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HIGHLIGHTS

PURPOSE AND ORGANIZATION OF THE UNOLS ADVISORY COUNCIL

The University National Oceanographic Laboratory System (UNOLS) was founded to create a mechanism for coordinated utilization of and planning for oceanographic facilities, especially, ships. UNOLS also promotes Federal and other support for academic oceanography, thereby maintaining and enhancing the excellence of this nation's oceanographic program. An underlying principal is that control of operations and scheduling remains with operating institution, thereby maintaining the close coupling between fleet users and operators. It promotes cooperative scheduling, financial efficiency, operator accountability, fleet maintenance and replacement, safety, and access to the fleet for scientists outside the institutions. UNOLS plays a key part in most decisions affecting the fleet.

Oceanography no longer is pursued only from ships. Our community is acquiring other large assets that will require information exchange and cooperative management. These include super-computers, imagery analysis systems, seismic arrays, and bio-technical laboratories. UNOLS now is organizing to assist the community with acquisition and cooperative management of these new sorts of facilities.

Most of the day-to-day work of UNOLS is done by the executive office under Capt. William Barbee, located at the School of Oceanography of the University of Washington. He is provided direction on a regular basis by the UNOLS Advisory Council composed of eight scientists elected by the UNOLS members and associate members, plus the chairman and vice-chairman of UNOLS. The Advisory Council has organized for its tasks by assigning to its members a set of standing roles described below. Council members stay current with developments related to their standing roles, and acting upon that information they promote changes and activities that will improve fleet and facility operations.

We seek the assistance of the UNOLS community, both administrators and scientists, with fulfilling these standing roles. We hope you will contact Advisory Council Members when your concern match their assignment. Our names and addresses are at the end of this essay. We are all on telemail with boxes addressed as C.Lorenzen, F.Webster, etc., and the whole Council can be reached as ADVISORY.COUNCIL. The chairman will be glad to assist you in communicating with the Council. It is a way of communicating with the whole oceanographic community.

UNOLS Advisory Council Standing Roles

A. Roles regarding effective operation and management of the UNOLS fleet:

1. Oversight of the joint scheduling process
   East Coast scheduling committee - Harris Stewart
   West Coast scheduling committee - John Martin
   University National Expeditionary Planning - Robert Corell
   ALVIN Review Committee - Robert Corell

2. Fleet effectiveness review
   User assessment forms - Carl Lorenzen
   Vessel inspection process - Robert Dinsmore
   Preparation for triennial review - Charles Miller

3. Fleet replacement - Robert Dinsmore

4. Shipboard scientific instrumentation, technician programs and user manuals - John Martin

B. Roles in communications and liaison

5. Editing the UNOLS News - Thomas Malone

6. Minutes, Advisory Council Resolutions, Direct Correspondence with the membership - Charles Miller, William Barbee

7. Oversight of the UNOLS and federal agency statistical base - Ferris Webster

8. International Restrictions to Ocean Science Committee - Harris Stewart, Robert Corell

9. Mechanisms for acquisition and management of advanced technical facilities - Charles Miller, Chris Mooers

10. Forecast of scientific and governmental trends through federal agency contact - Chris Mooers, Art Maxwell, Ferris Webster

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WHERE THE SHIPS WILL BE

The UNOLS National Expeditionary Planning Committee met on the morning of May 21, 1985, at the NSF building in Washington, D.C., immediately following the adjournment of the UNOLS East Coast and West Coast scheduling panels.

Representatives of ship operating institutions, and of ONR, NSF/DPP, USGS, and of the inter-institutional WOCE (World Ocean Circulation Experiment) program, presented their best estimates of agency and program needs for work in remote areas in late 1986, 1987, and subsequent years. There will be a significant need for ship time by NRL and ONR-sponsored programs in the western Indian Ocean and South Atlantic in late 1986 and in 1987 - approximately 60 days per year. The NSF funded US-India program may require one to two months of ship use in the Arabian Sea in 1987. Various investigators are proposing work to NSF for concerted programs in the Black Sea (near Turkey) and the Red Sea. The NSF Division of Polar Programs now has work scheduled for the POLAR DUKE through April, 1986; it now has equipment for trawling and dredging, and plenty of space for portable equipment, and can schedule non-DPP work in open periods. DPP expects to carry a major portion of its research on the POLAR DUKE, but will have a continuing need of time on a UNOLS ship every second Austral Summer for geology and geophysics programs in the Antarctic. The next field season for which they expect such a need is the Austral Summer of 1987/88. The schedule of Ocean Drilling Program area geophysical surveys is not yet totally clear, but derived from the drilling planned schedule, there should be a need for surveys in the Western Pacific/Indonesia area early in 1987.

The U.S. Geological Survey will carry out surveys of the EEZ during the next few years primarily with the British ship FARNELLA, using the GLORIA system. Other USGS work will be on the JOHN WESLEY POWELL (converted drug-runner). Little if any USGS work is planned to be carried on UNOLS vessels. WOCE's ship requirement has not yet been determined; however, it is clear that their program will require long, station-intensive transects. This work requires ships with very long range and endurance; it would be taxing to the largest UNOLS ships.

Based on 1986 schedules and projections for 1987, UNOLS ships will, in early 1987, be away from their home port as follows:

R/V KNORR will probably cross the North Atlantic, for work in the Mediterranean, Black Sea, and possible Red Sea and Western Indian Ocean.

R/V CONRAD will probably be in the South Atlantic at the beginning of 1987.

R/V THOMAS WASHINGTON is most likely to start the year in the western Pacific or eastern Indian Ocean, returning to San Diego in mid-1987.

R/V ATLANTIS II (with ALVIN) will start the year in Hawaii, and work west to the Marianas, then back to the U.S. northwest coast in the summer, returning to the North Atlantic near the end of 1987. It is probable that all work will be with ALVIN.

Both R/V COLUMBUS ISELIN and R/V MOANA WAVE are expected to be in the southeast Pacific at the start of 1987.

All of the other UNOLS ships are expected to be at their respective home ports at the beginning of 1987, and to work in areas relatively close to their home base during the year.

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FLEET REPLACEMENT

UNOLS' Fleet Replacement Committee, under the chairmanship of Robertson P. Dinsmore has been active for over a year. Other members of the FRC are:

John Martin, MLML
David Menzel, Skidaway
Joseph Phillips, University of Texas
Marcus Langseth, L-DGO
Derek Spencer, WHOI
Worth Nowlin, TAMU
Fred Speiss, Scripps
George Keller, Oregon State

The Committee is continuing its work along three general fronts:

- o Development of Science Requirements
- o Conceptual Design Studies of New Types of Ships
- o Plan for Fleet Replacement

1. Science Requirements

Outline requirements have been or are being prepared for at least six classes of research ships. These are kept under continuing review as comments and recommendations are received.

- o Large High Endurance General Purpose R/V. Size Range 250-300 ft.
- o Medium Endurance General Purpose R/V. Size Range 200-250 ft.
- o "High Performance" (SWATH type) General Purpose R/V. Size Range 200-250 ft.
- o Geology & Geophysics R/V (including multi-discipline capability). Approximate Size - 250ft.
- o Intermediate Size General Purpose R/V. Size Range 150-200 ft.
- o Coastal Size General Purpose R/V. Size Range 100-150 ft.

These requirements have been and will continue to be circulated throughout the community. Their effectiveness will be only as good as the reviews and comments received.

2. Conceptual Design Studies

This is the first step in translating a set of requirements into a real ship. Conceptual designs are prepared by a naval architect and include the following elements:

1. Technical report of the vessel design providing a discussion of the responsiveness to the scientific requirements and ship characteristics stated.
2. General arrangement plans
3. Inboard and outboard profile plans
4. Machinery arrangement and description of propulsion system and auxiliary power
5. Scientific arrangement
6. Estimate of drag, power, and fuel consumption rates
7. Analysis of ship's motion in waves
8. Operating characteristics, including costs
9. Estimated construction cost
10. Artist's conception drawing

Within the overall UNOLS effort, about eleven conceptual design studies are presently ongoing. All are large ships because of the priorities assigned to the replacement of the older, more obsolete types, most of which are the larger ships.

Status of Design Studies

High Performance Research Vessel (SWATH)

- o SSSCo (Lang) - Conceptual Design completed
- o Blue Sea McClure - Conversion of U/T G & G Design started
- o NAVSEA - Feasibility Study in progress

High Endurance Research Vessel (Large Monohull, 250-300')

- o Leiby/WHOI - Conceptual Design in progress
- o Rodney Lay - Conversion of SACLANT Design proposed
- o Guarino & Cox - Conversion of U/T G & G Design proposed.

Medium Endurance Research Vessel (Monohull, 200-250')

- o URI - Conceptual Design proposed
- o Scripps - Conceptual Design proposed
- o OCEANAV (NAVSEA) - Requirements still under development

Geophysics Ship

- o U. Texas - Conceptual design completed, entering preliminary design phase (J. Gilbert Associates)
- o Lamont-Doherty - Conceptual Design for G & G "Friendly" ship started (Marinette Marine)

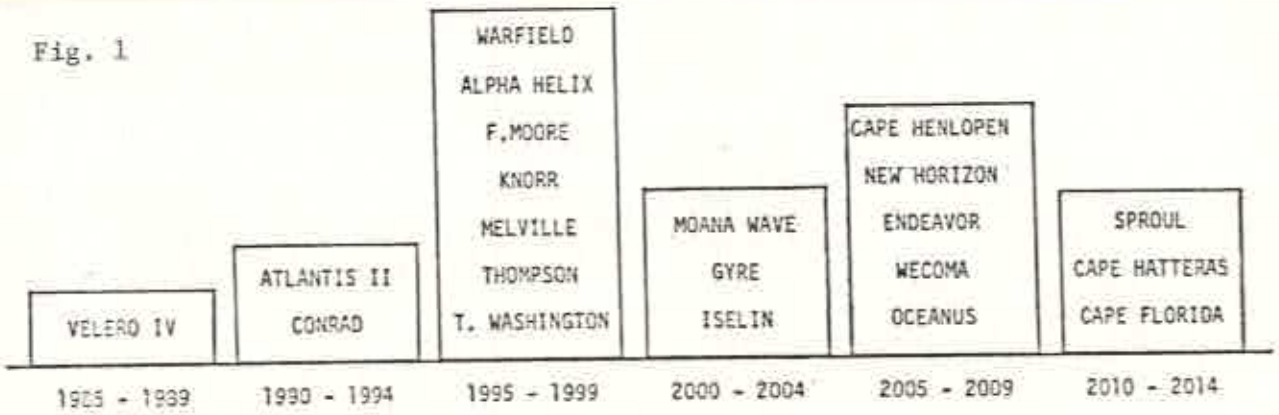
3. Plan For Fleet Replacement

The plan for fleet replacement has not changed significantly since that reported at the October 26, 1984 meeting. The recommended numbers and mix of ships remains not too different from that now existing. Chief difference lies in the area of specialized ships which are intended to have advanced capability in a designated field while at the same time retaining full multi-disciplinary ability.

Replacement planning begins with the projected retirement dates (Fig. 1) of existing ships and is modified by the requirements of science in terms of numbers, size and capabilities. The present outline upon which the plan is based is shown by Fig. 2.

The overall scheme for the Committee's work is shown by Fig. 3 and the current schedule of work is shown by Fig. 4.

Fig. 1



PROJECTED RETIREMENTS FROM UNOLS FLEET
Based on 30-Year Age Criterion

Fig. 2

Outline of Plan

Fleet replacement by five-year increments is given by the following table:

Time Frame	Class I & II	Class III	Class IV	Specialized
1985-89	2 new (modernize 2)		1 new	1 G&G
1990-94	1 new		1 new	1 Polar R/V
1995-1999	1 new	2 new	1 new	1 Sub Handling 1 G&G
2000-2004		2 new	2 new	
2005-2009		3 new		
2010-2014	2 new		2 new	
Total	6	7	7	4

Fig. 3

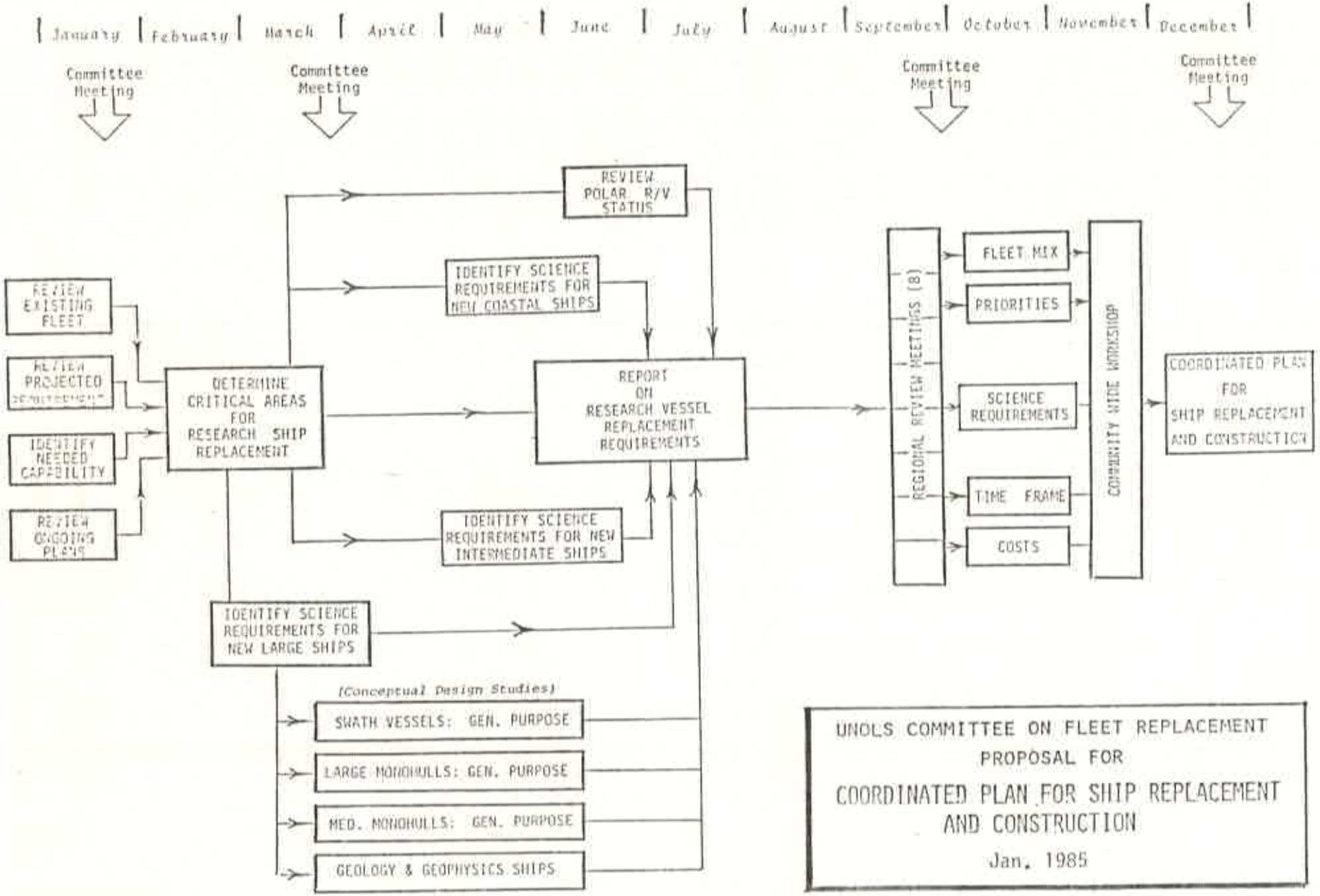

January
February
March
April
May
June
July
August
September
October
November
December
Committee Meeting
Committee Meeting
Committee Meeting
Committee Meeting
REVIEW POLAR R/V STATUS
IDENTIFY SCIENCE REQUIREMENTS FOR NEW COASTAL SHIPS
REVIEW EXISTING FLEET
REVIEW PROJECTED
IDENTIFY NEEDED CAPABILITY
REVIEW ONGOING PLANS
DETERMINE CRITICAL AREAS FOR RESEARCH SHIP REPLACEMENT
REPORT ON RESEARCH VESSEL REPLACEMENT REQUIREMENTS
IDENTIFY SCIENCE REQUIREMENTS FOR NEW INTERMEDIATE SHIPS
IDENTIFY SCIENCE REQUIREMENTS FOR NEW LARGE SHIPS
(Conceptual Design Studies)
SWATH VESSELS: GEN. PURPOSE
LARGE MONOHULLS: GEN. PURPOSE
MED. MONOHULLS: GEN. PURPOSE
GEOLOGY & GEOPHYSICS SHIPS
REGIONAL REVIEW MEETINGS (8)
FLEET MIX
PRIORITIES
SCIENCE REQUIREMENTS
TIME FRAME
COSTS
COMMUNITY WIDE WORKSHOP
COORDINATED PLAN FOR SHIP REPLACEMENT AND CONSTRUCTION
UNOLS COMMITTEE ON FLEET REPLACEMENT
PROPOSAL FOR
COORDINATED PLAN FOR SHIP REPLACEMENT AND CONSTRUCTION
Jan. 1985

Fig. 4

FLEET REPLACEMENT COMMITTEE

Work Schedule

1 April	Distribute Draft Replacement Study Proposal to Fleet Replacement Committee
15 April	Submit Proposal to ONR/NSF
15 May	First Draft Report on Research Vessel Replacement Plan
1 June	Analysis of Hull Model Tests (SWATH and MONOHULL); Completed by David Taylor Ship R & D Center (R. Lamb)
1 July	Complete Science Requirements Statements for Intermediate and Coastal Vessels (Class C & Class D)
15 July	Second-Draft Report on Research Vessel Replacement Plan
1 August	All Conceptual Design Studies Completed
August-September	Regional Reviews of Replacement Plan and Design Studies at Several Major Labs:

- Scripps Inst.
- Oregon State U.
- U. Washington
- U. Hawaii
- Woods Hole
- U. Rhode Island
- Lamont-Doherty
- U. Miami
- Texas A & M
- Washington, D.C.

7-8 October	Fleet Replacement Committee Meeting
20 October	Third Draft Report (including Review Proceedings)
Mid-November	Community-Wide Workshop -- 3-day event, 36 invitees (Alton Jones Conference Center, U. R. I.)
1 January	Fourth and Final Draft Report on Research Vessel Replacement Plan

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UNOLS SAFETY STANDARDS

The assembled membership of UNOLS, at their meeting May 22, 1985 unanimously adopted a revised University-National Oceanographic Laboratory System Research Vessel Safety Standards, May, 1985. The revision was made by a working group from UNOLS' Research Vessel Operators' Council, chaired by Captain T.K. Tex Treadwell. The Safety Standards are being printed now, and will be distributed to all UNOLS members, associate members and sponsoring agencies. Information copies are available to those interested from the UNOLS Office.

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SHIP SCHEDULING

At their meetings May 22, UNOLS Ship Scheduling Groups assembled 1986 schedules totalling about, 5,700 days. This would represent heavy use, essentially the full UNOLS fleet capacity. According to information from funding agencies, though, neither funding for ship operations nor ship requirements for funded science will exceed 4,900 - 5,000 days. Thus the potential exists for ship lay ups in 1986.

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ALVIN DEEP SUBMERGENCE PROGRAM

The ALVIN Review Committee held their annual review of ALVIN dive requests in Woods Hole on May 6, 7, 1985. The ARC reviewed 37 dive requests for 578 dives in 1986/1987 and made schedule recommendations to include 17 requests for about 200 dives. A provisional schedule was developed for 1986 (from the 1985 recommendations together with recommendations remaining from the 1984 review) that would have ATLANTIS II/ALVIN take up work in the North Atlantic in about March, 1986, support investigations in the Gulf of Mexico along transit to the Canal, and, in the Pacific, work in the Panama Basin and California Basins, ending the year in San Diego.

No schedule was developed for 1987. The most likely schedule would support work in the vicinity of Hawaii and the mid-Pacific enroute to the Mariana region. After completing recommended work there (late winter/spring 1987) the ATLANTIS II/ALVIN would return to the eastern Pacific, most likely the Gorda-Juan de Fuca - Oregon margin area. Work there and perhaps in the California Basins and farther south would finish operational availability prior to return to Woods Hole.

The Deep Submergence Group, W.H.O.I., ALVIN operators, reported on the 1984 ALVIN season and projected 1985 operations. In 1984, 174 dives were completed in 194 days on station, 266 days at sea. Projections for 1985 are 150 dives, 157 days in station, 207 days at sea. By May, only one dive scheduled for 1985 had not been made.

At the request of the sponsoring agencies, ARC will make a review and report of the ALVIN supported science program: An Overview Review of Submersible Supported Science: An ALVIN review Committee Perspective. Target date for the report is October, 1985.

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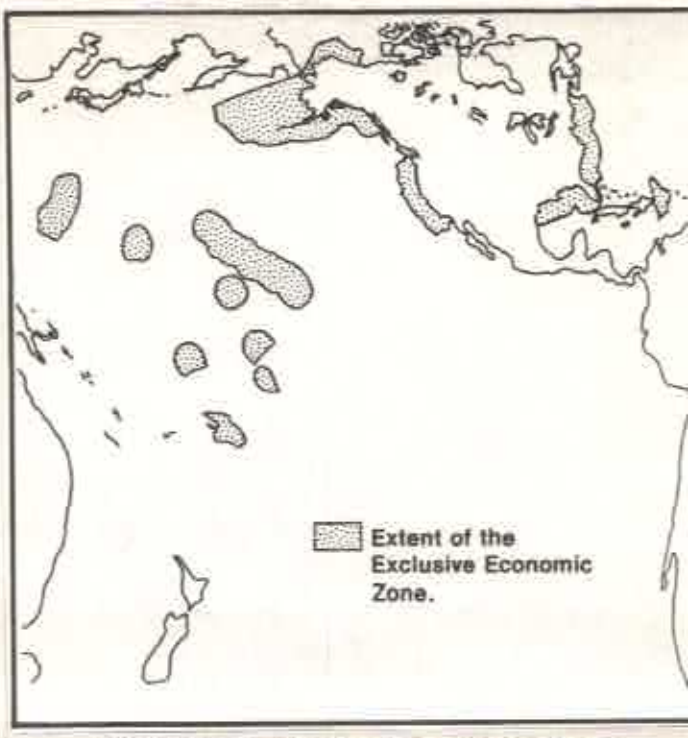
NOAA'S EEZ PROGRAM

Rear Admiral John Bossler, Director of NOAA's Charting and Geodetic Services addressed the UNOLS Advisory Council in August on NOAA's EEZ Program and Opportunities for UNOLS.

The United States' Exclusive Economic Zone (EEZ), established by Presidential Proclamation encompasses an area of nearly 3.4 million square miles, nearly twice our Nation's land area. The President's proclamation asserts certain sovereign rights over the EEZ, to facilitate wise management, advance the development of resources and promote protection of the marine environment. NOAA has a service oriented role in EEZ exploration that includes marine assessment, sea floor mapping and environmental services. Research interests include seafloor geological, water column and atmospheric processes. In a Memorandum of



NOAA's Exclusive Economic Zone Bathymetric Mapping Program

Understanding with the U.S. Geological Survey, NOAA would emphasize surveying, mapping, oceanographic analysis, fisheries management, analysis of resources and environmental services. A NOAA EEZ Program Office has been established with responsibilities, among others, to implement observational systems, negotiate with interested parties survey requirements, and specify bathymetric products. The goal of the bathymetric surveys project is to produce modern swath echo sounding coverage in detail to allow compilation of maps for use in the development and environmental protection of the EEZ. The technical approach is to use SEA BEAM in deep water and the Bathymetric Swath Survey System in shallow water. Navigation (horizontal control) will be by shorebased electronic survey systems until about 1987 and G.P.S. thereafter. The NOAA ships SURVEYOR with SEA BEAM and DAVIDSON with BS^3 are presently assigned. Additional ships will be used in the future.

Program plans for 1985 through 1991 are to survey areas off California, Washington and Oregon, off Alaska (Bering Sea and south of the Alaskan Penninsula) and south and southwest of the island of Hawaii.

Admiral Bossler identified several possiblities for participation in the EEZ program by UNOLS ships, institutions and individual academic investigators. These possibilities range from UNOLS ships running SEA BEAM cross lines during transit periods, to UNOLS SEA BEAM ships undertaking dedicated survey periods to geological/geophysical research project by individual institutons of investigators. Participating ships would need SEA BEAM and GPS navigation.

Other possibilities exist for UNOLS ships to cooperate by providing observations or conducting research in the marine atmosphere and the water column.

The Advisory Council viewed the NOAA EEZ program as an important one, and the opportunity for UNOLS participation as exciting. The Advisory Council Chairman has contacted Admiral Bossler to establish a working group that would be a focus for this potential cooperation. Institutions operating SEA BEAM ships will be explicitly represented in the UNOLs part of the working group.

For more information on the NOAA EEZ program, contact:

Exclusive Economic Zone Program Office
N/CG2
National Ocean Service
6001 Executive Blvd.
Rockville, MD 20852
(301) 443-8251

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WHERE THE DOLLARS ARE (or WILL BE)

Representatives from the National Science Foundation's Ocean Sciences Division provided interesting forecasts and analyses on the OCE budget.

The central theme is that significant increases are unlikely. Even well-sold, meritorious programs for increases will have difficulty in overcoming concerns over budget deficits and related budget strictures. OCE's long range plans and various initiatives are being well received though.

Forecasts for the Ocean Sciences Division:

BUDGET ESTIMATES
FY 1986-87
(in $M)

	1985 Actual	1986 Request	* 1986 Estimate	** 1987 Estimate
OCEAN SCIENCE DIVISION				
Ocean Science Research	58.2	59.9	59.0	61.5
Oceanographic Facilities	34.9	36.8	35.4	36.9
Ocean Drilling	27.6	28.9	28.9	30.1
	$120.7M	125.6	123.3	128.5
OFS Breakout				
Operations				
Ships Ops	23.8			
Other Ops & Misc.	2.9			
Marine techs	2.4			
Subtotal	29.1	29.5	29.5	30.8
Acquistions & Development				
Shipboard Equipment	1.7			
Instrumentation	1.8			
Technology Develop.	1.6			
Ship and Shore Constr./conv.	.7			
Subtotal	5.8	7.3	5.9	6.1
Total	$ 34.9M	36.8	35.4	36.9

*Best Guess (prior to final congressional action)
** 1987 is 1986 + 4.2% inflation

Since NSF provides approximately 70% of total support for the UNOLS fleet, this means that levels of fleet support (and operation) in 1985 will likely continue into 1986 and 1987.

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UNOLS News is published about quarterly. We concentrate on information directly related to UNOLS fleet funding and operations, and to UNOLS institutions. The items included arise mainly from the activities of various UNOLS officers and committees. We wish this orientation could be less dominant. We welcome information from throughout the UNOLS and ocean communities.