

SUMMARY REPORT OF THE MAY 1980  
TENTH ANNUAL MEETING

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JULY 1980



SUMMARY REPORT OF TENTH ANNUAL MEETING

May 22-23, 1980, Cosmos Club Auditorium

Washington, D.C.

First Day, May 22, 1980

1. GENERAL: *The sequence below follows the order in which agenda items were considered. The italicized figures following each item represent the date/item number as originally listed on the agenda (App. I).*

Chairman for the two-day meeting was Captain T. K. Treadwell, UNOLS Chairman. He welcomed those present (see App. II) and briefly reviewed the Agenda. (22/1)

2. GUEST SPEAKER: Captain Treadwell introduced RADM A. J. Baccio, Chief of Naval Research. In his address he reviewed Navy's commitment to oceanography and the oceanographic fleet. He mentioned the rising costs in maintaining the fleet as well as the shift in the funding picture since the 1960's, wherein NSF has grown to support a larger share of the burden. He addressed particular problems and issues facing the fleet today. The RADM's full remarks are found in App. III. (22/3)

3. GUEST SPEAKER: Dr. Francis S. Johnson, Assistant Director, Astronomical, Atmospheric, Earth & Ocean Sciences Directorate at NSF was the next speaker. He addressed the probable result on research of the current attempts to achieve a balanced Federal budget, as well the possible effect of the Ocean Margin Drilling Program. His remarks are included here as App. IV. (22/4)

4. EXECUTIVE SECRETARY'S REPORT: The Secretary, Mr. Thomas Stetson, made a plea for greater coordination and cooperation among research institutions. He said this was made even more imperative in view of today's ever-increasing ship operating costs. (22/2)

5. RVOC, CHAIRMAN'S REPORT: Mr. Dean Letzing, Chairman of the Research Vessel Operator's Council was unable to be present to give this report. Captain Treadwell called on Mr. Stetson who reviewed RVOC's last Annual Meeting, held in San Diego, October 1979. The usual items of interest to RVOC were discussed such as fuel availability, cost, budget outlook, manning requirements and foreign clearances. A complete report of the meeting is available from the UNOLS Office. (22/6)

6. ADVISORY COUNCIL'S CHAIRMAN'S REPORT: Dr. Anderson recounted the Council's activities over the past year: the rather intensive fleet assessment which projected a worst-case fleet funding situation, the establishment of the Technology Assessment Committee which held its first meeting last October, and the handling of post-cruise obligations to mention the most important.

Captain Treadwell made a plea to members present to use the Council more, as the latter represents them in UNOLS. (22/7)

7. ALVIN REVIEW COMMITTEE: Dr. R. Corell, Chairman, was unable to be present to review the past five-years. This report was given instead by Captain R. Dinsmore. He commented on the viewgraphs shown here as App. V. (22/8)

8. TECHNOLOGY ASSESSMENT COMMITTEE: Mr. C. Tollios reported on the activities of his committee formed last October. The viewgraphs appear as App. VI and are self-explanatory. (22/9)

9. FACILITIES REQUIREMENTS STUDIES: Captain Treadwell listed various facilities requirements studies that were underway. NSF and ONR have requested the National Academy to conduct a broad facilities requirement study for the U.S. oceanographic community.

Another study, being conducted by the Office of Technology Assessment (OTA) under the direction of Mr. Peter A. Johnson treats the research fleets of UNOLS, NOAA, Navy, EPA, USGS and USCG. It also treats marine technicians and equipment. A draft report is available from OTA.

NACOA is also conducting a mid- to long-range study of platform requirements. Captain Treadwell will be a participant. (22/10)

10. OCEAN SCIENCES SUPPORT: Dr. D. Frankenberg, Director of NSF's Ocean Sciences Division, was introduced by Captain Treadwell with the observation he was due to leave NSF in June. Dr. Frankenberg received a round of applause for his service to the community in that capacity.

Two of his viewgraphs, showing Ocean Sciences Division support of oceanography and the fleet, are reproduced as App. VII. He spoke of the continuing problem of matching fleet support with available funds. At the present level of science project support there exists surplus capacity in the fleet. He emphasized if the community didn't address the problem it left no alternative but for the Federal agencies to do so. NSF would prefer fewer vessels in the fleet, but the ones remaining would be better supported.

He said NSF was consulting with the Navy on the possibility of the two agencies shifting proposed deadlines to earlier in the year. This would allow funding decisions on scientific projects requiring ship time to be available earlier to operators for use in formulating schedules. Hopefully rational, planned decisions regarding vessel layups could be reached earlier. (22/5)

11. OUTLOOK FOR FY 1980/1982 SHIP SUPPORT: Several government representatives spoke on this subject. Miss M. Johrde, NSF/OFS, made some amplifying comments on FY 80/81 funding based on figures shown in the first page of App. VII.

Mr. J. McMillan, NSF/OFS Program Manager for Operations, spoke of negotiations with Navy's Defense Fuel Supply Center to supply fuel to vessels engaged on both ONR and NSF projects; these appeared to be going well.

Mr. K. Kaulum, Ocean Science & Technology Detachment, Bay St. Louis, recounted ONR's oceanographic support for FY80 which included some \$2,994K for vessels and \$336K for other charters while NAVELEX budget was \$1,022K. About \$750K went for facilities such as Seabeam, SATNAV, etc. Fuel became a significant item. He looks at about ~~\$3M~~ <sup>\$30M</sup> for core programs, and additional research options totaling up to \$12M, with decisions on some to be made by July.

Dr. R. Rowland, USGS Office of Marine Research, thought East coast USGS demand would remain at about three months per year. Since the West coast office had given up use of SEA SOUNDER (Ex-YAQUINA) it appears three months during summer months will be required off Alaska for their work. (22/11)

12. NAVY-UNOLS INTERACTION: Cdr. J. Wright spoke briefly on Navy-UNOLS cooperation. Topics mentioned were the evolving fuel agreement with operators, joint publishing of research vessel schedules, and the importance of keeping Navy aware of deep tows and seismic operations with explosives and air guns. Cdr. Wright is on the CNOC staff (Cdr., Naval Oceanography Command, Bay St. Louis). (22/12)

13. R/V REFERENCE SERVICE: Lt. Cdr. W. Donat, also from CNOC (see above), gave an illustrated explanation of the Reference System, a computerized data bank maintained by CNOC. Various questions may be asked of any vessels in the system such as course, speed, position, mission, schedule, etc. He said UNOLS operators were cooperating with his office in keeping data current. His telephone number is (601) 688-4497. (22/13)

14. FUTURE USE OF LARGE MIDWATER TRAWLS: Dr. B. Robison, UCSB, put operators on notice that they could look forward to midwater trawls approaching mouths of 600 square meters. These would be used for studies of deep-sea wastes, under-utilized food species, and quantitative micro-nekton assessment.

A search and evaluation of vessels, including those of NOAA, was being conducted to identify those that could handle large and intermediate size trawls with and without modification. Most would require the addition of a double drum winch. (12/14)

15. OTHER TOPICS: Under this item Captain Treadwell introduced consideration of "A Plan for Joint Scheduling..." and that of JOI, Inc. on the same subject. The former was available as a printed document at meeting time and was presented on behalf of several operations and ship users by Captain R. Dinsmore. The latter was a recap of a draft letter from Dr. J. Knause, Chairman JOI Board of Governors, to Dr. F. Johnson, NSF, presented by Dr. W. Hay, JOI President.

Captain R. Dinsmore's remarks were derived from App. VIII and essentially model a Ship Utilization Review Committee similar to those for national facilities as provided for by the UNOLS Charter, Annex II.

Dr. W. Hay's remarks were taken from a draft letter, as mentioned above, and were not available as a handout. Essentially JOI, Inc. wants to develop new modes of cooperative scheduling and has, in this letter, tentatively divided the fleet into four tentative segments: National, Underway G&G, East and West Coast Regional. They also hope to obtain realistic estimates of fleet support in the previous year.

In summation to these two speakers Captain Treadwell said UNOLS had better heed the warnings of the two guest speakers heard that morning, and that perhaps the best of both plans could be evolved into a workable solution. (22/15)

16. SHIP SCHEDULING SESSION: Wall charts had been prepared by the UNOLS Office showing all tentative fleet tracks for 1981 and of April 1980. In the past this session has amounted to no more than a review. As it was after five P.M. a formal review was not held, but interested groups gathered to discuss problems. The Executive Secretary distributed a list of ship time requests the UNOLS office was working on. (22/16)

The day was adjourned at 1710, 22 May 1980.

Second Day, May 23, 1980

Cosmos Club Auditorium

GENERAL

A list of Member and Associate Member Institution delegates and a UNOLS Directory is appended as App. IX. A roll call indicated all 17 Member Institutions and six out of 30 Associate Members represented.

1. INTERNATIONAL POST-CRUISE OBLIGATIONS: The Executive Secretary had prepared a paper listing three alternatives for monitoring post-cruise obligations. See App. X. The membership voted for alternative C.

2. ELECTION OF OFFICERS: This year's Nomination Committee composed of Drs. G. Keller, OSU, Chairman; Arthur Maxwell, W.H.O.I., and J. Schubel, SUNY, Stony Brook presented a slate in accordance with the Charter. The following were elected. Captain T. K. Treadwell, TAMU, was re-elected Chairman of UNOLS and Dr. John H. Martin, MLML, was re-elected Vice-Chairman.

3. ELECTION TO ADVISORY COUNCIL: Drs. Charles B. Miller, OSU, and Derek W. Spencer, W.H.O.I., were elected to replace Drs. R. Fisher and G. Keller, Member Institution representatives.

Dr. William M. Sackett, U. South Florida, was elected to replace Dr. J. Schubel, a departing member of an Associate Institution.

4. APPOINTMENTS TO THE ALVIN REVIEW COMMITTEE: Drs. R. Turner and J. Corliss were committee members with expiring terms and were replaced by Dr. Daniel E. Karig, Cornell, and Dr. Gilbert T. Rowe, Brookhaven National Laboratory.

5. OTHER BUSINESS:

a. NEW MEMBER: The University of California, Santa Barbara, had applied for Associate membership through the Marine Science Institute, Dr. Henry W. Offen, Director. They were so elected.

b. AGOR MANNING: This topic has been under review for some time. Captain Treadwell and others had looked into the possibility of R/V's operating under charter party agreements sailing under waivers due to critical personnel shortages. After much consultation with the Navy, it appears that any adjustments made in these agreements will be made at the time of renewal.

c. SHIP SCHEDULING: A motion was made by Dr. G. Keller to the effect that UNOLS should form a working group quickly to deal with scheduling problems. The motion passed and voting members passed on the names of such a working group recommended by the Advisory Council the previous night. The working group:

Dr. G. Anderson, U. of WA	Dr. B. Robinson, UCSB
Capt. R. Dinsmore, W.H.O.I.	Dr. T. Rossby, URI
Dr. D. Hayes, L-DGO	Dr. G. Shor, Scripps
Dr. G. Keller, OSU (as time permits)	Dr. T. Treadwell, TAMU
Dr. J. Martin, MLML	

This group met right after the Annual Meeting and elected Captain Dinsmore Chairman. Their next meeting will be with JOI, Inc. at Scripps in July.

d. MEETINGS: Captain Treadwell raised the question of whether UNOLS should meet more often, with a view to better scheduling. After hearing warnings from the previous day's speakers many felt this advisable. Dr. O. Pilkey suggested bi-annual meetings of the membership. This appeared to meet with favor.

Members agreed to voluntarily submit their five-year budgets, Table 1C (shiptime costs per project) and tentative 1981 schedules to the UNOLS office. These may be useful to various groups, whether JOI, Inc. or UNOLS, when they come to grips with vessel scheduling problems.

e. OCEAN MARGIN DRILLING: T. Stetson announced the OMD Program foresees long periods, perhaps up to a year, on one station. They are interested in reviewing proposals from scientists of any discipline for work that might be accomplished from the GLOMAR EXPLORER. Requests can be directed to Dr. Godfrey Savage, Engineering Consultant, Joint Oceanographic Institutions, 2600 Virginia Ave. NW, Suite 5, Washington, D.C. 20037. The telephone number is (202) 333-8276.

f. Captain Treadwell called for additional items; there being none, the Tenth Annual Meeting was concluded.

The meeting was adjourned at 11:45, on 23 May, 1980.

Thomas Stetson  
Executive Secretary  
UNOLS

TS/jpz

## UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

## TENTH ANNUAL MEETING

## AGENDA

0900 THURSDAY MAY 22, 1980, COSMOS CLUB AUDITORIUM

2121 MASSACHUSETTS AVENUE, WASHINGTON, D.C.

1. INTRODUCTION & WELCOME BY CAPTAIN T. K. TREADWELL, CHAIRMAN, UNOLS
2. REPORT BY THOMAS R. STETSON, EXECUTIVE SECRETARY, UNOLS
3. GUEST SPEAKER: RADM. ALBERT J. BACIOCICO, JR., CHIEF OF NAVAL RESEARCH
4. GUEST SPEAKER: DR. FRANCIS S. JOHNSON, ASST. DIR. FOR AEO SCIENCES, NSF
5. OCEAN SCIENCES SUPPORT, COMMENTARY BY DR. DIRK FRANKENBURG, DIR. DIVISION OF OCEAN SCIENCES, NSF
6. REPORT BY DEAN LETZRING, CHAIRMAN, RESEARCH VESSEL OPERATORS COUNCIL
7. REPORT BY DR. GEORGE C. ANDERSON, CHAIRMAN, UNOLS ADVISORY COUNCIL
8. ALVIN REVIEW COMMITTEE, REPORT BY DR. ROBERT W. CORELL
9. TECHNOLOGY ASSESSMENT COMMITTEE, REPORT BY CONSTANTINE D. TOLLIOS
10. STATUS OF FACILITIES REQUIREMENTS STUDIES, UPDATE BY CAPTAIN T. K. TREADWELL

1200-1400

LUNCH BREAK

HEROY ROOM OR YOUR CHOICE

11. OUTLOOK FOR FY 1981/1982 SHIP SUPPORT, FORECASTS BY FEDERAL FUNDING AGENCIES
12. NAVY-UNOLS INTERACTION, COMMENTARY BY CDR. JULIAN M. WRIGHT
13. RESEARCH VEHICLE REFERENCE SERVICE, LT. CDR. WINNFELD DONAT
14. FUTURE USE OF LARGE MIDWATER TRAWLS BY THE ACADEMIC FLEET, DR. BRUCE H. ROBISON
15. OTHER TOPICS  
*This is an opportunity for representatives of research institutions as well as individual scientists and Federal officials to raise and discuss issues concerning matters of interest to the meeting*
16. SHIP SCHEDULING SESSION
  - *The ship scheduling session is an informal meeting for UNOLS members to meet, compare and discuss problems associated with 1981 ship schedules*
  - *The session is open to all persons interested and especially to scientists who have ship time needs in 1981 or 1982 and wish to present their needs to operators*
  - *Preliminary ship schedules have been developed by UNOLS Members and collated sets will be available*

## UNOLS BUSINESS MEETING

0830 FRIDAY MAY 23, 1980, COSMOS CLUB AUDITORIUM

1. INTERNATIONAL POST CRUISE OBLIGATIONS  
*How can the impact on the principal investigator be minimized?*
2. ELECTION OF OFFICERS  
*The Charter requires election or re-election of the chairman and vice-chairman of UNOLS annually*
3. ELECTION TO THE ADVISORY COUNCIL  
*Expiring terms require the election of three members*
4. APPOINTMENTS TO THE ALVIN REVIEW COMMITTEE  
*Expiring terms require the appointment of two members to this committee*
5. OTHER BUSINESS THAT MAY PROPERLY COME BEFORE THE MEETING



REGISTERED ATTENDEES  
UNOLS ANNUAL MEETING  
MAY 22-23, 1980

Ms. Prudence S. Adler, OTA  
Mr. Frank Alexander, OFS  
Prof. E. Eugene Allmendinger, UNH  
Dr. George C. Anderson, U.WA  
Cdr. Samuel H. Applegarth, Jr., Consult.

RADM Albert J. Baciocco, Jr., ONR  
Dr. Rodger W. Baier, NSF  
Mr. John F. Bash, URI  
LCDR Brian Cronyn  
Dr. Ronald C. Chaney, Lehigh Univ.  
Mr. H. Lawrence Clark, NSF

Capt. Robertson P. Dinsmore, WHOI  
LCDR Winfield Donat, NAVOCEANO

Mr. Robert B. Elder, NSF/OFS  
Mr. William A. Erb, State Dept.  
Commo. Nostrebor Eromsnid, INSUGG

Dr. Robert L. Fisher, SIO  
Mr. Thomas F. Forhan, NSF  
Dr. Dirk Frankenberg, NSF

Dean William S. Gaither, Univ. Del.  
Mr. James Gibbons, U. of Miami  
Dr. James J. Griffin, URI  
Dr. M. Grant Gross, Johns Hopkins

Capt. Robert B. Haines, SIO  
Dr. William W. Hay, U. of Miami  
Prof. Dennis E. Hayes, L-DGO

Dr. Francis S. Johnson, NSF  
Ms. Kathryn L. Johnson, NSF  
Mr. Peter A. Johnson, OTA  
Ms. Mary K. Johrde, NSF  
Dr. Robert S. Jones, Harbor Br. Found.

Dr. Jay T. Katz, U. of MI  
Mr. Keith Kaulum, ONR/NSTL  
Dr. George H. Keller, OSU

Mr. Richard L. Longfield, U. HAW

Dr. Bruce T. Malfait, NSF  
Dr. John H. Martin, MLML  
Mr. Scott M. McKellar, NOAA  
Mr. John G. McMillan, NSF  
Mr. Greg K. Miller, Duke U.  
Dr. James W. Miller, Fla. Inst. for Ocean.  
Mr. Michael Mulcahy, Sea Tech. Magazine  
RADM Robert C. Munson, NOAA/NOS

Capt. Eric B. Nelson, Duke U.

Mr. Wadsworth Owen, U. of Del.

Dr. Patrick L. Parker, U. of TX  
Mrs. Eleanor P. Picard, WHOI  
Dr. Orrin H. Pilkey, Duke U.

Dr. Bruce H. Robison, UCSB  
Prof. H. Thomas Rossby, URI  
Dr. Robert W. Rowland, USGS  
Dr. Thomas C. Royer, U. AK

Dr. Jerry R. Schubel, SUNY  
Mr. Robert K. Sheehan, CBI  
Dr. George G. Shor, SIO  
CDR John P. Simpson, OPNAV  
CDR Fidel T. Smith, NOAA  
Dr. Derek W. Spencer, WHOI  
Mr. Thomas R. Stetson, WHOI  
Mr. Lee R. Stevens, State Dept.

Mr. Constantine D. Tollios, WHOI  
Capt. T.K. Treadwell, TAMU

Mr. Eugene B. Veek, USC  
Mr. Richard C. Vetter, NAS/OSB

Capt. John B. Watkins, Jr., U. WA  
Mr. Robert S. Winokur, ONR  
Dr. Warren J. Wisby, U. of Miami  
CDR Julian M. Wright, Jr., NAVOCEANO  
CDR Theodore Wyzewski, NODC

Dr. James A. Yoder, Skidaway

Dr. John M. Zeigler, VIMS

REMARKS BY THE CHIEF OF NAVAL RESEARCH  
TO THE  
ANNUAL MEETING OF UNOLS 22 MAY 1980

I APPRECIATE THE OPPORTUNITY TO MEET WITH THE MEMBERS OF THE UNOLS ORGANIZATION TODAY. SINCE DR. JOHNSON OF THE NATIONAL SCIENCE FOUNDATION IS ALSO AN INVITED SPEAKER, YOU WILL HAVE THE OPPORTUNITY TO HEAR FROM THE TWO GOVERNMENT AGENCIES THAT ARE MOST DIRECTLY CONCERNED WITH ACADEMIC SHIP OPERATIONS.

THE PURPOSE OF MY TALK TODAY IS TWOFOLD. I WOULD LIKE TO REVIEW WITH YOU THE ISSUES WHICH FACE US TODAY WITH REGARD TO THE MANAGEMENT AND OPERATION OF RESEARCH VESSELS FOR NAVY-SPONSORED OCEANOGRAPHIC R&D. IN THAT CONTEXT, I WILL INFORM YOU OF THE ACTIONS WE HAVE AND WILL BE TAKING TO ADDRESS THESE ISSUES.

IN STARTING, HOWEVER, I WOULD LIKE TO BRIEFLY REMIND YOU OF THE NAVY'S LONG COMMITMENT TO SUPPORTING OCEANOGRAPHIC RESEARCH. STRONG NAVY SUPPORT FOR OCEANOGRAPHIC RESEARCH HAS BEEN PROVIDED TO BOTH THE NAVY LABORATORIES AND UNIVERSITIES BY ONR FOR OVER 20 YEARS. ONR CAN TAKE CREDIT FOR THE INITIATION OF OCEAN SCIENCE PROGRAMS AT SEVERAL MAJOR INSTITUTIONS, AND SUPPORT TO MOST OF THOSE WHICH ALREADY EXISTED.

APART FROM THE DIRECT SUPPORT OF OCEAN SCIENCE PROGRAMS, THE NAVY ALSO FILLED THE GAP IN PROVIDING SEA-GOING CAPABILITIES TO ACADEMIC INSTITUTIONS DURING THE FORMATIVE YEARS. DURING THE

PERIOD FROM WORLD WAR II TO THE MID 1970's, THE NAVY FUNDED THE CONSTRUCTION OR ALTERATION OF NUMEROUS SHIPS FOR ASSIGNMENT TO UNIVERSITIES, IN ADDITION TO 21 FOR NAVY OPERATION. IN PARTICULAR, DURING THE 1960's AND EARLY 1970's THE NAVY DESIGNED AND CONSTRUCTED A FLEET OF SEVEN RESEARCH SHIPS FOR CHARTER TO, AND OPERATION BY, SELECTED ACADEMIC INSTITUTIONS. IN ADDITION, DSV ALVIN, ITS SUPPORT SHIP LULU, AND FLIP WERE ALL BUILT UNDER SPECIAL RESEARCH PROGRAMS. THESE NAVY-OWNED ASSETS HAVE BEEN USED TO CARRY OUT MARINE STUDIES ON BEHALF OF MANY SPONSORS, INCLUDING THE NAVY AND NATIONAL SCIENCE FOUNDATION.

SUFFICE TO SAY, THE NAVY HAS A LONG HISTORY OF SUPPORT TO OCEANOGRAPHIC RESEARCH AND THE FACILITIES NECESSARY TO CONDUCT THIS RESEARCH. IN VIEW OF THIS HISTORY, I FEEL WE HAVE A SPECIAL OBLIGATION TO THE UNIVERSITIES FOR CONTINUED OPERATION OF NAVY-OWNED SHIPS BY ACADEMIC INSTITUTIONS. THE COSTS OF OPERATION OF THESE VESSELS HAVE BEEN BORNE PRO-RATA AMONG THE SPONSORING AGENCIES, IN RELATIVE PROPORTION TO THE RESEARCH SPONSORED ABOARD THEM; HOWEVER, DURING THE PAST FEW YEARS, TWO MAJOR FACTORS HAVE ARISEN WHICH REQUIRE MORE POSITIVE PARTICIPATION BY THE NAVY IN THE OPERATION OF THESE SHIPS.

ONE FACTOR IS LARGELY FINANCIAL. THE COSTS OF OPERATING, MAINTAINING AND MODERNIZING THE ACADEMIC FLEET HAVE OUTPACED AVAILABLE SPONSOR SUPPORT AND INFLATION. THIS HAS RESULTED IN SEVERAL SHIPS BEING TEMPORARILY OUT OF SERVICE FOR EXTENDED TIME PERIODS; HOWEVER, EVEN MORE IMPORTANTLY, MAJOR MAINTENANCE,

MODERNIZATION AND EQUIPMENT UPGRADING HAVE BEEN DEFERRED, SO THAT A SUBSTANTIAL BACKLOG HAS ACCUMULATED.

THE SECOND FACTOR IS A CONSEQUENCE OF THE EVOLUTIONARY SHIFT IN FUNDING SUPPORT FOR THE UNIVERSITY-OPERATED SHIPS. COMMENCING IN THE LATE 1960's, FUNDING SUPPORT FOR OCEANOGRAPHIC RESEARCH FROM NON-NAVY AGENCIES EXPANDED. MOST NOTABLY, THE ROLE OF THE NATIONAL SCIENCE FOUNDATION IN SUPPORT OF BASIC RESEARCH, ESPECIALLY IN OCEANOGRAPHY, EXPANDED GREATLY. AT THE SAME TIME, FOR A VARIETY OF REASONS WHICH I WILL NOT ELABORATE ON HERE, NAVY SUPPORT FOR THE DEVELOPMENT OF NEW OCEANOGRAPHIC FACILITIES STARTED TO DECREASE. BY THE EARLY 1970's, AS THE NSF ROLE EXPANDED AND BUDGET PRESSURES WITHIN NAVY INCREASED, THE NAVY OCEAN SCIENCE AND TECHNOLOGY PROGRAM ATTEMPTED TO RETAIN ITS LONG-STANDING COMMITMENT TO FUNDING A STRONG OCEAN SCIENCE PROGRAM BY PROVIDING FUNDING FOR SHIP TIME ON A PROJECT BASIS. THE RESULT WAS THAT THE PERCENTAGE OF NAVY SUPPORT FOR THE UNOLS FLEET HAS BEEN ERODED IN THE PAST FEW YEARS, WITH THE BULK OF THE SUPPORT BEING PROVIDED BY NSF; HOWEVER NSF, ALONG WITH OTHER SPONSORS, HAS BECOME PROGRESSIVELY LESS ABLE TO SUPPORT OCEANOGRAPHIC RESEARCH AND SHIP OPERATIONS AS THEIR BUDGETS HAVE NOT KEPT PACE WITH INFLATION AND RISING COSTS.

WITH THE FOREGOING AS A BACKDROP, LET ME ASSURE YOU THAT I AM WELL AWARE OF THE PROBLEMS RELATED TO THE MANAGEMENT AND FUNDING OF THE NAVY-OWNED SHIPS IN THE UNOLS FLEET. I BELIEVE I FULLY UNDERSTAND THE SEVERITY OF THE FUNDING SITUATION THAT THE ACADEMIC FLEET FACES. RECENTLY, I HAVE BEEN ASSESSING THE PROBLEMS FACED BY THE ACADEMIC INSTITUTIONS, AS WELL AS BY THE NAVY, IN

THE MANAGEMENT AND OPERATION OF OCEANOGRAPHIC R&D SHIPS. I HAVE BEEN WORKING WITH THE OCEANOGRAPHER OF THE NAVY, RADM ROSS WILLIAMS, IN MAKING A CAREFUL EXAMINATION OF THE ISSUES INVOLVED. BEFORE REVIEWING THESE ISSUES BRIEFLY WITH YOU, I WANT TO EMPHASIZE TWO POINTS. FIRST, LET ME ASSURE YOU THAT I AM COMMITTED, WITHIN THE USUAL BUDGETARY CONSTRAINTS, TO SUSTAINING A HEALTHY OCEANOGRAPHIC RESEARCH PROGRAM WITH ADEQUATE SUPPORT TO THE ACADEMIC FLEET, INCLUDING MAINTENANCE, UPGRADING, CORRECTIONS OF DEFICIENCIES, AND MAJOR OVERHAULS. SECOND, THE NAVY MUST HAVE BIG SHIPS TO CONDUCT DEEP-WATER OCEANOGRAPHIC RESEARCH.

I WOULD NOW LIKE TO REVIEW FOR YOU THE PROBLEMS AND ISSUES AS I SEE THEM AND THE ACTIONS WE HAVE TAKEN TO RESOLVE THEM. THESE PROBLEMS AND ISSUES INCLUDE FUEL COSTS, MANAGEMENT RESPONSIBILITY, FUNDING, TECHNOLOGICAL CAPABILITIES, VESSEL MIX AND MODE OF OPERATION.

FIRST, WITH REGARD TO FUEL, WE HAVE TAKEN ACTION THAT WILL ENSURE OPERATORS OF ACADEMIC VESSELS ACCESS TO A STABLE FUEL SUPPLY, WHOSE PRICE AND AVAILABILITY SHOULD NOT BE SUBJECT TO THE GROSS FLUCTUATIONS OF THE OPEN FUEL MARKET. AS YOU ARE AWARE, I HAVE DIRECTED THAT ARRANGEMENTS BE MADE WITH THE DEFENSE FUEL SUPPLY CENTER TO PERMIT ACADEMIC VESSELS THAT ARE ENGAGED IN THE CONDUCT OF APPROVED NAVY RESEARCH TO PROCURE FUEL AT ANY DEFENSE FUEL DEPOT, IN THE CONTINENTAL U.S. OR OVERSEAS. IN ADDITION, I UNDERSTAND THAT NSF IS CONSIDERING A SIMILAR COURSE OF ACTION. THIS ACTION, I AM CERTAIN, WILL IMPROVE THE OVERALL COST EFFECTIVENESS OF THE ACADEMIC FLEET.

A PROBLEM OF PARTICULAR IMPORTANCE THAT IS CURRENTLY BEING ADDRESSED IS MANAGEMENT RESPONSIBILITY FOR NAVY-OWNED, UNIVERSITY-OPERATED RESEARCH VESSELS. UNTIL RECENTLY, NO CLEAR ASSIGNMENT OF MANAGEMENT RESPONSIBILITY FOR MATERIAL CONDITION, OVERHAULS, MAJOR MAINTENANCE AND REHABILITATION OF THE ACADEMIC FLEET HAS EXISTED. FOR THE PAST FEW MONTHS, I HAVE BEEN WORKING WITH THE OCEANOGRAPHER TO DEVELOP A SET OF WELL DEFINED MANAGEMENT RESPONSIBILITIES FOR ALL NAVY-OWNED RESEARCH VESSELS. THUS FAR, HE AND I HAVE REACHED A TENTATIVE AGREEMENT CONCERNING FUTURE MANAGEMENT RESPONSIBILITIES FOR NAVY-OWNED RESEARCH VESSELS OPERATED BY DOMESTIC ACADEMIC INSTITUTIONS. UNDER THIS PROPOSED AGREEMENT, THE CNR WILL ASSUME MANAGEMENT RESPONSIBILITY FOR SEVEN SHIPS IN THE ACADEMIC FLEET PLUS FLIP, ALVIN/LULU AND A NUMBER OF SMALLER BOATS.

A DRAFT ONR MANAGEMENT PLAN, DOCUMENTING THIS TRANSFER OF RESPONSIBILITY, HAS BEEN PREPARED WHICH PROPOSES A MANAGEMENT STRUCTURE AND FUNDING PLAN FOR THE NAVY SHIPS THAT ARE PART OF THE ACADEMIC FLEET. IF APPROVED, THE PLAN WILL ENSURE THAT THESE NAVY-OWNED SHIPS ARE BROUGHT INTO PROPER OPERATING CONDITION AND ARE KEPT AT MAXIMUM EFFECTIVENESS FOR THE CONDUCT OF NAVY-SPONSORED RESEARCH. THE MANAGEMENT PLAN PROPOSES ACTIVE NAVY MANAGEMENT OF THE SHIPS AND SPECIFICALLY PROVIDES FOR THE DESIGNATION OF A MANAGER WITHIN NAVY TO INTERFACE WITH THE ACADEMIC INSTITUTIONS AND OTHER SPONSORS; DEVELOPMENT OF AN EQUIPMENT INVENTORY AND INSPECTION SYSTEM; DEVELOPMENT OF A MODERNIZATION PROGRAM; AND PROVISION FOR MORE ACTIVE PARTICIPATION BY NAVY IN THE OVERSIGHT OF RESEARCH OPERATIONS OF THE SHIPS.

THIS PLAN IS CURRENTLY UNDER REVIEW AS PART OF THE OVERALL ONR PLANNING AND PROGRAMMING PROCESS; HOWEVER, I AM OPTIMISTIC THAT IN CONJUNCTION WITH NSF, ONR WILL BE ABLE TO PROVIDE INCREASED MANAGEMENT AND FUNDING SUPPORT THAT WILL CONTRIBUTE TO IMPROVING THE MATERIAL WELFARE OF THE ACADEMIC FLEET AND ENHANCING ITS SCIENTIFIC PRODUCTIVITY. ALTHOUGH THESE ARE NAVY-OWNED VESSELS, I BELIEVE WE HAVE A NATIONAL OBLIGATION TO MAINTAINING THESE ASSETS. NAVY IS PREPARED TO TAKE THE LEAD, BUT WE CANNOT DO IT ALONE.

AN IMPORTANT ASPECT OF THE DRAFT MANAGEMENT PLAN IS PROVISION FOR UPGRADING THE TECHNOLOGICAL CAPABILITY OF THE ACADEMIC FLEET. I AM WELL AWARE OF THE GROWING LAG IN THE INTRODUCTION OF ADVANCED EQUIPMENT INTO THE FLEET. TO REVERSE THIS TREND, ONR HAS ALREADY CONDUCTED PRELIMINARY TESTS ON VARIOUS CLASSES OF UNOLS VESSELS TO EXPLORE THE SUITABILITY OF SELECTING ONE OR MORE FOR INSTALLATION OF A MULTI-BEAM ECHOSOUNDER SYSTEM. SUCH A SYSTEM REPRESENTS A MAJOR CAPITAL INVESTMENT AND WOULD VASTLY IMPROVE THE BATHYMETRIC CAPABILITY OF THE FLEET. WE HAVE ALSO INITIATED A PROGRAM THAT WE HOPE WILL LEAD TO THE INTRODUCTION OF NAVSTAR GPS NAVIGATION SYSTEMS TO THE ACADEMIC FLEET. THE CONTINUOUS, HIGH-PRECISION POSITION-FIXING CAPABILITY OF THIS SYSTEM WOULD ALLOW NEW CLASSES OF SCIENTIFIC EXPERIMENTS IN THE OPEN OCEAN. IN ADDITION, THE DRAFT MANAGEMENT PLAN ADDRESSES OTHER MAJOR EQUIPMENT UPGRADES. WHILE THESE UPGRADES ARE STILL UNDER REVIEW, I WOULD LIKE TO POINT OUT THAT DURING FY 79 THE PURCHASE OF MORE THAN \$400K IN NEW EQUIPMENT WAS AUTHORIZED.

A THIRD PROBLEM, WHICH I HAVE ALREADY ADDRESSED BRIEFLY, IS FUNDING. THE ACTIONS I JUST MENTIONED WITH REGARD TO FUEL SUPPLIES AND A NEW MANAGEMENT STRUCTURE WILL CONTRIBUTE IN A MAJOR WAY TOWARD ALLEVIATING THE SEVERITY OF THE FUNDING SITUATION FOR THE ACADEMIC FLEET. IN ADDITION TO THESE ACTIONS, DURING FY 80 I HAVE PROVIDED AN INCREMENT OF OVER \$1 MILLION FOR THE PURCHASE OF REQUIRED SHIP TIME AND FOR UNPLANNED FUEL COSTS. I HAVE DIRECTED MY STAFF TO CONTINUE TO FOLLOW A POLICY THAT ALLOCATIONS FOR RESEARCH PROJECTS INCLUDE FUNDS FOR THE SHIP TIME REQUIRED TO DO THE WORK. THIS POLICY, I FEEL, IS ESSENTIAL TO THE CONDUCT OF A BALANCED OCEANOGRAPHIC RESEARCH PROGRAM. I FULLY REALIZE THAT EVEN THESE FUNDS WILL NOT NECESSARILY ELIMINATE POSSIBLE SHORTFALLS; HOWEVER, IT IS INDICATIVE OF OUR RECOGNITION THAT THE NAVY MUST CONTRIBUTE ITS EQUITABLE SHARE FOR OPERATING UNOLS RESEARCH VESSELS.

IT MUST BE NOTED THAT NONE OF THE ABOVE ACTIONS ON OUR PART WILL COMPLETELY SOLVE ALL PROBLEMS ASSOCIATED WITH RESEARCH SHIP OPERATIONS. THE FACT IS THAT THE COST OF OPERATING RESEARCH VESSELS HAS BEEN RISING AT A RATE FASTER THAN INFLATION AND THE BUDGETS OF THE VARIOUS SPONSORING AGENCIES. AS A RESULT, IN THE PAST SEVERAL YEARS, SOME SHIPS HAVE BEEN UNDER-UTILIZED OR EVEN LAID UP FOR EXTENDED PERIODS FOR FINANCIAL REASONS ALONE.

IT IS MY BELIEF THAT ECONOMICS ALONE WILL FORCE OCEANOGRAPHY TO EXAMINE MORE EFFICIENT AND EFFECTIVE MEANS FOR AT-SEA OPERATIONS, METHODS WHICH BREAK FROM THE PATTERNS OF THE PAST. REMOTE



SENSING, AIRCRAFT AND SHIPS OF OPPORTUNITY SUGGEST MANY POSSIBILITIES; HOWEVER, THE MOST IMPORTANT ISSUE IN TERMS OF PROVIDING AN ADEQUATE FLEET WITH A REASONABLY STABLE FUNDING BASE RELATES TO VESSEL MIX AND MODE OF OPERATION OF THE FLEET. I BELIEVE THIS IS AN ISSUE THAT UNOLS MUST CONSIDER ON A PRIORITY BASIS. IF YOU ABROGATE THIS RESPONSIBILITY, DECISIONS MAY BE MADE BY THE FUNDING AGENCIES ALONE. IN THIS REGARD, I WOULD SUGGEST THAT THE UNIVERSITY OPERATORS, PERHAPS WITH UNOLS COORDINATING THE EFFORT, WORK WITH THE SPONSORING AGENCIES TO EXAMINE METHODS OF MORE EFFECTIVELY OPERATING THE ACADEMIC FLEET. DR. JOHNSON AND I ARE CURRENTLY CONSIDERING A PROPOSAL TO SPONSOR A STUDY BY AN ORGANIZATION SUCH AS THE NATIONAL ACADEMY OF SCIENCES TO ADDRESS OPTIONS FOR OCEANOGRAPHIC FACILITIES FOR THE 1985-1990 TIME FRAME. MY STAFF AND I STAND READY TO ASSIST IN ANY WAY POSSIBLE.

IF I MAY, I WOULD LIKE TO POSE A FEW THOUGHTS FOR YOUR CONSIDERATION. BEYOND MAXIMIZING PRODUCTIVITY FOR EACH SHIP, IT MIGHT BE USEFUL TO EXAMINE EXISTING PATTERNS OF UTILIZATION TO SEE IF THEY CAN BE IMPROVED AND OPTIMIZED. IN THE PAST, EVERY MAJOR OCEANOGRAPHIC INSTITUTION HAD AT LEAST ONE SHIP, USED ALMOST EXCLUSIVELY BY SCIENTISTS FROM THAT LABORATORY. I SEE A TREND NOW TOWARD MUCH MORE FLEXIBILITY, WITH MORE COORDINATION AND CROSS-UTILIZATION. I SUSPECT, HOWEVER, THAT THIS TREND COULD BE EXTENDED AND FORMALIZED. DUE TO THE HIGH COST OF OPERATION, ESPECIALLY DUE TO FUEL PRICE INCREASES, IT IS NOW RATHER WASTEFUL TO SCHEDULE SHIPS PRIMARILY ON THE BASIS OF INSTITUTIONAL

AFFILIATIONS. I SUGGEST THAT UNOLS MIGHT EXPAND ITS SERVICES TO PROVIDE FOR CENTRALIZED SCHEDULING OF ACADEMIC SHIPS, BASED ON GEOGRAPHIC AND TIMING FACTORS. BY POOLING ASSETS AND JUDICIOUS SCHEDULING OF RESEARCH PROJECTS IN THE SAME GENERAL GEOGRAPHIC REGION, IT MAY BE POSSIBLE TO OPTIMIZE SHIP SCHEDULES TO AVOID EXPENSIVE LONG TRANSITS AND MAXIMIZE USAGE. FINALLY, INSOFAR AS SCHEDULING AND MAXIMUM UTILIZATION IS CONCERNED, I WILL STRONGLY URGE NAVY LABORATORIES TO CONSIDER USE OF UNOLS SHIPS, WHEN AVAILABLE, TO MEET THEIR REQUIREMENTS.

IN ANOTHER VEIN, WE MIGHT EVEN RE-EXAMINE THE PREMISE THAT EVERY INSTITUTION HAS TO OPERATE ITS OWN SHIP, COMPLETE WITH SEPARATE SHORE SUPPORT FACILITIES. A SINGLE VESSEL REQUIRES A CERTAIN MINIMUM SHORE BACKUP, BUT THIS DOES NOT INCREASE BY A FACTOR OF FOUR, IF FOUR SHIPS ARE OPERATED FROM THE SAME FACILITY. SEVERAL SHIPS CAN SHARE THE SAME SUPPLY FACILITIES, REPAIR SHOPS, EQUIPMENT POOLS, AND LOGISTICS AND OPERATING STAFFS. PERHAPS CONSIDERATION SHOULD BE GIVEN TO INVESTIGATING THE DESIRABILITY OF ESTABLISHING REGIONAL OPERATING CENTERS FOR THE UNIVERSITY RESEARCH FLEET, SOMETHING THE FEDERAL GOVERNMENT HAS HAD FOR MANY YEARS.

REALISTICALLY, EVEN THESE MEASURES MAY NOT PREVENT FURTHER LAY-UPS OF SHIPS IN THE NEAR FUTURE WHEN FUNDS BECOME EVEN TIGHTER. IT IS VITAL, THAT WHEN NECESSARY, SUCH LAY-UPS BE DONE IN AN EFFICIENT, COST EFFECTIVE MANNER. I DO NOT SEE HOW ANY OF US IN THE OCEAN SCIENCE COMMUNITY CAN SUCCESSFULLY COMPETE FOR SCARCE RESEARCH DOLLARS IF WE ARE SUPPORTING MARINE

FACILITIES INEFFICIENTLY. THE PRACTICE OF SHORT TERM LAY-UPS, LESS THAN HALF A YEAR, IS SIMPLY NOT COST EFFECTIVE. THEREFORE, IT'S TIME THAT WE CONSIDER COOPERATIVE SCHEDULING OF ANY NECESSARY SHIP LAY-UPS FOR EXTENDED PERIODS. THESE DECISIONS WILL BE MADE EITHER BY THE FUNDING AGENCIES, OR COOPERATIVELY WITH THE COMMUNITY THROUGH UNOLS.

IN CLOSING, I DO NOT WANT TO LEAVE YOU WITH A FEELING OF PESSIMISM. AS I STATED EARLIER, I FEEL A SPECIAL OBLIGATION FOR THE WELFARE OF THE ACADEMIC FLEET. WE ARE ATTEMPTING, WITHIN PROGRAMMATIC AND BUDGETARY CONSIDERATIONS, TO PROVIDE FUNDING SUPPORT FOR SHIP OPERATIONS AND MANAGEMENT; HOWEVER, IT IS UNREALISTIC TO EXPECT A MASSIVE INFUSION OF FUNDING SUPPORT FOR RESEARCH VESSEL OPERATIONS. I BELIEVE STRONGLY THAT THE ACTIONS WE HAVE TAKEN, AND ARE CONSIDERING, AMOUNT TO A MAJOR NAVY CONTRIBUTION TOWARD RESTORING THE VITALITY OF THE UNIVERSITY-OPERATED OCEANOGRAPHIC RESEARCH FLEET. THIS IS A CRITICAL PERIOD IN THE EVOLUTION OF THE ACADEMIC FLEET. BOTH THE UNIVERSITIES AND THE NAVY ARE FACED WITH A CONSIDERABLE CHALLENGE. I BELIEVE THAT COLLECTIVELY, WE CAN MEET THIS CHALLENGE, AND WILL CONTINUE TO CONDUCT QUALITY OCEANOGRAPHIC RESEARCH WITH THE CONSIDERABLE RESOURCES AVAILABLE TO US, BOTH IN SCIENTIFIC TALENT AND FACILITIES. I LOOK FORWARD TO WORKING WITH YOU IN MEETING THIS CHALLENGE AS WE ENTER THE EIGHTIES.

I SEE THAT YOU HAVE A FULL AND INTERESTING AGENDA, AS WELL AS THE ANNUAL ELECTION OF OFFICERS. I WOULD LIKE TO TAKE THIS OPPORTUNITY TO THANK TEX TREADWELL FOR THE JOB HE HAS DONE AS

UNOLS CHAIRMAN. I LOOK FORWARD TO WORKING WITH YOUR NEW OFFICERS AND A CONTINUING FRUITFUL RELATIONSHIP WITH UNOLS. ONCE AGAIN, THANK YOU FOR THE OPPORTUNITY TO MEET WITH YOU. AS TIME PERMITS, I WILL BE HAPPY TO ENTERTAIN QUESTIONS.

1  
Summary of  
REMARKS BEFORE UNOLS  
by  
FRANCIS S. JOHNSON

Appendix IV

May 22, 1980

Insofar as the general picture of Federal funding is concerned, it is very obvious that the Administration and the Congress intend to balance the budget. The effects of this will be felt throughout the research community. Research gets hurt more because much of the Federal budget--funds for defense, welfare, salaries and similar fixed cost items can't be tapped. Programs like that of the NSF are particularly vulnerable. There may be some funding increases in FY 81 and 82 but these will not be as large as inflation. In some cases there may even be reductions or level funding. What will occur beyond FY 1982 depends on many things--the election, the price of oil, the general state of the economy and others. This, to the AAEO Directorate, means little positive change and funding increases well below the inflation rate; ocean sciences will suffer more because of its high fuel cost factor. The only practical thing that we can do is to tighten the belt and live frugally.

There has been considerable discussion of the Ocean Margin Drilling Program (OMD). The scientific community, the Congress, and the oil industry are interested in the project. Although budget action is not complete, it appears that there will be about five million dollars of Federal funds, matched by about the same amount from the oil industry; this is roughly half of the amount that was being discussed a few months ago. The reduced initial funding may have positive benefits in that there will be more time for engineering studies and more time to try to line up additional industry support. There is some interest in the OMD from non-U.S. governments, but we expect no funding support from that sector until the drilling actually begins.

OMD is a separate line item in the budget. If for some reason the OMD plans were scrapped, the OMD funds would simply disappear. As things stand, the OMD project funds are clearly an add-on to the '81 budget; in other words, new money. If by chance a ceiling were to be placed on '81 spending then there could be a question of whether new or old money was used to support OMD.

Ocean science can expect at least some small advantage from carrying out the OMD program. The OMD platform will be on station for, in some cases, months or even years, providing the chance to obtain long time series observations. It may also be possible to install a multichannel seismic recording system on the drilling platform.

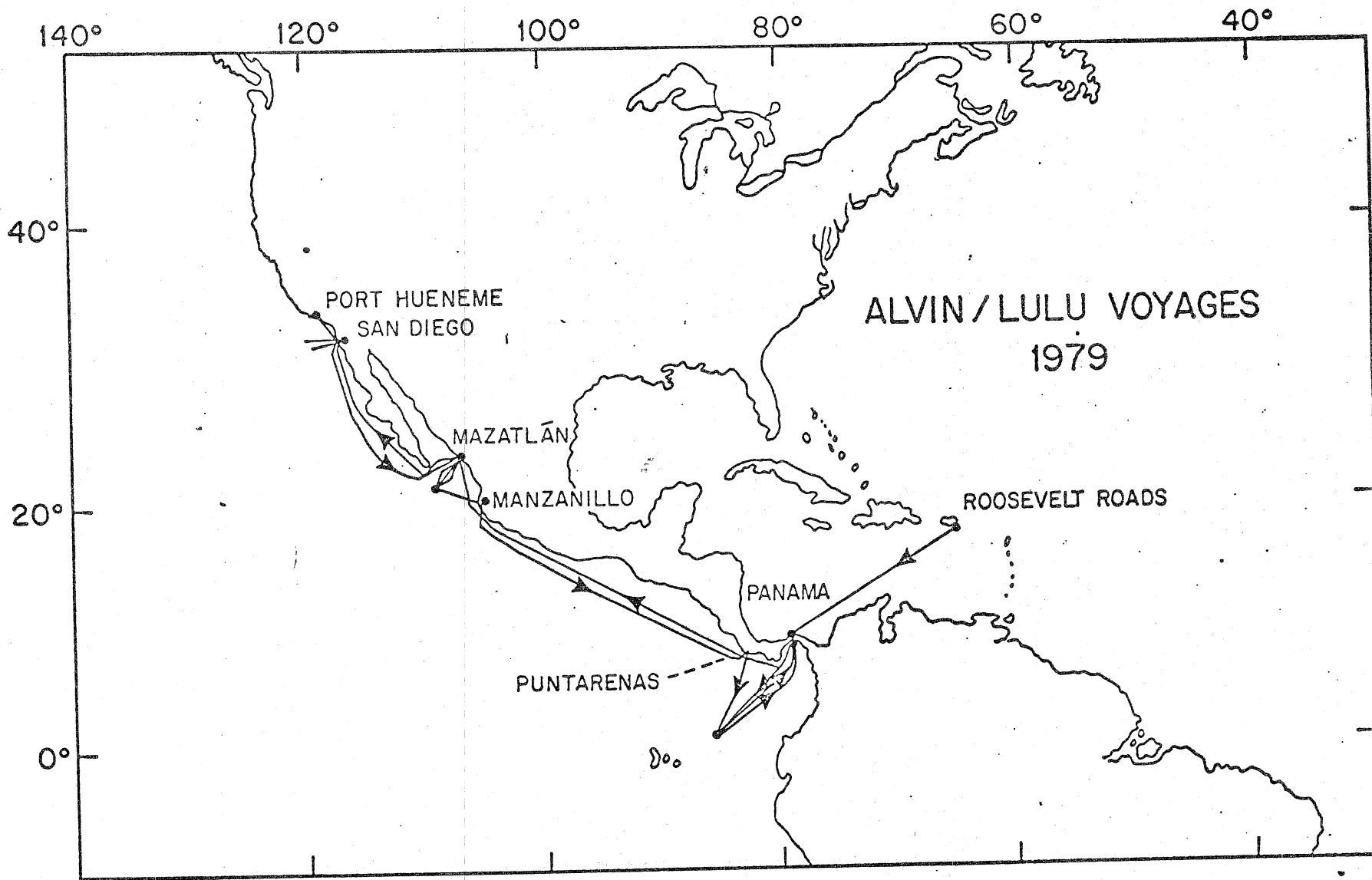
Fuel costs, which a few short years ago were essentially inconsequential, are now the driving force in funding ocean science research. In 1976 fuel took about 12% of the NSF ocean research dollars. In 1981 we think that percentage will be near 30, and in the years after that, who knows? We see no way to obtain a supplemental budget in the present climate, so we will have to absorb any additional fuel price increases with presently available funds. It should be noted here that the large integrated coordinated ocean science projects generate an unfavorable image before the National Science Board. Although there is no budget impact, it should also be noted that the large and small ocean research projects will be competing directly with one another in FY 1982 and beyond.

There are ways, of course, to reduce ship costs--lay up or dispose of (mainly large) ships, use smaller more efficient ships, carry out less fuel-intensive operations, use tighter schedules, with larger crews of scientists, and other means. What we need now in the Foundation is the best possible advice and guidance concerning research fleet management.

We have let contracts for the construction of two smaller ships; these will be completed late in 1981. We have funds in the '81 budget for a third ship,

but even if they survive the budgeting process, they may eventually have to be diverted to pay for fuel. We are not even thinking actively about a new polar research vessel at this time.

Maintenance and vessel upgrading are especially tricky in times of tight budgets. We are working closely with ONR to develop procedures for monitoring maintenance and to generate a plan of upgrading and refurbishment, within the limits imposed by resources available. We intend to do the best job that we can with what we have available with which to work.



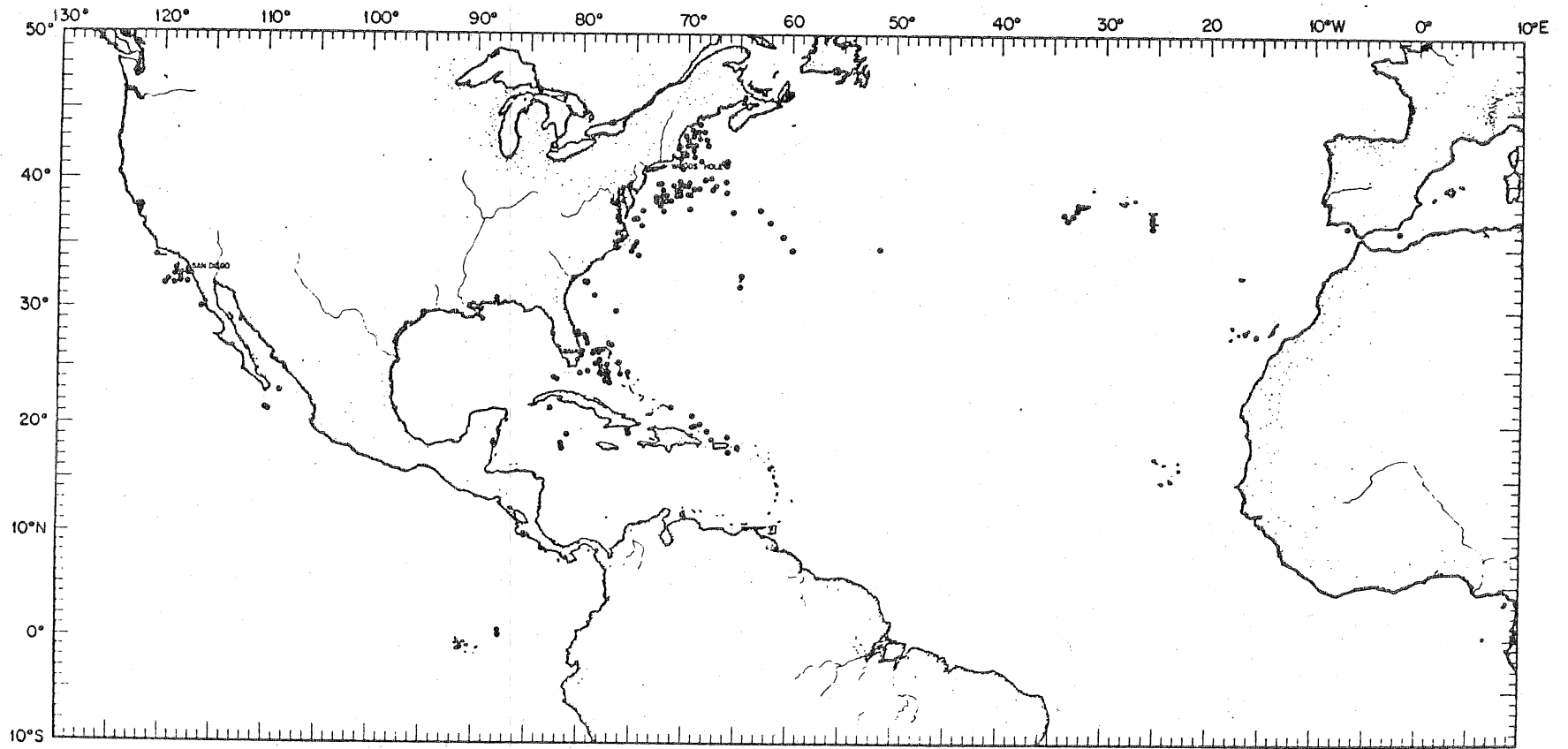


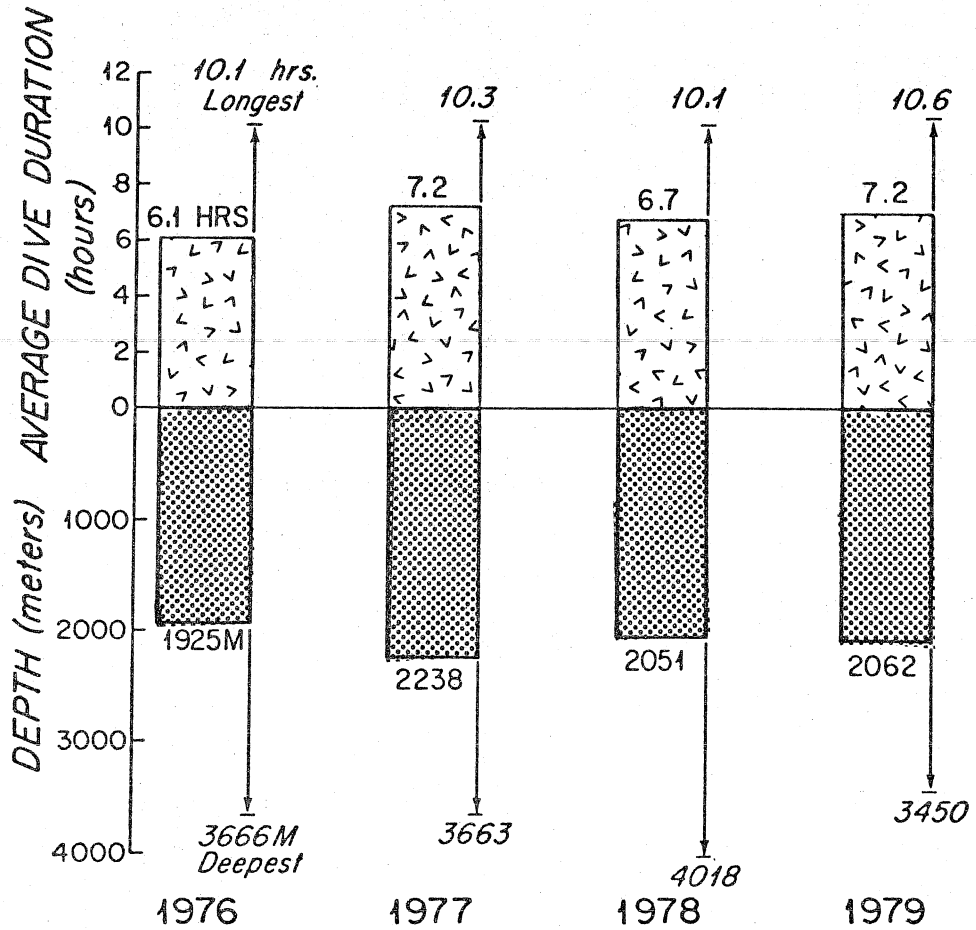
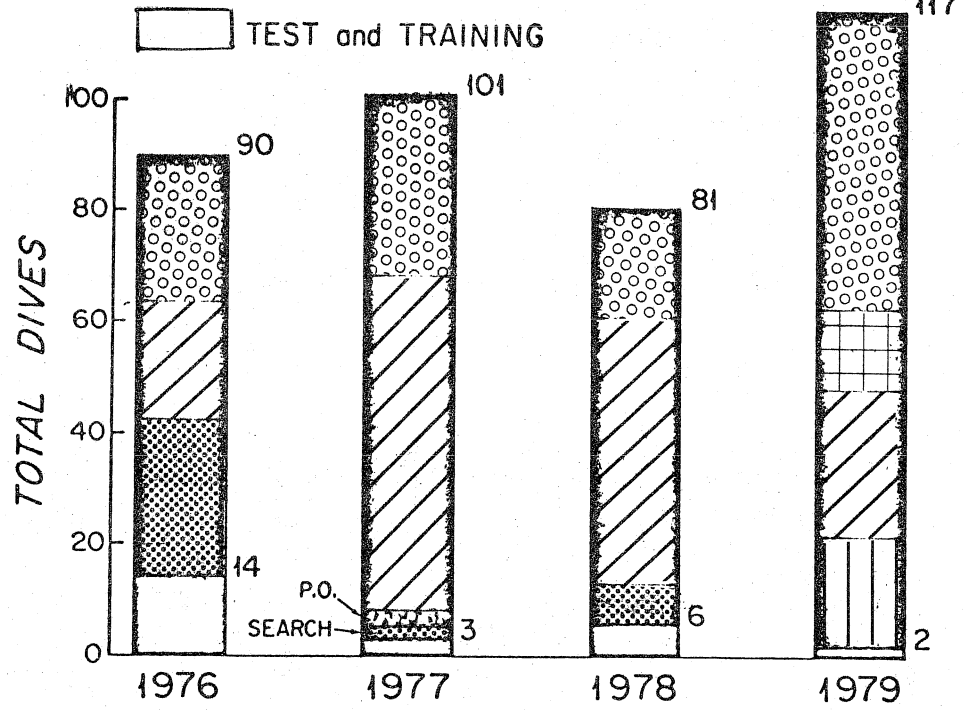
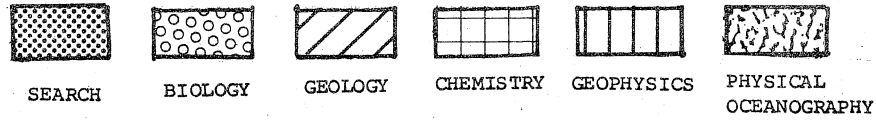
ALVIN/LULU  
OPERATIONS SUMMARY

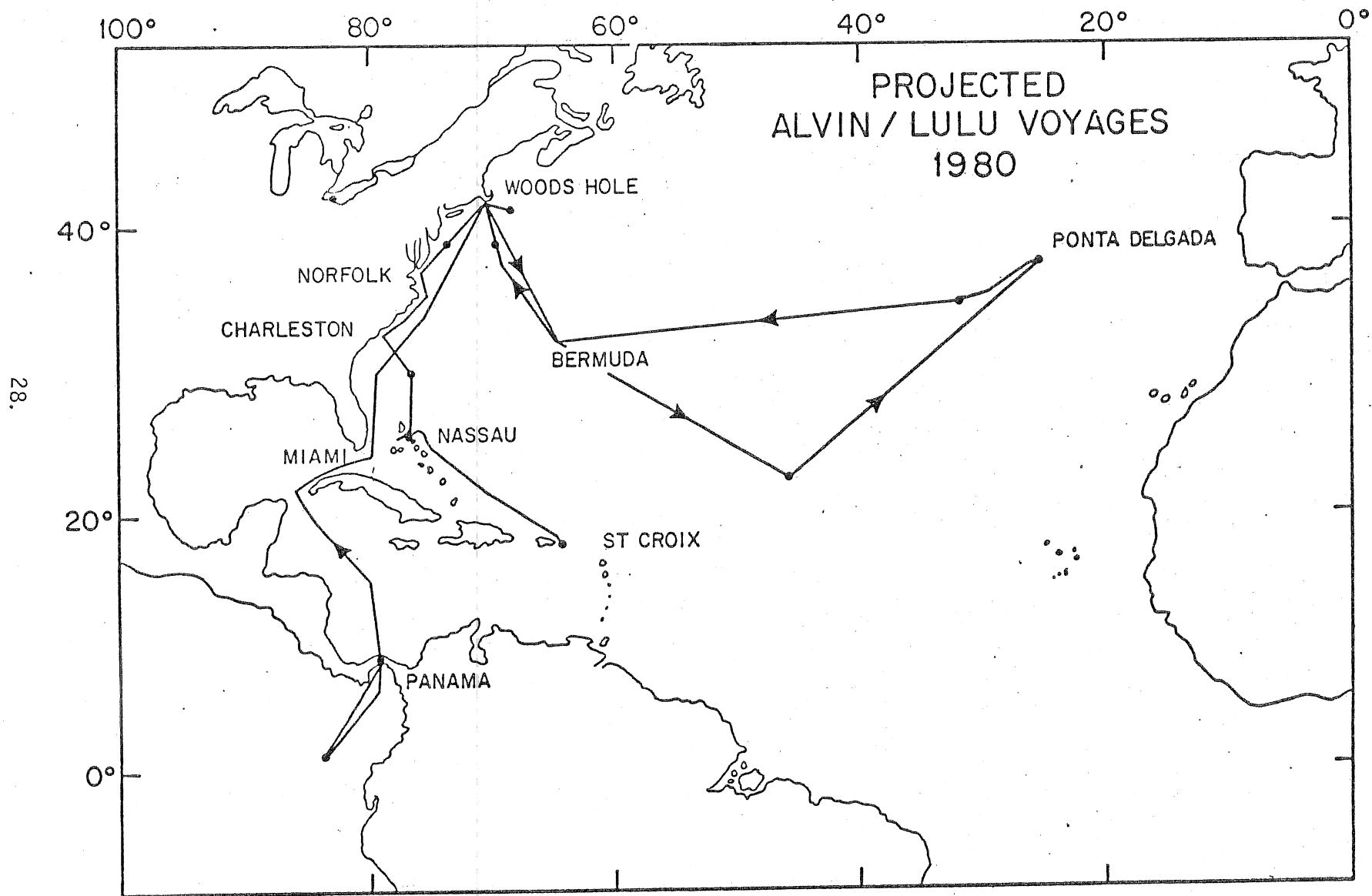
	<u>1978</u>	<u>1979</u>	<u>Projected 1980</u>
<u>Purpose</u>			
BIOLOGY	20	54	
CHEMISTRY		14	
GEOLOGY	48	27	
GEOPHYSICS		20	
TEST & TRAINING	6	2	
SEARCH	<u>7</u>		
TOTAL DIVES	81	117	<u>100</u>
 <u>User</u>			
NSF	88	114	56
ONR	23	35	37
NOAA	35	16	41
USGS		2	15
CALIF.		4	
NGS		5	
EPA	8		
NAVY	1		
KNOLLS ATOMIC			3
M. GILL			2
OPEN			<u>10</u>
TOTAL USE DAYS	<u>155</u>	<u>176</u>	<u>164</u>
 <u>Activity</u>			
TRANSIT	78	56	63
ON STATION	<u>77</u>	<u>120</u>	<u>101</u>
USE DAYS	155	176	164
NON USE DAYS	<u>32</u>	<u>52</u>	<u>30</u>
DAYS AT SEA	187	228	194
OP DAYS IN PORT	<u>13</u>	<u>73</u>	<u>47</u>
OPERATING DAYS	200	301	241
NON OPERATING	<u>165</u>	<u>64</u>	<u>125</u>
TOTAL DAYS	365	365	366



TOTAL ALVIN DIVES 1964 - 1980, 1,000







## STATUS OF ACTIVITIES OF THE TECHNOLOGY ASSESSMENT COMMITTEE

- \* 1ST MEETING HELD OCTOBER 1979 IN SAN DIEGO
- \* ELECTED CHAIRMAN AND DREW STRAWS FOR LENGTH OF SERVICE ON COMMITTEE

## THE TERM OF OFFICE OF EACH MEMBER IS:

LYNN ABBOTT:	1 YEAR
ALAN DRISCOLL:	3 YEARS
SAM GERARD:	3 YEARS
ROD MESECAR:	2 YEARS
TOM ROSBY:	1 YEAR (SCIENCE ADVISOR)
JIM STASNY:	2 YEARS
GUS TOLLIOS:	3 YEARS
BOB WILLIAMS:	2 YEARS

- \* REVIEWED CHARGES SET FORTH TO THE COMMITTEE FROM THE UNOLS ADVISORY COUNCIL
- \* DIVIDED COMMITTEE MEMBERS INTO SUBGROUPS TO PURSUE THE FIRST CHARGE OF THE COMMITTEE TO ESTABLISH MINIMUM STANDARDS FOR UNOLS VESSELS IN 7 MAJOR CATAGORIES OF INVESTIGATION
- \* SELECTED CHAIRMAN FOR THE 7 SUBCOMMITTEES
- \* DISCUSSED GOALS AND OBJECTIVES WHICH WOULD ACT AS GUIDELINES IN PURSUANCE OF OUR FIRST TASK...  
"ESTABLISHING MINIMUM STANDARDS FOR UNOLS VESSELS"
- \* MADE PLANS FOR NEXT GENERAL MEETING TO BE HELD 15 APRIL IN DENVER

## SUBCOMMITTEES FOR MIMIMUM SHIP STANDARDS

## 1. WIRE, WINCHES AND ASSOCIATED HANDLING EQUIPMENT

CHAIRMAN: ALLAN DRISCOLL, URI  
CONTRIBUTING MEMBER: SAM GERARD, L-DGO

## 2. CRANES AND ASSOCIATED EQUIPMENT

CHAIRMAN: BOB WILLIAMS, UNIV. OF WASHINGTON

## 3. COMMUNICATIONS

CHAIRMAN: JIM STASNY, TEXAS A&M  
CONTRIBUTING MEMBERS: LYNN ABBOTT, SCRIPPS  
GUS TOLLIOS, WHOI

## 4. NAVIGATION

CHAIRMAN: LYNN ABBOTT, SCRIPPS  
CONTRIBUTING MEMBERS: ROD MESECAR, OSU  
JIM STASNY, TEXAS A&M  
GUS TOLLIOS, WHOI

## 5. SHIP LAB SPACE &amp; FACILITIES

CHAIRMAN: SAM GERARD

## 6. SHIPBOARD INSTRUMENTATION

CHAIRMAN: ROD MESECAR, OSU  
CONTRIBUTING MEMBERS: LYNN ABBOTT, SCRIPPS  
JIM STASNY, TEXAS A&M  
GUS TOLLIOS, WHOI

## 7. INFORMATION DISSEMINATION

CHAIRMAN: ROD MESECAR, OSU  
CONTRIBUTING MEMBERS: GUS TOLLIOS

STATUS OF SUBCOMMITTEE WORK ON MINIMUM SCIENTIFIC SUPPORT  
CAPABILITIES FOR UNOLS VESSELS

I. WIRE & WINCHES

A QUESTIONNAIRE WAS SENT TO ALL UNOLS INSTITUTIONS  
IN FEBRUARY 1980 REPRESENTING THE FIRST ATTEMPT  
AT AN IN-DEPTH SURVEY OF THE WINCH-WIRE PROBLEM  
NOTED IN THE TEXAS A&M WORKSHOP ON SHIP STANDARDS.

PURPOSES

\* TO TABULATE EXISTING EQUIPMENT ON EACH SHIP REGARDING:

- 1- TYPE & CONDITION OF WINCHES BEING USED
- 2- TYPE & CONDITION OF ASSOCIATED EQUIPMENT  
SUCH AS LEVEL WINDERS, SHEAVES, AND DRIVES.
- 3- TYPE & CONDITION OF WIRE ROPE/CABLE ABOARD SHIP.

\* TO DETERMINE PRACTICES AND PROCEDURES BEING USED IN  
HANDLING THE EQUIPMENT

- 1- TO INVESTIGATE PREVENTIVE MAINTENANCE PROCEDURES
- 2- TO DETERMINE THE VARIOUS SCIENTIFIC ACTIVITIES  
THAT ARE PRIMARY USERS OF THE EQUIPMENT



## II. COMMUNICATIONS

A QUESTIONNAIRE WAS SENT TO ALL UNOLS INSTITUTIONS TO SURVEY THE STATUS OF COMMUNICATIONS EQUIPMENT BEING USED ON SHIPS AND AT SHORE FACILITIES

TWO MAJOR AREAS INTERROGATED WERE:

- \* SINGLE-SIDE BAND EQUIPMENT
- \* SATELLITE COMMUNICATIONS EQUIPMENT

\*\*\*\*\* RESULTS \*\*\*\*\*

15 OUT OF 18 INSTITUTIONS RESPONDED

## A. SHORE FACILITIES

1. ONLY TWO INSTITUTIONS DO NOT MAINTAIN SHORE FACILITIES:

UNIV. OF WASHINGTON & LAMONT-DOHERTY

2. THREE INSTITUTIONS ARE LIMITED TO 150 WATT OPERATIONS:

MOSS LANDING MARINE LABS  
UNIV. OF DELAWARE  
TEXAS A&M

3. URI REQUESTING NEW BASE STATION EQUIPMENT BECAUSE OF 10 CHANNEL LIMITATIONS OF PRESENT EQUIPMENT.
4. THE GENERAL CONSENSUS WAS THAT PRESENT ASSIGNED FREQUENCIES FOR COMMUNICATIONS ARE TOO CROWDED AND AT TIMES THERE IS COMPLETE LACK OF DAILY COMMUNICATIONS WITH SHIPS.
5. ALL AGREED THAT THERE WAS A NEED FOR NEW FREQUENCY ASSIGNMENTS WHICH COULD BE MADE THROUGH THE INTERDEPARTMENT RADIO ADVISORY COMMITTEE (IRAC).

6. THESE IRAC FREQUENCY ASSIGNMENTS COULD BE MADE DIRECTLY TO UNOLS AS THE RESPONSIBLE BODY TO CENTRALIZE THE ALLOCATION OF RADIO FREQUENCIES. SINCE MOST ACADEMIC VESSELS OPERATE WITHIN THE FRAMEWORK OF UNOLS, THESE FREQUENCIES WOULD BE COOPERATIVELY SHARED BY ALL.
7. ALL INSTITUTIONS RECOGNIZED THE NEED TO HAVE A COMMUNICATIONS MANAGER AT THE UNOLS LEVEL TO OVERSEE THE JOINT USE OF IRAC FREQUENCY ASSIGNMENTS AND TO KEEP ABREAST OF COMMUNICATIONS DEVELOPMENTS ON A COMMUNITY-WIDE BASIS.
8. IT IS ENVISIONED THAT THE COMMUNICATIONS MANAGER WOULD BECOME RESPONSIVE TO THE VARIOUS AGENCIES GOVERNING THE ALLOCATION AND CONTROL OF RADIO FREQUENCIES ESPECIALLY RELATING TO OCEANOGRAPHIC ACTIVITIES & WOULD ACT AS LIASON BETWEEN THE VARIOUS AGENCIES AND THE COMMUNITY TO KEEP ABREAST WITH NEW POLICIES AND TRENDS.

#### B. SHIP COMMUNICATIONS

1. ONLY FOUR INSTITUTIONS REPORTED HAVING MORE THAN ONE SINGLE SIDE BAND TRANSCEIVER ABOARD THEIR VESSELS.
2. IN GENERAL, THE SINGLE SIDE BAND EQUIPMENT ABOARD THE VESSELS APPEARED ADEQUATE.

## C. SATELLITE COMMUNICATIONS

1. THE COMMITTEE WAS IN UNANIMOUS AGREEMENT THAT SATELLITE COMMUNICATIONS SHOULD BE A REQUIREMENT FOR ALL UNOLS VESSELS ENGAGED IN DEEP OCEAN RESEARCH.
2. CONFIGURATION REQUIRED WOULD SUPPORT THE FOLLOWING FUNCTIONS:
  - \* VOICE
  - \* FACSMILE
  - \* DATA COMMUNICATIONS

CAPABILITIES FOR DATA COMMUNICATIONS ARE PRIMARILY FOR MESSAGE TRAFFIC BUT WOULD ALSO PROVIDE A MEANS OF TRANSMITTING "SAIL" ACQUISITION DATA TO SHORE IN THE FUTURE.

3. THE COMMITTEE RECOGNIZES THE OUTSTANDING EFFORT THE UNIVERISTY OF MIAMI HAS DEVOTED IN PIONEERING THE USE OF NASA'S APPLICATION TECHNOLOGY SATELLITES FOR OCEANOGRAPHIC USE. THE COMMITTEE ALSO RECOGNIZES THAT THE PRESENT USE OF THE ATS SATELLITES BY THE COMMUNITY IS THE DIRECT RESULTS OF MIAMI'S NEGOTIATIONS WITH NASA ESPECIALLY IN THE USE OF SIDE-BAND FREQUEECIES FOR DATA COMMUNICATIONS. HOWEVER, WE FEEL THAT THE BEST INTERESTS OF THE COMMUNITY CAN BE BEST SERVED IF THE RELATIONSHIP BETWEEN NASA AND THE COMMUNITY BE CARRIED ON AT THE UNOLS LEVEL...PREFERABLY WITHOUT THE MIAMI UMBRELLA.
4. THE COMMITTEE FELT THAT PAUL EDEN'S MANAGEMENT FUNCTION SHOULD BE MAINTAINED AS AN INTEGRAL PART OF THE JOINT COOPERATIVE USE OF THE SYSTEM BY THE COMMUNITY AND THAT HIS SERVICES BE MAINTAINED WITHIN THE UNOLS FRAMEWORK.

## III. NAVIGATION

THE COMMITTEE CONCLUDED THAT THE MOST IMMEDIATE NEED FOR UNOLS VESSELS REGARDING NAVIGATION WAS THE REPLACEMENT OF THE EXISTING SATELLITE NAVIGATORS (ALL ABOUT 8-10 YEARS OLD).

THE DECISION WAS BASED ON THE FOLLOWING:

- 1 - THE FORTHCOMING GLOBAL POSITIONING SYSTEM (GPS) IS STILL 6 TO 8 YEARS AWAY.
- 2 - THE PRESENT SATELLITE NAVIGATORS ARE BECOMING UNRELIABLE AND DEPEND ON A COSTLY ONR DEPOT TO MAINTAIN THEM. (THE DEPOT WOULD BE ELIMINATED BY GETTING NEW UNITS)
- 3 - STATE-OF-THE-ART RECEIVERS ARE MORE ACCURATE AND MORE VERSATILE IN THEIR OPERATIONS.
- 4 - THE NAVY INTENDS TO MAINTAIN THE PRESENT TRANSIT SATELLITE SYSTEM AT LEAST TO THE YEAR 1990- AND POSSIBLY BEYOND.

## A. SELECTING A NEW SATELLITE NAVIGATOR

1. THE COMMITTEE HAS SURVEYED THE INDUSTRY FOR A SUITABLE REPLACEMENT SYSTEM. THE KEY FACTORS CONSIDERED IN THE SELECTION WERE:

- \* HIGH RELIABILITY
- \* PERFORMANCE
- \* GLOBAL LOGISTIC SUPPORT
- \* COST

2. IN ORDER TO MAINTAIN CONTINUITY THROUGHOUT THE UNOLS FLEET, THE COMMITTEE WAS UNANIMOUS IN ITS DECISION THAT ALL SHIPS SHOULD HAVE THE SAME MODEL SATELLITE NAVIGATOR.

THE FOLLOWING FACTORS GOVERNED THIS DECISION:

- \* RECEIVERS COULD BE TRANSFERRED BETWEEN VESSELS WHEN SHIPS ARE NOT IN USE.
- \* CONNECTING THE NAVIGATORS TO THE NEW "SAIL" DATA ACQUISITION SYSTEM WOULD BE SIMPLIFIED.
- \* NAVIGATION REQUIREMENTS SUPPORTING AT SEA RESEARCH WOULD BE UNIFORM BETWEEN SHIPS - SIMPLIFYING THE TASK OF THE VISITING SCIENTIST.

## IV. SHIP INSTRUMENTATION

THE OBJECTIVES OF THE COMMITTEE REGARDING MINIMUM SHIP INSTRUMENTATION HAS BEEN CONTINUING TO DOCUMENT AND DEVELOP DATA COMMUNICATIONS CAPABILITIES ON BOARD UNOLS VESSELS.

ALTHOUGH THE PROPOSED DATA AND HARDWARE STANDARIZATION WAS FIRST INTRODUCED IN 1975 AND AGAIN IN 1978 AT THE UNOLS SPONSORED WORKING CONFERENCE ON OCEANOGRAPHIC DATA SYSTEMS, THE TASK OF THE TAC GROUP HAS BEEN TWO FOLD:

- \* TO MAINTAIN THE DIALOG WITH INTERESTED COMMUNITY PARTICIPANTS TO REFINE AN ACCEPTABLE WRITTEN ELECTRONIC INTERFACE STANDARD.
  - \* TO CONTINUE EFFORTS TO IMPLEMENT THE ELECTRONIC HARDWARE WHICH FUNCTIONS WITH THE INTERFACE STANDARD AND THE SCIENTIFIC USERS.
- A. THE PHILOSOPHICAL APPROACH INTENDED FOR BOTH THESE BRANCHES WAS TO USE CONCEPTS THAT, ONCE REFINED, COULD HAVE COMMUNITY-WIDE ACCEPTANCE.
1. TO ACCOMODATE THE PROPOSED INTERFACE STANDARD, THE POPULAR RS-232C STANDARD COMBINED WITH THE ASCII DATA FORMAT WAS USED AS THE BASIS FOR THE UNOLS PROGRAM. THUS THE "SAIL" CONCEPT (SERIAL ASCII INTERFACE LOOP) IS NO MORE THAN A MEANS OF CONNECTING INSTRUMENTATION DATA BY CONNNECTING THE INSTRUMENTS SERIALLY TOGETHER THROUGH A PAIR OF WIRES AND THEN TO AN INTELLIGENT TERMINAL.
    - a. ADDING THE VARIOUS INSTRUMENTS TO THE LOOP CAN EASILY BE DONE BY THE EXPERIMENTER BY FOLLOWING A FEW SIMPLE RULES.
    - b. THE EXPERIMENTER DICTATES THE INSTRUMENTS TO BE CONNECTED AND THE RATE TO SCAN THEM.

Ocean Sciences Division, NSF, Support of Oceanography  
and UNOLS Fleet Usage/Funding Profiles

Appendix VII - 1

TABLE 2

OCEAN SCIENCES DIVISION

Budget Summary - 1974 - 1981 Actual \$ (a) and (Constant 1974 \$ Calculated by use of  
Department of Commerce Implicit GNP Deflator)

	1974	1977		1978		1979		1980		1981+	
	a	a	b	a	b	a	b	a	b	a	b
IDOE											
Environmental Forecasting	3.1	4.8	3.7	6.0	4.4	6.2	4.2	9.5	6.4	10.2	6.3
Environmental Quality	4.5	5.1	4.0	5.2	3.8	5.4	3.7	4.7	3.2	5.8	3.6
Seabed Assessment	3.3	3.3	2.6	3.8	2.8	4.3	2.9	4.4	2.8	5.2	3.2
Living Resources	2.4	3.2	2.5	2.5	1.8	2.6	1.8	1.6	1.1	0.8	.5
General Support	.5	.6	.5	.8	.6	.9	.6	.6	.4	0.6	.4
	<u>13.8</u>	<u>17.0</u>	<u>13.3</u>	<u>18.3</u>	<u>13.4</u>	<u>19.4</u>	<u>13.2</u>	<u>20.8</u>	<u>13.9</u>	<u>22.6</u>	<u>14.0</u>
OCEANOGRAPHY											
Physical Oc.	3.0	3.3	2.6	3.7	2.7	3.9	2.6	4.2	2.8	4.4	2.7
Marine Chemistry	1.6	2.6	2.0	3.2	2.3	3.5	2.4	3.9	2.6	4.2	2.6
Submarine G+G	4.4	7.1	5.5	6.9	5.1	7.2	4.9	7.6	5.2	8.2	5.0
Biological Oc.	4.1	4.7	3.7	5.2	3.8	5.3	3.6	5.8	3.9	7.0	4.3
Instrumentation*	.3										
	<u>13.8</u>	<u>17.7</u>	<u>13.8</u>	<u>19.0</u>	<u>13.9</u>	<u>19.9</u>	<u>13.5</u>	<u>21.5</u>	<u>14.5</u>	<u>23.8</u>	<u>14.6</u>
TOTAL (Research)	27.6	34.7	27.1	37.3	27.3	39.3	26.7	42.3	28.4	46.4	28.6
OCEANOGRAPHIC FACILITIES + Support (OFS)											
Ship Operations	12.5	15.0	11.7	15.8	11.6	16.4	11.1	18.6	12.6	24.6	15.1
Ship Construction	3.6	.0	.0	1.7	1.2	3.1	2.1	3.1	2.1	0.0	
Equipment/Facilities	.9	1.2	.9	1.1	.8	2.5	1.7	1.7	1.2	2.0	1.2
Other Support (ALVIN)	1.3	2.1	1.6	2.1	1.5	1.1	.8	1.1	.7	1.2	.7
	<u>18.3</u>	<u>18.3</u>	<u>14.2</u>	<u>20.7</u>	<u>15.1</u>	<u>23.1</u>	<u>15.7</u>	<u>24.5</u>	<u>16.6</u>	<u>27.8</u>	<u>17.0</u>
TOTAL OFS	18.3	18.3	14.2	20.7	15.1	23.1	15.7	24.5	16.6	27.8	17.0

\* Instrumentation incorporated into program budgets after 1974

+ Estimated inflation rate = 9.5% based on 1st quarter Gross National Product Deflator

FLEET FUNDING - 1970-1979  
(\$M)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
NSF	7.4	8.2	10.1	11.6	12.5	13.4	13.6	15.0	15.8	16.5
OMR	4.7	4.4	4.0	3.8	3.6	3.5	2.5	2.6	2.4	2.6
OTHER	<u>1.6</u>	<u>1.9</u>	<u>1.8</u>	<u>1.5</u>	<u>2.1</u>	<u>2.8</u>	<u>4.1</u>	<u>4.3</u>	<u>4.6</u>	<u>4.2</u>
TOTAL FUNDS AVAILABLE	13.7	14.5	15.9	16.9	18.2	19.7	20.2	21.9	22.8	23.3
SHORTFALL				<u>0</u>	<u>0.3</u>	<u>0.7</u>	<u>1.1</u>	<u>0.5</u>	<u>1.7</u>	<u>2.9</u>
TOTAL NEEDED FOR ALL SHIPS				16.9	18.5	20.4	21.3	22.4	24.5	26.2
NO. OF SHIPS OPERATING	35	35	34	34	29	29	28	28	28	28

FLEET CHANGES

Proteus (Out)

Gosnold  
Oconostota  
Inland Seas  
Mysis  
Tursiops (Out)  
(\$1.0 M)

Gulfstream (Out)  
Longhorn (In)

{Chain (Out)  
Oceanus (In)  
Yaquina (Out)  
Wecoma (In)  
Trident (Out)  
(\$1.0 M)

Endeavor (In)  
Agassiz (Out)  
(\$0.7 M)

New Horizon (In)  
Maury (Out)

UNDER-UTILIZATION

Melville/223

Wash'ton/249  
Knorr/250  
A II/252

Gilliss/201  
Melville/144  
Wash'ton/201  
Agassiz/137  
Yaquina/186

Thompson/212  
Melville/203  
Wash'ton/226  
Gilliss/253  
Agassiz/166  
Wecoma/163  
Oceanus/188

Thompson/204  
Wash'ton/253  
Gilliss/150  
Endeavor/220

Thompson/249  
Wash'ton/254  
A II/244  
Gilliss/157  
Vema/161

Melville/126  
Knorr/214  
A II/118  
Wash'ton/173  
New Horizon/213  
Vema/165

CURRENT UNOLS FUNDING PROFILE

\$ M

	1973	1974	1975	1976	1977	1978	Est. 1979	Proj. 1980
NSF SHIP OPERATIONS	11.6	12.5	13.4	13.6	15.0	15.8	16.4	17.45
NSF SHIP OPS & TECHS	3.8	3.6	3.5	3.2	2.6	2.4	1.6	2.5
"OTHER" SHIP OPS**	1.5	2.1	2.8	3.0	4.3	4.6**	4.6**	4.9**
<b>TOTAL FUNDS AVAILABLE</b>	<b>16.9</b>	<b>18.2</b>	<b>19.7</b>	<b>19.8</b>	<b>21.9</b>	<b>22.8</b>	<b>22.2</b>	<b>24.85</b>
<hr/>								
<i>ACTUAL OR PROJECTED COSTS FOR FULL FLEET OPERATION</i>	16.9	18.5	20.4	22.3	23.8	24.5	26.4	27.9
<hr/>								
NSF TECHNICIAN FUND	0.8	1.0	1.1	1.1	1.1	1.3	1.3	1.4
NSF SHIP EQPT. FUND	1.2	1.0	1.0	1.0	1.2	1.1	1.2	1.6
NSF SHIP CONSTRUCTION	0	3.5	4.0	0.3	0	1.9*	3.0	3.1

\* 1.2 for Re-engining of ATLANTIS II  
 .7 for Polar and Coastal Design Studies

\* "Other" Ship Operations

	1978	EST. 1979	PROJ. 1980
Other Navy (NAVALEX)	.8	1.15	1.2
ERDA (DOE)	1.0	.8	1.0
BLM	.3	.3	.3
USGS	1.0	1.0	1.0
NOAA & EPA	.3	.3	.2
Other/private	1.2	1.0 <sub>+</sub>	1.2 <sub>+</sub>
<b>Total</b>	<b>4.6</b>	<b>4.6</b>	<b>4.9</b>



SUMMARY OF UNOLS VESSELS'  
OPERATIONAL AND SUPPORT STATISTICS

1978

	OVER 200 FT.	150 FT. TO 200 FT.	100 FT. TO 149 FT.	60 FT. TO 99 FT.	ALL VESSELS
NUMBER OF VESSELS SUPPLYING DATA	7	8	5	8	28
AVERAGE OPS DAYS	277	248	199	147	217
AVERAGE ACTUAL DAYS AT SEA	244	203	179	143	187
AVERAGE COST (EST. 1978)	\$1,500K	\$921K	\$626K	\$219K	\$804K
AVERAGE DAILY RATE (EST. 1978)	\$5,533	\$3,868	\$2,881	\$1,330	\$3,756
AVERAGE MAN-DAYS AT SEA	4,487	2,515	1,751	716	2,357
PARTICIPATION BY UNOLS ASSOCIATE MEMBERS	6%	7%	20%	5%	8%
PARTICIPATION BY NON-UNOLS	6%	8%	30%	4%	11%
FOREIGN PARTICIPATION	5%	1%	4%	<1%	2%
SHIP SUPPORT FUNDING					
NSF	74%	59%	75%	60%	67%
ONR	18%	6%	0%	4%	8%
ALL OTHER FEDERAL	6%	33%	23%	26%	21%
NON-FEDERAL	2%	2%	2%	10%	4%

## 1979 SUMMARY OF OPERATIONAL COSTS

	\$K AVERAGE COSTS				FLEET	
	Over 200 ft.	150- 200 ft.	100- 149 ft.	60- 99 ft.	Total	
Crew Salaries	656	364	240	115	10,097	39%
Marine Staff	84	73	57	21	1,719	7%
Maintenance	63	58	46	16	1,335	5%
Fuel	206	175	61	16	3,468	13%
Food	94	61	37	11	1,493	6%
Insurance	39	33	28	8	773	3%
Travel	34	17	14	3	487	2%
Other*	272	177	133	72	4,356	17%
Indirect	142	89	44	19	2,184	8%
<b>Total Expenses</b>	<b>11,127</b>	<b>9,413</b>	<b>3,297</b>	<b>2,075</b>	<b>25,914</b>	

\*Includes overhaul, stores, shore facilities & miscellaneous

UNOLS SHIPS/  
AVERAGE OPERATING DAYS

	1972	1973	1974	1975	1976	1977	1978
OVER 200 FT.	8/264	8/280	8/277	8/243	7/266	7/253	7/277
150 FT. - 200 FT.	7/253	7/259	8/252	8/243	8/233	8/278	8/248
100 FT. - 149 FT.	6/193	6/219	4/211	4/227	4/230	5/201	5/199
60 FT. - 99 FT.	13/180	11/187	10/174	9/152	9/149	8/170	8/147
<b>TOTAL NUMBER OF SHIPS</b>	<b>34</b>	<b>32</b>	<b>30</b>	<b>29</b>	<b>28</b>	<b>28</b>	<b>28</b>

AVERAGE DAILY RATES

1973-1979

	1973	1974	1975	1976	1977	1978	EST. 1979
OVER 200 FT.	\$3,749	\$4,363	\$5,144	\$4,656	\$6,104	\$5,533	\$5,581
150 FT. - 200 FT.	2,453	2,807	2,969	3,011	3,353	3,868	3,688
100 FT. - 149 FT.	1,388	1,715	2,079	2,645	2,444	2,881	2,689
60 FT. - 99 FT.	974	1,046	1,024	1,257	1,299	1,330	1,352

1979

PROFILE OF UNOLS FLEET

BY AGE & SIZE

	10 YRS. & UNDER	11-20	21-30	30 YEARS	TOTAL
OVER 200 FT.	KNORR MELVILLE	ATLANTIS II CONRAD GILLISS THOMPSON WASHINGTON	0	0	7
150 - 200 FT.	ENDEAVOR OCEANUS NEW HORIZON MOANA WAVE WECOMA GYRE ISELIN	KANA KEOKI	0	VEMA	9
100 - 149 FT.	CAPE HENLOPEN	WARFIELD ALPHA HELIX EASTWARD	0	VELERO IV	5
65 - 99 FT.	CALANUS BLUE FIN CAYUSE LONGHORN	ACONA E. B. SCRIPPS	ONAR	HOH	8
ALL SHIPS	14	11	1	3	29

## UNOLS RESEARCH VESSELS FLEET OPERATION - 1978

## CRUISE DAYS PROFILE

RESEARCH VESSEL	PHYS OCEAN	ACCOU STICS	CHEM OCEAN	BIOL OCEAN	ENVIR & ECOL	FISH. INVT	CLIM/ METEO	GEOLE GEOPH	MAP & CHRTG	OCEAN ENGRG	TRAIN ING	TRANS NONSI	TOTAL -----
MELVILLE	49	0	48	0	0	0	0	256	0	0	0	0	353
KNORR	120	0	103	16	12	0	0	69	0	0	0	0	320
ATLANTIS II	105	0	0	33	44	0	5	57	0	0	0	0	244
CONRAD	0	0	0	0	0	0	0	341	0	0	0	20	361
J. GILLISS	45	0	0	0	0	0	0	112	0	0	0	0	157
T.G. THOMPSON	16	0	59	29	100	0	0	39	0	0	0	6	249
T. WASHINGTON	17	20	0	61	0	0	0	156	0	0	0	0	254
VERA	0	0	0	0	0	0	0	161	0	0	0	0	161
ENDEAVOR	78	0	0	40	0	0	0	110	0	8	0	0	236
OCEANUS	57	22	30	83	20	0	0	37	0	0	0	0	249
WECOMA	53	22	72	0	31	0	0	38	0	0	0	4	220
GYRE	171	0	17	0	53	0	0	21	0	0	8	15	285
MOANNA WAVE	0	365	0	0	0	0	0	0	0	0	0	0	365
C. ISELIN	94	0	17	31	55	0	0	25	0	0	0	0	222
NEW HORIZON	0	0	0	0	0	0	0	2	0	0	0	0	2
KANA KEOKI	45	0	27	3	57	0	0	88	0	11	0	11	242
ALPHA HELIX	0	0	0	245	0	0	0	0	0	0	0	6	251
CAPE HENLOPEN	0	0	0	0	14	0	0	144	0	0	6	8	172
EASTWARD	20	0	0	38	15	0	0	151	0	0	0	48	272
VELERO IV	0	13	4	35	47	0	0	59	0	0	6	0	164
R. WARFIELD	7	0	23	46	39	0	0	21	0	0	0	0	136
E.B. SCRIPPS	3	19	0	14	34	0	0	71	0	16	4	1	162
ACONA	53	0	4	0	126	10	0	0	0	0	0	0	193
CAYUSE	23	0	7	25	11	34	22	7	0	0	0	0	129
LONGHORN	0	0	1	17	85	0	0	0	0	0	9	0	112
BLUEFIN	15	0	26	34	35	0	0	25	0	0	1	2	138
HOH	4	0	13	49	4	34	0	15	0	4	9	2	134
ONAR	41	3	64	25	0	0	0	2	0	2	15	2	154
CALANUS	0	0	26	62	4	0	0	61	0	0	1	0	154
TOTALS	1016	464	541	886	786	78	27	2068	0	41	59	125	6091
PERCENT	16.7	7.6	8.9	14.5	12.9	1.3	.4	34.0	.0	.7	1.0	2.1	

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1978

CRUISE DAYS PROFILE

NUMBER OF OPERATIONAL DAYS BY DISCIPLINE

	PHYS OCEAN	ACCOU STICS	CHEM OCEAN	BIOL OCEAN	ENVIR &ECOL	FISH. INVST	CLIM/ METEO	GEOLE GEOPH	MAP & CHRTG	OCEAN ENGRG	TRAIN ING	TRANS NOSCI	TOTAL -----
NAT'L SCIENCE FNDTN	807	16	446	793	440	44	20	1393	0	15	1	91	4066
OFF. NAVAL RESEARCH	106	83	17	0	0	0	7	283	0	6	0	13	515
US GEOL. SURVEY	0	0	0	0	42	0	0	316	0	0	0	0	358
BUR. LAND MNGMT.	15	0	0	0	70	0	0	0	0	0	0	0	85
NAT'L OCEAN/ATMOSPH	54	0	1	1	52	34	0	12	0	0	2	0	156
DEPT OF ENERGY	32	0	65	86	77	0	0	25	0	1	0	0	286
OTHER FEDERAL	0	365	0	0	19	0	0	0	0	1	0	8	393
STATE/MUNICIPAL	2	0	0	6	19	0	0	6	0	7	46	11	97
OTHER / PRIVATE	0	0	12	0	67	0	0	33	0	11	10	2	135
TOTALS	1016	464	541	886	786	78	27	2068	0	41	59	125	6091
PERCENT	16.7	7.6	8.9	14.5	12.9	1.3	.4	34.0	.0	.7	1.0	2.1	

## UNOLS RESEARCH VESSELS FLEET OPERATION - 1978

## CRUISE DAYS PROFILE

RESEARCH VESSEL	PHYS OCEAN	ACCOU STICS	CHEM OCEAN	BIOL OCEAN	ENVIR & ECOL	FISH. INVST	CLIM/ METEO	GEOLE GEOPH	MAP & CHRTG	OCEAN ENGRG	TRAIN ING	TRANS NONSI	TOTAL
UNIV. HAWAII	45	365	27	3	57	0	0	88	0	11	0	11	607
UNIV. ALASKA	53	0	4	0	126	10	0	0	0	0	0	0	193
UNIV. WASHINGTON	61	3	136	103	104	34	0	56	0	6	24	10	537
OREGON STATE UNIV.	76	22	79	25	42	34	22	45	0	0	0	4	349
SCRIPPS INST. OCEAN	69	39	48	320	34	0	0	485	0	16	4	7	1022
UNIV. SO. CALIF.	0	13	4	35	47	0	0	59	0	0	6	0	164
TEXAS A&M UNIV.	171	0	17	0	53	0	0	21	0	0	8	15	285
UNIV. TEXAS	0	0	1	17	85	0	0	0	0	0	9	0	112
UNIV. MIAMI, RSMAS	139	0	43	93	59	0	0	198	0	0	1	0	533
UNIV GA., SKIDAWAY	15	0	26	34	35	0	0	25	0	0	1	2	138
DUKE UNIV.	20	0	0	38	15	0	0	151	0	0	0	48	272
JOHNS HOPKINS UNIV.	7	0	23	46	39	0	0	21	0	0	0	0	136
UNIV. DELAWARE	0	0	0	0	14	0	0	144	0	0	6	8	172
LAMONT-DOHERTY GEOL	0	0	0	0	0	0	0	502	0	0	0	20	522
UNIV. RHODE ISLAND	78	0	0	40	0	0	0	110	0	8	0	0	236
WOODS HOLE OCEAN. I	282	22	133	132	76	0	5	163	0	0	0	0	813
UNOLS ASSOC. MEM.	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	1016	464	541	886	786	78	27	2068	0	41	59	125	6091
PERCENT	16.7	7.6	8.9	14.5	12.9	1.3	.4	34.0	.0	.7	1.0	2.1	

UNOLS RESEARCH VESSELS FLEET OPERATIONS • 1978

OPERATIONAL DAYS CHARGED BY SPONSOR

46.

	LOA	NATL SCI. FNDTN	OFF. NAVAL RES.	U.S. GEOL. SURV.	BUR. LAND MNGMT	NATL OCEAN ATMOS	DEPT. OF ENRGY	OTHER FEDER FUNDS	STATE OR MUNIC	PRIV/ FORGN FUNDS	TOTALS -----
MELVILLE	245FT	260	93	0	0	0	0	0	0	0	353
KNORR	245FT	271	7	0	0	12	30	0	0	0	320
ATLANTIS II	210FT	155	56	8	0	0	25	0	0	0	244
CONRAD	209FT	192	129	0	0	0	0	0	0	40	361
J. GILLISS	209FT	127	30	0	0	0	0	0	0	0	157
T.G. THOMPSON	209FT	240	8	0	0	0	1	0	0	0	249
T. WASHINGTON	209FT	198	20	0	0	0	34	0	2	0	254
VEMA	197FT	124	37	0	0	0	0	0	0	0	161
ENDEAVOR	177FT	197	18	0	0	0	21	0	0	0	236
OCEANUS	177FT	182	25	33	0	0	9	0	0	0	249
WECOMA	177FT	164	25	0	0	31	0	0	0	0	220
GYRE	174FT	186	5	21	30	0	5	13	0	25	285
MOANNA WAVE	174FT	0	0	0	0	0	0	365	0	0	365
C. ISELIN	170FT	106	0	67	28	0	21	0	0	0	222
NEW HORIZON	170FT	0	0	0	0	0	0	0	2	0	2
KANA KEOKI	156FT	207	16	0	0	0	0	0	8	11	242
ALPHA HELIX	133FT	251	0	0	0	0	0	0	0	0	251
CAPE HENLOPEN	120FT	0	0	121	0	0	0	8	6	37	172
EASTWARD	118FT	241	0	12	0	12	0	0	0	7	272
VELERO IV	110FT	143	0	0	13	0	0	0	8	0	164
R. WARFIELD	106FT	111	0	20	0	0	5	0	0	0	136
E.B. SCRIPPS	95FT	65	36	14	0	0	31	0	16	0	162
ACONA	85FT	96	0	0	0	53	2	2	0	40	193
CAYUSE	80FT	64	2	0	0	35	28	0	0	0	129
LONGHORN	80FT	48	0	0	14	10	0	0	32	8	112
BLUEFIN	72FT	47	0	25	0	0	63	0	0	3	138
H8H	65FT	116	6	0	0	0	0	1	10	0	134
UNAR	65FT	126	2	0	0	2	11	0	13	0	154
CALANUS	64FT	149	0	0	0	0	0	4	0	1	154
TOTALS		4066	515	321	85	156	286	393	97	172	6091
PERCENT		66.8	8.5	5.3	1.4	2.6	4.7	6.5	1.6	2.8	

UNOLS RESEARCH VESSELS FLEET OPERATIONS - 1978

PROJECT MAN-DAYS AT SEA BY SPONSOR

	TOTAL DAYS CHRGD	NATL SCI. FNJTN	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	353	5026	1102	0	0	0	52	0	203	43	6426
KNORR	320	4975	341	0	0	363	515	0	0	48	6242
ATLANTIS II	244	3479	1080	112	0	32	679	0	31	131	5544
CONRAD	361	1756	1373	0	0	0	0	0	0	500	3629
J. GILLISS	157	2176	0	0	0	0	0	0	0	0	2176
T.G. THOMPSON	249	3101	309	0	0	0	70	0	0	0	3480
T. WASHINGTON	254	2651	478	0	0	0	781	0	0	0	3910
VEMA	161	1043	270	0	0	0	0	0	0	0	1313
ENDEAVOR	236	2554	517	0	0	24	247	0	10	0	3362
OCEANUS	249	1525	348	342	0	0	119	45	0	100	2479
WECOMA	220	1734	311	0	0	208	0	0	0	0	2253
GYRE	285	1894	15	285	450	10	72	195	0	379	3300
MOANNA WAVE	365	0	0	0	0	0	0	2184	0	0	2184
C. ISELIN	222	1014	0	763	252	0	284	0	0	0	2313
NEW HORIZON	2	18	0	0	0	0	0	0	4	0	22
KANA KEOKI	242	2622	45	0	0	24	0	0	104	129	2924
ALPHA HELIX	251	2048	0	0	0	0	0	142	0	29	2219
CAPE HENLOPEN	172	0	0	202	0	0	0	16	88	127	433
EASTWARD	272	2693	0	180	0	0	0	0	0	431	3304
VELERO IV	164	1332	17	0	143	0	32	0	204	0	1728
R. WARFIELD	136	786	0	239	0	0	45	0	0	0	1070
E.B. SCRIPPS	162	443	258	98	0	87	258	0	90	0	1234
ACONA	193	543	0	0	0	276	23	18	0	349	1209
CAYUSE	129	462	10	0	0	252	123	0	0	0	877
LONGHORN	112	245	0	0	94	49	0	0	317	58	763
BLUEFIN	138	139	0	156	0	0	303	0	32	19	649
HSH	134	463	44	0	0	10	0	3	84	0	604
ONAR	154	539	12	0	0	17	95	0	159	0	822
CALANUS	154	749	0	0	0	0	0	16	0	15	780
TOTALS	6091	46010	6530	2377	939	1382	3698	2619	1326	2358	67239
PERCENT		68.4	9.7	3.5	1.4	2.1	5.5	3.9	2.0	3.5	



UNOLS RESEARCH VESSELS FLEET OPERATIONS • 1978 •

OPERATIONAL DAYS CHARGED BY SPONSOR

48.

LOA	NATL SCI. FNDTN	OFF. NAVAL RES.	U.S. GEOL. SURV.	BUR. LAND MNGMT	NATL OCEAN ATMOS	DEPT. OF ENRGY	OTHER FEDER FUNDS	STATE OR MUNIC	PRIV/ FORGN FUNDS	TOTALS -----
UNIV. HAWAII	207	16	0	0	0	0	365	8	11	607
UNIV. ALASKA	56	0	0	0	53	2	2	0	40	193
UNIV. WASHINGTON	482	16	0	0	3	12	1	23	0	537
OREGON STATE UNIV.	228	27	0	0	66	28	0	0	0	349
SCRIPPS INST. OCEAN	774	149	14	0	0	65	0	20	0	1022
UNIV. SB. CALIF.	143	0	0	13	0	0	0	8	0	164
TEXAS A&M UNIV.	186	5	21	30	0	5	13	0	25	285
UNIV. TEXAS	48	0	0	14	10	0	0	32	8	112
UNIV. MIAMI, RSMAS	382	30	67	28	0	21	4	0	1	533
UNIV GA., SKIDAWAY	47	0	25	0	0	63	0	0	3	138
DUKE UNIV.	241	0	12	0	12	0	0	0	7	272
JOHNS HOPKINS UNIV.	111	0	20	0	0	5	0	0	0	136
UNIV. DELAWARE	0	0	121	0	0	0	8	6	37	172
LAMONT-DOHERTY GEOL	316	166	0	0	0	0	0	0	40	522
UNIV. RHODE ISLAND	197	18	0	0	0	21	0	0	0	236
WOODS HOLE OCEAN. I	608	88	41	0	12	64	0	0	0	813
UNOLS ASSOC. MEM.	0	0	0	0	0	0	0	0	0	0
TOTALS	4066	515	321	85	156	286	393	97	172	6091
PERCENT	66.8	8.5	5.3	1.4	2.6	4.7	6.5	1.6	2.8	

A PLAN FOR JOINT SCHEDULING OF  
LARGE RESEARCH SHIPS OF THE UNOLS FLEET

Appendix VIII

Summary

This plan proposes an arrangement for planning and scheduling large ship use (over 200 feet) in order to meet growing economic pressures and to provide the most effective application of the available resources. Ship use planning and scheduling would be a function of an advisory group comprising ship operations, the two major Federal Agencies, and a body of individual scientists drawn from the UNOLS community. Specific functions of this group would be to review proposed use for large ships and recommend assignments based on scientific merit, science needs, ship capabilities, geographic distribution, and available funding. Other functions would include the development of major expeditions, recommend temporary or permanent layups as required, oversight of ship material condition and capabilities, and cognizance of dedicated facilities.

Background

Since the inception of UNOLS in 1972, the "large ship" component has shrunk from nine ships to six<sup>1</sup> and of the remaining six an average of one ship per year has been, or is projected to be, out of service. The reason for this decline is in part due to

1 - UNOLS ships over 200 feet:

<u>1972</u>			<u>1980</u>	
MELVILLE	KNORR	GILLISS	MELVILLE	KNORR
WASHINGTON	ATLANTIS II	CONRAD	WASHINGTON	ATLANTIS II
THOMPSON	CHAIN	VEMA	THOMPSON	CONRAD

addition to the fleet of capable intermediate sized ships and to an alleged decline in science demands for large ships. The chief reason, however, seems to be the increasing costs of the ships in relation to science project funding and the failure of available funds to match the increasing costs. Whatever the reason, a six-ship fleet appears to be the best that UNOLS can aspire to, and economics may reduce the "active" fleet to five, or even fewer, ships.

The current (1980) cost of the UNOLS fleet is about \$26M for 26 ships. The six large ships represent almost half of this (\$12.5M). It is not surprising to see pressures for reducing this number especially in view of alleged trends toward less use of these ships. Others hold that the "trends" are not entirely valid and that the need for large ships is as great or greater than it ever was and that any further reduction in this number would be a severe loss to this Nation's oceanographic research program.

In earlier times a ship assigned to a laboratory was utilized chiefly by that laboratory. Furthermore, most of the large ship users were located at the labs operating those ships. This balance no longer exists.

Coordinated and other cooperative projects have brought about an increasing number of ship users from without the operating laboratory. Furthermore, there are now only four institutions operating large ships whereas the number of ship users is becoming more diversely spread over a greater number of labs both within and outside UNOLS. These factors along with increasing economic pressures

have brought about an urgent awareness that the large ship resource -- and the funds they represent -- must be husbanded in the most effective manner possible.

Several schemes are being advanced to meet the situation described above. These include centralized or regional operations, cognizance by a single Federal Agency, consortia arrangements, and various concepts of "national facilities". Most deal with the entire UNOLS fleet; few include the element of scientific merit, and none have been fully defined to deal with the problems at hand.

Within the UNOLS concept, all ships are recognized as national resources, and the chief ingredient of UNOLS is cooperation and uniformity of purpose in order to assure access to all ships by qualified investigators. Nevertheless, control and scheduling of the ships remains with the operator, and a good case can be made for this. Only in UNOLS "National Facilities" does a community effort become the guiding influence in operating and scheduling. In the case of ALVIN the national facility operation has worked with good results. It has been suggested that certain elements of that operation be applied to the operation and scheduling of the large ships.

#### Discussion

The singling out of the large class of UNOLS ships for a joint, cooperative arrangement is probably the most reasonable and feasible approach. It is on these six ships that most of the pressures have been centered. Those charged with viewing (and meeting) overall

flect costs have concluded that only here can budgets be balanced. Large ship advocates point out that these ships carry most of the interinstitutional programs and constitute a national resource. If these ships are to effectively demonstrate their worth and at the same time be cost effective, it is essential that some sort of common framework be explored. Smaller ships are not considered to pose the same problems at this time. Thus any massive effort to include them in any similar arrangement would be an enormous, unnecessary and probably chaotic undertaking. The large ships represent only four operators with a geographical balance, and if manageability is to be tested, it should be confined to these ships.

It is proposed that these ships be separated from the main body of UNOLS and formed into a national pool of university research ships under a single advisory body. Here some of the same principles of UNOLS national oceanographic facilities would be adapted but with specific applications to meet the purposes intended. For example, if a ship by reason of funding or other consideration should be layed up, this body might be the most effective instrument for achieving that decision. Additional matters include planning for long voyages, oversight of ships' conditions and capabilities, and "dedicated" ships. The principal role, of course, would be ship scheduling to assure the most effective, efficient, and economic utilization of ships. Being born out of necessity in these times of reduced ship availability, the element of scientific merit is readily available through this process. The following sections deal with specific applications of this proposal.

(1) Organizational Framework is probably best achieved through the UNOLS system whose charter is intended for this sort of thing. Other frameworks could be JOI, OSB, a Federally constituted group, or a new independent body. UNOLS has chains of communication to most academic institutions and an infrastructure already functioning in allied matters. The UNOLS Charter probably would need amending, mostly in the form of an annex, to provide for a new large ship operations council or something of that sort. This would best be served by a body comprising one representative appointed *ex-officio* by each large ship operating institution, one each from NSF and ONR as major funding and ship-owning agencies, and a group of individual experts of varying disciplines elected from the major ship use institutions. This would result in a group of about 11-13 persons of whom about half are institution or agency members and those remaining comprise an independent review group. In much the same way as the UNOLS Advisory Council and the UNOLS ALVIN Review Committee, this group perhaps termed the Ship Utilization Review Council (SURC) would nominally report to the UNOLS Chairman but would have the statutory authority of interacting directly with Federal agencies (and operating institutions).

(2) Ship Scheduling would be the principal role of the Review Council and would achieve for the first time a fully coordinated approach for a distinct block of ships. Advantages here would be an overview of the full inventory of ship requests. This alone will be a formidable task. The ALVIN Review Committee in considering 1981 received and reviewed 19 requests. For the same year Woods

Hole alone received 28 requests for large ship use. With six ships to schedule the job will be at least six times as great and probably more. Factors involved with ship scheduling include:

- Timeliness and Format of requests - Sufficient information must be received in time for the group to make reasonable judgments.
- Qualification of Investigators - Is project funded or what is likelihood of funding?
- Ship Requirements - Is a large ship needed? What special ship capabilities are needed? What are available?
- Ship Days - What number of days actually are required to accomplish the project?
- Area and Time Frame - How stringent? What fits exist with other projects. Can project be deferred?
- Compression - Can projects be combined?
- Views of Funding Agencies - What science priorities exist? Past history; future projections?
- Ship Operator Views - Institution priorities? Ability to perform; constraints on ship operations?
- Ship Funding - What is outlook for facilities funding? How many ships and ship days will this support?
- Scientific Merit - What is best science that can and should be supported if priorities are invoked?

Under a single scheduling body, considering the above factors, the best possibility exists for an effective coordinated ships' sched-

ule supporting the entire oceanographic community. It goes without saying that the closest liaison with all UNOLS scheduling officers must be established and maintained in order to assure orderly interface with the intermediate and smaller vessels in the UNOLS fleet.

(3) Expedition Planning - The development of long voyages would be better served and made more efficient by this sort of coordinated approach. Such planning has already become interinstitutional in nature but presently has no rational basis for development. As a result, duplications have arisen in ship assignments and oversights have occurred in science applications.

(4) Ship Capabilities - Joint scheduling should include an overview of ships' material condition and capability of conducting research in accordance with UNOLS criteria now under development. Ship deficiencies would become more apparent along with the pressures for correction. The goal here would be the awareness of uniform standards and the ability to fit intended projects with the ships best located and suited to serve them.

(5) Dedicated Ships - The need for and assignment of a ship or ships for dedicated purposes: geology and geophysics, Seabeam, or other use can be facilitated through this body in view of the obvious interaction with the remainder of the fleet. Such an assignment could be temporary or for a longer term, but it becomes *per se* a National Facility (or should be). A national review mechanism for dedicated ship use becomes immediately available as well as a regulated approach for treating the "other" science projects of the operating institution which would be displaced.



(6) Ship Layups - Layups are rationally a function of total needs, scheduling arrangements, and available funds. With the ship use "pooled" under the arrangement described here, a mechanism is established for best identifying if a layup is required and which ship it ought to be. Working with the Federal agencies on one hand and the scheduling process on the other, the "Council" would be in the best possible position to recommend (and make stick) layups ranging from short term to permanent, if necessary.

The question arises that if this is an effective mechanism, why would it not be suitable for application to all seagoing ships -- or at least to the intermediate size vessels? The answer is that it might well be, but it might also be premature to involve up to ten or more additional operators and proportionately greater use proposals until the mechanism has at least been tested. The scheme described above involves only four operators and probably includes most of the problem areas that seem to be in contention. Certainly the big ships are the center of most of the current funding problems and controversy. If it works, consideration should be given to its extension.

On the other hand, the mechanism, if established, should have a self-destruct clause for its automatic elimination after one or two cycles if it does not prove effective.

#### Recommendation

It is submitted that this arrangement or a similar one addressing the same goals should be considered as a matter of urgency and that a suitable mechanism be instituted under UNOLS in

order to deal with the large ship planning and scheduling process in a cooperative and orderly manner.

This proposal has been developed in consultation with several of UNOLS members and community of ship users in whose behalf it is submitted. By copy hereof to the UNOLS Chairman it is requested that it be discussed at the forthcoming UNOLS meeting.

Member & Associate Member Delegates  
to UNOLS Annual Meeting May 23, 1980

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\* Voted in May 23, 1980

(with designated representatives)

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## UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

INTERNATIONAL POST CRUISE OBLIGATIONS  
MONITORING THE RESPONSIBILITY

There are three alternatives:

A. Department of State (DOS) assumes responsibility for ensuring that international post cruise obligations are complied with. These obligations would be agreed to by both DOS and the principal investigator (PI). DOS would require a cruise report initially and a schedule for compliance with the other items from the PI.

DOS enters initially into the agreement with the coastal country and it has the governmental responsibility and authority to see that the agreement is carried out.

B. UNOLS assumes responsibility for compliance. DOS would provide the UNOLS Office with copies of the PI's report and his schedule for meeting the remaining obligations. Depending on their nature, some time might elapse until they were all fulfilled. Should the PI default, UNOLS, from secretary to chairman, can use persuasion. Pressure on the PI's departmental chairman or institution is probably the only additional avenue of influence available to UNOLS.

C. Some combination of UNOLS and DOS sharing the monitoring obligation. DOS would inform UNOLS when a PI was not meeting agreed-to obligations. UNOLS would then bring whatever pressure it could to bear. If this proved insufficient DOS could decline to process further foreign clearances for that vessel.