

Operating Proposal for the Committee

Nowlin and Treadwell had circulated to the FIC a first draft proposal for ongoing committee operation for a two-year period. Written comments had been received only from R. Dinsmore. Nowlin agreed prior to the August committee meeting to revise the proposal taking into consideration any written comments and recommendations at the meeting.

Miscellaneous

The next FIC meeting was set for 13-14 August at the Naval Postgraduate School in Monterey, California.

The Office of Naval Research's decisions to upgrade or replace their large academic research vessels and to increase ship operation funds by \$5 M per year beginning in FY 1988 were applauded by the FIC. However, the committee took the opportunity to express to Keith Kaalum its dissatisfaction with the new scheduling requirements for Navy-owned academic research vessels which ONR intend to implement in FY 1988. These were expressed in Kaalum's electronic mail memorandum to Ocean of 1 April (Appendix IX).

Richard West distributed copies (Appendix X) of a paper on "operations and maintenance costs of academic research vessels" which he had prepared for a meeting of the Society of Naval Architects and Marine Engineers.

The subject of computer assistance in UNOLS cruise scheduling and record keeping was discussed. Mike Rawson had prepared a response which Marcus Langseth summarized. The general recommendation is that greater use be made of accessible computer data bases to assist both operators and potential chief scientists in scheduling and in permanent record keeping of UNOLS fleet use.

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The subject of requirements for a large polar research vessel was discussed. Nowlin had offered the assistance of the FIC to the NSF Division of Polar Programs (DPP) in assessing/formulating the U.S. oceanographic community's requirements for capabilities which might be met by the research icebreaker which DPP plans to acquire for Southern Ocean studies. However, DPP intends to obtain community input via a separate DPP-appointed committee. During a committee recess, Nowlin discussed plans for this icebreaker with the directorate of DPP. It seems unclear to what extent, if at all, that vessel will be available for use by non-DPP supported projects, how funding for non-DPP projects might be affected, whether the vessel would be allowed to operate north of 60°S, or what science capabilities might be included. The consensus of the FIC was to wait and see what actions DPP might take before initiating another study of requirements for a large polar research vessel. However, a group of knowledgeable individuals was identified who might be called on for expertise should it be needed by DPP or for a future FIC study.

Navy Actions

A status report on the propulsion refit of the KNORR and MELVILLE (Appendix VII) was presented by Robert Dinsmore, who, as chairman of the refit committee, is the liaison with FIC. Plans seem to be progressing well. WOCE needs have been factored into the refit requirements in considerable detail. It was suggested that requirements for GOFs and RIDGE be considered as well.

Keith Kaalum reviewed the status of AGOR-23 procurement. This vessel, to be constructed with Navy funds, is intended as a replacement for one for the AGOR-3 (CONRAD) class vessels. Separate solicitations for the operator and the builder are scheduled to be circulated in June 1987. The guidelines for this large, general purpose vessel allow for new monohull or SWATH for conversion. A preliminary design study is to be performed by the builder.

Navy's present plan for their future academic research fleet was presented by Kaalum. In addition to propulsion refits of KNORR and MELVILLE and the replacement of one AGOR-3 with the AGOR-23, plans call for the replacement of the other two AGOR-3s as Navy vessels by one other large vessel in the future. A new wrinkle to the plan announced by Kaalum was to reduce the present 7-ship Navy academic fleet of 5 ships, presumably by removing either MOANA WAVE or GYRE from their fleet.

Refits, Improvements, and Conversions

T.K. Treadwell had prepared a summary for suggestions received for improvements of intermediate and CAPF-class vessels now in the UNOLS fleet. A more complete summary will be prepared for the August FIC meeting.

Richard West had obtained a list of vessels available as Federal surplus through the Maritime Administration. None seemed suitable for further investigation as oceanographic research vessels. Nowlin agreed to obtain regular updates of this listing. As potentially useful vessels are identified, arrangements may be made to inspect them--probably by consultants.

The cruise evaluation form now used on RV GYRE was circulated (Appendix VIII). The FIC comments were very favorable for a similar form as a replacement for the present UNOLS post cruise evaluation form. Further comments from FIC members will be sent to Nowlin who will recommend the use of a new form to the UNOLS Advisory Committee.

Keith Kaalum was asked to request NAVSEA undertake this endeavor, in order to provide information to allow the future users to better evaluate the potential capabilities of a large SWATH for oceanographic research.

Dinsmore proposed that an intermediate SWATH should offer enhanced seakeeping capability relative to intermediate monohulls. Such a vessel might not require the large power, deep draft, and other disadvantages of a SWATH designed to meet science mission requirements of a large monohull. It was agreed that the FIC, via Dinsmore, would solicit the interest of four selected marine architects in preparing a concept design for an intermediate SWATH. A task statement to be mailed to these architects was prepared by Dinsmore and approved by the FIC. It was suggested that some modification to the intermediate vessel science mission requirements may be needed, e.g., sustainable speeds and associated sea states may be increased for an intermediate SWATH relative to those for an intermediate monohull.

Science Mission requirements and possible Concept Design studies

The first meeting of the subcommittee (chaired by Fred Spiess) on deep-ocean, stable research platforms is scheduled for 29-30 June 1987 at SIO, at which time they will consider science mission requirements. A report will be circulated to the community for summer of 1987, and a revised set of requirements circulated to the community for comment thereafter. Based on community response, a conceptual design study may be initiated by summer 1988.

On behalf of his subcommittee, Bruce Robison presented the draft science mission requirements for a small, general-purpose research vessel (Appendix VI). Though not yet a complete draft, the FIC discussed these requirements and recommended some changes. Robison stressed the point that ROV handling capability should be included on all future oceanographic research vessels. The FIC was given until June to make additional comments, after which Robison agreed to circulate the draft to the community for comment. The requirements will be reviewed again at the August committee meeting. Treadwell will pass user/operator comments regarding CAPB class vessels to Robison as they are received. It is anticipated that a concept design study for a small, general-purpose vessel will follow.

Robert Dinsmore reported that he would constitute a subcommittee to consider needs for a small, ice-capable research vessel. Possible members are Agard, Dieter, Dinsmore, Eisner, Robison, and Royer. The first meeting will be held in the Fall of 1987. Following formulation of science mission requirements, a concept design study is planned.

Prompted in part by a proposal submitted to NSF by Arctic Energies Ltd. and by information provided by Treadwell on the Canadian research submarine project (SAGA) now under construction, Bruce Robison had prepared a background statement on research submarines which he discussed with the FIC. After considerable debate, the FIC agreed that the potential values of a large research submarine to the oceanographic research committee might be great and the concept is worth further consideration within the UNOLS framework. It was decided to establish a submarine science studies subcommittee, chaired by Robison. Potential subcommittee members were identified and Robison will contact them for interest. This subcommittee will begin by re-examining the Oceanlab report (completed in the 1970's) and proceed to identify science requirements which might be met by such an innovative platform. They will maintain close watch on the development of the SAGA submarine, and clearly will be aware of the recommendations of the submersible study now in progress (chaired by Robison). The need for a concept design study will be decided on the basis of such preliminary studies.

NORPO plans will be sent to the FIC members and an assessment made of the use in recent years of CONRAD, MOORE, and WASHINGTON for MCS work.

Advanced Designs

Fred Spiess reviewed the proposal from Glosten Associates for a preliminary design study of a monohull based primarily on the conceptual design study completed by Glosten at the direction of the Fleet Replacement Committee. A draft proposal (Appendix IV) had been circulated prior to the meeting and Spiess had received comments. FIC members were given 2 more weeks to provide additional comments.

It was agreed that on behalf of the FIC Spiess should submit to NSF a proposal for this preliminary design study. The budget should include funds for the supervision and monitoring of this study by Spiess and his associates. Periodic review of progress by the FIC will be scheduled.

Robert Dinsmore reviewed the status of SWATH vessel construction and discussed briefly their advantages and disadvantages. He identified and described some 10 SWATH vessels now in operation. The Navy has awarded a construction contract to McDermott for construction of T-AGOS 19 SWATH. That design was reviewed, as was the status of the SWATH T-AGX Common Hull Study, which involves the concept of constructing several SWATH ships for distinct users from common components.

Keith Kaalum reviewed the characteristics resulting from the common hull SWATH design study for TAGOS (SWATH-A) for a Navy Lab, and for T-AGS '0', an oceanographic research vessel (Appendix V). Adding the requirements of both users has resulted in a design for a common vessel with excessive horsepower (6000) and size (600 tons). The possible actions are to depart from a common hull design or to reduce requirements. The design requirements in the areas of speed, endurance, and payload initially set by the community are listed in column 1 of the following table.

Speed:	Endurance:	Payload:
Cruising	N. Miles	Laboratory size
14 kts	12,000	Sci. Compl.
100T	4,000 ft ²	Sci. Storage
Column 1	20,000 ft ³	Exp. Wgt.
12 kts	8,000	
Column 2	2,000 ft ²	
	20	
	10,000 ft ³	
	60T	

It is not clear which (combination) of these requirements force the resulting undesirable large size and horsepower.

Therefore, the FIC suggested a parametric study in which alternative designs are undertaken by relaxing the initial requirements shown in column 1 to those given in column 2. It was suggested that 7 alternatives be considered, relaxing: (1) the speed requirement only, (2) the endurance requirement only, (3) the payload requirement only, (4) the speed and endurance requirements, (5) the speed and payload requirements, (6) the payload and endurance requirements, and finally (7) speed, endurance and payload requirements. For each alternative, an examination should be made as to which of the other science mission requirements are compromised and to what extent.

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UNOLS Fleet Improvement Committee

Minutes

of Meeting 11-12 May 1987

Washington, D.C.

The UNOLS Fleet Improvement Committee met on 11-12 May 1987 in Washington, D.C. at the Joseph Henry Building. Committee members present were Robert Dinsmore, Donn Gorsline, Marcus Langseth, James Murray, Worth Nowlin, Bruce Robison, Fred Spiess; absent were Richard Barber and T. K. Treadwell. Observers and guests present included: Richard West, Keith Kaulum, George Keller, Don Heinrichs, Grant Cross, and John McWilliam.

A tentative meeting agenda was available prior to the meeting. After discussion, the agenda shown in Appendix I was adopted.

General Fleet Planning

Donn Gorsline began the general fleet considerations with a review of U.S. research vessels acquired with non-federal funds. This discussion was supplemented by a paper on "Conversions as a source of oceanographic research platforms" prepared by T. K. Treadwell (Appendix II). Gorsline noted the general relation between scientific capabilities required and vessel size. As a function of time, this relationship seems to have increased the size of the smallest research vessels for which the community is willing to take responsibility, i.e., the smallest UNOLS vessels are becoming ever larger.

Gorsline agreed to prepare a draft report before the next FIC meeting dealing with scientific capabilities as a function of vessel size, advantages and disadvantages of conversions (from historical perspective), and charters (noting that Galtner now is chairing a Marine Board study dealing with charters). Treadwell's paper may be used in preparing this report.

James Murray presented an overview of future fleet requirements as reflected in scientific plans for programs under development. He included a summary of requirements for WOCE, GOFs, Ocean RIDGE, and the NSF Long-Range Plan for Ocean Sciences. It was suggested that ship requirements be included for the ongoing programs TOGA and ODP and the potential programs Global Ocean Ecosystem Dynamics and Coastal Dynamics and Processes. Murray agreed to prepare a draft report before the next FIC meeting which would summarize programmatic requirements for research vessels and project funding for the vessels. A potential difficulty is how to reflect the impact of new global geosciences initiatives on the core programs of NSF and ONR.

Marcus Langseth discussed vessel requirements in support of marine geology and geophysics. He presented and contrasted in tabular form the vessel requirements for geology (on station) as opposed to geophysics (underway). This is included as Appendix III. The distinction between these vessel types is quite important. When we speak of geology- and geophysics-capable we generally mean geophysical-capable vessels.

It was decided to form a small subcommittee to consider fleet requirements for multichannel seismics (MCS). This would include a feasibility study of temporary vessel reconfiguration to accommodate MCS on general purpose vessels. As background,