has been limited to two commercial geophysical vessels. The last large oceanographic ship was delivered in 1969.

Based on community-wide inputs, scientific requirements and ship characteristics are being developed for several conceptual design studies. These designs will include conventional monohull and SWATH (semi-submerged) ships. The latter type has features which might be attractive for working at sea, and should be given serious consideration.

It is anticipated that a new large general purpose research ship will be larger than current large UNOLS vessels but probably not larger than 300 ft. The most overriding requirement is that a new ship should provide the most stable environment possible and permit work to continue at sea in one or two sea states higher than presently possible. Further requirements call for improved capability for overside equipment handling, and for upgraded laboratory facilities.

Conceptual designs based upon these and other requirements will be reviewed at a workshop and by community wide inputs during the winter. From these, a design or designs will be selected to go into preliminary, and finally, contract design phases.

Following early attention to large ships, the Fleet Replacement Committee will redirect its efforts to intermediate and small vessels. At the study's end there will be submitted a Plan for the UNOLS Fleet Replacement along with recommendations for types and mix of ships needed for the next generation fleet.

The Fleet Replacement Committee will meet next on July 9 and 10, 1984, at Moss Landing Marine Laboratories, California.

The formal report from the UNOLS Fleet Replacement Committee, together with a report on the NECOR Large Ship Replacement Conference, April 19 and 20, 1984 is Appendix VII.

UNOLS National Expeditionary Planning Committee Report: George G. Shor, Jr., Chairman, reported that during its first year the Committee's operation was in large part a missionary operation: convincing investigators and operators of the need for systematic advanced planning and of the benefits to be derived therefrom. Although further refinement of the planning process is required, efforts so far has been successful. Solicitations, announcements and, to a lesser extent, workshops resulted in nearly 40 notices of intent for expeditions in 1985-1987. On that basis together with available information on prospective large scale oceanography programs (e.g., Southern Ocean work, Tropic Heat) UNOLS operating institutions were able to project tentative plans from late 1985 through 1987. Summaries of these plans were published in EOS

(v. 65, n. 18, May 1, 1984), in UNOLS NEWS (v. 1, n. 3, Spring, 1984) and will be added to the UNOLS ship schedule bulletin board.

During 1984-1985 UNEPC will hold one workshop, at the Fall AGU/Ocean Sciences meeting (December, San Francisco). Unlike workshops in the past year, presentations will not be solicited from prospective investigators. Instead forecasts of ocean programs will be solicited from funding agencies and large program coordinating groups.

Permits for Research in Ocean Regions Restricted by Foreign States: Mr. William Erb, Director, Office of Marine Science and Technology Affairs, Department of State, made a brief report on United States policy pertaining to access for research in waters under foreign jurisdiction.

The Office of Marine Science and Technology affairs experienced a transition during 1983-84 with the resignation of their Research Vessel Clearance Officer followed by interim replacement for several months prior to a permanent replacement.

During 1983, recommendations were received from within UNOLS that bilateral agreements should be pursued concerning access for oceanographic research, especially with Canada and Mexico. The climate for obtaining permits from Canada remains excellent, probably because of a community of research interests. Early in the discussions with Mexico there were indications that a bilateral agreement might be achievable. However at a meeting in September, 1983 the idea was rejected. Mexico continues to grant clearance for oceanographic research, and to require permits for all vessels/investigations.

The United States' pending withdrawal from UNESCO has been publicized. UNOLS should note, however, that the Intergovernmental Oceanographic Commission (IOC) has autonomy from UNESCO and the intent is to continue to participate in IOC. UNOLS' Committee on International Restrictions to Ocean Science will be consulted concerning recommended modes for continued participation.

One consequence of the March, 1983 President's Exclusive Economic Zone (EEZ) proclamation has been that there are now many more requests for research clearances than before. Mr. Erb introduced Mr. Tom Cocke, Research Vessel Clearance Officer, Office of Marine Science and Technology Affairs to discuss clearances. The Office of Marine Science and Technology Affairs is the official channel for obtaining clearances. In discussing the clearance procedure, Mr. Cocke emphasized that requests should be in his office at least seven months prior to the start of a cruise, post cruise obligations for data and reports must be met and there is usually an obligation to accommodate observers/participants from the host country. Post cruise obligations, clearance approvals and research cruise reports are covered in Notice to Research Vessel Operators number 57. The Summary of 1983 Clearance Requests (Appendix VIII) includes 109 requests to 31 countries, a 50% increase over 1982. Of these, two were denied, four affected research by non-timely receipt and six are still pending. Five year trends show increases in Canadian and South American clearances, decreases for Mexico and the Caribbean. There is also an increase in requests outside the Western Hemisphere -- 35% of the total to date in 1984.



On February 29, 1984 the Soviet Union established an exclusive economic zone and established rules for research clearance. (NRVO #65 describes the Soviet decree.)

International Restrictions on Ocean Science Committee (IROSC): Ferris Webster introduced Dr. David Ross, Woods Hole Oceanographic Institution and Committee Member to delivered the IROSC report in the absense of Chairman Robert Corell and to present to UNOLS a preliminary proposal for a *Program for International Marine Science Cooperation*. He noted that the report and proposal had been heard by the Advisory Council at their May 24, 1984 meeting. *The Council endorsed the Committee's report and recommended that UNOLS hear the proposal on international cooperation in marine science. It was the sense of the Advisory Council that the proposal should be developed more specifically before UNOLS Members' reactions were sought. (e.g., What specific UNOLS roles and functions are proposed? What other organizations should be involved?)*

UNOLS International Restrictions on Ocean Science Committee is comprised of:

Robert Corell, Chairman  
Dirk Frankenberg  
John Knauss  
David Ross  
Warren Wooster

Other groups in the oceanographic community are also concerned with various aspects of international marine science affairs, notably those in the National Research Council/National Academy of Sciences Board on Ocean Science and Policy (BOSP), and in the Marine Division of the National Association of State Universities and Land Grant Colleges (NASULGC). All of the current members on IROSC have strong involvement in international marine affairs, including participation in the international groups of BOSP and NASULGC. The Committee suggested that there is a critical role for IROSC, because of UNOLS' strong ties to research vessel operating institutions and emphasis on ocean-going research.

During the past year the Committee has conducted its business through telephone conferences and incidental meetings among Committee members. No meeting of the full Committee has been called.

The Committee has been concerned with the issue of access for ocean research in waters under foreign jurisdiction. Most especially IROSC is concerned with the efficacy of the research clearance request process, with following up the discharge of post-cruise obligations and with UNOLS' role in the request process and in monitoring post-cruise obligations. *IROSC recommends that UNOLS play the lead role in*

- (a) *monitoring and facilitating clearances, and*
- (b) *monitoring and follow-up on post cruise obligations.*

It is the sense of the Committee that UNOLS activities in monitoring the clearance process should be such as to aid UNOLS operating institutions and principal investigators but should not supplant functions of the Office of Marine Science and Technology Affairs, Department of State. UNOLS



institutions should have the lead in obtaining the discharge of post cruise obligations.

The Committee is also concerned that it is fulfilling its charge and if that charge is, in all instances, appropriate. Briefly, the Committee charge (UNOLS Advisory Council Minutes, January 6, 1983) is to monitor laws, treaties and regulations affecting freedom of access to ocean regions, identify, and inform UNOLS about those issues that would limit access, make recommendations to the Advisory Council on what issues need action and on possible UNOLS policy statements and establish liaison with groups concerned with these issues. The Committee shall submit status reports to UNOLS.

The Committee is concerned that they do not have the capacity to monitor laws, treaties, etc., comprehensively, and further suggests that this may not be an appropriate function for UNOLS.

IROSC has also suggested to the Advisory Council that specific terms be established for members, to provide both continuity and turnover. Robert Corell, Chairman, has asked to step down.

Dr. Ross then presented to UNOLS a proposal for International Marine Science Cooperation (Appendix IX). The program would establish a non-government organization of and in the oceanographic community to act as an honest broker serving United States scientists in international marine science affairs. Functions would be to:

- provide a point of contact among U.S. and foreign scientists interested in international marine scientific activities,
- search for opportunities for cooperation in international marine science,
- maintain information about U.S. individuals, agencies and institutions wishing to work in foreign countries,
- match U.S. and foreign interests to facilitate U.S./foreign marine research,
- maintain a collection of foreign rules and regulations affecting cooperative international marine research, and
- follow-up on the success ratio of cooperative programs and develop characteristics of successful programs.

After a brief general discussion that included both interest in and reservations concerning the proposal, UNOLS Chairman Webster referred the overall proposal to the Advisory Council for further study.

Report from East-West Regional Ship: Captain Robertson P. Dinsmore reported that the East and West Regional Ship Scheduling Groups had met separately and jointly on May 23, 1984 (see report, Appendix X). The meetings resulted in good schedules for most ships in the UNOLS fleet. As shown in the summary below, 5,999 use days are projected for the fleet in 1985 compared to 5,210 use days estimated for 1984. This is an increased use of 15%. *A much larger number than usual of proposals for 1985 work are already funded. This allows for a much more effective scheduling process than could otherwise be*

realized. Principal investigators who submitted their proposals promptly and science program managers who made timely decisions are to be commended.

In the schedules developed, west coast ships match well to scientific program requirements. On the east coast, known scientific programs are all accommodated with the possible exception of some South Atlantic investigations. Potential problems are identified and discussions will continue toward reaching acceptable accommodation.

In the funding summary based on projected ship operations, costs have increased by about \$3 million over similar projections made in May, 1983. Some shakedown can be anticipated.

5/24/84

SHIP OPERATIONS FUNDING SUMMARY  
1985

	<u>NSF</u>	<u>ONR</u> (in \$ MILLION)	<u>OTHER</u>	<u>TOTAL</u>	<u>OPS DAYS</u>
Projected Costs:					
East Coast	15.894	3.094	5.215	24.203	
West Coast	15.098	1.785	1.373	18.257	
Total	30.992	4.879	6.588	42.460	5,999
Anticipated Funding	25.0	4.9	7.0	36.9	
Shortfall	5.9	0	<0.4>	5.5	

1984 RUNNING HISTORY

MAY '83 - Projected Cost	28.7	4.4	6.4	39.5	6,016
Anticipated Funding	25.4	4.1	6.4	35.9	
Shortfall	3.3	0.3	0	3.6	
OCT. '83 - Projected Cost	27.4	5.0	8.3	40.7	5,892
Anticipated Funding	25.0	4.5	8.0	37.5	
Shortfall	2.4	0.5	0.3	3.2	
MAY '84 - Projected Cost	24.7	4.8	7.2	36.7	5,210
Anticipated Funding	24.3	4.8	7.2	36.2	
Shortfall	0.4	0	0	0.4	

The Scheduling groups urge a continuing dialogue among UNOLS ship operators and funding agencies toward standardizing accounting procedures used for ship operations.

*At the suggestion of Chairman Webster, UNOLS commended Captain Dinsmore for his efforts both on the Fleet Replacement Committee and in the ship scheduling process.*

Candidate for Membership: In January, 1984 the Moss Landing Marine Laboratory (MLML) applied for full membership in UNOLS. At their February, 1984 meeting the Advisory Council recommended MLML for Membership. In accordance with the UNOLS Charter the Moss Landing application together with the Advisory Council's recommendation had been circulated to UNOLS Members and Associate Members (Appendix XI).

*The UNOLS Membership accepted Moss Landing Marine Laboratories as a Member.*

Candidates for Associate Membership: During 1983 and 1984 the Louisiana Universities Marine Consortium, the Naval Postgraduate School and the University of South Florida each applied for Associate Membership in UNOLS. At their October, 1983 and February, 1984 meetings the Advisory Council recommended that the applications be accepted. The applications and recommendations have been circulated.

*The UNOLS membership accepted the Louisiana Universities Marine Consortium (LUMCON), the Naval Postgraduate School and the University of South Florida as Associate Members.*

UNOLS Charter: A revision to the Charter, defining UNOLS vessels, had been recommended by the Advisory Council and circulated to the UNOLS membership. It was introduced for adoption:

*Add as paragraph (g) under Section 2:*

*UNOLS vessels are defined as those United States research vessels which are operated by UNOLS Member Institutions and are significantly funded by the Federal government. They are operated in accordance with UNOLS performance and Safety Standards and are scheduled by established UNOLS procedures. Designation of UNOLS vessels is by vote of UNOLS Members, after review and recommendation by the Advisory Council.*

After discussion the recommended revision was twice modified and adopted:

*Add as paragraph (g) under Section 2:*

*UNOLS vessels are defined as those United States vessels which are operated by UNOLS Member Institutions and are significantly funded by the Federal government. They are operated in accordance with UNOLS Safety Standards and are scheduled by established UNOLS procedures. Designation or removal of designation of UNOLS vessels is by vote of UNOLS Members, after review and recommendation by the Advisory Council.*

In accordance with its effective sunset provisions the entire UNOLS Charter was considered for readoption. (Provisions are that this be done at three year intervals).

*The Membership readopted the UNOLS Charter.*

The Executive Secretary was directed to circulate fair copies of the newly-modified and adopted Charter to all Members and Associate Members. (Done apart from this report.)

Election of Chairman and Vice Chairman, UNOLS: A nominating committee of Harris B. Stewart, Jr., Chairman, Derek Spencer and T. K. "Tex" Treadwell had developed slates of candidates (Appendix XII). *The results of elections were:*

<i>UNOLS Chairman</i>	<i>Ferris Webster</i>
<i>UNOLS Vice Chairman</i>	<i>Robert W. Corell.</i>

Election of Four Members to Advisory Council: The same nominating committee advanced a slate for four vacancies occurring on the Advisory Council. *The results of elections were:*

*Advisory Council, from Members*  
*Donn S. Gorsline, USC (1-year term)*  
*Carl J. Lorenzen, UW (3-year term)*  
*Arthur E. Maxwell, UT (3-year term)*

*From Associate Members*  
*Thomas Malone, UMd (3-year term)*

Appointment of Three Members to ALVIN Review Committee: Three current members of the ALVIN Review Committee (Robert C. Aller, Frederick L. Sayles and A. A. Yayanos) terms expire. Since they believe that there should be turnover on the ARC they have chosen not to be re-appointed. As replacements the ARC recommended:

*Jody W. Deming: Marine microbiologist, Johns Hopkins University/Chesapeake Bay Inst. Temperature and pressure effects on deep sea bacteria.*

*J. Kirk Cochran: Geochemist, Assistant Professor, SUNY Stony Brook. Natural and artificial radionuclides in sediments and seawater. Sediment diagenesis.*

*Geoffrey Thompson: Geochemist, Senior Scientist, W.H.O.I. Analytic chemistry, sedimentology and mineralogy.*

*Their appointments were affirmed by the assembled membership.*

Revised UNOLS Safety Standards: A committee from within RVOC had drafted revised UNOLS Safety Standards. The draft had been circulated to UNOLS Members and Associate Members so that it could be introduced for adoption (see letter, Appendix XIII).

Captain T. K. Treadwell initiated discussion of the draft and listed members of the working group:

T. K. Treadwell, TAMU, Chairman  
E. Eugene Allmendinger, UNH  
Jack Bash, URI  
William Harkness, UH



Ken Palfrey, OSU  
Eric Nelson, Duke/UNC  
Jim Williams, UCSD, Scripps

The sense of the discussion was that the draft was an improvement over the current version of UNOLS Safety Standards, and that the draft would generally serve the community well if adopted. It was characterized as an excellent job. Nevertheless, two general objections were discussed: Certain inconsistencies or ambiguities were cited in statements in the draft that would define whether the Standards would become mandatory regulations or discretionary guidance. A number of objections were raised to Part 15. SCUBA DIVING.

Rather than adopting those parts of the draft that were satisfactory, it was informally decided that an attempt should be made to remove objections in time to reintroduce a modified complete draft at the next UNOLS meeting. Captain Treadwell agreed to work on a modified draft.

*The UNOLS membership commended Captain T. K. Treadwell and the working group for their efforts to provide improved UNOLS Research Vessel Safety Standards.*

Other Business: Based on queries from the floor, the Executive Secretary was instructed to prepare a summary list of UNOLS directives, operative resolutions, standards and guidance now in effect and to circulate the summary to the UNOLS membership.

There being no further business, the meeting was adjourned at 12:50 p.m.

William D. Barbee  
Executive Secretary  
UNOLS

APPENDIX I

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM  
SEMI-ANNUAL MEETING  
AGENDA  
1:00 p.m., Thursday, May 24, 1984  
NATIONAL ACADEMY OF SCIENCES, LECTURE ROOM  
2101 CONSTITUTION AVENUE N.W., WASHINGTON, D.C.

INTRODUCTION AND WELCOME - Ferris Webster, Chairman, UNOLS.

PRINCIPAL ADDRESS - Edward A. Knapp, Director, National Science Foundation, will address the UNOLS membership.

UNOLS ADVISORY COUNCIL REPORT - Harris B. Stewart, Jr., Advisory Council Vice-Chairman, will report on the Council's activities.

OUTLOOK FOR FY-1986 SHIP AND PROGRAM SUPPORT - Forecasts by Federal Funding Agencies (NSF, ONR, NOAA, USGS, MMS, DOE).

ALVIN REVIEW COMMITTEE REPORT - by William D. Barbee (in absence of R. Corell).

(The meeting must adjourn promptly by 4:30 p.m. on May 24).

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0830, Friday, May 25, 1984  
NATIONAL ACADEMY OF SCIENCES, LECTURE ROOM

COMMITTEE ON FLEET REPLACEMENT REPORT - Captain Robertson P. Dinsmore, Chairman, will report for the Committee.

UNOLS-NATIONAL EXPEDITIONARY PLANNING COMMITTEE REPORT - George Shor, Jr., Chairman, will report on tentative expeditionary plans and UNOLS ship whereabouts for the period late 1985 through 1987.

PERMITS FOR RESEARCH IN OCEAN REGIONS RESTRICTED BY FOREIGN STATES - An overview from Dept. of State, Office of Marine Science and Technology Affairs.

COMMITTEE ON INTERNATIONAL RESTRICTIONS ON OCEAN SCIENCE - Robert W. Corell, Chairman will report on Committee activities and an agenda for the year.

David Ross, Committee Member, W.H.O.I., will discuss a proposal for a program for International Marine Science cooperation.

REPORT FROM EAST-WEST REGIONAL SHIP SCHEDULING GROUPS - The East and West Regional Ships Scheduling Groups, having met separately and jointly, will present the results of their scheduling efforts for 1985 to UNOLS Members. Summary ship cost projections from UNOLS institutions will be presented. The session is open to all persons interested and especially to scientists who have ship time needs in 1985, and 1986, and who wish to present their needs to operators.

UNOLS BUSINESS MEETING

UNOLS OFFICE ACTIVITIES - Report of the year's activities, William D. Barbee, Executive Secretary.

CANDIDATE FOR MEMBERSHIP - The Moss Landing Marine Laboratories has applied for Membership in UNOLS. The application has been revised by the Advisory Council, who recommend approval, and circulated to UNOLS Members. Members will vote on the application.

CANDIDATES FOR ASSOCIATE MEMBERSHIP - Three institutions, the Naval Postgraduate School, the Louisiana Universities Marine Consortium, and the University of South Florida, have applied for Associate Membership. All three applications have been reviewed by the Advisory Council, who recommended approval, and circulated to UNOLS Members, and Associate Members. Members and Associate Members will vote on these applications.

UNOLS CHARTER - A revision to the Charter, defining UNOLS vessels, has been recommended by the Advisory Council and distributed to the UNOLS Membership. This revision will be introduced for Member's approval.

The entire UNOLS Charter will be introduced to UNOLS Members for their consideration of re-adoption.

ELECTION OF CHAIRMAN AND VICE-CHAIRMAN, UNOLS - Slates of Nominations have been distributed.

ELECTION OF FOUR MEMBERS TO ADVISORY COUNCIL - The terms of two Council Members representing Member institutions and one representing Associate Members expire. In addition, one Council Member representing Members has submitted his resignation. A slate of nominations has been distributed for candidates to fill all these vacancies.

APPOINTMENT OF THREE MEMBERS TO ALVIN REVIEW COMMITTEE - Recommendations for the ALVIN Review Committee will be presented for UNOLS action.

REVISED UNOLS SAFETY STANDARDS - A committee from within RVOC has drafted revised UNOLS Safety Standards. A draft has been circulated to UNOLS Institutions, and will be introduced for UNOLS adoption. (Note that the current UNOLS Charter makes explicit reference to UNOLS Safety Standards.)

OTHER BUSINESS -

UNOLS Semiannual Meeting  
Washington, D.C.  
May, 1984

Richard E. Alderman, NOAA

Thomas C. Aldrich, U.S. Geological Survey

\*E. Eugene Allmendinger, University of New Hampshire

\*Alfred M. Beeton, University of Michigan

\*Donald F. Boesch, Louisiana Universities Marine Consortium

\*Douglas R. Caldwell, Oregon State University

\*J. Frisbee Campbell, University of Hawaii

Dr. John Christensen, Bigelow Lab for Ocean Sciences

Larry Clark, National Science Foundation

Candyce E. Clark, House of Representatives, Merchant Marine & Fisheries Committee

W. Thomas Cocke, Department of State

Thomas N. Cooley, National Science Foundation

Dolly Dieter, University of Alaska

Robert P. Dinsmore, Woods Hole Oceanographic Institution

John D. Donnelly, Woods Hole Oceanographic Institution

William A. Erb, Department of State

\*James Gibbons, University of Miami, RSMAS

\*Donn S. Gorsline, University of Southern California

\*Dr. James J. Griffin, University of Rhode Island

M. Grant Gross, National Science Foundation

William B. Hahn, University of Rhode Island

\*Lawrence W. Harding, Jr., Johns Hopkins University

Edward D. Houde, National Science Foundation

Thomas C. Johnson, Duke/University of North Carolina

\*Robert S. Jones, Harbor Branch Foundation

Jay T. Katz, University of Michigan

Keith Kaulum, Office of Naval Research

Edward A. Knapp, National Science Foundation

Ronald R. La Count, National Science Foundation

\*John H. Martin, Moss Landing Marine Labs

\*Member, Associate Member Representative, at this meeting

Donald P. Martineau, NOAA  
John G. McMillan, National Science Foundation  
\*David A. Menzel, Skidaway Institute of Oceanography  
Isabel H. Miles, Chesapeake Bay Institute  
Joan R. Mitchell, National Science Foundation  
\*William H. Mitchell, University of Texas  
Rufus Morison, Environmental Protection Agency  
Robert C. Munson, NOAA  
\*John C. Mutter, Lamont-Doherty Geological Observatory  
Wadsworth Owen, University of Delaware  
Polly A. Penhale, National Science Foundation  
Steve C. Rabalais, Louisiana Universities Marine Consortium  
\*Bruce H. Robison, University of California  
Robert W. Rowland, U.S. Geological Survey  
\*Thomas C. Royer, University of Alaska  
\*Richard W. Schneider, University of Delaware  
Alexander N. Shor, Lamont-Doherty Geological Observatory  
\*George G. Shor, Jr., Scripps Institution of Oceanography  
\*Derek Spencer, Woods Hole Oceanographic Institution  
Kathy Tollerton, National Association of State Universities & Land Grant Colleges  
Sandra D. Toye, National Science Foundation  
\*T. K. Treadwell, Texas A & M University  
Richard B. Tripp, University of Washington  
James C. Tyler, National Science Foundation  
\*Joseph F. Ustach, Duke/University of North Carolina  
Robert E. Wall, National Science Foundation  
\*J. Boyce Watkins, Jr., University of Washington  
Ferris Webster, University of Delaware  
Richard W. West, National Science Foundation  
Robert S. Winokur, Office of Naval Research  
Paul M. Wolff, NOAA  
\*John M. Zeigler, Virginia Institute of Marine Science

\*Member, Associate Member Representative, at this meeting



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

12/83

OPERATOR	NAME	LOA (FT/M)	BUILT/ CONVERTED	NUMBER OF SCIENTISTS	OWNER	SHIP SCHEDULING CONTACT
University of Hawaii Hawaii Institute of Geophysics 2525 Correa Road Honolulu, Hawaii 96822	KANA KEOKI MOANA WAVE	156/48 174/53	1967 1973	16 20	U.H. NAVY	Mr. J. Frisbee Campbell Scientific Coordinator for Marine Operations (808) 948-7654
University of Alaska Institute of Marine Science Fairbanks, Alaska 99701	ALPHA HELIX	133/41	1966	15	NSF	Professor Thomas C. Royer Associate Professor (907) 474-7835
University of Washington School of Oceanography, WB-10 Seattle, Washington 98195	T.G. THOMPSON ONAR C.A. BARNES	209/64 65/20 65/20	1965 1954/1963 1966/1983	23 6 6	NAVY NAVY U.W.	Dr. Brian T.R. Lewis Director (206) 543-6487
Oregon State University School of Oceanography Corvallis, Oregon 97331	WECOMA	177/54	1975	16	NSF	Ms. Mary Jo Gutierrez Ship Scheduling Officer (503) 754-4447
Moss Landing Marine Laboratories P.O. Box 223 Moss Landing, California 95039	CAYUSE	80/24	1968	8	NSF	Miss Gail Liragis Ship Scheduler (408) 633-3304
University of Southern California Inst. for Marine & Coastal Studies Los Angeles, California 90089-0341	VELERO IV	110/34	1948	12	USC	Mr. Don Newman, Mgr. Marine Support Facility (213) 743-6977
University of California, San Diego Scripps Institution of Oceanography La Jolla, California 92093	MELVILLE T. WASHINGTON NEW HORIZON E.B. SCRIPPS	245/75 209/64 170/52 95/29	1970 1965 1978 1965	29 21 13 8	NAVY NAVY U.C. U.C.	Dr. George Shor, Jr. Ship Scheduler Code A-010 (619) 452-2840
University of Michigan Great Lakes & Marine Waters Center Ann Arbor, Michigan 48109	LAURENTIAN	80/24	1974	10	U.M.	Mr. Clifford Tetzloff Marine Superintendent (313) 763-3183
Texas A & M University Department of Oceanography College Station, Texas 77843	GYRE	174/53	1973	22	NAVY	Captain T.K. Treadwell Marine Operations Officer (409) 845-7211
The University of Texas Port Aransas Marine Laboratory Port Aransas, Texas 78373	LONGHORN	80/24	1971	10	U.T.	Mr. John H. Thompson Assoc. Director - Admin. (512) 749-6760
University of Miami, R.S.M.A.S. 4600 Rickenbacker Causeway Miami, Florida 33149	ISELIN CAPE FLORIDA CALANUS	170/52 135/41 64/20	1972 1981 1971	16 12 6	U.M. NSF U.M.	Mr. James Gibbons Operations Manager (305) 361-4023
University System of Georgia Skidaway Institute of Oceanography P.O. Box 13687 Savannah, Georgia 31416-0687	BLUE FIN	72/22	1972/1975	8	U.G.	Dr. David W. Menzel Director (912) 356-2480
Duke/UNC Oceanographic Consortium Duke University Marine Laboratory Beaufort, North Carolina 28516	CAPE HATTERAS	135/41	1981	12	NSF	Captain Eric B. Nelson Marine Superintendent (919) 728-3372
The Johns Hopkins University Chesapeake Bay Institute Shady Side, Maryland 20764	R. WARFIELD	106/32	1967	10	J.H.U.	Mr. Bruce Cornwall Marine Superintendent (301) 867-7550, Ext. 246
University of Delaware College of Marine Studies Lewes, Delaware 19958	CAPE HENLOPEN	120/37	1975	12	U.D.	Mr. Wadsworth Owen Dir. of Marine Operations (302) 645-4320
Columbia University Lamont-Doherty Geological Observatory Palisades, New York 10964	CONRAD	209/64	1962	23	NAVY	Mr. Henry (Chip) Kennedy Ship Scheduler (914) 359-2900, Ext. 245
University of Rhode Island Graduate School of Oceanography Narragansett, Rhode Island 02881	ENDEAVOR	177/54	1976	16	NSF	Mr. John F. Bash Ship Scheduler (401) 792-6203
Woods Hole Oceanographic Institution Woods Hole, Massachusetts 02543	KNORR ATLANTIS II OCEANUS DSRV ALVIN	245/75 210/64 177/54 25.8	1969 1963 1975 1964	25 25 12 2	NAVY WHOI NSF NAVY	Mr. John D. Donnelly Manager of Marine Ops. (617) 548-1400, Ext. 2736

UNOLS DIRECTORY  
(with designated representatives)

## MEMBERS

-----

UNIVERSITY OF ALASKA  
*Dr. Thomas C. Royer*

UNIVERSITY OF DELAWARE  
*Dr. William S. Gaither*

DUKE/UNIVERSITY OF NORTH CAROLINA  
*Dr. Dirk Frankenberg*

UNIVERSITY OF HAWAII  
*Dr. Charles E. Helsley*

THE JOHNS HOPKINS UNIVERSITY  
*Dr. Lawrence Harding*

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GEOLOGICAL OBSERVATORY  
*Dr. Marcus Langseth*

UNIVERSITY OF MIAMI, ROSENSTIEL SCHOOL  
OF MARINE AND ATMOSPHERIC SCIENCE  
*Mr. James Gibbons*

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UNIVERSITY OF TEXAS  
*Dr. Arthur E. Maxwell*

TEXAS A & M UNIVERSITY  
*Captain T. K. Treadwell*

UNIVERSITY OF WASHINGTON  
*Dr. Brian Lewis*

WOODS HOLE OCEANOGRAPHIC INSTITUTION  
*Dr. Derek W. Spencer*

ASSOCIATE MEMBERS

UNIVERSITY OF ALABAMA  
*Dr. George F. Crozier*

BERMUDA BIOLOGICAL STATION  
*Dr. Wolfgang E. Sterrer*

BIGELOW LABORATORY FOR OCEAN SCIENCES  
*Dr. Charles S. Yentsch*

BROOKHAVEN NATIONAL LABORATORY  
*Dr. Terry E. Whitlege*

UNIVERSITY OF CALIFORNIA, SANTA  
BARBARA  
*Dr. Bruce H. Robison*

CAPE FEAR TECHNICAL INSTITUTE  
*Mr. Edward Foss*

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FLORIDA INSTITUTE FOR OCEANOGRAPHY  
*Dr. William W. Behrens*

FLORIDA INSTITUTE OF TECHNOLOGY  
*Mr. Jack Morton*

FLORIDA STATE UNIVERSITY

HARBOR BRANCH FOUNDATION  
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UNIVERSITY OF MAINE  
*Dr. Bernard J. McAlice*

MARINE SCIENCE CONSORTIUM  
*Dr. Robert W. Hinds*

UNIVERSITY OF MARYLAND  
*Dr. Ian Morris*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
*Dr. John M. Edmond*

UNIVERSITY OF NEW HAMPSHIRE  
*Professor E. Eugene Allmendinger*

NEW YORK STATE UNIVERSITY COLLEGE AT  
BUFFALO

NEW YORK STATE UNIVERSITY AT STONY BROOK  
*Dr. J.R. Schubel*

NORTH CAROLINA STATE UNIVERSITY  
*Dr. Robert H. Weisberg*

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*Dr. Robert Y. George*

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OLD DOMINION UNIVERSITY  
*Dr. Harris B. Stewart, Jr.*

UNIVERSITY OF PUERTO RICO  
*Dr. Thomas Tosteson*

SAN DIEGO STATE UNIVERSITY  
*Dr. Richard F. Ford*

VIRGINIA INSTITUTE OF MARINE SCIENCE  
*Dr. John M. Zeigler*

WALLA WALLA COLLEGE  
*Dr. Lawrence McCloskey*

UNIVERSITY OF WISCONSIN AT MADISON  
*Dr. Robert A. Ragotskie*

UNIVERSITY OF WISCONSIN AT MILWAUKEE  
*Dr. David N. Edgington*

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1983 -

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UNOLS OFFICE

04/19/84

CRUISE DAYS PROFILES

AGENCY	PHYS OCEAN	ACCOU STICS	CHEM OCEAN	BIOL OCEAN	ENVIR ECOL	FISH INVST	CLIM METEO	GEOLO GEOPH	MAP CHRTG	OCEAN ENGRG	TRAIN ING	TRANS NONSCI	TOTAL
NATL SCIENCE FNDTN	693	57	512	1035	43	9	0	706	0	4	0	115	3174
OFF. NAVAL RESEARCH	243	21	16	9	2	0	0	194	0	1	0	0	486
U.S. GEOL. SURVEY	0	0	0	2	0	0	0	70	0	0	0	8	80
BUR. LAND MNGMT/MMS	6	0	6	25	0	0	0	0	0	0	0	0	37
NATL OCEAN/ATMOSPH	66	11	7	0	1	0	0	0	0	0	0	0	85
DEPT OF ENERGY	38	0	29	45	15	0	0	17	0	0	0	0	144
OTHER FEDERAL	4	0	0	19	21	0	0	0	0	0	0	10	54
STATE/MUNICIPAL	40	0	26	79	33	0	0	42	0	0	95	1	316
OTHER/PRIVATE	3	0	11	7	1	0	0	74	0	0	11	11	118
*****													
TOTALS	1093	89	607	1221	116	9	0	1103	0	5	106	145	4494
PERCENT	24.3	2.0	13.5	27.2	2.6	.2	0.0	24.5	0.0	.1	2.4	3.2	100.0

CRUISE DAYS PROFILES

04/19/84

INSTITUTION	PHYS OCEAN	ACCOUSTICS	CHEM OCEAN	BIOL OCEAN	ENVIR ECOL	FISH INVST	CLIM METEO	GEOLO GEOPH	MAP CHRTG	OCEAN ENGRG	TRAIN ING	TRANS NONSCI	TOTAL
UNIV. HAWAII	2	0	0	40	0	0	0	225	0	0	0	19	286
UNIV. ALASKA	55	0	25	54	0	0	0	0	0	0	3	1	138
UNIV. WASHINGTON	109	0	77	92	0	0	0	62	0	0	7	0	347
OREGON STATE UNIV.	116	0	78	35	0	0	0	25	0	0	0	0	254
SCRIPPS INST. OCEAN	133	46	37	149	32	0	0	337	0	0	3	19	756
UNIV. SO. CALIF.	0	0	48	62	0	0	0	21	0	0	0	0	131
TEXAS A&M UNIV.	39	0	103	17	0	0	0	76	0	0	14	0	249
UNIV. TEXAS	0	0	0	19	23	0	0	0	0	0	24	0	66
UNIV. MIAMI, RSMAS	95	0	60	265	11	0	0	83	0	0	11	0	525
UNIV GA., SKIDAWAY	16	0	43	89	12	0	0	0	0	0	0	0	160
DUKE UNIV./UNC	28	9	38	78	5	0	0	35	0	0	42	0	235
JOHNS HOPKINS UNIV.	0	0	0	113	0	9	0	0	0	0	1	1	124
UNIVERSITY DELAWARE	41	0	14	14	0	0	0	0	0	0	0	0	69
LAMONT-DOHERTY GEOL	49	0	0	0	0	0	0	124	0	0	0	95	268
UNIV. RHODE ISLAND	100	0	2	71	0	0	0	45	0	0	0	9	227
WOODS HOLE OCEAN. I	310	34	77	36	0	0	0	70	0	5	0	0	532
MOSS LANDING MAR LAB	0	0	5	87	33	0	0	0	0	0	1	1	127
*****													
TOTALS	1093	89	607	1221	116	9	0	1103	0	5	106	145	4494
PERCENT	24.3	2.0	13.5	27.2	2.6	.2	0.0	24.5	0.0	.1	2.4	3.2	100.0



## CRUISE DAYS PROFILES

04/19/84

VESSEL	PHYS OCEAN	ACCOU STICS	CHEM OCEAN	BIOL OCEAN	ENVIR ECOL	FISH INVST	CLIM METEO	GEOLO GEOPH	MAP CHRTG	OCEAN ENGRG	TRAIN ING	TRANS NONSCI	TOTAL
MELVILLE	44	24	22	45	0	0	0	103	0	0	0	19	257
KNORR	151	0	71	0	0	0	0	57	0	0	0	0	279
CONRAD	49	0	0	0	0	0	0	124	0	0	0	95	268
T.G. THOMPSON	88	0	0	35	0	0	0	35	0	0	0	0	158
T. WASHINGTON	0	0	0	1	0	0	0	154	0	0	0	0	155
ENDEAVOR	100	0	2	71	0	0	0	45	0	0	0	9	227
OCEANUS	159	34	6	36	0	0	0	13	0	5	0	0	253
WECOMA	116	0	78	35	0	0	0	25	0	0	0	0	254
GYRE	39	0	103	17	0	0	0	76	0	0	14	0	249
C. ISELIN	30	0	14	106	0	0	0	75	0	0	0	0	225
NEW HORIZON	51	22	12	70	32	0	0	22	0	0	0	0	209
KANA KEOKI	2	0	0	40	0	0	0	225	0	0	0	19	286
CAPE FLORIDA	29	0	8	114	11	0	0	8	0	0	10	0	180
CAPE HATTERAS	28	9	38	78	5	0	0	35	0	0	42	0	235
ALPHA HELIX	55	0	25	54	0	0	0	0	0	0	3	1	138
CAPE HENLOPEN	41	0	14	14	0	0	0	0	0	0	0	0	69
VELERO IV	0	0	48	62	0	0	0	21	0	0	0	0	131
R. WARFIELD	0	0	0	113	0	9	0	0	0	0	1	1	124
E.B. SCRIPPS	38	0	3	33	0	0	0	58	0	0	3	0	135
CAYUSE	0	0	5	87	33	0	0	0	0	0	1	1	127
LONGHORN	0	0	0	19	23	0	0	0	0	0	24	0	66
BLUEFIN	16	0	43	89	12	0	0	0	0	0	0	0	160
ONAR	21	0	77	57	0	0	0	23	0	0	7	0	185
C.A. BARNES	0	0	0	0	0	0	0	4	0	0	0	0	4
CALANUS	36	0	38	45	0	0	0	0	0	0	1	0	120
*****													
TOTALS	1093	89	607	1221	116	9	0	1103	0	5	106	145	4494
PERCENT	24.3	2.0	13.5	27.2	2.6	.2	0.0	24.5	0.0	.1	2.4	3.2	100.0

OPERATIONAL DAYS CHARGED BY SPONSOR

UNOLS OFFICE

04/19/84

INSTITUTION	NATL SCI. FNDR	OFF. NAVAL RES.	U.S. GFOL SIJRV.	BUR. LAND MNGMT	NATL OCEAN ATMOS	DEPT OF ENRGY	OTHER FEDER FUNDS	STATE OR MUNTC	PRIV/ FORGN FUNDS	TOTALS -----
UNIV. HAWAII	153	48	8	0	0	0	0	23	54	286
UNIV. ALASKA	116	8	0	0	0	0	0	14	0	138
UNIV. WASHINGTON	229	69	2	0	7	16	0	22	2	347
OREGON STATE UNIV.	217	29	0	0	0	8	0	0	0	254
SCRIPPS INST. OCEAN	558	123	0	0	11	6	0	56	2	756
UNIV. SO. CALIF.	131	0	0	0	0	0	0	0	0	131
TEXAS A&M UNIV.	79	14	70	23	7	24	0	23	9	249
UNIV. TEXAS	0	0	0	0	1	0	0	64	1	66
UNIV. MIAMI, RSMAS	421	15	0	0	36	19	18	0	16	525
UNIV GA., SKIDAWAY	96	0	0	0	0	40	0	24	0	160
DUKE UNIV./UNC	162	9	0	1	0	13	0	49	1	235
JOHNS HOPKINS UNIV.	123	0	0	0	0	0	0	1	0	124
UNIVERSITY DELAWARE	13	5	0	5	23	0	0	23	0	69
LAMONT-DOHERTY GEOL	244	0	0	0	0	0	10	0	14	268
UNIV. RHODE ISLAND	141	45	0	8	0	18	3	0	12	227
WOODS HOLE OCEAN. I	406	118	0	0	0	0	1	0	7	532
MOSS LANDING MAR LAB	85	3	0	0	0	0	22	17	0	127
*****										
TOTALS	3174	486	80	37	85	144	54	316	118	4494
PERCENT	70.6	10.8	1.8	.8	1.9	3.2	1.2	7.0	2.6	100.0

## OPERATIONAL DAYS CHARGED BY SPONSOR

04/19/84

VESSEL	LOA	NATL SCI. FNDTN	OFF. NAVAL RES.	U.S. GFOL SIJRV.	BUR. LAND MNGMT	NATL OCEAN ATMOS	DEPT OF ENRGY	OTHER FEDER FUNDS	STATE OR MUNIC	PRIV/ FORGN FUNDS	TOTALS -----
MELVILLE	245FT	182	56	0	0	11	0	0	8	0	257
KNORR	245FT	201	78	0	0	0	0	0	0	0	279
CONRAD	209FT	244	0	0	0	0	0	10	0	14	268
T.G. THOMPSON	209FT	82	64	0	0	0	12	0	0	0	158
T. WASHINGTON	209FT	127	14	0	0	0	0	0	14	0	155
ENDEAVOR	177FT	141	45	0	8	0	18	3	0	12	227
OCEANUS	177FT	205	40	0	0	0	0	1	0	7	253
WECOMA	177FT	217	29	0	0	0	8	0	0	0	254
GYRE	174FT	79	14	70	23	7	24	0	23	9	249
C. ISELIN	170FT	195	7	0	0	0	0	18	0	5	225
NEW HORIZON	170FT	176	22	0	0	0	6	0	5	0	209
KANA KEOKI	156FT	153	48	8	0	0	0	0	23	54	286
CAPE FLORIDA	135FT	143	8	0	0	0	19	0	0	10	180
CAPE HATTERAS	135FT	162	9	0	1	0	13	0	49	1	235
ALPHA HELIX	133FT	116	8	0	0	0	0	0	14	0	138
CAPE HENLOPEN	120FT	13	5	0	5	23	0	0	23	0	69
VELERO IV	110FT	131	0	0	0	0	0	0	0	0	131
R. WARFIELD	106FT	123	0	0	0	0	0	0	1	0	124
E.B. SCRIPPS	95FT	73	31	0	0	0	0	0	29	2	135
CAYUSE	80FT	85	3	0	0	0	0	22	17	0	127
LONGHORN	80FT	0	0	0	0	1	0	0	64	1	66
BLUEFIN	72FT	96	0	0	0	0	40	0	24	0	160
ONAR	65FT	143	5	2	0	7	4	0	22	2	185
C.A. BARNES	65FT	4	0	0	0	0	0	0	0	0	4
CALANUS	64FT	83	0	0	0	36	0	0	0	1	120
*****											
TOTALS		3174	486	80	37	85	144	54	316	118	4494
PERCENT		70.6	10.8	1.8	.8	1.9	3.2	1.2	7.0	2.6	100.0

## PROJECT PERSON-DAYS AT SEA BY SPONSOR

04/19/84

VESSEL	LOA	TOTAL DAYS CHRGD	NATL SCI. FNDRN	OFF. NAVAL RES.	U.S. GEOL. SURV.	RUR. LAND MNGMT	NATL OCEAN ATMOS	DFPT. OF ENRGY	OTHER FEDER FUNDS	STATE OR MUNIC	PRIV/ FORGN FUNDS	TOTALS -----
MELVILLE	245	257	3803	1236	0	0	286	0	0	200	0	5525
KNORR	245	279	2779	1462	0	0	0	0	0	0	0	4241
CONRAD	209	268	1783	0	0	0	0	0	0	0	70	1853
T.G. THOMPSON	209	158	1474	737	0	0	0	264	0	0	0	2475
T. WASHINGTON	209	155	1686	294	0	0	0	0	0	128	0	2108
ENDEAVOR	177	227	1877	573	0	112	0	265	45	0	168	3040
OCEANUS	177	253	2077	458	0	0	0	0	12	0	84	2631
WECOMA	177	254	3870	377	0	0	0	102	0	0	0	4349
GYRE	174	249	1521	294	1174	332	105	400	0	475	189	4490
C. ISELIN	170	225	2836	63	0	0	0	0	234	0	50	3183
NEW HORIZON	170	209	2257	280	0	0	0	108	0	55	0	2700
KANA KEOKI	156	286	2212	539	8	0	0	0	0	150	666	3575
CAPE FLORIDA	135	180	1574	100	0	0	0	196	0	0	160	2030
CAPE HATTERAS	135	235	1961	108	0	5	0	156	0	1066	4	3300
ALPHA HELIX	133	138	1212	32	0	0	0	0	0	138	0	1382
CAPE HENLOPEN	120	69	215	10	0	30	226	0	0	188	0	669
VELERO IV	110	131	1305	0	0	0	0	0	0	0	0	1305
R. WARFIELD	106	124	865	0	0	0	0	0	0	38	0	903
E.B. SCRIPPS	095	135	1014	195	0	0	0	0	0	269	18	1496
CAYUSE	080	127	527	21	0	0	0	0	443	235	0	1226
LONGHORN	080	66	0	0	0	0	0	0	0	859	1	862
BLUEFIN	072	160	277	0	0	0	0	174	0	194	0	645
ONAR	065	185	613	26	7	0	33	15	0	174	6	874
CALANUS	064	120	477	0	0	0	180	0	0	0	9	666
*****												
TOTALS		4494	38215	6805	1189	479	832	1680	734	4169	1425	55528
PERCENT			68.8	12.3	2.1	.9	1.5	3.0	1.3	7.5	2.6	100.0



UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1983 -

04/19/84

UNOLS CRUISE PARTICIPANTS AND AFFILIATIONS

SHIP	SCI	TECH	GRAD	STU/OBS	TOTAL	ASSOC	NON-UNOLS	FED	FRGN	TOTAL
KANA KEOKI	86	107	46	33	272	1	41	18	21	81
ALPHA HELIX	59	30	36	22	147	0	0	2	9	11
T.G. THOMPSON	28	79	16	27	150	1	7	0	2	10
ONAR	105	146	67	143	461	0	2	17	3	22
C.A.BARNES	0	0	0	0	0	0	0	0	0	0
WECOMA	47	103	59	30	239	14	24	1	13	52
MELVILLE	66	98	37	44	245	44	25	13	5	87
NEW HORIZON	46	73	25	5	149	13	4	4	7	28
E.B. SCRIPPS	54	89	65	46	254	30	32	1	0	63
T. WASHINGTON	29	44	17	19	109	1	5	3	6	15
VELERO IV	66	25	75	12	178	51	19	2	0	72
GYRE	117	98	67	4	286	22	8	70	1	101
LONGHORN	54	22	220	157	453	0	106	1	0	107
C. ISELIN	49	86	27	7	169	15	42	0	3	60
CAPE FLORIDA	58	77	19	16	170	24	17	2	6	49
CALANUS	29	20	15	11	75	4	2	3	1	10
BLUEFIN	100	207	25	33	365	10	13	1	6	30
CAPE HATTERAS	118	64	78	133	393	213	32	12	1	258
R. WARFIELD	90	67	48	57	262	77	17	8	0	102
CAPE HENLOPEN	58	83	43	11	195	17	14	32	0	63
CONRAD	20	39	4	23	86	9	3	0	5	17
ENDEAVOR	133	87	62	31	313	2	11	8	5	26
KNORR	67	82	28	5	182	12	17	2	10	41
OCEANUS	94	99	14	17	224	6	31	14	8	59
CAYUSE	78	54	75	76	283	13	71	0	0	84
TOTALS	1651	1879	1168	962	5660	579	543	214	112	1448
PERCENT	29.2	33.2	20.6	17.0	100.0	10.2	9.6	3.8	2.0	25.6

APPENDIX V-7

Annual Report  
University-National Oceanographic Laboratory System  
Advisory Council

Washington, D.C.  
May 24, 1984

Harris B. Stewart, Jr.  
Acting Chairman

In his report last year, then Chairman, Bruce Robison, emphasized the Advisory Council's activities concerning the well-being of the UNOLS fleet, appraisal of its status, and evaluating of its effectiveness. Bruce noted that there was need for such self-evaluation within UNOLS, and, indeed, this has been the case. *During 1983-84 the Advisory Council's main activities have dealt with the composition, management, effectiveness, and so, the well-being of the UNOLS fleet.* Even though the fleet seems to be in good shape in 1984 and 1985, the Council believes that it is critical to continue the processes of operational evaluation, management appraisal, and planning for both near term scheduling and orderly fleet replacement.

A one-line appraisal: the UNOLS fleet is in good shape. There is good balance between science program needs and fleet capacity. The fleet is almost fully utilized, and at the same time queuing is modest and only rarely must a funded project be deferred. Use of the fleet has increased from the 4,494 use-days reported in 1983 to 5,210 days estimated for 1984 and 5,999 days projected for 1985. (Some projects remain difficult to schedule because of logistic or operational factors.) Finally, the increases that have been realized in funding for ships, particularly from the National Science Foundation, are providing *adequate* resources for fleet operations. This overall satisfactory situation notwithstanding, there remain critical problems facing the fleet: the average age of ships is high, and many, especially of the larger vessels must be replaced before the end of the century: some individual ships are old and no longer adequate to meet *present* needs; and some individual units have difficulty maintaining effective schedules. Thus, there is need to continue the evaluation of the composition, distribution and management of the UNOLS fleet. The Council has undertaken an update of this evaluation, to be completed by May, 1985.

Before describing specific Council activities that address our emphasis on the well-being of the fleet, I want to do three things: describe the Council, remind you of how we do business, and note how Council activities fit into the overall UNOLS effort.

During 1983-84 Advisory Council Members have been:

	Charles Miller, Chair	OSU
	Harris B. Stewart, Jr., Vice Chair	ODU
	Robert W. Corell	U. New Hampshire
	Robertson P. Dinsmore	W.H.O.I.
	Donn S. Gorsline	USC
	Roger Larson	U Rhode Island
	Bruce Robison	UC Santa Barbara
	John C. Van Leer	RSMAS Miami
<i>ex-officio</i>	Joseph Curray, UNOLS Vice Chair	Scripps
<i>ex-officio</i>	Ferris Webster, UNOLS Chair	U Delaware

The Council addresses many matters as a body. One example is Charter revision and review of membership. Another is the Fleet report itself. Other matters are addressed first through standing roles assigned to individual Council members. Activities arising through standing roles are reviewed by the Council as a whole.

Advisory Council actions are but one of UNOLS' efforts in support of fleet management. Later today you will hear reports from UNOLS committees on:

the ALVIN program  
Fleet Replacement  
National Expeditionary Planning,  
Ship Scheduling, and will consider  
UNOLS Safety Standards.

You will hear a report from an Advisory Council Subcommittee on

International Restrictions on Ocean Science.

The deliberations of all these groups impinge directly on management of the UNOLS fleet.

Further, UNOLS as a body will today (and tomorrow) consider

the UNOLS Charter,  
Membership in UNOLS,  
UNOLS officers, and  
adoption of Safety Standards.

This then is the context for Advisory Council activities.

In this context the Advisory Council has taken these actions:

- We have begun a second reexamination of UNOLS fleet composition, distribution and management. Information is being collected on availability, use and costs for UNOLS ships in 1983, 1984 and (projected) 1985.

- In response to an explicit charge from NSF/OFS, the Council has accepted the responsibility to review and provide recommendations of all major actions involving composition of the UNOLS fleet. (The Council's reviews, together with relevant reviews by the UNOLS Committee on Fleet Replacement provide the

external review mechanism needed by the Oceanographic Facilities Support Section.) During 1983-84, the Council reviewed and made recommendations on actions proposed by USC, Scripps, the University of Texas and the University of Hawaii.

The Advisory Council endorsed a proposal generated through the Fleet Replacement Committee to address orderly replacement of the UNOLS fleet.

- The UNOLS process for Cruise Assessments has been in place over the last year, and the Council has reviewed returns from individual investigators and forwarded summaries to sponsoring agencies and operating institutions. Results from these assessments provide a basis for evaluating efficiency of individual ships, and have been well received in NSF and ONR. Cruise assessments will be continued.

- The Council has looked at new platform design ideas as a part of its interest in orderly fleet replacement. A position paper on two design concepts was included in our October, 1983 meeting report, and is being considered by the Fleet Replacement Committee.

- We have monitored the efforts of the East and West Coast Ship Scheduling Groups. You will hear from Bob Dinsmore later concerning scheduling. The Council notes that scheduling for 1985 is proceeding effectively -- and the UNOLS fleet schedule is strong in 1985.

- We also endorse George Shor's efforts and results in implementing a planning process for national expeditionary programs. That planning has produced -- tentative though they may be -- preliminary plans for UNOLS' blue water ships in 1986 and 1987. They should be useful to ship operators, investigators and agency program managers alike.

In sum, the Council has considered fleet management and composition, programs for orderly replacement, fleet efficiency and effectiveness, scheduling and advanced planning. This emphasis on the fleet will continue to be the Council's focus.

- The Council's concern with communication within UNOLS and throughout the academic oceanographic community has led to establishment of UNOLS NEWS. The newsletter's first two issues were edited by Council member Donn Gorsline, and distributed to about 600 addressees.

- In last year's report, members were alerted that the Advisory Council was examining the UNOLS Charter and would recommend revisions, especially concerning membership criteria and UNOLS ship definition. Recommended revisions were advanced to the membership, and were mainly accepted. A definition of UNOLS ships remains before the membership.

The Council also began to review institutions on the basis of membership criteria. Four applications for membership are before UNOLS later in this meeting.

- Although the Council addressed a concept of Specialized Instrument Facilities for oceanographic research, we were without great success. The community has not responded strongly to our overtures. The Council will



continue to explore possibilities for the shared management and use of specialized facilities, in hope of initiating a workable scheme.

There will be, potentially, a very large turnover in the Council at tomorrow's elections. As one result, direction for the UNOLS Advisory Council could change drastically. But, however that comes out, I suggest that the new Council will see a strong UNOLS with a firm sense of direction. For this I thank all of the Council members, especially those who are retiring, Robert W. Corell, Donn S. Gorsline, Roger Larson, and John C. Van Leer.

R. P. Dinsmore  
May 18, 1984

## REPORT ON UNOLS FLEET REPLACEMENT COMMITTEE

1. The Committee met on May 8, 1984, at Scripps Institution: R. P. Dinsmore, F. N. Spiess, D. W. Spencer, D. W. Menzel, J. H. Martin, and G. Keller. Dr. Richard W. West, NSF, sat in as observer; Don Keach, USC, joined for portion of meeting.
2. The principal items of discussion were (a) Role of Committee, (b) Current Changes in Fleet, (c) Fleet Replacement Study, (d) Conceptual Designs of New Ship Construction, (e) Community-Wide Workshop on Fleet Replacement, and (f) Schedule for Future Work.
3. The Committee agreed that its chief role was the development of a plan for the orderly replacement of the fleet: such plan to include the numbers and mix of ships needed, priority replacement scheme and schedule of replacement including estimated costs; and the design development of the first several ships. The Committee further agreed to take under advisement and to comment on proposed changes to the UNOLS Fleet insofar as any changes which impact upon an overall replacement plan.
4. The Committee reviewed the Draft Proposal for the Development of a Plan for Research Vessel Replacement and Construction, and approved the plan for submission to potential sponsoring agencies. Recommended modifications include revising the time scale to a more realistic start and completion dates; increasing the number of immediate conceptual design studies through means of participating UNOLS sponsors; provide for a method of continuing future designs for additional types and classes of ships; and update proposed costs of the overall study. The effort and its proposal therefore should be in two phases: Phase I from now through the conceptual designs and community-wide workshop; and Phase II the work following. This will permit possible modifications to later parts based upon early experience.
5. The Committee reviewed existing reports which contribute to the initial phases of the study. The Committee approved the Report of the NECOR Ship Replacement Conference (19-20 April 1984) as an input to the proposed conceptual design studies. (A copy of this is attached.) However, ship characteristics leading into design studies should not be so restrictive as to preclude innovative approaches.

-2-

6. The Committee accepted the proposal by University of Texas and NECOR (WHOI) to fund additional conceptual designs as a part of the UNOLS effort provided that the design studies are conducted to the same objectives and reviews and would become available for UNOLS use. The Committee noted that UT has solicited proposals for conceptual design studies to the same scope of effort as the UNOLS plan, and proposes to proceed with three design studies -- two "conventional" hull and one SWATH. These would be specialized G & G type ships. WHOI on behalf of NECOR proposes to support additionally two general purpose designs -- one conventional and one SWATH. This, then, will provide for a total of nine design studies:
  - two conventional general purpose ships
  - two SWATH ships
  - two specialized G & G ships
  - one sail assist study
  - one innovative design study
7. The community-wide workshop to report on the progress of Phase I of the replacement plan development including the conceptual design studies will be held in early November. From this workshop and associated reviews Phase II of the plan development will take shape.
8. The Committee reviewed briefly the status of the proposed fleet actions with the following recommendations:
  - Replacement of E. B. Scripps by a similar sized vessel will have no negative impact on replacement planning and will be a welcome addition to the fleet.
  - Continuation of KANA KEOKI following replacement by MOANA WAVE. This has the effect of adding one ship where all available information indicates it is not needed and can be ill afforded. Committee should not take cognizance of this in future planning.
  - Replacement of FRED MOORE by new construction is premature until the proposal can be studied in the full context of UNOLS replacement requirements. The UT proposal to sponsor conceptual design studies as a part of the overall plan is welcome.

-3-

- Replacement of VELERO IV continues as a priority matter. The Committee discussed USC replacement efforts with Don Keach and toured the M/V OSPREY at San Diego. The Committee's view is that the \$5 - 7M needed to convert OSPREY would be better invested in new construction of an intermediate sized ship which might be better suited to USC needs anyhow.
9. The next meeting of the Committee will be 9-10 July, 1984.

R. P. Dinsmore

RPD:crm  
Attachment



NECOR LARGE SHIP REPLACEMENT CONFERENCE  
University of Rhode Island  
19-20 April 1984

Composite Ship Characteristics Summary

The need to plan for new, more capable research ships to conduct scientific programs at sea has become virtually self evident. Numerous studies have amply demonstrated that our ships, mostly constructed in the 1960's are becoming obsolete in their capability to support oceanography for the 1980's and 1990's. Nowhere is this more apparent than in the Northeast Consortium Research Fleet where one ship - CONRAD - is over twenty years old, and another - ATLANTIS II, the same age - has been effectively removed from its institutional role to support submersible operations as a National facility. This same situation exists at the national level where a total of five major seagoing ships are present to serve the university community. Of these, three were constructed in the 1960's and the requirements being posed by the scientific community render these ships marginally capable. The need to plan for new ships is more than just sound practice; it has become a matter of urgency.

The NECOR Conference examined shipboard science requirements for a new replacement vessel or vessels on a discipline-by-discipline basis. The summary which follows combines those requirements into a single listing which sets forth the characteristics which a new general purpose research ship should embody. In most instances, there was a consensus leading to the characteristics developed.

In such cases where the requirements by a particular discipline were unique or differed from the "general purpose norm," those characteristics are separately stated.

RESEARCH SHIP CHARACTERISTICS  
DERIVED FROM NECOR LARGE VESSEL REPLACEMENT CONFERENCE  
APRIL 19-20, 1984

- General: The most single overriding required characteristic in common agreement is that the ship provide the most stable environment possible in order to allow both overside and laboratory work to proceed in greater capacity and in higher sea states than is now possible. Other general requirements are reliability, flexibility, cleanliness, vibration and noise free, and an overall upgrading of quality for doing science and engineering at sea.
- Size: Large; greater than existing UNOLS (245 ft. LOA) but not to exceed 300 feet.
- Endurance: 60 days; providing the ability to transit to the most remote area and work 3-4 weeks on station.
- Accommodations: 25-30 scientific personnel in one- and two-person stateroom. Expandable to 40 through the use of vans.  
  
Science Library-Lounge. Science office with copying machine.
- Speed: 15 knots cruising; sustainable in Sea State 6. Fine speed control down to 0.5 knots.
- Station Keeping: Maintain station and work in sea states up to 5; limited work in SS 7. Dynamic positioning in depths to 6,000 m, 45-knot winds, and SS 6.
- Ice Strengthening: Ability to transit loose pack (3/10 cover). Not intended for icebreaking or close pack work. Protection against encounters with growlers and other glacial ice difficult to detect.

<u>Sea State</u>	<u>Description</u>	<u>Height</u>	
		<u>Feet</u>	<u>Meters</u>
0	Calm-glassy	0	0.
1	Calm-rippled	0 to 1/4	0 to 0.1.
2	Smooth-wavelets	1/4 to 1 1/4	0.1 to 0.5.
3	Slight	1 1/4 to 4	0.5 to 1.25.
4	Moderate	4 to 8	1.25 to 2.5.
5	Rough	8 to 13	2.5 to 4.
6	Very rough	13 to 20	4 to 6.
7	High	20 to 30	6 to 9.
8	Very high	30 to 45	9 to 14.
9	Phenomenal	Over 45	Over 14.

- Deck Working Area:** Spacious fantail area - 3,000 sq. ft. minimum with contiguous waist work area along one side 12 x 50 ft. minimum. Heavy deck plating (3/4") to accommodate 100-ton deck loads. Oversize holddowns on 2-ft. centers. Highly flexible to accommodate large and heavy equipment. Removable bulwarks. Dry deck but not greater than 7-10 ft. above waterline.
- Usable foredeck area to accommodate specialized towers and booms extending beyond bow wave.
- Provision for "tugger" winches to be sited at locations around working deck areas.
- All working decks accessible for power, water, air, and hydraulics; also data and voice communication ports.
- Cranes:** A suite of modern cranes to handle heavier and larger equipment than at present: (1) to reach all working deck areas and offload vans and heavy equipment up to 20,000 lbs., (2) articulated to work close to deck and water surface, (3) to handle overside loads up to 2,000 lbs., 30 ft. from side and up to 5,000 lbs. closer to side, (4) overside cranes to have servo controls and motion compensation.
- Ship capable of carrying portable cranes for specialized purposes.
- Winches:** New generation of larger oceanographic winches embodying microprocessor and servo controlled mechanisms providing fine control (0.5 m/min); constant tensioning and constant parameter. Digital wire monitoring systems with inputs to laboratory panels and shipboard recording systems. Local and remote controls.
- At least four general purpose winches: (1) hydro - 30,000 ft. 1/4" - 5/16" wire, (2) conducting cable (or fibre-optics) 30,000 ft. 5/16" - 3/8" cable, (3) trawling and coring - 40,000 ft. 9/16" wire, (4) deeptow - 30,000 ft. 0.68 coax, power (10 KVA) and fibreoptics. In addition, provision to carry portable and special purpose winches on working decks such as large coring facility winch (250,000 lb. capacity).
- Portable shelters available to winch work areas for instrument adjustments and repairs.
- Winch control station(s) located for optimum operator visibility with reliable communications to laboratories and ship control stations.
- Overside Handling:** Various frames and other handling gear larger and more versatile than present to accommodate wire, cable, and free launched arrays. Matched to work with winch and crane locations but able to be relocated as necessary.

Stern A-frame to have 20-ft. minimum horizontal and 30-ft. vertical clearance; 15-ft. inboard and outboard reaches.

Articulated stern ramp, 20-ft. minimum width, including flush deck provision.

Provision to carry additional overside handling rigs along working decks from bow to stern.

Control station(s) to give operator protection and operations monitoring and be located to provide maximum visibility of overside work.

**Workboats:** At least one and preferably two 16-ft. inflatable (or semi-rigid) boats located for ease of launching and recovery.

A scientific work boat 25-30 ft. LOA specially fitted out for supplemental operations at sea including collecting, instrumentation, and wide angle signal measurements. 12-hour endurance including both manned accommodations and automated operation. "Clean" construction.

**Vans:** To carry four standard 8' x 20' portable vans which may be laboratory, berthing, storage, or other specialized use. Hookup provision for power, HVAC, fresh water uncontaminated sea water, compressed air, drains, hydraulics, communications, SAIL and shipboard monitoring systems. Van access direct to ship interior.

Provision to carry additional portable non-standard vans on both superstructure and working decks. Supporting connections at several locations around ship including foredeck.

Ship should be capable of loading and offloading vans using own cranes.

**Laboratories:** Approximately ten laboratories totalling about 4,000 sq. ft. These include: main lab (600); hydro lab ((240); specialized labs (3 @ 400); electronics/computer lab and associated users space (600); wet lab (400); chemistry lab (240); darkroom (150); climate controlled chamber (100); freezer (80).

Heating, ventilation, and air conditioning (HVAC) which are appropriate to laboratories, vans, and other science spaces being served. Laboratories shall maintain temperature of 75°; 50% relative humidity and 9-11



air changes per hour. Chemistry lab(s) and at least one special purpose lab shall be provided with filtered air at positive pressure.

Uncontaminated sea water supply to most laboratories, vans, and several key deck areas. Compressed air supply to be clean and oil free.

Labs should be located so that none serve as general passageways. Access between labs should be convenient. Labs, offices, and storage to be served by a man-rated elevator.

Two fume hoods to be installed permanently in chemistry lab. Main lab and three special purpose labs shall have provision for temporary installation of fume hoods.

Cabinetry shall be high grade laboratory quality including flexibility for 50% rearrangements through the use of unistruts and deck boltdowns.

Each lab area to have separate panel board on a clean bus with continuous delivery capability of at least 40-volt amperes per total square feet of deck area. Labs to be furnished with 110 v. and 220 v. AC. Total estimated science power is 100 KVA.

Labs to be fabricated using uncontaminated and "clean" materials and constructed to be maintained as such. Furnishings, HVAC, doors, hatches, cable runs, and fittings to be planned for maximum lab cleanliness.

Science  
Storage:

To have 10,000 cubic ft. of scientific storage accessible to labs by elevator and weatherdeck hatch(es). To include suitable shelving, racks, and tie downs.

Acoustical  
Systems:

Ship to be as acoustically quiet as practicable in the choice of all shipboard systems and their location and installation. Design target is underway echo sounding at 10 knots from hull hydrophones.

Ship to have 12 kHz, 3.5 kHz echo sounding systems and provision for additional systems.

Transducer wells (20") to be located forward and aft. Large pressurized sea chest (4 ft. x 8 ft.) to be located at optimum acoustic location for at-sea installation and servicing of transducers and transponders.

Hydrophone arrays to be located in hull.

To provide for phased array, multibeam precision echo sounding system (Sea Beam).

Navigation/  
Positioning:

Global Positioning System (GPS) with appropriate interfaces to data systems and ship control processors.

Short baseline acoustic navigation system.

Dynamic Positioning System with both absolute and relative positioning parameters.

Internal Com-  
munications:

Internal communication system providing high quality voice communications throughout all science spaces and working areas.

Closed circuit television monitoring and recording of all working areas including subsurface performance of equipment and its handling.

Serial ASCII Instrumentation Loop (SAIL) system available throughout science spaces including vans and key working areas.

Monitors for all ship control, environmental parameters, science and overside equipment performance to be available in all, or most, science spaces.

Exterior Com-  
munications:

Reliable voice channels for continuous communications to shore stations (including home laboratories), other ships and boats and aircraft. This includes satellite, VHF and UHF.

Facsimile communications to transmit high speed graphics and hard copy text on regular schedules.

High speed data communications (9600 Baud) links to shore labs and other ships on a continuous basis.

Ship Control:

Chief requirement is maximum visibility of deck work areas during science operations and especially during deployment and retrieval of equipment. This would envision a bridge-pilot house very nearly amidships and with unobstructed stern visibility.

The functions, communications, and layout of the ship control station should be carefully designed to enhance the interaction of ship and science operations. For example, ship course, speed, attitude, and positioning will often be integrated with scientific operations requiring control to be exercised from a laboratory area.

Specialized Requirements by Discipline

- Biology:** Stresses the need for fine control of ship speed ( $\pm 0.1$  knot) and fine control of winch wire rate ( $\pm 0.5$  m/min).
- Cranes and overside gear to handle net tows up to 20 sq. meter opening.
- Laboratories to accommodate instrumentation such as electron microscope, H.P. liquid chromatograph atomic absorption spectrometer, mass spectrometer, spectrophotometer, and autoanalyzer.
- Vibration free laboratory area for microscopy and analytical balances.
- Chemistry:** Stresses need for cleanliness throughout ship to include use of non-contaminating materials such as non-petroleum lubricants for sampling equipment and handling devices.
- Provide for alternate underwater engine exhaust when clean air envelope required.
- Similar laboratory considerations as biology.
- Physical Oceanography:** No special requirements not previously included.
- Geology & Geophysics:** 2,000-3,000 sq. ft. lab space located well aft in close proximity to towed arrays.
- Provide for additional radio antenna arrays.
- Carry and support four large capacity air-compressors.
- Carry and handle large array multi-channel seismic systems comprising 20 ton, 10-ft. high, 15-ft. wide steamer reel, and rigging and booms to tow arrays with 100-meter separation.
- Ocean Engineering:** Stresses importance of flexibility of deck working areas to handle varieties of high performance overside handling equipment. This more important than high endurance and large laboratory spaces.
- Handle motion compensated launch and recovery systems for mating to free vehicle.
- Handle drone aircraft and drone boats.

## CONCEPTS OF SHIP DESIGNS

The Conference examined types of platforms which would accommodate the science and engineering requirements set forth at the meeting. Chief among these for serious consideration were the conventional monohull ship and the Small Waterplane Twin Hull (SWATH) ship.

Monohull

A conventional monohull ship to meet the characteristics stated will require the following approximate dimensions:

Length Overall	275 ft.	Length Waterline	250 ft.
Beam	48 ft.	Draft	18 ft.
Displacement Tonnage	2,800 tons	Shaft Horsepower	3,600 H.P.
Twin Screw with thrusters		Fuel Capacity	130,000 gals.

A vessel of this type would have a maximum speed of about 16.5 knots and be able to cruise at 15 knots although 14 knots cruising would be a more fuel efficient and comfortable speed. Cruising speeds would be sustainable in sea states up to 5 but not head-to in any sea states over 5 without severe pounding and discomfort.

A 60-day endurance at cruising speed is not feasible, however. twenty days at cruising speed and 40 days at slow working speeds is possible or any combination of this which will keep within a 100,000 gallon available fuel (3,000 gal./day cruising). A good hull design embodying bilge keels and anti-roll tanks should provide a stable environment greater than is now experienced on any existing UNOLS vessel. Station work should be possible in Sea States 5 and 6. However, ship motion will remain as a significant factor and work in Sea



State 7 probably will be only marginally possible.

Ice strengthening according to merchant ship rules (ABS) is defined by Classes ranging from AA to C. Class C (minimum) is relatively common. Class AA is applicable to vessels in heavy ice conditions but not that of icebreakers or polar vessels which have inordinate design and scantlings. Ice strengthening involves increased specifications for key areas of hull plating and framing and rudder and propeller protection.

From the requirements stated, it would seem appropriate that the ship meet Class B or A ice strengthening. It is not intended that this design serve as a polar research vessel. A sound design for that purpose presently exists.<sup>1</sup> Class B ice strengthening will give protection to and permit operations in open pack ice (3/10 cover) and protect the ship if beset in wind driven pack.

Dynamic positioning will require thrusters aft as well as the usual thruster forward. These probably should be omni-directional and whether cycloid, jet, or retractable propeller remains a matter of engineering (and noise) consideration. Dynamic positioning should be successful in Sea State 5 and 35 knot winds but may be marginal at higher states. In any case, bow and stern thrusters will provide exceptional maneuverability.

There should be no difficulty incorporating all remaining "general purpose" characteristics. Overside handling envisions an entirely new generation of winches and cranes, but most of these presently exist as state-of-the-art.

Propulsion and service power probably dictate a silicon controller rectifier (SCR) system. An example of this would be four 1,000 h.p. diesel engines driving AC generators. This power is available for main propulsion using rectifier banks and DC motors, and also for ships service power. At high speeds most power goes to propulsion; at low speeds the power is available for science work. Number of engines running depends on demand and the result becomes a highly efficient plant.

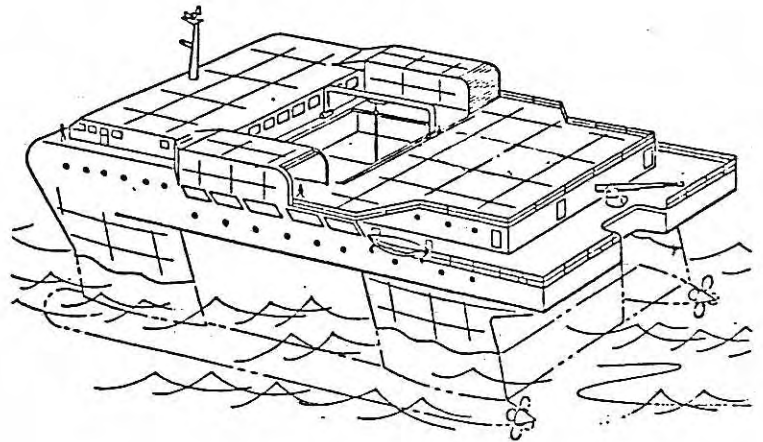
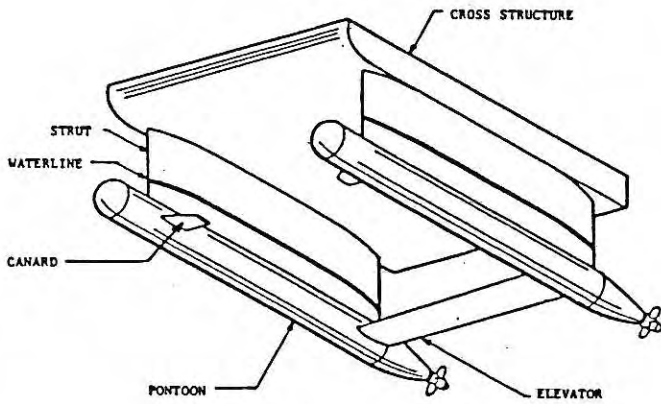
The vessel described above could meet the requirements for underway geophysics (MCS) by loading the high capacity air compressors, towed arrays, and other rigging on the existing work decks. This is a totally feasible arrangement; however, it results in a dedicated type ship operation and precludes much of the "general purpose" provisions. It raises the prospect that an underway geophysics ship, perhaps somewhat smaller, should be an additional, specially designed -- and dedicated ship.

Estimated costs for a monohull ship of the size and type described above are about \$25M for the basic ship and \$7M for the science outfitting.

### Swath Ship

The small waterplane twin hull (SWATH), or semi-submerged ship, is a relatively recent development in ship design. Although patents employing this concept show up in 1905, 1932, and 1946, it was not until 1972 that the Naval Electronics Laboratory constructed an 89-ft., 217-ton, prototype model. The principle of the SWATH ship is that submerged hulls do not follow surface wave motion, and struts supporting an above water platform have a small cross section (water-

plane) which result in longer natural periods and reduced buoyancy force changes. Hull fins further dampen motions and provide dynamic stabilization when underway. The result of all this is that SWATH ships both in theory and performance of the several already built demonstrate a remarkably stable environment and platform configuration which is highly attractive for science and engineering operations at sea. It is time that the oceanographic community takes a hard look at what SWATH can offer.



Based on information available on SWATH performance and configuration, a SWATH comparable to the above defined monohull can be described as follows:

Length-overall	210 ft.	Beam	92 ft.
Operating Draft	23.5 ft.	Displacement	2,000 tons
Hull Diameter	17 ft.	Air Gap	15 ft.
Speed	15 knots	Horsepower	3,100 S.H.P.

A SWATH ship of these dimensions would be able to sustain cruising speeds in Sea State 6 with relatively small pitch and roll. Station work could proceed relatively unhampered in sea states up to SS 7.

These two characteristics constitute the chief and highly attractive advantage of this type hull over a monohull vessel. Other advantages include highly accessible and versatile working spaces and flexibility for varying arrangements for at-sea operations.

SWATH endurance is probably less. Fuel capacity would be limited to about 100,000 gals. (325 tons) thereby restricting the endurance to 40-45 days. Payload is less than a monohull; defined as 25% of displacement and including fuel. This results in a net available loading of about 250 tons - within the stated requirements but none the less limiting.

The main working deck is about 25 ft. above waterline which is considerably higher than most oceanographers are accustomed to. This would be offset by the easier overside handling which the platform stability affords. Some working space could be arranged at the cross-over level which is the height of the air gap - 15 feet.

SWATH has less drag than a monohull and would need less propulsion power for the same speed. A plant similar to the monohull above would require four 850 H.P. diesel engines to provide ship's service and propulsion power. This should result in about 15% less fuel consumption.

SWATH is well adapted for stationkeeping and dynamic positioning. Thrusters would be required in each hull forward but probably not aft. The ship should be able to maintain station in higher sea states and wind.

Ice operations are not recommended at this time. The structure would be highly vulnerable to transverse pressure ice and work even in loose pack ice would prove difficult.

In other respects the SWATH ship could meet or exceed the general



purpose requirements set forth. Motion characteristics, deck working area potential, capability for overside and center well handling, and hull mounted transducer and hydrophone arrays make it particularly adaptable for ocean engineering needs.

The wide separation possible for towed geophysical arrays as well as the versatility of deck space make the ship well suited to geology and geophysics. Coring operations would be especially enhanced. The same comments which are stated in the monohull section regarding an underway G. & G. ship also apply here but probably to a lesser degree.

The deep draft and wide beam constitute a disadvantage in the selection of ports and berthing. This can be offset somewhat by deballasting and light load condition where one-half fuel load and payload will result in an 18-ft. draft. This will not always be possible and will be a consideration always to be reckoned with. It is estimated that construction costs for a SWATH ship described above would be \$27 M for the basic ship and \$7 M for science outfitting.

#### CONCLUSIONS

The Conference recommended that ship design studies be implemented for two ships: (1) a conventional monohull vessel and (2) a SWATH ship - which satisfy the ship requirements set forth by the Conference and subsequent continued improvements thereto. When such studies corroborate the requirements with valid ship characteristics, a construction program should be started for one or both ships as appropriate.

If a SWATH design continues to offer the attractions which were in evidence at the Conference, then first priority for construction

should go to that hull type, but not at this time to the exclusion of the high endurance, global ranging, conventional hull.

R. P. Dinsmore

15 May 1984

SUMMARY OF 1983 CLEARANCE REQUESTS

<u>SHIP</u>	<u>COUNTRY(S)</u>	<u>RESEARCH PERIOD</u>
Seahawk	Jamaica	February-March 1983
Conrad	Morocco	April-May 1983
Turtle/Energy Service I	Mexico	May 1983
Albatross IV	Canada	April-May 1983
Melville	French Polynesia	March-April 1983
Onar	Canada	April-May 1983
Knorr	Barbados <sup>1</sup>	March 1983
Albatross IV	Canada	May-June 1983
Onar	Canada	August 1983
Harkness	Bahrain <sup>2</sup> Saudi Arabia U.A.E.	June 82-October 85
Westward	Bermuda	May 1983
NOAA Aircraft (Project AGASP)	Norway <sup>3</sup> Greenland	March-April 1983
Oceanus	French Guiana	April-May 1983
New Horizon	Mexico <sup>4</sup>	November 1983
Knorr	Bermuda <sup>5</sup>	April-May 1983
Lynch	Norway <sup>6</sup>	May-June 1983
Lynch	Norway Iceland U.K.	April-May 1983
Oceanus	Canada <sup>7</sup>	April-May 1983
Onar	Canada	July-September 83
Endeavor	Panama	November 1983
Conrad	Canada	June-July 1983

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Endeavor	Peru Ecuador	November-December 83
Gyre	Canada	May-June 1983
Conrad	Norway Greenland	August-September 83
Endeavor	Peru Chile	December 1983
Hero	Chile <sup>8</sup>	June 1983
Surveyor	Canada	May 1983
Hero	Chile <sup>9</sup>	July-August 1983
Westward	Canada Bermuda	June-July 1983
T.G. Thompson	Canada	August-September 83
Hero	Chile	September-October 83
NOS (Field Survey)	Canada	July-August 1983
Columbus Iselin	Barbados <sup>10</sup>	July-August 1983
Endeavor	Iceland	July-August 1983
NOS (Mapping)	Canada	July 1983
Oregon Beaver (Chartered vessel)	Mexico <sup>11</sup>	September-October 83
Oceanus	Canada	August-September 83
Westward	Canada	July-October 1983
Nereid Seafarer (Chartered vessels) (Also aircraft)	Canada	July-October 1983
Columbus Iselin	Barbados	August 1983
Gold N. Sun Warrior II Nordfjord (Chartered vessels)	Canada	August-September 83
Cape Hatteras	Canada	August-September 83



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NOS (Aerial and Field Survey)	Canada	August-September 83
Knorr Melville	Ivory Coast South Africa	November 83-February 8
John Isaacs (Chartered vessel)	Canada	August-October 1983
Conrad	Brazil	<u>12</u> January-February 84
Oceanus	Canada	August 1983
Harkness	Morocco	September 1983
Harkness	U.K.	October 83-April 85
Delaware II	Canada	September 1983
Albatross IV	Canada	October-November 83
Delaware II	Canada	November 83-February 84
Surveyor	Canada <sup>13</sup>	August-September 1983
NCAR Aircraft	Mexico	July-August 1983
Cape Hatteras	Bermuda	August 1983
Endeavor	Ecuador	November-December 83
Kana Keoki	Canada	September-October 83
New Horizon	Mexico	January 1984
David Starr Jordan		February-March 1984
		April-May 1984
		June 1984
		<u>14</u> July 1984
		<u>15</u> October-November 84
Westward	Barbados Venezuela Antigua Netherlands Martinique	October-November 83
Cape Florida	Jamaica Bahamas Haiti	November-December 83
Alvin/Atlantis II	Bahamas	February-March 1984
Knorr	Brazil	March-April 1984

Westward	Barbados Venezuela Jamaica French Caribbean Haiti	November 83-January 84
Oregon Beaver (Chartered vessel)	Mexico	February-March 1984
Conrad	Egypt <sup>16</sup> Saudi Arabia <sup>16</sup>	May-July 1984
Endeavor	Peru	April-May 1984
Lynch Researcher Virginia Key	Bahamas	November-December 83
Thomas Washington	Mexico <sup>17</sup>	February 1984
Endeavor	Chile	February-March 1984
Conrad	Bahamas	<u>18</u> January- February 84
Conrad	Spain France	April 1984
Conrad	Spain <sup>19</sup>	August 1984
Westward	Honduras	February-March 1984
E.B. Scripps	Mexico <sup>20</sup>	July 1984
Alvin/Atlantis II	Mexico	<u>21</u> June 1984
Gyre	Canada <sup>22</sup>	June 1984
Gyre	Mexico	April 1984
Gyre	Brazil <sup>23</sup>	September-October 84
Conrad	Egypt <sup>24</sup> Greece Libya	April-May 1984
Columbus Iselin	Panama <sup>25</sup> Colombia Ecuador Peru	December 83-February 84
S.P. Lee	New Zealand	December 83-January 84

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NOAA Aircraft  
(Arctic Cyclone  
Project)

Norway  
Greenland  
Iceland

January-February 84

Virginia Key  
Researcher

Bahamas<sup>26</sup>

January-August 1984

Whiting

Bahamas

February-May 1984

NCAR Aircraft

Mexico

February-March 1984

- 1.) Arrangements for conducting research were made by Chief Scientist.
- 2.) Clearance for Saudi Arabia was denied with no reason given but likely due to tension in that region. No clearance was received from U.A.E. and Bahrain and plans for research were discontinued in absence of clearances. No research conducted in these areas.
- 3.) Department of State was required to seek diplomatic clearance for research after NOAA requested landing clearance for aircraft.
- 4.) Clearance granted after supplemental information was supplied. Approval was received very close to research period, although request was made 8 months prior.
- 5.) Notification of research outside jurisdiction.
- 6.) Request was made for military data gathering and not marine scientific research. Clearance granted for outside 4 nm T.S.
- 7.) Clearance approved late in May immediately prior to portion of research planned for Canadian jurisdiction.
- 8.) Cruise track slightly amended by Chilean Navy before approval in order to avoid sensitive areas.
- 9.) Cruise track slightly amended by Chilean Navy before approval in order to avoid sensitive areas.
- 10.) Arrangements for conducting research were made by Chief Scientist.
- 11.) First leg of research conducted outside Mexican jurisdiction as clearance approval not received in time.
- 12.) Research postponed until late 1984 due to delays in drydock. Clearance approval received before postponement.
- 13.) Clearance approved with one week notice.
- 14.) Clearance pending approval
- 15.) Clearance pending approval
- 16.) Clearance pending approval
- 17.) Research aborted due to shipboard problems.
- 18.) Research cancelled due to ship delays in drydock. Clearance had been approved.



- 19.) Clearance denied. Spanish scientists did not support clearance as they had not been involved in planning research.
- 20.) Clearance pending approval
- 21.) Research postponed until 1985. Clearance had not been approved.
- 22.) Clearance pending approval
- 23.) Clearance pending approval
- 24.) Department of State determined that clearance not required for research beyond continental shelf outside T.S.
- 25.) Clearances not received from Panama and Colombia due to insufficient lead time. Clearances were granted for Ecuador and Peru after extraordinary measures by Department of State.
- 26.) Clearance not required.

TOTAL REQUESTS PER COUNTRY

1983

Canada - 27

Mexico - 11

Panama - 2

Honduras - 1

Chile - 5

Peru - 4

Brazil - 3

Ecuador - 3

Venezuela - 2

Colombia - 1

French Guiana - 1

Bahamas - 5

Barbados - 5

Jamaica - 3

Haiti - 2

Antigua - 1

U.K. (and Bermuda) - 5

Norway - 5

France (and Fr. Polynesia &amp; Fr. Carib.) - 4

Denmark (Greenland) - 3

Iceland - 3

Spain - 2

Netherlands - 1

Morocco - 2

Saudi Arabia - 2

Egypt - 1

Bahrain - 1

U.A.E. - 1

Ivory Coast - 1

South Africa - 1

New Zealand - 1

The Department of State submitted a total of 109 clearance requests to 31 foreign governments during 1983.

Two clearances were denied. Research was affected in four other instances owing to non-receipt of timely clearances. Six clearances are still pending.

DRAFT - 16 Feb 1984

## PROGRAM FOR INTERNATIONAL MARINE SCIENCE COOPERATION

David A. Ross

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Introduction

The past few years have seen considerable changes in how the ocean is viewed by foreign countries and this, in turn, may well influence much of the future style and direction of U.S. marine scientific research in foreign waters. The two principal factors behind these changes have been advances in marine science and technology, especially in their applied aspects, and the Law of the Sea (LOS) Treaty. In the case of the former, the increased potential for ocean use, exploitation and modification could result in many economic benefits. This ocean "promise" has been especially attractive to many developing coastal countries who see major economic potential in their new marine territories. Application of the LOS Treaty can result in as much as 42 percent of the ocean coming under coastal state jurisdiction. The combination of these two factors has led many of the world's coastal countries to focus increased attention on their marine and coastal environment. At the same time it is apparent that most developing countries have little or no marine science and technology capabilities with which to undertake the necessary studies to capitalize on or to even explore the potential of their new territory.

The dimension of the problems and opportunities for some coastal foreign countries can be immense. Consider, for example, Portugal which with its new EEZ (including zones for its offshore islands) is now about one part land and nineteen parts water; other countries, like the Seychelles, have even more impressive ratios.

Control by coastal states over their EEZs (including jurisdiction over marine science) is a reality regardless of whether the LOS Treaty is eventually adopted or not, since most countries have already established EEZs and have legislation that covers and/or controls most ocean uses in this zone. This enclosure of the coastal ocean comes at a time when the U.S. marine science community faces a decrease in the number of ocean-going ships along with budget constraints. However, it is also a time when major studies, such as in air-sea interactions (i.e., climate and global ocean circulation), could lead to innovative ocean use. Such studies and others will require access to all EEZs, a region that, among other things, includes essentially all upwelling zones, most subduction regions, most real or potential marine resources, port facilities and, of course, all continental margins.

This scenario has created a challenge for oceanographers. Controls and regulations for marine science in foreign EEZs are many and complex. They require detailed negotiations, permission, data exchange, possible training and assistance efforts, but especially required is close cooperation with the foreign country in all phases of the research activity. The challenge comes in developing and maintaining successful and viable foreign programs without sacrificing excessive amounts of time and resources of the U.S. marine scientific community. Meeting this challenge will often require skills and infrastructure not presently available to most marine scientists.



It should be stressed that many oceanic phenomena are global or regional in nature and cannot be fully understood by research in just one part of the ocean. For any U.S. scientist to propose and conduct efficient and effective studies in a foreign EEZ will require cooperation with other scientists and scientific institutions. This collaboration should be structured so as to help to define the problems, develop and implement the methods of observation, exchange information, and publish the results. Simply said, the success of U.S. international marine research will depend on securing access to foreign waters, and this will require developing cooperative programs with scientists or institutions in these foreign countries. A simple or single program may not be sufficient to ensure continuing access for all U.S. research vessels. Longer, more continuing relationships may often be necessary.

Despite the obvious need for increased cooperative efforts in marine science with foreign countries, there exists no contact point in the U.S. that represents the spectrum of U.S. marine activities and interests. Several governmental agencies have international marine offices (NOAA, NSF, and State Dept. for example) and several institutions maintain active international operations. Their foreign visibility is, however, generally limited, and these offices primarily serve (and correctly so) the organizations they represent. At the same time, there generally is a limited awareness between agencies, organizations and institutions of the foreign programs done elsewhere. A coastal country looking for a cooperative U.S. program within this array of organizations may find it a bewildering labyrinth. From the U.S. marine scientific community viewpoint, a foreign program by one U.S. organization may not always lead to benefits elsewhere (such as continued access or knowledge of how to work with that country).

### The Opportunity

I feel that the U.S. and its marine scientists (from government, industry and academia) should try to benefit from the establishment of foreign EEZs as well as help the adjacent coastal country. The U.S. marine community has developed extensive expertise in coastal management (NOAA's Coastal Zone Management Program, for example), marine resource development (Sea Grant and industry) and basic marine science and marine policy studies (academia, in general). The question then is, are we efficiently and successfully making our skills and resources available for foreign cooperative opportunities? The premise of my proposal is that we could and should be doing better, and to do so would lead to increased scientific research opportunities and other benefits to the U.S. marine community and, indirectly to our nation. This is not to criticize the several excellent cooperative foreign programs in existence, but rather to suggest that there are opportunities being missed.

### Proposal

The basic thrust of this proposal is to establish an Office for International Marine Science Cooperation that will be a focal point for foreign contacts seeking to develop cooperative programs with the U.S. marine scientific community (and vice versa). The Office would assist (where appropriate) in the development of such programs by involving appropriate U.S. individuals and organizations. The main objectives of such an office would be as follows:

- To improve opportunities and efficiencies for those in the U.S. marine community wishing to work with foreign countries (and in foreign waters).

- To improve access for foreign countries and institutions to marine scientific research and training opportunities with U.S. organizations.
- To collect and circulate information to the U.S. marine scientific community concerning opportunities, mechanisms and funding sources for foreign programs.
- To identify problem countries or areas for the U.S. marine community and advise on mechanisms for dealing with such problems (in particular, from scientists who have had experience in such countries).
- To identify potential U.S. scientists interested in working in specific foreign countries.
- To assist in the development of multidisciplinary teams.
- To serve as a spokesperson for U.S. marine scientific interests in working with foreign countries.

Before discussing these objectives more fully, two points should be addressed. (1) Is such a mechanism needed? (2) If so, where should it be located?

Is such a mechanism needed?

The interest of foreign countries in studying, evaluating and exploiting their coastal and offshore potential should be obvious to those individuals involved with international activities. Two recent Ocean Policy Committee Reports (OPC, 1981; OPC, 1982) have described this interest. U.S. marine scientists have shown continued interest in working in foreign waters regardless of LOS problems (Ross, et al, 1983). In addition, there seems to be a clear, if undocumented, increase in visits of foreign scientists and officials to U.S. marine institutions, in many instances, to explore mechanisms for cooperation.

The 1981 OPC study (conducted by its Marine Technical Assistance Group) looked at several specific points including an assessment of U.S. capabilities to meet its objectives and fulfill the needs of developing countries. It also provided recommendations on policies and mechanisms for future U.S. programs of marine technical assistance and cooperation. A workshop held in La Jolla, California was attended by about 60 individuals including 20 representatives from developing countries, international institutions, or donor countries other than the U.S. A key recommendation of the meeting was that an office be established as a central point of contact for U.S. or foreign investigators seeking information on U.S. support for marine-related projects. It was also recommended that economists and social scientists be involved in planning, management and evaluation of marine-related projects to assure adequate consideration of the socio-political and economic framework of the host country.

One mechanism that has been partially successful for U.S. scientific involvement with foreign countries has been the Intergovernmental Oceanographic Commission (IOC) of UNESCO. However, future U.S. participation in IOC may be reduced or eliminated due to present U.S. dissatisfaction with UNESCO. Another technique for development of foreign marine scientific projects has been the Sea Grant International Program. This program presently has no specific budget although a few small foreign efforts continue with private funds. Private foundations such as the William H. Donner Foundation and the Tinker Foundation and others, have funded cooperative foreign programs (at the University of Miami, Scripps Institution of Oceanography, University of Delaware and the Woods Hole Oceanographic Institution, for example), but foundation resources are limited and often directed towards specific



geographic regions and certain U.S. institutions. It should be appreciated that foreign programs can create opportunities for new research that might not have been possible otherwise.

I have discussed the idea of a program for international marine science cooperation at several forums, receiving generally a positive response. These forums include OCEANS '83, the International Ocean Science Policy Group of the National Academy Board on Ocean Science and Policy (BOSP), the International Committee of UNOLS and NACOA. Following a presentation to the International Ocean Science Policy Group, a positive response (see Appendix I) was received from Mr. William Erb, Director of the Office of Marine Science and Technology Affairs of the U.S. Department of State (the office that obtains U.S. ship clearances).

Where Should the International Marine Science Cooperation Office be Located?

There are several obvious locations for such an Office; including within the federal government (State Department, National Science Foundation, or National Oceanic and Atmospheric Administration), within the academic community (a specific institution, the University National Oceanographic Laboratory System (UNOLS) or the Joint Oceanographic Institutions (JOI, Inc.), or something separate from any of these entities. I visualize the first few years of this program as an experimental period and feel that maximum success would be achieved by placing the Office within an oceanographic institution. At any location, a key challenge will be to ensure that the Office is perceived as (and indeed is) an "honest broker" willing to consider all interests of the marine community (academia, government and industry). In order to maintain the broadest possible spectrum of contacts, the Office should be located outside the U.S. governmental structure where it

would be neither an official agency of the U.S. government nor responsible for coordinating governmental programs (nor would it be a funding agency). Coordination, policy direction and new initiatives for cooperation within the U.S. government would remain the role of other governmental bodies, such as PIPICO. The Office for International Marine Science Cooperation would undoubtedly become a spokesperson for marine technical cooperation but would not lobby for specific programs or requests. The Office must carefully distinguish U.S. foreign policy considerations from scientific considerations. If science is used to develop foreign policy objectives, the policy must be kept separate from the research protocol.

My choice of a location for this Office is the Woods Hole Oceanographic Institution which has a solid, international scientific reputation and a good record of cooperation with the national oceanographic community. Space and administrative support is available for such an effort at WHOI.

Mechanisms and Structure for the International Marine Science Cooperation Office

The program will be run by a Director assisted by an Advisory Committee, together they will establish specific tasks for the Office and advise on ongoing aspects. The Advisory Committee should include representatives from:

- National Science Foundation,
- Office of Naval Research,
- National Oceanic and Atmospheric Administration,
- State Department,
- Other federal offices interested in foreign marine science programs,
- JOI, Inc.,
- UNOLS,

Sea-going oceanographic institutions,  
Coastal oceanographic institutions,  
Sea Grant Program,  
Schools or institutions having active marine scientific and/or marine  
engineering programs,  
Industry.

Ex-Officio members could come from the Marine Division of the National Association of State Universities and Land-Grant Colleges, PIPICO, NACOA, BOSP and appropriate Congressional Committees. Close coordination with all these organizations will be critical if the Office is to be effective.

#### Specific Tasks

First, it should be emphasized that the focus of the Office is to help develop new cooperative programs with foreign countries. The Office is not intended to interfere with or supplant individual programs or activities within any part of the marine community. Specific tasks of the Office should include (a complete list would be established within the Advisory Committee):

(1) Serve as the contact point in the U.S. for foreign scientists or organizations interested in developing cooperative marine programs with U.S. organizations. This will require informing foreign governments and agencies as to the existence of the Office (various listings of such foreign contacts are available). U.S. agencies, institutions and universities must also be informed, not just of the existence of such an Office but also of its benefits and objectives. A good communications network must be established.

- (2) Search for opportunities both within the U.S. (AID, for example) as well as in foreign countries and distribute this information to U.S. participants. This will require a good U.S. and foreign contact network which would be developed as part of Item (1).
  
- (3) Determine interests of specific U.S. marine scientists, engineers, administrators (in government, academia and industry) in working in foreign countries, including their fields of specialization as well as geographical interests. This will involve contacting marine institutions and organizations, developing a list of interested individuals and obtaining other appropriate information. Data will be computerized and be quickly available via TELENET or some similar system.
  
- (4) Help match U.S. scientists and their interests with foreign requests.
  
- (5) Maintain an up-to-date collection of rules and regulations of foreign countries for marine scientific research in their waters. This will involve obtaining data from the U.S. Department of State, other agencies and U.S. scientists. This can become an important task, especially if countries vary in their interpretation of the LOS Treaty. I anticipate that a collection of "operating rules" may be critical in dealing with certain countries. Material will be made available on request to U.S. scientists and institutions. This information and other items could also be made available via a newsletter (electronic and/or printed).



(6) Follow up on success or failure of foreign programs and develop a data base as to key contacts, style, etc. of marine science activity in specific foreign countries.

#### Funding

One scenario would be for funding to come from one or more traditional marine science sources such as NSF, ONR, or NOAA. Another possibility could be for this Office to be created by legislation. Such legislation would give both national and international visibility to the Office and indicate to foreign countries the U.S. commitment towards cooperation in marine activities. To explore fully the potential of the International Marine Science Cooperation Office an initial three-year program of operation seems appropriate, with an in-depth review at the end of the second year.

Funding costs will include a Project Director, two assistants and a part-time secretary. There will be travel costs to visit U.S. institutions and explain the program and for Advisory Committee meetings. Anticipated costs are on the order of \$225,000 per year.

Communications will be an especially important aspect of this program. We anticipate making full use of computer capabilities, including TELENET, etc.

References

Ocean Policy Committee, 1981. International Cooperation in Marine Technology, Science, and Fisheries: The Future U.S. Role in Development. Proceedings of a Workshop, January 18-22, 1981, Scripps Institution of Oceanography, La Jolla, CA, National Academy Press: Washington, DC, 391 pp.

Ocean Policy Committee, 1982. United States Interests and Needs in the Coordination of International Oceanographic Research. National Academy Press: Washington, DC, 121 pp.

Ross, D.A., R.C. Ladner and J.A. Early, 1983. The Impact of the Law of the Sea Conference on U.S. Marine Scientific Research: Report on a Questionnaire. W.H.O.I. Technical Report 83-15, 36 pp.

EAST COAST SHIP SCHEDULING GROUP  
WEST COAST SHIP SCHEDULING GROUP  
REPORT OF JOINT MEETING  
MAY 23, 1984

The East and West Regional Ship Scheduling Groups met separately and jointly at the National Science Foundation, 1800 G Street N.W., Washington, D.C. on May 23, 1984.

Individual meetings for the two groups were called to order at 9:00 a.m. by Robertson P. Dinsmore (East) and J. Boyce Watkins, acting for Brian Lewis (West).

*Review and updates of 1984 ship schedules, operations, costs and agency support* were quickly made. The reviews revealed only modest decreases from estimates made at Ship Scheduling Group meetings in February and March, 1984 (see tables below).

*Ship schedules, operations, costs and agency support for 1985* were next projected by individual institutions, discussed and summarized.

Schedule updates can be reviewed on the UNOLS Ship Sched Bulletin Board. Operations, costs and funding summaries are in the tables below.

EAST-WEST SCHEDULING MEETING  
May 23, 1984

Summary of 1985 Cost Projections

(May 23, 1984 Projection)

\$ Million

	OP DAYS	NSF	ONR	OTHER	TOTAL
EAST	3,435	15.894	3.094	5.215	24.203
WEST	2,564	15.098	1.785	1.373	18.257
TOTAL	<u>5,999</u>	<u>30.992</u>	<u>4.879</u>	<u>6.588</u>	<u>\$42,460</u>
ANTICIPATED FUNDING		25.0	4.9	7.0	36.9
PROJECTED SHORTFALL		5.9	0	(0.4)	5.5

(SIMILAR PROJECTIONS MADE FEBRUARY AND MARCH, 1984)

EAST	3,268	13.926	2.987	6.482	23.395
WEST	2,621	14.776	2.422	1.137	18.336
TOTAL	<u>5,889</u>	<u>28.702</u>	<u>5.409</u>	<u>7.619</u>	<u>\$41.731</u>

## PROFILE OF FUNDING CYCLES

	\\$MILLION					SHORT FALL
	OP DAYS	NSF	ONR	OTHER	TOTAL	
1982	4399	21.2	3.4	4.8	29.4	----
1983	4494	23.4	3.9	5.3	32.6	----

## 1984 OPERATIONS

May '83 Projection (Anticipated)	6,016	28.7 (25.4)	4.4 (4.1)	6.4 (6.4)	39.5 (35.9)	(\$0.4)
Oct. '83 Projection (Anticipated)	5,892	27.4 (25.0)	5.0 (4.5)	8.3 (8.0)	40.7 (37.5)	(\$3.2)
Feb., Mar., '84 Projection (Anticipated)	5,435	25.5 (24.3)	4.8 (4.8)	7.9 (7.2)	38.2 (36.2)	(\$2.0)
May '84 Projection (Anticipated)	5,210	24.7 (24.3)	4.8 (4.8)	7.2 (7.2)	36.7 (36.2)	(\$0.4)

Estimates for 1984 costs have nearly converged with funding anticipated to be available, to support 5,210 days' ship use. This use is nearly 16% over actual days in 1983, with but a 12% increase in cost.

Summaries of 1984 cost and operating estimates for individual ships (attached) have changed but little from similar estimates in Spring, 1984. Modification of the MOANA WAVE and its return to the UNOLS fleet (replacing KANA KEOKI) is proceeding on schedule. The ship to replace the E. B. SCRIPPS will be available in about September.

The summaries of 1985 costs and operating projections for individual ships (attached) indicate strong schedules for most ships and a total fleet use of 5,999 days. This is, again, a 15% increase over 1984. Information is that a much larger than usual portion of the science proposals supported by this projected ship use is already funded. This allows for a much more effective scheduling process than could otherwise be realized.

*The Ship Scheduling Groups commend those principal investigators who submitted their proposals promptly as well as the science program managers who made timely funding decisions.*

A comparison of costs projected for 1985 with anticipated funding (summary table above) suggests that some shaking down remains. Some science proposals reflected in the cost projections may not be funded. If requirements for ship use remain at near 6,000 days, some projects (and use) may have to be deferred beyond 1985.

## Attendees

Douglas R. Caldwell, OSU  
 J. Frisbee Campbell, UH  
 Jack Bash, URI  
 E. R. Dieter, UAlaska  
 Robertson P. Dinsmore, WHOI  
 John D. Donnelly, WHOI  
 James Gibbons, UM-RSMAS  
 Donn S. Gorsline, USC  
 James J. Griffin, URI  
 William B. Hahn, URI  
 Lawrence W. Harding, Jr., JHU  
 Thomas C. Johnson, Duke/UNC  
 Robert S. Jones, Harbor Branch  
 Henry Kennedy, L-DGO  
 John H. Martin, MLML  
 David W. Menzel, Skidaway  
 Isabel H. Miles, JHU  
 William H. Mitchell, UT  
 Wadsworth Owen, UDelaware  
 Thomas C. Royer, UAlaska  
 T. K. Treadwell, TAMU  
 Richard B. Tripp, UW  
 Alexander H. Shor, L-DGO  
 George Shor, Jr., Scripps  
 Joseph F. Ustach, Duke/UNC  
 J. Boyce Watkins, Jr., UW

NSF

Larry Clark  
 Curt Collins  
 Thomas Cooley  
 Grant Gross  
 Donald F. Heinrichs  
 Edward D. Houde  
 Ronald R. La Count  
 Bruce Malfait  
 John G. McMillan  
 John Morrison  
 Polly Penhale  
 Robert W. Wall  
 Richard West

ONR

Keith Kaulum

USGS

Thomas C. Aldrich

UNOLS

William D. Barbee  
 Mitchell Stebens



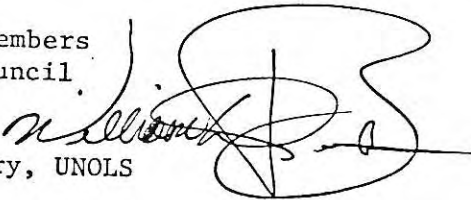
# UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

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  
(206) 543-2203

April 17, 1984

TO: UNOLS Members  
UNOLS Associate Members  
UNOLS Advisory Council

FROM: William D. Barbee   
Executive Secretary, UNOLS

SUBJECT: Recommended Applications for UNOLS

The Advisory Council, at their October, 1983 and February, 1984 meeting considered four applications to UNOLS:

Moss Landing Marine Laboratories applied for change from Associate Membership to Member status (Attachment 1);

Louisiana Universities Marine Consortium (LUMCON) for Associate Member (Attachment 2);

Navy Postgraduate School for Associate Member (Attachment 3);

University of South Florida for Associate Member (Attachment 4).

The Advisory Council recommended to UNOLS that each of these applications be granted. The Council instructed that the four applications be distributed to UNOLS Membership so that the applications and recommendations can be considered at the May, 1984 UNOLS Semi Annual Meeting.

Attachments

P.O. BOX 223  
MOSS LANDING, CA 95039-0  
(408) 633-3304

13 January 1984

Dr. Ferris Webster, Chairman UNOLS  
College of Marine Sciences  
University of Delaware  
Lewes, DE 19958

Dear Ferris:

On behalf of Moss Landing Marine Laboratories, I am applying for full membership in UNOLS. I believe that MLML is deserving of membership for the following reasons:

- (1) We have operated a significant ship (RV CAYUSE, 80 feet LOA) for the past four years with major funding from NSF OFS. In addition to operating CAYUSE in our central California region, we have successfully used her on two cruises to Manzanillo, Mexico and one to Hawaii. Clearly CAYUSE has a great deal of capability for a ship of her size.
- (2) MLML is operated by the 19 campus, 300,000 student California State University system. Approximately 100 students from six CSU campuses (San Jose, San Francisco, Hayward, Stanislaus, Fresno, and Sacramento) participate in our program, 80% at the Master's level. Our graduates are highly regarded, and 25% have gone on to Ph.D. programs at other UNOLS institutions throughout the country.
- (3) MLML is a hard money education/research institution. The annual operating budget is approximately \$750,000 provided by the CSU. These funds are augmented by faculty grants averaging about \$1,000,000 per year. The State of California recently provided 1.8 million dollars for the construction of 10,000 square feet of new laboratory space and complete renovation of our old 17,000 square foot building. Construction of these modern, first-rate facilities is nearly complete.
- (4) MLML has 12 individuals at the Ph.D. level that participate in our teaching/research programs. Half of these individuals are heavy ship users.
- (5) Finally, MLML has always fully supported UNOLS. We have been associate members since 1976, and I have attended almost every annual and semi-annual meeting since that time. I served on the advisory council from 1976 to 1979 and was UNOLS Vice-Chairman in 1980 and 1981. I also chaired the West Coast scheduling group in 1983.

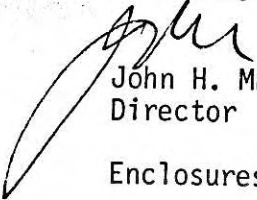
Dr. Ferris Webster

Page 2

13 January 1984

I have enclosed copies of various documents supporting our application; other copies have been sent to Bill Barbie for distribution at the next advisory council meeting. I will, of course, be happy to answer any questions and provide additional information upon request. Thank you for your consideration of this matter.

Sincerely,



John H. Martin  
Director

Enclosures

cc: Bill Barbie

## MLML FACULTY

- BROENKOW, William W. Ph.D. 1969. Areas of Specialization: Physical Oceanography and Oceanographic Instrumentation.
- CAILLIET, Gregor C. Ph.D. 1972. Areas of Specialization: Marine Ichthyology and Marine Ecology.
- CARNEY, Robert S. Ph.D. 1977. Areas of Specialization: Deep-Sea megafaunal ecology.
- FLEGAL, A. Russell. Ph.D. 1979. Areas of Specialization: Marine Geochemistry and Biogeochemical Oceanography.
- FOSTER, Michael S. Ph.D. 1972. Areas of Specialization: Marine Phycology and Marine Ecology.
- KNAUER, George A. Ph.D. 1972. Areas of Specialization: Biological Oceanography, Trace Elements in Water and Organisms, Plankton.
- LEDBETTER, Michael T. Ph.D. 1977. Areas of Specialization: Deep-Sea Sedimentology, Paleoceanography.
- LOEB, Valerie J. Ph.D. 1979. Areas of Specialization: Ichthyoplankton.
- MARTIN, John H. Ph.D. 1966. Areas of Specialization: Trace Elements in Water and Organisms, Plankton.
- NYBAKKEN, James W. Ph.D. 1965. Areas of Specialization: Marine Invertebrate Zoology, Marine Ecology.
- OLIVER, John. S. Ph.D. 1980. Areas of Specialization: Marine Ecology, Invertebrate Zoology, Marine Benthos.
- WURSIG, Bernd G. Ph.D. 1965. Areas of Specialization: Behavior, Ecology and Social Organization of Marine Mammals.

## Moss Landing Marine Laboratories

## PERCENTAGE OF FUNDING SOURCES FOR R/V CAYUSE 1980-84

Year	NSF	Other Fed.	MLML %	Other
1980*	47	10	35	8
1981*	83	--	17	-
1982*	58	22	16	4
1983*	65	23	8	4
1984**	72	--	16	12

\*final

\*\*projected



Section 8  
TABLE 1-A  
SHIPTIME COSTS PER PROJECT CY 1980

Project Identification	Annual Research Support	R/V CAYUSE \$2,453	Actual Cost of Shiptime per Grant or Project
Projects performed using NSF- supported shiptime			
NSF Projects			
OCE 79-09431, J. Martin, G. Knauer	29,999	4	9,810
OCE 79-26797, W. Broenkow, J. Martin	132,886	22	53,954
COE 78-09018, B. Robison, UCSB	42,000	5	12,262
OCE 78-25683, M. Silver, UCSC	39,054	15	36,786
OCE 80-03200, G. Knauer, J. Martin	<u>125,089</u>	<u>17</u>	<u>41,692</u>
Subtotals	369,028	63	154,504
Projects performed using Sandia Laboratories supported shiptime			
SAN 46-1518, R. Heath, OSU	<u>250,000</u>	<u>8</u>	<u>19,620</u>
Subtotals	250,000	8	19,620
Projects performed using EPA- supported shiptime			
R 807110010, J. Martin	<u>20,062</u>	<u>2</u>	<u>4,905</u>
Subtotals	20,062	2	4,905
Projects performed using state- supported shiptime			
65-1478, B. Tasto, Department of Fish and Game	<u>--</u>	<u>3</u>	<u>7,357</u>
Subtotals	--	3	7,357
Projects performed using local government supported shiptime			
CH <sub>2</sub> M Hill, SWOOP, J. Martin	<u>35,000</u>	<u>5</u>	<u>12,262</u>
Subtotals	35,000	5	12,262

TABLE 1-A (continued)

Project Identification	Annual Research Support	R/V CAYUSE \$2,453	Actual Cost of Shiptime per Grant or Project
Projects performed using other educational institution-support shiptime			
MLML consortium campuses	--	3	7,357
Other educational institutions	--	2	4,905
Subtotals		5	12,262
Projects performed using MLML-supported shiptime			
Sea Grant R/CZ-54, H. Mullins	18,695	10	24,524
MLML class cruises	--	23	56,406
MLML thesis cruises	--	8	19,618
MLML faculty/staff projects	--	6	14,718
Subtotals	18,695	47	115,266
<u>Summary Totals:</u>			
Projects performed on shiptime supported by:			
NSF	369,028	63	154,504
Sandia Laboratories (DOE)	250,000	8	19,620
EPA	20,062	2	4,905
State of California	--	3	7,357
Local Government	35,000	5	12,262
Other Educational Institutions	--	5	12,262
MLML*	18,695	47	115,266
TOTALS	692,785	133	326,176

\* 1980 was our first full operating year; several grants and contracts had insufficient funds to cover our revised daily rate of \$2,453 versus the original estimated daily rate of \$2,190. The deficits were made up from MLML funds as follows: Sandia Labs = \$2,100; EPA = \$1,182; State of California = \$787; local government = \$1,312; other educational institutions = \$10,762; total = \$16,143. Thus, MLML actually provided \$115,291 plus \$16,143 = \$131,434 in operating funds for 1980.

Section 8

TABLE 1-A  
SHIPTIME COSTS PER PROJECT CY 1981

Project Identification	Annual Research Support	R/V CAYUSE \$2830	Actual Cost Shiptime per Grant/Project
<u>Projects performed using NSF-supported shiptime</u>			
OCE 79-26797, W. Broenkow, J. Martin (MLML)	\$132,866	54	\$152,820
OCE 79-09317, J. Cox (UCSB)	46,000	17	48,110
OCE 81-09934, J. Cox (UCSB)	46,000	5	14,150
OCE 80-25209, S. Honjo (WHOI)	81,000	11	31,130
OCE 79-19244, M. Silver (UCSC)	39,456	15	42,450
OCE 80-03200, G. Knauer (MLML)	125,089	6	16,980
OCE 80-26131, R. Smith, J. Allen (OSU)	100,000	23	65,090
Totals to be charged to NSF shiptime:	\$570,414	131	\$370,730
<u>Projects performed using MLML-supported shiptime</u>			
MLML Class Cruises	-	13	\$ 36,790
MLML Thesis Cruises	-	10	28,300
MLML Faculty/Staff Projects	-	4	11,320
Subtotal:	-	27	\$ 76,410
<u>Summary Totals:</u>			
Projects performed on shiptime supported by:			
NSF	\$570,414	131	\$370,730
MLML	-	27	76,410
Total:	\$570,414	158	\$447,140

## Moss Landing Marine Laboratories

## Section 8

TABLE 1A  
SHIPTIME COSTS PER PROJECT CY 1982

Project Identification	Annual Research Support	CAYUSE \$3437	Actual Cost of Shiptime per Grant/Contract
Projects performed using NSF-supported shiptime			
<u>NSF Projects</u>			
OCE 81-09934, J. Cox (UCSB)	\$46,003	6	\$20,622
OCE 81-17286, G. Knauer (MLML)	33,330	6	20,622
OCE 80-03200, J. Martin, G. Knauer (MLML)	125,089	10	34,370
OCE 79-26797, J. Martin, W. Broenkow (MLML)	132,866	57	195,909
Sub-total . . . . .	337,288	79	271,523
Totals to be charged to NSF shiptime . . . . .	337,288	79	271,523
Projects performed using DOE-supported shiptime			
AT06-79-EV-10047, G. Anderson (UW)	346,057	25	85,925
Sub-total . . . . .	346,057	25	85,925
Projects performed using ONR-supported shiptime			
N00014-79-C-004, W. Percy (OSU)	215,000	5	17,185
Sub-total . . . . .	215,000	5	17,185
Projects performed using City & County of San Francisco-supported shiptime			
CT 30686(CO-27-0069MY), M. Carlin	22,500	4	13,748
Sub-total . . . . .	22,500	4	13,748

13 January 1984

Ferris:

1983 and 1984 data will be provided to Bill Barbee before the next UNOLS meeting.

JHM



**LOUISIANA UNIVERSITIES MARINE CONSORTIUM**

MARINE RESEARCH AND EDUCATION CENTER

STAR ROUTE BOX 541 (COCODRIE)

CHAUVIN, LOUISIANA

504-594-7552 504-568-7027

September 22, 1983

Mr. William D. Barbee  
University-National Oceanographic  
Laboratory System  
UNOLS Office, WB-15  
School of Oceanography  
University of Washington  
Seattle, WA 98195

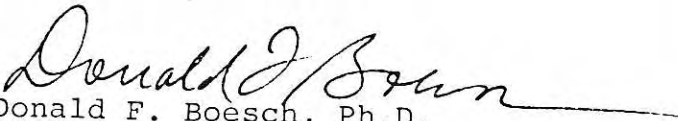
Dear Bill:

Enclosed please find the application of the Louisiana Universities Marine Consortium for Associate Membership in UNOLS.

As I indicated in our conversation in San Francisco, LUMCON is committed to development of a high quality scientific staff and close interaction with our colleagues on the university campuses. Already our small cadre has attracted funding from NSF, NOAA and DOI. We are particularly building capabilities and programs for research on Louisiana's important continental shelf so that our new vessel capabilities are effectively utilized. At the same time we are developing an impressive marine operations capability with vessels, support staff and onshore facilities. Of course, these serve the needs of not only our own scientists but those from our member universities and the scientific community at-large.

I hope this enclosed information satisfies the needs of the UNOLS Advisory Council and Membership. If not, please contact me and I will be happy to supply whatever you need.

Sincerely yours,

  
Donald F. Boesch, Ph.D.  
Executive Director

DFB/gad  
Encl.

## 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, WA 98195

UNOLS

## 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: Louisiana Universities Marine Consortium

Name of person delegated to act as representative to UNOLS

Name: Dr. Donald F. BoeschTitle: Executive DirectorAddress: Louisiana Universities Marine Consortium, Star Route Box  
541, Chauvin, LA 70344Telephone Number: 504/568-7027

General Information on oceanographic, Sea Grant and other marine science programs:

No. Professional Personnel 4\* No. Graduate Students Approximately 15 from  
member universitiesApproximate Annual Budget \$1.3 million presently use facilities

List of research vessels owned or operated:

<u>NAME</u>	<u>SIZE</u>
<u>Continental shelf research vessel (unnamed, under construction)</u>	<u>32m LOA</u>
<u>R/V R. J. Russell</u>	<u>13.5m LOA</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. Barbee  
Executive Secretary  
UNOLS Office, WB-15  
School of Oceanography  
University of Washington  
Seattle, Washington 98195

SUBMITTED:

Signature: Donald F. BoeschName: Donald F. Boesch, Ph.D.Title: Executive DirectorDate: 9/22/83

Revised 7/82

\*(associated marine faculty at member universities ca. 50)

SUPPLEMENTAL INFORMATION  
APPLICATION FOR UNOLS ASSOCIATE MEMBERSHIP

Louisiana Universities Marine Consortium

HISTORY, RESPONSIBILITIES, GOALS OF LUMCON

The Louisiana Universities Marine Consortium (LUMCON) was formed by act of the Louisiana Legislature in 1979 with the primary function of conducting research and promoting education in the marine sciences and marine technology, particularly where related to coastal and marine resources and the impact of energy-related activities on those resources. The Consortium consists of 13 member public universities, including Louisiana State University, University of Southwestern Louisiana, the University of New Orleans, McNeese State University and Nicholls State University which have a marine research orientation.

One of the principal functions of LUMCON is to operate a coastal laboratory, the Louisiana Universities Marine Center, and research vessels for the state's universities. Thus, the Consortium was formed to fill a long-standing need for coastal and marine facilities which had been sorely lacking. Louisiana was the only coastal state without a continuously operated marine laboratory in service to its universities. This despite the unparalleled value of its marine resources, including fisheries, oil and gas and minerals.

LUMCON has received capital outlays totalling \$16.6 million to-date for the construction of these facilities from state funds. The modern Marine Center, providing approximately 20,000 net square feet of research space, plus classrooms, a library, an auditorium and accommodation facilities, totalling nearly 80,000 gross square feet, is presently under construction. A photograph of a scale model is provided. It will be completed during the summer of 1985. Funds are also available for construction of two research vessels, one 32 m in length capable of supporting general purpose oceanographic research on the continental shelf and slope, and the other approximately 16 m in length to support coastal research and educational programs.

LUMCON has a small scientific staff presently and will have a somewhat larger one (approximately 8 principal investigators) when facilities are available. These individuals will be adjunct faculty at one or more of the member universities. However, LUMCON's programs will heavily depend on faculty and staff of the member universities.

VESSELS

Currently, LUMCON operates the R/V R. J. Russell (13.5 m), a vessel constructed in 1981 for coastal research by LSU. In 1982 LUMCON assumed operational responsibility for the Russell which still belongs to the university. It has been used for coastal geological, biological and hydrographic research and for training university students.

Construction will soon begin (November, 1983) on a 32 m vessel (attachment) specially designed for marine research on the continental shelf and slope. This vessel evolved from an earlier design developed by the University of Texas and Gulf Marine Design, Inc. in collaboration with research oceanographers from the Gulf of Mexico region. It is designed to meet UNOLS basic minimum scientific support capabilities for vessels in its size class.

Design concepts for the 16 m vessel are presently being evaluated; it will be constructed in 1984.

LUMCON receives a direct state appropriation for operation of its facilities. Funds appropriated for the present fiscal year include most of the crew, insurance and maintenance costs for its vessels. Thus the vessel operations are on a sound financial basis. Costs of additional crew, fuel and other expendables will be met from self-generated revenues.

LUMCON employs a Vessel Operations Supervisor, currently Mr. Steve Rabalais, and is committed to effective management of its marine operations. Office, shop and communications facilities are included in the Marine Center under construction.

## KEY INDIVIDUALS

### Ship User Information

Dr. Donald F. Boesch  
Louisiana Universities Marine Consortium  
Star Route Box 541  
Chauvin, LA 70344

Dr. Michael J. Dagg  
Louisiana Universities Marine Consortium  
Star Route Box 541  
Chauvin, LA 70344

Dr. James M. Coleman  
Coastal Studies Institute  
Louisiana State University  
Baton Rouge, LA 70803

Dr. R. Eugene Turner  
Center for Wetland Resources  
Louisiana State University  
Baton Rouge, LA 70803

Dr. David Dunn  
University of New Orleans  
Lake Front  
New Orleans, LA 70122

Dr. Darryl L. Felder  
Department of Biology  
University of Southwestern Louisiana  
Box 442451 USL  
Lafayette, LA 70504

Dr. L. Harold Stevenson  
Environmental Sciences and Microbiology  
McNeese State University  
Lake Charles, LA 70609

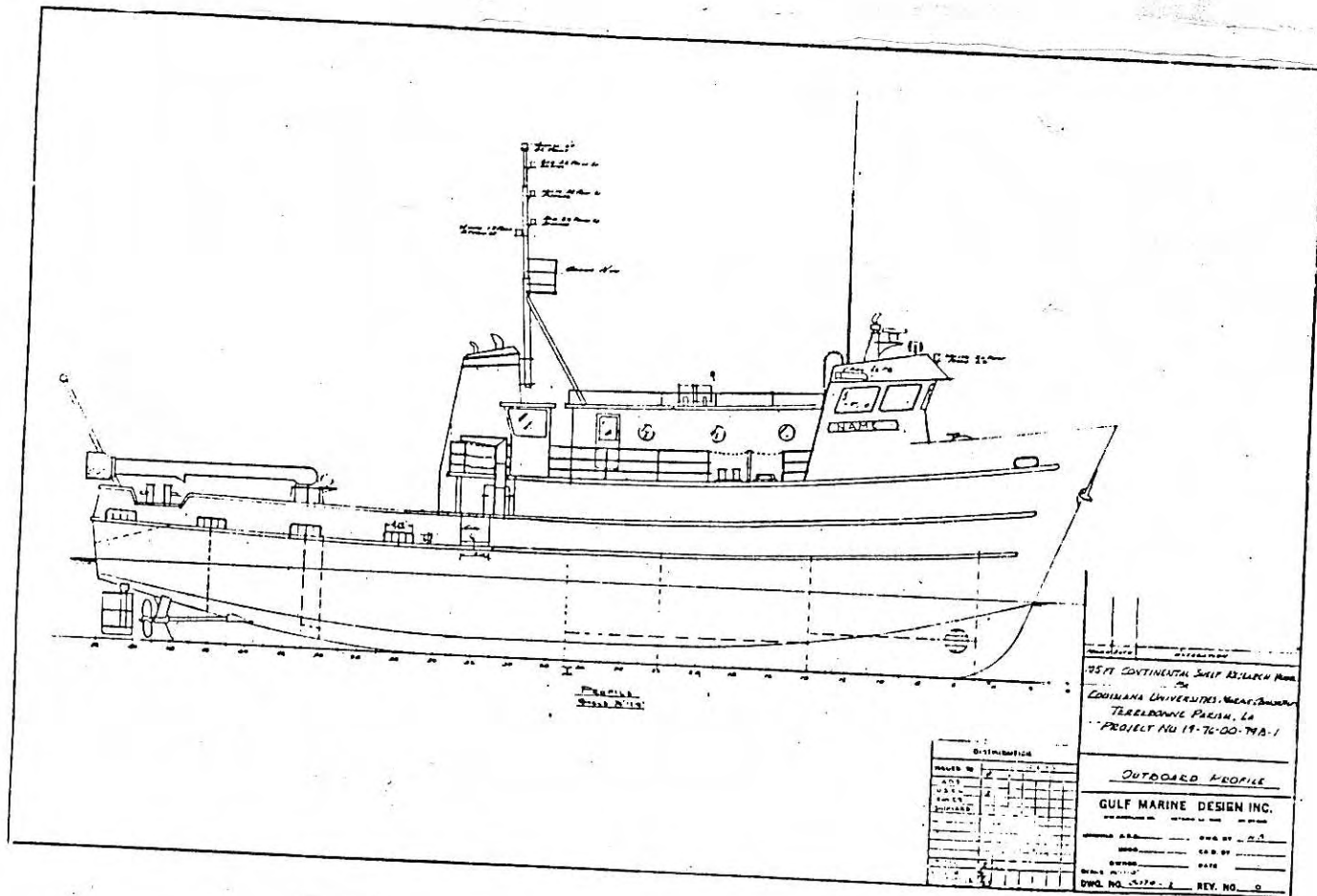
Research Ship Operations and Management

Dr. Donald F. Boesch  
Executive Director  
Louisiana Universities Marine Consortium  
Star Route Box 541  
Chauvin, LA 70344

Mr. Steve Rabalais  
Vessel Operations Supervisor  
Louisiana Universities Marine Consortium  
Star Route Box 541  
Chauvin, LA 70344

Dr. E. Raymond Hackett  
Operations and Finance Manager  
Louisiana Universities Marine Consortium  
Star Route Box 541  
Chauvin, LA 70344





Louisiana Universities Marine Consortium  
 32 m Research Vessel

## INQUIRIES

Additional information can be obtained from:

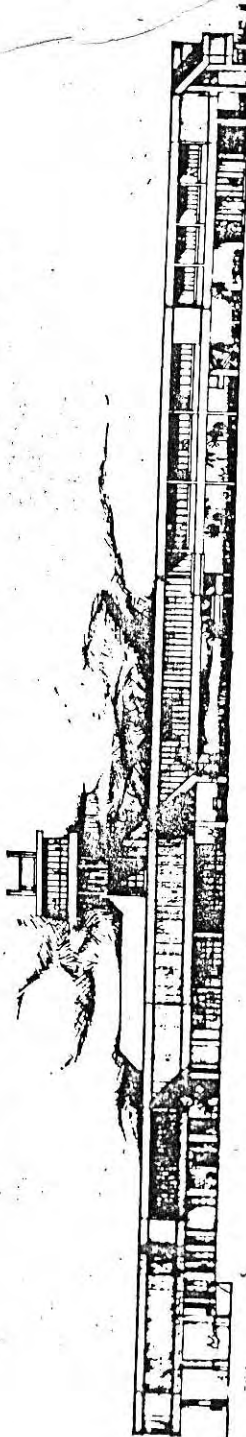
LOUISIANA UNIVERSITIES MARINE CENTER  
Star Route Box 541  
Chauvin, Louisiana 70344  
(504) 594-7552 or (504) 568-7027

or

LUMCON COUNCIL OFFICE  
4884 Constitution Ave., Suite 2L  
Baton Rouge, Louisiana 70808  
(504) 925-7801

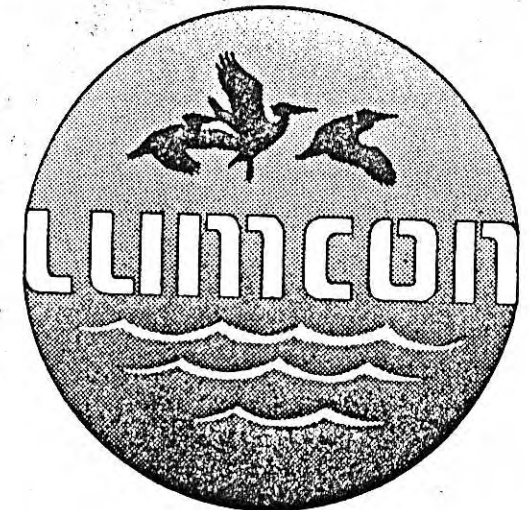
This Public Document was published at a cost of \$.10 per copy by The Louisiana Universities Marine Consortium, Chauvin, Louisiana to provide the public with information regarding the coastal research facilities, marine-related instruction, and public service available for Louisiana citizens under authority of special exception by the Division of Administration. This material was printed in accordance with the standards for printing by state agencies established pursuant to R.S. 43:31.

LOUISIANA UNIVERSITIES MARINE CENTER FOR RESEARCH AND EDUCATION



APPENDIX XI-18

# LOUISIANA UNIVERSITIES MARINE CONSORTIUM



Research and Education  
Programs and Facilities  
for  
Louisiana's Universities

APPENDIX XI-18

The Louisiana Universities Marine Consortium (LUMCON) for Research and Education is an organization of the thirteen four-year state universities and four higher education management boards. It was formed by joint agreement of its members and by Act of the Louisiana Legislature in 1979 to provide coastal research facilities, education in the marine sciences and technology and public service for Louisiana's citizens.

The following institutions and management boards are members of the Consortium and are represented on its governing Council:

Grambling State University of Louisiana  
Louisiana State University and Agricultural and  
Mechanical College in Baton Rouge  
Louisiana State University in Shreveport  
Louisiana Tech University  
Nicholls State University  
Northeast Louisiana University  
Northwestern State University  
Southeastern Louisiana University  
Southern University in Baton Rouge  
Southern University in New Orleans  
University of New Orleans  
University of Southwestern Louisiana

The Board of Trustees for State Colleges and  
Universities

Louisiana State University Board of Supervisors  
Southern University Board of Supervisors  
Louisiana Board of Regents

## NEED FOR LUMCON

Louisiana's coastal and marine resources related to fisheries, energy industries, shipping and recreation are of great national significance and are of greater importance to the state's economy and culture than in any other state. Louisiana leads the Nation in the amount of seafood landed (28% of the national total) and produces 95% of the oil and virtually all of the natural gas extracted from waters off the United States. New Orleans is now the Nation's leading port in terms of cargo tonnage.

Ironically, Louisiana is the only coastal state which does not have a university-affiliated coastal laboratory and associated vessels capable of supporting continuous research and educational programs. In contrast, no less than eleven university marine laboratories and institutes and twelve vessels exceeding 50-feet in length are operated on the Gulf Coast by universities in Texas, Mississippi, Alabama and Florida. Millions of dollars have been spent for federally funded grant and contract research in the northern Gulf of Mexico, but a disproportionately small percentage of these

funds has come to Louisiana based institutions and scientists; funding is often granted to investigators based at better-equipped research laboratories in other states. Furthermore, students who want an educational program at a marine laboratory have no alternative but to seek admission to an out-of-state program.

Substantial and growing interest in the marine sciences and technology exists at a number of universities in Louisiana. In order to provide modern research facilities to meet the needs of these universities and the state, the Consortium was established as a means to develop facilities and equipment beyond the financial capabilities of individual institutions and to avoid duplication of facilities. In addition to the operation of facilities, the Consortium will serve as a focal point among Louisiana institutions of higher education for cooperative programs of marine education, research and public service, from which benefits will accrue to students, research scientists, governmental agencies, industries, and the private citizens of Louisiana.

## FACILITIES

The principal coastal facility of the Consortium is the Louisiana Universities Marine Center for Research and Education at Cocodrie in Terrebonne Parish. Architectural plans for a modern, well-equipped laboratory with residential accommodations for students and faculty have been completed and the first phase of construction was begun in 1981. Construction of buildings is scheduled to begin in the fall of 1982 with completion planned for late 1984. The Marine Center will contain over 24,000 net square feet of laboratory, classroom and library spaces in addition to offices, dormitories, a cafeteria, docks and boatsheds. The Cocodrie site was selected after detailed evaluation of potential sites throughout coastal Louisiana because of its accessibility to diverse marine habitats, including large bays, barrier islands and the Gulf of Mexico, and its proximity to the metropolitan area of Houma.

In addition to temporary facilities at the site of the Marine Center at Cocodrie, LUMCON also operates two satellite field laboratories at Port Fourchon, west of Grand Isle, and at Fearman Bayou on the western shore of Vermilion Bay, south of Abbeville. These facilities have limited accommodations and small laboratories and are used for field trips and summer courses.

Two research vessels have also been planned. The larger vessel, 95 feet in length, has been specially designed for marine research on the continental shelf of the Gulf of Mexico. Another vessel, approximately 50 feet in length, will be used for educational programs and research in bays and nearshore Gulf.

LUMCON facilities will be utilized by resident research staff, students and visiting scientists from participating universities. The public will also be invited to visit the Marine Center

for displays and talks on Louisiana's coastal and marine environments. Access to LUMCON facilities will also be granted to institutions and government agencies when their affiliation is in keeping with the objectives of the Consortium.

## RESEARCH

LUMCON is developing a balanced program of applied and basic research. Priorities in applied research include studies of the alarming coastal erosion and wetlands modification experienced in Louisiana, commercial and sport fisheries, and the impact of human activities on natural resources. LUMCON has a specific mandate in its enabling legislation to conduct research on the impact of the extensive energy-related industries on coastal and marine resources. Through research at the Marine Center, coordination of research on university campuses and communication with state, federal and local agencies, LUMCON seeks to encourage a unified effort toward the solution of coastal and marine-related problems in Louisiana.

Basic research programs emphasize unique features of Louisiana's marine environments and its biota and, consequently, enhance and complement applied research programs. Research topics include descriptions of the marine biota, the ecology and physiology of estuarine and continental shelf organisms, the effects of wetlands and the Mississippi and Atchafalaya rivers on adjacent waters, water currents and sedimentation.

## EDUCATION

Educational programs include university courses, university field trips and short courses, student research training, teacher training, secondary and elementary school programs and public education. LUMCON does not itself grant credits or degrees; these are awarded through member universities. Since the summer of 1981, courses have been offered during the summer at LUMCON's satellite laboratories. These courses are offered for credit by each of the 13 public universities, the only such unified curriculum in Louisiana higher education. The public education program seeks to enhance public awareness of coastal and marine resources in Louisiana and foster a better understanding of associated issues among the general public.

## ADMINISTRATION

Governance of LUMCON is the responsibility of a Council composed of seventeen representatives, one from each of the thirteen participating state universities and one from each of the four higher education management boards. The Louisiana Board of Regents serves as fiscal agent for LUMCON and approves all budget requests. The Council employs an Executive Director to manage scientific and support staff and the day-to-day operations of the Consortium and the Marine Center.

## NAVAL POSTGRADUATE SCHOOL

DEPARTMENT OF OCEANOGRAPHY

MONTEREY, CALIFORNIA - 93940

IN REPLY REFER TO:  
NC4(68Mr)/glw  
25 July 1983

Mr. William D. Barbee  
Executive Secretary  
C/O Dr. Robert W. Corell  
University of New Hampshire  
Marine Programs Building  
Durham, N.H. 03824

Dear Bill:

Enclosed is our application for Associate Membership in UNOLS. Also enclosed are a copy of :

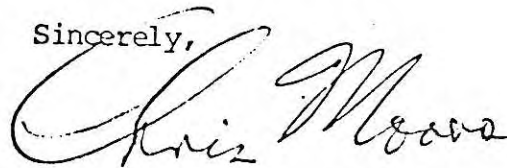
- \*a. R/V ACANIA User's Information Booklet,
- \*b. Air-Ocean Sciences Programs Book, which describes our curricula and lists faculty with their research interests,
- \*c. NPS Catalog, which lists degree requirements, etc., and
- \*d. R/V ACANIA ship schedules for the past two years.\*

Over the past 25 years, we have had well over a thousand M.S. graduates in Oceanography and a few PhD graduates. Together with our Meteorology Department, we presently have about 85 M.S. students, and about 10 PhD students. The two departments have combined academic and research faculties of about 20 PhD's each.

R/V ACANIA has been operated by NPS for eleven years. She is sponsored by the Oceanographer of the Navy and is supported by Commander, Naval Oceanography Command. Her mission is, in order of priority, to : (1) support the oceanographic instructional program, (2) support Oceanography Faculty research, (3) support other NPS Faculty seagoing research, and (4) support cooperating investigators from Navy, other Federal, and academic laboratories.

R/V ACANIA is 54 years old and must soon be retired. We are seeking a replacement vessel through Navy channels. As an option, we are exploring a cooperative arrangement with MLML and USC. Other options include use of Navy AGORs and chartering commercial or academic vessels. Our seagoing research program has grown to be well in excess of \$1M per year, with support from ONR, NSF, and others. Much of the research is done in concert with other academic institutions. We believe that it would be to our mutual advantage to begin to communicate more fully with the UNOLS community through Associate Membership.

Sincerely,



CHRISTOPHER N. K. MOERS  
Chairman and Professor

\* Not distributed by UNOLS

UNOLS  
17 Apr 84



## 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, WA 98195

## UNOLS

## 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: NAVAL POSTGRADUATE SCHOOL

Name of person delegated to act as representative to UNOLS

Name: Professor Christopher N. K. Mooers

Title: Chairman, Department of Oceanography

Address: Naval Postgraduate School, Monterey, CA 93940

Telephone Number: (408) 646-2673

General Information on oceanographic, Sea Grant and other marine science programs:

No. Professional Personnel 44 No. Graduate Students 85Approximate Annual Budget \$1,250,000

List of research vessels owned or operated:

<u>NAME</u>	<u>SIZE</u>
<u>R/V ACANIA</u>	<u>126' LOA, 22' BEAM, 9' Draft</u>
<u> </u>	<u> </u>
<u> </u>	<u> </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. Barbee  
Executive Secretary  
OLS Office, WB-15  
School of Oceanography  
University of Washington  
Seattle, Washington 98195

SUBMITTED:

Signature

Name: CHRISTOPHER N. K. MOOERSTitle: Professor and ChairmanDate: 25 July 1983

Revised 7/82



Key Individuals to whom Ship User Information should be sent

1. Professor Thomas R. Osborn  
Code 68Or  
Naval Postgraduate School  
Monterey, CA 93940
2. Professor Edward B. Thornton  
Code 68Tm  
Naval Postgraduate School  
Monterey, CA 93940
3. Professor Eugene C. Haderlie  
Code 68Hc  
Naval Postgraduate School  
Monterey, CA 93940
4. Dr. Eugene D. Traganza  
Code 68Tg  
Naval Postgraduate School  
Monterey, CA 93940
5. Dr. James L. Mueller  
68My  
Naval Postgraduate School  
Monterey, CA 93940
6. Dr. Robert H. Bourke  
Code 68Bf  
Naval Postgraduate School  
Monterey, CA 93940
7. Mr. T.H. Calhoon  
Code 68Cu  
Naval Postgraduate School  
Monterey, CA 93940

Key Individual to whom Research Ship Operations and Maintenance Information  
should be sent

1. Mr. T. H. Calhoon  
Code 68Cu  
Naval Postgraduate School  
Monterey, CA 93940
2. Master, R/V ACANIA  
Department of Oceanography  
Naval Postgraduate School  
Monterey, CA 93940

# UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

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UNOLS Office, WB-15  
School of Oceanography  
University of Washington  
Seattle, WA 98195

## UNOLS

### 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: University of South Florida, Department of Marine Science

Name of person delegated to act as representative to UNOLS

Name: Peter R. Betzer

Title: Chairman

Address: Department of Marine Science

140 7th Avenue South, St. Petersburg, Fl. 33701

Telephone Number: 813/893-9130

General Information on oceanographic, Sea Grant and other marine science programs:

No. Professional Personnel 20 No. Graduate Students 92

Approximate Annual Budget 1.4 million

List of research vessels owned or operated:

<u>NAME</u>	<u>SIZE</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):

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(intended for scientists and ship users);

Research ship operations and maintenance - for marine superintendents and port captains.

SEND TO:

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

SUBMITTED:

Signature

*Peter R. Betzer*

Name: Peter R. Betzer

Title: Chairman

Date: 1/18/84



# UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

MAY 1984

## UNOLS NOMINATING COMMITTEE

The Nominating Committee has assembled the following slate of candidates for UNOLS and Advisory Council positions to be filled at the May, 1984 Semi Annual Meeting.

## THE SLATE

For Chairman, UNOLS:

William J. Merrell	Texas A and M University
Ferris Webster (incumbent)	University of Delaware

For Vice Chairman:

Robert W. Corell	University of New Hampshire
Brian T. R. Lewis	University of Washington

For Advisory Council - Member Representation (Elect Three)

Elizabeth L. Venrick	UCSD - Scripps
Arthur E. Maxwell	University of Texas
Carl J. Lorenzen	University of Washington
George Knauer	Moss Landing Marine Labs - San Jose State University
Lawrence Harding	Johns Hopkins University
Donn S. Gorsline (incumbent)	University of Southern California

For Advisory Council - Associate Member Representation (Elect One)

Michael Roman	University of Maryland
Thomas Malone	University of Maryland



Name/Discipline

Present Occupation Status

Title

Research Interest

William J. Merrell, Physical Oceanography  
Professor, Texas A and M University  
Administrator, Deep Sea Drilling Project  
Currents, circulation, transport

Ferris Webster, Physical Oceanography  
Professor of Oceanography, University of Delaware  
Currents and circulation; tides and waves

Robert W. Corell, Ocean Engineering  
Professor, University of New Hampshire  
Director, Marine Program  
Ocean engineering; instrumentation engineering

Brian T. R. Lewis, Geological Oceanography  
Professor Oceanography, University of Washington  
Director, School of Oceanography  
Seismology; geophysics

Elizabeth L. Venrick, Biological Oceanography  
Associate Research Oceanographer, Scripps Institution of Oceanography  
Phytoplankton; ecology; applied statistics

Arthur E. Maxwell, Oceanographer, Geophysicist  
Director, Institute for Geophysics, University of Texas, Austin  
Geophysics, currents and circulation; structural geology/tectonics

Carl J. Lorenzen, Biological Oceanography  
Research Professor of Oceanography, University of Washington  
Algae and higher plants; phytoplankton; fisheries oceanography

George Knauer, Biological/Chemical Oceanography  
Professor of Oceanography, Moss Landing Marine Laboratories  
Pelagic energy fluxes; phytoplankton, zooplankton; trace metal  
interactions; biochemistry of trace metals

Lawrence Harding, Biological Oceanography  
Associate Research Scientist, Johns Hopkins University  
Phytoplankton physiology; light adaptation of dinoflagellates,  
interaction with estuarine dynamics

Donn S. Gorsline, Geological Oceanography  
Professor of Marine Geology, University of Southern California  
Sedimentology; geomorphology; stratigraphy

Thomas Malone, Biological Oceanography  
Professor of Oceanography, University of Maryland (Horn Pt Labs)  
Population ecology of phytoplankton; food chain dynamics;  
nutrient cycling

Michael Roman, Biological Oceanography  
Assistant Professor Oceanography, University of Maryland (Horn Pt Labs)  
Zooplankton ecology; food chain patterns in plankton communities;  
factors affecting secondary production.



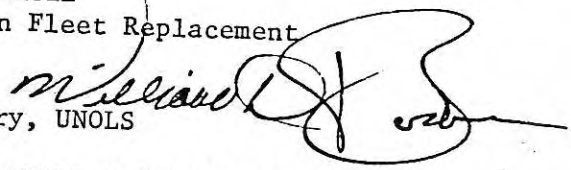
# UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

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  
(206) 543-2203

April 16, 1984

TO: UNOLS Members  
UNOLS Associate Members  
UNOLS Advisory Council  
UNOLS Committee on Fleet Replacement

FROM: William D. Barbee   
Executive Secretary, UNOLS

SUBJECT: Draft Revision of UNOLS Safety Standards

This is to transmit to UNOLS Members and Associate Members the 1984 draft revision of UNOLS Safety Standards.

*This draft will be introduced for adoption to UNOLS Members at the Semi Annual Meeting in Washington, D.C. on May 25, 1984.*

Copies of the draft have already been circulated to RVOC representatives. The importance of safety standards to UNOLS and to research vessel operators in general suggests that this draft should receive comprehensive administrative, legal and operational reviews at all UNOLS institutions.

This draft has been developed through the initiative and efforts of the Research Vessel Operators Council (RVOC). Although many individuals in RVOC contributed, the draft is mainly a product of the working group:

T. K. Treadwell, TAMU, Chairman  
E. Eugene Allmendinger, UNH  
Jack Bash, URI  
William Harkness, UH  
Ken Palfrey, OSU  
Eric Nelson, Duke/UNC  
Jim Williams, UCSD, Scripps

Sam Applegarth, consultant, participated as representative from NSF's ship inspection team, and R. P. Dinsmore provided a comprehensive review.

cc: La Count, NSF  
McMillan, NSF  
West, NSF  
Kaulum, ONR

Rowland, USGS  
Alderman, NOAA  
Lane, MMS  
Osterberg, DOE