FLEET IMPROVEMENT COMMITTEE

Meeting Summary Report

Shannon Court Hotel

Franciscan Room
550 Geary Street
San Francisco, CA
12-13 December, 1996

Appendices

Introduction and Welcome - The Fleet Improvement Committee (FIC) held a meeting on 12-13 December, 1996 at the Shannon Court Hotel, Franciscan Room in San Francisco, CA. Chris Mooers called the Fleet Improvement Committee Meeting to order at 8:30 a.m. and introduced new committee members, Tom Crowley from Texas A&M and Bill Smethie from Lamont Doherty Earth Observatory. Scientists from West Coast universities and laboratories with seagoing experience in the Pacific were invited to the meeting to help FIC develop Science Mission Requirements (SMRs) for the Central Pacific region. Chris welcomed the invited guests and provided them with a background of the FIC's responsibilities for developing ship improvements and replacements. He explained that this meeting would address the science needs of the community. The SMRs developed at this meeting will be forwarded to the UNOLS Council for review at their winter meeting in mid-January.

These minutes reflect the order in which the meeting agenda items were addressed. The agenda and meeting participant list is included as ***Appendix I*** and ***Appendix II***, respectfully.

UNOLS Report - Ken Johnson, UNOLS Chair, reported on UNOLS activities. This year two vessels were added to the fleet, URRACA which is operated by Smithsonian Tropical Research Institute and ROGER REVELLE which is operated by Scripps Oceanographic Institution. COLUMBUS ISELIN was sold to Mexico in November. ATLANTIS II was retired from the fleet in July. ATLANTIS is scheduled to be delivered on 25 February 1997. When ATLANTIS comes on-line, there will be 28 ships in the UNOLS fleet.

UNOLS has been active in building new partnerships this year. The report. *Shortfall Projections in the UNOLS Fleet,* estimated a $10M shortfall by the year 2000. As a result, efforts were made to build support from agencies other than the traditional funding agencies of the National Science Foundation and the Office of Naval Research. Currently, a Memorandum of Agreement (MOA) is being developed

between UNOLS and NOAA. The MOA would bring NOAA's new AGOR (RON BROWN) into UNOLS ship scheduling. NOAA would also provide approximately $5M for the ship operations support. Additionally, NOAA would provide approximately $2.6 M dollars for use of UNOLS vessels each year. Ken has been the co-chair with Alan Thomas, acting director of OAR, on developing the MOA. They are addressing NOAA's oceanographic needs. NOAA's fisheries needs are a bit more complicated. At the present time, there are no UNOLS vessels outfitted to support NOAA's fishery needs for deep trawling work. Also, fisheries stock assessment vessels require very quiet platforms. Considerations would need to be made as to whether a UNOLS vessel should be modified to accommodate NOAA's fishery needs.

Another partnership which has grown over the year has been between UNOLS, the National Science Foundation, and the U.S. Coast Guard. A UNOLS Standing committee, the Arctic Icebreaker Coordinating Committee (AICC) was formed to assist the Coast Guard in scheduling science parties for Arctic research. Additionally, the AICC is actively communicating with the Coast Guard on science outfitting of their icebreaker currently under construction, MICHAEL HEALY. HEALY will be delivered in 1998 and will begin science operations in 1999.

The third partnership is with the Naval Oceanographic Office (NAVO) and UNOLS. NAVO representatives have attended UNOLS Council and Fleet Improvement Committee meetings in the past year. As a result of the National Ocean Partnership Act (NOPA), $7.5M was earmarked for NAVO's use of UNOLS vessels. Ten NAVO cruises have been scheduled on the UNOLS vessels. Admiral Paul Gaffney, CNR and CNMOC, greatly supports sea going science.

Ken continued by reporting that the ship scheduling process received many criticisms over the past year. The scheduling process went through many iterations and a number of factors contributed to its complications. Many requests had time constraints such as mooring recoveries. ROV shipping schedules were a factor. Two large foreign programs required scheduling. Operations in general are becoming more complex. Programs were spread out across the globe. New UNOLS partnerships introduced first-time users to the UNOLS fleet. As a result, an ad-hoc working group has been formed to review the scheduling process. Rick Jahnke has agreed to chair the group which includes two oceanographers, two schedulers, and three program managers. In addition to Rick, group members include Bob Detrick, Robert Hinton, Rose Dufour, Sujata Millick, Dolly Dieter, and Dave Epp. It has been noted that the community needs educating on the scheduling process.

Ken reported that the Navy's program which provides the science community with an opportunity for research under the ice on a nuclear submarine is completing its second year. The experience has worked out well. Installation of a multibeam system is planned for the next sub cruise. A five-year memorandum of agreement was developed to support these operations. ONR is the major coordinator for the program.

Ken reported that plans to continue the ship inspection program are underway. There have been no inspections in a year. The UNOLS Office is in the process of preparing a request for proposals. The contract would be let from UNOLS, but administered, as in the past, by NSF.

Agency Reports - Agency representatives provided Ken Johnson with summary reports prior to the meeting. Ken provided an overview of these reports.

National Science Foundation (NSF) - Don Heinrichs provided Ken with a set of viewgraphs, see ***Appendix III***. NSF predicts that if fleet support returns to the traditional sponsors only, a reduction of the fleet size would probably be necessary. Support from traditional sponsors has declined in recent years. New ships have been added, increasing costs by approximately $4.8M in 1997. Outside support in 1997 from NAVO and the UK may not be available in future years. All of these factors make the large ships vulnerable. Ken has asked the FIC to look at the various scenarios facing the UNOLS Fleet and to make recommendations for preserving a capable fleet.

Ken reviewed the ship operations support trends from 1993 to 1997. NSF continues to be the major contributor. The biggest increase in ship support in 1997 came from "other" (non-traditional) support. NAVO was the major sponsor in the "other" category.

The NSF Ship Operations budget is approximately level for 1997. Although Ocean Sciences Research overall had an increase of 4%, funding was needed to support a new initiative, Major Research Instrumentation. Also, NSF is seeing increased demand for computer work and less for field work.

Ken summarized NSF's report by making three observations:

1) Big ships are vulnerable,

2) Funding levels are level at best,

3) Partnership with NAVO is not set in concrete and is vulnerable.

As a result of these observations, Ken recommended that the meeting participants consider economics in the discussion on Science Mission Requirements.

National Oceanographic and Atmospheric Administration (NOAA) - Steve Piotrowizc provided Ken with an e-mail message prior to the FIC meeting. The e-mail reported on NOAA's ship time projections for 1998 and 1999. Depending on budgets, NOAA should be able to maintain the one-half of a ship year of Class I/II time on UNOLS vessels at a minimum. The message is included as ***Appendix IV***.

National Ocean Partnership Act - John Orcutt provided an update on the National Ocean Partnership Act (NOPA). The hearings leading up to the Act included heads of federal agencies. The Act was authorized and funds were appropriated. Unfortunately, because of the short lead time, no new funds were identified to support the Act. Congress decided that the funds to support the Act should come out of the Navy's operations budget.

Charge to FIC: Development of Science Mission Requirements (SMRs) for the Central Pacific - Ken Johnson presented a viewgraph of the projected years of retirement for the UNOLS vessels, see ***Appendix V***. By the year 2005, six ships in Classes I through IV are expected to retire. With the exception of MOANA WAVE and GYRE, all of the ships are small. In light of the Navy's plans to replace MOANA WAVE, Fred Saalfeld, Technical Director for ONR, has requested UNOLS and the University of Hawaii to develop SMRs for the Central Pacific, see ***Appendix VI***. The vessel under consideration should be in the Class II/III category. Normally, UNOLS/FIC would develop an SMR and then circulate it to the community for comment. The Navy, however, has requested that UNOLS and Hawaii provide a response by 27 January. Due to the short time frame, it was decided to convene a group of scientists with seagoing experience in the Pacific to meet with FIC to develop a set of SMRs. The SMRs developed from the FIC meeting will be passed to the Council for their review at its January meeting.

Ken reviewed the tasks before us:

- Develop a set of SMRs that NAVSEA will use to develop a circular of requirements for a request for bids.
- Economic Concerns - Costs for building and operation need to be considered in the development of the SMRs.

Office of Naval Research: Status of New Research Vessel - Sujata Millick reviewed the current status of the Navy's new research vessel, see ***Appendix VII***. Language was included in the Defense Authorization and Appropriation Bills regarding replacement of MOANA WAVE. It directs the Navy to look at SWATH and SLICE design options. ONR plans to forward ship specifications to NAVSEA by February 7, 1997. ONR and the Oceanographer of the Navy have issued a tasking letter to NAVSEA allowing them to conduct a SWATH market survey, study ship acquisition options, and begin preparing a program of actions and milestones. Under the design considerations, NAVSEA cannot develop a design that substantially exceeds the $45M appropriation. NAVSEA will evaluate the SWATH, SLICE, and monohull designs in their considerations.

Sujata reviewed the construction schedule. The Navy plans call for release of an RFP by June 1997, selection of a ship builder in September 1997, ship delivery in September 1999, and operations by the

year 2000. Sujata pointed out that the schedule is very optimistic and that slippage should be anticipated.

Sujata provided the status of the Navy's SLICE construction. The vessel has been constructed and sea trials are expected to be conducted in mid February. A series of tests are planned for the vessel throughout 1997.

University of Hawaii Report - Barry Raleigh began the University of Hawaii report by reviewing the Senate's language regarding construction of a replacement for MOANA WAVE, see ***Appendix VIII***. He pointed out that the language recommends $45,000,000 to construct a SWATH. Barry Raleigh and Brian Taylor reviewed various SWATH vessel designs and their respective costs, see ***Appendix IX***. JAMSTEC's research vessel, KAIYO, cost approximately $36M to build. It has a 3,500 ton displacement. PIONEER, a diving support vessel built by Aker Gulf Marine and Global Industries in Louisiana was delivered in November, 1996. It has a 2800 ton displacement and two struts per side. The vessel has a dual draft capability. In transit, the hulls are on the surface for less resistance and the draft is 12 feet. On station, the hulls are submerged for greater stability and the draft is 21.5 feet. The dual draft feature offers the vessel a lot of flexibility. The cost of PIONEER without mission outfitting was less than $20M. Another SWATH under construction is the IGSS. It is being built by International Hospitality, Inc. in Toronto and has a planned delivery date of December 1997. The vessel will also have a dual draft capability. The cost without mission outfitting is estimated at less than $20M. Barry pointed out that the SWATH technology is maturing and construction costs are coming down. Lastly, the SLICE design was reviewed. The engines on the vessel are forward. SLICE requires lower installed power at high speeds as compared to a SWATH.

Brian Taylor continued by reviewing MOANA WAVE's historical cruise tracks, see ***Appendix X***. He also provided a table which gave statistics from the National Geophysical Data Center on the quantity of shipboard data collected from various UNOLS Institutions. MOANA Wave's contributions have been significant.

Lastly, Brian reported on Hawaii's development of SMRs for a Central Pacific vessel. In October, Hawaii circulated preliminary SMRs to the community for review and comment. The general concern of the community was that another Class I vessel was not needed. Hawaii listened to the community and downscaled their SMRs, see ***Appendix XI***. Brian presented a table which compared MOANA WAVE's design features to their mid-Pacific SWATH design, see ***Appendix XII***. The SWATH vessel characteristics call for a displacement of approximately 3,000 tons, transit speed of 15 knots, and a range of 10,000 nm. The SWATH design is very attractive to Hawaii since stability and speed of transit are high priorities.

Central Pacific SMR Workshop - The remainder of the first day and the morning of the second day of the FIC meeting was devoted to the development of SMRs for the Central Pacific. Ken Johnson lead the workshop using existing UNOLS SMRs for Class II/III monohulls and SWATHs as a guideline. A summary of the minimum and desirable requirements developed is detailed in a report included in ***Appendix XIII***. The report includes issues discussed during the development of the SMRs. The desirable requirements were prioritized by the meeting participants. The SMRs developed will be forwarded to the UNOLS Council for review at their winter meeting on 12-13 January.

Estimated Useful Life of UNOLS Vessels - FIC reviewed the of estimated useful life of UNOLS vessels, see ***Appendix XIV***. A number of observations were made. Through the year 2010, only one large ship will retire, MOANA WAVE. Many of the ships that will retire before the year 2015 operate in the Atlantic. Most of the intermediate class vessels will approach retirement during roughly the same time frame (prior to 2015). Now is the time to start planning for their replacement.

Concept Design of Intermediate Vessel - The estimated useful life chart, ***Appendix XIV***, shows that many of the intermediate vessels will be retired by the year 2015. Now is the time to begin preparing for their replacement. Ken Johnson recommended the development of a conceptual design for an intermediate research vessel. The design should also address the needs of coastal research. It will be proposed to the Council that the UNOLS Office submit a proposal for development of conceptual designs.

White Paper on Crew Requirements - Ken Johnson recommended that a white paper be developed to address USCG requirements for crewing and how these requirements will impact the design of future UNOLS vessels. This item will be included on the Council Meeting agenda.

Interim Fleet Improvement Plan (IFIP) - The IFIP was reviewed in detail by FIC and modifications were recommended. Chris Mooers will modify the document and submit it to the UNOLS Council.

1998 Fleet Improvement Plan (FIP98) - Prior to the FIC meeting, FIC members had been assigned sections of the 1995 Fleet Improvement Plan (FIP95) to review and update. FIC members provided copies of their updates at the meeting. Some sections, it was determined, did not require updating. It was decided that rather than rewrite the entire FIP95, an addendum to the report would be prepared to update as necessary. An outline of the addendum will be prepared and circulated via e-mail by Chris Mooers.

FIC Summer Meeting - It was decided to hold the summer FIC meeting at the University of Rhode Island/GSO. A date in the May to August time-frame would be scheduled.

The meeting was adjourned at 1800.