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UNOLS NEWS

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HIGHLIGHTS

PARTING SHOTS FROM DSG
THE AC'S REVIEW OF THE FLEET
REALISM FROM OCFS

USER BEWARE

THE BULLETIN BOARD

THE EDITOR'S PAGE - YARNING IN THE LEE OF THE LONGBOAT - As I retire as Editor and councillor I can feel confident that UNOLS News is here to stay and that TOM MALONE, the new Editor and councillor, will keep things humming. Good luck Tom, I have thoroughly enjoyed the job. Before laying down the pen I will take advantage of the perquisites of editorship and throw a few stones at existing conditions. With the results of the most recent Ocean Science panels and directors' allocation of budgets, it must be evident that the ocean community is in a sad state. Enrollment is down and kids look elsewhere for career opportunity. New and junior investigators are feeling pain or loss of funds. Older hands are looking at interrupted programs, we are all being pushed and shoved to join consortia to push "Initiatives" while individual support diminishes at a compound rate. All bodes ill for the ocean community. Couple that with shortfalls in fleet support and the picture is grim indeed. Although the overwhelming concerns of UNOLS tend to focus on the fleet, it seems clear to me that we should shift our attention to the real base for the whole operation...the Ocean Sciences Research support. The fleet is well run, well overseen, well led and is simply a function of the OSRS in the first place. Fleet replacement and review is a housekeeping task that is ongoing...let's put our attention to the real problems. What does that involve? It means a concerted national effort to document and communicate our needs to the Congress, AND, it also means taking stock of the present budget allocation. What are the first priorities? Should there be limitations on certain budget items? Should we be continuing ocean drilling at the present level? How much should be sought for OSRS to bring the funding of proposals



to perhaps 35% of submittals which is probably enough to steady state the national programs? My guess is that reallocation of \$2-3 M of a 1985 total of about \$121 M could put us above the red line. What is the red line for a living ocean program? Are large national projects the way to go at the expense of individual investigations? Some big science is necessary and, in fact, the only way to approach some major questions, but is it healthier to keep a brake on that mode and preserve a balance between big and little? I am reminded of the growth of symposia in national convention programs which has some obvious negative effects when allowed to run free. How do we arrive at these answers? NSF has advisory panels and the recent long term plan is a product of this advice in conjunction with NSF staff input. But has this also produced damage control plans? Can UNOLS provide an alternative plan much as it provided the first hard-headed analysis of the fleet with the 1982 review, since updated twice? In this regard, the UNOLS Advisory Council is an elected body from the community working in the standing context of a chartered institutional association. Perhaps that body is better placed to provide an OSRS review and recommendations for reallocation of a steady state budget to meet the foundation needs of the community. Its worth the try.

D. S. Gorsline

We will miss Donn Gorsline at our AC meetings. In addition to his unique ability to organize our thoughts with the nimble use of chalk and blackboard, he manages to keep us from slipping into dreamland (and I suspect himself, there being certain limits to altruism) through rather incredible mime-like portrayals of the smiling Buddha. Thanks Don.

THE AC REVIEWS THE "COMPOSITION, DISTRIBUTION, AND MANAGEMENT OF THE UNOLS FLEET" (Excerpts from the report):

The report was written from our fog-shrouded vantage point in early 1985. The situation is not particularly alarming, and the report is not dramatic. On the other hand there are important problems in the fleet and with fleet management, and we hope the UNOLS community will give them serious, active attention. The Advisory Council welcomes debate about the issues we raise here, and we encourage you to comment on the report and take an active role in the continued examination of the fleet.

THE MARINE SCIENCE SCENE

Over the past five years the academic marine science community has experienced stress from the general economic condition of the nation and from competition with other sciences for resources. Analysis of the ocean science research budgets for the past 20 years show that the real inflation-corrected funding has been declining since 1972 and is now stagnant, if not still declining. At the same time this score of years has been a period of unparalleled advance in all sciences, particularly in the marine sciences which have changed radically our scientific view of the Earth by discoveries in every subdiscipline. These discoveries range from the plate tectonics model in marine geology to an explanatory physics for oceanic circulation. Matching these advances, and making them possible, has been parallel evolution of technology. At present, technology is changing faster than the ocean fleet (in the broadest sense of ships, buoys, satellites, and submersibles) can change.

Oceanography Funding in Federal Ocean Program

Yr	--IN CURRENT DOLLARS				C.P.I.	--IN 1967 DOLLARS--			
	TOTAL	NSF	DOD	DOC		TOTAL	NSF	DOD	DOC
67	61.5	24.8	28.6		100.0	61.50	24.80	28.60	
68	78.1	38.3	30.5		104.2	74.95	36.76	29.27	
69	78.4	34.9	34.3		109.8	71.40	31.79	31.24	
70	78.4	30.3	33.2		116.3	67.41	26.05	28.55	
71	101.5	49.4	32.1	19.7	121.3	83.68	40.73	26.46	16.24
72	119.4	65.7	30.0	20.5	125.3	95.29	52.43	23.94	16.36
73	109.9	57.3	27.3	21.5	133.1	82.57	43.05	20.51	16.15
74	116.1	61.1	28.4	19.7	147.7	78.61	41.37	19.23	13.34
75	124.1	65.7	27.7	19.5	161.2	76.99	40.76	17.18	12.10
76	128.9	65.0	31.8	19.8	170.5	75.60	38.12	18.65	11.61
77	144.6	73.8	31.8	23.5	181.5	79.67	40.66	17.52	12.95
78	157.6	78.9	37.0	26.9	195.4	80.66	40.38	18.94	13.77
79	172.9	88.8	40.4	28.8	217.4	79.53	40.85	18.58	13.25
80	207.3	97.5	45.5	40.2	246.8	84.00	39.51	18.44	16.29
81	218.9	95.0	53.8	42.9	272.4	80.36	34.88	19.75	15.75
82	172.2	104.9	18.1	20.7	289.1	59.56	36.29	6.26	7.16
83	179.2	107.8	20.1	20.5	298.5	60.03	36.11	6.73	6.87
84	191.4	127.8	13.5	21.1	313.4	61.07	40.78	4.31	6.73
85	222.5	138.5	20.9	29.3	325.9	68.27	42.50	6.41	8.99

Oceanography is entering a period of even stronger competition for finite funds. At the same time it is entering a period of rapid advances in the equipment that can be applied to ocean problems. We must sustain the valuable work in progress, and we must find the resources to employ the new technology which promises to reveal whole new orders of natural phenomena. Thus, UNOLS must look to maintaining a fleet of research vessels, to enhancing the capabilities of this fleet with new vessel designs, and to expanding its view to include satellites, seafloor installations, and other new systems.

One response of the oceanographic community to the financial requirements of this expanding set of opportunities has been the Long Range Plan of the Ocean Science Division (OCE) of the National Science Foundation. It was developed by OCE with advice from its Advisory Committee composed of active oceanographers. The plan examines the core programs and identifies initiatives for future support. It concludes that a core program will continue to be needed to provide basic support across the full spectrum of ocean sciences for a mix of small to large projects (\$10,000 to several millions per year). These will include single and multi-discipline projects and their associated equipment acquisitions.

Beyond the core programs, initiatives are developed in the Long Range Plan that should attract support from the national scientific leadership and from the government. These initiatives push beyond the present scale of ocean science in the U.S., and if they attract new funds, they will require modification of the UNOLS fleet and other oceanographic facilities in the not too distant future. The initiatives incorporate only two major scientific themes, a recognition of the interdisciplinary character of the most promising new lines of research. These are 1) Global Ocean Studies and 2) Ocean

Lithospheric Studies. Global Ocean Studies will be an attempt to achieve a fully integrated view of the fluxes and balances of water, energy, and biological and chemical species in the oceans and at their boundaries. New technical tools must be mustered and applied ranging from satellite remote sensing through genetic engineering. Lithospheric Studies will apply our growing capability in seafloor imaging and seismic analysis to provide a picture of the Earth at a new level of resolution. This will include submersible observation and sampling of a wide array of seafloor features, extended application of satellite geodesy, a seafloor seismic net, and other newly available techniques.

The draft of the Long Range Plan notes that just continuing the core programs will require overhaul and replacement of the present academic fleet with adjustments in number and types of ships in step with changing scientific needs. The new initiatives may or may not require increases in the size of the fleet, but they will certainly require that UNOLS and the oceanographic community generally begin to operate and manage an expanded array of equipment.

STATUS OF THE UNOLS FLEET

Since 1983 a number of changes have been made to the UNOLS Fleet which together result in a significant increase in capacity:

ATLANTIS II to submarine tending, supplanting LULU;
FRED H. MOORE added to UNOLS fleet;
ROBERT G. SPROUL as a replacement for E.B. SCRIPPS;
MOANA WAVE with stretch replaces KANA KEOKI;
OSPREY proposed as a replacement for VELERO IV.

These changes mostly have been initiated by individual UNOLS institutions and are not part of a coherent overall plan for the fleet. They add to fleet capability either by addition of new ship days or by replacing smaller ships with larger and more expensive ones. *The Council notes that while each of the changes considered individually results in a benefit to the UNOLS Fleet, and thus enhances our support of ocean science, they have resulted in alarming increases in costs.* Examination of operating days for the UNOLS fleet in the years 1982-1984 and of projected operations in 1985 (Table 3) shows that the growth in capacity cannot be fully utilized by demand that is backed by scientific project funding. *We are again in a situation where there is more ship capacity than we have the supported science to justify.*

In order to make up some of the gap between costs and available funds, agencies and operators have negotiated a part-year lay-up of the KNORR and a full year lay-up of the ISELIN. There is still an apparent shortfall of \$1.4M that is now being addressed by NSF and individual institutions. If further reductions in operations are still required in 1985, they will be less draconian than those already taken.

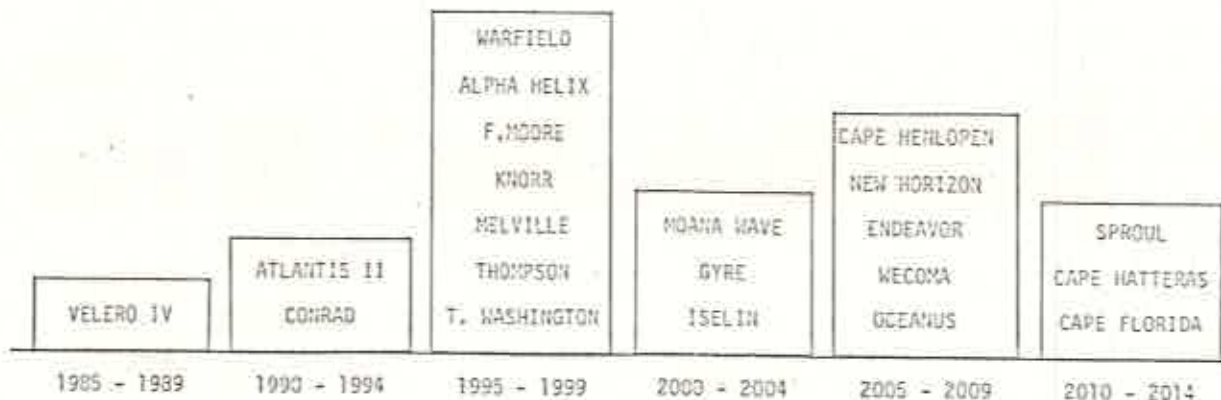
The Council estimates that about two ship-years of lay-ups will be necessary in 1986.

CONDITION OF THE FLEET AND OPERATIONAL PERFORMANCE

Hulls and Ship Systems

The 26 UNOLS ships range in age from 4 to 37 years. The median age is 15. All of the larger ships are over the median age, while all but one of the intermediate ships are less than the median age. The smaller vessels are evenly split. One small ship (VELERO IV) is clearly over the age at which maintenance becomes inefficiently expensive.

A listing of service life expectations based on a 30 year age criterion is presented below. This "Starting Point: should, of course, be amended by condition and effectiveness of the individual ships.



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

The ability to respond to changing scientific needs probably is the dominant concern with respect to fleet condition. Three of the larger ships are of the AGOR-3 Class which served as the basic design for AGOR's 3 to 13 and where minor variations in design attempted to keep up with changing scientific requirements. These requirements now have exceeded the capability of that class to fully respond. Most of the intermediate and smaller (Classes C and D/E) are newer and in more favorable situations, but one Class C and three smaller ships may be considered as inadequate to their current service. In all, 7 of the 27 UNOLS ships are less than optimal to meet ongoing or projected needs. These opinions are derived from ship inspection reports and reports by the operators themselves.

Review of these hull and science-support conditions indicates the following ships are candidates for replacement at the dates indicated:

- VELERO IV.....now
- MOORE1987
- BLUE FIN.....1991
- CONRAD.....1992

In terms of safety there are no significant deficiencies. Deficiencies found in the NSF inspection program were promptly corrected, and *the operators of the UNOLS fleet are to be congratulated on their responsible attention to safety.*

Scientific Equipment

The principal concern in this category is winches. Despite a recent upgrading program by sponsoring agencies, about half of the ships in the fleet have oceanographic winches which are inadequate to meet ongoing needs. Inadequacies include excessive failure rates, small size for typical applications, imprecision in spooling, and insufficient power. No winches now in service have ship motion compensation, which will be a requirement for many applications in the near future.

Related to winches is the wire and cable situation. The establishment of the UNOLS wire "pool" has been a significant step in assuring an adequate supply system and for obtaining reduced purchase costs. However, the quantity of cable now in the system is inadequate to meet our needs. Purchases to increase the available stock have been curtailed by a change in cable availability. The change is that the sole manufacturer of torque balanced wire rope, virtually required for modern oceanographic applications, is closing its operation without any immediate replacement. Eventually this situation may be corrected when the patents are transferred to a smaller manufacturer willing to produce for a specialty market, or when foreign sources develop. We must build our stock soon. The urgent attention of the agencies and UNOLS to this problem will be required.

Ship Performance - UNOLS Cruise Assessment Forms

Results from UNOLS assessment forms provide a more positive evaluation of the fleet than does the NSF-sponsored inspection by maritime experts. The forms reflect fleet performance from the user point of view. The forms also have been providing ship operators with direct interaction with users with regard to performance after completion of cruises. This has been particularly helpful in the case of users from institutions other than the operating institution. Comments from cruises in 1983 and 1984 have been generally favorable. Most problems encountered have been relatively minor, or at least repairs have been prompt and satisfactory. There were very few breakdowns of either hull systems or scientific support equipment that required termination or cancellation of cruises. The frequency with which users speak favorably of the ships crew, officers and marine technicians is impressive. Clearly the UNOLS fleet attracts capable maritime staff who participate in the spirit of seagoing science.

Filing of the cruise assessment forms is uneven throughout the fleet. The Advisory Council feels these forms are valuable, and we encourage both the ship operators and ship users to see that they are returned to the UNOLS Office.

The Advisory Council finds the current UNOLS fleet to be remarkably well operated and in acceptable material condition. The fleet supports today's ocean research, in spite of increasing demands on equipment due to the changing nature of investigations, advancing age of ships and an almost

inevitable creeping obsolescence. That the level of support provided by the fleet is acceptable is a tribute to the excellence of staffing, both ashore and afloat. This excellence of staffing is corroborated by user appraisals. None of the excellence perceived by users belies the problems demonstrated by the NSF sponsored inspections. The Advisory Council believes that the user forms partly reflect the expectations of the users. They know what the ships can and usually do provide, and they don't complain if they get it. That does not mean the fleet is all that the rapidly modernizing science of oceanography needs. *Improvements and replacements are becoming urgent.*

CONSIDERATION OF NEW FLEET MANAGEMENT OPTIONS

While the existing UNOLS ship operators are considerably more cost effective and scientifically efficient than corresponding operations within the Federal Government, there is still a need to examine the situation continuously so that operations keep pace with changing scientific needs and economic realities.

One way to look at the situation is to break down the fleet into several components, each of which may have a separate mode of management tuned to the scale of the respective operations. Consider the following categories:

- 1) A fire-engine or standby operational mode. That is, we could have some ships available on short notice to do scientific tasks that come up on an immediate basis and to handle overflow from the regular fleet. These ships would not operate with full, advance schedules.
- 2) Local or regional ship operations. In general, these may be smaller or intermediate ships that do not undertake world-wide cruises. They would be primarily used by scientists of the operating institution, though not restricted to that.
- 3) Deep-sea, worldwide ships with most operations including scientists from more than one institution.
- 4) Specialized facilities, of which the ALVIN-ATLANTIS II and JOIDES RESOLUTION operations are present examples.

Assuming we can categorize ships within the UNOLS Fleet in this way, then would we obtain improved management by doing so and developing a new management mode for each class? The specialized facilities already are characterized by tailored management, which involves planning of the scientific program and scheduling by a group of scientists representing the oceanographic community as a whole (or at least all of those with relevant interests). This process is monitored closely by the funding agencies to ensure fair and efficient operation. In effect, the price for assurance for continued funding is a tighter management scheme than for other facilities, and one involving individuals from outside the operator's institution. We note that these specialized facilities have only developed when broad support from the community as a whole has been essential to their initial funding or continued operation.

It may be timely to consider whether something like the system for specialized facilities should be applied to ships with worldwide operations.

A start on this has been made through formation of UNEPC, but perhaps it should be strengthened and given the same sort of relationship to the federal agencies as have the ALVIN Review Committee and the Deep-Sea Drilling Program. The Committee we envision would take proposals from all sources and put together the most efficient overall schedule for this class of ships as a whole. It would play a leading role in promoting expeditionary work according to region and routes. It would oversee the operation of this fraction of the fleet in a general way and serve to invigorate operations for scientific productivity.

WEST COAST SHIP SCHEDULING GROUP MEETING, MARCH 11, 1985 - The group met in La Jolla on March 11, 1985. Schedules as of March suggest moderate to heavy use for 1985 (see updates in report of May meetings later in this issue). Most ships carry a high percentage of not-yet-funded project days as is usual for spring. Pressure for Antarctic/Southern Ocean work has generated alternative schedules for some ships. ALPHA HELIX schedule looks stronger but has few winter requests. MOANA WAVE has a heavy schedule including work off South America, Gorda-Juan de Fuca area and in the western Pacific...a long ranging year. THOMPSON and BARNES seem to be fully scheduled at this report. WECOMA has 212 days scheduled. Work off Peru and Ecuador then northeast Pacific. CAYUSE has 119 days, regional work. VELERO IV will retire in mid-year and some equipment will then be transferred to OSPREY as she continues her conversion. MELVILLE and WASHINGTON have a total of 513 days. NEW HORIZON has 191 days in the Gulf of California and east Pacific. SPROUL will complete conversion and has 160 days scheduled off California. Cost estimates have declined since the October 1984 review. UNOLS is establishing a bulletin board that will show 1986 schedules. Some scheduling problems may be resolved when the word on funding is received in May. Some exchanges are arranged dependent on funding and availability in given areas. Winch and wire problems were discussed. The source for new 3 X 19 torque balanced wire remains a problem since U.S. Steel discontinued the line. New company has not yet started up production. Computer communication and input for keeping up an active, timely schedule were discussed and passed to the A/C for consideration and recommendation.

EAST COAST SCHEDULING GROUP MEETING, MARCH 15, 1985 - The group met March 15, 1985 in Washington, D.C. Schedules suggest heavy 1986 use although much uncertainty is present as is usual at this time. Cost projections are high. Significant readjustment seems likely as returns for proposals come in May. NSF staff reviewed budget projections (see elsewhere in this issue). No increase in supported ship use over 1985 is seen. GYRE has 237 days scheduled. Gulf and East Coast. MOORE has a very light schedule (58 days). ISELIN is laid up for 1985. CAPE FLORIDA has a schedule of 228 days South Atlantic Bight, Caribbean, Gulf. CALANUS has 160 days local. BLUE FIN is scheduled for 180 days all local. CAPE HATTERAS has 255 days, all funded. CAPE HENLOPEN has 201 days in central Atlantic coast. WARFIELD has 145 days. CONRAD has 338 days scheduled, central Atlantic, Caribbean and Pacific. ENDEAVOR has about 249 days, about 80% solid. KNORR has 196 days; ATLANTIS II will be in WHOI for maintenance end of 1985. 257 days operational in 1985. OCEANUS has 250 days. Some proposal exchanges were arranged. Likely that all funded proposals will be accommodated. Also noted the critical cable needs for 3 X 19 wire. Automated ship scheduling by computer also discussed.

ALVIN/ATLANTIS II SCHEDULE - The ALVIN Review Committee met on December 3, 1984 and issued a set of recommendations noted below: These will be reviewed again as discussion progresses in the community and with the funding agencies.

The ALVIN Review Committee, following the 1984 Long Range Planning Workshop in San Francisco, recommended a revised general framework for ALVIN operations for late 1985-1988. The Committee's recommendations are based upon two key considerations:

(1) The experience with an expanded (over 175 days/yr vs 150 dives/yr in previous years) AII-ALVIN operation during 1984 has clearly demonstrated that it will not be possible to extend the overhaul period from the current practice of once every 12-15 months to 36 months as had been planned for the next few years. It is now clear that safe and prudent operations require an overhaul after 300-350 dives, or every 24-30 months, particularly on a schedule that includes a significant number of dives exceeding 3000 m. Specifically, the Committee feels that an expedition to a deep, remote project area such as the Marianas, could not succeed without, first completing a major overhaul (3-4 months).

(2) The projected needs for the best possible program of deep submergence investigations for the ALVIN outlined by the investigators in the Letter of Intent process, and by the presentations given by research investigators at the ARC/UNOLS annual Long Range Planning Workshops in both 1983, and 1984, and as projected by the funding agencies (NSF/ONR/NOAA). Important ALVIN supported research has been proposed in the Atlantic as well as in both the eastern and western Pacific.

Therefore, the committee recommends to the funding agencies the following schedule for the period late 1985-1988.

- Complete the 1985 schedule for ALVIN as tentatively outlined in the schedule dated November 6, 1984.
- Conduct a full overhaul of ALVIN during the first 3-4 months of 1986.
- Conduct a modest deep diving program in the Atlantic during the middle of 1986.
- Conduct an expanded diving program in the Pacific (both eastern and western) in late 1986 and through much of 1987.

The Committee reaffirms its earlier recommendations for the several projects in the Marianas region, but must recommend that they be deferred to 1987. The Committee will entertain requests for additional projects throughout the Pacific for late 1986 and 1987.

The program for 1988 is open, and will be guided by ARC Long Range Planning Workshops. It should be noted that ALVIN will require an overhaul in mid-to-late 1988.

After their review meeting of May 6, 7, 1985, the ARC issued a PROSPECTUS outlining ALVIN long range planning and 1986-87 programs.

The ALVIN Review Committee (ARC) of UNOLS, in concert with the three funding Agencies (NSF, ONR, and NOAA), have established a policy that the ARC annually will prepare, publish, and distribute a PROSPECTUS ON ALVIN RESEARCH LONG RANGE PLANNING. This Prospectus outlines the interests, intents and tentative plans for the coming three year period.

The Long Range Planning activities of the ALVIN Review Committee are composed of five elements:

1. SOLICITATION OF LETTERS OF INTENT - In the Fall of each year, the ARC sends a letter to the full UNOLS mailing list inviting individual investigators to submit "Letters of Intent", expressing their interest in an ALVIN supported science program.

2. ANNUAL PLANNING WORKSHOP - The ARC hosts one or two Planning Workshops each year, usually held in conjunction with the AGU and ASLO winter annual meetings. The emphasis of the Workshop is on planning for the second and third outyears of ALVIN operations, or beyond.

3. ANNUAL ARC PLANNING REVIEW - The ARC holds a mid-winter meeting expressly for the purpose of reviewing the letters of intent and the substance of the proposals presented at the Workshop to determine the potential geographical areas of operations.

4. RECOMMENDATIONS FOR GEOGRAPHICAL AREAS OF ALVIN OPERATIONS - The Committee then makes formal recommendations for potential geographical areas of operations to the funding agencies and to the ocean science community. These are outlined in the Annual ALVIN Program Flyer, distributed widely throughout the Ocean Science Community every Fall.

5. DISTRIBUTION OF CURRENT OPERATING SCHEDULE - The ARC, in cooperation with the Woods Hole Oceanographic Institution, distributes (usually in the late summer or early Fall) the current year ALVIN/ATLANTIS II operating schedule.

A REVIEW OF THE 1986-88 AND BEYOND PLANNING

The invitations for Letters of Intent for 1986-88 and beyond were circulated to the ocean science community on November 1, 1984. By December 2, 1984, the Committee had received 47 letters of intent and interest, covering 13 general geographical areas. The areas proposed were:

- EPR/Galapagos/E. Pacific Seamounts
- Panama Basin
- Guaymas
- California Basins
- Gorda-Juan de Fuca
- Mariana Region/West Pacific
- General Pacific
- W. Florida Escarpment
- Blake Plateau/Puerto Rico/V.I.
- E. Coast Continental Shelf/Slope
- Mid-Atlantic Ridge

- N.E. Atlantic Ridge
- Amazon Fan

The Committee hosted a Workshop on December 2, 1984, in conjunction with the joint AGU/ASLO Winter Annual Meeting in San Francisco, California. The ARC, after the Workshop, reviewed the total suggested program of dives and requirements recommended by the Operations Group at WHOI, resulted in a series of recommendations for potential operations in 1986-88. The essential aspects for the 1986 and 1987 operating years are summarized below.

The 1986 and 1987 ALVIN Program

The ALVIN Review Committee recommends the following program for 1986 through 1987: After ALVIN overhaul (early 1986), conduct a modest deep diving program in the Atlantic in mid 1986, following by an expanded diving program in both eastern and western Pacific in late 1986 and much of 1987.

Subsequent to the December 1985 Committee Recommendations, operational considerations required that ALVIN undergo its normal overhaul several months earlier than had been anticipated. Therefore, adjustments were made in the Fall 1985 schedule, which were detailed to the academic community in a letter of February 27, 1985.

The details of schedules for requesting dive time for 1986 and 1987 are contained in the 1985 issue of the ALVIN Flyer. The program for 1988 and beyond is open, and will be guided by subsequent Long Range Planning Workshops, and by received Letters of Intent from individual investigators. It should be noted, however, that the ALVIN will require an overhaul in mid-to-late 1988. The projections for ALVIN overhaul are based on recent experience with the ALVIN/AII deep submergence diving system, particularly the increase in deep dives in excess of 3000 meters. It now appears that an overhaul will be required after 300-350 dives, or once every 24-30 months of operations. An overhaul requires 3-6 months.

The results of this planning will continue to include published schedules and information, solicitations, announcements of research opportunities and an Annual Prospectus. The ALVIN Review Committee is eager to hear your suggestions regarding planning and operations of the ALVIN/ATLANTIS II Program. Any suggestions or requests for information should be addressed to:

Chairman, ALVIN Review Committee
UNOLS Office, WB-15
School of Oceanography
University of Washington
Seattle, Washington 98195
Telephone: (206) 543-2203

To obtain information regarding ALVIN/ATLANTIS II systems capabilities, specific equipment, or other details in planning a potential scientific dive aboard the DSRV ALVIN, contact:

Barrie B. Walden, Submersible Program Manager
Woods Hole Oceanographic Institution
Woods Hole, Mass. 02543
Telephone: (617) 548-1400, Ext. 2407

JANUARY MEETING OF UNOLS ADVISORY COUNCIL - The UNOLS Advisory Council met at the Marine Sciences Institute of the University of California in Santa Barbara from January 21-23, 1985. Bruce Robison hosted the meeting and his hospitality was outstanding. The main work of the meeting was on drafting materials for the update of the Fleet review report. This has been discussed elsewhere in this issue. The progress of the CENCAL and OSPREY work was reviewed and some additional applications for membership were reviewed (see elsewhere in this issue). The A/C also briefly discussed the progress of the ship scheduling groups and how that process can be improved and reinvigorated. Some information was received on plans and policies of NSF, USGS and ONR. Interactions with the Federal Oceanographic Fleet Coordination Committee were reviewed by Ferris Webster. The Council also appointed an ad hoc panel headed by Bruce Robison to review interest in a Mid-Water Submersible Workshop and to propose plans for that workshop at a later meeting.

UNOLS FLEET SUPPORT 1986: REALISM FROM OCFS - Excerpts from a letter to UNOLS from Sandra Toye, Head, OCFS.

The outlook for fleet support for Fiscal Year 1986 is not encouraging. That is our annual prediction, and it is understandably tempting to shrug it off. But as everyone is aware, concern about the Federal deficit makes FY 1986 an uncommon year: budget reductions are in store for much of the Federal establishment. Furthermore, the political sensitivities surrounding budget and appropriations may result in continuing resolutions, vetoes, or other tactics which can compound the problem by adding months of uncertainty to the equation. At best, we expect level funding for the fleet in absolute dollars.

It's true, of course, that estimates in the early scheduling rounds are always based on extremely hopeful forecasts of success in project funding. Since the March round, the NSF Ocean Sciences Research Section panels have met, and many PI's and ship operators should now have more solid indications of the likelihood of support for proposed field programs. After all allowances are made, however, it still appears to us that no more than 20 or 21 ship years can be supported in 1986. We call on UNOLS to help find the most rational way to deal with that reality if it does come to pass.

Part of the "cure" lies in scheduling. Fully utilized ships get more science done for each operations dollar, especially in distant water operations. If layups are inevitable, it is better to plan for them than to be forced into a patchwork of last-minute partial layups which save little money and disrupt schedules for scientists and operators alike.

We see one particular area where schedules must be rationalized if the right mix of facilities is to be available -- the Western Pacific, Indian Ocean and adjacent regions in 1986-87. Following on the Indian Ocean, there are bodies of work emerging for the Red Sea and Gulf of Aden; another group of

proposals in the far southern oceans; and yet others, in the equatorial and northwest Pacific. This is the kind of situation UNEPC was created to handle, yet the March schedules show little evidence of integration in the thinking of the operators with an obvious stake in these plans. CONRAD, WASHINGTON, MOANA WAVE and THOMPSON schedulers need to sit down together and look hard at the real requirements. Any schedule which is still relying on new proposals, not yet submitted, for a major portion of next year's operations is unrealistic.

There are also larger questions about fleet management under the likely funding constraints -- questions which the Advisory Council and/or the membership should address. What should be our position on fleet expansion and fleet distribution under these circumstances? How can the community identify and protect those capabilities essential to the long-range health of the field? Do we need special deadlines or other administrative devices to handle the short term FY 1986 schedule and support decisions?

SPECIALIZED INSTRUMENTATION FACILITIES - Although UNOLS has had this topic as a regular agenda item and a role for one of the councillors for the past two years, there has been little movement. NSF now has this as one of the Advisory Board topics. Their role is more in the nature of establishing past developments and to establish some possible future facilities. Input from the community is needed here. As funds become tighter, cooperative utilization of major instrumentation facilities is a cost effective way to provide state-of-the-art facilities to the community. If you have some tentative plans or ideas pass them to Charlie Miller or Bruce Robison.

NSF OCEAN SCIENCES REVIEW - The following are abstracted from data from the Ocean Sciences Division of NSF.

BUDGETS	FY 1985 Current Plan	FY 1986 Request
OCEAN SCIENCES RESEARCH SUPPORT	\$ 58.1 M	\$ 59.9 M
OCEANOGRAPHIC FACILITIES SUPPORT	35.0 M	36.8 M
OCEAN DRILLING PROGRAM	27.6 M	28.8 M
	<u>\$ 120.7 M</u>	<u>\$ 125.5 M</u>

NSF provides 62% of the federal support for basic research in the oceans as calculated by a subcommittee of the Federal Committee on Atmosphere and Oceans. Total support declined 17% between 1980 and 1985. During that same period, NSF ocean science budget increased by 7%. Copies of the report can be obtained from Joe Bush, NOAA/PP, Rm 5813, HCHB, Washington, D.C. 20230.

NSF Ocean Sciences has reorganized its structure. The new Oceanographic Centers and Facilities Section (OCFS) combines Ocean Drilling and OPS as well as additional responsibilities for developing OCE programs in Ocean Engineering and Drilling Technology. Ocean Sciences Research Support (OSRS) has melded its previous structure in which parallel "IDOE" programs and OSRS programs now are combined to a simpler four part structure reflecting the major disciplinary areas. Bob Wall heads OSRS and Sandy Toye heads OCFS.

Target Dates for Proposal Submission are now as follows:

Target Date for Submission	Panel	Earliest Start Date
1 June	August	1 November
1 October	December	1 February
1 February	April	1 July

NSF Doctoral Dissertation Research Improvement Awards are being phased out this year.

OCE long range planning was noted in our last issue Vol. 2 No. 1, and their plan was adopted at the November meeting. Strategy for implementing the plan are being considered and begun.

NEW OFFICERS FOR UNOLS ELECTED AT MAY SEMI-ANNUAL MEETING - The following new officers were elected at the semi-annual meeting, joining carry over members of the A/C:

- Ferris Webster, re-elected Chairman, UNOLS
- Robert W. Corell, re-elected Vice Chairman, UNOLS
- John H. Martin, Advisory Council (Member Representative)
- Christopher N. K. Mooers, Advisory Council (Associate Member Representative)

USERS BEWARE - Representatives from UNOLS' institutions met during the May, 1985 UNOLS meeting to discuss the management of technicians and the use of shared equipment. The "take-home" message is that there is no standard scheme and it is unlikely that such a scheme will emerge in the near future. Technicians and their perceived roles vary from institution to institution. The kind of equipment available and the cost to the user also vary tremendously among institutions. This appears to be a matter of policy. So, user beware. We are functioning in a free market. Before requesting a particular vessel, for your proposed research, it is advisable to find out what comes with the ship (in the way of technical support and equipment such as CTDs) and how much it will cost... You will probably be surprised that what is standard fare at some institutions is an expensive option at others.

THE BULLETIN BOARD

UNOLS REPORTS - Several UNOLS reports may be of interest to some of our readers. They can be had from headquarters via letter to Bill Barbee.
SUMMARY REPORT OF UNOLS NATIONAL EXPEDITIONARY PLANNING COMMITTEE WORKSHOP
December, 1984.

DRAFT REVISED UNOLS SAFETY STANDARDS, January, 1985.

Your UNOLS Rep should also have these so try that person first.

KUDOS - It's impressive to see the almost unanimous praise for our UNOLS Fleet crews and techs in the cruise assessment forms. Looks like we are in great shape in that important area. Also...don't forget that cruise assessment reports are viewed by the UNOLS A/C and the summaries by the funding agencies. They are important and they are read where it counts. The very high standards of our ships are maintained as a matter of pride by all our Member Institutions but sometimes considered criticism is a necessary reminder.

CENCAL LIVES - The new Central California Cooperative Group has become a reality with the initial signature on the agreement. USC, USGS and MLML have signed and UCSB and UCSC are pushing the Board of Regents for their approval. This new group will provide better regional utilization of facilities and improves communication between Member Institutions with the same broad geographic area of interest. Naval Postgraduate School may also join and other institutions in the region are also eligible. More news on this new group will appear in future UNOLS NEWS issues.

SEISMIC REFLECTION FANATICS AND DEVOTEES ORGANIZE - The National Oceanic and Reflecting Profiling Group has met in Boulder with the blessings of JOI Inc. and is aimed at bringing profiling schedules into better coordination. The program may assume a role very much like the ALVIN Review Panel. West Coast, Gulf Coast and East Coast interest are represented. Greg Moore at University of Tulsa chairs NORPO.

SUBMERSIBLE USERS - We remind sub users that the Navy Initiatives noted in UNOLS NEWS Vol. 2, No. 1, provide for greater access to Navy research submersibles. Check with your ONR Rep or with the ALVIN Review Committee (Bob Corell).

NEW UNOLS MEMBERS - Sea Education Foundation and the University of Wisconsin-Superior have applied for Associate Membership and were forwarded, recommended for approval from the A/C to the UNOLS delegates. The two were approved at the May meeting.

INTERNATIONAL CRUISES: STATE REMINDS YOU TO FULFILL POST-CRUISE OBLIGATIONS - Department of State Bureau of Oceans and International Environmental and Scientific Affairs Notice to Research Vessel Operators #66 of January, 1985 discusses the problem of fulfillment of post-cruise obligations after cruises in foreign territorial waters. Fulfillment of post-cruise obligations -- or in some cases default -- has become a serious proposition. Failure to fulfill can, in some instances, lead to denial of permission to do subsequent research in a host country's waters. One investigator's negligence can cause grief to the whole community. Being good neighbors can reap benefits. Write to the Bureau in Washington, D.C. for copies.

1985 Schedules - Schedules for 1985 will be updated on the UNOLS bulletin board: SHIP.SCHED85. (Note that SHIP.SCHED84 will be discontinued.) Some relatively important changes have been made since October, 1984.

QUOTE OF THE QUARTER - I AM PRONE TO THE IDEA THAT WITH NOTHING EARTHSHAKING TO SAY WE SHOULDN'T GET OUT THE MICROSEISMIC POUNDERS AND MAKE UNNECESSARY WAVES WE WILL SAVE THE TECTONIC BIGGIES FOR TIMES THEY ARE NEEDED.