UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Advisory Council Meeting
October 29, 1986
Joseph Henry Building
National Academy of Sciences
2100 Pennsylvania Avenue NW
Washington, DC

Advisory Council members together with representatives from the Minerals Management Service, National Science Foundation, Office of Naval Research, and State Department met in Room 455 Joseph Henry Building, Washington, D.C. The meeting was called to order at 8:30 a.m., October 29, 1986 by **Advisory Council Chairman John Martin.** The meeting generally followed the **Agenda** (Appendix I).

Attendees

Advisory Council

John Martin, Chairman
Thomas C. Malone, Vice Chair.
Robertson P. Dinsmore
Robert A. Knox
Kenneth C. MacDonald
Arthur Maxwell
Robert W. Corell, *ex-officio*
George H. Keller, *ex-officio*

UNOLS Office

William D. Barbee
Mitch Stebens

Observers

Hawley Thomas, MMS
Louis B. Brown, NSF
H. Lawrence Clark, NSF
M. Grant Gross, NSF
Donald F. Heinrichs, NSF
John G. McMillan, NSF
Joan Mitchell, NSF
Lee Stevens, NSF
John Albright, NOAA
Michael DeLuca, NOAA
Eric O. Hartwig, ONR
Keith Kaulum, ONR
Wesley Lovaas, ONR
William Erb, State Dept.
Garrett Brass, U. Miami, RSMAS
Ronald Hutchinson, U. Miami, RSMAS

The Advisory Council accepted minutes from their August 27, 28, 1986 meeting.

Before taking up other agenda items John Martin welcomed **Eric O. Hartwig, who is acting as ONR's Associate Director for Environmental Sciences, to his first Advisory Council meeting.** Eric stated that he intends to take an active part in matters common to ONR and UNOLS. Critical common problems include ONR use (and their availability) of ships in the UNOLS fleet, Navy research vessel requirements (new ships, modifications, etc.) and maintenance and operation of Navy vessels in UNOLS. *An active goal will be to implement a plan to ensure stable ONR use of and support to ships in the UNOLS fleet.*

Examine Agenda for October 31 UNOLS Meeting

Chairman's Report. George Keller, in outlining his report for UNOLS, expressed his intent to participate strongly in UNOLS activities. (As in his attendance of the 1986 RVOC meeting and correspondence with all Member and Associate Member institutions). The purpose of UNOLS has been, traditionally, to coordinate the effective utilization of ships in the academic research fleet. That traditional role remains central, with, recently, a greater emphasis on *advising Federal agencies and, as appropriate, congressional staffs concerning program and facilities for academic research in oceanography.*

In the near term, budget constraints and changing conditions have led to urgent short term problems because the seagoing requirements of funded ocean science do not use the total capacity of the UNOLS fleet. UNOLS must address this short term problem. They must speak with a unified, effective voice. Means must be found to quantify fleet effectiveness (if arguments on UNOLS fleet effectiveness are to be persuasive). Plans must be developed to address both near term problems including funding shortfalls, underutilization and lay ups and the long term problem of developing fleet capability to support effectively ocean science research through the 1990's.

UNOLS will continue, through the Fleet Improvement Committee, to define fleet make up and capability best for both near and long term support of ocean research. The Ship scheduling process will be improved so that efficient fleet schedules will be reached in a more timely fashion. And communications, both within UNOLS and to other parts of the ocean community, will be emphasized to help achieve a unified presence.

Fleet Improvement Committee. The UNOLS Chairman had prepared a charge for the FIC: amplify and update the Fleet Improvement Plan, especially redefining the mix and number of ships, keep science mission requirements current, prepare conceptual designs for smaller vessels, consider alternatives to new construction and advance design process for two larger vessels. *Worth Nowlin has agreed to chair the FIC,*

with Tex Treadwell as executive secretary. Objectives, approach and calendar for the Fleet Improvement Committee are in Appendix II.

Advisory Council Report. John Martin deferred characterization of his Advisory Council report to UNOLS, since the report would reflect Advisory Council activities during the current meeting. *The Council agreed at their August, 1986 meeting that their emphasis for the year would be on improved fleet policies and strategies for the 1990's, helping to achieve a match between science program requirements and ship and support facilities, and improving UNOLS' ship scheduling process by implementing a use request/schedule information center.*

The Council will work with the Fleet Improvement Committee on fleet management issues and with Ship Scheduling Groups Chairmen Shor and Dinsmore on scheduling problems.

During 1986/87 UNOLS membership and the designation of UNOLS ships will be reviewed, and recommendations prepared. The Charter will be reviewed and recommended changes submitted for UNOLS action in May, 1986. The Council will also review UNOLS Office functions and recommend on selection of Executive Secretary and host institution.

The council is working with the Chairperson RVOC to develop means to assure comparability and availability of information on shared use equipment and marine technicians.

The Council sees the continued development of global geoscience initiatives such as TOGA, WOCE and GOFS as opportunity to achieve in ocean sciences a long term research program of appropriate scale for the 1990's.

ALVIN Review Committee. Robert Corell, ARC Chairman reported that that Committee will hold an ALVIN Workshop just preceding the Fall AGU/ASLO meetings in San Francisco (December 7, 1986). Purpose of the Workshop will be to gain information for planning the ALVIN-supported program in 1989 and beyond. A regular ALVIN Review Committee meeting will also be held in San Francisco, to consider changes in 1987 work.

The **ALVIN Prospectus** for 1986 is about to be distributed. The Prospectus summarizes long range planning efforts and ALVIN program status.

The **ALVIN Flyer**, inviting Dive Requests for 1988 work (submission in Spring, 1987) will be issued in December.

The **ALVIN Schedule for 1987** will begin off southern California, work off Hawaii and in the central Pacific en route to four months' work in the Mariana-Bonin regions. On return to the eastern Pacific, ALVIN-ATLANTIS II will do

some work off Washington-Oregon and finish the 1987 season off California.

Almost all of the work recommended and then tentatively scheduled for 1987 is sponsored by NSF. This requires too much (ALVIN-ATLANTIS II) facility support from NSF, and changes to the existing schedule will be necessary. **Keith Kaulum, ONR** suggested that the ARC should take into account the impact of scheduling on the distribution of funding among agencies. Had such consideration been made in June, 1986 there would have been no need for potentially disruptive schedule changes.

John McMillan, NSF provided a copy of the renewal of the Memorandum of Agreement Concerning Support of the Deep Submergence Vehicle (DSV) ALVIN covering 1987-1989 (Appendix III). *The Advisory Council approved the renewal, noting that the ALVIN- supported program produces excellent science and that the Memorandum of Agreement among ONR, NOAA and NSF together with the spirit of execution among the three agencies contributes significantly to program excellence.*

Robert Corell reported briefly on the Navy's **SEA CLIFF PROGRAM** and the ARC role in implementation. Reviewing briefly, the Secretary of the Navy's Oceanography Initiatives in 1984 included one to optimize use of Navy deep submersible assets. The ALVIN Review Committee welcomed that initiative, particularly concerning SEA CLIFF and its potential to support a U.S. deep submergence ocean research effort in depths to 6000 meters. The ARC agreed to help ONR in fostering interest in and developing a program from among the academic community to use SEA CLIFF for ocean research. By agreement with ONR, the ARC held workshops in the winter 1985-1986 to help develop scientific programs using SEA CLIFF's 6000 meter capability and to generate planning information for a 1987 SEA CLIFF program. (At the meeting it was made clear that a major scientific expedition could not be realistically planned earlier than 1988.) Interested investigators responded with letters of intent for nearly 200 SEA CLIFF dives. *The ALVIN Review Committee is concerned that thus far there has been no effective Navy response to the interest expressed by the academic community.* During 1986, scientific use of the SEA CLIFF was devoted to a project on Escanaba Trough funded by Minerals Management Service and conducted by USGS scientists.

Keith Kaulum responded that problems had arisen because SEA CLIFF is not yet readily available. There is still no completely-suitable support ship. (RFP's for a support ship closed in October, 1986.) In addition, details on SEA CLIFF user fee have not been reached. ONR would not exercise the academic community further until SEA CLIFF is available and details for its use are defined.

The ALVIN Review Committee is eager to help foster SEA CLIFF use in extending academic oceanographic research to 6000 meters but not until an understanding of the Committees's role is reached and a schedule of SEA CLIFF availability is firm. Hopes were raised in the academic oceanographic community that they might use SEA CLIFF to extend their research. Those hopes have thus far not been sustained. This shouldn't happen again.

In June, 1986 UNOLS had endorsed a recommendation from the special ALVIN Study Committee and ARC for a major **Submersible Science Study.** The Study would be arranged through and overseen by the ALVIN Review Committee, and should be completed during 1987.

The ARC Chairman presented a plan for a Submersible Science Study that would: assess and project ocean science trends relative to submersible science, review and recommend submersible systems, prepare and recommend a funding plan, prepare and recommend an implementation plan and assess and recommend strategies for Federal agency needs. The study would be sponsored by UNOLS with the endorsement and concurrence of NSF, NOAA and ONR. It would be conducted by a committee formed by ARC, supported by the UNOLS Office and funded by NSF, NOAA and ONR (by negotiation). *The Advisory Council endorsed the ARC plan for presentation to UNOLS.*

RVOC. George Keller reported attending his first RVOC meeting, October 8, 9, 10, in Veracruz, Mexico. The meeting was excellent, well organized, well conducted and with a substantial program. The Mexican Navy and Veracruz officials were excellent hosts. Executive meetings were held after the scheduled RVOC to discuss clearance problems. Explicit problems exist concerning clearance for U.S. research in Mexican waters. Such problems must be addressed with sensitivity to the Mexican position.

Workshops on winches, wire and cranes, and on marine liability and risk management were especially informative.

E.R. Dolly Dieter completed her terms chairing RVOC and declined to continue. Jack Bash, University of Rhode Island was elected chairman. Jim Williams, Scripps, will succeed Jack as RVOC secretary.

Funding Agencies

Don Heinrichs, provided a summary report for NSF (Appendix IV). The Foundation received an 8.9% increase for FY-1987. The Congressional appropriation included language specifying the funding level for the Ocean Sciences Division (i.e., OCE funds are protected). This will reflect into funding for Operations (Ship Operations plus ALVIN, aircraft, etc.) as an increase from 1986's actual $25.4M to $27.3M estimated for 1987. Other ship operations support estimated for 1987

includes $1.8M from the Ocean Drilling Program and $0.2M from Division of Polar Programs. Thus $27.5-27.7M should be available for ship operations in 1987 (see Appendix IV). Although this should ease the shortfall problem projected for 1987, it will not solve the problem. In addition, available ship time continues to exceed science project requirements. NSF still anticipates some part or full year lay ups in 1987. Neither the Black Sea expedition nor the South Atlantic Ventilation Experiment will be funded for field operations in 1987.

NSF looks forward to improved UNOLS ship scheduling procedures, and OCFS intends to implement new procedures (e.g., early-in-the-year estimates of NSF program's total ship requirements for the schedule year, with some detail on area, ship class requirements, etc.)

A decision will be reached soon on disposal of the CAYUSE. In response to notices that it might be available, OCFS received three letters of interest from academic institutions, two Federal agencies, and one from a private laboratory.

NSF's updated long range plan is scheduled for completion early in 1987. The LRP includes a section on ship operations, etc. According to the Plan, the existing academic research fleet cannot meet all projected requirements (due partly to fleet capacity, partly to individual ship or class capabilities). In addition to new construction, options might include chartering to meet MG & G needs filling the needs for R/V WOCE from outside the academic research fleet. *To examine such options objectively, a position must be reached as to what CORE FLEET Federal oceanographic programs should maintain.* NSF will maintain close liaison with the Fleet Improvement Committee and with the Advisory Council on their study of policies and strategies for the 1990's.

Keith Kaulum reported that there is not yet a 1987 budget for ONR. Currently, ONR elements have authority to 70% of last year's funding. The Navy (SUBDEV Group I) had been trying to achieve certification for LULU to be used as support vessel for SEA CLIFF and/or TURTLE. They have abandoned that effort, and made LULU available. (Note: NOAA's Undersea Research Program had expressed interest.)

The Navy has made new funding arrangements for research use of the submersible NR-1. ONR wants to set up a committee (through ARC) to recommend on and monitor NR-1 science improvements. There is need to alert the academic research community on NR-1 availability, terms for use, etc.

Mr. Kaulum was to present status reports to the UNOLS members on the AGOR-23 acquisition process, AGX program

milestones and the overhaul program plan for AGORS 14 and 15.

AGOR-23 Circular of Requirements (COR) are complete, and the Request for Proposals will be due in April, 1987 with selection of the design contract award by August, 1987. It is anticipated that construction/conversion would start in about October, 1988, with delivery in early 1990.

Selection of an operating institution for AGOR-23 would be on a compatible schedule. An RFP would be issued in November, 1986. (The COR and RFP for AGOR-23 would be available.) Proposals would be due in late February, and selection by April, 1987. This would allow appropriate institution participation in selection and later phases of AGOR-23 acquisition.

Eligible institutions would include those U.S. academic oceanographic research institutions with research vessel operating experience, adequate facilities and, probably, eligibility for UNOLS membership.

Proposals would include technical and scientific justification, a plan to retire an AGOR-3, plans and cost estimates for participation in AGOR-23 acquisition, trials and outfitting and an operations plan and budget.

An ONR selection committee would be established, chaired by the Associate Director for Environmental Sciences (Code 112) with four ONR members, two NSF, one UNOLS, and one member from Oceanographer's Office (OP-006).

The AGX series will be SWATH design. One of first two will be for support of academic ocean research. Work began on the Tentative Operational Requirements (TOR) in September, 1986. It is expected that work will begin on point designs in March, 1987, and RFP will be issued in February, 1988 with proposals due, selection and award August through December, 1988. *The TOR had been passed to UNOLS' Chairman for comments and UNOLS response, essentially from FRC/FIC members, had been made.*

Overhaul of AGOR's 14 and 15 (KNORR, MELVILLE) is in the Navy budgets for FY-1988 and 1989. Estimates are for $16M per ship. Current plans are to fund the overhauls with research facilities money, but ship construction funds may be used. The overhaul schedule includes completion of concept and technical studies by end of 1986, a decision workshop to fix overhaul elements (WHOI, SIO, NSF, ONR, UNOLS, Consultants), a preliminary design study by Scripps and/or WHOI during 1987, contract for the work in late 1987 with work to begin on the first ship in about October, 1988.

The Council asked Mr. Kaulum about recent remarks that the Navy was sponsoring an ice strengthened polar research vessel or that AGOR-23 would be strengthened to become a polar research vessel. Apparently there has been some preliminary consideration for an Arctic ice breaker or ice strengthened research vessel to be built by the Navy during the 1990's.

Hawley Thomas provided a summary of MMS funding for 1987 (Appendix V). Regional distribution of the $22.96M would be:

Alaska	$8.9M
Atlantic	$1.9M
Gulf of Mexico	$3.7M
Pacific	$5.6M

Contracts are through regional offices. Approximately 50% of the work will be biological studies.

The Advisory Council restated their concern that very little of the ship time requirements for the MMS work are filled by UNOLS ships. The Council understands that the studies are contracted and that it is difficult for UNOLS ships to be selected and to participate. The Council suggested that MMS investigate making ship time government furnished in their study contracts. Such an arrangement might prove beneficial to both the MMS and the UNOLS fleet.

John Albright reported that NOAA is operating 22 of her 23 ships at the beginning of FY-1987. The DISCOVERER has been equipped with SEA BEAM and is conducting EEZ surveys off the Pacific Coast. The MT. MITCHELL has been moved to the Pacific, for work in Alaska. NOAA is planning on the basis of 4000 sea days in 1987.

For FY-1988, the Department of Commerce supports a budget for an 18 ship fleet. The submission is at OMB now. Over the last several years OMB has approved an 11 ship fleet (although Congress has, each year, provided funds for the full NOAA fleet).

In response to Council inquiry, Cdr. Albright, responded that classification strictures are still in place that prohibit NOAA's dissemination of SEA BEAM data from the EEZ. This classification policy may be broadened to cover the UNOLS fleet as well.

Grant Gross reported that at the October 27, 28 meeting of the Advisory Committee to Ocean Sciences (ACOS), he had requested that ACOS examine the functions and activities of the NRC Ocean Studies Board and of UNOLS to see how they might best function in an advisory structure to NSF's Ocean Sciences Division. The ACOS examination is in the context

of NSF policies and procedures prescribing oversight and advisory functions.

UNOLS Ship Scheduling. Ship Scheduling meetings were to be held on October 30; no new information had been developed on 1987 schedules, cost estimates, etc.

Bob Dinsmore and George Shor had circulated among UNOLS members information on UNOLS scheduling with options for improvement, etc., (letter of September 4, 1986, distributed earlier to Council). Responses were received from thirteen of eighteen Member Institutions. The responses can be characterized:

> East and West Coast Ship Scheduling Groups should be continued.
>
> Two meetings each year (at UNOLS meetings) are effective and useful. Eliminate the February/March meeting and replace with mail information exchange.
>
> Establish a centralized, interactive, electronic register for ship time requests.
>
> DO NOT establish or implement a process of centralized scheduling. Improve the existing scheme as necessary.
>
> Establish and use consortia in the scheduling process (especially to help user-operator interaction.).

There was consensus on those points, although there was also some dissent concerning each one.

Other suggestions were to decide on lay ups earlier, to require more homework (before meetings) by institutions, and to do more of the scheduling, information exchange, etc. by mail/telemail.

Many responses from Member Institutions urged that the Ship Scheduling Groups (or their Chairmen) continue to make recommendations on lay ups to UNOLS and to funding agencies. *Since they are a serious matter, central to UNOLS, the UNOLS Chairman will deliver any agreed-to recommendation to funding agencies. They would be UNOLS recommendations, not Ship Scheduling Group recommendations.*

Don Heinrichs said that to help the scheduling process NSF intends to provide to UNOLS an early report on their program constraints on ship use. The report on 1988 ship use requirements would be available to the Advisory Council (and UNOLS Members) at the January, 1987 Council meeting. Constraints might include an estimate of the total ship days required by NSF programs, ship requirements by class, area, discipline, etc.

UNOLS Business. The **slate of candidates to fill Advisory Council vacancies** was noted. Many more nominations than usual were received; many excellent candidates were advanced.

Chairman Keller was to announce to UNOLS at the October 31 meeting that **the grant for hosting and supporting the UNOLS Office expires in April, 1988.** UNOLS Member Institutions will be solicited for their interest and intent to propose to host the Office, beginning in 1988. The Chairman's intent is to assure an open process for selecting UNOLS' host institution and executive secretary. It does not reflect dissatisfaction with existing arrangements.

The Advisory Council, noting that the **UNOLS Charter should be re-adopted at May, 1987 meetings** will examine the current version and recommend changes if needed. A subcommittee of Art Maxwell, John Martin and one other will take the lead.

Advisory Council Standing Roles. Cruise Assessments for first and second quarters, 1986 had been distributed to Council members. They were not discussed.

Bob Dinsmore reported that **NSF's Ship Inspection Program** continues to improve and is bringing about improvement in UNOLS fleet condition and operations. As the program continues increased emphasis is being placed on safety, crew training and preparedness.

The first Navy INSURV ship inspection augmented by science equipment/operation inspection had just been completed.

The POLAR DUKE will be inspected under the NSF program in April, 1987.

There have been almost no negative comments on the NSF inspection program. Constructive suggestions received and considered include: arrange for operators to attend other institutions' inspections, inspect ships while in drydock, provide a more definitive report of exceptions and monitor corrective action/compliance. Issue a closing report.

The Council requested that results of individual inspections be made available to them, so that compliance with UNOLS safety standards, etc. could be monitored. Dick West, Program Manager agreed.

UNOLS Fleet Policies and Strategies for 1990's. The working group Art Maxwell, Robert Knox and Ken MacDonald had met and drafted a *Report to the Advisory Council on Fleet Management Strategies and Mechanisms* (Appendix VI). The working group noted that they had operated on the premise that for the foreseeable future (the near term) ship requirements from funded science would be short of full UNOLS fleet

utilization. Their thrust was to encourage UNOLS and UNOLS institutions to reach for solutions, not wait for solutions to be imposed. The group addressed two main issues: current and alternative mechanisms for managing, operating, funding and supporting the UNOLS fleet, and strategies and mechanisms for matching the UNOLS fleet to the needs of ocean science. Their objectives became: means to reduce the ship-day capacity of the fleet to match science needs (and support), means to increase effective use of ship support funds and ensure balance between science and ship support funding.

Their three main recommendations:

- *Consolidation of operating centers and personnel from the existing 18 centers to 6 or 7;*
- *Efforts to retire ships in concert with fleet replacement plans (i.e., to achieve a net reduction in ships, fleet capacity);*
- *Adoption of a two-tiered ship support funding system (i.e., block funding of large expedition-oriented ships, project funding for smaller ones).*

The report generated intense discussion among Advisory Council members and funding agency representatives. The sense of the discussions was to approve of the overall thrust, the central issues and objectives expressed in the report. There were reservations, however, to the three recommendations or to details therein.

The assertion that consolidation to a few operating centers would be more cost effective needs to be established. (Figures provided by NSF show that 85% of funding for marine operations is for ship costs, only 15% for shore support. Thus, the savings from consolidation appear limited.) Further, there are benefits to programs and to institutions other than cost/funding that should be considered. Cost effectiveness is not the only consideration.

Effecting a short term reduction in fleet capacity (ship days) was generally encouraged. Tying the reduction to the ship replacement process was also endorsed. Some practical questions were raised (e.g., Can an institution tie retirement of NSF or privately owned ships to acquisition of a new Navy-owned ship? How to balance this criterion against others in assigning new ships?).

The suggestion for two-tiered funding systems raised objections, principally from agency representatives: A two tiered system would unavoidably introduce a bias for "big science" over "little science". NSF processes/procedures would have great difficulty accommodating a large number of project-funded ship operations proposals. Project funding or indicating ship costs on proposals results in bias against field investigations.

After this discussion *the Advisory Council endorsed the recommendations that efforts be made to achieve maximum reduction of UNOLS fleet capacity in coordination with current fleet replacement.* Specifically they urged that ONR give weight to proposals that would achieve greater than one-for-one ship retirement in selecting operating institution for AGOR-23.

The Council also agreed that the report needs further development and refinement, and that the two issues addressed in the plan must be integrated with the Fleet Improvement Committee's examination of the UNOLS fleet size and make up issue.

Shipboard Scientific Instrumentation and Marine Technicians. John Martin reported that he had been coordinating his efforts for the Advisory Council on achieving consistency in institution policies for shipboard instrumentation and marine technicians with related efforts by RVOC. He had furnished Dolly Dieter, RVOC Chair, with responses to his poll on shipboard instrumentation. The issues were addressed at the recent RVOC meeting.

UNOLS News. UNOLS News Vol. 3, No. 3 was prepared in the UNOLS Office, and was, at the end of October, in distribution. Tom Malone invited input to the final number for 1986. That issue will, in large part, report on information and results from the fall UNOLS meetings.

UNOLS Statistics. The UNOLS Office was instructed to prepare a five year summary of UNOLS ship use (based on UNOLS' annual summaries).

International Restrictions to Ocean Science Committee. The Advisory Council noted the report on *Problems Encountered by the UNOLS Ship-operating Institutions in Obtaining Clearances to Work in Waters Under Foreign Jurisdiction.*

The Council deferred recommendation concerning the IROSC, at least until comments are received from more committee members.

Acquisition and management of advanced technical facilities. John Martin noted that the Council had, at its August, 1986 meeting, moved to forego formation of a UNOLS Oceanographic Supercomputing Committee (OSCC). John had discussed that decision with NSF representatives.

Agency and community contacts. George Keller reported that he had written to the chairman of several advisory groups in oceanography (NASULGC Marine Division, NAS Ocean Studies Board, NSF's Ocean Sciences Advisory Committee, JOIDES Board of Directors) suggesting better interaction and communication among the groups, and describing UNOLS' agenda for 1986-1987. Response to George's letters had been mixed;

he will continue to keep the other groups informed of UNOLS activities.

UNOLS-DPP fleet interaction. The UNOLS executive committee will meet with representatives of NSF's Division of Polar Programs and of the Advisory Committee to DPP (ACDPP). The meeting, initiated by ACDPP, would discuss means: to facilitate interaction with UNOLS and define the role of POLAR DUKE in the UNOLS fleet, to form a standing committee to advise on POLAR DUKE scheduling and operating decisions, and to acquire marine technician services for POLAR DUKE.

Meeting Schedules. Conflicts had arisen that forced changes in the scheduling of UNOLS meetings in 1987. The schedules already published in Advisory Council minutes for August, 1986 and in UNOLS News, Vol. 3, No. 3, were changed. The schedule is:

Advisory Council	**January 29, 30 1987** **Scripps, La Jolla, CA**

Spring meetings in Washington, D.C.:

Advisory Council	**May 18, 1987**
Ship Scheduling*	**May 19, 1987**
UNOLS Semiannual	**May 20, 1987**

*Ship Scheduling Groups, Chairmen may decide to hold the scheduling meetings separate from other UNOLS meetings.

The meeting was adjourned at 5:25 p.m.

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Advisory Council Meeting
Agenda
8:30 a.m., October 29, 1986
Room 455
Joseph Henry Building - National Academy of Sciences
2100 Pennsylvania Avenue NW
Washington, DC

Accept Minutes of August 27, 28 1986 Meeting

Examine Agenda for October 31 UNOLS Semiannual Meeting

Chairman's Report - George Keller.

Advisory Council Report - John Martin.

Fleet Improvement Committee - Status of the reconstituted FIC - George Keller.

Alvin Review Committee - Plans and Activities - Robert Corell.

RVOC - Note on their meeting of October 8, 9, 10 (including safety, crew training) - George Keller, Bill Barbee.

Remarks from Funding Agencies - Agency representatives will review their agency status reports as they choose.

UNOLS Ship Scheduling - Separate and joint meetings will not have been held. Bob Dinsmore may wish to review his and George Shor's efforts toward improving the process. The Executive Committee will meet with Ship Scheduling Chairmen on October 30 to discuss, especially how recommendations should be reached and delivered to agencies.

UNOLS Business - 1. The slate for Advisory Council vacancies. 2. UNOLS Office and grant status. 3. UNOLS Charter, readoption or revision.

Advisory Council Standing Roles - (Those not covered above)

Cruise Assessments - Summaries of Cruise Assessment returns for first and second quarter, 1986 are provided.

Vessel Inspection - Bob Dinsmore will report on recent activities. (Note that NSF Inspection Program Report is appended to A/C minutes of August, 1986.)

UNOLS Fleet Policies and Strategies for 1990's - Art Maxwell, Robert Knox and Ken MacDonald will report progress on the study.

Shipboard scientific instrumentation, technician programs and user manuals - John Martin. (Also, a report on RVOC considerations of their October 86 meeting.)

UNOLS NEWS - Vol 3, No. 3 distributed October, 1986. Tom Malone will welcome input for Vol. 3, No. 4 in December, 1986.

UNOLS Statistics - If the UNOLS Office should be summarizing ship use or other data in new or different combinations, these new directions should be set.

International Restrictions to Ocean Science - The report on Problems Encountered in Obtaining Clearances to Work in Foreign Waters has been distributed to the Council. Council action. Council recommendations on an IROS Committee.

Acquisition and management of advanced technical facilities - John Martin on deferral of OSCC formation. (Information to UNOLS.)

Scientific and government trends; agency and community contact - UNOLS Executive Committee (UNOLS Chairman correspondence, etc.).

UNOLS-DPP fleet interaction - A meeting will be held on October 30 among UNOLS Executive Committee, DPP representatives, OCFS representatives and others.

Other Business - Any?

UNOLS FLEET IMPROVEMENT COMMITTEE

Objectives:

1. Amplify and update the UNOLS Improvement Plan. This will require continuing reassessment of number and mix of ships, required sources, program planning, vessel availability, results of committee studies, and so forth.

2. Continue to refine science mission requirements, including specifically the roles and requirements for smaller vessels and innovative platforms.

3. Initiate and carry through conceptual designs for smaller vessels.

4. Consider alternatives to new construction for meeting science mission requirements.

   a) Refits and improvements to existing UNOLS vessels may have them more capable and economical, and extend their service life.

   b) There are numerous relatively new vessels in the merchant fleet which might be converted to form one or more classes of research vessels. Many of these are owned by the Federal government.

5. Carry two of the new conceptual designs for large vessels into more detailed design phases (perhaps full preliminary design).

6. Serve as liaison activity and information source for Federal agency representatives working in matters of planning or funding for new construction and upgrading of UNOLS vessels.

Approach:

The committee would have responsibility for overall directions. They would assume total responsibility for objectives (1), (2), (5), and (6).

Subcommittees might be established to carry through objectives (3) and (4) under the overall guidance of the parent committee. This would allow broader representation by experts from the community in carrying out the somewhat diverse tasks.

The Executive Secretary would staff the committee. He would have specific responsibility for tracking, initiating and the contracted design studies.

Calendar:

31 October 1986 - UNOLS Decision on committee membership.

December 1986 or January/February 1987 - First meeting of committee.

March 1987 - Committee review of draft proposal.

April/May 1987 - Submit proposal to NSF/ONR.

10/22/86

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

DIVISION OF OCEAN SCIENCES
OCEANOGRAPHIC CENTERS AND FACILITIES SECTION

15 October 1986

Dr. Robert W. Corell
Chairman, ALVIN Review Committee
University of New Hampshire
Durham, NH 03824

Dear Bob:

The renewal of the Memorandum of Agreement for support of ALVIN has finally made it through the maze and we're set for another three years. Although the agreement is essentially unchanged, I thought you might want to have a copy for your records.

Sincerely yours,

John G. McMillan
Program Manager
Operations

MEMORANDUM OF AGREEMENT CONCERNING SUPPORT OF THE DEEP SUBMERGENCE VEHICLE (DSV) ALVIN

In the belief that DSV ALVIN is a unique national asset and provides a significant capability to the oceanographic research community; and in the further belief that a reasonable assurance of operating support is a necessary precondition to the establishment of a sound scheduling and utilization program, the Department of the Navy, the National Oceanic and Atmospheric Administration (NOAA), and the National Science Foundation (NSF), hereafter referred to as the supporting agencies, agree to the following:

I. GENERAL PROVISIONS AND UNDERSTANDINGS

1. Within the limits imposed by Congressional action and/or the availability of funds, the agencies will provide support for operating cost of DSV ALVIN for a period of 3 years, from 1 January 1987 through 31 December 1989. Funds will be provided in accordance with the terms set out in Section III, below.

2. The Woods Hole Oceanographic Institution (WHOI) will operate DSV ALVIN during this period as a National Oceanographic Facility of the University-National Oceanographic Laboratory System (UNOLS). Proposals for use of ALVIN by WHOI personnel shall be subject to the same reviews and conditions as all other proposals.

3. An ALVIN Review Committee (ARC) named by UNOLS will examine scientific requests to use ALVIN and recommend to the operating institution those programs most appropriate for scheduling. Final selection of projects and establishment of scheduling priorities remain at the discretion of the supporting agencies. The Committee develops long-range scientific utilization plans to encourage highly qualified investigators and programs and to ensure the effective use of ALVIN for multidisciplinary scientific and technological research. The Committee also provides recommendations to UNOLS and WHOI with respect to new techniques and instrumentation, operating policies, support and use arrangements, and other matters relating to ALVIN.

4. Title to ALVIN is retained by the Navy, and nothing in this agreement shall be construed as impinging upon the basic conditions controlling the assignment of the vessel to WHOI for operation and maintenance. The submersible ALVIN and associated handling system must be maintained in a material condition that will allow uninterrupted Navy certification. If a situation arises in which primary Navy assets cannot perform a vital navy mission, and it is within the capability of ALVIN, the Navy retains the right under such an emergency to preempt ALVIN scheduling. The cost during such a mission would be funded by the Navy in accordance with Section III, paragraph 6, below. Preempted projects would be appropriately rescheduled. Proposed use by foreign nationals should be cleared with Navy representatives prior to operation.

II. SCHEDULING AND UTILIZATION

1. The unique capabilities and logistic complexity of ALVIN require careful planning to ensure effective and economical use. To this end, the following general principles should be observed in establishing utilization plans and schedules:

   a. Outlines of major programs including scientific objectives, operating areas, and probable sources of support should be identified at least 2 years in advance;

   b. Opportunities for smaller scale or short lead-time programs to fill in a schedule or take advantage of scientific or geographic circumstance should be carefully preserved;

   c. A "full use schedule" of approximately 180 operating days per year, average, should be a goal to minimize unit costs.

2. Scheduling necessarily involves several iterations and extensive consultation among the principals. In general, however, the following cycle should be observed:

   a. CY--18 to 36 months--Review Committee recommends to WHOI operating areas and key programs for the out-years based on scientific proposals and agency plans.

   b. CY--12 to 24 months--Funding agency decisions confirm or reject major scientific programs; shorter lead-time programs develop to round out a schedule.

   c. CY--9 to 12 months--Operator institution proposes a tentative schedule and an operations budget for review by Review Committee and the supporting agencies.

   d. CY--6 months--Operator institution completes arrangements for operations support and carries out specific pre-cruise planning and preparation with users. Operator institution ensures compliance with certification procedures.

   e. CY--Calendar year operations begin.

3. Ultimate responsibility for implementing the schedule rests with the operating institution, which shall give appropriate consideration to the recommendations of the Committee, the requirements of the supporting agencies and its own financial and operational responsibilities. Substantial changes not of an emergency nature must be approved in advance by the supporting agencies.

III. FUNDING

1. The provisions of this section apply to "operations costs" for DSV ALVIN and the surface support vessel when required and specifically excludes scientific project costs.

2. The supporting agencies will among them fund 150 operating days per calendar year. Generally, this will distribute 3:1:1 operating days among NSF, Navy, and NOAA, respectively. From year to year the use ratio may change by mutual consent among the agencies and the total may be adjusted somewhat depending on outside user demands, maintenance requirements, as well as individual agency concerns.

3. The balance of the schedule may be made available for additional use by the supporting agencies or by other users. The operating institution is encouraged to fill out the schedule with other scientific users, with appropriate review by the ARC. In addition, non-scientific users may be accommodated following consultation with the ARC Chairman and the supporting agencies, provided that such additional use does not interfere with the scientific programs recommended and scheduled.

4. The term Operating Day as used in this Agreement is defined as all days away from homeport in an operating status incident to the scientific mission or training. Includes days in port for the purpose of mission preparation, changing personnel, etc., and normally includes transit time. Does not include maintenance or days laid up or dive days assigned by the operating institution for engineering trials of benefit to all users. The operating day is the basic unit for ship time funding and support considerations.

5. The Woods Hole Oceanographic Institution shall prepare an operational plan and budget each year for review and approval by the principal supporting agencies.

6. All operating costs for use of DSV ALVIN by Federal agencies or their grantees or contractors, including, but not limited to, the signatories of this Agreement, shall be in accordance with regular Federal accounting and auditing procedures.

7. Solely for coherence of administration and accountability, funds provided by the supporting agencies under this Agreement will be transmitted through a single grant or other arrangement administered by the National Science Foundation, which shall incorporate a statement of responsibilities of the parties consistent with this Agreement.

IV. TERMINATION

1. Approximately 1 year before the termination of this Agreement, the supporting agencies, UNOLS, and WHOI will review and evaluate the DSV ALVIN program to determine the future disposition and use of the system.

2. This Agreement may, by mutual agreement, be renewed or extended.

3. An agency wishing to terminate this Agreement prior to the established termination date of 31 December 1989 or alter its obligations hereunder, must provide written notice to the other participants at least 1 year in advance.

V. LIAISON

1. For the Department of the Navy; Office of Naval Research, Head, Ocean Engineering Division, Environmental Sciences Directorate.

2. For the National Oceanic and Atmospheric Administration; Director, Office of Undersea Research.

3. For the National Science Foundation; Head, Oceanographic Centers and Facilities Section.

Signatures/Dates

William J. Merrell, Jr. — For the National Science Foundation, Assistant Director, Directorate for Geosciences

Joseph O. Fletcher — For the National Oceanic and Atmospheric Administration, Assistant Administrator, Oceanic and Atmospheric Research

RADM J. B. Mooney, Jr. USN — For the Department of the Navy, Chief of Naval Research

NSF REPORT
UNOLS ADVISORY COUNCIL
OCTOBER 1986

OCEANOGRAPHIC FACILITIES SUPPORT

Budget Summary	Actual	Actual	Estimate
Operations	1985	1986	1987
Ship Operations	23.8	23.8	
ALVIN Aircraft, Misc.	2.9	1.6	27.3
Marine Technicians	2.4	2.5	2.7
	29.1	27.9	30.0
Acquisition and Development			
Science Instruments	1.8	1.6	1.9
Shipboard Equipment	1.7	1.4	1.8
Technology Development	1.6	1.7	2.3
UNOLS, Ship Const., Misc.	0.7	0.9	0.7
	5.8	5.6	6.7
TOTAL	$34.9M	$33.5M	$36.7M

Other NSF Support -- Ship Operations

Ocean Drilling Program	.1	2.1	1.8
DPP Antarctic Operations	?	0.8	0.2

FY 1986:

- Research cruise requirements met for all NSF-funded projects.
- Available ship time in academic fleet continued to exceed requirements for funded projects.
- Inactive status for R/V WECOMA, R/V CAYUSE and R/V OSPREY. Short schedules for several other ships.
- DSRV ALVIN resumed operations after successful major upgrade of submersible capabilities. Heavy schedule.
- Initiation of dialog with UNOLS and operations on new procedures to improve scheduling, maintenance and operations decisions.
- Increased coordination with Navy regarding operations, new ship construction, and long term fleet planning.

FY 1987:

- o Available shiptime continues to exceed science project requirements.

- o Inactive status projected for R/V KNORR and several other ships. Short schedules for some ships.

- o DSRV ALVIN in heavy demand for NSF projects. First use in western Pacific (6 legs). NSF operations costs up.

- o Increased attention to safety issues and follow-up actions in NSF ship inspection program.

- o Implement new procedures in conjunction with UNOLS re. improved scheduling, maintenance and operations decisions.

- o Maintain close liaison with new UNOLS Fleet Improvement Committee examining research needs in the 1990's. Plus UNOLS Advisory Council Study of Policies and Strategies for the 1990's.

- o Continue/improve coordination with Navy and other agencies.

<u>R/V CAYUSE Status</u>: Letters of interests.

- o UNOLS -- Center for Marine Science of University of Southern Mississippi; Skidaway Institute of Oceanography; Bigelow Laboratory for Association for Research on the Gulf of Maine.

- o Federal -- EPA and NOAA

- o Other -- Private laboratory (1); Three telephone calls.

<u>NSF/OCE Long - Range Plan Update</u>:

- o Update LRP scheduled for completion in early 1987.

- o Includes sections on ship operations, ship construction and ocean technology.

- o Existing academic research fleet cannot meet all projected field program requirements. Plan will discuss options.

United States Department of the Interior

MINERALS MANAGEMENT SERVICE
WASHINGTON, DC 20240

OCT 20 1986

THE MINERALS MANAGEMENT SERVICE (MMS) ENVIRONMENTAL STUDIES ARE AWARDED IN THE FORM OF CONTRACTS, USUALLY BY COMPETITIVE PROCUREMENT, TO PRIVATE COMPANIES OR, IN A FEW CASES, AS INTERAGENCY AGREEMENTS TO OTHER FEDERAL AGENCIES. THE COORDINATION AND DIRECTION OF RESEARCH VESSELS FOR STUDIES IS NOT A FUNCTION OF THE MMS HEADQUARTERS. VESSELS ARE SELECTED BY EACH POTENTIAL VENDOR, BASED ON THE SUITABILITY OF THE VESSEL AND OPERATION COST, AT THE REGIONAL LEVEL AND APPROVED BY THE MMS HEADQUARTERS LEVEL. COORDINATED USE OF THE SELECTED VESSEL BY MULTIPLE VENDORS IS INITIATED AT THE REGIONAL LEVEL. COST SHARING FOR SHIPTIME WITH OTHER FEDERAL AGENCIES IS ONGOING.

THE PROPOSED ENVIRONMENTAL STUDIES FUNDING FOR FY-87 IS $22,965,000. THIS, AND CONSEQUENTLY REGIONAL DISTRIBUTIONS, MAY CHANGE IF DEFICT REDUCTION MEASURES ARE IMPLEMENTED.

THE PROPOSED REGIONAL FUNDING DISTRIBUTIONS ARE:

ALASKA, $8.9 MILLION.
ATLANTIC, $1.9 MILLION.
GULF OF MEXICO, $3.7 MILLION.
PACIFIC, $5.6 MILLION.
WASHINGTON OFFICE, 2.8 MILLION.

THESE ARE SUBJECT TO CHANGE THROUGHOUT THE YEAR.

REGIONAL STUDIES REQUIRING RESEARCH VESSELS ARE PHYSICAL AND BIOLOGICAL OCEANOGRAPHY PROJECTS. THE BIOLOGICAL PROJECTS THROUGHOUT THE REGIONS REPRESENT OVER 50% OF THE TOTAL STUDY EFFORT. INFORMATION ABOUT A SPECIFIC STUDY IS PROVIDED IN REGIONAL STUDIES PLANS PREPARED ANNUALLY BY THE REGIONAL OFFICE.

QUESTIONS ON THE ENVIRONMENTAL STUDIES PROGRAM SHOULD BE DIRECTED TO DR. DON V. AURAND, CHIEF, BRANCH OF ENVIRONMENTAL STUDIES AT (202) 343-7744.

Report to the UNOLS Advisory Council by the Subcommittee on Fleet Management Strategies and Mechanisms

I. Background, Nature of the Problem

The subcommittee was asked to review:

1. Current and alternative mechanisms for managing and operating the vessels of the UNOLS fleet and for funding and supporting that fleet.

2. Management strategies and mechanisms to match the UNOLS fleet to the needs of ocean science.

At the outset we agreed that there would be no substantive problem to review nor any need for our subcommittee were it not for the current mismatch between funding of research proposals and fleet capacity. There is not enough money to support more than a modest fraction of all well-reviewed ocean science proposals. The volume of seagoing "business" created by the few funded proposals is 10-15% short of full fleet utilization. Even a modest increase in the acceptance rate for first-class proposals would immediately generate full-utilization level of activity. Under these circumstances existing UNOLS machinery could and should continue to function well, as it has for many years. It is important to note that UNOLS has achieved a high - not perfect, but high - level of operating and scheduling efficiency and of equitable access to ships for all ocean scientists. Fine tuning is always possible, but significant changes are forced now only by the funding mismatch, which we assume will be a fact of life for many years.

Obviously the best solution is to decrease the mismatch by increasing both research and ship operation funding. We hope the community will redouble its efforts to do so. The remainder of this report is devoted to measures designed to cope with the mismatch assuming it to be a long-term constraint. We seek ways to do one or more of the following:

a. cut back the ship-day capacity of the fleet to coincide more closely with available ships support

b. use ship support dollars more effectively

c. ensure balance between science and ship support funding

Item c. is especially relevant to NSF. The broad objective must always be to maximize scientific productivity as a whole. Ships are a necessary means to this end; support of them must be weighed against support of other aspects of the ocean science enterprise. Such balancing is an ongoing problem.

II. Some partial solutions and first steps

There is no painless way to achieve the reductionist goals stated above. We have tried to isolate practical, realizable steps which combine progress toward the goals with bearable pain levels.

A. Consolidation of operating centers and personnel

There are currently 18 UNOLS ship operating centers. We believe that judicious consolidation and combination could reduce this number to 6 or 7, perhaps fewer. Economies would be effected by reducing redundant personnel (hopefully through retirement attrition rather than firing) and by shared use of expensive piers and shore support equipment. There

would be offsetting extra costs for some scientists to transport seagoing equipment and people to more distant operating bases.

The surviving operating bases should be selected for geographical distribution and for existence of significant support facilities and shore-based technical/engineering staffs. Fortunately the centers which fit the latter criterion are in fact well-distributed geographically.

Consolidation need not imply formal transfer of operating responsibility. It is possible to imagine interinstitutional agreements whereby at consolidated center X ships A, B, and C from institutions P,Q and R are based. Further consolidation under a single operating institution is possible and perhaps desirable, but not intrinsically required by the scheme.

Such consolidation would naturally foster and facilitate exchanges of marine personnel, and we suppose that interinstitutional agreements could remove any bureaucratic roadblocks. At hypothetical center X, if ship A faces a lean schedule, some of her crew could sail for a time on B, with minimal disruption to their lives. This sort of sharing is more difficult currently, when B is based in isolation at institution Q. Lay-ups of various durations should be more practical and less agonizing under consolidation.

NECOR has already made positive steps in this direction. We would encourage NECOR to proceed even further by developing imaginative plans for further consolidation, and would urge other regions to follow their lead.

The logical limit of consolidation is some sort of national operating unit. We balk at this idea. A UNOLS strength has been the close coupling of ships to operating institutions where seagoing scientists work; this should not be cast aside. Examples of highly inefficient centralized fleet operations in the United States are clear, and UNOLS should not fall into this trap.

B. Concerted efforts to retire ships, coordinated with fleet replacement plans

Short-term layups are not efficient money saving devices. One either pays substantial caretaker costs during the layup or pays substantial refurbishment costs at reactivation time. Only permanent retirements really cut costs dramatically.

Fleet replacement plans afford a good means to bring about retirements. As new ships are made ready old ones should be retired at a rapid enough rate (probably greater than one-for-one) to cause net savings.

A specific example of such a situation is now in the offing. NSF should urge the Navy, as it selects the operating institution for AGOR-23, to give weight to proposals which offer additional ship retirements beyond a single AGOR-3 class ship already stipulated by the Navy. This weighting could cause an institution to re-think its fleet and perhaps make a two-for-one proposal; it might also cause a group of institutions to band together to make such a proposal (consolidation?). In this manner the advent of a new ship can serve as a positive incentive to trim the fleet, and the method of trimming can be designed with care by the institution(s) that will live with the result.

"Retirement" of a ship of course implies only removal from the UNOLS list, not necessarily physical scrapping or sale. Nothing prevents such a ship from seeking alternate support.

C. Adoption of a two-tiered funding system for ship support

UNOLS should explore with NSF the possible economic consequences of altering the present funding machinery whereby almost all ship support funding flows through OCFS rather than through individual grants. On the one hand, large blue-water vessels almost certainly require the present mode of funding to preserve any semblance of stability and rational long-range expedition planning. Smaller ships, on the other hand, are better suited to function in the more volatile grant funding mode, a la current ONR practice. Layups are less technically difficult and disrupt fewer people. Non-federal use is a more realistic possibility for small ships than for large ones, so small ships can be more insulated from federal funding fluctuations. Small ships are more numerous; loss or layup of one small ship produces proportionately less disruption to national capability in its class than would be the case for loss or layup of a large ship.

If the NSF mechanism is restructured to support only a few large vessels (Classes I and II) by the existing process, leaving others to grant funding, we suppose that the user-operator "market" in small vessels would produce heightened competition, greater awareness of costs, and greater economies, as P.I.'s "shop" for ships. Obviously a shift in funds within NSF between OCFS and scientific programs would have to occur, and the quantification of this shift would be critical. The result ought to be to leave OCFS with sufficient funds to support a

stringently selected list of large vessels on a full-time basis. These ships are national assets of worldwide use to a broad spectrum of ocean scientists. The remaining funds would flow through grants, and costs of smaller ship use would be a legitimate part of a proposal budget, as currently happens at ONR. A corollary condition on the reduced big-ship system should be earlier submission of proposals so that ship schedules can be carefully constructed to avoid dead time. Transit runs on these ships should be exceedingly rare. Scientists wishing to use them in peculiar locations or times may have to wait for a while before an effective schedule can accommodate them.

Action on this suggestion should await the results of consultations with NSF, for clearly some internal changes at NSF would be involved, and these may have hidden ramifications. It is possible, however, to take three modest steps toward cost-consciousness, which is at the root of this suggestion:

1. Require all proposals to NSF to show costs of ship support (ship time, related technical support, equipment use fees, etc), even though these dollars now flow through OCFS. This will provide reviewers with total project costs and encourage awareness of the difficult science/ship support weighting that must be done.

2. Revise ship scheduling procedures to follow this sequence:

    a. Have data on all operational and related costs readily available

b. Ensure that the research proposal support is firm

c. Ensure that all operators are cognizant of all ship requests

d. Have a small group of agency and operator representatives prepare an efficient draft schedule

e. Finally convene a general operators meeting to solidify the schedule

3. NSF should use the spring panel to commit the great majority (70-80%) of ship support funds, so that orderly scheduling could begin sooner. Proposals involving ship use could still be accepted for the summer panel, but scientists would have a clear incentive to submit for the spring, since by summer the well would be almost dry.

III. Concluding remarks

Given our subcommittee charge, this is necessarily an extraordinarily gloomy document. None of us takes any pleasure in these recommendations. But it should be obvious to the ocean science community that if we do not frame our own remedies to the financial crisis, remedies will be selected for us by federal agencies. The results of such a non-decision on our part may well be even more melancholy and more disruptive to our seagoing science than facing the distasteful task ourselves.