

REPORT OF THE MAY 1977

ANNUAL MEETING

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AUGUST 1977



SEVENTH ANNUAL MEETING

AGENDA

0900, THURSDAY MAY 12, 1977, ROOM 2008
 NEW EXECUTIVE OFFICE BLDG., 17TH STREET,
 NEAR PENNSYLVANIA AVE., N.W., WASHINGTON, D.C.

1. INTRODUCTION BY DR. WARREN S. WOOSTER, CHAIRMAN, UNOLS
2. REPORT BY MR. THOMAS STETSON, EXECUTIVE SECRETARY, UNOLS
The Executive Secretary will report on the activities of the UNOLS Office.
3. REPORT BY DR. RICHARD C. DUGDALE, CH., UNOLS ADVISORY COUNCIL
4. GUEST SPEAKER: MR. WILLIAM YOUNG, LEGISLATIVE ASSISTANT TO SEN. CLAIBORNE PELL
The View from the Hill
5. A. RESEARCH VESSEL DESIGN STUDIES.
Brief presentations by principals involved in four coastal and one polar vessel design projects.
 B. COMMENT BY AN NSF REPRESENTATIVE ON STATUS OF THE AGENCY'S EVALUATION OF THE DESIGNS
 C. UNOLS' RESPONSE TO STUDIES: DISCUSSION & ACTION
6. FUTURE PROSPECTS FOR THE RESEARCH FLEET, DR. WOOSTER
The need for UNOLS Long-Range Planning for Fleet Upgrading, Outfitting & Construction.
7. SHIP OPERATIONS IN FOREIGN WATERS, DR. WOOSTER
The Need for UNOLS Action in Concert with Department of State.
8. OUTLOOK FOR FY1978 SHIP SUPPORT
Forecasts by Representatives from NSF, ONR, BLM, ERDA, USGS, others.
9. OTHER TOPICS
This is an opportunity for representatives of research institutions as well as individual scientists and Federal representatives to raise and discuss issues concerning matters of mutual interest.

1230

LUNCH BREAK

-
- 1400 - 1730 ROOM 2008 SHIP SCHEDULING SESSION, INTRODUCED BY DR. DUGDALE
10. THE SHIP SCHEDULING MEETING IS AN INFORMAL SESSION FOR UNOLS MEMBERS TO MEET, COMPARE AND DISCUSS PROBLEMS INVOLVED WITH 1978 SHIP SCHEDULES
 - THE MEETING IS OPEN TO ALL PERSONS INTERESTED AND ESPECIALLY TO SCIENTISTS WHO HAVE SHIP TIME NEEDS IN 1978 AND WISH TO PRESENT THEIR NEEDS TO SHIP OPERATORS
 - PRELIMINARY SHIP SCHEDULES HAVE BEEN DEVELOPED BY UNOLS MEMBERS AND COLLATED SETS WILL BE DISTRIBUTED AND AVAILABLE PRIOR TO THE MEETING
-

UNOLS BUSINESS MEETING AGENDA

0830 FRIDAY, MAY 13, 1977, ROOM 2010, NEW EXECUTIVE OFFICE BUILDING, WASHINGTON, D.C.

11. CHARTER REVIEW
12. ELECTION OF OFFICERS
The Charter requires the election or re-election of Chairman and Vice-Ch. of UNOLS annually.
13. ELECTION TO ADVISORY COUNCIL
Expiring terms require the election of two members.
14. APPOINTMENT OF FACILITY REVIEW COMMITTEES
Expiring terms require appointment of 3 members to ALPHA HELIX Review Committee and 2 members to ALVIN Review Committee.
- TO ACT ON APPLICATIONS FOR ASSOCIATE MEMBERSHIP FROM HOBART & WILLIAM SMITH COLLEGES AND MOSS
15. LANDING MARINE LABORATORY, AND APPLICATION OF UNIVERSITY OF DELAWARE FOR FULL MEMBERSHIP
16. TO SEE IF MEMBERS FEEL THAT THE RECOMMENDATIONS SET FORTH IN THE RECENT RISK MANAGEMENT STUDY CAN BE ADOPTED OR WHETHER MARINE INSURANCE IS BEST HANDLED ON INDIVIDUAL BASIS
17. OTHER BUSINESS THAT MAY PROPERLY COME BEFORE THE SESSION

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

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

UNOLS Office
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

SUMMARY REPORT OF SEVENTH ANNUAL MEETING May 12-13, 1977, New Executive Office Building Washington, D.C.

1. GENERAL

These notes are keyed to the numbered items on the Agenda, preceding page.

Chairman for the two-day meeting was Dr. Warren S. Wooster, Prof. of Marine Studies & Fisheries at the Institute for Marine Studies, University of Washington.

He gave a short welcome to those present, commented on the full agenda facing the assembly and then introduced Mr. Stetson, Executive Secretary.

2. SECRETARY'S REPORT

Mr. Stetson briefly mentioned the recent activities of the Office, including reference to the fact that the data derived from the Ship Utilization Forms, so faithfully submitted by Members, is now computerized. This has been made possible by the addition of Mr. H. L. Clark, Executive Assistant, to the Office last October and allows for greater flexibility in producing various ship-use profiles. Those produced during the past year, together with earlier data, are reproduced as Appendix A, and include data on funding.

The Secretary mentioned that the Preliminary Report of the Long-Range Planning Meeting (Oct. '74) had never been accepted by Member Institutions and that he felt the most urgent business facing the Advisory Council was to up-date and recommend for adoption, revitalized long range goals.

3. ADVISORY COUNCIL CHAIRMAN'S REPORT

Dr. Richard C. Dugdale reported on the activities of the Advisory Council which met quarterly during the year.

Charter Review. Of concern has been the lack of representation by deep water operators on the Council. A subcommittee consisting of

Drs. G. Gross (Ch.), R. Dugdale and F. Webster was formed which reviewed the Charter with respect to current UNOLS operation. Certain changes were recommended; these are detailed later in this report (Item 11).

National Oceanographic Facilities (NOF). Dr. Dugdale reported EASTWARD had developed a good regional user clientele and had therefore assumed institutional status and is no longer treated as a NOF. Its UNOLS Review Committee has been disbanded.

He called upon Dr. R. Fisher (SIO) to report on ALPHA HELIX, which had been working in the Amazon. The transparencies used are included in this report as Appendix B.

Dr. G. Keller (OSU) summarized the ALVIN program, noting there had been at least two recent workshops which in addition to expanding user clientele, resulted in reports (see Bibliog., App. E) containing recommendations on upgrading the ALVIN/LULU system.

Ship-Use Forecasting Meetings. Dr. Dugdale reported two of these were regional in nature, one for East and Gulf Coasts and one in Seattle for the Pacific NW. They were followed by one in Washington in February for deep water operators with most agencies represented. Reports on these meetings are listed in the Bibliography. These meetings helped in highlighting schedule problems, some of which result from large, funded programs absorbing vessels thereby depriving regional users of access and were valuable in acquainting agency representatives with member institutions' operations.

4. GUEST SPEAKER

Dr. Wooster introduced Mr. William Young, legislative assistant to Sen. Claiborne Pell. Mr. Young suggested the title of his talk be changed from "The View from the Hill" to "A View...". Briefly, it was apparent the Senator is a good friend of American oceanography and wishes to keep it strong by ensuring adequate funds are earmarked for oceanography. Given the realities of today's fiscal picture it is vital that member institutions through UNOLS develop identifiable priorities and goals which can then be made use of by our friends on the hill in their efforts on behalf of the entire oceanographic community.

5. RESEARCH VESSEL DESIGN STUDIES

The four coastal research vessel conceptual designs as well as two for a polar vessel were reviewed for those present by a representative from the lead institution. Those making presentations were: Dr. C. Lorenzen, U. of Washington, Mr. J. Thompson, U. of Texas, Mr. J. Gibbons, U. of Miami, and Prof. E. Allmendinger, U. of New Hampshire.

Dr. R. Elsner, U. of Alaska, reviewed the polar vessels' plans. Additionally, Mr. W. Owen, U. of Delaware, reported on CAPE HENLOPEN's first year of operation.

Table I summarizes basic data for these vessels and various reports on them are available from the lead institutions or UNOLS.

Evaluation. The next step will be a review of the four coastal conceptual designs by a panel of experts to be convened June 29th in Washington, D.C. by Office of Oceanographic Facilities & Support at NSF. UNOLS' delegates to this meeting will be: Dr. R. Barber, Duke, Capt. R. Dinsmore, W.H.O.I., Dr. D. Gorsline, U. of S. California, and Dr. R. Schwartzlose, SIO.

6. FUTURE PROSPECTS FOR THE FLEET

Dr. Wooster stated future prospects for the academic fleet as well as other federal vessels may be very bleak due to lack of a federal program for replacement or even upgrading. This is a very serious problem of highest priority and one he expects the Advisory Council to reckon with. In his discourse Dr. Wooster touched on the following problems:

(1) Fleet Condition: Upgrading and replacement is a continuing endeavour. He noted we should be working towards eventual replacement of the four older AGORS, as well as some other fleet units.

(2) Scientific Upgrading: If scientific upgrading is not made a continuing effort, lack of same works towards fleet obsolescence.

(3) Foreign Research Restrictions: Members of UNOLS are monitoring this area of concern. [See Item 7]

(4) Other problem areas are: rising fuel costs, new U. S. Fisheries zone, OCS exploration and pollution concerns.

Dr. Wooster noted NACOA is looking at the next decade in oceanography and would welcome recommendations from UNOLS members via UNOLS. Once again he urged the Advisory Council to move on these problems.

7. OPERATIONS IN FOREIGN WATERS

Dr. Wooster had prepared a position paper entitled "Proposed UNOLS Role in Facilitating Distant Water Research," attached here as Appendix C. The paper suggests UNOLS take a lead role in organizing a systematic program to assist U. S. scientists in conducting foreign research and establish a Distant Water Operating Group (DWOG), which would then enter into discussions with State Department and other federal agencies to develop satisfactory procedures facilitating foreign research.

SHIP DESIGN	COASTAL						POLAR	
	New England	Washington	Miami #1	C.HENLOPEN	Texas	Miami #2	# 1	# 2
Length OA	138'	134'	128'6"	120'	95'	99'9"	225'10"	190'10"
Beam	30'	35'	27'	23'2"	26'6"	25'6"	40'	40'
Depth, Molded	16'	14'9"	12'	10'8"	11'	12'9"	21'	21'
Draft, Max DWL	14'6"	13'	8'	9'3"	8'	7'9"	16'5"	16'5"
Displ. DWL, Tons	616	549	348.6	178.6	248	245.9	2371	1785
Horsepower	1,125	600	931	2500	824	672(?)	3700	3700
Gross Tons	300	250	171	278	182	200	--	--
Fuel Oil, gal.	23,770	32,000	21,980	9,000	13,980	12,200	--	131,800
Fresh Water, gal.	10,020	3,500	7,850	1,650	7,028	7,750	evaps at 3000/day	evaps at 3000/day
Lab Area, ft ²	617	880	662	260/388	450	430	3521	2086
Deck Space, ft ²	1,444	1,280	1,171	840/230	1,215	830	4,500	4,000
Storage Vol. ft ³								
Dry	1,000	300	4,020	--	--	1,980	--	--
Frozen & Chilled	360	158	500	--	--	245	--	--
Crew	9	10	9	7/8	4-6	5	17	17
Scientists	10	12	12	12	10-12	9	19	17
Cruise Speed, kt	12	10	12.5	18/12	10	10.5	13	13
Endurance, days	14	21	16	3/10	21	11	90	60
Range, n. mi.	4,000	5,000	4,800	900/2800	3,000	2,770	20,000	13,000
Est. Price \$	2.3M	2.5M	1.8M	1.54M	1.25M	1.5M	13.5M	12M

TABLE I

Dr. Keller offered some scientists might be reluctant to abandon personal foreign contacts, but Dr. Wooster feels that this would be one of the many aspects the group would look into.

There was general agreement such a group could serve a useful purpose and its first meeting may be this fall to consider developments arising from the current LOS Conference. Invitations will shortly go out to members operating foreign so this group may begin to function.

8. FY 1978 SHIP SUPPORT

Miss M. Johrde projected the following table:

<u>AGENCY</u>	<u>FY76</u>	<u>FY77</u>	<u>FY78</u>
NSF	\$13.6M	\$15.3M	\$16.5M
ONR	2.5	2.9	3.0
NOAA/BLM	2.1	1.6)	
ERDA	0.7	0.8)	4.0
OTHER	1.3	1.8)	
			<u>\$23.5M</u>
Full operating costs from proposals (28RVs)			<u>24.0</u>
Shortfall			0.5

She emphasized these FY1978 figures are before congressional action and that the anticipated shortfall would probably be larger.

Dr. D. Allen, BLM, assessed the impact of OCS exploration. For FY1978 BLM requires 120 days in the North Atlantic and 128 in South Atlantic. See Table II for seasonal requirement.

Dr. Rowland, USGS, said requirements remained essentially the same as detailed at the Jan. 21, 1977 ship forecasting meeting in Baltimore. [These needs are included in the report of that meeting, see Bibliography.]

9. OTHER

Dr. W. Muellenhoff, NOAA/MUS&T, presented the following statement to the assembly. The programs of which he speaks would welcome input from UNOLS members.

I would like to comment on a subject raised last year in the statement provided by Dr. George Crozier relative to the concerns of a number of scientists about the future of manned undersea vehicles and platforms and their management support.

As you know, we had been requested by the Interagency Committee on Marine Science and Engineering to "coordinate the use of national undersea platforms (present and future) ...identify the need for these platforms...and assist Federal agencies in planning the use of platforms." In addition, we have recently been requested by Congress to assist in the development of a program to provide a legislative base for a comprehensive national manned undersea science and technology effort.

Since it has been often stated that the bases for a meaningful marine science program are the needs of scientists as well as the statutory responsibilities of the Federal agencies, it is appropriate to have UNOLS affiliated scientists participate in developing a long-range national program which will involve the development and utilization of underwater facilities and vehicles.

The multiagency support of the ALVIN is proving the usefulness of this national capability; NSF, NOAA, and the Navy are presently negotiating an agreement for the continued support of ALVIN in 1978, 1979, and 1980. Even with such a program, NOAA's needs for research submersibles will only be partially met. NOAA has just begun a national shallow water habitat program with the only available U.S. habitat. The Hydrolab is tentatively scheduled to be utilized in an initial multi-year program at Fairleigh-Dickinson's West Indies Laboratory. Additional habitat programs are anticipated in a number of U. S. coastal zone regions within a few years.

To assure that scientists with first-hand experience in the use of rapidly expanding underwater research techniques participate in formulating a national program, NOAA intends to develop the components of a national program with extensive scientific community input. In addition, many others throughout the country will be asked to assist us in developing realistic long-range goals, meaningful programs to achieve those goals, and in the identification of facilities which will be needed now and in the future to implement the programs. We solicit and welcome all inputs.

Prof. W. Shannon, Social Science Data Center, UCONN, conducting a study entitled "Federal Funding of Academic Marine Science" mentioned their questionnaire had gone to a random pool selected from UNOLS' institutions, seagrant programs, and respondents in the 1968 Ocean Science Study. He mentioned a study of graduates would be undertaken next. A final report may be available early next year.

TABLE II

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NORTH ATLANTIC (GEORGES BANK)		30			30			30			30	
SOUTH ATLANTIC (BLAKE PLATEAU)		30			24			50			24	

Total ship days required: 248

Minimum LOA required: 170'

Minimum scientific party Accomodations: 15

Special requirements:

Sufficient crew to support 24-hour operations

CTD/Transmissometer winch with 4-conductor slip ring assembly and plastic coated conductor cable

Deck space to accomodate and secure a 10' x 28' x 16' clean laboratory van

Holding capacity to secure all overboard discharges while on station.

BUREAU OF LAND MANAGEMENT
SHIP REQUIREMENTS
C/Y 1978

May 12, 1977
UNOLS Ann. Mtg.

Prof. E. Allmendinger, UNH, a member of the Marine Technical Society's Undersea Vehicles Committee mentioned that they have embarked upon a project to identify basic performance criteria in the years ahead to 2000, for manned and un-manned undersea vehicles, and that input from any interested parties would be welcome.

Dr. R. Goodman, NORDA Tech. Dir., mentioned an internal AGOR committee had been formed composed of members drawn from major naval laboratories including APL and the Naval Oceanographic Office to ensure best fit of programs on their vessels. As a result some UNOLS facilities may be utilized from time to time by programs better accommodated by UNOLS.

10. SHIP SCHEDULING SESSION

Tentative 1978 UNOLS fleet schedules had previously been prepared and distributed. This session was introduced by Dr. Dugdale who turned it over to T. Stetson. In attendance were the ship scheduling contacts or their representatives from each UNOLS Member Institution, as well as several representatives from Associate Members and governmental agencies.

- Input from government agencies requiring ship time was first requested.
- BLM -- Dr. Dave Allen speaking for BLM stated that this agency had a request for a total of 249 ship days during CY 1978. He provided a handout showing the time periods of the requests from Georges Bank and Blake Plateau. It was later brought out that the University of Miami had committed approximately 115 days of GILLISS time to BLM, thus reducing their current need to 135 days.

Considerable discussion centered around the question as to how BLM ship requirements could be best met within the scheduling and funding framework in existence. Primary consideration should be given to the accommodation of NSF science, but it was hoped that a ship could be committed to BLM in September. Coordination of efforts between operators and BLM should be made through the UNOLS Office.
- USGS -- Dr. Dave Allen also spoke on behalf of USGS saying that this agency's requirements as stated in the Feb. 24, 1977 Ship Forecasting Meeting still hold true. [See Table II]
- FGGE -- Sandra Toye mentioned that Dr. Rex Fleming was attempting to get some ship funds for the massive FGGE project described at the February 24th meeting, however the project remains essentially a piggyback one and the probability for funding remains small. Some support for FGGE ship time may become available through INDEX.

There was no further discussion regarding agency requirements.

The remainder of the meeting was devoted to a review of the 1978 tentative ship schedule. Operations in each ocean was discussed on a seasonal basis. The 1978 schedules as published were confirmed unless

otherwise noted below:

SCRIPPS - The THOMAS WASHINGTON work off Central America in February and March is out. The ship will work off So. California until undertaking the cruise to the Central Pacific. The MELVILLE operations in the Mediterranean involve heat flow. There is a possibility that she may stop at Woods Hole enroute to the So. Atlantic.

OREGON STATE - WECOMA will be doing some work up in the Gulf of Alaska. CAYUSE has open some time in February and March, 2 1/2 weeks in June and 1/2 of October.

U. of WASHINGTON - T.G. THOMPSON still has three schedule options pending ONR funding which should be confirmed in October.

U. of ALASKA - ACONA will be working on PROBES 21 Apr. to 30 May funded by DPP in the Gulf of Alaska.

W.H.O.I. and U.R.I. note that both have scheduled work for JASIN in the North Sea. They will work together to see if any work can be combined. W.H.O.I. has turned over to Duke all Med. requests. W.H.O.I. also notes that the KNORR cruise into the Pacific is shaping up, however the time is still too long. It is hoped they can get the ship home by Christmas.

L.D.G.O. - VEMA is firm early in year off Capetown and is funded. Work in Pacific is in proposal stage. CONRAD is firm through May, June through December is in proposal stage.

DUKE - EASTWARD work in Mediterranean in proposal stage. However, they fully expect to be able to do W.H.O.I. work in Black Sea. They are seeking proposals to do enroute home from Azores early in 1979.

It was pointed out that a funded IDOE Manganese Nodule request for 30 days in 1978 in the Pacific (11°N, 40°W) is still outstanding. UNOLS office will follow through on this matter.

Meeting was adjourned at 16:45.

11. CHARTER REVIEW

The subcommittee on charter review, mentioned under Item 3 above, made certain recommendations to the Advisory Council which then incorporated them into the revised charter distributed prior to the meeting.

The significant changes are:

- (1) Establishes a nominating committee, responsible for submitting a slate for UNOLS officers to the Members
- (2) Alters ratio of Member Institutions to Associate Members from 4:3 to 5:3 on the Advisory Council
- (3) The UNOLS chairman and vice-chairman, serving as *ex-officio* members will each have a vote in Advisory Council Meetings
- (4) The Advisory Council will meet at least three times a year, in addition to the annual meeting

Upon a motion by Dr. G. Gross, the revised Charter was voted by Member Institutions and the final version is included as Appendix D.

12. ELECTION OF OFFICERS

Last December a Nominating Committee was set up to solicit candidates for officers and members of the Advisory Council so as to formulate a slate to present the Annual Meeting. Those serving were Dr. A. Maxwell (W.H.O.I.), Ch., with J. Byrne (OSU) and Dr. R. Dugdale (Bigelow). The Charter requires election or re-election of the chairman and vice-chairman of UNOLS annually. Dr. Wooster and Dr. Webster were both proposed and re-elected for another year, as chairman and vice-chairman respectively.

13. ELECTION TO ADVISORY COUNCIL

Drs. R. Fisher (SIO), G. Keller (OSU), and J. Schubel (SUNY, Stony Brook) were put forth by the nominating committee and elected to the Advisory Council. Fisher's election serves to correct the ratio of members to associate members called for under Item 11. (2) above, Keller succeeds himself, and Schubel replaces Dr. R. Dugdale, whose term is expiring.

14. APPOINTMENT OF FACILITY REVIEW COMMITTEES

ALPHA HELIX Review Committee. To fill three vacancies Dr. E. Chin was re-appointed and Dr. Wm. Hulet (U of TX) was run against Dr. R. Lasker (NOAA). Dr. Hulet won and was appointed, as well as Dr. C. Miller (OSU).

ALVIN Review Committee. Dr. R. Turner (Harvard) and Dr. J. Corliss (OSU) were appointed to this committee to replace Drs. R. Hessler and G. Keller respectively.

15. MEMBERSHIP APPLICATIONS

Associate Memberships. Applications for Associate Membership from Hobart & William Smith Colleges and Moss Landing Marine Laboratory were approved by majority vote.

Full Membership. U. of Delaware's application for full membership was approved by a vote of 11 to 5.

16. RISK MANAGEMENT

An excerpt from the 1975 risk management study was distributed prior to the meeting to provide a basis for discussion. Members tended to agree that whatever problems did exist were so imbedded in the way individual institutions handled their insurance as to make it very nearly impossible to effect change. Copies of this study are available from the UNOLS Office.

17. OTHER

A note of appreciation for Dr. R. Dugdale's fine service as Chairman, Advisory Council, was sounded by Dr. F. Webster and seconded by all.

There being no further business the meeting was adjourned at 1100.

REGISTERED ATTENDEES
UNOLS ANNUAL MEETING
May 12-13, 1977

Prof. E. Allmendinger, UNH
Mr. F. Alexander, OFS
Dr. D. Allen, BLM
Dr. G. Anderson, U of WA
Dr. A. M. Beeton, U of MI
Mr. A. F. Betzel, NSF
Dr. A. L. Bridgewater, NSF
*Dr. J. O. Blanton, Skidaway
Mr. B. H. Barber, NOS
Mr. R. W. Baier, NSF/IDOE
*Mr. J. F. Campbell, HIG
Mr. L. Clark, UNOLS
Mr. L. M. Cunningham, Sci. Appl.
Dr. R. C. Dugdale, Bigelow Lab
Dr. E. A. Dunnington, U of MD
Cdr. J. Dropp, Oceano. of Navy
Capt. R. P. Dinsmore, W.H.O.I.
Dr. J. Dermody, U. of Alaska
Dr. F. P. Diemer, ONR
Mr. R. B. Elder, NSF
Mr. W. Erb, State Dept.
Capt. R. Ewing, U of TX
Dr. R. Elsner, U of Alaska
*Dr. R. L. Fisher, SIO
Dr. D. Frankenberg, U of NC
*Dr. M. G. Gross, Johns Hopkins
*Mr. J. Gibbons, U of Miami
*Dean W. S. Gaither, U of Del
Dr. R. Goodman, NORDA
Dr. J. J. Griffin, URI
Dr. Donn Gorsline, USC
*Dr. D. Hayes, L-DGO
Capt. R. B. Haines, SIO
Ms. M. K. Johrde, NSF/OFS
Mr. F. D. Jennings, NSF
*Dr. G. Keller, OSU
*Dr. J. T. Katz, U of MI
Dr. R. B. Lambert, NSF
Dr. C. Lorenzen, U of WA
Ms. M. L. Lindquist, OSB/NAS
Mr. K. Lackie, NORDA
Dr. J. H. Martin, Moss Landing
Dr. W. P. Muellenhoff, NOAA/MUS&T
Dr. Tracy McLellan, NSF
Mr. S. V. Nelson, Oceanographer Off.
Capt. E. Nelson, Duke Univ.
Mr. W. Owen, U of Del
Capt. J. O'Brien, NAVSEA
Dr. J. M. Parks, Lehigh
*Dr. O. Pilkey, Duke Univ.
Dr. F. G. Roberts, SUNY
Mr. E. W. Rayfield, NOAA
*Prof. F. A. Richards, U of WA
Dr. A. F. Richards, Lehigh Univ.
Mr. M. O. Rinkel, SUSIO
Dr. J. S. Rankin, SEA
Dr. R. Rowland, USGS
*Dr. T. C. Royer, U of Alaska
*Mr. R. Sexton, URI
Mr. W. L. Sullivan, DOS
Mr. T. Stetson, UNOLS
Prof. W. W. Shannon, UCONN
Mr. R. W. Schneider, U of Del.
*Capt. T. K. Treadwell, TAMU
Mrs. S. Toye, NSF/OFS
Dr. W. Taylor, CBI
*Mr. J. H. Thompson, U of TX
*Mr. E. B. Veek, USC
Dr. W. S. Wooster, U of WA
*Dr. F. Webster, W.H.O.I.
Dr. T. E. Whittedge, Brookhaven
Dr. R. E. Wall, NSF/OS
Mr. J. E. Walczak, NAVOCEANO
Dr. R. Williams, NSF
Dr. B. Watkins, U of WA
Mr. R. D. Wildman, Sea Grant
Dr. J. M. Zeigler, VIMS

* Voting Members at 1977 Annual Meeting

MAY 1977

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CURRENT UNOLS FUNDING PROFILE

\$ M

	1973	1974	1975	1976	EST. 1977	PROJ. 1978
NSF SHIP OPERATIONS	11.6	12.7	13.4	13.6	15.3	16.5
ONR SHIP OPS & TECHS	3.8	3.8	3.5	2.5	3.0	3.0
"OTHER" SHIP OPS	1.5	1.5	2.9	4.1	3.0	4.0
TOTAL	16.9	18.0	19.8	20.2	21.3	23.5
<i>ACTUAL COSTS</i>	<i>16.9</i>	<i>18.0</i>	<i>19.1</i>	<i>21.3</i>	<i>22.3</i>	<i>24.0</i>
NSF TECHNICIAN FUND.	0.8	1.0	1.1	1.1	1.1	1.3
NSF SHIP EQPT. FUND	1.2	1.0	1.0	1.0	1.2	1.3
NSF SHIP CONSTRUCTION	0	3.5	4.0	0.3	0	0

MAY 1977

SUMMARY OF UNOLS VESSELS'
OPERATIONAL AND SUPPORT STATISTICS
1976

	OVER 200 FT.	150 FT TO 200 FT*	100 FT TO 149 FT	60 FT TO 99 FT	ALL VESSELS
NUMBER OF VESSELS	7	8	4	9	28
AVERAGE OPS DAYS	266	233	230	149	213
AVERAGE ACTUAL DAYS AT SEA	235	209	202	140	193
AVERAGE COST (EST. 1976)	\$1348K	\$820K	\$588K	\$203K	\$703K
AVG. DAILY RATE (EST. 1976)	\$4885	\$2952	\$2314	\$1267	\$2797
AVG. MAN-DAYS AT SEA	3849	2459	2200	958	2372
PARTICIPATION BY UNOLS ASSOC. MEMBERS	7%	4%	24%	2%	7%
PARTICIPATION BY NON-UNOLS	5%	9%	14%	5%	8%
FOREIGN PARTICIPATION	9%	1%	10%	1%	4%
SHIP SUPPORT FUNDING					
NSF	74.7%	51.7%	80.8%	59.4%	65.3%
ONR	16.0%	19.5%	.4%	2.1%	11.4%
ALL OTHER FEDERAL	6.6%	24.7%	12.5%	26.1%	17.4%
NON-FEDERAL	2.8%	4.8%	6.3%	12.4%	6.1%

FIGURES EXCLUDE 11 DAYS OF OPERATIONS BY R/V ENDEAVOR FOR DELIVERY AND TRIALS.

PROFILE OF UNOLS FLEET

BY AGE & SIZE

1977

	10 YEARS & UNDER	11-20	21-30	OVER 30 YEARS	TOTAL
OVER 200 FT.	2	5	0	0	7
150 - 199 FT.	7	1	0	1	9
100 - 149 FT.	0	2	1	0	3
UNDER 100 FT.	5	2	1	1	9
ALL SHIPS	14	10	2	2	28

AVERAGE DAILY COSTS

	1973	1974	1975	1976	1977
OVER 200FT	\$3,749	\$4,363	\$5,144	\$4,885	\$5,110
150FT - 200FT	2,453	2,807	2,969	2,952	3,083
100FT - 149FT	1,388	1,715	2,079	2,314	1,987
60FT - 99FT	974	1,046	1,024	1,267	1,290

1977 SUMMARY OF OPERATIONAL COSTS
\$ K

	OVER 200FT	150- 200FT	100- 149FT	60- 99FT	TOTAL	
CREW SALARIES	611	312	235	112	8605	39%
MARINE STAFF	70	53	50	22	1269	6%
MAINTENANCE	59	50	34	19	1095	5%
FUEL	248	206	53	20	4465	20%
FOOD	78	55	28	10	1180	5%
INSURANCE	46	27	23	6	689	3%
TRAVEL	23	17	12	1.4	401.2	2%
OTHER	161	108	83	35	2687	12%
INDIRECT	153	77	47	23	1836	8%
TOTAL	10,463	7,387	2,213	2,164	22,227	

AVERAGE ANNUAL SHIP OPS. COST - \$ K

	1973	1974	1975	1976	EST. 1977	AVE. ANNUAL INCREASE
OVER 200FT	1,026	1,193	1,249	1,348	1,495	9%
150FT - 200FT	632	696	723	820	923	9%
100FT - 149FT	370	367	473	588	553	8.7%
60FT - 99FT	149	154	155	203	240	10.7%
TOTAL FLEET COSTS	15,442	17,960	19,058	21,300	22,273	9.4%

NUMBER OF UNOLS SHIPS/
AVERAGE OPERATING DAYS

	1972	1973	1974	1975	1976
OVER 200FT	8/264	8/280	8/277	8/243	7/266
150FT - 200FT	7/253	7/259	8/252	8/243	8/233
100FT - 149FT	6/193	6/219	4/211	4/227	4/230
60FT - 99FT	13/180	11/187	10/174	9/152	9/149
TOTAL	34 SHIPS	32 SHIPS	30 SHIPS	29 SHIPS	28 SHIPS

UNCL RESEARCH VESSELS FLEET OPERATIONS - 1976 -

May 1977

OPERATIONAL DAYS CHARGED BY SPONSOR

	NATL SCI, FNUIN	OFF, NAVAL RES.	U.S. GEOLOGICAL SURV.	BUR. LAND MNGMT	NATL OCEAN ATMOS	ENER. R & D ADMIN	OTHER FEDER FUNDS	STATE OR MUNIC	PRIV/ FORGN FUNDS	TOTALS *****
MELVILLE	162	0	10	0	0	0	0	10	21	203
KNORR	237	0	0	0	11	56	0	0	0	304
ATLANTIS II	228	123	0	0	0	0	0	0	0	351
CONRAD	133	162	0	0	0	17	0	0	0	312
GILLISS	234	2	0	17	0	0	0	0	0	253
T.G. THOMPSON	182	0	0	0	0	11	0	0	19	212
T.G. WASHINGTON	214	11	0	0	0	0	0	1	0	226
VERA	220	111	0	0	0	0	0	0	0	331
AGASSIZ	61	14	0	21	0	21	0	0	0	166
ENDEAVOR	11	0	0	0	0	0	4	45	0	11
OCEANUS	108	62	17	0	0	0	0	0	0	188
WECOMA	76	13	0	0	0	0	0	0	1	112
GYRE	187	9	5	60	0	18	0	0	0	278
MOANNA WAVE	0	25	0	0	0	0	0	17	0	295
ISELIN	174	34	0	23	249	0	0	7	0	263
KANA KEOKI	149	86	0	0	0	12	0	0	0	282
ALPHA HELIX	250	0	0	0	0	0	0	17	0	302
EASTWARD	287	0	0	0	0	0	0	0	52	309
VELERO IV	120	4	0	64	0	22	0	0	0	191
WARFIELD	86	0	0	0	0	0	0	0	3	117
DOLPHIN	62	0	0	3	0	29	0	19	0	84
E.B. SCRIPPS	63	22	2	0	0	0	0	30	0	117
ACONA	89	0	0	3	0	0	0	0	0	192
CAYUSE	69	3	0	0	16	0	0	0	34	125
LONGHORN	33	0	0	124	97	15	11	0	0	199
BLUEFIN	57	0	0	0	0	0	0	42	0	127
MOH	102	0	0	0	0	70	0	0	0	140
ONAR	158	3	0	0	11	0	8	19	0	177
CALANUS	165	0	0	0	1	8	1	6	0	182
TOTALS	3917	684	34	315	284	279	24	227	135	5999
PERCENT	65.3	11.4	.6	5.3	4.4	4.7	.4	3.8	2.3	

UNCL RESEARCH VESSELS FLEET OPERATIONS - 1976 -

May 1977

OPERATIONAL DAYS CHARGED BY SPONSOR

	NATL SCI. FUNDS	OFF, NAVAL RES.	U.S. GEOLOG. SURV.	BUR. LAND MNGMT	NATL OCEAN ATMOS	ENER. R & D ADMIN	OTHER FEDER FUNDS	STATE OR MUNIC	PRIV/ FORGN FUNDS	TOTALS -----
UNIV. HAWAII	149	111	0	0	243	0	0	24	0	547
UNIV. ALASKA	89	0	0	3	66	0	0	0	34	192
UNIV. WASHINGTON	442	3	0	0	12	19	9	25	19	529
OREGON STATE UNIV.	145	16	0	0	32	33	11	0	0	237
SCRIPPS INST. OCEAN	812	47	12	24	0	21	4	105	73	1098
UNIV. SO. CALIF.	120	4	0	64	0	0	0	0	3	191
TEXAS A&M UNIV.	187	9	5	60	0	0	0	17	0	278
UNIV. TEXAS	33	0	0	124	0	0	0	42	0	199
UNIV. MIAMI, RSMAS	573	36	0	40	0	12	0	12	5	678
UNIV GA., SKIDAWAY	57	0	0	0	0	70	0	0	0	127
DUKE UNIV.	287	0	0	0	0	22	0	0	0	309
JOHNS HOPKINS UNIV.	86	0	0	0	0	29	0	2	0	117
LAMONT-DOHERTY GEOL	353	273	0	0	0	17	0	0	0	643
UNIV. RHODE ISLAND	11	0	0	0	0	0	0	0	0	11
WOODS HOLE OCEANO I	573	185	17	0	11	56	0	0	1	843
TOTALS	3917	684	34	315	384	279	24	227	135	5999
PERCENT	65.3	11.4	.6	5.3	6.4	4.7	.4	3.8	2.3	

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1976

May 1977

CRUISE DAYS PROFILE

NUMBER OF OPERATIONAL DAYS BY DISCIPLINE

	PHYS OCEAN	ACCU STICS	CHEM OCEAN	BIBL OCEAN	ENVIR & ECOL	FISH, INVT	CLIM/ METEØ	GEOL GEOPH	MAP & CHRTG	OCEAN ENGRG	TRAIN ING	TRANS NOSCI	TOTAL -----
MELVILLE	0	0	15	2	0	0	0	144	0	3	0	39	203
KNORR	30	0	64	39	19	0	0	152	0	0	0	0	304
ATLANTIS II	125	0	38	3	0	0	0	185	0	0	0	0	351
CONRAD	18	0	0	0	0	0	0	294	0	0	0	0	312
GILLISS	15	0	95	62	37	0	0	44	0	0	0	0	253
T.G. THOMPSON	88	0	58	0	15	0	0	20	0	0	0	0	212
T.G. WASHINGTON	108	12	0	0	0	0	0	105	0	0	0	31	226
VERA	0	0	0	0	0	0	0	331	0	0	0	0	331
AGASSIZ	50	0	21	32	33	0	0	28	0	2	0	0	166
ENDEAVOR	0	0	0	8	3	0	0	0	0	0	0	0	11
OCEANUS	43	40	2	71	2	0	0	19	0	0	0	0	188
WECOMA	5	0	0	13	20	5	10	26	0	43	0	1	112
GYRE	45	0	77	40	30	0	0	77	0	0	9	0	278
MOANNA WAVE	207	5	19	15	30	0	0	0	0	0	0	0	293
ISELIN	14	27	62	56	23	0	0	58	0	0	0	19	243
KANA KEOKI	28	0	0	0	20	0	0	201	0	0	1	3	252
ALPHA HELIX	0	0	57	171	74	0	0	0	0	0	0	0	302
EASTWARD	41	0	61	31	99	0	0	62	0	0	0	0	309
VEJERØ IV	8	4	5	65	30	0	0	79	0	0	0	15	191
WARFIELD	0	0	0	36	46	0	0	35	0	0	0	0	117
DOLPHIN	0	0	0	63	19	0	0	0	0	0	0	0	84
E.B. SCRIPPS	18	0	1	5	0	0	0	63	0	11	11	8	117
ACONA	23	41	8	24	76	0	0	20	0	0	0	0	192
CAYUSE	0	2	60	8	26	23	1	5	0	0	0	0	125
LONGHORN	0	0	53	12	78	0	0	49	0	0	1	5	199
BLUEFIN	68	0	0	12	44	0	0	0	0	0	0	3	127
HOW	5	0	14	23	17	51	0	10	0	8	12	0	140
BNAR	36	0	83	6	39	0	0	4	0	3	6	0	177
CALANUS	0	0	0	97	11	0	0	68	0	0	4	2	182
TOTALS	975	131	793	894	791	79	11	2079	0	71	44	131	5999
PERCENT	16.3	2.2	13.2	14.9	13.2	1.3	.2	34.7	.0	1.2	.7	2.2	

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1976

May 1977

CRUISE DAYS PROFILE

NUMBER OF OPERATIONAL DAYS BY DISCIPLINE

	PHYS OCEAN	ACCOU STICS	CHEM OCEAN	BIOLOGICAL OCEAN	ENVIR & ECOL	FISH. INVEST	CLIM/ METEOR	GEOLOGICAL GEOPH	MAP & CHRTG	OCEAN ENGRG	TRAIN ING	TRANS NO SCI	TOTAL -----
NAT'L SCIENCE FNDTN	455	53	612	752	390	44	10	1474	0	63	10	54	3917
OFF. NAVAL RESEARCH	166	78	8	20	1	0	1	400	0	2	0	8	684
US GEOL. SURVEY	0	0	0	0	0	0	0	34	0	0	0	0	34
BUR. LAND MNGMT.	0	0	73	0	172	0	0	70	0	0	0	0	315
NAT'L OCEAN/ATMOSPHERIC	215	0	27	45	46	28	0	11	0	0	0	12	384
ENERGY R&D ADMIN.	97	0	67	1	112	0	0	0	0	0	0	2	279
OTHER FEDERAL	4	0	5	0	13	0	0	2	0	0	0	0	24
STATE/MUNICIPAL	38	0	1	24	15	7	0	88	0	6	34	14	227
OTHER / PRIVATE	0	0	0	52	42	0	0	0	0	0	0	41	135
TOTALS	975	131	793	894	791	79	11	2079	0	71	44	131	5999
PERCENT	16.3	2.2	13.2	14.9	13.2	1.3	.2	34.7	.0	1.2	.7	2.2	

UNBL RESEARCH VESSELS FLEET OPERATIONS • 1976 •

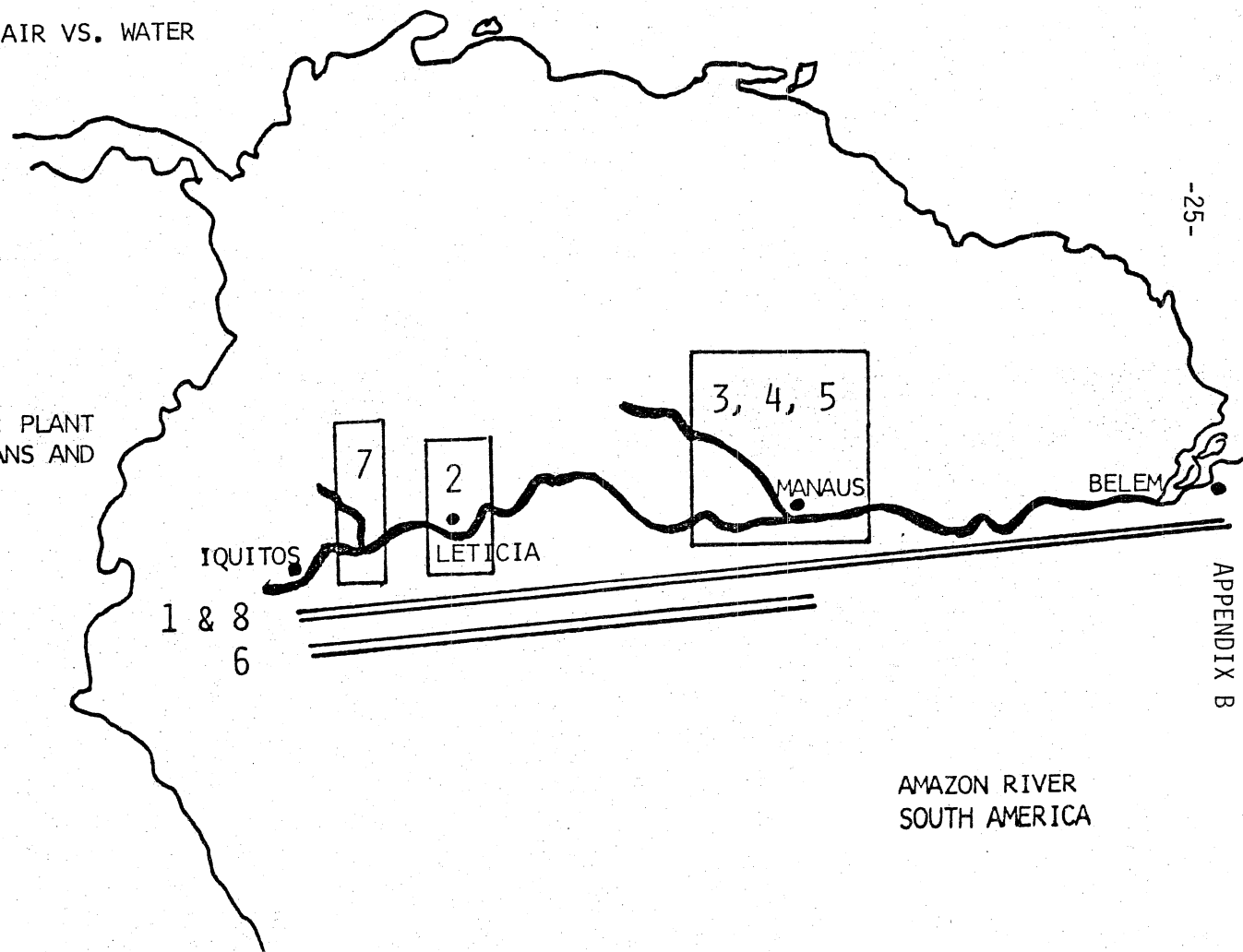
May 1977

PROJECT MAN-DAYS AT SEA BY SPONSOR

	TOTAL DAYS CHRGD	NATL SCI. FNDTN	OFF. NAVAL RES.	U.S. GEOL. SURV.	BUR. LAND MNGMT	NATL OCEAN ATMOS	ENER. R & D ADMIN	OTHER FEDER FUNDS	STATE OR MUNIC	PRIV/ FORGN FUNDS	TOTALS -----
MELVILLE	203	3912	0	240	0	0	0	135	420	4707	
KNØRR	304	3647	399	0	0	298	990	0	31	5365	
ATLANTIS II	351	2980	1804	0	0	0	0	0	0	4792	
CONRAD	312	1357	1493	0	0	0	342	0	0	3192	
GILLISS	253	2157	113	0	240	0	0	0	0	2510	
T.G. THOMPSON	212	2418	51	0	0	0	152	0	50	2671	
T.G. WASHINGTON	226	3044	403	0	0	0	0	100	60	3607	
VEMA	331	2260	1075	0	0	0	0	0	0	3335	
AGASSIZ	166	648	187	0	264	0	312	50	220	1683	
ENDEAVOR	11	142	0	0	0	0	0	0	0	142	
OCEANUS	188	1060	539	212	4	30	46	0	0	2117	
WECOMA	112	863	162	0	0	75	108	0	222	1208	
GYRE	278	1877	248	207	843	0	0	0	42	3361	
MOANNA WAVE	295	0	156	0	12	2146	0	144	0	2318	
ISELIN	243	1775	315	0	210	0	132	0	0	2432	
KANA KEOKI	252	1910	1115	0	0	0	0	165	31	3221	
ALPHA HELIX	302	2233	0	0	0	0	0	494	43	3193	
EASTWARD	309	2539	34	45	0	0	260	0	18	2959	
VELERO IV	191	961	44	0	791	0	0	0	30	1826	
WARFIELD	117	577	12	0	0	3	228	0	3	823	
DOLPHIN	84	271	0	0	21	0	0	202	0	494	
E.B. SCRIPPS	117	339	79	24	0	0	1	37	466	930	
ACONA	192	448	0	0	54	333	0	0	256	1091	
CAYUSE	125	441	19	0	0	208	112	100	0	880	
LONGHORN	199	100	0	0	1048	18	0	0	481	1647	
BLUEFIN	127	132	0	0	0	0	329	10	2	473	
HØH	140	407	0	0	0	85	0	48	405	945	
ØNAR	177	965	17	0	0	5	46	4	56	1093	
CALANUS	182	858	0	0	0	0	0	4	166	1058	
TOTALS	5999	40321	8265	728	3487	3201	3058	1126	2274	64093	
PERCENT		62.9	12.9	1.1	5.4	5.0	4.8	1.8	3.5	5.5	

R/V ALPHA HELIX
 AMAZON EXPEDITION 1976-1977

PHASE	SCIENCE
<u>1 AND 8</u> EDMOND	SEDIMENT LOAD; WATER CHEMISTRY
<u>2</u> NEEL	GENETICS - BLOOD STUDIES OF PRIMITIVE TRIBES IN BRAZIL, PERU, COLOMBIA
<u>3</u> RANDALL/ HOCHACHKA	RESPIRATORY STUDIES: AIR VS. WATER BREATHING FISH
<u>4</u> RIGGS	FISH HEMOGLOBIN
<u>5</u> NICOL	EYE PHYSIOLOGY - FISH
<u>6</u> PRANCE	PLANT TAXONOMY
<u>7</u> SCHULTES	PHARMACOLOGICAL STUDY: PLANT HALLUCINOGEN; AMPHIBIANS AND INSECTS



AMAZON EXPEDITION 1976-1977

Phase I - June 9-July 8, 1976. Dr. John Edmond, Chief Scientist.

This study undertaken to better understand the mechanisms controlling the Amazon River's chemical characteristics and the interaction between geology, vegetation, season, and water flow. This is a sedimentation study. (MIT, U.S. Geological Survey, University of Pisa, Italy)

Phase II - July 14-Aug. 21, 1976. Dr. James Neel, Chief Scientist.

Multidisciplinary study of six Amerindian tribes of Amazonian Basin. Objectives to collect demographic, genetic, anthropometric, medical, and linguistic material on these tribes. (University of Michigan Medical School; Center for Disease Control)

Phase III - Sept. 5-Oct. 5, 1976. Dr. David Randall/Dr. P.W.

Hochachka, Co-Chief Scientists. This study done mostly on Lake Januca. Study of remote areas reminiscent of ancient times where aquatic vertebrates went from water breathing to air breathing fish, i.e. lungfish (Lepidosiren), eel (Symbranchus), osteoglossid (Arapaima), etc. (This is the Canadian group).

Phase IV - Nov. 5-Dec. 20, 1976. Dr. Austen Riggs, Chief Scientist.

Hemoglobin of fishes and other organisms. Molecular adaptations in hemoglobins of fishes living in natural waters with varying amounts of oxygen and acidity. (University of Texas, Austin; Univeristy of Oslo; Citta Universitaria, Rome, Italy)

Phase V - Jan. 6-Feb. 2, 1977. Dr. Colin Nicol, Chief Scientist.

Structure and function of eyes of Amazonian fishes. Light transmission and turbidity of river waters measured. The eyes examined and the optical properties determined and the visual pigments defined. Waters of both the Negro and Solimoes Amazon used. (UCLA Jules Stein Eye Institute; University of Texas, Port Aransas; Universidade de Sal Paulo, Brazil; University of London etc.)

Phase VI - Feb. 9-March 8, 1977. Dr. Ghillean Prance, Chief Scientist.

Study of plant systematics, primarily on seed proteins. First use of disc gel electrophoresis on plants along a stretch of river and one of the first in tropical botany. THIS DUE TO ALPHA HELIX FACTOR. (New York Botanical Gardens and the Academy of Natural Sciences, Stoud Water Research Center)

Phase VII - March 27-May 12, 1977. Dr. Richard Schultes, Chief

Scientist. Pharmacological study on plant hallucinogens. Also study aboard on Amazon ants and poisonous frogs. (Harvard Botanical Museum; New York American Museum of Natural History; NIH; Swedish Medical Research Council, Karolinska Institutet; Boston University, etc.)

Phase VIII - May 17-June 8, 1977. Dr. John Edmond, Chief Scientist.

Same program and participants as Phase I.

PROPOSED UNOLS ROLE IN FACILITATING DISTANT WATER RESEARCH

Warren S. Wooster, Ch., UNOLS
March 1977

A major portion of the operations of some UNOLS members has been commonly conducted in waters lying within 200 miles of the coasts of other countries. These operations have become increasingly difficult because of the unilateral actions of many coastal states in exercising control over research conducted off their shores. Further restrictions are a certain consequence of the law of the sea negotiations now underway.

Details of the future regime for marine scientific research are not yet established. It seems likely that coastal state consent will be required for all research activities within 200 miles of the coast. Consent may be coupled with an extensive set of conditions and obligations, similar to but more comprehensive than those already imposed by many countries.

Since all academic institutions operating research vessels in distant waters are members of UNOLS, UNOLS joined the Ocean Policy Committee of the National Academy of Sciences in sponsoring a workshop to consider problems of scientific research in the Third United Nations Law of the Sea Conference. That workshop, which met on 15 January 1976, recommended that UNOLS assume a lead role in designing, organizing, and carrying out a more systematic, comprehensive, and coordinated program for assisting U. S. scientists and their institutions in conducting research in distant waters and in meeting their obligations toward countries in whose waters they operate.

The UNOLS Advisory Council, at its meeting on 6-7 December 1976, agreed that this was an appropriate task for UNOLS and requested that

a paper be prepared setting forth ways whereby it could be carried out. At a subsequent meeting, on 25 February, the Advisory Council reviewed a draft paper that attempted to spell out a set of procedures consistent with the obligations set forth in the Revised Single Negotiating Text.

The Advisory Council decided that it was premature to elaborate a precise set of procedures until agreement is reached in the Law of the Sea Conference. These procedures must be developed through discussions with the State Department which is the official link with other countries, and with other Federal agencies that support or are directly engaged in distant water research. At the same time, it is essential that research vessel operators take a lead role in formulating procedures that will have a major impact on their future operations.

Accordingly, the following actions are proposed for UNOLS to take at its 1977 Annual Meeting:

1. Endorse the position that UNOLS should assume the lead role in designing, organizing and carrying out a more systematic, comprehensive, and coordinated program for assisting U. S. scientists and their institutions in conducting research in distant waters and in meeting their obligations toward countries in whose waters they operate.
2. Establish a Distant Water Operating Group consisting of representatives of interested members.
3. Empower that Group to enter into discussions with representatives of State Department, Navy, NOAA and other appropriate Federal agencies in order to develop satisfactory procedures to facilitate operation under the new regime for marine scientific research.

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

CHARTER

Recognizing the need for improved coordinated use of Federally supported oceanographic facilities, the community of academic oceanographic institutions which operate those facilities by virtue of this Charter, do hereby establish such a system.

1. Objectives

- (a) To create a mechanism for coordinated utilization of and planning for oceanographic facilities through an association of academic institutions in a national system whereby institutions can work together and with funding agencies to assist in the effective use, assessment and planning for oceanographic facilities for graduate level research and educational programs.
- (b) To optimize federal and other support for academic oceanography, thereby continuing and enhancing the excellence of this nation's oceanographic program.

2. Organization

- (a) The purpose of the organization is to provide for community-wide coordination and review of the utilization of academic oceanographic facilities, opportunity for access to those facilities, assessment of the current match of facilities to the needs of academic oceanographic programs and appropriate recommendations of priorities for replacing, modifying or improving the numbers and mix of facilities for the community of users.
- (b) The organization shall be named the University-National Oceanographic Laboratory System (UNOLS).
- (c) The organization shall be comprised of the UNOLS institutions, the Advisory Council, Executive Committee, a UNOLS Office, and other sub-bodies which may be provided for from time to time.
- (d) Membership in UNOLS is open to academic institutions having graduate level marine science programs and which operate or use sea-going oceanographic facilities supported to a significant degree by federal funds. Membership shall be on an institutional basis. Each UNOLS Institution shall designate a representative to UNOLS who normally will speak and act for the institution. In his absence he will be represented by an authorized alternate. Membership shall become effective upon application by an institution and a majority concurrence of the existing memberships specified herein. Membership may be voluntarily terminated by

any member on written notice to the UNOLS Chairman, and involuntarily terminated by a two-thirds vote of the Member Institutions when that member is no longer considered qualified for that category of membership.

- (e) UNOLS institutions are divided into two groups to promote coordination and sharing of facilities and to facilitate information transfer about operating procedures and practices.

(1) Member Institutions operate significant seagoing oceanographic research facilities. These facilities are regularly available to users outside the operating institution through such mechanisms as federally funded facility support. Institutions will normally be expected to show evidence of three or more years of continuous operation of shared significant research facilities in order to qualify for Membership. Election as a UNOLS Member Institution will be considered by the Advisory Council upon receipt for evaluation of a written application indicating the facilities involved, the graduate-level research and academic program of the institution, its history as an operator of shared significant oceanographic facilities, and a projection of the use of facilities for the next year, including user charges. Elections to membership will be held at the Annual Meeting and require a majority vote of the Member Institutions present or by proxy if absent.

(2) Associate Institutions. Academic institutions conducting graduate level research and instructional programs in the marine sciences and who use seagoing or other facilities are eligible for election as UNOLS Associate Institutions. Election as UNOLS Associate will normally be done after submission of a written application to the Advisory Council for evaluation of the institution's research and academic programs and its probable involvement in UNOLS activities. Election will be made at the Annual Meeting by a vote of the UNOLS institutions. A simple majority vote of UNOLS Member and Associate Institutions present or by proxy if absent will be sufficient for election.

- (f) The Chairman of UNOLS will be elected from among the Member Institutions. The Vice Chairman may be elected from among the Associate Member Institutions. Each will serve for a term of one year and will not serve more than three successive terms. The Vice Chairman will serve in the absence of the Chairman. If neither the Chairman nor Vice Chairman are present at a meeting, the members present shall elect an Acting Chairman for the duration of the meeting.

3. Elections

- (a) Annual election of UNOLS Chairman and Vice Chairman will occur at the Annual Meeting.

- (b) Nominations for these positions as well as for vacancies on Advisory Council will be submitted in writing before the Annual Meeting to the Chairman or Executive Secretary of UNOLS. Any individual or institution may submit nominations.
- (c) A Nominating Committee drawn from three UNOLS Institutions will be appointed by the UNOLS Chairman to consider the nominations received in writing for the UNOLS Chairman, UNOLS Vice-Chairman and members of the Advisory Council. The Nominating Committee shall submit a slate of at least two candidates for each position for the vote of the UNOLS Member Institutions in attendance at the Annual Meeting or by proxy if absent. In nominating candidates, the Nominating Committee shall give due consideration to maintaining appropriate balance among institutions from different geographic regions, having different types of facilities, and operations. Individuals nominated should also be chosen to assure representation of different scientific disciplines.

4. UNOLS Advisory Council

- (a) The purpose of the Advisory Council will be to monitor UNOLS activities giving attention to the effective use of existing oceanographic facilities and to the performance of the Member Institutions in providing access to Federally supported university facilities for scientists from other institutions, especially from non-ship operating institutions. It will evaluate the need for replacement and additional facilities and assess whether some facilities are outmoded or in excess of current needs.

The Advisory Council will consider and make recommendations to funding agencies of the needs for specialized facilities or new concepts in facilities and the balance between facilities and funded research programs. It will assist funding agencies to obtain adequate and uniform financial data and cruise reporting of ship operations.

- (b) The Advisory Council shall be comprised of eight members, five of whom will be from Member Institutions and three from Associate Institutions. No more than one member will serve from any one institution. Members will be elected for three-year terms with no limitation on the number of terms. Vacancies occurring during the year shall be filled at the next Annual Meeting.
- (c) The UNOLS Chairman and UNOLS Vice-Chairman will serve as ex-officio members of the Advisory Council.
- (d) The Chairman and Vice-Chairman of the Advisory Council shall be elected or re-elected annually from and by its members present or by proxy.

5. Executive Committee

- (a) The UNOLS Executive Committee shall be comprised of the Chairman, Vice-Chairman, and Executive Secretary of UNOLS, and the Chairman of the UNOLS Advisory Council.
- (b) The purpose of the UNOLS Executive Committee is:
 - (1) To act on behalf of UNOLS in matters which need immediate action and where a meeting or other action by the entire membership is not feasible.
 - (2) Prepare recommendations and positions on matters requiring review, approval and other action by UNOLS.
- (c) All actions by UNOLS Executive Committee shall be promptly transmitted in writing to all UNOLS Institutions. No action shall become final until approved by the majority of all Member Institutions.

6. UNOLS Office

- (a) A UNOLS Office will normally be established at a UNOLS Member Institution.
- (b) The purpose of the UNOLS Office will be to provide secretariat services for UNOLS and the Advisory Council. It will serve as the focal point for UNOLS correspondence and for central files on facilities, schedules, user requirements and related information.
- (c) The Executive Secretary of UNOLS will head the UNOLS Office. In the event a replacement for the Executive Secretary has to be found, a nominating committee, not limited in size, but organized with due regard for UNOLS Member Institutions' interests shall be appointed by the Advisory Council for the purpose of advertising for and the selection of a candidate. When a suitable candidate has been found, the UNOLS Member Institutions will be polled. A simple majority shall prevail.
- (d) Costs of operating the UNOLS Office will be Federally funded and should be prorated among the funding agencies in accordance with their participation in contract and grant programs with the institutions, or by such other arrangements as may be agreed to.
- (e) Contractual obligations between the UNOLS institution hosting the UNOLS Office and the funding agencies will be the responsibility of those organizations.

7. Other Sub-Bodies

- (a) In order to achieve particular purposes pursuant to the goals of the organization, sub-bodies either ad-hoc or permanent may be established by the membership. The Advisory Council may establish ad-hoc bodies as it deems necessary.

8. Coordination of Facilities

- (a) An underlying principal of the UNOLS is that control of facility operations and scheduling remain the responsibility of the operating institution with the understanding that reasonable efforts will be made to provide services to the scheduled users.
- (b) Coordination of ship schedules will be in accordance with procedures set forth in Annex I to this Charter. In general, UNOLS ship schedule meetings for broad operating areas will be held annually to coordinate tentative ship schedules developed by members. The objective of the meetings is to compare the various schedules, to recommend modification of them as desirable in order to achieve more effective use of ships, and to incorporate as many as possible of the requirements that could not be integrated in earlier schedules.
- (c) Coordination of other facilities will develop as the need becomes apparent. Requirements for specialized facilities are often identified by scientists themselves. Recommendations so generated by the scientific community can then be made to the funding agencies via the Advisory Council. Likewise, the availability of specialized facilities can be communicated to the academic oceanographic community through the efforts of the UNOLS.

9. Meetings

- (a) The Chairman of UNOLS, in accordance with the following, shall be responsible for the convening of all meetings of UNOLS and the Agenda:
 - (1) At least once a year UNOLS Institutions will convene to coordinate their facility schedules. Schedule coordination may involve more than one meeting each based on, but not limited to, a broad operating area and spaced sufficiently in time to permit attendance at all if desired. Other scientists and laboratories not members of UNOLS but who have indicated their requirements for work also may attend.
 - (2) In addition to the scheduling of meetings, the UNOLS Institutions and Advisory Council will hold a joint annual open session which may be attended by any interested party. The open session will provide an input to UNOLS assessment, planning and organizational activities by the community at large.

- (3) Notification of the UNOLS annual meeting and schedule coordinating meetings will be given broad distribution at least thirty days in advance.
 - (4) Special meetings of UNOLS may be called at the discretion of the UNOLS Chairman on the request of three or more UNOLS Institutions.
- (b) The Advisory Council will meet at least three times each year, in addition to or in conjunction with the meetings listed above, in observance of the purposes of the Council. The Advisory Council will attend all UNOLS meetings convened for the purpose of coordinating schedules to observe and review the results of such scheduling. Meetings of the Advisory Council shall be at the call of the Council Chairman.
 - (c) Minutes shall be maintained of the proceedings of all UNOLS and Advisory Council meetings and shall be distributed to all UNOLS Institutions and Council members and participants.

10. Voting

- (a) Voting at all UNOLS Meetings and on matters submitted by the Chairman through correspondence shall be on the basis of UNOLS Member Institutions, each being entitled to one vote.
- (b) All recommendations and decisions except as herein set forth shall be on the basis of a simple majority of Member Institutions represented present except that significant matters shall be decided by an absolute majority of all Member Institutions. A significant matter shall be determined by the Chairman, any Member Institution, or any item not on the circulated agenda.
- (c) Voting will normally be by voice, but on request of any Member Institution represented, by secret ballot.

11. Reports

- (a) Reports of the UNOLS schedule coordination meetings and annual meeting shall be prepared and distributed to funding agencies, UNOLS institutions and participants.
- (b) The Advisory Council shall make an annual report to the funding agencies via UNOLS and shall include such matters pursuant to its Charter as:
 - (1) Review and evaluation of the effectiveness of utilization and operation of Federally supported oceanographic facilities including the providing of access to facilities to all qualified scientists.

- (2) The need for replacement and additional facilities and their assignment, and an assessment of outmoded or excess facilities and their disposition.
 - (3) The consideration of specialized facilities or new concepts in facilities.
 - (4) Recommendations as to the balance between facilities and funded research programs.
- (c) Minority Reports may be submitted by UNOLS or the Advisory Council but must be signed by at least two Member Institutions or Associate Institutions.

12. Authority and Powers

- (a) Recommendations and decisions by UNOLS or any sub-organization thereof are not binding on any member or interested participant thereof.
- (b) No legal, fiscal or contractual authority is intended, granted, or implied under the terms of this Charter.

13. Implementation, Amendments and Termination

- (a) This Charter may be amended or Operative Annexes added or deleted if and when approved by two-thirds vote of the UNOLS Member Institutions, the matter having been submitted to the membership at least thirty days prior to the vote.
- (b) This Charter shall remain in effect for a period of three years after which time it shall be dissolved unless modified or re-adopted by vote of the UNOLS Member Institutions.

Originally adopted: Sept. 22, 1971, Palisades, New York
Amended: July 13, 1973, by mailed ballot
Amended & readopted: May 17, 1974, Washington, D.C.
Amended: May 26, 1976, Washington, D.C.
Amended & readopted: May 13, 1977, Washington, D.C.

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ANNEX I

TO THE CHARTER

A Procedure for Coordinating Ship Schedules

1. An important facet of the UNOLS' activities is the provision of a mechanism to coordinate the use of available facilities. The coordination of ship schedules is the most obvious area where immediate benefit might be gained. An underlying principal of the UNOLS is that control of facility operations and scheduling remain the responsibility of the operating institution with the understanding that reasonable efforts will be made to provide services to scheduled users. It will be a responsibility of the UNOLS Advisory Council to assess and report on the effectiveness of facility utilization. Within this framework, the following procedures shall apply for the coordination of ship schedules.
2. As an initial step each UNOLS institution responsible for the operation of one or more ships will develop a tentative schedule for its ships. This tentative schedule should incorporate as broad an input as possible, both from within and without the operating institution. Further, the schedule at this stage must be considered as tentative; it is recognized that factors such as funding, logistics, weather, geography and research programs will provide many constraints. This tentative schedule should be forwarded to the UNOLS Office no later than 1 March. The UNOLS Office will collate the various tentative schedules and distribute these to UNOLS institutions and widely to other interested institutions and scientists having Federally funded oceanographic research programs.
3. A scheduled coordination meeting shall be convened each year by the UNOLS Chairman. This meeting shall ordinarily be held in conjunction with the annual UNOLS meeting generally no later than mid-May. The objective of the meeting is to compare the various schedules, to modify them as desirable in order to achieve more effective use of ships and to incorporate as many as possible of the requirements that could not be integrated in earlier schedules. Other scientists, and non-UNOLS institutions who have indicated their requirements for work at sea in the area under discussion may also attend and discuss their interests at the meeting if they so elect.
4. Subsequent to the coordination meeting, each UNOLS institution will develop a ship schedule for the following year. (Again, it must be recognized that this schedule will have to be revised continually to accommodate vagaries in ship's operating problems as well as changes

ANNEX I

in scientific programs. These changes will be the responsibility of the operating institution, but will be made in context with the previously agreed upon schedule). The schedules should be forwarded to the UNOLS Office by 1 July. The UNOLS Office will furnish funding agencies with copies.

Further, the UNOLS Office will circulate the final schedules to all interested parties. Schedule revisions will be submitted promptly to the UNOLS Office, which will develop an appropriate calendar for revision and distribution of fleet schedules based on the advice of the UNOLS Advisory Council, membership and the principal funding agencies.

5. Requests by scientists for use of ships not at their institutions should be via channels established between institutions or scientists for this purpose or by a request to the UNOLS Office which shall transmit the request to appropriate ship operator(s).

Requests for "primary" ship use (i.e., of the chief scientist) should be in the January-February period so as to be included in the procedures outlined in (2) above. Requests for "ancillary" ship use should be made between March-July when the tentative schedules are under examination.

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ANNEX II

TO THE CHARTER

National Oceanographic Facilities

1. In addition to regular institutional UNOLS facilities there may be identified National Oceanographic Facilities, defined as those facilities, specialized and otherwise, that are made available for the use of qualified scientists from any institution and the use of which shall be determined by a UNOLS Review Committee.
2. A research vessel or other research facility may be designated a National Oceanographic Facility upon the approval of UNOLS institutions after review by the UNOLS Advisory Council, with the concurrence of the owner and operator of the facility and with reasonable assurance of support. National Oceanographic Facilities may be multi or special purpose facilities and may be designated for the entire annual operating period or any significant period thereof.
3. The purpose of National Oceanographic Facilities is:
 - To provide oceanographic vessel and other facility support to scientists who do not operate or have available the required facilities.
 - To provide for the support and use in academic research of specialized and unique facilities.
4. A Review Committee for each facility shall be established for the purpose of considering proposals for facility use and for recommending programs to be scheduled. Members of the Committee shall be nominated by the UNOLS Advisory Council and shall be appointed by UNOLS. Members shall serve for terms of three years on a rotating basis. Each institution operating a National Oceanographic Facility may designate an ex-officio member in addition to those members appointed by UNOLS. The Review Committee shall elect its own Chairman from among the members appointed by UNOLS.
5. In recommending the allocation of facility time the Review Committee shall act primarily on the scientific merit of the proposed research and its compatibility with the individual facility.
6. Operational scheduling of the facility will be the function of the operating institution. The time frame for scheduling generally shall be in accordance with Annex I of the UNOLS Charter.

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7. Information and announcements advertising the availability of a National Oceanographic Facility will be a joint function of the operating institution and the UNOLS Office.
8. Receipt, acknowledgement, collating and structuring of requests for facility use will be the function of the operating institution in consultation with the UNOLS Office.
9. An annual report by UNOLS on the use of each National Oceanographic Facility will be prepared by the appropriate institution in cooperation with the Review Committee and UNOLS Office.
10. Requests for funding the operation of the facility will be the responsibility of the operating institution.
11. If a National Oceanographic Facility ceases to meet the criteria above, especially with respect to being specialized or unique, recommendation may be made by the Advisory Council to the funding agencies that such designation be discontinued.

Approved and adopted: May 5, 1972, College Station, Texas
Readopted: May 17, 1974, Washington, D.C.
Amended and readopted: May 13, 1977, Washington, D.C.

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ANNEX III

TO THE CHARTER

Research Vessel Operators' Council

1. The Research Vessel Operators' Council, having been established and operative since 1962, and having interests and goals in common with UNOLS is, by mutual consent of both organizations, made part of the University-National Oceanographic Laboratory System.
2. The purpose of the Research Vessel Operators' Council shall be to promote cooperation among the marine science research and educational institutions and to represent their interests in the areas of marine operations, governmental regulations, labor relations, and public relations as these areas affect their research fleets.
3. Membership in the Research Vessel Operators' Council shall be limited to those private, charitable, and state educational institutions which operate vessels engaged in research in the marine sciences and whose vessels are defined within the following statement:

"A vessel engaged solely in scientific research and/or instruction, operated in the public interest by either a private non-profit institution, an educational institution, or a public authority."
4. The Research Vessel Operators' Council shall enact its own by-laws and elect its own officers.
5. The Research Vessel Operators' Council shall prepare a report of its activities for the annual UNOLS meeting.

Approved and adopted: May 16, 1974, Washington, D.C.
Readopted: May 13, 1977, Washington, D.C.

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