

UNOLS NEWS

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Spring 1984

EDITOR'S NOTE

Readers are encouraged to send announcements, short news notes or comments to UNOLS Headquarters for inclusion in UNOLS NEWS. We go to press quarterly, roughly one month ahead of publication so if you want something out by a particular date it will pay to be forehanded. Our approximate publication months are November, February, May, and August. Copy should be concise and for announcements be sure the date, place and mail address are in the copy. Send copy to Executive Secretary, UNOLS NEWS COPY, UNOLS Office, WB-15, School of Oceanography, University of Washington, Seattle, Washington, 98195. Material should be concerned with UNOLS business, ships, cruises, expedition planning, ship or facility-related meetings or related to ship or cruise ops information.

TALL SHIPS TO SAIL AGAIN

A White House memo to all departments and agencies notes that plans are being made for a parade of tall ships similar to the one that celebrated July 4, 1976 in New York Harbor on the country's bicentennial. The next parade will be held in New York on July 4, 1986 to celebrate the centennial of the Statue of Liberty.

SHIP SCHEDULING GROUPS MEET

The East and West Coast Ship Scheduling Committees met in March and February, respectively, and highlights of the reports of those meetings are as follows:

WEST COAST MEETING, February 27-28, 1984, University of Washington campus: Chairman Brian Lewis hosted the group at University of Washington. Although the schedules advanced by some institutions are still dependent on science proposals not yet funded and there was one instance (off Peru) where two institutions had tentatively booked the same projects, schedules were firmer than at this time in recent years. The group agreed that scientists had submitted both ship time requests and science proposals in a more timely fashion than in recent years.

The workshop on NSF ship operations proposals was well received. The free exchange between Ron La Count and John McMillan of OFS and the assembled UNOLS ship operators and schedulers was informative and effective.



1984 Schedules. Schedules for 1984 will be entered onto the UNOLS ship scheduling bulletin board on Telemail. The University of Alaska's ALPHA HELIX is scheduled for 119 days in 1984. Decline from earlier projections is because two projects, ISHTAR and SIPEX were not reviewed for 1984. The University of Southern California's VELERO IV will operate through September on a 131 day schedule. University of Hawaii's KANA KEOKI is funded through June. The present schedule has the ship in Yokohama in late June, facing an unproductive transit to Midway. The tentative schedule for KANA KEOKI includes EEZ and other work in the mid Pacific through August after which the ship will interface with MOANA WAVE for outfitting, etc. The MOANA WAVE will be in shipyard in Alabama for drydock, restoration and stretch until transit to Honolulu in August. All other West Coast ship/institution schedules are heavy and solid.

1984 Projections:

(Date of Projection)	Oct. '83	Feb. '84
Operation Days	2,593	2,227
NSF Funds	\$12.6M	\$11.4M
ONR Funds	\$ 2.4M	\$ 2.9M
Other Funds	\$ 3.1M	\$ 2.2M
TOTAL	<u>\$18.2M</u>	<u>\$16.5M</u>

Tentative 1985 Projections (Feb. 1984)

		Increment over 1984
Operation Days	2,621	394
NSF Funds	\$14.8M	\$ 3.4M
ONR Funds	\$ 2.4M	\$-0.5M
Other Funds	\$ 1.1M	\$-1.1M
TOTAL	<u>\$18.3M</u>	<u>\$ 1.8M</u>

George Shor discussed long range plans and planning based on UNEPC summaries and workshops. More than 30 notices of intent had been received to use ships in 1986 and 1987. This is a good start, but not yet a comprehensive planning base for expeditionary planning (see UNOLS NEWS V. 1, No. 2). Although workshops work well for ALVIN/ATLANTIS II planning they have not proven effective for considering the UNOLS fleet at large. Other modes for gathering information will be explored. UNEPC will hold a meeting March 20, and then will produce a useful report for the May UNOLS meeting.

John McMillan for NSF/OPS and Bruce Robison for UNOLS Advisory Council strongly endorsed the UNOLS' expeditionary planning concept, UNEPC efforts to implement advanced planning and results.

EAST COAST MEETING, March 19-20, 1984 in Washington, D.C. chaired by Bob Dinsmore (WHOI). Preliminary schedules and tentative cost projections suggest that the East Coast portion of the UNOLS fleet will be heavily used in 1985. When East Coast schedules and projections are combined with those from the West Coast (see above), they indicate that more large ship time has been requested than is available.

TAMU reported that although the GYRE's schedule still reflects heavy use, it was significantly disrupted by the recent cancellation of a 15-day cruise that had been scheduled for July, 1984. Such sudden and late cancellations reflect unduly on scheduling efficiency.

The question of the future role of ATLANTIS II was raised. Representatives from the Northeast Consortium (NECOR) noted that ATLANTIS II was fully devoted to ALVIN support during 1984 and 1985 and thus contributed to the fleet shortage of large ships. This matter has been addressed to the UNOLS Chairman and the ALVIN Review Committee.

1984 Projections

(Date of Projection)	EAST COAST		WEST COAST		FLEET TOTALS	
	Oct. '83	Mar. '84	Oct. '83	Feb. '84	Oct. '83	Mar. '84
Operation Days	3,299	3,208	2,593	2,227	5,892	5,435
NSF Funds	\$14.7M	\$14.1M	\$12.6M	\$11.4M	\$27.4M	\$25.5M
ONR Funds	\$ 2.7M	\$ 1.9M	\$ 2.4M	\$ 2.9M	\$ 5.1M	\$ 4.8M
Other Funds	\$ 5.1M	\$ 5.6M	\$ 3.1M	\$ 2.2M	\$ 8.2M	\$ 7.9M
TOTAL	\$22.5M	\$21.6M	\$18.2M	\$16.5M	\$40.7M	\$38.2M

1985 Projections: (For West Coast see previous tables)

	EAST COAST		FLEET TOTALS	
		Incr. over '84		Incr. over '84
Operation Days	3,268	60	5,889	454
NSF Funds	\$13.9M	\$-0.2M	\$28.7M	\$ 3.2M
ONR Funds	\$ 3.0M	\$ 1.1M	\$ 5.4M	\$ 0.6M
Other Funds	\$ 6.5M	\$ 0.9M	\$ 7.6M	\$-0.3M
TOTAL	\$23.4M	\$ 1.8M	\$41.7M	\$ 3.5M

Requests for large ships exceeded the time available, even with the THOMAS WASHINGTON spending part of 1985 in the South Atlantic. This shortage of capacity is due in part to (1) the ATLANTIS II's assignment as ALVIN support during 1985, (2) the large amount of South Atlantic and Southern Ocean ship time requested and (3) the number of SEABEAM and MCS requests. Shortages are concentrated in the South Atlantic and on the East Pacific Rise. Even if all South Atlantic proposals are funded, some may have to be deferred until early 1986.

Requests for intermediate ship time totalled less than fleet capacity. At this time the schedule for COLUMBUS ISELIN in particular is weak. For that reason the group recommended that the possibility be examined for a one to two year trial assignment of the ISELIN to the West Coast to test whether that size vessel is a suitable replacement for VELERO IV.

Requests for coastal and small vessels are about equal to the time available. All ships should operate with full schedules.

Both ship scheduling groups noted that ship time requests are more timely and tentative scheduling further advanced than in past years. This is, in large part due to earlier project funding and greater visibility given to ship

scheduling and planning. It is highly gratifying and should lend to more efficient ship schedules.

SHIP SCHEDULING UPDATE

The May 23, 1984 meetings of the East and West Coast Ship Scheduling Groups updated the 1984 and 1985 ship schedules. 1985 is still very soft and 1984 showed only minimal changes from the data in this issue. Much depends, as usual, on the success rate of the next wave of proposals. No major new problems were identified but the perennial technician problem was discussed. This deals basically with the question of where support for special gear comes from (CTD, doppler current profiles, etc.) - OFS or OCE? Also, the new brochures describing formats for technician support and ship ops support proposals are now available from Ron La Count's office. Get copies now!!!

RESEARCH SHIP PLANS FOR 1985-87

The University National Oceanographic Laboratory System (UNOLS), representing operators of American academic research ships, has established a National Expeditionary Planning Committee, to coordinate planning of research ship cruises to remote areas, multi-ship operations, and operations requiring fixed schedules of work. One essential part of this is to provide predictions of the areas in which the major research ships are likely to operate, to make it possible for scientific investigators to do their own planning. This is, of course, a circular process: Some marine scientists have told us of their plans; these have resulted in tentative schedules; we hope that other investigators will fit their plans into these schedules to use the ships more efficiently and avoid unproductive transit time.

In the following list, ships are listed as working in their "normal operating area" - areas close to home port - if there are not present plans for them to work elsewhere. Generalized routes are given for those ships for which there are plans for remote operations. All plans are of course subject to change. Scientific investigators interested in working on any of these ships should contact the ship-operating institution, or the UNOLS Office.

R/V KNORR (Woods Hole) - Normal operating area (north and equatorial Atlantic) during summers of 1985 and 1986. Work in far south Atlantic during winter of 1985-86; may return north either through the Atlantic or the western Indian Ocean and Mediterranean. Time available for work enroute in 85 and 86.

R/V MELVILLE (Scripps) - Normal operating area (northeast and central Pacific) 1985 through November, and summer of 86. Possible meridional transects to and from Antarctic along 100° and 170° West in early 1986. Work in "Southern Ocean" (Atlantic and Pacific) in winter of 1986-87, with transit runs either through eastern Pacific or south Atlantic.

R/V ATLANTIS II (Woods Hole) - Northeast Pacific in early 85. ATLANTIS II will carry the DSRV ALVIN through 1985; its schedule is therefore tied to the ALVIN schedule, which is not yet firm beyond the end of 1984. ATLANTIS II will be equipped with a Sea Beam system during 1985.

R/V CONRAD (Lamont) - Will work in the Equatorial Atlantic and Caribbean in early 1985, followed by East Pacific Rise work into San Diego by June. Transit to the western Pacific (Philippines, S. China Sea) and Indian Ocean (North Australia) will be followed by availability in Indian Ocean or southern

Indian-Atlantic Ocean in late 85 and early 86. A tentative schedule for further work in the Indian Ocean during mid-86 will await proposals. CONRAD is principally outfitted for marine geophysical programs, with Sea Beam and multichannel seismic system.

R/V THOMAS WASHINGTON (Scripps) - Starts 1985 in the south Atlantic; returns to eastern equatorial Pacific in May 1985. In fall-winter 85 will probably make a loop via Hawaii to the southwest Pacific, to southeast Pacific. May return north in early 86 through southeast Pacific for north Pacific operations. Will return south to Antarctic for the winter of 1986-87. Equipped with Sea Beam; will carry two-channel digital seismic system for most of time.

R/V THOMAS THOMPSON (University of Washington) - Normal operating area (north Pacific north of about 25° north). Will work to Japan and back in 1985, has time available in the northwest Pacific.

R/V MOANA WAVE (Hawaii) - Will start 1985 off the coast of Peru, work off western South America in early 85, transit via Easter Island across the south Pacific to the Fiji area in mid-85. Will work in the western and southwestern Pacific through October and then proceed to the South Atlantic via either western South America or the Indian Ocean in November or December. Early 86 will be spent in the southern oceans and a return to Honolulu via the Indian Ocean and southwest Pacific is planned for the summer and fall of 1986. MOANA WAVE is being lengthened in 1984 and will carry a multichannel digital seismic system and SeaMARC II in addition to general laboratory areas and deep sea trawl and hydrographic winches.

R/V OCEANUS (Woods Hole) - Normal operating area (North Atlantic).

R/V ENDEAVOR (University of Rhode Island) - Normal operating area (North Atlantic). In 1985 will work between Equator and Iceland. In 86 may work part of year in southeast Pacific.

R/V COLUMBUS ISELIN (University of Miami) - Normal operating area (western North Atlantic, Gulf and Caribbean).

R/V GYRE (Texas A&M) - Normal operating area (western North Atlantic, Gulf and Caribbean).

R/V NEW HORIZON (Scripps) - Normal operating area (eastern north Pacific, California to Mexico).

R/V WECOMA (Oregon State University) - Normal operating area (northwest coast of U.S.). Will work south to Peru and back in March-April 1985.

ADDITIONAL QUOTE FROM THE DIVISION OF OCEAN SCIENCES NEWS RELEASE APRIL, 1984

Recent staff changes: Neil Anderson and Curt Collins have returned to NSF after extended absences. Neil returned as Program Manager for Marine Chemistry after service on the staff of the IOC in Paris. Curt returned from WHOI to his position as Program Manager for Ocean Dynamics and John Morrison has moved up as Associate Program Director for Ocean Dynamics. Peter Brewer returned to WHOI after a two-year stint. Peter did an outstanding job and we will miss him. Rana Fine left NSF for sunshine at Miami after a productive

two years as Associate Program Director for Biological Oceanography. Ed Houde has joined us from Chesapeake Biological Laboratory, at the University of Maryland to take over from Mike Reeve in Biological Oceanography. Mike returned to Miami after a fine job of running Biological Oceanography.

Two oceanographers were among those selected as Presidential Young Investigators. Mimi Koehl, UC Berkeley, biomechanics of marine organisms, and David Karl, University of Hawaii, marine microbial ecology. Congratulations to both. These are five-year awards of up to \$100,000 per year with joint funding from NSF, the host university and possibly some private sources as well. Notices for the 1985 competition will be mailed shortly.

Improved access to super computers: The Foundation has taken action to improve access to supercomputers for NSF-sponsored scientists. The Foundation has adopted a two-step plan for FY 1984. First, NSF will receive, evaluate and fund proposals from individual investigators or groups for access to Class VI machines and appropriate ancillary costs. Second, NSF will arrange for large blocks of such computer services that can be made available for the most meritorious NSF projects. The Foundation has allocated \$6 M for this purpose in FY 1984. For FY 1985, NSF is currently planning to allocate \$20 M for advanced scientific computing - \$10 M to buy time, \$5 M for networks, and \$5 M for local facilities. Please contact your program manager directly if you want additional information.

THE DIVISION OF OCEAN SCIENCES' ADVISORY COMMITTEE

Our Advisory Committee provides very valuable assistance to us in many areas. In addition to conducting oversight review of our research, facilities support and ocean drilling programs, the Advisory Committee provides us with guidance on our long-range planning and on other issues. The Advisory Committee is intended to serve as major channel of communication between the ocean sciences community and the Division of Ocean Sciences. Accordingly, if you identify an issue of community-wide interest which you would like to bring to our attention through the Advisory Committee, please do so by contacting the Chairperson or one of the Members. The names, addresses and telephone numbers of the Advisory Committee are listed below for your information:

Dr. Vera Alexander
Institute of Marine Science
University of Alaska
Fairbanks, AK 99701
(907) 474-7531

Dr. Mary Jane Perry
School of Oceanography
University of Washington
Seattle, WA 98195
(206) 543-2652

Dr. Robert W. Corell
Sea Grant Program
University of New Hampshire
Durham, NH 03824
(603) 862-2994

Dr. Allan R. Robinson
Pierce Hall
Harvard University
Cambridge, MA 02138
(617) 495-2819

Dr. Richard W. Eppley
Scripps Institution of
Oceanography, A-018
University of California
at San Diego
La Jolla, CA 92092
(619) 452-2338

Dr. Constance Sancetta
Lamont-Doherty Geological Observatory
Palisades, NY 10964
(914) 359-2900

Dr. William W. Hay
Director of Museum and
Curator of Nannofossils
University of Colorado
Boulder, CO 80302
(303) 492-6165

Dr. David R. Schink
Department of Oceanography
Texas A&M University
College Station, TX 77843
(409) 845-7031

Dr. L. Jay Langfelder
Department of Marine, Earth
and Atmospheric Sciences
North Carolina State University
Raleigh, NC 27650
(919) 737-3717

Dr. Friedrich Schott
Rosenstiel School of Marine and
Atmospheric Sciences
4600 Rickenbacker Causeway
Miami, FL 33149
(305) 361-4057

Dr. Brian T. R. Lewis
School of Oceanography
University of Washington
Seattle, WA 98195
(206) 543-6487

Dr. Derek W. Spencer
Associate Director of Research
Woods Hole Oceanographic Institution
Woods Hole, MA 02543
(617) 548-1400 x2244

RESEARCH VESSEL CLEARANCES

The Department of State has designated a new Research Vessel Clearance Officer, Mr. Tom Cocke. If you need information or assistance in planning research that may involve clearances from foreign governments, please contact Mr. Cocke at the following address:

Office of Marine Science and
Technology Affairs
Department of State
Washington, D. C. 20520
Tel.: (202) 632-0789

If you are planning research but are not sure whether you will require a clearance, you may be especially interested in the recent Notice to Research Vessel Operators #61, Rev. 4, which summarizes "Claimed Maritime Jurisdictions". All ship-operating institutions should have copies of this notice. Additional copies may be obtained from Mr. Cocke.

ACTIVITIES UNDER THE IOC'S WESTERN PACIFIC (WESTPAC) PROGRAM

Lou Brown, the U.S. National Coordinator for WESTPAC, has recently received the Report of the Third Session of the IOC's Programme Group for WESTPAC which was held last fall. Anyone who is interested in receiving a copy of this report and the accompanying newsletter on WESTPAC activities should contact Lou.

U.S.-FRENCH COOPERATION IN OCEAN SCIENCE

U.S. and French ocean scientists have worked together for many years under a bilateral cooperative science agreement. NOAA is the lead agency for this agreement and most of the activities conducted under this agreement have been primarily of interest to NOAA. However, this agreement could be broadened to include additional activities of direct interest to U.S. academic basic research institutions. Areas of cooperation include:

Marine Geology and Geophysics	Control of Marine Pollution
Man-in-the-Sea Submersibles	Hyperbaric Diving Research
Marine Technology	Living Resources
Marine Data Processing & Exchange	Aquaculture
Shiptime Interchange	Climate and the Ocean
	Marine Environmental Research

If you are interested in developing cooperative activities with colleagues in France under this agreement, please contact either Grant Gross, Don Heinrichs or Lou Brown for further information. We can put you in touch with the appropriate "Scientific Leader" for additional information on an existing subject area or suggest how you might go about identifying a new subject area.

U.S.-CHINESE COOPERATION IN OCEAN SCIENCES

We are also assisting NOAA in the Protocol between the U.S. and the People's Republic of China for Cooperation in Marine and Fishery Science and Technology. NOAA's counterpart for this protocol in the PRC is the National Bureau of Oceanography. Thus far, the Chinese Academy of Sciences and its research staff have not been actively involved in this Protocol. However, cooperative activities have been initiated under this protocol in the following areas:

Oceanographic Data Exchange and Oceanographic Data Center Development	Marine Sedimentation Processes
Marine Instrumentation, Buoys, Marine Metrology & Standards	Aquaculture
Numerical Computer Modelling	Marine Environmental Services
Marine Fishery Management and Development	Marine Environmental Quality Research and Monitoring
	Ocean Heat Transport and Climate
	Biology of Fish Resources Species
	Marine Remote Sensing Techniques

If you are interested in pursuing joint research with PRC scientists in these or other areas, please contact Grant Gross (NSF) or Lou Brown. Once again, we will either put you in touch with the U.S. scientist currently coordinating U.S. participation in your area of interest or assist you in identifying your area of interest as a new subject area under the protocol.

THE RESEARCH VESSEL STRATEGY COMMITTEE (RVSC) OF THE UK

The RVSC is a group similar to the UNEPC of UNOLS (how's that for a string of jargon!!) and their secretary will welcome expressions of interest in joint work in the Indian Ocean in 1985-86. They will be meeting at about the same time as the May UNOLS meeting but interested scientists may wish to contact them. (Keep UNEPC informed via the UNOLS Office, Attn: Capt. William Barbee.)

The secretary is Dr. S. J. White, Polaris House, North Star Avenue, Swindon, Wilts SN2 1EU, UK. They wanted brief proposals by early May prior to their meeting date. Still worth a try for those that may be interested.

COOPERATIVE NAVY HYDROGRAPHIC OFFICE SURVEYING PROGRAM

The USN hydrographic surveying program is interested in collection of hydrographic data via piggyback operations with ships operating in areas of interest. If such work is feasible, then funding, equipment and technical support can be worked out in detail between the interested parties. For additional information, write to Commander R. R. Miller, in the Office of the Commander, Naval Oceanography Command, NSTL, Mississippi 39529. For telephone contact call LCDR G. Jamerson at 601-688-5007. If any of you develop work in this cooperative mode, drop a line to Bill Barbee for UNOLS' information.

NEW UNOLS SAFETY STANDARDS REPORT REVIEWED AND DISCUSSED AT MAY MEETING

Tex Treadwell's working group on UNOLS Safety Standards has completed their report under RVOC initiative and the report was discussed at the May UNOLS Semiannual meeting in Washington, D.C.. Scientists will be able to view the report after adoption. Interested persons or groups should write to Bill Barbee at UNOLS Office for copies. The report was distributed to UNOLS Members and Associate Members prior to the May meeting and copies will be available on demand. These are the basic conditions for effective ship operation and should be viewed by all sea going scientists. Tex will accept comments and additions until July 1, 1984. Adoption will be considered in October, 1984.

ADVISORY COUNCIL MEETING NOTES, FEBRUARY 2-3, 1984, PIGEON KEY, FLORIDA

The Advisory Council held its winter quarter meeting at Pigeon Key from February 2-3, 1984. Host John Van Leer did an excellent job of arranging a good meeting site and plenty of fine seafood and hospitality. Council members also had a chance to sail aboard John's catamaran. A productive meeting ensued and some items of interest are noted below:

Cruise Assessment Forms...Although returns are now improving in numbers, and the informative service is doing well, some PI's are still not completing the forms which are our best source for information on actual fleet operation. These forms are read and problems and credits noted. The fine operating record of the UNOLS fleet continues to be reflected in these reports (see UNOLS NEWS V. 1, No. 2). Although there are still some items on the forms that need polishing they are an important function.

International Access for Ocean Research...UNOLS has accepted the task of preparing a handbook to guide applicants for research permits in foreign waters. We will let the community know when that report and handbook is available. Lee Stevens is the author.

Charley Miller reported on the Specialized Instrumentation Facilities survey and requests and noted that there is interest in establishing an aircraft imagery center on the west coast. Surprisingly little response has come so far from the community on ideas for these regional centers. Part of the reason may be a lack of identification of a funding source.

Fleet Replacement Study...Bob Dinsmore's committee has proposed to conduct a study leading to a coordinated plan for the replacement of aging

UNOLS research ships, and the construction of new ships in order to implement the overall plan. (See UNOLS NEWS, V. 1, No. 2.) The council endorsed this approach and proposal and recommended that the committee should also develop specific recommendations to the funding agencies and the oceanographic community for mechanisms through which the ship replacements can be achieved. There are several current plans by individual institutions for ship replacement and the council is corresponding with these institutions on their proposals within the context of the committee's plans. Ron La Count noted that peer review is of primary importance for changes in the fleet and planning of individual replacements. The Division of Ocean Sciences Advisory Committee subcommittee on OFS stressed "Hence, we recommend that all major actions involving the composition of the academic fleet be sent to the UNOLS Advisory Council for their recommendations."

The Advisory Council accepted responsibility to review and provide recommendations on all major actions involving composition of the academic fleet. The Council's formal review of proposed additions, replacements or other augmentation of the fleet (in concert with relevant reviews by the UNOLS Committee of Fleet Replacement) will provide a consistent external review mechanism for all changes contemplated for the academic fleet.

The Council will be taking another look at the "Boulder Report" on fleet composition and will periodically up-date that report as part of its general review.

Need for a polar ship was discussed and it was noted that the Federal Fleet has similar needs.

Other Agency Ship needs...Bob Rowland of USGS reviewed the future demands for ship time by USGS under their mandate to survey the EEZ. He will continue to report to the Council on these developments. More cooperation between NOAA, UNOLS and USGS seems likely over the next few years.

Definition of UNOLS Vessels...A new addition to the Charter defining UNOLS vessels has been edited and approved for review by the members and associate members at the May meeting.

NEW MEMBERS AND ASSOCIATE MEMBERS VOTED ON BY UNOLS MEMBERSHIP

The applications of Moss Landing for transfer to membership from associate membership was recommended by the Council as were the applications of U.S. Navy Postgraduate School, University of South Florida and Louisiana Universities Marine Consortium for associate membership. All of these applications were approved by UNOLS in May, 1984.

BOB DINSMORE REPAIRS FLORIDA BRIDGE

A highlight of the February Advisory Council meeting was a demonstration by Bob Dinsmore of the method for repairing recalcitrant draw bridges. Stopped by a jammed bridge on the Keys Highway enroute to Pigeon Key, Bob fixed the bridge with a 2X4 and a Swiss Army knife while Advisory Council members fended off irate Florida State Police and an enraged female bridge tender. All ended happily as the bridge swung back into operation. One or two members were dragged off to the nearest road gang but presumably will be released in time for the May council meeting. Contributions for parole bonds will be accepted by the Headquarters staff if sent in brown paper bags and using unmarked bills.

UNOLS VIEWS MODIFICATIONS TO CHARTER AND RENEWS CHARTER

The membership reviewed and discussed an amendment to the Charter regarding the definition of a UNOLS vessel. Some modification of the amendment was proposed and approved. The amendment then read as follows:

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

The membership approved the amendment and then voted to re-adopt the entire Charter for the next three years.

On Thursday, May 24, 1984, Dr. Edward A. Knapp, Director of the National Science Foundation, was the key-note speaker opening the UNOLS Semiannual Meeting.

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

Dr. Knapp also commented with pleasure on how UNOLS, as a community, has supported NSF in valuable ways. "As an organization, you have provided valuable advice and council to many people at the Foundation. For example, your Submersible Science Study is being used to upgrade the ALVIN system by the three funding agencies --NOAA, ONR, and NSF...UNOLS has been indispensable in scheduling the research fleet. And your periodic assessments and evaluation of the fleet and the need for replacement vessels helps ensure that we will have an adequate fleet for ocean scientists in the future."

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

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

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

PEOPLE IN THE NEWS

John Byrne leaves NOAA in November to assume the Presidency of Oregon State University. John has a long association with OSU having moved up the line from Assistant Professor of Oceanography to Vice-President for Research and Graduate Affairs before going to NOAA as Administrator.

Bill Gaither has left Delaware to become President of Drexel in September. Bill was the first Dean of Marine Sciences at Delaware and led the growing program there for many moons.

G. Ross Heath has been selected as the new Dean, College of Ocean and Fishery Sciences, University of Washington. He will leave his present position at Oregon State University for his new job late this summer.

Best wishes to Ross, John and Bill from UNOLS.

REMINDER - NR-1, SEA CLIFF, TURTLE AVAILABILITY

Pass the word -- there are opportunities for use of these three Navy - operated submersibles. This can ease the increasing load on ALVIN and provide possibilities for submersible work when ALVIN is in another ocean. For more information on availability either contact the UNOLS Office or Keith Kaulum at ONR. New modifications improving depth capability and new support vessel plan, make this opportunity even more attractive. Check it out.

UNOLS FLEET REPLACEMENT COMMITTEE

We reviewed the draft plan for the Committee's work in developing a long range plan in UNOLS NEWS, V. 1, No. 2. Since that issue, the Committee has met on May 8, 1984 at SIO and a NECOR conference on ship replacement and characteristics for new ships held April 19-20, 1984 at URI. Excerpts of Bob Dinsmore's Committee report follow and the NECOR report can be obtained by writing to Bob Dinsmore at WHOI.

At the May 8, 1984 meeting the principal items of discussing were (a) Role of Committee, (b) Current Changes in Fleet, (c) Fleet Replacement Study, (d) Conceptual Designs of New Ship Construction, (e) Community-Wide Workshop on Fleet Replacement, and (f) Schedule for Future Work.

The Committee agreed that its chief role was the development of a plan for the orderly replacement of the fleet: such plan to include the numbers and mix of ships needed, priority replacement scheme and schedule of replacement including estimated costs; and the design development of the first several ships. The Committee further agreed to take under advisement and to comment on proposed changes to the UNOLS Fleet insofar as such changes might impact upon an overall replacement plan.

The Committee reviewed the Draft Proposal for the Development of a Plan for Research Vessel Replacement and Construction, and approved the plan for

submission to potential sponsoring agencies. Recommended modifications included revising the time scale to more realistic start and completion dates; increasing the number of immediate conceptual design studies through means of participating UNOLS sponsors; provide for a method of continuing future designs for additional types and classes of ships; and update proposed costs of the overall study. The effort and its proposal therefore should be in two phases: Phase I from now through the conceptual designs and community-wide workshop; and Phase II the work following. This will permit possible modifications to later parts based upon early experience.

The Committee reviewed existing reports which contribute to the initial phases of the study. The Committee approved the Report of the NECOR Ship Replacement Conference (19-20 April 1984) as an input to the proposed conceptual design studies. However, ship characteristics leading to design studies should not be so restrictive as to preclude innovative approaches.

The Committee accepted offers by University of Texas and NECOR (WHOI) to fund additional conceptual designs as a part of the UNOLS effort provided that the design studies are conducted to the same objectives and reviews and would become available for UNOLS use. The Committee noted that UT has solicited proposals for conceptual design studies to the same scope of effort as the UNOLS plan, and proposes to proceed with three design studies -- two "conventional" hull and one SWATH. These would be specialized G & G type ships. WHOI on behalf of NECOR proposes to support additionally two general purpose designs -- one conventional and one SWATH. This, then, will provide for a total of eight design studies:

- two conventional general purpose ships
- two SWATH ships
- two specialized G & G ships
- one sail assist study
- one innovative design study

The community-wide workshop to report on the progress of Phase I of the replacement plan development including the conceptual design studies will be held November 9-10. From this workshop and associated reviews Phase II of the plan development will take shape.

The next meeting of the Committee will be 9-10 July, 1984.

DIVISION OF POLAR PROGRAMS

Plans are in progress to replace R/V HERO with a new polar ship (R/V POLAR DUKE) leased initially and possibly for later purchase. The vessel was built in 1983, is 219' overall with a beam of 43' and a draft of 19'. The ship has space for 14 crew and 27 scientists. Full speed is 15 knots, cruises at 13 knots and can maneuver at very slow speed. Vans can be placed in the hold to provide special lab facilities. More details can be obtained from DPP at NSF. The ship will be available for both Palmer Peninsular work and in other accessible areas in the Antarctic winter. The ship has an ABS ice classification of 1AA. The ship is now available as of early May, 1984.

NOTE: THE UNOLS SEMI-ANNUAL MEETING WILL BE OCTOBER 26, 1984 IN WASHINGTON, D.C. Ship Scheduling Groups will meet October 25, and the Advisory Council will meet October 24, 1984.

USE OF TIME ABOARD NOAA VESSEL

Paul Wolf, Assistant Administrator for National Ocean Services, NOAA emphasized the availability of NOAA ships for academic research in his address to UNOLS (May 24). Piggy-back time, especially, is available on NOAA ships. Schedules are available from the National Ocean Service, or from either the Pacific or Atlantic Marine Centers. The NOS is actively encouraging this use. Information on schedules has been sent to various individuals in the ocean community.

Requests are reviewed and given priority ratings which in turn determine what, where and when research is done on specific NOAA vessels.

COMMENTS BY FUNDING AGENCY REPRESENTATIVES - HOW DOES FY 1986 LOOK?

Ron La Count (NSF) noted that the 1985 budget was advance published in the last issue of UNOLS NEWS. Highlight of 1985 is that probably equipment will be up to about \$5 million. Things look good for the requested 1985 budget. 1986 is still buried in the dim reaches of the future.

Keith Kaulum of ONR noted that Ron usually accuses him of gloom and doom - so - he turned a new leaf and declined to say anything about future ONR budgets. He noted that the MOANA WAVE conversion has gone well and met costs. Good management. Noted the availability of NR-1. Seventy days per year are available for outside users. Approximately \$6 million will go for equipment over 1984-85.

Bob Rowland (USGS) noted the difficulty of crystal balling 1986. He reviewed the Exclusive Economic Zone work (EEZ). A "Gloria" survey of the West Coast is in progress out to about 200 miles. New digital recording methods are improving data - records a swath about 16 nautical miles on each side of the vessel (depth dependent). USGS has also done some Antarctic work and in the Central Pacific. Thus all EEZ funds went into this Pacific basket. In 1985 more will be done on East Coast UNOLS ships.

The budget in 1984-86 period seems to be running at \$19 million (Marine Geology).

If Interior emphasis comes through, additional funds could come in 1986. Increases would probably be parceled out through platform use, submersibles, drilling, interagency and university joint efforts and other uses beyond what will probably be a steady state USGS personnel level.

ALVIN REVIEW COMMITTEE

The Committee received 35 proposals all in the Pacific Region, and involving 402 dives. 250 dives received strong recommendation from the Committee which would mean up to 18 months of ALVIN and AII time in the Pacific. This would effectively remove AII from general ocean use during that time. Final decisions on the ALVIN/AII schedule will be forthcoming during early summer. Part of the strong demand for ALVIN may well represent backlog from the down period while AII was being converted. ALVIN deployment and recovery operations seem to be going very well in the new combination.

A PROPOSAL BY DAVE ROSS FOR COORDINATION OF INTERNATIONAL MARINE SCIENCE COOPERATION

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

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

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

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

Despite the obvious need for increased cooperative efforts in marine science with foreign countries, there exists no contact point in th U.S. that represents the spectrum of U.S. marine activities and interest.

The Opportunity

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

Proposal

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

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

I would welcome comments, questions or additions from interested members of the marine community.

UNOLS OFFICERS AND COUNCILLORS ELECTED AT MAY MEETING

The membership voted and re-elected Ferris Webster (UDeI) as Chairman of UNOLS. Bob Correll (UNH) was elected as Vice-Chairman. New councillors are Art Maxwell (UT) and Carl Lorenzen (UW) for three-year terms as Member

Institution councillors, Donn Gorsline (USC) as a Member Institution councillor to fill the one-year remainder of Roger Larsen's term and Tom Malone (UMaryland) as Associate Member councillor for a three-year term. The continuing incumbent councillors are Charles Miller, (OSU) and Bob Dinsmore (WHOI) for Member Institutions; and Bruce Robison (UCSB) and Harris Stewart (ODU) for Associate Member Institutions. UNOLS acknowledges the fine service of Joe Curray, (SIO) retiring Vice-Chairman, and John Van Leer (UMiami), Roger Larson (URI), and Bob Correll (UNH), retiring councillors.

The membership also approved three new members for the ALVIN Review Committee. These are Geoffrey Thompson (WHOI), Jody W. Deming (JHU) and J. Kirk Cochran (SUNY Stony Brook). They replace Bob Aller (UChicago), Fred Sayles (WHOI) and Art Yayanos (Scripps). UNOLS acknowledges the fine services of these three retiring Committee members.

NECOR has just published a description of their structure, facility and protocol for Sea Beam operations. Because the use of Sea Beam is of wide interest throughout the oceanographic community, UNOLS NEWS is reprinting the NECOR communique:

In an effort to keep the community abreast of developments at the NECOR Sea Beam facility that are relevant to the design and/or timing of an investigators experiment, we will periodically issue a brief newsletter. This communique represents the first of this series.

THE NECOR STRUCTURE

In the Spring of 1981 the directors of Lamont-Doherty Geological Observatory of Columbia University, The Graduate School of Oceanography of the University of Rhode Island and Woods Hole Oceanographic Institution formed the Northeast Consortium of Oceanographic Research (NECOR). One of the major objectives of NECOR was to share the responsibility for the operation, integration and use of certain specialized facilities thereby avoiding duplication and gaining significant savings in operating costs (Fig 1a). In this regard, the NECOR institutions identified a need to develop the capability to make maps of the sea floor utilizing the multi-narrow beam swathmapping system (Sea Beam) of General Instrument Corporation. Proposals were submitted to the Office of Naval Research and the National Science Foundation, these proposals were reviewed favorably, and NECOR was funded to set up a Sea Beam facility on the East Coast (Scripps Institution of Oceanography already had a system in operation).

THE NECOR SEA BEAM OPERATION

Management: NECOR decided that a single and central management team for the NECOR Sea Beam system would be established and that it would be responsible for the acquisition, processing and archiving of the data. This operation was to be located at GSO/URI and Drs. Paul J. Fox and Robert C. Tyce were placed in charge of its operation. Use of the Sea Beam system is ultimately governed by funding decisions made at NSF and ONR but logistical and scheduling considerations are handled initially by NECOR committees (Fig. 1b). Dr. Alexander Shor of LDGO is the Chairman of the NECOR Sea Beam Committee and requests for the use of the NECOR Sea Beam System should be sent directly to him. Since use of the NECOR Sea Beam System means that either the

ATLANTIS II (WHOI) or CONRAD (LDGO) will be involved, it is advised that ship time requests be placed with ship scheduling offices of these institutions as well.

Equipment: The NECOR Sea Beam Facility is comprised of a number of components. Both the AII and CONRAD have been equipped with hull-mounted transducer arrays. We have also acquired one echo processor system that, when used in conjunction with a hull mounted array, produces Sea Beam swathmap data. One of the processors has been installed aboard the CONRAD and another system will be delivered next January and will be installed aboard the ATLANTIS II. Ancillary hardware has also been acquired (Fig. 2) and installed aboard the CONRAD allowing us to log the Sea Beam bathymetric data and to merge these data with navigational parameters (speed, heading, satellite fixes). When in use, this integrated system provides the user with the ability to make Sea Beam controlled bathymetric maps in real time with these bathymetric and navigational data displayed on a flat bed plotter at an appropriate scale (see Fig. 3 for an example).

The Product Provided by the NECOR Processing Operation: While at sea two Sea Beam personnel will keep the system operational, will produce Sea Beam maps for the scientific party and will advise the scientific party on operation of Sea Beam and recommend survey techniques. The scientist in charge will choose what scale or scales they wish to work at, the contour intervals to be used, and how the survey is to be designed. Once these decisions are made, the emphasis during the survey for the Sea Beam personnel will be to insure that the system functions, with data logged and real-time maps produced on the flat bed plotter. After a given survey, the Sea Beam personnel will, with input from the scientists in charge, smooth the navigation data by editing bad satellite fixes and correcting for dead reckoning errors. The smoothed navigation data will then be merged with the Sea Beam data and a first edition of the survey map will be plotted out on a Houston drum plotter at the scale and contour interval dictated by the survey needs. Unless navigation data is extremely good, this first edition map will still contain errors as evidenced by crossing Sea Beam bathymetric swaths that do not match. As time permits at sea, the Sea Beam personnel will work with the scientist in charge to further smooth the data by shifting Sea Beam bathymetric swaths to bring the lines into congruency. At the end of a cruise the investigator should step off the ship with a set of working maps, smoothed for navigation and at a scale and contour interval of their choosing, as well as a magnetic tape with merged navigation and Sea Beam data. Strip charts displaying bathymetric swath data collected during the survey will also be supplied to the investigator if desired but these data will first return to the NECOR Sea Beam facility where they will be microfilmed for archiving at GSO/URI. Depending on the time available during the cruise, the maps made on board may or may not represent a final product. The work load during a given cruise as well as the survey complexity will determine whether or not post cruise work is necessary. If final editing of navigation and Sea Beam data is required after the cruise, particularly detailed data shifts suggested by topographic swath matching, these tasks will be accomplished at the shore-based processing center along with special data reduction or map production and sent to the investigator. Additional data processing and more sophisticated data display formats will also be available from the center. Experience has shown that we should expect to spend time ashore processing cruise data at least equal to that required for its collection.

The NECOR Shore-Based Sea Beam Processing Center: An important component of the NECOR Sea Beam facility is the shore-based data processing operation (Fig. 4) that gives us the capability to process data after a cruise (enhancing the bathymetric information), to develop new and improved software for the shipboard data processing, and to store and archive Sea Beam data. Like our shipboard system, our shore-based facility is centered around a VAX-11/730 which will be fully compatible with the shipboard equipment. This configuration has two obvious advantages: software developed ashore can be immediately implemented at sea and, in the event of hardware failures at sea, the malfunctioning unit can be replaced by its shore-based counterpart. The malfunctioning unit can be returned to URI and repaired here, avoiding the expense and logistical headaches of flying computer repairmen halfway around the world to meet the ship in a remote port.

The NECOR Sea Beam shore-based processing facility will be located and integrated with the GSO/URI Remote Sensing Facility. The Remote Sensing group at URI uses a larger VAX (11/750) and this system will be networked to our VAX 11/730 vastly increasing the computer power of our system, providing backup capability during down time, and giving access to the image processing capabilities of the Remote Sensing Facility for advanced data processing development. Our plans include sharing space, facilities and personnel with a net gain in capability for all concerned.

The Present Schedules For the NECOR Sea Beam System: The Sea Beam System aboard the CONRAD has been fully operational since January of this year and is scheduled into the spring of 1985. During the first year of operation (calendar 1985) the costs incurred to run the Sea Beam aboard CONRAD on NSF and ONR cruises have been block funded by these funding agencies. For other contract work carried out in 1984 and for all projects carried out in 1985 NECOR Sea Beam expenses will be covered by a users fee (\$1500/day for every day at sea plus two days of port time at each end of each leg).

Although it is still too early to predict the amount of Sea Beam usage for calendar 1984, it seems clear that the NECOR Sea Beam system will be operational and available for use aboard both ships. During 1985 the CONRAD will be working in the far western Pacific and, possibly the Indian Ocean and the ATLANTIS II will be working with submersible ALVIN in the Pacific and Marianas Island Arc region. The shipboard Sea Beam electronics for the ATLANTIS II will be delivered in February of 1985 and we plan to install this equipment, as well as ancillary support hardware soon thereafter (should NSF agree to fund this hardware). The NECOR institutions are presently constructing a proposal requesting funds to acquire the ancillary hardware and spare parts necessary to support the Sea Beam system aboard the ATLANTIS II making it possible to generate maps simultaneously aboard both ATLANTIS II and CONRAD.

NECOR Sea Beam Data Handling Policy: Original contour strip charts will be provided to the Chief Scientist after microfilming; microfilm copies will be archived at GSO/URI. Original graphic records of center beam depths from the Sea Beam system will be archived at LDGO or WHOI (for CONRAD and ATLANTIS II respectively); microfilm copies will be archived at GSO/URI. Data tapes containing all navigation and Sea Beam data will be provided to each Chief Scientist at the end of each cruise. A second tape will be taken to GSO/URI, and a third will remain aboard ship. Following all post-processing, a final

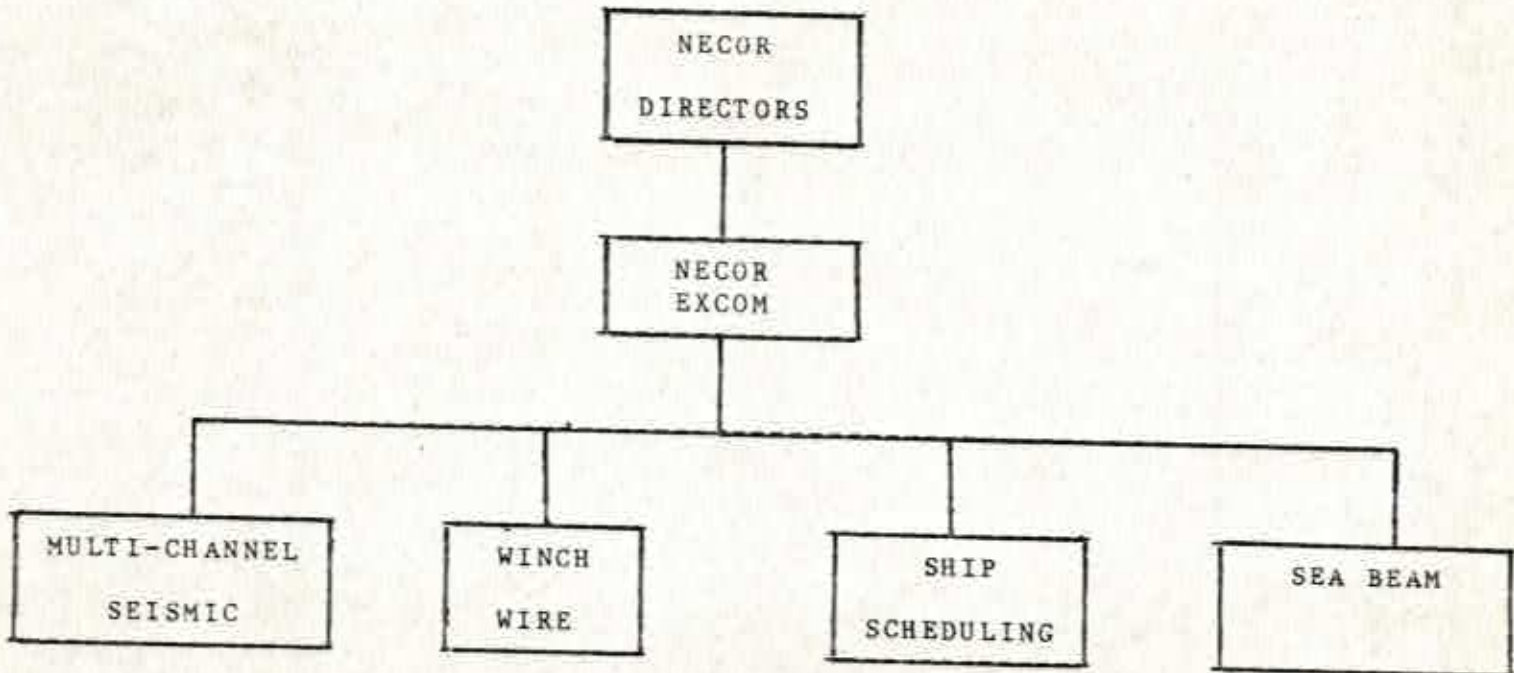
tape will also be provided to the Chief Scientist, together with one complete set of final plots at a scale determined by the Chief Scientist. All shipboard plots may be retained by the Chief Scientist if required. Computer data files will be retained at GSO/URI as archive data.

Data dissemination by the NECOR Sea Beam facility will be restricted for two years after cruise termination, except for track plots and swath width data. Requests received within two years of the cruise will be referred to the Chief Scientist. After two years, data requests will be either filled directly by GSO/URI or referred to NGSDC. Data will be forwarded to NGSDC in the format determined by the ONR Sea Beam Software Committee (M. Loughridge, Chairman).

An annual compilation of tracks of NECOR Sea Beam cruises will be prepared in a distributable format. The specific format has not been decided but 4" per degree charts will probably be the standard for track charts.

Questions about the NECOR Sea Beam System: Prospective users of the NECOR Sea Beam System are encouraged to call P. J. Fox and R. Tyce at the Sea Beam Science and Management Office at GSO/URI (401-792-6853) if there are questions about technical aspects or, S. Shor at LDGO (914-359-2900, extension 219) if there are questions about scheduling.

A. STRUCTURE OF NECOR



B. STRUCTURE OF SEA BEAM AT GSO/URI

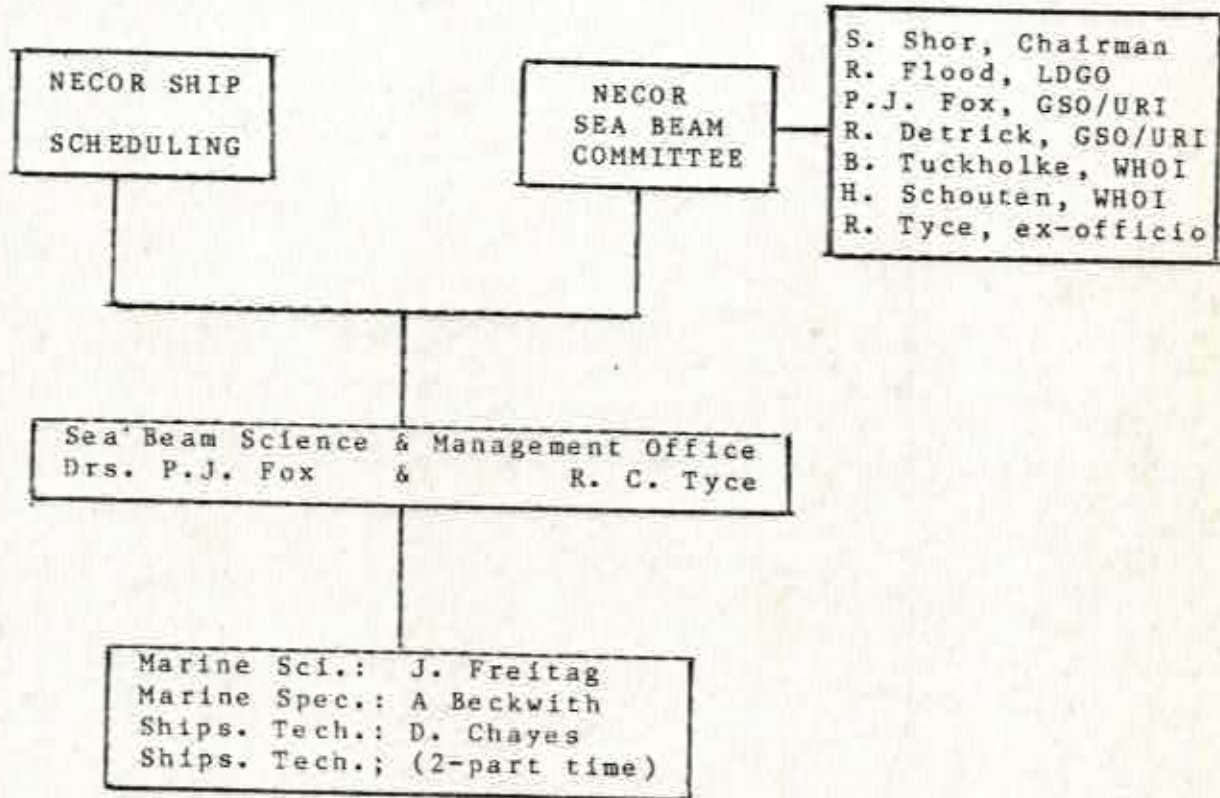


Figure 1.

SEA BEAM SHIPBOARD PROCESSING SYSTEM

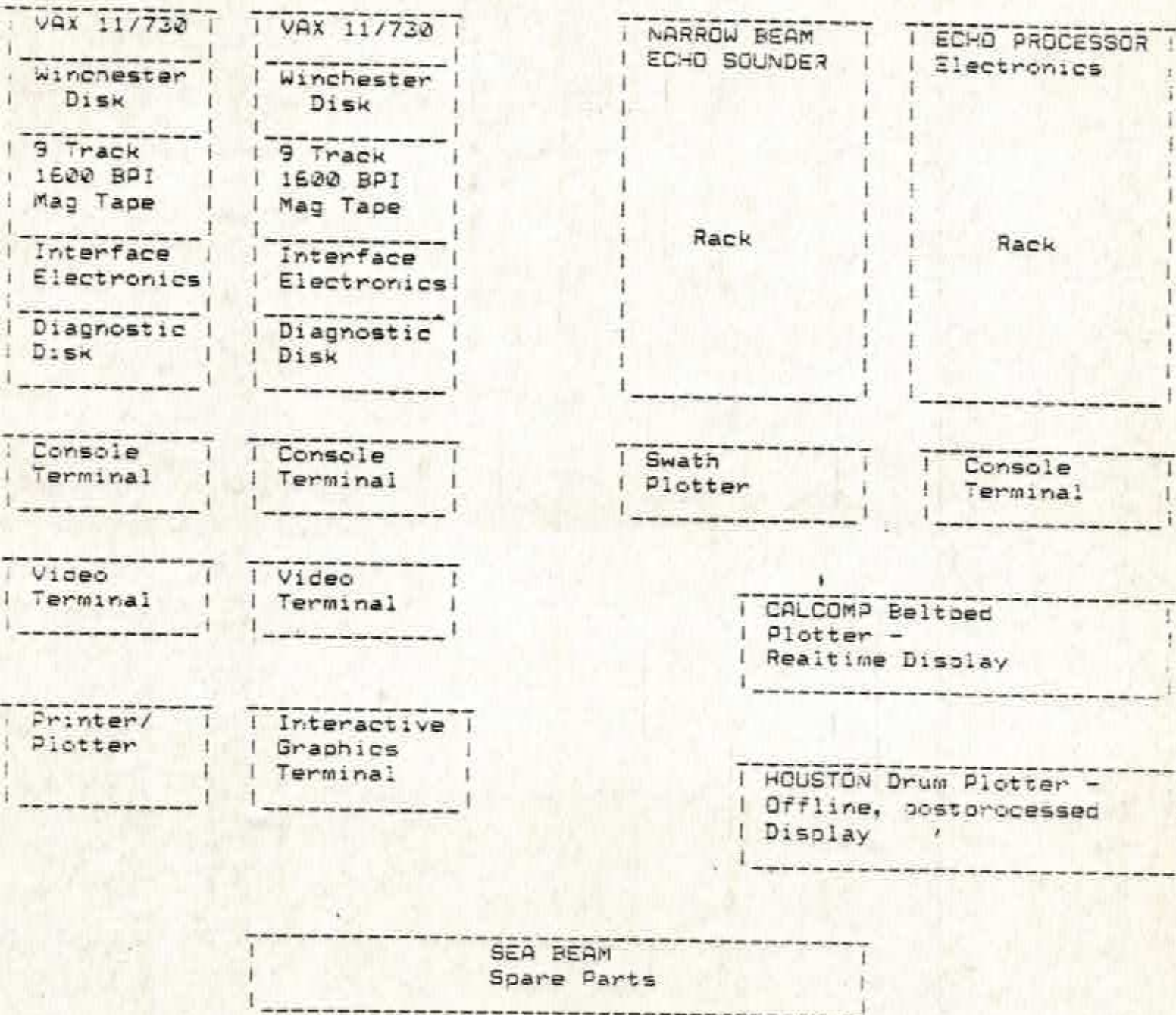


Figure 2

NECUR SEABEAM, Hudson Fan survey8, courtesy A. Shor

Mercator Projection, Scale = 30.00 in/deg longitude

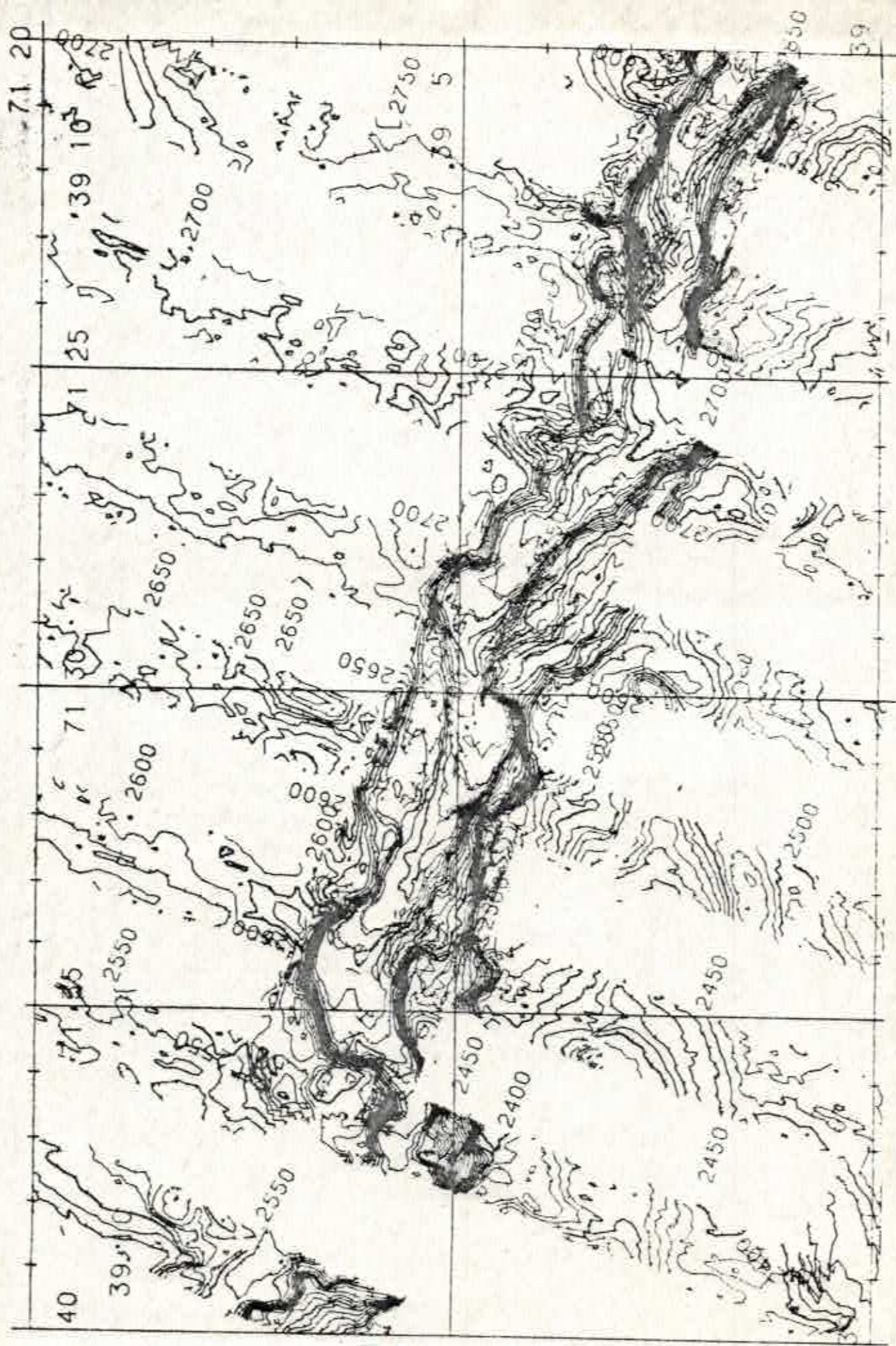


Figure 3. An example of a real time plot of Sea Beam swath map data merged with navigation (in this case LORAN C).

SEA BEAM SHOREBASED PROCESSING CENTER

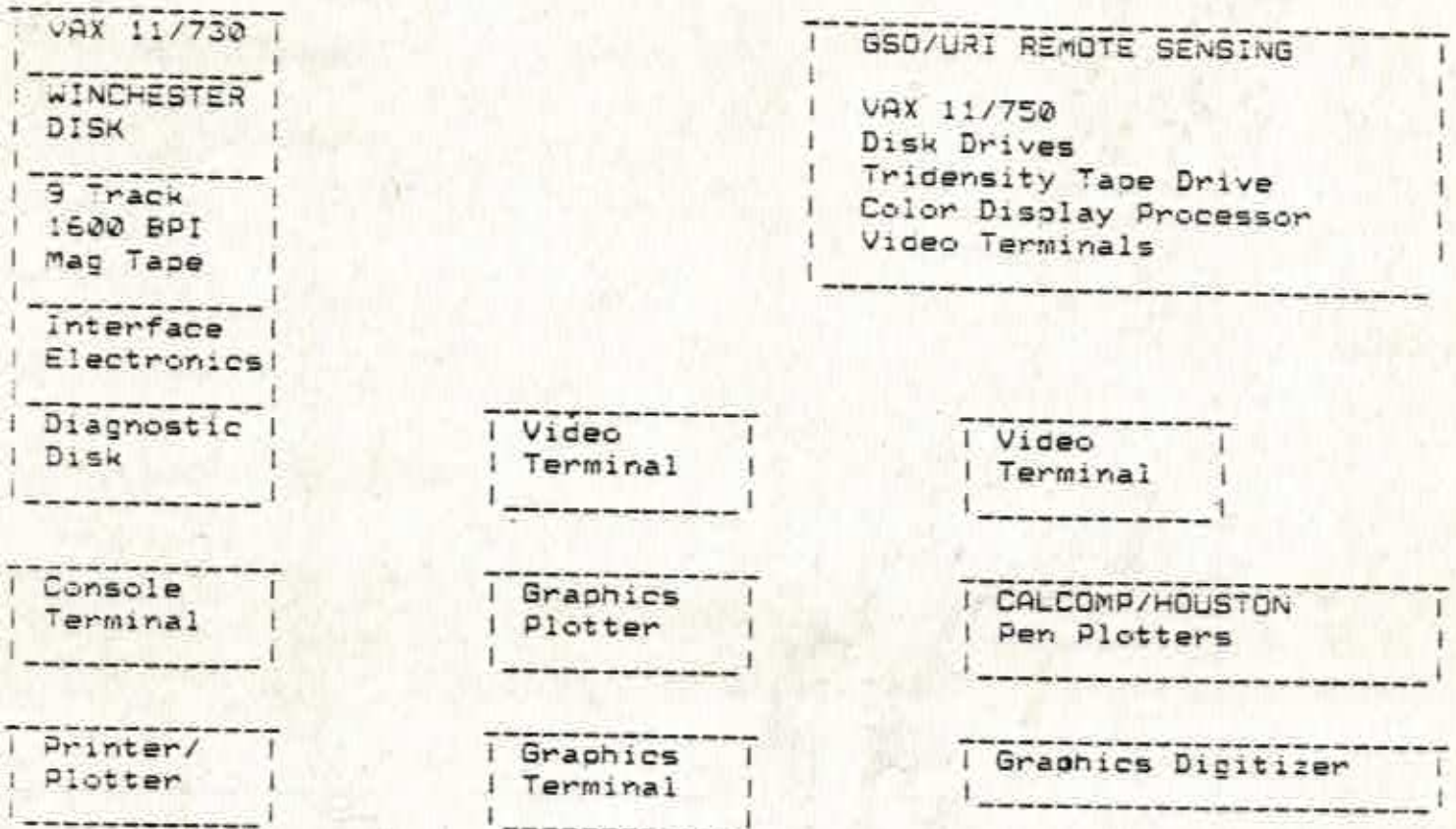


Figure 4

A late item for anyone who may have been under a rock or at sea for all
of June.

THE WHITE HOUSE
Office of the Press Secretary

For Immediate Release

June 6, 1984

The President today announced his intention to nominate Erich Bloch to be Director of the National Science Foundation for a term of six years. He would succeed Edward A. Knapp.

Since 1981, Mr. Bloch has been serving as Vice President for Technical Personnel Development at IBM in White plains, New York. He has been with IBM since 1953 when he began there as a technical engineer. He has held several managerial positions at IBM including Assistant Group Executive-Technology, Director of Subsystems and Technology, and Vice President for Operations.

He is a member of the National Academy of Engineering and a Fellow of the Institute of Electrical and Electronic Engineers. He is on the Board of Directors of the Semiconductor Industry Association and is Chairman of the Semiconductor Research Cooperative.

Mr. Bloch received his education in electrical engineering at the Federal Polytechnic Institute of Zurich, Switzerland and his BSEE degree from the University of Buffalo in 1952. He is married, has one child and resides in South Salem, New York. He was born January 9, 1925 in Salzburg, Germany, and became a United States citizen in 1953.