

UNOLS COUNCIL MEETING

National Science Foundation, Board Room 1235
4201 Wilson Boulevard
Arlington, VA

September 12-13, 1995

MEETING MINUTES

The UNOLS Council met on 12-13, September, 1995 at the National Science Foundation, Board Room 1235, Arlington, VA. The meeting was called to order by Ken Johnson, UNOLS Chair at 1:00 p.m. The participants are listed in [Appendix II](#) and the meeting agenda is included as [Appendix I](#). These minutes reflect the order in which items were addressed.

APPENDICES

- I. [Meeting Agenda](#)
- II. [Meeting Participant List](#)
- III. [Proposed Changes to the Research Vessel Safety Standards](#)
- IV. [ALVIN/ROV Proposal and Operations Summary](#)
- V. [1996 Intermediate Ship Schedule Timelines](#)
- VI. [1995/1996 Ship Costs](#)
- VII. [RVTEC Meeting Agenda](#)
- VIII. [POLAR DUKE Replacement Plans](#)
- IX. [USCG Polar Icebreaker Schedule & Ice Operations Overview](#)
- X. [AGOR 24/25 Construction](#)
- XI. [New Horizon Mid-life Refit](#)
- XII. [1995 Telecommunications Bill](#)

ACCEPT MINUTES: The minutes of the 24-25 April, 1995 [Council Meeting](#) were accepted as written.

COMMITTEE REPORTS

RESEARCH VESSEL OPERATOR'S COMMITTEE (RVOC) - Mike Prince, RVOC Chair, reported on plans for the 1995 RVOC Annual Meeting scheduled for 24-26 October in San Diego, CA. Scripps will hold this year's meeting. The first day's agenda will include reports from the committees, agencies and operators. Medical Health Systems has been invited to report on activities over the past year. George Ireland will report on regulatory issues. Dennis Nixon will provide an update on liability and insurance issues. The second day of the meeting will include a tour of Scripps's Marine Facility. Mike reported that a white paper on the benefits of the UNOLS fleet is being developed by Paul Ljunggren, himself and Jack Bash. A draft of the paper will be reviewed at the RVOC meeting. Other items to be addressed at the meeting include: Post Cruise Assessments, crew training, increasing shipboard safety awareness, MHS pre-exam, physical exam standards and home pages for UNOLS Operators. A tour of the MBARI swath currently under construction at SWATH Ocean is being arranged for Wednesday afternoon. If possible, a tour of KAIMALINO will also be arranged. The third day of the meeting will be devoted to roundtable discussions by the operators. A small diving workshop is being scheduled for Monday, October 23rd preceding the RVOC meetings. Mike reported that over the past two years, the RVOC Safety Committee

has been reviewing the Research Vessel Safety Standards (RVSS). The current standards were approved in 1992. A review is required every three years. The committee has proposed a number of changes, see [Appendix III](#). The changes mostly reflect regulatory updates that have come into effect in the past three years. Other changes include corrections to wording. An appendix has been added which provides guidelines for chartering non-institutional vessels by UNOLS institutions. Mike provided the Council with an executive summary of the changes for their review and discussion later in the meeting.

DEEP SUBMERGENCE SCIENCE COMMITTEE (DESSC) - Mike Perfit, DESSC Chair, reported on the Committee's activities along with a summary of ALVIN and ROV operations. In 1995, ALVIN is scheduled to complete 177 dives which relates to 317 ATLANTIS II operational days. This year to date, ALVIN has completed 130 dives and operations on the whole have been very successful. ALVIN will complete its 3000th dive during the week of 18 September in Juan de Fuca.

In 1996, ALVIN/AII operations are faced with a number of uncertainties: 1) uncertainties in scheduling, 2) ALVIN's overhaul schedule, 3) the ATLANTIS II certification, 4) fiscal and operational constraints, 5) widely geographically dispersed requests for science operations and 6) the retirement of ATLANTIS II at the end of 1996. In 1996, 128 dives are proposed with only 47 currently funded and the remaining 81 pending, see [Appendix IV](#). Although 1997 is anticipated to be a light operating year, there is still some funded work in the Southern and Northern East Pacific Rise. Mike presented a time line of ATLANTIS II's 1996 operations.

In 1996, there are three, possibly four, programs planned for the ROV facilities, JASON, AMS120 and Argo II. The three programs have operations on the Mid-Atlantic Ridge, Juan de Fuca, and Southern EPR. Interest in 1997 for ROV facilities is high with nineteen programs currently in the planning stages, see Appendix IV. Mike continued by reporting on issues that were discussed at DESSC's spring meeting. The DESSC supported the concept of ATLANTIS as the ALVIN handling platform. ONR had reported at DESSC's spring meeting that initial reports were positive that ATLANTIS could be modified to handle ALVIN. A NAVSEA study indicated that this would be feasible, cost would be reasonable and ship construction schedules minimally impacted. Halter shipyard has been tasked to scope out the project and provide a cost estimate. DESSC hopes to see ALVIN operational down time to a minimum during this transition phase.

A proposal for navigation upgrades is being developed and should be submitted soon. Other upgrades are currently in progress for the ROVs including improvement to manipulative capabilities. A study on submersible batteries was recently performed. The study examined the bottom time capabilities of ALVIN over past years. A slight downward trend in available battery time was observed. A comparison of batteries currently in use by other submersible operators was performed. Presently, the other batteries in use are considerably more expensive than those used on ALVIN and the additional bottom time achieved would not justify the additional cost for use on ALVIN.

In June, the agencies indicated that they continue to be very supportive of the National Deep Submergence Facility (DSF). However, the future funding picture is very unclear, especially for NURP. DESSC emphasized to the agencies that they consider re-establishing a Memorandum of Agreement for the DSF very important.

Two new members have been nominated for DESSC. Additionally, Karen Von Damm recently submitted her resignation from the committee, due to her new responsibilities as Chair of RIDGE. Lastly, Mike announced that the next DESSC meeting is scheduled for Sunday, 10 December, immediately preceding the AGU Conference.

FLEET IMPROVEMENT COMMITTEE (FIC) - Chris Mooers, FIC Chair, reported that the

committee continues in their efforts to investigate coastal zone research facility needs. They believe that orderly planning is needed since it can take up to ten years from the beginning of planning until a vessel is actually on line. Chris believes planning is best done by working through consortia that cover the various coastal regions. He reported that he has been polling the agencies to get an indication of what their future coastal research needs will be. NSF and NRL have indicated that large ships may be capable of meeting many of the future coastal research needs. Chris will continue to get input from other agencies. Chris reported that MARCO has proposed a workshop to NSF on identifying coastal vessel needs for their area.

Additionally, Duke has submitted a letter to NSF requesting authorization for a study to stretch CAPE HATTERAS.

FIC is involved in a number of studies. A study on vans is in the process of having final comments incorporated. A study on safety responsibilities aboard UNOLS ships is nearing completion. Bob Dinsmore is preparing a Primer on small boats. As part of the Primer, an inventory of small boats is being compiled on the World Wide Web. Ten geographic regions have been established and a point of contact for each area identified. FIC is also involved with RVOC in reviewing the Post Cruise Report objectives. Chris continued by reporting on the summer FIC meeting in Seward, Alaska. Guests to the meeting included a representative from NOAA's NOS program and a representative from Navy's CNMOC office. The purpose of them attending the meeting was to explore mutual interests in collecting data from UNOLS ships. Chris concluded by announcing that there will be a session at OCEANS 96 MTS/IEEE focusing on coastal ocean science. The meeting will be in September in Ft. Lauderdale.

SHIP SCHEDULING MEETING (SSC) - Don Moller, SSC Chair, reported on the results of the Ship Scheduling Meeting and Review held on 11 September just prior to the Council Meeting. Many of the scheduling issues had been resolved prior to the meeting. NSF funding decisions were made early this year as a result of their earlier submission deadline of February. Additionally, many funding decisions for major ONR programs had been decided early in the year. Communication between the operators has been good. On the whole, proposal pressure for 1996 is low. There is only one cruise that remains unscheduled, but most likely will be accommodated. This is a GLOBEC cruise. All the large ships need to return home from the southern oceans in 1996. Additionally, they were faced with a number of scheduling constraints: transferring OBSs, scientific party boarding and coordination with the scheduling demands of the Fiber optic systems. The schedulers did a good job at economizing on transit times and accommodating science programs. There is concern over the status of KNORR's SeaBeam capabilities. The first two 1996 cruises on KNORR will depend on the SeaBeam operating properly.

The intermediate ship schedules in the northeast Atlantic are closely coordinated, see [Appendix V](#). These include DOE work on the global ocean program, ONR's Coastal Mixing and Optics and the NSF/NOAA GLOBEC program. As a Class, the intermediates, with the exception of SEWARD JOHNSON, will not be operating to their optimum capacity. There is concern over the status of federal funding in 1996, particularly NOAA/NURP funding. A few ships will depend heavily on NOAA/NURP work. The ship scheduling meeting concluded with a presentation by Robert Hinton on electronic transmission of ship time requests, form 831.

[Appendix VI](#) is a comparison table of the Fleet operating days for the years 1994 to 1996. Don concluded his report by presenting ship costs for 1995 and 1996. These numbers reflect the budgets the operators feel necessary to support the scheduled operations.

RESEARCH VESSEL TECHNICAL ENHANCEMENT COMMITTEE (RVTEC) - Rich Findley, RVTEC Chair, reported on the Committee's upcoming annual meeting to be hosted by Moss Landing Marine Lab in Monterey, CA on 16-18 October. Participation by all UNOLS institutions with technician

programs is strongly encouraged. Rich reviewed the meeting's tentative agenda, see [Appendix VII](#). The first morning of the meeting will address general business. Elections will be held for the Vice Chair position. A technical session on dissolved oxygen is planned. The Data Standards Committee will report on the status of their activities to be followed by a half day workshop on data standards. A report from the Equipment and Database Subcommittee is scheduled. They will address home pages on the WWW along with searchable data bases. Other items on the agenda include Chirp Sonar, safety in handling over-the-side equipment, and review of UNOLS forms. A representative from the Navy's CNMOC program will be invited.

GUEST SPEAKER - Al Sutherland, NSF Office of Polar Programs: Al Sutherland, from the NSF Office of Polar Programs, provided the Council with a presentation on the acquisition of the replacement ship for POLAR DUKE. View graphs of Al's talk are included at [Appendix VIII](#). POLAR DUKE's contract is coming to an end. Congress dictated that the ship's replacement would be U.S. Flagged. This did not rule out re-contracting POLAR DUKE if this ship went through the re-flagging process. Three competitors offered bids. Edison Chouest Offshore was selected on 18 April based both on technical and price issues. The ship will be delivered in June 1997 in Louisiana. The name of the ship will be L. M. GOULD, named after a famous Antarctic explorer, educator and university president. Dr. Gould server as chief scientist under Admiral Byrd.

GOULD will be built to ABS-A1 class. It will be 230 feet LOA with a beam of 46 feet and a draft of 18 feet. The gross tonnage will be 1599 tons. A variable pitch propeller with kort nozzle will be driven by a 4200 BHP engine. The ship will have accommodations for 44 persons. With a planned crew of 14 this would permit 30 scientific berths. The ship is expected to be operated similar to POLAR DUKE with both research and supply being its mission. Living areas and labs will be located above the water (ice) line. The contract with Chouest is for a five year term with a ten year option at \$4.5M to \$5M per year. An estimated operating day rate of \$17.5 - 18 K is planned.

AGENCY REPORTS

NATIONAL SCIENCE FOUNDATION - Don Heinrichs provided the report for NSF starting with personnel issues. Mike Purdy is expected to take over the job of Director, Ocean Science Division in late September. Lisa Rom is on professional development leave at U C Berkeley. She will be working 50% of her time for NSF technician program. Mick Devin, a Sea Grant Intern, will be the on site contact for the technician program.

The NSF budget for 1996 is expected to be 1% below the 1995 budget. In 1995, OCE received \$193.4M. The final numbers will not be known until the Senate/House conference has been completed. NSF is expecting to be told to reduce the Foundation by one directorate. Special projects include the discussions on potential changes in the UNOLS fleet. NSF is working with ONR on this issue to provide an agency perspective. The Ocean Studies Board is being considered as a possible forum for the evaluation of UNOLS.

The Arctic Research Vessel planning status remain the same. The GAO report said that there was not a demonstrated need for the ARV. The National Academy study is to be briefed to NSF and the USCG in early October and the completed report published before the end of October. NSF will seriously look at the recommendations of this report. Don reported that Tom Pyle has been named the new Arctic Section Head for OPP.

OFFICE OF NAVAL RESEARCH - Jim Andrews reported that ONR Research Facilities is anticipating level funding for 1996. They are revising the algorithm for funding ship time from 55:45 to 80:20 facilities to science funding. This is designed to encourage more ship use. The CNO Executive

Board made a series of proclamations with regard to oceanography. The CEB recognized that the Navy has a fundamental interest in the ocean and oceanography not shared by other agencies. The Navy will, therefore, continue to emphasize support for ocean research. Although the Navy has been emphasizing coastal science, they do not want to ignore blue water oceanography. They have set their priorities at 70% littoral, 60% blue water with a 30% overlap of the two regions. Additionally, they will not allow the funding for ONR ocean science to fall below the 1996 baseline funding. Additional initiatives are still being worked out, however, they are expected to include the revitalization of Navy Chairs. Finally, NAVOCEANO is exploring the option of using Navy ships for their survey work. No money has been identified for this future work, but they are hopeful to have a test program on a UNOLS ship in 1996.

The budget and schedule for converting AGOR-25, ATLANTIS, to a submersible handling ship should be available from Halter Marine by the end of September. ONR and NSF will work towards a quick decision. At present the assumptions are that it will be feasible. Sujata Millick was hired in the spring to work in the ONR Research Facilities Program. Sujata is currently working for the Senate Appropriations Committee and will not be able to work full time at ONR until the DOD appropriations are signed.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) - Captain Martin Mulhern reported on present activities, recent changes, and the budget picture for the NOAA fleet. Construction of the NOAA AGOR, named RESEARCHER, is on schedule and proceeding well. Delivery is expected in August 1997. The NOAA AGOR is the fourth in the "THOMPSON" class. Marty noted that NOAA has benefited from close cooperation with the University of Washington, Scripps Institution of Oceanography, Woods Hole Oceanographic Institution, and NAVSEA, as well as the shipyard's experience in constructing the other ships in the class.

Conversion of a U.S. Navy T-AGOS ship to support oceanographic mooring operations and related research is underway, with delivery scheduled in early spring, 1996. Home port will be Honolulu, and the ship will be named Ka'Imimoana. Also underway are repairs to extend (RTE) the life of the fisheries research vessel DELAWARE II. The NOAA Ship MALCOLM BALDRIGE is deployed along with a number of UNOLS vessels in the Indian Ocean, to provide support to WOCE, OACES, JGOFS, and other programs. The BALDRIGE is operating extremely well. Last year, new evaporators and ship service diesel generators were installed, and several years ago a shaft alignment problem was completely resolved. The BALDRIGE will return to the U.S. in February 1996. By the end of September the NOAA Ships SURVEYOR, MT MITCHELL, and HECK will be taken off line, joining the already inactive OCEANOGRAPHER, FAIRWEATHER, and DAVIDSON. Plans for disposal are temporarily on hold while regulations concerning PCB's are investigated. Excluding the permanently inactive ships listed above, by October NOAA's fleet will include a total of 18 ships: the T-AGOS ship now in conversion, two T-AGOS ships that are temporarily inactive, plus fifteen other active ships. In the future NOAA expects to utilize both university-operated and private sector ships to a larger degree. Continued vigorous cooperation between NOAA and the academic community is expected, with healthy cooperation being a "2-way street".

UNITED STATES COAST GUARD (USCG) - Captain Alan Summy made the USCG presentation using a series of view graphs which are included as Appendix IX. Captain Summy reported that the USCG budget was to decline 20% over the next four years, however, they expect 100% funding in 1996 for operating, maintenance, acquisition and construction funds for the Polar Icebreakers. No science missions have been requested for 1995 or 1996. A mission has been proposed for 1997. An International agreement has been worked out with the Canadians that would grandfather ships with CASPPR compliance if they are launched prior to 31 December 1998. HEALY is scheduled for launching prior to that time and will be exempt from the new CASPPR requirements. HEALY is on track for construction starting next year. HEALY's home port has not yet been decided. Ports under consideration include Boston, Norfolk and Charleston on the east coast and Seattle on the west coast. A shore side staff of 65-

70 will be in support of HEALY. The cost for science use of HEALY is estimated at \$16-20K per day. This includes 60% of the helicopter cost, 40% maintenance and 100% fuel. Characteristics of HEALY are included in [Appendix IX](#).

DEPARTMENT OF STATE (DOS) - Tom Cocke provided the Department of State presentation. Tom's office has seen an increase in requests for foreign clearances by 15 to 20% to now about 400 per year. Half of the clearance requests are coming in late. Participation by the foreign state scientists has been increasing. Tom reported that the Indian Ocean clearances have been working well. Brazil clearances seem to be less of a problem. The number of requests for Mexico have been decreasing. Tom will be going to Mexico this year in an effort to improve clearance procedures with that country. Two clearances were received from Russia this year which is an improvement.

OCEANOGRAPHER OF THE NAVY (OON) - The OON report was presented by Pat Dennis. The Navy's modernization program is winding down. The program will stabilize out at eight survey ships. Two TAGS ships (60 and 61) have been delivered but are not operating as a result of a transformer problem. The third ship is ready for delivery and the keel for the fourth is scheduled to be laid. The Navy has an option on two additional TAGS 60 class ships, however, instead of constructing the sixth TAG, OON may receive the USNS WATERS. USNS WATERS, built as a cable layer, if transferred to the OON would be converted to a survey ship. Cost of conversion is estimated at \$7M.

NAVOCEANO is planning on a modest use of UNOLS ships in 1996. This could expand in the future and supplement the activities of OON's eight core ships.

UNOLS ISSUES

Potential Changes on the Horizon for the UNOLS Fleet - Peter Betzer chaired an ad hoc committee to examine the "Potential Changes on the Horizon for the UNOLS Fleet". Included in his committee were: D. Hayes, R. Knox, C. Mooers, R. Pittenger and R. Wall. The committee developed a draft paper to address the issue of declining funding and an excess of ship capacity.

They responded to the following charge.

1. Review the budget projections of Don Heinrichs for UNOLS ship operations, giving special regard to the possible expanded participation of supporters/users, other than NSF (i.e. ONR, NRL, NOAA, USGS, MMS, DOE, EPA and NASA);
2. Within reasonable budgetary assumptions, assess a general model for the UNOLS Fleet requirements for supporting science. This assessment should be based on the model the UNOLS Fleet Improvement Committee projected for the year 2000 but modified to more accurately reflect current status and updated projections;
3. If any imbalance exists between requirements and resources, offer suggestions as to how we might best reconcile the mismatch? (i.e. increase the user base, reduce the fleet, and/or go to different modes of operation);
4. What UNOLS operational/fiscal changes would work best for the U.S. oceanographic community;
5. Could fleet realignment lead to a more effective use of our ships? If so, what are the particular criteria that should be used to evaluate the merits of shifting sea-going assets.

Fleet operating costs projections were provided which included the new ships that would be coming on-line. Funding available projections were also provided from information collected from the agencies. Considerable discussion followed. The ad hoc committee listened to many suggestions which would be used in updating and revising the draft report. A completed report will be ready for the next Council meeting. One conclusion of the report was to expand the user base. This was non-controversial and

considered an immediate action item.

Customer Satisfaction Survey - The Fleet Improvement Committee mailed out surveys to 325 recent UNOLS ship users. These surveys asked questions about the quality of service of the UNOLS fleet. Approximately 20% of the surveys were returned. A summary of the results was included in the UNOLS Newsletter. In general the results were very good. Chris Mooers explained that there were, however, problem areas that were being addressed. The most significant problem was in the post cruise assessment reporting. Several respondents suggested this report was not effective. The FIC is working with the RVOC and RVTEC to improve the reporting procedure. A new assessment form is under development and the need for the operating institution to respond to each assessment was stressed.

Assessment Reports - Mike Prince presented a draft for a new assessment report. The format should be easier to complete and better to extract statistics for analysis. The Council discussed the draft and made suggestions. RVOC was tasked to work with RVTEC and provide a final draft for the next FIC meeting which would then be forwarded to the Council for approval.

Internet Update - At the scheduling meeting, Robert Hinton displayed UW's homepage with an electronic version of the ship time request form (form 831). The UNOLS Office is in the process of exploring methods for putting the ship time request form on internet so that it will be accessible to all operators and ship users

White Paper on Regional Consortia - Chris Mooers, Chair of the FIC, distributed to the Council a draft "white paper" on regional consortia. Chris has been receiving input from various FIC and Council members and will continue work on the draft. Chris is also collecting MOA's from the existing consortia. A revised draft of this paper will be mailed to the FIC and Council membership for review.

New Ship Construction - Dick Pittenger reported on construction of AGOR 24 and 25, see [Appendix X](#). Much was learned from the construction of THOMPSON and many of its design deficiencies have been corrected on REVELLE and ATLANTIS. Construction on ATLANTIS is progressing ahead of schedule. Delivery is planned for April 1997. Halter shipyard is performing a study to determine cost and schedule impact of converting ATLANTIS to a submersible handling platform. Shipyard representatives have visited LANEY CHOUEST and ATLANTIS II to examine their handling systems. Results of the study are expected by the end of the month. Bob Knox showed a video of the REVELLE launch and presented a momento to Annette DeSilva in appreciation for her efforts at ONR during design and construction of the ship.

Mid-life Refits - Mike Prince reported that a mid-life refit for POINT SUR is on hold for a few years until there are adequate funds and time. However, an extended overhaul has been requested for early 1996.

Bob Knox reported on the proposed mid-life refit for NEW HORIZON for 1996, see [Appendix XI](#). The proposal is straight forward with plans to correct long standing problems. The areas to be examined include: stability, payload versus endurance, operational maintainability and improved habitability. The ship will be grandfathered in regard to admeasurement resulting in a savings in funds. The mid-life is scheduled to begin late this year and proceed through the early months of next year, but is contingent on funding. Scripps plans to cost share the mid-life with NSF on a 20/80 split (Scripps:NSF). This is based on the percentage use of the ship by State and Federal agencies.

A stretch of CAPE HATTERAS is being considered by Duke/UNC. Funding to perform a study on the stretch has not been identified.

MARCO's proposal for a Coastal Workshop has been submitted to NSF and is under review. The

workshop will study the needs for a coastal vessel in the Mid-Atlantic region.

Arctic Facilities Committee/Science Committee for HEALY - Cindy Lee, Tom Royer and David Karl were on an ad hoc committee to assess the need for a UNOLS Committee to champion Arctic facilities. Cindy reported that the committee believes that UNOLS should have a standing committee and that this committee should be concerned with all polar research facilities needs. HEALY would be one issue among many. Chris Mooers advised the Council that FIC was communicating with the Coast Guard about an advisory committee for HEALY. He is working with the Coast Guard on terms of references for an oversight group and considering possible candidates, however, funding to support the committee is an issue. Discussion followed. It was decided to wait for the National Academy report on the Arctic facilities before proceeding. A small interim working group is to be established to work with the Coast Guard and address HEALY issues while laying the ground work for a UNOLS Committee.

Nuclear Submarine For Oceanographic Research - The SOONS update report is not moving along due to a lack of a major sponsor. Ken Johnson will contact Lloyd Keigwin to see if he needs assistance completing the report.

Radio Operator/GPS - Dick Pittenger is continuing his efforts to get UNOLS' large ships exempt for the requirement to carry a Radio Officer. The exemption may get passed this year. A copy of the 1995 Telecommunications Bill is enclosed as [*Appendix XII*](#).

P-Code GPS is now operating on the vessels operated by Scripps, University of Washington and WHOI. Efforts to get P-Code access for University of Hawaii, URI, OSU and LDEO are underway, but facing a lot of red tape.

Research Vessel Safety Standards - After review of changes to the Research Vessel Safety Standards, the Council made a motion to approve the standards as amended with the additions of "hazardous" and "where appropriate". This was in regard to a section addressing chemicals carried aboard a vessel. Rather than identifying all chemicals it was recommended that "hazardous" chemicals along with their neutralizing agents be listed where appropriate.

UNOLS Council Membership - The Council membership slate was presented for Council review. The slate will be voted on at the Annual meeting.

UNOLS Committee Appointments - Chris Mooers announced nominations for three FIC members: Larry Atkinson of ODU would replace Don Wright. Bess Ward of UCSC would replace Tom Royer and Tom Weingartner of University of Alaska will replace Ken Johnson.

The Council approved the nominations.

Mike Perfit announced two nominees for DESSC. These are Cindy Van Dover, West Coast Science Director for NURP, and J.C. Sempere, a geophysicist with expertise in remote sensing and deep towed vehicles. The Council approved the nominations.

Annual Meeting - Ken Johnson reported that the Annual meeting will follow the Council meeting. No changes to the tentative agenda were noted.

Calendar for UNOLS Meeting - NAVOCEANO has invited UNOLS to host their winter meetings at Stennis, MS. The Council meeting could be scheduled during the same week as FIC. A visit to Halter Marine Inc. could also be arranged. Jack Bash will poll the Council to determine a convenient date.

The meeting was adjourned at 5:15 p.m.

