

# **UNOLS ANNUAL MEETING**

## **SUMMARY REPORT**

**17 September 1992**

**National Trust for Historic Preservation  
1785 Massachusetts Avenue, N.W.  
Washington, DC 20036**



**UNOLS ANNUAL MEETING**  
**8:30 A.M., THURSDAY SEPTEMBER 17, 1992**  
**NATIONAL TRUST FOR HISTORIC PRESERVATION**  
**WASHINGTON, D.C.**

**GENERAL:** Issues and items are reported in the order in which they were addressed in the 17 September, 1992 UNOLS Annual Meeting Agenda except as modified herewith. The published agenda is enclosed as **Appendix I**.

**ATTENDANCE:** A list of registered attendants has been compiled and is presented as **Appendix II**.

**DIRECTORIES:** Information from the UNOLS Office which has been included in this report include: UNOLS Directory, UNOLS Fleet Ship Scheduling Contacts, UNOLS Advisory Council (1971-1992), UNOLS Executive Committee (1971-1992), UNOLS Fleet Marine Operations Contacts, UNOLS Council/Committees, and Summary of UNOLS Fleet Operations, 1991 -- Ship Statistics Summary Report (**Appendices III-IX**).

**INTRODUCTION AND WELCOME:** Garry Brass, UNOLS Chair, called the meeting to order and welcomed the UNOLS members and other attendees to the UNOLS Annual Meeting.

**KEYNOTE ADDRESS:** Dr. John A. Knauss, Undersecretary for Oceans and Atmosphere, National Oceanic and Atmosphere Administration provided the Keynote address. Dr. Knauss focused his talk on two major points, NOAA and University relationships, and NOAA's plan to replace its aging fleet.

He stressed the long term relationship that NOAA has enjoyed with the academic community and sighted NOAA's responsibility to ensure the success of universities' ocean programs. He explained that the NOAA budget included \$120 million for universities, one third of which went to Sea Grant. NOAA is working at improving the time it takes to get grants funded. They have also set up an OMNET mailbox to receive and respond to problems.

Dr. Knauss outlined the NOAA plan to replace its aging fleet. The plan includes a request for \$100 million per year for 15 years. This level of funding is needed to replace or upgrade a fleet responsible for 5000 sea days of operation. The NOAA responsibility is divided into three basic areas: Hydrography, Fisheries and

Oceanography. Each of these areas require different platforms to do their work. In the interim, NOAA is and will continue to charter ships. They have established a partnership with USC in the operation of VICKERS. They have also chartered other UNOLS vessels. In total, 862 ship days were chartered in 1992 for \$6.4 million and 883 days are planned for 1993 for \$6.6 million. This process is expected to continue as the budget permits.

NOAA is expecting the results of the 1993 budget soon. Early indications are that cuts are in order that could stifle NOAA activities in chartering and delay the plans for fleet replacement.

## **COMMITTEE REPORTS**

### **FLEET IMPROVEMENT COMMITTEE:**

The report of the Fleet Improvement Committee was provided by Garry Brass in the absence of committee Chair Marcus Langseth. The major activities of the FIC include: a study of shipboard laboratories and habitability; Arctic research vessel design; coastal oceanography facilities; and a revised Fleet Improvement Plan.

The committee has circulated a questionnaire to scientists who have recently gone to sea on at least two different vessels. The questionnaire requested scientists to compare shipboard labs and living conditions on the vessels. Further information is being gathered. Garry reported that the Arctic Research Vessel Subcommittee had completed a conceptual design study which considers an ice class A3 hull for this ship. This hull design would require 18,000 hp and a length of 320 feet. Funds are expected for a preliminary design study which should be completed by the fall of 1993. The Coastal Oceans Subcommittee is planning a workshop for February 1993 to compile national plans for working in the coastal oceans and to identify those facilities that will be needed to perform this science. Finally the FIC is developing a revised Fleet Improvement Plan to replace the plan dated 1990.

### **RESEARCH VESSEL OPERATORS COMMITTEE**

Mike Prince, Vice Chair, provided the report from the Research Vessel Operators Committee (RVOC) in the absence of the Chair, Jim Williams. Mike reported that the RVOC Annual meeting is scheduled for the Virden Conference Center at the University of Delaware in Lewes, DE on 20-22 October. Subjects on the agenda include: International Treaties and Convention Tonnage; Oil Pollution Act of 1990; Disabilities Act; Insurance Plan; Coastal Research Vessel Workshop; Winch and Wire Workshop; Navigation Equipment and Inspection Procedure for non UNOLS Vessels. Mike also

reported that the RVOC Safety Training Manual had been published and distributed and that a revised Research Vessel Safety Standards manual would be presented to the membership for approval.

## **DEEP SUBMERGENCE SCIENCE COMMITTEE**

Jeff Fox, the newly appointed Chair of the DEep Submergence Science Committee (DESSC), reported on the year's events. He first praised Feenan Jennings for his six productive years as Chair of the ALVIN Review Committee. Also departing and receiving praise were Doug Nelson and Dave Cacchione serving five and four years respectively. Gary Taghon has been reappointed for three years and newly appointed persons include Dan Fornari, Hugh Milburn and Carl Wirsen. Standing members include Casey Moore, Mary Scranton, Karen Von Damm and Dick Pittenger (ex-officio).

Jeff reported that 1992 has been a poor year for ALVIN with only 76 dives and the submersible ending its operating year in August. ATLANTIS II was able to pick up 60 operating days in the late summer/early fall that were not ALVIN related. An evaluation of the poor showing suggested several factors. ALVIN is a maturing facility and the rate of technology improvements has flattened. At the same time ROVs are being introduced but are not ready to perform the level of science that can be conducted on a manned submersible. The community is not well organized, many with different agenda. The time has come to change the role of the committee from a review process to forward thinking and planning. A name change from ALVIN Review Committee to Deep Submergence Science Committee is appropriate. New tasks will include: analysis of critical issues of deep submergence science; assess the community needs; promote technical enhancement of the facility and the integration of ROVs with manned submersibles. The first step in this process is the reconstituted committee. Next is the conduct of a workshop planned for 13-14 October to review the critical issues and define the strategy for 1994 and beyond. The workshop plans have been well received and the workshop is expected to be well attended. This, coupled with the AII/ALVIN strong operating schedule for 1993, suggests a great start for a new era in deep submergence science.

## **SHIP SCHEDULING COMMITTEE:**

Ken Palfrey, Ship Scheduling Committee Chair, presented the report for this committee. Ken explained that the committee met first in June to scope out the potential ship time for 1993 and then earlier this week to firm up the various ship schedules. The schedules presented at the meeting reflected 5335 ship days at a cost of \$51.7 million. After review and deletion of those cruises that were declined funding a total of 4700 operating days resulted. This reduction will bring the cost of the fleet closer to the funds available.

All large ships are expected to operate in 1993. MOANA WAVE will be returning to the Hawaii area mid year, replacing the VICKERS. Shiptime on the East intermediate ships is low. ENDEAVOR is expecting to complete a mid-life refit by June or July and remained tied up for the remainder of the year. OCEANUS will have a shortened operating year then go in the yard for its mid-life refit. GYRE and ISELIN will have very light schedules. NEW HORIZON and WECOMA are expected to have full schedules. VICKERS will be operating the first third of the year with NOAA funding then return to Los Angles with no proposed work.

The efforts, in advance of the meeting, to place all schedules on OMNET and to provide cost figures for these schedules was very effective in reducing the meeting time and increasing the scheduling efficiency.

## AGENCY REPORTS

### REMARKS FROM THE FEDERAL AGENCIES:

NSF: Don Heinrichs provided a viewgraph of the proposed NSF budget (Appendix X). The proposed increase of 14% appears highly unlikely at this point in the budget process while a 2 to 5% decrease is more likely.

Don announced plans for a minor reorganization of the Ocean Science Division of NSF. Larry Clark, Program Director for the Oceanographic Technology Program, will be moving from the Facilities Section to the Research Section. He will be taking with him the Oceanographic Instrumentation Development Program. Lisa Rom will remain as the Program Manager for the Marine Technician Program and Oceanographic Instrumentation.

NSF is finalizing a policy statement defining those ships that are acceptable to take NSF funded projects. Ships will be required to meet the UNOLS Safety Standards. This will apply to both academic and charter vessels.

ONR and NSF are jointly working on a plan to standardize insurance policies in the fleet with a goal towards a single group policy. The proposed plan is under review and comments from the operators are being considered.

NSF plans to fund the mid-life refits on the three OCEANUS class ships. ENDEAVOR is scheduled for the shipyard later this year with OCEANUS and WECOMA following in 1993.

**NOAA:** Scott McKellar provided a summary of events at NOAA by first reviewing some personnel changes. RADM Stubblefield has taken over for RADM Andreasen as Director of NOAA Corp Operations. Captain Don Northrup is the Chief, Program Services Division, replacing Captain Dave Yeager.

In ship operations, NOAA has taken delivery of TAGOS 13 from the Navy. MT. MITCHELL has completed 100 days of operation in the Persian Gulf. NOAA will be funding ship life extensions on three ships in 1993. These are ALBATROSS IV, OCEANOGRAPHER and DELAWARE II. The NOAA plan is to bring their operating days up to 5000 per year which will include UNOLS charters. The funding for the 1993 UNOLS charters is 1992 carry over money and will be available. The funding for 1994 charters will depend upon Congress and the NOAA budget.

**ONR:** Keith Kaulum reported first on their Fleet Improvement Program. THOMAS G. THOMPSON is completed. AGOR 24 was in the 1992 Navy construction budget. Procurement of AGOR 24 will be based first on technical capabilities and aspects of the shipyard design and secondly on cost. Some technical questions need to be resolved and an additional \$9 million is expected in the Navy's 1993 budget to augment the current funds. The letting of the construction contract is expected shortly after Congress approves the budget. AGOR 25 remains in the Navy's 1994 budget package. A NOAA version, AGOR 26, remains an option in the 1995 budget. ONR is working with Scripps and WHOI on changes they would like to see in AGORs 24 and 25. A prioritized list of change candidates for AGOR 24 is being developed.

ONR will be transferring GYRE to TAMU and THOMAS WASHINGTON will be transferred to Chile by the end of September. KNORR and MELVILLE are both operating and doing well.

Gordon Hamilton will be acting for one year in place of Eric Hartwig as Director of Ocean Sciences.

A Memorandum of Agreement (MOA) for the operation of ALVIN is in draft form and being routed through ONR, NSF and NOAA. The MOA provides a 150 day safety net for the operation of ALVIN and ROVs, dividing the responsibility between the three agencies at 82 days NSF, 34 days ONR and 34 days NOAA. The MOA provides for the integration of ROVs into the ALVIN operation. It also provides for a re-compete provision in the last year of the agreement. The ship support is not included in the draft MOA.

**USCG:** LCDR Bill Davis of the US Coast Guard provided the membership with a report on the USCG activities. He indicated that their budget remained as planned. Their two icebreakers were planning 140 days of operations in 1993 and they are available for science projects as they head south. Bill reported that their new

icebreaker was on track in the planning phase and should be built and ready to operate in 1997.

**MMS:** Ronald Lai of the Mineral Management Service reported that MMS operated from four regions: Atlantic, Gulf of Mexico, Pacific and Alaska. UNOLS ships have been used in the Gulf and the Pacific. MMS is committed to future projects and expects to continue the use of UNOLS vessels.

**STATE DEPARTMENT:** Tom Cocke reported that clearance processes were running very smoothly these days. He attributes this to their new computer system and the able assistance of Patsy Brown. Mexico still remains a problem with clearances. Tom indicated that 40% of clearance requests received are inside the time frame requested. This provides some problem but appears to be manageable. Tom suggested he plans more analysis of the clearance processes.

## UNOLS ISSUES

**RISK MANAGEMENT:** NSF and ONR have presented to the UNOLS community a plan to consolidate all ship insurance policies into a single policy. Deductibles and total coverage would be consistent throughout the fleet and hull insurance would not be covered. Responses from the operating institutions have been received by the funding agencies and are presently under review. A decision on how or if the plan is to be instituted should be announced soon.

**COASTAL WORKSHOP:** The Fleet Improvement Committee Subcommittee on Coastal Oceanography will be conducting a workshop in February 1993 at Williamsburg, VA. This workshop will assess the future vessel and facility needs of coastal marine science. Further details of the workshop will be available on OMNET COASTAL.NEWS.

**FLEET COORDINATION:** Garry Brass and Jack Bash have been attending the Subcommittee on Federal Oceanographic Fleet Coordination (formerly FOFCC) meetings. These meetings have been useful in keeping in touch with other Federal oceanographic programs and injecting UNOLS needs.

**ARCTIC RESEARCH VESSEL (ARV) DESIGN RESOLUTION:** The Arctic Vessel Design status was covered in the presentation by Garry Brass on the FIC report

above. The Council passed a resolution in their July meeting stating UNOLS position regarding the ARV design, Appendix XI.

**DEEP SUBMERGENCE WORKSHOP:** This subject was covered by Jeff Fox in his presentation on the DEep Submergence Science Committee above.

**REVIEW OF NSF SHIP INSPECTION PROGRAM:** A review of the NSF Inspection Program was conducted by a panel chaired by Jim Williams. The panel concluded that the program was successful, however all UNOLS ships are not covered in the process. The report sites the lack of community scientific standards and that follow-up action for the inspection is not complete. NSF is responding to the panel's suggestions and is developing a new format for inspections.

**REVIEW OF UNOLS REPORT:** Dick Pittenger, a panel member in the UNOLS Review, gave a brief account of this report. UNOLS is working and effective. Users are happy with the services provided. More emphasis is needed on the technical support efforts aboard ship and UNOLS needs to be more active in settling fleet requirements.

**SEACLIFF:** The Navy has offered the scientific community 60 operational days per year for DSV SEACLIFF, a 6000 meter manned submersible. NOAA is coordinating its use and provides funds for expendables. UNOLS convened a panel in May 1992 to review proposals for the 60 days of science. SEACLIFF is presently in Hawaiian waters, conducting approximately 40 dives which were selected in the review process. NOAA will announce a call for opportunity for the dives in 1993. Presently the site has not been selected.

**MEMORANDUM OF AGREEMENT:** This topic was covered in the ONR report above.

**RESEARCH VESSEL TECHNICAL ENHANCEMENT COMMITTEE (RVTEC):** A proposal has been presented to UNOLS to establish a committee that will address issues of the technical support community. Efforts to establish a forum in the past have been less than successful. This proposal is to form a committee of UNOLS that is similar to that of the RVOC. The participants plan to meet at least once a year normally in conjunction with a national technical conference. This year their plan is to meet prior to the Marine Technology Society Conference in Washington, DC, in early October. Representatives from all operating institutions are expected to attend and all UNOLS institutions are welcome to send representatives. The UNOLS Council has



favorably endorsed this committee in their July meeting and must now receive the approval of the membership.

#### **VOTING ISSUES:**

Establishment of a UNOLS Research Vessel Technical Enhancement Committee (RVTEC). --- Approved.

Adoption of the revised Research Vessel Safety Standards. --- Approved.

Re-adoption of the UNOLS Charter (as required every three years). --- Approved

Addition of Southern Mississippi University as a new UNOLS member. --- Approved

**ADDITIONAL ISSUES:** Johns Hopkins and the University of Southern California were moved from Operating Institution status to non-Operating Institution status.

**UNOLS ELECTIONS:** Four UNOLS Council positions were due for re-election. These were: Chair (two year term), Vice Chair (two year term), Member at large (three year term), Member among designated representatives of non-Operating Institution (three year term). The slate is included as **Appendix XII**.

#### **Election Results:**

Chair - Garry Brass

Vice Chair - Peter Betzer

Member - Dick Pittenger

Member - Bob Wall

**UNOLS APPOINTMENTS TO COMMITTEES:** The UNOLS Chair announced the following appointments/reappointments to committees.

**DESSC:** Jeff Fox, Chair; Dan Fornari; Hugh Milburn; Gary Taghon; Carl Wirsen

**SSC:** Ken Palfrey, Chair; Ron Hutchinson, Vice Chair

**Executive Committee:** Garry Brass; Peter Betzer; Ken Palfrey; David Karl

The meeting was adjourned at 1430 hrs 17 September 1992.

## APPENDIX

Agenda	I
Attendees	II
UNOLS Directory	III
UNOLS Fleet Ship Scheduling Contacts	IV
UNOLS Advisory Council	V
UNOLS Executive Committee	VI
UNOLS Fleet Marine Operations Contacts	VII
UNOLS Council/Committee	VIII
Summary of UNOLS Fleet Operations: 1991-- Operating Days and Sea Days	IX
NSF Budget	X
Arctic Research Vessel Design Resolution	XI
Slate of Candidates for UNOLS Council	XII

# APPENDIX I

# UNOLS ANNUAL MEETING AGENDA

8:30 A.M., THURSDAY, SEPTEMBER 17, 1992  
NATIONAL TRUST FOR HISTORIC PRESERVATION  
WASHINGTON, D.C.

**Introduction and Welcome:** Garry Brass, UNOLS Chair will report on 1991-1992 activities, current issues and issues continuing into 1993.

## KEYNOTE ADDRESS

Dr. John A. Knauss, Undersecretary for Oceans and Atmosphere, National Oceanic and Atmospheric Administration, will provide the keynote address for the 1992 UNOLS Annual Meeting.

## COMMITTEE REPORTS

**Fleet Improvement Committee:** Mark Langseth, Chair, will report on 1991-1992 accomplishments, reports issued and plans for next year. He will provide an update on the Fleet Improvement Plan update, labs and accommodations study, Arctic research vessel design study and the coastal subcommittee events.

**Research Vessel Operators Committee:** Jim Williams, Chair, will report on 1991-1992 RVOC activities, publications and issues and on the upcoming RVOC meeting in Lewes, Delaware.

**Deep Submergence Science Committee (formerly ALVIN Review Committee):** Jeff Fox, Chair, will provide a status of the ALVIN program, activities during the past year and plans for 1993. 1992 was a year of many significant changes for ARC (including their name change). The committee is in a period of integration of ROV and other deep submergence technology.

**Ship Scheduling Committee:** Ken Palfrey, Chair, will report on the scheduling process during 1992, schedules for 1993, cost balanced against expected funds and recommendations from the SSC.

## AGENCY REPORTS

**Remarks from Federal Agencies:** Information from Federal funding agencies (DOE, MMS, NOAA, NSF, ONR and USGS) of 1992 funding forecasts for 1993 or later, ship operations and science support. NOAA will discuss their ship time use of UNOLS vessels, ONR will report on THOMAS G. THOMPSON (AGOR-23) entering the Fleet, KNORR and MELVILLE renovation completion, and budgetary status of AGOR-24/25. NSF will report on activities/plans for 1993 and beyond. NOAA, NSF, and ONR will discuss the status of the Memorandum of Agreement for ALVIN. Tom Cocke, Department of State/Office of Ocean Affairs, will summarize the 1992 clearance status and note issues and problems.

12:00 - 1:00

Lunch Break

12:00 - 1:00

## UNOLS ISSUES

**Issues before UNOLS:** Various issues of interest to UNOLS Members have arisen during the year. The UNOLS Chair will introduce these issues or elaborate on remarks made earlier:

- Risk Management
- Arctic RV Design Resolution (encl. 1)
- Review of UNOLS - Report
- RV Technical Enhancement Workshop
- Coastal Workshop
- Deep Submergence Workshop
- SEA CLIFF/UNOLS Agreement
- Fleet Coordination
- Review of NSF Ship Inspection Program
- MOA Renewal for ALVIN

UNOLS Members may wish to raise additional issues.

**UNOLS MEMBERSHIP VOTES:** The following issues require a membership vote for approval:

- *Research Vessel Technical Enhancement Committee (RVTEC)* - The formation of UNOLS Committee (enclosure 2).
- *Research Vessel Safety Standards* - Adoption of updated Standards
- *UNOLS Institutions Status Changes* - Johns Hopkins status has changes from operator to non-operator (enclosure 3)
- *Readoption of UNOLS Charter* - As required every three years.
- *New UNOLS Member* - Southern Mississippi University has applied for UNOLS membership.

**UNOLS Elections:** Election for the following UNOLS positions will be held:

UNOLS Chair, from among candidates affiliated with UNOLS Operator Institutions (2-year term).

UNOLS Vice Chair, at large, affiliated with any Member institution (2-year term).

UNOLS Council Member, at large, affiliated with any Member institution (3-year term).

UNOLS Council Member, from among designated representatives of UNOLS non-Operator Institutions (3-year term).

A call for Nominations was issued in July 1992. The Slate of nominees is enclosed (enclosure 4).

**UNOLS Appointments to Committees:** The UNOLS Chair will announce new appointments to ARC, FIC, RVOC, and SSC, accordance with the UNOLS Charter.

**Other Business:** Other issues, actions or recommendations as might be introduced.

## **APPENDIX II**

**UNOLS ANNUAL MEETING**  
**WASHINGTON, D.C. - SEPTEMBER 17, 1992**

James G. Acker	Goddard Space Flight Center, NASA
Vernon L. Asper	University of Southern Mississippi
Timothy M. Askew	Harbor Branch Oceanographic Institution
John F. Bash	UNOLS
Peter R. Betzer	University of South Florida
Patsy Brown	U.S. Department of State
W. Thomas Cocke	U.S. Department of State
Kimbra L. Cutlip	Smithsonian Institution
Mary D'Andrea	UNOLS
William T. Davis	USCG Ice Operation
Patrick J. Dennis	Joint Oceanographic Institutions
Annette M. DeSilva	Office of Naval Research
Cheryl L. Dybas	National Science Foundation
William Erb	U.S. Department of State
Don L. Gibson	University of Texas
M. Grant Cross	National Science Foundation
Dennis E. Hayes	Lamont-Doherty Geological Observatory
Donald F. Heinrichs	National Science Foundation
Eric D. Itsweire	National Science Foundation
David M. Karl	University of Hawaii
Keith Kaulum	Office of Naval Research
Robert A. Knox	Scripps Institution of Oceanography
Ron R. LaCount	Joint Oceanographic Institutions
Ronald J. Lai	Mineral Management Service
Michael A. Lang	Smithsonian Institution
Dean E. Letzring	Texas A&M University
Eric J. Lindstrom	World Ocean Circulation Experiment Interagency Office
Richard L. Longfield	University of Hawaii
David W. Menzel	Skidaway Institute
Russell E. McDuff	University of Washington
Scott M. McKellar	National Oceanic and Atmospheric Administration
Bruce T. Malfait	National Science Foundation
Theodore C. Moore	Center for Great Lakes and Aquatic Science
Martin R. Mulhern	National Oceanic and Atmospheric Administration
Donald E. Nortrap	National Oceanic and Atmospheric Administration
Wadsworth Owen	University of Delaware
Richard F. Pittenger	Woods Hole Oceanographic Institution
Kennard M. Palfrey	Oregon State University
J. Michael Prince	Moss Landing Marine Laboratories
Steve C. Rabalais	Louisiana Universities Marine Consortium
Lisa Rom	National Science Foundation
Thomas C. Royer	University of Alaska
Cornelius W. Sullivan	University of Southern California
Richard W. West	National Science Foundation
Stan Winslow	University of Hawaii

# APPENDIX III

UNOLS DIRECTORY (with designated representatives)  
Operator Institutions in **BOLD**

Rev. 10/9

ALABAMA MARINE ENVIRONMENTAL SCIENCES CONSORTIUM  
Dr. George F. Crozier

**UNIVERSITY OF ALASKA** Dr. Thomas Royer

BERMUDA BIOLOGICAL STATION Dr. Anthony K. Knap

BIGELOW LABORATORY FOR OCEAN SCIENCES  
Dr. David Townsend

BROOKHAVEN NATIONAL LABORATORY Dr. Creighton D. Wirick

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

UNIVERSITY OF CALIFORNIA, SANTA BARBARA  
Dr. James P. Kennett

CAPE FEAR TECHNICAL INSTITUTE Mr. Edward Foss

**COLUMBIA UNIVERSITY, LAMONT-DOHERTY  
GEOLOGICAL OBSERVATORY** Dr. Dennis Hayes

UNIVERSITY OF CONNECTICUT Dr. Donald F. Squires

**UNIVERSITY OF DELAWARE** Dr. Carolyn A. Thoroughgood

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

FLORIDA INSTITUTE FOR OCEANOGRAPHY Dr. John C. Ogden

FLORIDA INSTITUTE OF TECHNOLOGY Mr. Jack Morton

FLORIDA STATE UNIVERSITY Dr. William C. Burnett

**HARBOR BRANCH OCEANOGRAPHIC INSTITUTION**  
RADM John B. Mooney, Jr.

HARVARD UNIVERSITY Dr. M.E. McElroy

**UNIVERSITY OF HAWAII** Dr. Roy Wilkens

HOBART & WILLIAM SMITH COLLEGES Dr. Donald L. Woodrow

THE JOHNS HOPKINS UNIVERSITY Dr. Gordon D. Smith

LEHIGH UNIVERSITY Dr. Bobb Carson

**LOUISIANA UNIVERSITIES MARINE CONSORTIUM**  
Dr. Paul Sammarco

UNIVERSITY OF MAINE Dr. Robert E. Wall

THE MARINE SCIENCE CONSORTIUM Dr. Darlene Richardson

UNIVERSITY OF MARYLAND Dr. Doug Capone

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
Dr. John M. Edmond

**UNIVERSITY OF MIAMI, ROSENSTIEL SCHOOL OF  
MARINE & ATMOSPHERIC SCIENCES**  
Dr. Garrett W. Brass

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

MONTEREY BAY AQUARIUM RESEARCH INSTITUTE  
Dr. Bruce Robison

**MOSS LANDING MARINE LABORATORIES**  
Dr. John H. Martin

NAVAL POSTGRADUATE SCHOOL Dr. Curtis Collins

UNIVERSITY OF NEW HAMPSHIRE  
Dr. E. Eugene Allmendinger

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

UNIVERSITY OF NORTH CAROLINA AT WILMINGTON  
Dr. Alan Hulbert

NOVA UNIVERSITY Dr. Julian P. McCreary

OCCIDENTAL COLLEGE Dr. John S. Stephens, Jr.

OLD DOMINION UNIVERSITY Dr. Larry Atkinson

**OREGON STATE UNIVERSITY** Dr. Douglas Caldwell

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

**UNIVERSITY OF RHODE ISLAND** Dr. Paul J. Fox

RUTGERS UNIVERSITY Dr. Frederick Grassle

SAN DIEGO STATE UNIVERSITY Dr. Clive Dorman

SEA EDUCATION ASSOCIATION Dr. John J. McMahon

UNIVERSITY OF SOUTH CAROLINA Dr. Robert Thunell

UNIVERSITY OF SOUTH FLORIDA Dr. Peter R. Betzer

UNIVERSITY OF SOUTHERN CALIFORNIA  
Dr. Cornelius W. Sullivan

UNIVERSITY OF SOUTHERN MISSISSIPPI Dr. Vernon Asper

**UNIVERSITY SYSTEM OF GEORGIA, SKIDAWAY  
INSTITUTE OF OCEANOGRAPHY** Dr. David W. Menzel

**UNIVERSITY OF TEXAS** Dr. Robert S. Jones

**TEXAS A&M UNIVERSITY** Dr. Gilbert Rowe

VIRGINIA INSTITUTE OF MARINE SCIENCE Dr. Frank O. Perkins

**UNIVERSITY OF WASHINGTON** Dr. Arthur Nowell

UNIVERSITY OF WISCONSIN AT MADISON Dr. Anders W. Anderson

UNIVERSITY OF WISCONSIN AT MILWAUKEE  
Dr. David E. Edgington

UNIVERSITY OF WISCONSIN AT SUPERIOR Dr. Mary Balcer

**WOODS HOLE OCEANOGRAPHIC INSTITUTION**  
RADM Richard Pittenger



## **APPENDIX IV**

# SHIP SCHEDULING CONTACT

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

Rev (9/92)

OPERATOR	NAME	LOA (FT/M)	BUILT/ CONVERTED	NO. of SCIENTISTS	OWNER	SHIP SCHED. CONTACT
University of Hawaii SOEST (HIG) 2525 Correa Rd. Honolulu, HI 96819	MOANA WAVE	210/64	1973/1984	19	NAVY	Dr. Roy Wilkens Ship Scheduler PHONE: (808) 956-5223 FAX: (808) 956-2538 TELEMAIL: R.WILKENS
University of Alaska Institute of Marine Science Fairbanks, AK 99775	ALPHA HELIX	133/41	1966	15	NSF	Dr. Thomas Royer Chair, Ship Committee PHONE: (907) 474-7835 FAX: (907) 474-7204 TELEMAIL: T.ROYER
University of Washington School of Oceanography, WB-10 Seattle, WA 98195	T. G. THOMPSON C.A. BARNES	274/84 66/20	1991 1966/1984	26 6	NAVY NSF	Mr. Robert Hinton Marine Superintendent PHONE: (206) 543-5062 FAX: (206) 543-6073 TELEMAIL: R.HINTON
Oregon State University College of Oceanography Newport, OR 97365	WECOMA	177/54	1975	20	NSF	Capt. Kennard M. Palfrey Marine Superintendent PHONE: (503) 867-0224 FAX: (503) 867-3733 TELEMAIL: OSU.SHIPS
Moss Landing Marine Laboratories PO Box 450 Moss Landing, CA 95039	POINT SUR	135/41	1981	12	NSF	Mr. Michael Prince Marine Superintendent PHONE: (408) 633-3534 FAX: (408) 633-4580 TELEMAIL: MLML.SHIPS
University of Southern California Hancock Institute for Marine Studies 820 South Seaside Avenue, Terminal Island, CA 90731	VICKERS	220/67	1973/1989	25	USC	Mr. Don Newman, Mgr. Marine Support Facility PHONE: (213) 743-6977 830-457 FAX: (213) 830-6328 TELEMAIL: R.PIEPER
University of California, San Diego Scripps Institution of Oceanography La Jolla, CA 92093-0210	MELVILLE T. WASHINGTON NEW HORIZON R.G. SPROUL	279/86 209/64 170/52 125/38	1969/1990-91 1965 1978 1981/1985	35 22 13 12	NAVY NAVY U.C. U.C.	Ms. Rose M. Dufour Ship Scheduler(s) Code A-010 PHONE: (619) 534-2841 FAX: (619) 535-1817 TELEMAIL: SCRIPPS.INS
University of Michigan Center for Great Lakes & Aquatic Sciences 2200 Bonisteel Boulevard Ann Arbor, MI 48109-2099	LAURENTIAN	80/24	1974	8	U.M.	Dr. Linda Goad Marine Superintendent PHONE: (313) 763-5393 FAX: (313) 747-2748 TELEMAIL: T.MOORE
Texas A&M University Department of Oceanography PO Box 1675 Galveston, TX 77553	GYRE	182/55	1973/80	23	NAVY	Capt. Dean Letzring Mngr. Marine Operations PHONE: (409) 740-4465 FAX: (409) 740-4456 TELEMAIL: RV.GYRE
University of Texas Marine Science Institute Port Aransas, TX 78373	LONGHORN	105/32	1971/1986	12	U.T.	Mr. John Thompson Assoc. Director, Admin. PHONE: (512) 749-6760 FAX: (512) 749-6777

OPERATOR	NAME	LOA (FT/M)	BUILT/ CONVERTED	NO. of SCIENTISTS	OWNER	SHIP SCHED CONTACT
Louisiana Universities Marine Consortium Marine Research & Education Center Star Route Box 541 (Cocodrie) Chauvin, LA 70344	PELICAN	105/32	1985	15	LUMCON	Mr. Steve Rabalais Marine Ops. Supervisor PHONE: (504) 851-2808 FAX: (504) 851-2874 TELEMAIL: LUMCON
Harbor Branch Oceanographic Institution 5600 Old Dixie Highway Ft. Pierce, FL 34946	SEWARD JOHNSON EDWIN LINK	176/54 168/51	1984 1982/1988	20 20	H.B. H.B.	Mr. Tim Askew Marine Operations PHONE: (407) 465-2400 x25 FAX: (407) 465-2116 TELEMAIL: HBOI.SHIPS
University of Miami, RSMAS Marine Department 4600 Rickenbacker Causeway Miami, FL 33149	COLUMBUS ISELIN CALANUS	170/52 64/20	1972 1971	24 6	U.M. U.M.	Mr. Ronald Hutchinson Marine Operations PHONE: (305) 361-4880 FAX: (305) 365-0840 TELEMAIL: R.HUTCHINSON
University System of Georgia Skidaway Institute of Oceanography P.O. Box 13687 Savannah, GA 31416-0687	BLUE FIN	72/22	1972/1975	8	U.G.	Mr. Lee Knight Assist. Director, Operations PHONE: (912) 356-2486 FAX: (912) 356-2751 TELEMAIL: D.MENZEL
Duke/UNC Oceanographic Consortium Duke University Marine Laboratory Beaufort, NC 28516	CAPE HATTERAS	135/41	1981	12	NSF	Mr. Quentin Lewis Marine Superintendent PHONE: (919) 728-3372 FAX: (919) 728-2514 TELEMAIL: DUKE.UNC
University of Delaware College of Marine Studies 700 Pilottown Road Lewes, DE 19958	CAPE HENLOPEN	120/37	1976	12	U.D.	Mr. Wadsworth Owen Director, Marine Operations PHONE: (302) 645-4320 FAX: (302) 645-4006 TELEMAIL: W.OWEN
Lamont-Doherty Geological Observatory Columbia University Palisades, NY 10964	MAURICE EWING	239/73	1983/1990	32	L-DGO	Mr. Michael Rawson Marine Sci. Coordinator PHONE: (914) 359-2900 x3f FAX: (914) 359-6817 TELEMAIL: M.RAWSON.LDG
University of Rhode Island Graduate School of Oceanography Narragansett, RI 02882	ENDEAVOR	177/54	1976	16	NSF	Mr. William Hahn Marine Superintendent PHONE: (401) 792-6203 FAX: (401) 792-6574 TELEMAIL: RHODE.ISLAND
Woods Hole Oceanographic Institution Woods Hole, MA 02543	KNORR ATLANTIS II OCEANUS DSRV ALVIN	279/85 210/64 177/54 25.8	1970/1989 1963 1975 1964	34 *29 12 2	NAVY WHOI NSF NAVY	Mr. Donald Moller Marine Ops. Admin. PHONE: (508) 548-1400 x22 FAX: (508) 457-2185 TELEMAIL: D.MOLLER or WOODS.HOLE
Bermuda Biological Station for Research Inc. 17 Biological Station Lane Ferry Reach St. George's GE-01 BERMUDA	WHEATHERBIRD II	115/35	1982/1989	10	BBSR	Mr. Howard S. Barnes Operations PHONE: (809) 297-1880 FAX: (809) 297-8143

\*20 Scientists, plus 9 ALVIN group

# APPENDIX V

# UNOLS ADVISORY COUNCIL

1971-1976. Comprised of four members from Member Institutions and three from Associate Members Institutions.

1977-1988. Increased membership in the Advisory Council to eight - five from Member Institutions, and three from Associate Member Institutions.

Rev. 10/82

## 1971-1972

	Expires	
J.V. Byrne, OSU, Chair	5/75	
D.W. Menzel, SKIO	5/74	
R.A. Ragotzkie, U/WISC	5/73	
H.M. Stommel, MIT	5/74	
W.S. Wooster, SIO	5/73	
J.P. Craven, U/HAWAII	5/75	
C.L. Drake, DARTMOUTH	(resigned)	
A.E. Maxwell, WHOI, ex-officio		UNOLS CH
J.M. Savage, USC, ex-officio		UNOLS V-CH

## 1975-1976

	Expires	
R.C. Dugdale, BIGELOW, Chair	5/77	
P.L. Parker, U/TEXAS	7/76	
A.F. Richards, LEHIGH	7/76	
T.K. Treadwell, TAMU	5/78	
D. Hood, U/ALASKA	5/76	
F. Webster, WHOI	5/77	
J.A. Knauss, URI, ex-officio		UNOLS CH
G.G. Shor, SIO, ex-officio		UNOLS V-CH

## 1972-73

	Expires	
J.V. Byrne, OSU, Chair	5/75	
D.W. Menzel, SKIO	5/74	
R.A. Ragotzkie, U/WISC	5/73	
A.F. Richards, LEHIGH	5/73	
H.M. Stommel, MIT	5/74	
W.S. Wooster, SIO	5/73	
J.P. Craven, U/HAWAII	5/75	
A.E. Maxwell, WHOI, ex-officio		UNOLS CH
J.M. Savage, USC, ex-officio		UNOLS V-CH

## 1976-1977

	Expires	
R.C. Dugdale, BIGELOW, Chair	5/77	
R.T. Barber, DUKE	5/79	
D. Frankenberg, UNC	5/79	
M.G. Gross, JHU	5/78	
G.H. Keller, OSU	5/77	
J.H. Martin, MLML	5/79	
T.K. Treadwell, TAMU	5/78	
W.S. Wooster, U/WA, ex-officio		UNOLS CH
F. Webster, WHOI, ex-officio		UNOLS V-CH

## 1973-1974

	Expires	
J.V. Byrne, OSU, Chair	5/75	
J.P. Craven, U/HAWAII	5/75	
D.W. Menzel, SKIO	5/74	
R.A. Ragotzkie, U/WISC	5/74	
A.F. Richards, LEHIGH	5/76	
H.M. Stommel, MIT	5/74	
P.L. Parker, U/TEXAS	7/76	
R.C. Dugdale, U/WA	7/76	
R. Colwell, U/MARYLAND	(Interim Appointee)	
A.E. Maxwell, WHOI, ex-officio		UNOLS CH
J.M. Savage, USC, ex-officio		UNOLS V-CH

## 1977-1978

	Term	
G.H. Keller, OSU, Chair	7/76-6/80	
D. Frankenberg, UNC, V-Chair	7/76-6/79	
R.T. Barber, DUKE	7/76-6/79	
R.L. Fisher, SIO	7/77-6/80	
M.G. Gross, JHU	7/75-6/80	
J.H. Martin, MLML	7/76-6/79	
J.R. Schubel, SUNY	7/77-6/80	
T.K. Treadwell, TAMU	7/75-6/78	
W.S. Wooster, U/WA, ex-officio		7/76-6/78 UNOLS CH
F. Webster, WHOI, ex-officio		7/76-6/78 UNOLS V-CH

## 1974-1975

	Expires	
J.V. Byrne, SIO, Acting Chair	5/75	
P.L. Parker, U/TEXAS	7/76	
A.F. Richards, LEHIGH	7/76	
W.S. Richardson, NOVA U, Chair	(deceased)	
R.J. Wold, U/WISC	(resigned)	
R.C. Dugdale, U/WA	5/76	
J.P. Craven, U/HAWAII	5/76	
J.A. Knauss, URI, ex-officio		UNOLS CH
G.G. Shor, SIO, ex-officio		UNOLS V-CH

## 1978-1979

	Term	
G.H. Keller, OSU, Chair	7/76-6/80	
R.T. Barber, DUKE, V-Chair	7/76-6/79	
G.C. Anderson, U/WA	7/78-6/81	
R.L. Fisher, SIO	7/77-6/80	
J.H. Martin, MLML	7/76-6/79	
W.B.F. Ryan, L-DGO	7/78-6/81	
J.R. Schubel, SUNY/STONY BROOK	7/77-6/81	
J.M. Zeigler, VIMS	7/78-6/81	
T.K. Treadwell, TAMU, ex-officio		7/78-6/79 UNOLS CH
A.F. Richards, LEHIGH, ex-officio		7/78-6/79 UNOLS V-CH

# UNOLS ADVISORY COUNCIL

1971-1976. Comprised of four members from Member Institutions and three from Associate Members Institutions.

1977-1988. Increased membership in the Advisory Council to eight - five from Member Institutions, and three from Associate Member Institutions.

## 1979-1980

	Term	
G.C. Anderson, U/WA, Chair	7/78-6/81	
J.R. Schubel, SUNY/SB, V-Chair	7/77-6/80	
G.H. Kaller, OSU	7/76-6/80	
B.H. Robison, UCSB	7/79-6/82	
H.T. Rossby, URI	7/79-6/82	
W.B.F.	Ryan, L-DGO	
	7/78-6/81	
R.L. Fisher, SIO	7/77-6/80	
J.M. Zeigler, VIMS	7/78-6/81	
T.K. Treadwell, TAMU, ex-officio	7/78-6/80 UNOLS CH	
J.H. Martin, MLML, ex-officio	7/79-6/80 UNOLS V-CH	

## 1980-1981

	Term	
G.C. Anderson, U/WA, Chair	7/78-6/81	
H.T. Rossby, URI, V-Chair	7/78-6/82	
B.H. Robison, UCSB	7/79-6/82	
C.B. Miller, OSU	7/70-6/83	
W.B.F.	Ryan, L-DGO	
	7/78-6/81	
W.M. Sackett, U/S FL	7/80-6/83	
D.W. Spencer, WHOI	7/80-6/83	
J.M. Zeigler, VIMS	7/78-6/81	
T.K. Treadwell, TAMU, ex-officio	7/79-6/81 UNOLS CH	
J.H. Martin, MLML, ex-officio	7/79-6/81 UNOLS V-CH	

## 1981-1982

	Term	
B.H. Robison, UCSB, Chair	7/79-6/82	
H.T. Rossby, URI, V-Chair	7/79-6/82	
R.W. Corell, UNH	7/81-6/84	
J.R. Curray, SIO	7/81-6/83	
D.S. Gorsline, USC	7/81-6/84	
C.B. Miller, OSU	7/80-6/83	
W.M. Sackett, U/S FL	7/80-6/83	
J.C. Van Leer, U/MIAMI	7/80-6/83	
D.W. Spencer, WHOI, ex-officio	7/81-6/82 UNOLS CH	
D. Frankenberg, UNC, ex-officio	7/81-6/82 UNOLS V-CH	

## 1982-83

	Term	
B.H. Robison, UCSB, Chair	7/82-6/85	
J.R. Curray, SIO, V-Chair	7/82-6/85	
R.W. Corell, UNH	7/81-6/84	
D.S. Gorsline, USC	7/81-6/84	
R.L. Larson, URI	7/82-6/85	
C.B. Miller, OSU	7/80-6/83	
W.B. Sackett, U/S FL	7/80-6/83	
J.C. Van Leer, U/MIAMI	7/80-6/83	
D.W. Spencer, WHOI, ex-officio	7/82-6/83 UNOLS CH	
D. Frankenberg, UNC, ex-officio	7/82-6/83 UNOLS V-CH	

## 1983-1984

	Term	
C.B. Miller, OSU, Chair	7/80-6/86	
H.B. Stewart, Jr., Old Dominion U, V-Chair	7/83-6/86	
R.W. Corell, UNH	7/81-6/84	
R.P. Dinsmore, WHOI	7/83-6/86	
D.S. Gorsline, USC	7/81-6/85	
R. Larson, URI	7/82-6/85	
B.H. Robison, UCSB	7/79-6/85	
J.C. Van Leer, U/MIAMI	7/81-6/84	
F. Webster, U/DEL, ex-officio	7/83-6/84 UNOLS CH	
J.R. Curray, SIO, ex-officio	7/83-6/84 UNOLS V-CH	

## 1984-1985

	Term	
C.B. Miller, OSU, Chair	7/80-6/86	
H.B. Stewart, Jr., Old Dominion U, V-Chair	7/83-6/86	
R.P. Dinsmore, WHOI	7/83-6/86	
D.S. Gorsline, USC	7/81-6/84	
B.H. Robison, UCSB	7/79-6/85	
A.E. Maxwell, U/TX, Austin	7/84-6/87	
C.J. Lorenzen, U/WA	7/84-6/87	
T. Malone, U/MD	7/84-6/87	
F. Webster, U/DEL, ex-officio	7/83-6/84 UNOLS CH	
R.W. Corell, UNH, ex-officio	7/84/6/85 UNOLS V-CH	

## 1985-1986

	Term	
C.B. Miller, OSU, Chair	7/80-6/86	
T. Malone, U/MD, V-Chair	7/84-6/87	
R.P. Dinsmore, WHOI	7/83-6/86	
C.J. Lorenzen, U/WA	7/84-6/87	
J.H. Martin, MLML	7/85-6/88	
A.E. Maxwell, U/TX, Austin	7/84-6/87	
C.N. Mooers, NPS	7/85-6/88	
H.B. Stewart, Jr., Old Dominion U	7/83-6/86	
F. Webster, U/DEL, ex-officio	7/83-6/86 UNOLS CH	
R.W. Corell, UNH, ex-officio	7/81-6/86 UNOLS V-CH	

## 1986-1987

	Term	
J.H. Martin, MLML, Chair	7/85-6/88	
T. Malone, U/MD, V-Chair	7/84-6/87	
R.P. Dinsmore, WHOI	7/83-6/89	
P.J. Fox, URI	10/86-6/87	
R.A. Knox, SIO	7/86-6/89	
K.C. MacDonald, UCSB	7/86-6/89	
A.E. Maxwell, U/TX, Austin	7/84-6/87	
C.S. Yentsch, Bigelow	10/86-6/88	
G.H. Kaller, OSU, ex-officio	7/86-6/88 UNOLS CH	
R.W. Corell, UNH, ex-officio	7/84-1/87 UNOLS V-CH	

# UNOLS ADVISORY COUNCIL

**1971-1976.** Comprised of four members from Member Institutions and three from Associate Members Institutions.

**1977-1988.** Increased membership in the Advisory Council to eight - five from Member Institutions, and three from Associate Member Institutions.

## 1987-1988

	Term	
J.H. Martin, MLML, Chair	7/85-10/88	
T. Malone, U/MD, V-Chair	7/84-10/90	
R.P. Dinsmore, WHOI	7/83-10/89	
R.A. Knox, SIO	7/86-10/89	
T.C. Johnson, Duke/UNC	7/87-10/90	
A.E. Maxwell, U/TX, Austin	7/84-10/90	
J.P. Kennett, UCSB	7/87-10/89	
C.S. Yentsch, Bigelow	10/86-10/88	
G.H. Keller, OSU, ex-officio	7/86-10/88 UNOLS CH	
J. Langfelder, HBOI	10/87-10/89 UNOLS V-CH	
resigned 4/88		

## 1990-1991

	Term	
G.W. Brass, U/Miami, Chair	10/90-10/92	
T.C. Johnson, Duke/UNC, V-Chair	10/87-10/92	
L.P. Atkinson, Old Dominion U	10/88-10/91	
P. Betzer, U/S FL	10/89-10/92	
D.S. Gorsline, USC	2/91-10/91	
P.J. Fox, URI	10/88-10/91	
G.D. Grice, WHOI *	10/90-10/93	
D.M. Karl, U/Hawaii	10/90-10/93	
W.D. Nowlin, TAMU *	10/89-10/92	
F.D. Jennings, TAMU, ex-officio	10/88-10/9X ARC CH	
M.G. Langseth, L-DGO, ex-officio	10/90-10/9X FIC CH	
K.M. Palfrey, OSU, ex-officio	10/90-10/9X SSC CH	
J.G. Williams, SIO, ex-officio	10/88-10/9X ROVC CH	

\* Resigned 10/91

## UNOLS COUNCIL

In October 1988, the Advisory Council was reconstituted as the UNOLS Council

## 1988-1989

	Term	
G.H. Keller, OSU, Chair	7/86-10/90	
T.C. Johnson, Duke/UNC, V-Chair	10/87-10/90	
L.P. Atkinson, Old Dominion U	10/88-10/91	
G.W. Brass, U/MIAMI	10/88-10/91	
R.P. Dinsmore, WHOI	7/83-10/89	
P.J. Fox, URI	10/88-10/91	
J.P. Kennett, UCSB	10/87-10/89	
R.A. Knox, SIO	7/86-10/89	
T.C. Malone, U/MD	7/84-10/90	
A.E. Maxwell, U/TX, Austin	7/84-10/90	
F.D. Jennings, TAMU, ex-officio	10/88-10/9X ARC CH	
W.D. Nowlin, TAMU, ex-officio	10/89-10/9X FIC CH	
G.G. Shor, Jr., SIO, ex-officio	10/89-10/9X SSC CH	
J.G. Williams, SIO, ex-officio	10/88-10/90 RVOC CH	

## 1989-1990

	Term	
G.H. Keller, OSU, Chair	7/86-10/90	
T.C. Johnson, Duke/UNC, V-Chair	10/87-10/90	
L.P. Atkinson, Old Dominion U	10/88-10/91	
P. Betzer, U/S FL	10/89-10/92	
G.W. Brass, U/MIAMI	10/88-10/91	
P.J. Fox, URI	10/88-10/91	
T.C. Malone, U/MD	7/84-10/90	
A.E. Maxwell, U/TX, Austin	7/84-10/90	
W.D. Nowlin, TAMU	10/89-10/92	
F.D. Jennings, TAMU, ex-officio	10/88-10/9X ARC CH	
D.S. Gorsline, USC, ex-officio	10/89-10/9X FIC CH	
M. Rawson, L-DGO, ex-officio	10/89-10/9X SSC CH	
J.G. Williams, SIO, ex-officio	10/88-10/90 RVOC CH	

## 1991-1992

	Term	
G.W. Brass, U/Miami, Chair	10/90-10/92	
T.C. Johnson, Duke/UNC, V-Chair	10/87-10/92	
P. Betzer, U/S FL	10/89-10/92	
P.J. Fox, URI	10/88-10/92	
D.E. Hayes, L-DGO	10/91-10/94	
R. Jahnke, Skidaway	10/91-10/94	
D.M. Karl, U/Hawaii	10/90-10/93	
R.A. Knox, Scripps	10/91-10/93	
C.A. Nittrouer, SUNY	10/91-10/94	
F.D. Jennings, TAMU, ex-officio	10/88-10/9X ARC CH	
M.G. Langseth, L-DGO, ex-officio	10/90-10/9X FIC CH	
K.M. Palfrey, OSU, ex-officio	10/90-10/9X SSC CH	
J.G. Williams, SIO, ex-officio	10/88-10/9X ROVC CH	

## 1992-1993

	Term	
G.W. Brass, U/Miami, Chair	10/90-10/94	
P. Betzer, U/S FL, V-Chair	10/92-10/94	
D.E. Hayes, L-DGO	10/91-10/94	
R. Jahnke, Skidaway	10/91-10/94	
D.M. Karl, U/Hawaii	10/90-10/93	
R.A. Knox, Scripps	10/91-10/93	
C.A. Nittrouer, SUNY	10/91-10/94	
R. Piitenger, WHOI	10/92-10/95	
R. Wall, U/Miami	10/92-10/95	
P.J. Fox, URI, ex-officio	10/92-10/9X DeSSC CH	
M.G. Langseth, L-DGO, ex-officio	10/90-10/9X FIC CH	
K.M. Palfrey, OSU, ex-officio	10/90-10/9X SSC CH	
M. Prince, MLML, ex-officio	10/92-10/9X ROVC CH	

# APPENDIX VI



**UNOLS Chairman and Vice-Chairman  
Advisory Council Chairman and Vice-Chairman and Executive Secretary  
(Executive Committee consists of UNOLS Chairman and Vice-Chairman,  
Advisory Council Chairman and Executive Secretary)**

May 1971-1972

A. E. Maxwell, WHOI	UNOLS CH.
J. M. Savage, USC	UNOLS V-CH.
J. V. Byrne, OSU	A/C CH.
R. P. Dinsmore, UNOLS	E/S

May 1972-1973

A. E. Maxwell, WHOI	UNOLS CH.
J. M. Savage, USC	UNOLS V-CH.
J. V. Byrne, OSU	A/C CH.
R. P. Dinsmore, UNOLS	E/S

May 1973-1974

A. E. Maxwell, WHOI	UNOLS CH.
J. M. Savage, USC	UNOLS V-CH.
J. V. Byrne, OSU	A/C CH.
R. P. Dinsmore, UNOLS	E/S

May 1974-1975

J. A. Knauss, URI	UNOLS CH.
G. C. Shor, SIO	UNOLS V-CH.
R. C. Dugdale, BIGELOW	A/C CH.
R. P. Dinsmore, UNOLS	E/S

May 1975-1976

J. A. Knauss, URI	UNOLS CH.
G. C. Shor, SIO	UNOLS V-CH.
R. C. Dugdale, BIGELOW	A/C CH.
R. P. Dinsmore, UNOLS	E/S

May 1976-1977

W. S. Wooster, U/WA	UNOLS CH.
T. F. Webster, WHOI	UNOLS V-CH.
R. C. Dugdale, BIGELOW	A/C CH.
T. R. Stetson, UNOLS	E/S

May 1977-1978

W. S. Wooster, U/WA	UNOLS CH.
T. F. Webster, WHOI	UNOLS V-CH.
G. H. Keller, OSU	A/C CH.
D. Frankenberg, UNC	A/C V-CH.
T. R. Stetson, UNOLS	E/S

May 1978-1979

T. K. Treadwell, TAMU	UNOLS CH.
A. F. Richards, LEHIGH	UNOLS V-CH.
G. H. Keller, OSU	A/C CH.
R. T. Barber, DUKE	A/C V-CH.
T. R. Stetson, UNOLS	E/S

May 1979-1980

T. K. Treadwell, TAMU	UNOLS CH.
J. H. Martin, MLML	UNOLS V-CH.
G. C. Anderson, U/WA	A/C CH.
J. R. Schubel, SUNY/SB	A/C V-CH.
T. R. Stetson, UNOLS	E/S

May 1980-1981

T. K. Treadwell, TAMU	UNOLS CH.
J. H. Martin, MLML	UNOLS V-CH.
G. C. Anderson, U/WA	A/C CH.
H. T. Rossby, URI	A/C V-CH.
T. R. Stetson, UNOLS	E/S

May 1981-1982

D. W. Spencer, WHOI	UNOLS CH.
D. Frankenberg, UNC/CH	UNOLS V-CH.
B. H. Robison, UCSB	A/C CH.
H. T. Rossby, URI	A/C V-CH.
T. R. Stetson, UNOLS	E/S

May 1982-1983

D. W. Spencer, WHOI	UNOLS CH.
D. Frankenberg, UNC/CH	UNOLS V-CH.
B. H. Robison, UCSB	A/C CH.
J. R. Curray, SCRIPPS	A/C V-CH.
W. D. Barbee, UNOLS	E/S

May 1983-1984

F. Webster, U/DEL	UNOLS CH.
J. R. Curray, SCRIPPS	UNOLS V-CH.
C. B. Miller, OSU	A/C CH.
H. B. Stewart, OLD DOM	A/C V-CH.
W. D. Barbee, UNOLS	E/S

May 1984-1985

F. Webster, U/DEL	UNOLS CH.
R. W. Corell, U/NH	UNOLS V-CH.
C. B. Miller, OSU	A/C CH.
H. B. Stewart, OLD DOM	A/C V-CH.
W. D. Barbee, UNOLS	E/S

May 1985-1986

F. Webster, U/DEL	UNOLS CH.
R. W. Corell, U/NH	UNOLS V-CH.
C. B. Miller, OSU	A/C CH.
T. Malone, U/MD	A/C V-CH.
W. D. Barbee, UNOLS	E/S

UNOLS Chairman and Vice-Chairman  
Advisory Council Chairman and Vice-Chairman and Executive Secretary  
(Executive Committee consists of UNOLS Chairman and Vice-Chairman,  
Advisory Council Chairman and Executive Secretary)

May 1986-Oct 1987

G. H. Keller, OSU	UNOLS CH.
R. W. Corell, U/NH *	UNOLS V-CH.
J. H. Martin, MLML	A/C CH.
T. Malone, U/MD	A/C V-CH.
W. D. Barbee, UNOLS	E/S

\* resigned 1/28/87

Oct 1987-Sept 1988

G. H. Keller, OSU	UNOLS CH.
J. Langfelder, HBR.BR.	UNOLS V-CH.
J. H. Martin, MLML	A/C CH.
T. Malone, U/MD	A/C V-CH.
W. D. Barbee, UNOLS	E/S

In 1988 the UNOLS Charter was revised,  
the Executive Committee was redefined  
to include the UNOLS Chair, Vice-Chair  
and two members elected from the  
UNOLS Council.

Sept 1988-1989

G. H. Keller, OSU	UNOLS CH.
T. C. Johnson, DUKE/UNC	UNOLS V-CH.
R. A. Knox, SCRIPPS	UNOLS Council
A. E. Maxwell, U/TX	UNOLS Council

Sept 1989-1990

G. H. Keller, OSU	UNOLS CH.
T. C. Johnson, DUKE/UNC	UNOLS V-CH.
G. W. Brass, U/MIAMI	UNOLS Council
W. D. Knowlin, TAMU	UNOLS Council

Sept 1990-1991

G. W. Brass, U/Miami	UNOLS CH.
T. C. Johnson, DUKE/UNC	UNOLS V-CH.
K. M. Palfrey, OSU	UNOLS Council
L. P. Atkinson, OLD DOM	UNOLS Council

Oct 1991-1992

G. W. Brass, U/Miami	UNOLS CH.
T. C. Johnson, DUKE/UNC	UNOLS V-CH.
K. M. Palfrey, OSU	UNOLS Council
D. M. Karl, U/Hawaii	UNOLS Council

Sept 1992-1993

G. W. Brass, U/Miami	UNOLS CH.
P. Betzer, U/ S FL	UNOLS V-CH.
K. M. Palfrey, OSU	UNOLS Council
D. M. Karl, U/Hawaii	UNOLS Council

## **APPENDIX VII**

# MARINE OPERATIONS CONTACT

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

Rev. (9/92)

OPERATOR	NAME	LOA (FT./M)	BUILT/ CONVERTED	CREW	NO. of SCI.	OWNER	MARINE OPS. CONTACT
University of Hawaii Marine Center #1 Sand Island Road Honolulu, HI 96819	MOANA WAVE	210/64	1973/1984	16	19	NAVY	Capt. J.W. Coste Marine Superintendent PHONE: (808) 847-2661 FAX: (808) 848-5451
University of Alaska Institute of Marine Science Fairbanks, AK 99701	ALPHA HELIX	133/41	1966	9	15	NSF	Mr. Thomas Smith Marine Superintendent PHONE: (907) 224-5261 FAX: (907) 224-3392
University of Washington School of Oceanography, WB-10 Seattle, WA 98195	T. G. THOMPSON C.A. BARNES	274/84 66/20	1991 1966/1984	22 2	26 6	NAVY NSF	Mr. Robert Hinton Marine Superintendent PHONE: (206) 543-5062 FAX: (206) 543-6073
Oregon State University College of Oceanography Newport, OR 97365	WECOMA	177/54	1975	13	20	NSF	Capt. Kennard M. Palfrey Marine Superintendent PHONE: (503) 867-0224 FAX: (503) 867-3733
Moss Landing Marine Laboratories PO Box 450 Moss Landing, CA 95039	POINT SUR	135/41	1981	9	12	NSF	Mr. Michael Prince Marine Superintendent PHONE: (408) 633-3534 FAX: (408) 633-4580
University of Southern California Hancock Institute for Marine Studies 820 South Seaside Avenue Terminal Island, CA 90731	VICKERS	220/67	1973/1989	14	25	USC	Mr. Don Newman, Mgr. Marine Support Facility PHONE: (213) 743-6977 830-4570 FAX: (213) 830-6328
University of California, San Diego Scripps Institution of Oceanography La Jolla, CA 92093-0210	MELVILLE T. WASHINGTON NEW HORIZON R.G. SPROUL	279/86 209/64 170/52 125/38	1969/1990-1 1965 1978 1981/1985	23 23 12 5	35 22 13 12	NAVY NAVY U.C. U.C.	Capt. Jim Williams Marine Facilities Code P-005 PHONE: (619) 225-9600 FAX: (619) 534-1635
University of Michigan Center for Great Lakes & Aquatic Sciences 2200 Bonisteel Boulevard Ann Arbor, MI 48109-2099	LAURENTIAN	80/24	1974	6	8	U.M.	Dr. Linda Goad Marine Superintendent PHONE: (313) 763-5393 FAX: (313) 747-2748
Texas A&M University Department of Oceanography PO Box 1675 Galveston, TX 77553	GYRE	182/55	1973/1980	10	23	NAVY	Capt. Dean Letzring Manager, Marine Ops. PHONE: (409) 740-4469 FAX: (409) 740-4456
University of Texas Marine Science Institute Port Aransas, TX 78373	LONGHORN	105/32	1971/1986	4	12	U.T.	Mr. John Thompson Assoc. Director, Admin. PHONE: (512) 749-6760 FAX: (512) 749-6777
Louisiana Universities Marine Consortium Marine Research & Education Center Star Route Box 541 (Cocodrie) Chauvin, LA 70344	PELICAN	105/32	1985	5	15	LUMCON	Mr. Steve Rabalais Marine Ops. Supervisor PHONE: (504) 851-2808 FAX: (504) 851-2874
Harbor Branch Oceanographic Institution 5600 Old Dixie Highway Ft. Pierce, FL 34946	SEWARD JOHNSON EDWIN LINK	176/54 168/51	1984 1982/1988	10 10	20 20	H.B. H.B.	Mr. Tim Askew Marine Operations PHONE: (407) 465-2400 x FAX: (407) 465-2116

OPERATOR	NAME	LOA (FT/M)	BUILT/ CONVERTED	CREW	NO. of SCI.	OWNER	MARINE OPS	CONTACT
University of Miami, RSMAS Marine Department 4600 Rickenbacker Causeway Miami, FL 33149	COLUMBUS ISELIN	170/52	1972	12	24	U.M.		Mr. Ronald Hutchinson
	CALANUS	64/20	1971	2	6	U.M.		Marine Operations PHONE: (305) 381-4880 FAX: (305) 365-0840
University System of Georgia Skidaway Institute of Oceanography P.O. Box 13687 Savannah, GA 31416-0687	BLUE FIN	72/22	1972/1975	5	8	U.G.		Mr. Lee Knight Assist. Director, Operations PHONE: (912) 356-2486 FAX: (912) 356-2751
Duke/UNC Oceanographic Consortium Duke University Marine Laboratory Beaufort, NC 28516	CAPE HATTERAS	135/41	1981	10	12	NSF		Mr. Quentin Lewis Marine Superintendent PHONE: (919) 728-3372 FAX: (919) 728-2514
University of Delaware College of Marine Studies 700 Pilottown Road Lewes, DE 19958	CAPE HENLOPEN	120/37	1976	7	12	U.D.		Mr. Wadsworth Owen Director, Marine Operations PHONE: (302) 645-4320 FAX: (302) 645-4006
Lamont-Doherty Geological Observatory Columbia University Palisades, NY 10964	MAURICE EWING	239/73	1983/1990	18	32	L-DGO		Capt. Paul Ljunggren Marine Superintendent PHONE: (914) 359-2900 x3 FAX: (914) 359-6817
University of Rhode Island Graduate School of Oceanography Narragansett, RI 02882	ENDEAVOR	177/54	1976	12	16	NSF		Mr. William Hahn Marine Superintendent PHONE: (401) 792-8203 FAX: (401) 792-8574
Woods Hole Oceanographic Institution Woods Hole, MA 02543	KNORR	279/85	1970/1989	25	34	NAVY		Capt. Joe Coburn
	ATLANTIS II	210/64	1963	27	*29	WHOI		Manager, Marine Ops.
	OCEANUS	177/54	1975	12	12	NSF		PHONE: (508) 548-1400x2
	DSRV ALVIN	25.8	1964		2	NAVY		FAX: (508) 540-8675
Bermuda Biological Station for Research Inc. 17 Biological Station Lane Ferry Reach St. George's GE-01 BERMUDA	WHEATHERBIRD II	115/35	1982/1989	6	10	BBSR		Mr. Howard S. Barnes Operations PHONE: (809) 297-1880 FAX: (809) 297-8143

\*20 Scientists, plus 9 ALVIN group

## **APPENDIX VIII**

# UNOLS COUNCIL/COMMITTEES

rev. 10/92

## UNOLS COUNCIL (UC)

(305) 361-4690	Garry Brass, U Miami, (Chair)	10/90-10/92
(919) 728-2111	Tom Johnson, Duke/UNC, (V-Chair)	10/87-10/92
(813) 893-9630	Peter Betzer, U South Florida	10/89-10/92
(914) 359-2900	Dennis E. Hayes, L-DGO	10/91-10/94
(912) 598-2491	Richard Jahnke, Skidaway	10/91-10/94
(808) 956-8964	David Karl, U Hawaii	10/90-10/93
(619) 534-2094	Robert A. Knox, Scripps	10/91-10/93
(516) 632-8652	Charles A Nittrouer, State U New York	10/91-10/94
(401) 792-6229	Paul J. Fox, URI (Chair, DSSC)	09/92-10/95
(914) 359-2900 x 518	Marcus Langseth, L-DGO, (Chair, FIC)	10/90-10/9X
(503) 867-0224	Ken Palfrey, OSU, (Chair, Ship Scheduling)	10/90-10/9X
(619) 534-1643	Jim Williams, Scripps, (Chair, RVOC)	10/88-10/9X

## DEEP SUBMERGENCE SCIENCE COMMITTEE (DESSC)

(401) 792-6229	Paul J. Fox, URI (Chair)	7/92-6/95
(914) 359-2900	Daniel Fornari, L-DGO	7/92-6/95
(206) 526-6169	Hugh Milburn, NOAA	7/92-6/95
(408) 459-2574	James (Casey) Moore, UC Santa Cruz	7/87-6/93
(516) 632-8735	Mary Scranton, SUNY, Stony Brook	7/87-6/93
(908) 932-1326	Gary Taghon, Rutgers	7/89-6/95
(603) 862-1718	Karen Von Damm, UNH	7/90-6/93
(508) 548-2900	Carl Wirsén, WHOI	7/92-6/95
(508) 548-1400 x 2597	Richard Pittenger, WHOI, (ex-officio)	6/91-XXXX

## RESEARCH VESSEL OPERATORS' COMMITTEE (RVOC)

(619) 534-1643	Jim Williams, Scripps, (Chair)	10/88-10/92
(408) 633-3534	Michael Prince, MLML, (V-Chair)	9/91-10/93

## FLEET IMPROVEMENT COMMITTEE (FIC)

(914) 359-2900 x 518	Marcus Langseth, L-DGO, (Chair)	10/90-10/93
(813) 893-9630	Peter Betzer, U South Florida	10/90-10/93
(619) 534-6368	Teresa Chereskin, Scripps	10/90-10/93
(808) 956-7894	Eric Firing, U Hawaii	2/92-5/95
(408) 755-8657	Kenneth Johnson, MLML	10/89-10/92
(503) 737-4524	Charles Miller, OSU	10/90-10/93
(907) 474-7835	Thomas Royer, U Alaska	10/89-10/92
(804) 642-7267	L. Donelson Wright, VIMS	10/90-10/93
(305) 361-4690	Garry Brass, U Miami, (ex-officio)	10/90-10/9X


# APPENDIX IX



# UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

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

August 16, 1992

To: UNOLS Members  
From: Annette M. DeSilva   
UNOLS Office  
SUBJECT: UNOLS Ship Use Statistics, 1991

This transmits Summaries of UNOLS Research Vessel Fleet Operations for 1991. These UNOLS ship-use statistics cover the calendar year. Note that the 1991 summaries are in two parts: based on operational days and then on days at sea. Fleet totals were for 4,574 operational days and 4,169 sea days.

cc: UNOLS Council  
Fleet Improvement Committee  
Ship Scheduling Contacts  
Marine Superintendents  
NSF: Gross  
Heinrichs  
Reeve  
Dieter  
ONR: Hartwig  
Ramberg  
Kaulum  
DeSilva  
NOAA: Stubblefield  
Yeager, D.



UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

PAGE 1  
UNOLS OFFICE  
DATE: 07/29/92

CRUISE DAY PROFILES

AGENCY	PHYS. OCEAN	ACOUS. TICS	CHEM. OCEAN	BIOL. OCEAN	ENVIR. ECOL.	FISH. INVST	CLIM. METEO	GEOLO GEOPH	MAP CHRTG	OCEAN ENGIN	TRAIN ING	TRANS NONSCI	POLL ASSESS	OTHER	TOTAL
National Science Foundation	690.00	.00	444.00	699.00	21.00	3.00	.00	634.00	180.00	6.00	2.00	.00	.00	119.00	2798.00
Office of Naval Research	317.00	3.00	7.00	129.00	.00	.00	.00	62.00	42.00	5.00	10.00	.00	.00	62.00	637.00
U.S. Geological Survey	.00	.00	.00	.00	.00	.00	.00	16.00	.00	.00	.00	.00	.00	.00	16.00
Bureau of Land Management/Minerals Mgmt. Service	28.00	.00	.00	2.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	30.00
National Oceanic and Atmospheric Administration	53.00	.00	40.00	163.50	.00	.00	.00	41.50	.00	.00	.00	.00	5.00	63.00	366.00
Department of Energy (ERDA)	14.00	.00	7.00	14.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	35.00
Other Federal	37.00	.00	.00	14.00	6.00	.00	.00	.00	.00	.00	.00	.00	6.00	8.00	71.00
State/Municipal	4.00	.00	206.00	26.00	.00	.00	.00	7.00	.00	2.00	39.00	.00	5.00	.00	289.00
Other/Private	13.00	.00	17.00	94.00	.00	13.00	.00	62.00	8.00	26.00	19.00	.00	2.00	78.00	332.00
<b>TOTALS</b>	<b>1156.00</b>	<b>3.00</b>	<b>721.00</b>	<b>1141.50</b>	<b>27.00</b>	<b>16.00</b>	<b>.00</b>	<b>822.50</b>	<b>230.00</b>	<b>39.00</b>	<b>70.00</b>	<b>.00</b>	<b>18.00</b>	<b>330.00</b>	<b>4574.00</b>
<b>PERCENT</b>	<b>25.27</b>	<b>.07</b>	<b>15.76</b>	<b>24.96</b>	<b>.59</b>	<b>.35</b>	<b>.00</b>	<b>17.98</b>	<b>5.03</b>	<b>.85</b>	<b>1.53</b>	<b>.00</b>	<b>.39</b>	<b>7.21</b>	<b>100.00</b>

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

CRUISE DAY PROFILES

INSTITUTION	PHYS. OCEAN	ACOUS- TICS	CHEM. OCEAN	BIOL. OCEAN	ENVIR. ECOL.	FISH. INVST	CLIM. METEO	GEOLO. GEOPH	MAP. CHRTG	OCEAN. ENGIN	TRAIN. ING	TRANS. NONSCI	POLL. ASSESS	OTHER	TOTAL
University of Hawaii	148.00	.00	35.00	35.00	.00	.00	.00	51.00	.00	.00	.00	.00	.00	.00	269.00
University of Alaska	68.00	.00	4.00	37.00	.00	.00	.00	3.00	.00	.00	.00	.00	.00	.00	112.00
University of Washington	69.00	.00	24.00	93.00	.00	3.00	.00	5.00	29.00	1.00	13.00	.00	.00	1.00	238.00
Oregon State University	139.00	.00	21.00	21.00	.00	.00	.00	13.00	.00	.00	.00	.00	.00	8.00	202.00
Scripps Institution of Oceanography	264.00	.00	17.00	135.00	.00	.00	.00	244.00	.00	3.00	3.00	.00	.00	13.00	679.00
Texas A & M University	.00	.00	209.00	.00	.00	.00	.00	6.00	.00	.00	7.00	.00	.00	.00	222.00
University of Texas	30.00	.00	.00	18.00	.00	13.00	.00	20.00	.00	.00	17.00	.00	.00	12.00	110.00
University of Miami, RSMAS	105.00	3.00	56.00	93.00	21.00	.00	.00	82.00	.00	.00	1.00	.00	5.00	.00	366.00
University of Georgia, Skidaway	3.00	.00	7.00	39.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	49.00
Duke University/University of North Carolina	8.00	.00	28.00	97.00	.00	.00	.00	24.00	13.00	.00	.00	.00	.00	55.00	225.00
Johns Hopkins University	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
University of Delaware	18.00	.00	76.00	59.00	.00	.00	.00	5.00	.00	.00	.00	.00	.00	.00	158.00
Lamont-Doherty Geological Observatory	.00	.00	.00	.00	.00	.00	.00	129.00	172.00	.00	.00	.00	.00	.00	301.00
University of Rhode Island	99.00	.00	.00	58.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	40.00	197.00
Woods Hole Oceanographic Institution	108.00	.00	10.00	114.00	.00	.00	.00	202.00	.00	11.00	.00	.00	.00	59.00	504.00
University of Michigan	3.00	.00	.00	36.00	.00	.00	.00	23.00	.00	.00	8.00	.00	11.00	2.00	83.00
Moss Landing Marine Laboratory	57.00	.00	25.00	45.00	6.00	.00	.00	.00	.00	2.00	20.00	.00	.00	.00	155.00
Louisiana Universities Marine Consortium	27.00	.00	.00	49.00	.00	.00	.00	.00	.00	19.00	1.00	.00	2.00	.00	98.00
Harbor Branch Oceanographic Institution	10.00	.00	54.00	201.50	.00	.00	.00	12.50	.00	3.00	.00	.00	.00	140.00	421.00
Bermuda Biological Station for Research	.00	.00	155.00	11.00	.00	.00	.00	3.00	16.00	.00	.00	.00	.00	.00	185.00
<b>TOTALS</b>	<b>1156.00</b>	<b>3.00</b>	<b>721.00</b>	<b>1141.50</b>	<b>27.00</b>	<b>16.00</b>	<b>0.00</b>	<b>822.50</b>	<b>230.00</b>	<b>39.00</b>	<b>70.00</b>	<b>0.00</b>	<b>18.00</b>	<b>330.00</b>	<b>4574.00</b>
<b>PERCENT</b>	<b>25.27</b>	<b>0.07</b>	<b>15.76</b>	<b>24.96</b>	<b>0.59</b>	<b>0.35</b>	<b>0.00</b>	<b>17.98</b>	<b>5.03</b>	<b>0.85</b>	<b>1.53</b>	<b>0.00</b>	<b>0.39</b>	<b>7.21</b>	<b>100.00</b>

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

CRUISE DAY PROFILES

VESSELS	PHYS.	ACOUS.	CHEM.	BIOL.	ENVIR.	FISH.	CLIM.	GEOLO	MAP	OCEAN	TRAIN.	TRANS.	POLL.	OTHER	TOTAL
	OCEAN	TICS	OCEAN	OCEAN	ECOL.	INVST	METEO	GEOPH	CHRTG	ENGIN	ING	NONSCI	ASSESS		
T THOMPSON	30.00	00	00	22.00	00	00	00	00	29.00	00	00	00	00	00	81.00
EWING	00	00	00	00	00	00	00	129.00	172.00	00	00	00	00	00	301.00
MOANA WAVE	148.00	00	35.00	35.00	00	00	00	51.00	00	00	00	00	00	00	269.00
ATLANTIS II	00	00	00	87.00	00	00	00	185.00	00	11.00	00	00	00	9.00	292.00
T. WASHINGTON	126.00	00	00	00	00	00	00	198.00	00	00	00	00	00	12.00	336.00
WECOMA	139.00	00	21.00	21.00	00	00	00	13.00	00	00	00	00	00	8.00	202.00
ENDEAVOR	99.00	00	00	58.00	00	00	00	00	00	00	00	00	00	40.00	197.00
OCEANUS	108.00	00	10.00	27.00	00	00	00	17.00	00	00	00	00	00	50.00	212.00
SEWARD JOHNSON	00	00	34.00	112.50	00	00	00	12.50	00	00	00	00	00	67.00	226.00
GYRE	00	00	209.00	00	00	00	00	6.00	00	00	7.00	00	00	00	222.00
NEW HORIZON	75.00	00	14.00	89.00	00	00	00	25.00	00	3.00	00	00	00	1.00	207.00
ISELIN	49.00	00	55.00	75.00	21.00	00	00	39.00	00	00	00	00	00	00	239.00
EDWIN LINK	10.00	00	20.00	89.00	00	00	00	00	00	3.00	00	00	00	73.00	195.00
POINT SUR	57.00	00	25.00	45.00	6.00	00	00	00	00	2.00	20.00	00	00	00	155.00
CAPE HATTERAS	8.00	00	28.00	97.00	00	00	00	24.00	13.00	00	00	00	00	55.00	225.00
ALPHA HELIX	68.00	00	4.00	37.00	00	00	00	3.00	00	00	00	00	00	00	112.00
ROBERT G. SPROUL	63.00	00	3.00	46.00	00	00	00	21.00	00	00	3.00	00	00	00	136.00
CAPE HENLOPEN	18.00	00	76.00	59.00	00	00	00	5.00	00	00	00	00	00	00	158.00
WEATHERBIRD II	00	00	155.00	11.00	00	00	00	3.00	16.00	00	00	00	00	00	185.00
WARFIELD	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
PELICAN	27.00	00	00	49.00	00	00	00	00	00	19.00	1.00	00	2.00	00	98.00
LAURENTIAN	3.00	00	00	36.00	00	00	00	23.00	00	00	8.00	00	11.00	2.00	83.00
LONGHORN	30.00	00	00	18.00	00	13.00	00	20.00	00	00	17.00	00	00	12.00	110.00
BLUE FIN	3.00	00	7.00	39.00	00	00	00	00	00	00	00	00	00	00	49.00
CLIFFORD A. BARNES	39.00	00	24.00	71.00	00	3.00	00	5.00	00	1.00	13.00	00	00	1.00	157.00
CALANUS	56.00	3.00	1.00	18.00	00	00	00	43.00	00	00	1.00	00	5.00	00	127.00
<b>TOTALS</b>	<b>1156.00</b>	<b>3.00</b>	<b>721.00</b>	<b>1141.50</b>	<b>27.00</b>	<b>16.00</b>	<b>00</b>	<b>822.50</b>	<b>230.00</b>	<b>39.00</b>	<b>70.00</b>	<b>00</b>	<b>18.00</b>	<b>330.00</b>	<b>4574.00</b>
<b>PERCENT</b>	<b>25.27</b>	<b>.07</b>	<b>15.76</b>	<b>24.96</b>	<b>.59</b>	<b>.35</b>	<b>00</b>	<b>17.98</b>	<b>5.03</b>	<b>.85</b>	<b>1.53</b>	<b>00</b>	<b>.39</b>	<b>7.21</b>	<b>100.00</b>

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

PAGE 4  
UNOLS OFFICE  
DATE: 07/29/92

OPERATIONAL DAYS CHARGED BY SPONSOR

INSTITUTION	NATL SCI FNDTN	OFF. NAVAL RES	U.S. GEOL. SURV.	MIN. MGMT. SERV.	NATL. OCEAN. ATM AD.	DEPT. OF ENERGY	OTHER FEDER. FUNDS	STATE OR MUNIC.	PRIV/ FORGN. FUNDS	TOTAL
University of Hawaii	251.00	.00	.00	.00	.00	.00	.00	.00	18.00	269.00
University of Alaska	109.00	.00	.00	.00	.00	.00	.00	.00	3.00	112.00
University of Washington	139.00	81.00	2.00	.00	2.00	.00	.00	13.00	1.00	238.00
Oregon State University	154.00	48.00	.00	.00	.00	.00	.00	.00	.00	202.00
Scripps Institution of Oceanography	508.00	88.00	.00	3.00	.00	.00	8.00	.00	72.00	679.00
Texas A & M University	8.00	.00	.00	.00	.00	.00	.00	214.00	.00	222.00
University of Texas	4.00	.00	.00	.00	52.00	.00	.00	.00	54.00	110.00
University of Miami, RSMAS	300.00	16.00	.00	25.00	15.00	.00	.00	9.00	1.00	366.00
University of Georgia, Skidaway	25.00	.00	.00	.00	.00	24.00	.00	.00	.00	49.00
Duke University/University of North Carolina	184.00	13.00	12.00	.00	6.00	.00	.00	10.00	.00	225.00
Johns Hopkins University	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
University of Delaware	135.00	8.00	.00	.00	.00	11.00	.00	.00	4.00	158.00
Lamont Doherty Geological Observatory	301.00	.00	.00	.00	.00	.00	.00	.00	.00	301.00
University of Rhode Island	69.00	128.00	.00	.00	.00	.00	.00	.00	.00	197.00
Woods Hole Oceanographic Institution	297.00	173.00	2.00	.00	32.00	.00	.00	.00	.00	504.00
University of Michigan	50.00	.00	.00	.00	.00	.00	6.00	27.00	.00	83.00
Moss Landing Marine Laboratory	49.00	46.00	.00	.00	.00	.00	39.00	14.00	7.00	155.00
Louisiana Universities Marine Consortium	.00	.00	.00	2.00	58.00	.00	10.00	2.00	26.00	98.00
Harbor Branch Oceanographic Institution	41.00	36.00	.00	.00	201.00	.00	8.00	.00	135.00	421.00
Bermuda Biological Station for Research	174.00	.00	.00	.00	.00	.00	.00	.00	11.00	185.00
<b>TOTALS</b>	2798.00	637.00	16.00	30.00	366.00	35.00	71.00	289.00	332.00	4574.00
<b>PERCENT</b>	61.17	13.93	.35	.66	8.00	.77	1.55	6.32	7.26	100.00

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

PAGE 5  
UNOLS OFFICE  
DATE: 07/29/92

OPERATIONAL DAYS CHARGED BY SPONSOR

VESSELS	LENGTH	NATL SCI. FNDTN	OFF. NAVAL RES.	U.S. GEOL. SURV.	MIN. MGMT. SERV.	NATL. OCEAN. ATM AD.	DEPT. OF ENERGY	OTHER FEDER. FUNDS	STATE OR MUNIC.	PRIV/ FORGN. FUNDS	TOTAL
T THOMPSON	274 FT	.00	81.00	.00	.00	.00	.00	.00	.00	.00	81.00
EWING	239 FT	301.00	.00	.00	.00	.00	.00	.00	.00	.00	301.00
MOANA WAVE	210 FT	251.00	.00	.00	.00	.00	.00	.00	.00	18.00	269.00
ATLANTIS II	210 FT	248.00	21.00	.00	.00	23.00	.00	.00	.00	.00	292.00
T. WASHINGTON	209 FT	320.00	10.00	.00	.00	.00	.00	.00	.00	6.00	336.00
WECOMA	177 FT	154.00	48.00	.00	.00	.00	.00	.00	.00	.00	202.00
ENDEAVOR	177 FT	69.00	128.00	.00	.00	.00	.00	.00	.00	.00	197.00
OCEANUS	177 FT	49.00	152.00	2.00	.00	9.00	.00	.00	.00	.00	212.00
SEWARD JOHNSON	178 FT	7.00	23.00	.00	.00	86.00	.00	.00	.00	110.00	226.00
GYRE	174 FT	8.00	.00	.00	.00	.00	.00	.00	214.00	.00	222.00
NEW HORIZON	170 FT	89.00	78.00	.00	.00	.00	.00	.00	.00	40.00	207.00
ISELIN	170 FT	228.00	11.00	.00	.00	.00	.00	.00	.00	.00	239.00
EDWIN LINK	168 FT	34.00	13.00	.00	.00	115.00	.00	8.00	.00	25.00	195.00
POINT SUR	135 FT	49.00	46.00	.00	.00	.00	.00	39.00	14.00	7.00	155.00
CAPE HATTERAS	135 FT	184.00	13.00	12.00	.00	6.00	.00	.00	10.00	.00	225.00
ALPHA HELIX	133 FT	109.00	.00	.00	.00	.00	.00	.00	.00	3.00	112.00
ROBERT G. SPROUL	125 FT	99.00	.00	.00	3.00	.00	.00	8.00	.00	26.00	136.00
CAPE HENLOPEN	120 FT	135.00	8.00	.00	.00	.00	11.00	.00	.00	4.00	158.00
WEATHERBIRD II	115 FT	174.00	.00	.00	.00	.00	.00	.00	.00	11.00	185.00
WARFIELD	108 FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PELICAN	105 FT	.00	.00	.00	2.00	58.00	.00	10.00	2.00	26.00	98.00
LAURENTIAN	80 FT	50.00	.00	.00	.00	.00	.00	6.00	27.00	.00	83.00
LONGHORN	80 FT	4.00	.00	.00	.00	52.00	.00	.00	.00	54.00	110.00
BLUE FIN	72 FT	25.00	.00	.00	.00	.00	24.00	.00	.00	.00	49.00
CLIFFORD A BARNES	66 FT	139.00	.00	2.00	.00	2.00	.00	.00	13.00	1.00	157.00
CALANUS	64 FT	72.00	5.00	.00	25.00	15.00	.00	.00	9.00	1.00	127.00
<b>TOTALS</b>		2798.00	637.00	16.00	30.00	366.00	35.00	71.00	289.00	332.00	4574.00
<b>PERCENT</b>		61.17	13.93	.35	.66	8.00	.77	1.55	6.32	7.26	100.00

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

PROJECT PERSON-DAYS AT SEA BY SPONSOR

VESSELS	LENGTH	NATL	OFF.	U.S.	MIN.	NATL.	DEPT.	OTHER	STATE	PRIV/	TOTAL
		SCI	NAVAL	GEOL.	MGMT.	OCEAN.	OF	FEDER.	OR	FORGN.	
		FNDTN	RES.	SURV.	SERV.	ATM AD.	ENERGY	FUNDS	MUNIC.	FUNDS	
T THOMPSON	274 FT	.00	1330.00	.00	.00	.00	.00	.00	.00	.00	1330.00
EWING	239 FT	4830.00	.00	.00	.00	.00	.00	.00	.00	.00	4830.00
MOANA WAVE	210 FT	3340.00	.00	.00	.00	.00	.00	.00	.00	133.00	3473.00
ATLANTIS II	210 FT	4575.00	318.00	.00	.00	414.00	.00	.00	.00	.00	5307.00
T WASHINGTON	209 FT	4800.00	140.00	.00	.00	.00	.00	.00	.00	88.00	5028.00
WECOMA	177 FT	1555.00	607.00	.00	.00	.00	.00	.00	.00	.00	2162.00
ENDEAVOR	177 FT	807.00	1830.00	.00	.00	.00	.00	.00	.00	.00	2637.00
OCEANUS	177 FT	636.00	1486.00	22.00	.00	99.00	.00	.00	.00	.00	2243.00
SEWARD JOHNSON	176 FT	60.00	276.00	.00	.00	957.00	.00	.00	.00	661.00	1954.00
GYRE	174 FT	174.00	.00	.00	.00	.00	.00	.00	2491.80	.00	2665.80
NEW HORIZON	170 FT	1060.00	797.00	.00	.00	.00	.00	.00	.00	458.00	2315.00
ISELIN	170 FT	3779.50	85.00	.00	.00	.00	.00	.00	.00	.00	3864.50
EDWIN LINK	168 FT	332.00	51.00	.00	.00	902.00	.00	56.00	.00	107.00	1448.00
POINT SUR	135 FT	499.00	365.00	.00	.00	.00	.00	428.00	275.00	291.00	1858.00
CAPE HATTERAS	135 FT	1153.00	104.00	144.00	.00	72.00	.00	.00	110.00	.00	1583.00
ALPHA HELIX	133 FT	806.00	.00	.00	.00	.00	.00	.00	.00	36.00	842.00
ROBERT G. SPROUL	126 FT	1505.00	.00	.00	33.00	.00	.00	61.00	.00	358.00	1957.00
CAPE HENLOPEN	120 FT	1211.00	37.00	.00	.00	.00	65.00	.00	.00	44.00	1357.00
WEATHERBIRD II	115 FT	878.00	.00	.00	.00	.00	.00	.00	.00	53.00	931.00
WARFIELD	106 FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PELICAN	105 FT	.00	.00	.00	8.00	588.00	.00	200.00	28.00	91.00	915.00
LAURENTIAN	80 FT	364.00	.00	.00	.00	.00	.00	40.00	216.00	.00	620.00
LONGHORN	80 FT	40.00	.00	.00	.00	288.00	.00	.00	.00	877.00	1203.00
BLUE FIN	72 FT	45.00	.00	.00	.00	.00	80.00	.00	.00	.00	125.00
CLIFFORD A. BARNES	65 FT	602.00	.00	7.00	.00	11.00	.00	.00	190.50	4.00	814.50
CALANUS	64 FT	476.00	30.00	.00	111.00	140.50	.00	.00	41.00	16.00	814.50
<b>TOTALS</b>		33527.50	7456.00	173.00	152.00	3469.50	145.00	785.00	3352.30	3217.00	52277.30
<b>PERCENT</b>		64.67	14.38	.33	.29	6.69	.28	1.51	6.47	6.21	100.84

## UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

PAGE 7

UNOLS OFFICE

DATE: 07/29/92

## UNOLS CRUISE PARTICIPANTS AND AFFILIATIONS

VESSELS	SCI	TECH	GRAD	STU/ OBS	TOTAL	NON-OPER UNOLS	NON- UNOLS	FED	FRGN	TOTAL
T THOMPSON	20.00	61.00	11.00	21.00	113.00	4.00	19.00	7.00	8.00	38.00
EWING	40.00	63.00	21.00	7.00	131.00	8.00	27.00	.00	2.00	37.00
MOANA WAVE	50.00	84.00	39.00	50.00	223.00	4.00	54.00	3.00	8.00	69.00
ATLANTIS II	171.00	132.00	33.00	24.00	360.00	38.00	50.00	46.00	24.00	158.00
T WASHINGTON	66.00	140.00	38.00	12.00	256.00	6.00	11.00	6.00	7.00	30.00
WECOMA	42.00	72.00	31.00	14.00	159.00	6.00	20.00	15.00	2.00	43.00
ENDEAVOR	54.00	56.00	25.00	8.00	143.00	25.00	2.00	1.00	.00	28.00
OCEANUS	118.00	99.00	19.00	10.00	246.00	20.00	17.00	29.00	1.00	67.00
SEWARD JOHNSON	141.00	39.00	44.00	52.00	276.00	74.00	107.00	11.00	20.00	212.00
GYRE	9.70	50.50	36.00	17.10	113.30	.00	4.00	.00	11.00	15.00
NEW HORIZON	52.00	84.00	29.00	9.00	174.00	16.00	9.00	13.00	5.00	43.00
ISELIN	111.00	89.00	103.00	38.00	341.00	92.00	61.00	2.00	56.00	211.00
EDWIN LINK	92.00	65.00	52.00	35.00	244.00	91.00	63.00	33.00	2.00	189.00
POINT SUR	141.00	106.00	200.00	147.00	594.00	150.00	103.00	11.00	1.00	265.00
CAPE HATTERAS	116.00	89.00	83.00	20.00	308.00	131.00	29.00	12.00	4.00	176.00
ALPHA HELIX	26.00	58.00	45.00	8.00	137.00	6.00	2.00	.00	2.00	10.00
ROBERT G. SPROUL	108.00	69.00	65.00	28.00	270.00	4.00	69.00	4.00	14.00	91.00
CAPE HENLOPEN	223.00	37.00	43.00	14.00	317.00	139.00	21.00	17.00	6.00	183.00
WEATHERBIRD II	131.00	144.00	28.00	36.00	339.00	4.00	36.00	1.00	9.00	50.00
WARFIELD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PELICAN	141.00	41.00	10.00	31.00	223.00	.00	91.00	10.00	2.00	103.00
LAURENTIAN	45.00	53.00	62.00	51.00	211.00	7.00	45.00	6.00	9.00	67.00
LONGHORN	60.00	81.00	83.00	255.00	479.00	.00	275.00	3.00	.00	278.00
BLUE FIN	18.00	32.00	12.00	8.00	70.00	.00	3.00	.00	.00	3.00
CLIFFORD A BARNES	54.00	55.00	93.00	176.00	378.00	2.00	5.00	15.00	2.00	24.00
CALANUS	73.00	55.00	29.00	49.00	206.00	22.00	38.00	34.00	2.00	96.00
<b>TOTALS</b>	<b>2102.70</b>	<b>1854.50</b>	<b>1234.00</b>	<b>1120.10</b>	<b>6311.30</b>	<b>849.00</b>	<b>1161.00</b>	<b>279.00</b>	<b>197.00</b>	<b>2486.00</b>
<b>PERCENT</b>	<b>33.32</b>	<b>29.38</b>	<b>19.55</b>	<b>17.75</b>	<b>100.00</b>	<b>34.15</b>	<b>46.70</b>	<b>11.22</b>	<b>7.92</b>	<b>100.00</b>



UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

PAGE 1  
UNOLS OFFICE  
DATE: 07/29/92

SEA DAY PROFILES

AGENCY	PHYS. OCEAN	ACOUS. TICS	CHEM. OCEAN	BIOL. OCEAN	ENVIR. ECOL.	FISH. INVST	CLIM. METEO	GEOLO GEOPH	MAP CHRTG	OCEAN ENGIN	TRAIN- ING	TRANS. NONSCI	POLL. ASSESS	OTHER	TOTAL
National Science Foundation	643.00	.00	375.00	671.00	21.00	3.00	.00	576.00	162.00	5.00	2.00	.00	.00	86.00	2544.00
Office of Naval Research	308.00	3.00	7.00	121.00	.00	.00	.00	62.00	39.00	5.00	10.00	.00	.00	61.00	616.00
U.S. Geological Survey	.00	.00	.00	.00	.00	.00	.00	16.00	.00	.00	.00	.00	.00	.00	16.00
Bureau of Land Management/Minerals Mgmt. Service	28.00	.00	.00	2.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	30.00
National Oceanic and Atmospheric Administration	44.00	.00	37.00	147.50	.00	.00	.00	36.50	.00	.00	.00	.00	5.00	60.00	330.00
Department of Energy (ERDA)	14.00	.00	7.00	13.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	34.00
Other Federal	37.00	.00	.00	14.00	6.00	.00	.00	.00	.00	.00	.00	.00	6.00	6.00	69.00
State/Municipal	4.00	.00	132.00	26.00	.00	.00	.00	7.00	.00	2.00	39.00	.00	3.00	.00	213.00
Other/Private	13.00	.00	16.00	88.00	.00	13.00	.00	61.00	8.00	26.00	19.00	.00	2.00	71.00	317.00
<b>TOTALS</b>	<b>1091.00</b>	<b>3.00</b>	<b>574.00</b>	<b>1082.50</b>	<b>27.00</b>	<b>16.00</b>	<b>.00</b>	<b>758.50</b>	<b>209.00</b>	<b>38.00</b>	<b>70.00</b>	<b>.00</b>	<b>16.00</b>	<b>284.00</b>	<b>4169.00</b>
<b>PERCENT</b>	<b>26.17</b>	<b>.07</b>	<b>13.77</b>	<b>25.97</b>	<b>.65</b>	<b>.38</b>	<b>.00</b>	<b>18.19</b>	<b>5.01</b>	<b>.91</b>	<b>1.68</b>	<b>.00</b>	<b>.38</b>	<b>6.81</b>	<b>100.00</b>

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

SEA DAY PROFILES

INSTITUTION	PHYS.	ACOUS.	CHEM.	BIOL.	ENVIR.	FISH.	CLIM.	GEOLO.	MAP	OCEAN	TRAIN.	TRANS.	POLL.	OTHER	TOTAL
	OCEAN	TICS	OCEAN	OCEAN	ECOL.	INVT	METEO	GEOPH	CHRTG	ENGIN	ING	NONSCI	ASSESS		
University of Hawaii	134.00	.00	33.00	35.00	.00	.00	.00	48.00	.00	.00	.00	.00	.00	.00	250.00
University of Alaska	66.00	.00	4.00	37.00	.00	.00	.00	3.00	.00	.00	.00	.00	.00	.00	110.00
University of Washington	68.00	.00	24.00	91.00	.00	3.00	.00	5.00	27.00	1.00	13.00	.00	.00	1.00	233.00
Oregon State University	129.00	.00	19.00	19.00	.00	.00	.00	10.00	.00	.00	.00	.00	.00	8.00	185.00
Scripps Institution of Oceanography	253.00	.00	17.00	135.00	.00	.00	.00	227.00	.00	3.00	3.00	.00	.00	10.00	648.00
Texas A & M University	.00	.00	135.00	.00	.00	.00	.00	6.00	.00	.00	7.00	.00	.00	.00	148.00
University of Texas	21.00	.00	.00	18.00	.00	13.00	.00	20.00	.00	.00	17.00	.00	.00	12.00	101.00
University of Miami, RSMAS	102.00	3.00	53.00	92.00	21.00	.00	.00	78.00	.00	.00	1.00	.00	5.00	.00	355.00
University of Georgia, Skidaway	3.00	.00	7.00	38.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	48.00
Duke University/University of North Carolina	7.00	.00	22.00	91.00	.00	.00	.00	24.00	12.00	.00	.00	.00	.00	27.00	183.00
Johns Hopkins University	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
University of Delaware	18.00	.00	68.00	54.00	.00	.00	.00	5.00	.00	.00	.00	.00	.00	.00	145.00
Lamont-Doherty Geological Observatory	.00	.00	.00	.00	.00	.00	.00	116.00	155.00	.00	.00	.00	.00	.00	271.00
University of Rhode Island	93.00	.00	.00	55.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	40.00	188.00
Woods Hole Oceanographic Institution	102.00	.00	10.00	103.00	.00	.00	.00	180.00	.00	10.00	.00	.00	.00	56.00	461.00
University of Michigan	3.00	.00	.00	16.00	.00	.00	.00	23.00	.00	.00	8.00	.00	9.00	2.00	81.00
Moss Landing Marine Laboratory	57.00	.00	25.00	45.00	6.00	.00	.00	.00	.00	2.00	20.00	.00	.00	.00	155.00
Louisiana Universities Marine Consortium	27.00	.00	.00	49.00	.00	.00	.00	.00	.00	19.00	1.00	.00	2.00	.00	98.00
Harbor Branch Oceanographic Institution	8.00	.00	50.00	175.50	.00	.00	.00	10.50	.00	3.00	.00	.00	.00	128.00	375.00
Bermuda Biological Station for Research	.00	.00	107.00	9.00	.00	.00	.00	3.00	15.00	.00	.00	.00	.00	.00	134.00
<b>TOTALS</b>	1091.00	3.00	574.00	1082.50	27.00	16.00	.00	758.50	209.00	38.00	70.00	.00	16.00	284.00	4169.00
<b>PERCENT</b>	26.17	.07	13.77	25.97	65	.38	.00	18.19	5.01	.91	1.68	.00	.38	6.81	100.00

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

SEA DAY PROFILES

VESSELS	PHYS.	ACOUS.	CHEM.	BIOL.	ENVIR.	FISH.	CLIM.	GEOLO	MAP	OCEAN	TRAIN.	TRANS.	POLL.	OTHER	TOTAL
	OCEAN	TICS	OCEAN	OCEAN	ECOL.	INVST	METEO	GEOPH	CHRTG	ENGIN	ING	NONSCI	ASSESS		
T. THOMPSON	29.00	.00	.00	20.00	.00	.00	.00	.00	27.00	.00	.00	.00	.00	.00	76.00
EWING	.00	.00	.00	.00	.00	.00	.00	116.00	155.00	.00	.00	.00	.00	.00	271.00
MOANA WAVE	134.00	.00	33.00	35.00	.00	.00	.00	48.00	.00	.00	.00	.00	.00	.00	250.00
ATLANTIS II	.00	.00	.00	76.00	.00	.00	.00	163.00	.00	10.00	.00	.00	.00	7.00	256.00
T. WASHINGTON	115.00	.00	.00	.00	.00	.00	.00	181.00	.00	.00	.00	.00	.00	9.00	305.00
WECOMA	129.00	.00	19.00	19.00	.00	.00	.00	10.00	.00	.00	.00	.00	.00	8.00	185.00
ENDEAVOR	93.00	.00	.00	55.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	40.00	188.00
OCEANUS	102.00	.00	10.00	27.00	.00	.00	.00	17.00	.00	.00	.00	.00	.00	49.00	205.00
SEWARD JOHNSON	.00	.00	31.00	96.50	.00	.00	.00	10.50	.00	.00	.00	.00	.00	60.00	198.00
GYRE	.00	.00	135.00	.00	.00	.00	.00	6.00	.00	.00	7.00	.00	.00	.00	148.00
NEW HORIZON	75.00	.00	14.00	89.00	.00	.00	.00	25.00	.00	3.00	.00	.00	.00	1.00	207.00
ISELIN	46.00	.00	52.00	74.00	21.00	.00	.00	35.00	.00	.00	.00	.00	.00	.00	228.00
EDWIN LINK	8.00	.00	19.00	79.00	.00	.00	.00	.00	.00	3.00	.00	.00	.00	68.00	177.00
POINT SUR	57.00	.00	25.00	45.00	6.00	.00	.00	.00	.00	2.00	20.00	.00	.00	.00	155.00
CAPE HATTERAS	7.00	.00	22.00	91.00	.00	.00	.00	24.00	12.00	.00	.00	.00	.00	27.00	183.00
ALPHA HELIX	66.00	.00	4.00	37.00	.00	.00	.00	3.00	.00	.00	.00	.00	.00	.00	110.00
ROBERT G. SPROUL	63.00	.00	3.00	46.00	.00	.00	.00	21.00	.00	.00	3.00	.00	.00	.00	136.00
CAPE HENLOPEN	18.00	.00	68.00	54.00	.00	.00	.00	5.00	.00	.00	.00	.00	.00	.00	145.00
WEATHERBIRD II	.00	.00	107.00	9.00	.00	.00	.00	3.00	15.00	.00	.00	.00	.00	.00	134.00
WARFIELD	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PELICAN	27.00	.00	.00	49.00	.00	.00	.00	.00	.00	19.00	1.00	.00	2.00	.00	98.00
LAURENTIAN	3.00	.00	.00	36.00	.00	.00	.00	23.00	.00	.00	8.00	.00	9.00	2.00	81.00
LONGHORN	21.00	.00	.00	18.00	.00	13.00	.00	20.00	.00	.00	17.00	.00	.00	12.00	101.00
BLUE FIN	3.00	.00	7.00	38.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	48.00
CLIFFORD A. BARNES	39.00	.00	24.00	71.00	.00	3.00	.00	5.00	.00	1.00	13.00	.00	.00	1.00	157.00
CALANUS	56.00	3.00	1.00	18.00	.00	.00	.00	43.00	.00	.00	1.00	.00	5.00	.00	127.00
<b>TOTALS</b>	<b>1091.00</b>	<b>3.00</b>	<b>574.00</b>	<b>1082.50</b>	<b>27.00</b>	<b>16.00</b>	<b>.00</b>	<b>758.50</b>	<b>209.00</b>	<b>38.00</b>	<b>70.00</b>	<b>.00</b>	<b>16.00</b>	<b>284.00</b>	<b>4169.00</b>
<b>PERCENT</b>	<b>26.17</b>	<b>.07</b>	<b>13.77</b>	<b>25.97</b>	<b>.65</b>	<b>.38</b>	<b>.00</b>	<b>18.19</b>	<b>5.01</b>	<b>.91</b>	<b>1.68</b>	<b>.00</b>	<b>.38</b>	<b>6.81</b>	<b>100.00</b>

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

SEA DAYS CHARGED BY SPONSOR

INSTITUTION	NATL SCI FNDTN	OFF. NAVAL RES.	U.S GEOL SURV	MIN. MGMT. SERV.	NATL OCEAN. ATM AD.	DEPT. OF ENERGY	OTHER FEDER. FUNDS	STATE OR MUNIC	PRIV/ FORGN FUNDS	TOTAL
University of Hawaii	233.00	.00	.00	.00	.00	.00	.00	.00	17.00	250.00
University of Alaska	107.00	.00	.00	.00	.00	.00	.00	.00	3.00	110.00
University of Washington	139.00	76.00	2.00	.00	2.00	.00	.00	13.00	1.00	233.00
Oregon State University	137.00	48.00	.00	.00	.00	.00	.00	.00	.00	185.00
Scripps Institution of Oceanography	477.00	88.00	.00	3.00	.00	.00	8.00	.00	72.00	648.00
Texas A & M University	8.00	.00	.00	.00	.00	.00	.00	140.00	.00	148.00
University of Texas	4.00	.00	.00	.00	43.00	.00	.00	.00	54.00	101.00
University of Miami, RSMAS	289.00	16.00	.00	25.00	15.00	.00	.00	9.00	1.00	355.00
University of Georgia, Skidaway	25.00	.00	.00	.00	.00	23.00	.00	.00	.00	48.00
Duke University/University of North Carolina	143.00	12.00	12.00	.00	6.00	.00	.00	10.00	.00	183.00
Johns Hopkins University	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
University of Delaware	122.00	8.00	.00	.00	.00	11.00	.00	.00	4.00	145.00
Lamont-Doherty Geological Observatory	271.00	.00	.00	.00	.00	.00	.00	.00	.00	271.00
University of Rhode Island	65.00	123.00	.00	.00	.00	.00	.00	.00	.00	188.00
Woods Hole Oceanographic Institution	264.00	166.00	2.00	.00	29.00	.00	.00	.00	.00	461.00
University of Michigan	50.00	.00	.00	.00	.00	.00	6.00	25.00	.00	81.00
Moss Landing Marine Laboratory	49.00	46.00	.00	.00	.00	.00	39.00	14.00	7.00	155.00
Louisiana Universities Marine Consortium	.00	.00	.00	2.00	58.00	.00	10.00	2.00	26.00	98.00
Harbor Branch Oceanographic Institution	38.00	33.00	.00	.00	177.00	.00	6.00	.00	121.00	375.00
Bermuda Biological Station for Research	123.00	.00	.00	.00	.00	.00	.00	.00	11.00	134.00
<b>TOTALS</b>	2544.00	616.00	16.00	30.00	330.00	34.00	69.00	213.00	317.00	4169.00
<b>PERCENT</b>	61.02	14.78	.38	.72	7.92	.82	1.66	5.11	7.60	100.00

## UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1991 -

PAGE 5

UNOLS OFFICE

DATE: 07/29/92

## SEA DAYS CHARGED BY SPONSOR

VESSELS	LENGTH	NATL	OFF.	U.S.	MIN.	NATL.	DEPT.	OTHER	STATE	PRIV/	TOTAL
		SCI.	NAVAL	GEOL.	MGMT.	OCEAN.	OF	FEDER.	OR	FORGN.	
		FNDTN	RES.	SURV.	SERV.	ATM AD.	ENERGY	FUNDS	MUNIC	FUNDS	
T. THOMPSON	274 FT	.00	76.00	.00	.00	.00	.00	.00	.00	.00	76.00
EWING	239 FT	271.00	.00	.00	.00	.00	.00	.00	.00	.00	271.00
MOANA WAVE	210 FT	233.00	.00	.00	.00	.00	.00	.00	.00	17.00	250.00
ATLANTIS II	210 FT	215.00	21.00	.00	.00	20.00	.00	.00	.00	.00	256.00
T. WASHINGTON	209 FT	289.00	10.00	.00	.00	.00	.00	.00	.00	6.00	305.00
WECOMA	177 FT	137.00	48.00	.00	.00	.00	.00	.00	.00	.00	185.00
ENDEAVOR	177 FT	65.00	123.00	.00	.00	.00	.00	.00	.00	.00	188.00
OCEANUS	177 FT	49.00	145.00	2.00	.00	9.00	.00	.00	.00	.00	205.00
SEWARD JOHNSON	176 FT	7.00	20.00	.00	.00	75.00	.00	.00	.00	96.00	198.00
GYRE	174 FT	8.00	.00	.00	.00	.00	.00	.00	140.00	.00	148.00
NEW HORIZON	170 FT	89.00	78.00	.00	.00	.00	.00	.00	.00	40.00	207.00
ISELIN	170 FT	217.00	11.00	.00	.00	.00	.00	.00	.00	.00	228.00
EDWIN LINK	168 FT	31.00	13.00	.00	.00	102.00	.00	6.00	.00	25.00	177.00
POINT SUR	136 FT	49.00	46.00	.00	.00	.00	39.00	14.00	7.00	.00	155.00
CAPE HATTERAS	136 FT	143.00	12.00	12.00	.00	6.00	.00	.00	10.00	.00	183.00
ALPHA HELIX	133 FT	107.00	.00	.00	.00	.00	.00	.00	.00	3.00	110.00
ROBERT G. SPROUL	125 FT	99.00	.00	.00	3.00	.00	.00	8.00	.00	26.00	136.00
CAPE HENLOPEN	120 FT	122.00	8.00	.00	.00	.00	11.00	.00	.00	4.00	145.00
WEATHERBIRD II	116 FT	123.00	.00	.00	.00	.00	.00	.00	.00	11.00	134.00
WARFIELD	108 FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PELICAN	106 FT	.00	.00	.00	2.00	58.00	.00	10.00	2.00	26.00	98.00
LAURENTIAN	80 FT	50.00	.00	.00	.00	.00	.00	6.00	25.00	.00	81.00
LONGHORN	80 FT	4.00	.00	.00	.00	43.00	.00	.00	.00	54.00	101.00
BLUE FIN	72 FT	25.00	.00	.00	.00	.00	23.00	.00	.00	.00	48.00
CLIFFORD A. BARNES	65 FT	139.00	.00	2.00	.00	2.00	.00	.00	13.00	1.00	157.00
CALANUS	64 FT	72.00	5.00	.00	25.00	15.00	.00	.00	9.00	1.00	127.00
<b>TOTALS</b>		2544.00	816.00	16.00	30.00	330.00	73.00	44.00	206.00	310.00	4169.00
<b>PERCENT</b>		61.02	14.78	.38	.72	7.92	1.75	1.06	4.94	7.44	100.00

# APPENDIX X

## OCEAN SCIENCES DIVISION

	<u>Actual FY 1990</u>	<u>Actual FY 1991</u>	<u>Estimated FY 1992</u>	<u>Requested FY 1993</u>
<b>Ocean Sciences Division</b>	<b>\$147.4 M</b>	<b>\$164.8 M</b>	<b>\$178.8 M</b>	<b>\$206.4 M</b>
<b>Ocean Sciences Research</b>	<b>72.9 M</b>	<b>82.1 M</b>	<b>90.8 M</b>	<b>109.3 M</b>
<b>Ocean Drilling Program</b>	<b>32.0 M</b>	<b>35.0 M</b>	<b>36.4 M</b>	<b>37.8 M</b>
<b>Oceanographic Facilities</b>	<b>42.5 M</b>	<b>47.7 M</b>	<b>51.6 M</b>	<b>59.3 M</b>

### OCEANOGRAPHIC FACILITIES DETAIL

<b>Operations</b>				
<b>Ship Operations</b>	<b>\$ 22.4 M*</b>	<b>\$ 26.7 M*</b>	<b>\$ 30.2 M*</b>	<b>\$ 34.0 M*</b>
<b>ALVIN, Aircraft, etc.</b>	<b>1.4 M</b>	<b>1.8 M</b>	<b>1.3 M</b>	<b>1.5 M</b>
<b>Marine Techs</b>	<b><u>3.7 M</u></b>	<b><u>4.0 M</u></b>	<b><u>4.3 M</u></b>	<b><u>4.6 M</u></b>
	<b>27.5 M</b>	<b>32.5 M</b>	<b>35.8 M</b>	<b>40.1 M</b>
<b>Infrastructure</b>				
<b>Science Instruments</b>	<b>\$ 1.8 M</b>	<b>\$ 1.9 M</b>	<b>\$ 4.0 M</b>	<b>\$ 4.5 M</b>
<b>Shipboard Equipment</b>	<b>2.1 M</b>	<b>2.2 M</b>		
<b>Ships, Upgrades</b>	<b>3.4 M</b>	<b>3.7 M</b>	<b>3.3 M</b>	<b>6.1 M</b>
<b>UNOLS, Misc.</b>	<b><u>0.6 M</u></b>	<b><u>0.6 M</u></b>	<b><u>0.7 M</u></b>	<b><u>0.7 M</u></b>
	<b>7.9 M</b>	<b>8.4 M</b>	<b>8.0 M</b>	<b>11.3 M</b>
<b>Technology, Centers, Reserves</b>				
<b>Technology Development</b>	<b>\$ 3.5 M</b>	<b>\$ 4.2 M</b>	<b>\$ 4.5 M</b>	<b>\$ 5.0 M</b>
<b>AMS Center</b>	<b>1.8 M</b>	<b>1.7 M</b>	<b>1.5 M</b>	<b>1.1 M</b>
<b>Cross Directorate/Reserves</b>	<b><u>1.8 M</u></b>	<b><u>0.9 M</u></b>	<b><u>1.8 M</u></b>	<b><u>1.8 M</u></b>
	<b>7.1 M</b>	<b>6.8 M</b>	<b>7.8 M</b>	<b>7.9 M</b>

*Plus \$1.0 M from ODP (1990), \$1.6 M (1991 and 1992) , \$1.5 M (1993)*

# APPENDIX XI



## ARCTIC VESSEL DESIGN RESOLUTION

UNOLS strongly supports the continuation of the marine science community participating in the design, construction and operation of an Arctic Research Vessel.

## **APPENDIX XII**

September, 1992

## UNOLS COUNCIL ELECTIONS

The UNOLS Nominating Committee has assembled the following slate of candidates for the UNOLS Council positions to be filled at the Annual Meeting. This election will be held in accordance with the UNOLS Charter as adopted September 1989. The current membership of the Council and a UNOLS directory are attached.

### UNOLS COUNCIL SLATE

**CHAIRMAN** (2 year term) - individual affiliated with an Operating Member Institution:

Garrett Brass          University of Miami

Nominations are invited from the floor during the Annual meeting. Persons nominated should be from an Operating Institution and have indicated a willingness to serve. A brief vitae of the nominee should be available to the membership.

**VICE CHAIRMAN** (2 year term) - individual affiliated from any Member Institution:

Peter Betzer          University of South Florida  
Vera Alexander        University of Alaska

**COUNCIL MEMBER** (3 year term) - representative from non-operating Member institution:

Bob Wall              University of Maine  
Doug Capone          University of Maryland

**COUNCIL MEMBER** (3 year term) - individual affiliated with any Member Institution:

Dick Pittenger        Woods Hole Oceanographic Inst.  
Neil Sullivan         University of So. California

## VITAE

- Garry Brass** Professor and Chairman, Division of Geology and Geophysics, Rosenstiel School of Marine and Atmospheric Science, University of Miami  
Geochemistry; Paleo-oceanography and circulation and geochemistry of the Mesozoic ocean
- Peter Betzer** Professor and Chair, Department of Marine Science, University of South Florida  
Geochemistry, Analytical Chemistry, Particle-solute interactions, sedimentology, atmospheric transport, phytoplankton, mineralogy
- Vera Alexander** Director of the Institute of Marine Science and Dean of the School of Fisheries and Ocean Science, University of Alaska  
Marine Science and Biological Oceanography
- Dick Pittenger** Associate Director for Marine Operations, Woods Hole Oceanographic Institution  
Underwater Acoustics, Global change
- Neil Sullivan** Professor of Biological Sciences and Director of Graduate Programs in Ocean Science and of the Hancock Institute for Marine Studies  
Marine microbiologist, biological oceanography and marine biology
- Bob Wall** Director, Center for Marine Studies and Sea Grant College Program, University of Maine  
Submarine Geology and Geophysics
- Doug Capone** Professor, Chesapeake Biological Laboratory, University of Maryland  
Biological Oceanography, Microbial Ecology