

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

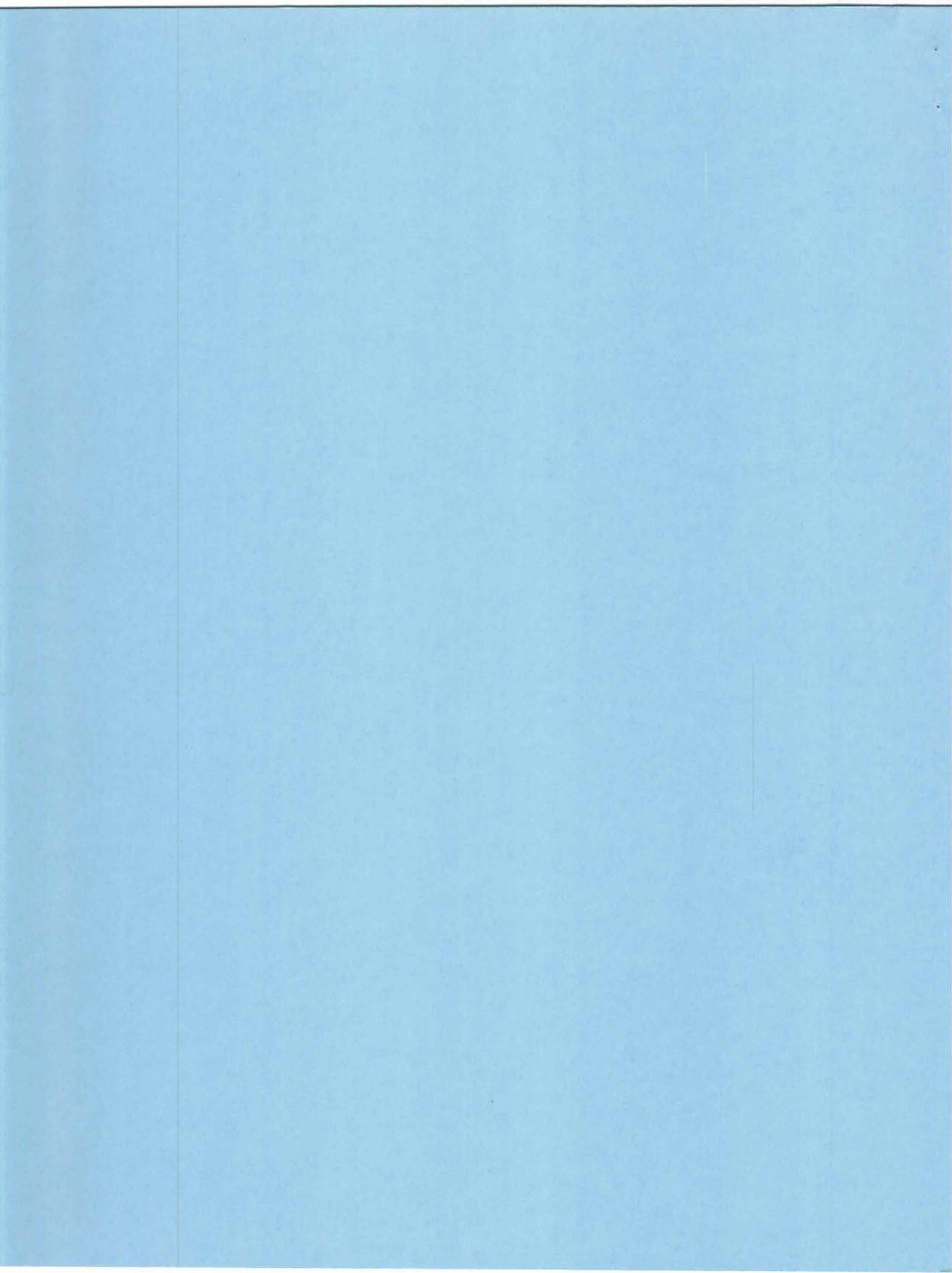
**UNOLS  
FLEET IMPROVEMENT  
COMMITTEE**

**MEETING REPORT**

**October 3, 1994**

**Lamont Hall  
Lamont-Doherty Earth Observatory  
Palisades, NY**





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The UNOLS Fleet Improvement Committee met in Lamont Hall at the Lamont-Doherty Earth Observatory, Palisades, New York on October 3, 1994. The meeting was called to order at 9:30 AM by the FIC Chair, Marcus Langseth.

**Meeting Participants**

**FIC Members**

Marcus Langseth, Chair  
Peter Betzer  
Joe Coburn  
Eric Firing  
Ken Johnson, UNOLS Chair  
Chris Mooers, Chair Elect  
Tom Royer

**Participants**

Jack Bash, UNOLS  
Martin Mulhern, NOAA

**APPENDICES**

- I. FIC Agenda
- II. Draft Science Mission Requirements

**GREETINGS AND MEETING LOGISTICS** - Marcus Langseth welcomed the Committee to Lamont and discussed the logistics of the meeting.

**APPROVAL OF MINUTES AND MEETING AGENDA** - The minutes for the March 17-18, 1994 FIC meeting at University of Hawaii were approved as written. The meeting agenda, *Appendix I* was accepted as presented. New members Suzanne Strom and Bob Detricks and well as Don Wright were unable to attend this meeting.

**UNOLS COUNCIL REPORT** - Ken Johnson provided the committee with a brief outline of the Council meeting that had been held in Washington, D.C. 19 September. Ken reported that GAO is studying the funding alternatives for the Arctic Research Vessel and has expanded their study to include evaluating all Arctic research assets.

NSF is requesting the Ocean Studies Board to provide a blue ribbon panel type study to provide the rationale for the ARV. This is necessary to compete for funding of major assets in the NSF budget. UNOLS is planning to work with the ARCSS OAI Science Steering Committee at the Baltimore AGU in establishing coordination procedures for Arctic assets. UNOLS has been talking with the USCG concerning ways the scientific community can provide input and advise to enhance the science capabilities aboard their icebreakers. UNOLS is particularly concerned with their new ship HEALY. It was decided that a letter should be written to the Coast Guard to express our interest and concern.

Ken reported that the UNOLS ship scheduling for 1995 suggested an operational need for over \$49M while the budget will provide about \$46M. The University of Miami is exploring three options for ISELIN. The first option would be to rebuild the ship as a coastal research vessel. This option would require additional funds. The second option would be to repair the ship to its previous configuration. This could be accomplished with the insurance money. A third option is to not repair but retire the ship. Once the inspection for repair needs is completed the costs at the shipyard will not be covered by insurance so an early decision on their options is expected.

The UNOLS Council discussed the importance of a stable crew. This is not only good for science but is a safety factor. The Council plans to revisit the over capacity issue in the fleet.

Ken reported that there would be changes on the council with the election of Bob Knox and Cindy Lee. In addition the chairs of both FIC and the Scheduling Committee change which will bring Chris Mooers and Don Moller on the Council as ex-officio members. Ken further reported that the University of Hawaii is investigating the feasibility of acquiring a SWATH vessel as a replacement for MOANA WAVE. Lastly Ken informed the Committee that some of the features of OMNET would be picked up by the University of Delaware's OCEANIC.

**FLEET IMPROVEMENT PLAN UPDATE** - Mark Langseth lead the discussion on the update of the Fleet Improvement Plan. It was decided that FIC should pursue the first recommendation of the plan concerning the need for long-range facility projections. Mark will draft a letter to encourage SFOFC, or its replacement, to take this for action. General discussion followed on the Plan which only needs minor polishing before publishing.

**SCIENCE MISSION REQUIREMENTS FOR COASTAL RESEARCH** - Peter Betzer provided a draft of Science Mission Requirements (SMR) for coastal research vessels. Discussion centered around the SMRs and how close they come to existing ships. More investigation is needed to develop a compendium of small research vessels. The requirements suggest that a barge could be used to fulfill many of the needs. It was brought up that a barge was available through GSA excess property. This barge had been outfitted for science was air conditioned, had jack up pilings and a

large generator capacity. Although very little time was available to survey the community and solicit possible users, no institution was willing to accept the financial responsibility to acquire this barge. It was decided that Peter's draft was a great start and that the Committee should continue with the development of these SMRs.

**SCICEX 93 - NUCLEAR SUBMARINES FOR SCIENCE** - Mark updated the Committee on the ongoing program to provide a nuclear submarine for science. An MOU has been signed by the Navy, NOAA, USGS and NSF to utilize an operational nuclear submarine for a science cruise each year for the next five years. This is a follow-on effort of the successful cruise aboard PARGO in 1993. The 1995 cruise will be aboard the submarine SSN CAVALLA ??, a STURGEON class attack submarine. The sub will depart Hawaii in March and will proceed to the Arctic for a 78 day operation. It will carry a Navy crew of about 130 and 5 to 7 scientists. A Science Steering Committee has been meeting to develop the science programs for this cruise. A parallel operations committee will look at the hardware and operational considerations. A five year strategy is being developed.

An Announcement of Opportunity should be out by January or February for the 1996 cruise and will entertain suggestions for the 1997 cruise. Tom Curtin of ONR is the point person.

The submarines have a CTD aboard. They can launch an XBT underway as well as take underway water samples. They have an ice profiling system and a gravimeter can be installed. A 12 khz narrow beam sounder is available. The operational sonars and towed array are not available to the scientists. A proposal is in to install an ADCP. There is also a proposal to install ports for studying water color. A 133 meter maximum depth is allowed for science. The track for the cruise will be determined before departure and was designed by science. The 1993 cruise indicated the highly skilled and motivated officers and crew that were available for assistance.

Mark gave a brief discussion on the conference in September to brainstorm what can be done from a nuclear submarine if it were dedicated for science. The concept would be a de-fanged attack submarine with torpedoes removed and reduced manning. The sub would be decommissioned, operated by the Navy and used exclusively for science. A report from this conference, which should be out this fall, will be an updated SOONS report.

**FUTURE ACTIVITIES OF THE FIC** - Mark lead the discussion on the future activities of the FIC. As stated earlier the FIC plans to encourage the feds, probably through the committee that succeeds the SFOFC, to develop a five year plan of science programs and their facility requirements. The FIC will open a dialogue with the Coast Guard with the goal to develop a mutually acceptable two ship Arctic strategy that can use the ARV and HEALY. In addition, the FIC will offer the Coast Guard an opportunity to get science input through a science user group that will hopefully open a

strong communications link with that organization with the goal to have the USCG icebreakers science user friendly.

Ken Johnson suggested that the FIC should look at better ways to ensure the safety issues aboard UNOLS ships. Specifically, he believes that crew training, crew readiness and low crew turnover leads to safer and more effective operations. The apparent trend to cost undercutting will likely be done at the expense of maintenance and safety. This is brought about by the overcapacity of UNOLS. Both RVOC and FIC have expressed concerns in this area. It is time we revisit the study by Bob Knox that looked at the perceived over capacity of the East Coast intermediate ships.

The need to develop a compendium of small research vessels should be addressed.

**OTHER BUSINESS** - The chair of the KNORR Conversion subcommittee will need to change now that Ken Johnson is Chair of UNOLS. It was suggested that Bob Detricks be asked to join this subcommittee and that Karen Von Damm be asked to Chair it.

The location and possible dates for the next FIC were discussed. Peter Betzer agreed to St Petersburg as the meeting site and Jack Bash was asked to survey the Committee as to a good date in January or February.

The meeting was adjourned at 1630 hrs.

# APPENDIX I

**Agenda**  
**UNOLS FLEET IMPROVEMENT COMMITTEE**  
**October 3, 1994**  
**Lamont-Doherty Earth Observatory**  
**Palisades, New York**

*Convene Monday October 3, 9:30 AM at Lamont Hall*

- 1. Greetings and meeting logistics**
- 2. Approval of minutes of last meeting and agenda**
- 3. UNOLS Council report (Johnson)**
- 4. Finishing touches on the Fleet Improvement Plan Update (Langseth)**
- 5. Science mission requirements for a coastal research vessel (Betzer)**
- 6. Update on Navy program for Nuclear Submarine for science in the Arctic (Langseth).**
- 7. Future activities of the FIC (Committee)**
- 8. Other business**

## **APPENDIX II**

**DRAFT  
SCIENCE MISSION REQUIREMENTS  
UNOLS FLEET IMPROVEMENT COMMITTEE**

**OBJECTIVE**

To consider science mission requirements for shallow draft/high capability research vessel.

SIZE	-	will be based on requirements
DRAFT	-	about 3 meters
SPEED	-	12 Kts in Sea State 4
ENDURANCE	-	15 days
RANGE	-	3000 Nautical Miles

**POWER PLANT** - 2 ENGINES and Bow Thruster. This will provide a margin of safety for working in shallow environments and also should help achieve goal of being able to position vessel dynamically. **STATION** - Keeping should be a priority. Also 3 point mooring in water up to 100 meters deep should be possible.

**CREW** - 12 or less.

**SCIENTISTS** - 24

**INSTRUMENT/GEAR HANDLING** - should be able to deploy/retrieve large arrays of current meters, MOCNESS system, Vibracore Rig, Autonomous Vehicles, Box Coring Systems, etc. At the very least a large A frame (stern-mounted) and crane will be necessary. Also a vertical capstan may be important.

**DECK SPACE** - at least 1200 ft<sup>2</sup> for deck operations plus space (340 ft<sup>2</sup>) for at least 2 specialized vans. For example, a "clean" van for trace metal/organic analyses and a clean van for processing samples for primary production. It would be helpful if the ship operator had these facilities and were able to provide them for visiting scientists as needed.

**WINCHES** (3) - multiple wire operations will probably be the norm in shelf areas and the simultaneous use of winches will greatly increase efficiency. One winch should probably have 1000 meters of wire as this will allow access to slope regions.

**BOW TOWER** - given the importance of atmospheric inputs a bow-mounted sampling tower which could be instrumental for gaseous and/or particulate collections of the atmosphere.

**UNDERWAY SAMPLING SYSTEM** - an underway water sampling system that collects from the upper meter should be accessible in main laboratory.

**LABORATORY SPACES** - 800 ft<sup>2</sup> and should include at least 1 fume hood for chemical processing. Overhead storage racks such as Endeavor has would be most user friendly.

**CLEAN AND UNINTERRUPTED POWER SYSTEM (UPS)** - should be available for all laboratory space and also all state rooms so that computers are protected

**SCIENTIFIC STORAGE** - easy access internal space should be available for storage. Storage in laboratory space under benches should be provided plus about 1000 ft<sup>3</sup> outside laboratory areas. Refrigerated storage of sediment water and/or biological materials will, at times, be important. Therefore, at least 2 large walk in coolers should be available for scientific use.

**COMMUNICATIONS** - high speed communications/data transfer systems should be available. This is especially important for satellite data that can be used to adjust sampling patterns and cruise tracks.

**NAVIGATION** - differential GPS, loran, backup.

**LIVING QUARTERS** - 2 person state rooms all of which are "linked" to bridge and main laboratory via fiber optics.

**DECK TIE DOWN** - flush-mounted systems at 24" intervals both outside and inside laboratory spaces.

