

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Advisory Council Meeting
October 21, 1987
American Institute of Architects
1735 New York Avenue N.W.
Washington, D.C.

Advisory Council Members together with representatives from the National Science Foundation and the Office of Naval Research met in Washington, D.C. The meeting was called to order at 9:30 a.m. by Council Chairman John Martin. The meeting followed the agenda (Appendix I).

Attendees:

Advisory Council

John Martin, Chairman
Tom Malone, Vice Chairman
Robertson Dinsmore
Robert Knox
Arthur Maxwell
George Keller, UNOLS Chairman

Observers

Keith Kaulum, ONR
Grant Gross, NSF
Thomas Forehan
John McMillan
Lee Stevens
Richard West

UNOLS Institutions

Marcus Langseth, L-DGO
Robert Douglas, USC

UNOLS Office

William Barbee
Barbara Funke



Minutes for the August, 1987 Council meeting were not available.

The Council meeting centered around examination of the Agenda for the October 23 UNOLS meeting.

George Keller, UNOLS Chairman, briefly outlined his report to UNOLS members. The report outlines issues of importance to UNOLS, UNOLS activities and critical problems. The report will cover ship construction, design and modification by the Navy (ONR), ship and other facilities portions of NSF's Long Range Plan for Ocean Sciences and UNOLS interactions (through the Fleet Improvement Committee) to help provide design criteria and science mission needs for new ships. A projection will be included of new ships and facilities that will soon become available for use in academic ocean research. A related issue is effective joint management of the academic fleet by principal sponsoring agencies (subject of a special report).

Ship operations and scheduling remain of critical interest to UNOLS. During 1987 a UNOLS contract was initiated to provide security assessments and training to UNOLS vessels, and the ship scheduling process has been improved by providing a procedure to pass UNOLS recommendations to funding agencies.

In exercising UNOLS oversight on the ALVIN Review Committee, it has been concluded that the program supported by ALVIN is highly successful, and the ALVIN Review Committee is effective in its roles of advise and recommendations for program management. The ARC is monitoring a special study of science needs for undersea support facilities, chaired by Bruce Robison.

UNOLS solicited and evaluated proposals for hosting the UNOLS Office beyond expiration of the current grant (May, 1988). Recommendation was to continue the Office at the University of Washington. Concern was raised from among UNOLS members that the term for the Office at a given institution is not limited, and that the process for soliciting and evaluating proposals to host may not be efficient. The Executive Committee and the Advisory Council agreed to draft changes to the Charter on a rotation policy for the UNOLS Office.

UNOLS has been and should continue to be an effective forum for addressing many operational issues (e.g., achieving parity-to-users from various marine technicians programs).

Potential new issues for the UNOLS fleet include policies for and use of radionuclides on ships, and the use and disposal of plastics and other garbage. The UNOLS fleet may need a consistent model plan.

The Chairman will close by urging that member institutions communicate their concerns on facilities issues and policies to the UNOLS Executive Committee or Advisory Council. Funding agencies welcome advice and recommendations from UNOLS. UNOLS must be willing to address critical issues, especially the difficult ones.

George Keller also distributed to the Advisory Council a policy on lay-up of ships that he had solicited from and had been recommended by RVOC (Appendix I). Council members were asked for their reactions to the policy. UNOLS members and agency representatives will also be asked for comments.

It was noted that a separate Advisory Council Report would not be delivered at the UNOLS meeting. Advisory Council activities and issues will be included in the UNOLS Chairman's report.

Worth Nowlin, Chairman, Fleet Improvement Committee, was to report on committee activities to UNOLS. Bob Dinsmore, member FIC, discussed issues with the Council.

Problems continue with the NAVSEA preliminary design for the AGOR-X SWATH presently to be assigned for use in the UNOLS fleet. The FIC subcommittee, Marcus Langseth, chair, formed to interact with ONR and NAVSEA on the design, has met with them several times. Although the FIC subcommittee has advanced a comprehensive set of scientific requirements and has advised on layout and handling gear, they have been unsuccessful in influencing NAVSEA to reexamine the basic design and to consider design(s) more suitable to UNOLS research vessel needs. Essentially, the NAVSEA preliminary design (see Appendix III) is an adaptation based on a common hull that is very large, probably expensive to operate and does not accommodate either towing scientific arrays or have over-the-side operations. (Underwater hulls extend 30 feet aft from stern deck and 8 feet outboard.) Furthermore, the design would result in a ship of limited underway maneuverability. Suggestions from the FIC are that use of an overhanging strut design would solve over-the-side handling and towing problems, and relaxation of some performance characteristics not important for research could produce a ship of more suitable size and operating cost. NAVSEA (together with the Office of the Oceanographer) has been unwilling to face the costs and delays of re-design. A concern is that delays may lead to permanent loss of the ship.

The sense of the Advisory Council was that the AGOR-X preliminary design based on the common hull would result in a ship that was too large, too costly to operate and would not accommodate critical research operations. UNOLS should advise the Navy that they would not accept such a ship.

After further discussion, it was agreed that the Council (and UNOLS) should hear out Robert Winokur and Commander Patrick Dennis of the Office of the Oceanographer before taking a position. Efforts through the FIC should continue to try to influence the design toward one suitable for UNOLS use. **Marcus Langseth's subcommittee report will be distributed to the Advisory Council and all UNOLS Member institutions through George Keller.**

Planning for the refit of KNORR and MELVILLE (AGOR 14, 15) is near completion of the preliminary design (Appendix IV). The KNORR will be the first ship into the yard. Possible reduction to the DOD (Navy) budget could lead to reduction in the first year budget for the refits. Reductions are being appealed.

The charge to the Fleet Improvement Committee to formulate and justify the number and size of ships for the improved UNOLS fleet has been nearly completed. Results will be available soon in a White Paper by an FIC subcommittee under James Murray.

A proposal for operation of the Fleet Improvement Committee has been submitted to NSF. Negotiations on the first-year budget are nearly complete.

ALVIN Review Committee activities, to be reported by Fennan Jennings, Chairman, were discussed by Bill Barbee. At their May, 1987 review meeting the ARC recommended eleven requests for a total of 73 dives in 1988. These recommendations together with earlier recommendations for dives in 1988 will result in a schedule for about 180 dives all in the eastern Pacific. Operations would begin off San Diego, then Guaymas Basin, EPR and near the Galapagos. A series of investigations on Gorda-Juan de Fuca and off the Washington-Oregon coast would be addressed in June-September. Short projects in California basins and on eastern Pacific seamount will conclude operations for the year, and the ATLANTIS II/ALVIN will return to Woods Hole for ALVIN overhaul, etc. All ARC recommended requests will be included in the 1988 schedule. There will be no queue of recommended projects at the end of the year.

The ARC will continue to emphasize advanced planning, and attempt to formulate general ALVIN-program plans for about three years. Workshops to solicit notices of intent/interest will be held in San Francisco (prior to AGU Fall meeting) and in New Orleans (prior to Ocean Sciences meeting).

Bruce Robison has held one meeting of his committee to review submersible science needs into the 1990's.

Robert Corell, NSF, and Bruce Robison, ONR, will report to UNOLS on efforts to develop effective joint NSF-ONR management of the UNOLS fleet. Don Heinrichs and Gene Silva have been negotiating to develop solutions for problems in joint management (e.g., agency funding responsibility for lay-ups, for costs of transits).

RVOC Chairman Jack Bash's report to UNOLS was described by Bill Barbee. The report covers the annual RVOC meeting held October, 1987 and the RVOC letter report on lay-ups (Appendix II). The meeting, hosted by UNOLS Associate Member University of New Hampshire, was interesting and informative.

Perhaps the most far-reaching issue was that of fleet insurance, costs and operator responsibilities/liabilities. Insurance costs are rising rapidly for many UNOLS ship operators. One possible relief might be fleet wide insurance through a club. The insurance club approach would require expanded safety standards and enforcement monitoring, expanded safety training for crews and comprehensive programs to assure seaworthiness. RVOC was advised, as should be the Advisory Council, that such efforts would have real direct costs and additional indirect costs in terms of diminished operational flexibility, etc. It should also be noted that action relative to insurance notwithstanding, operator liability is likely to be increased due to court precedents and the general climate regarding employee claims and compensation.

The RVOC was notified that the fleet will be provided a program of security assessments, plans and training for those ships operating in areas where there are potential risks. Most blue water ships in the fleet have shown interest and will avail themselves of the service.

Robert Winokur and Patrick Dennis of the Office of the Oceanographer of the Navy discussed with the Council both the procurement process and the preliminary design process for AGOR-X, the second new Navy-built ship that would come to the UNOLS fleet. The Office of the Oceanographer is responsible for and has been successful in getting money in FY-1989 and FY-1990 budgets to build two ships, a survey ship for the Navy Oceanographic Office and AGOR-X, a research vessel for the UNOLS fleet (through ONR). The Office is strongly committed to building a SWATH design R/V. Both ships would be built following preliminary designs based on a common hull. They intend to build ships that will be useful and effective for their operators and users. The Office of the Oceanographer recognizes concerns over the NAVSEA preliminary designs. They are optimistic that NAVSEA will make those changes that would allow effective research vessel operation. Many changes have already been made, and dialogs continue. Mr. Winokur and Commander Dennis noted

the risks involved in re-design delays, and counselled a posture that would allow NAVSEA time and opportunity to develop and refine their SWATH design into a highly effective research platform.

The Advisory Council discussed the comments from Mr. Winokur and Commander Dennis. Although strong reservations remained concerning the common hull preliminary design, they agreed to defer action pending NAVSEA design refinements.

In a related matter Mr. Winokur informed the Council that he was trying to arrange a research opportunity/research use experiment aboard the Japanese SWATH KAIYO. The proposal is to secure the KAIYO for about 60 days in early 1988. An experiment/investigation would be conducted to assess and evaluate KAIYO efficacy as platform for a broad range of ocean science research. Opportunity would be available for academic oceanographers to participate in planning and executing the experiment aboard KAIYO. Keith Kaulum could serve as preliminary contact.

Regional Ship Scheduling meetings were to be held on October 22 and reported to UNOLS by Group Chairmen on October 23. The outlook for achieving effective 1988 schedules within anticipated agency funding is not as favorable as it was in July. Factors include:

- NSF does not expect the large increase in 1988 ship operating funds that was anticipated in July.
- Projects and cruises for only about \$5.5 million ONR support have been approved. Thus not all of the \$8.5 million potentially available for UNOLS fleet operation will be realized.
- Clearances for a western Pacific project (INSTEP) are not yet secure, thus MOANA WAVE's schedule remains tentative.
- A total of about 4200 days' operation are still proposed for NSF support; this is perhaps 500 days more than the total science proposals funded.

Ship scheduling groups will have to reduce 1988 fleet schedules and cost estimates at their October 22 meeting by as much as 500 days and \$2-3 million. Part of the reduction should come from elimination of science projects not funded for 1988, part, perhaps, from deferral of some science to 1989 and part by consolidation of schedules. One or more ships could be laid up during 1988.

Remarks from Federal Funding Agencies

John McMillan, NSF/OCFS, discussed late information on the NSF/OCE budget for 1988, issues arising from the recent Advisory Committee to Ocean Sciences (ACOS) oversight report and other matters. Best estimates for NSF/OCE budgets, including oceanographic facilities were prescribed.

NSF BUDGET ESTIMATES October 1987

OCEAN SCIENCES DIVISION	1985 Actual	1986 Actual	1987 Actual	1988* Estimate
Ocean Sciences Research	58.2	56.9	66.4	74.3
Oceanographic Facilities	34.9	33.7	37.2	43.9
Ocean Drilling Program	<u>27.6</u>	<u>28.9</u>	<u>30.1</u>	<u>31.3</u>
	\$ 120.7 M	119.5	133.7	149.5

OCEANOGRAPHIC FACILITIES DETAIL

Operations

Ship Operations	23.8	24.0	26.0 ¹	26.6 ²
ALVIN, Aircraft, Misc.	2.9	1.6	1.8	1.8
Marine Technicians	<u>2.4</u>	<u>2.5</u>	<u>3.1</u>	<u>3.3</u>
	\$ 29.1 M	28.1	30.9	31.7

Acquisitions & Development

Science Instruments	1.8	1.6	1.8	1
Shipboard Equipment	1.7	1.4	1.7	7.4
Technology Development	1.6	1.7	2.4	1
AMS Center	-	-	-	2.9
UNOLS, Ship Const., Misc.	0.7	0.9	0.4	1.0
Interagency/International**	-	-	-	0.9
	\$ 5.8 M	5.6	6.3	12.2

TOTAL \$ **34.9** **33.7** **37.2** **43.9**

* Estimate using House Appropriations markup.

** Not identified separately in previous years.

(1) In 1987, an additional \$1.5 million was provided by the Ocean Drilling Program.

(2) In 1988, an additional \$1.8 million is estimated from the Ocean Drilling Program.

These estimates do not include possible Gramm-Rudman reductions.

Of particular concern is that NSF funds to support ship operations are estimated to total about \$28.4 million while estimates of the NSF share of the total of all Ship Operations Proposals is over \$32 million. **On the basis of existing 1988 operations plans for the fleet, prospects for an unacceptably large shortfall are real. The NSF total proposed for ship operations should be reduced without delay.** (This issue was to be addressed at the Ship Scheduling meeting, October 22.)

A recent ACOS oversight report included recommendation that cruise assessment reports be submitted directly to NSF/OCFS and used in decisions on funding ship operations. **The NSF/OCFS position is that the forms are UNOLS forms, and control of distribution is not up to NSF; funding decisions are based on the needs of scientific research; and the NSF/MARAD inspection program provides adequate information on the capabilities of individual ships to conduct research.**

Shared-use equipment and marine technicians continue as issues in that individual UNOLS institutions policies and costs charged do not present a consistent aspect to users. Program manager Larry Clark is pursuing a resolution.

The NSF ship construction program is outlined in the **Long Range Plan for the Division of Ocean Sciences, National Science Foundation** (pp. 60-68, 77).

Keith Kaulum, ONR, informed the Council that there were no new explicit figures for the ONR budget. Deficit-reduction budget measures could lead to reductions of up to 12-1/2% in the 1988 ONR budget. ONR has reached its directed objective by obligating 50% of their FY-1988 funds by October 31.

Recent budget manipulations had led to a tentative reduction of funds for renovation of AGOR 14 and 15. That reduction has been appealed, and final decision on the funds had not yet been reached. ONR still hopes to begin preliminary/construction designs almost immediately.

ONR has retained Captain (retired) Ed Mortimer as a consultant to work on ship improvements and other fleet improvement projects.

The acquisition of AGOR-23 is progressing. The date for receipt of contract proposals has been deferred until January, 1988 "to encourage additional bidder(s)."

Letter proposals from institutions wishing to operate AGOR-23 were to be evaluated during the first two weeks of November. (Information, not from ONR, was that four letters had been received: from a consortium of the University of

Washington, Oregon State University and the University of Alaska, a consortium of Scripps Institution of Oceanography, University of California, San Diego and University of California affiliates, a consortium of the University of Texas, Texas A&M University and the University of Miami and from Lamont-Doherty Geological Observatory, Columbia University.)

The DPP portion of the NSF budget passed through House Appropriations hearings without reduction, and with modest reduction through Senate hearings.

Request for Proposals has been issued for the icebreaking research vessel to be acquired by DPP. DPP has also moved to acquire the MYSIS for support of "local" operations.

NSF/DPP and the Coast Guard have reached accommodation on NSF's icebreaking R/V and science support for one Coast Guard replacement icebreaker.

Clearances for Foreign Research. This topic was not reviewed.

UNOLS Business.

UNOLS member institutions had earlier been advised of the Advisory Council's recommendation to revise Annex I to the Charter, A Procedure for Coordinating Ship Schedules. The Charter, as a whole, was also to be introduced for readoption.

The Council reviewed the Slate of Nominees for UNOLS and Advisory Council positions (Appendix V). It was noted during this review that one Council member had missed the last three consecutive Advisory Council meetings. The UNOLS Charter, 4 (b) is explicit that such consecutive misses "will signify a loss of the person's membership on the Council." Although the Council agreed that the last two absences were justified--the member was chief scientist on research cruises--the Charter allowed no flexibility. The Council then discussed candidates for replacement (as also specified in the Charter) and nominated:

James Kennett, University of California, Santa Barbara and
Eli Silver, University of Southern California.

Candidates for new appointments to the ALVIN Review Committee had been reviewed earlier.

Advisory Council Standing Rules not addressed as a part of the UNOLS Meeting agenda were reviewed.

Radioactive substances aboard ships. Tom Malone had earlier agreed to review and assess this issue. He delivered a report to the Council (Appendix VI).

The report cited as critical problems: The frequency of use and amounts of low energy beta emitters employed on UNOLS ships have increased and will probably increase further. This poses problems of environmental contamination (especially on board the ship) of storage of wastes and of disposal. In addition there is high probability of future requests for the use of high energy gamma emitters. Those isotopes pose a much greater health risk as well as risks for environmental contamination, etc.

The report includes recommendations for UNOLS and UNOLS-institution policy and procedures for use of radioisotopes. Variances are noted among current individual institution policies and procedures. The report recommends that procedures be formalized and standardized and suggests that UNOLS and sponsoring agencies may want to approach NRC on development of an overall policy for the use of radioisotopes on research vessels at sea. The Council accepted the report and charged Dr. Malone to continue his survey of individual UNOLS institution policies and procedures.

Cruise Assessments. Bob Dinsmore reviewed for the Council Cruise Assessment returns for the first two quarters of 1987. Seventy-one reports had been received, generally covering ships from all but two UNOLS institutions. More than 85% of the reports were for fully successful cruises. Complaints on the mode of operation were non-existent and failures/inadequacy of ship or equipment were rarely cited.

Specific questions on the cruise assessment forms and their use include:

- What should be done about ships or institutions not participating in the assessment process?
- What should be done when chronic problems are reported for individual ships or institutions?
- Should an acknowledgment be required from the operating institution?
- How can investigators be encouraged to submit frank (hopefully constructive) critical assessments?

In discussion, the Council agreed that questions and concerns with the assessment process had dragged on for too long. Their sense was that something must be done to improve the process without further delay.

Vessel Inspections. Bob Dinsmore reported that within the past two years every ship in the UNOLS fleet except the THOMAS WASHINGTON has been inspected under either INSURV or the NSF/MARAD ship inspection program. In general, inspections reveal ships to be satisfactory in operation and material condition, although recommendations have been issued that two ships, the CONRAD and the CALANUS, not operate until defects were corrected. (Note: Defects had been corrected, and the vessels cleared.)

Fleet wide, the principal defects have included:

1. Watertight integrity. Sufficient care is not being taken to maintain designed watertight integrity. Violations include holes through watertight bulkheads, watertight doors blocked or disabled, leaking or brittle gaskets, etc. **This is a serious problem and is being emphasized by inspection teams.**
2. Load line determination for some ships is not current or not adequately documented.
3. Fire and bilge pumps are sometimes not adequate or not maintained satisfactorily.
4. Inadequate oil-water separators. (Note that most UNOLS ships are not required to have oil-water separators, but the ban on discharging oily waste at sea makes for an implied requirement.)
5. Science equipment is improving, especially CTD systems/capability. Echo sounding capability is improving generally, but is still not adequate on some ships.
6. SAIL systems are being used on many ships in the fleet.

A recommendation is under development that Doppler current profilers become standard equipment on "all ships".

Generally, marine technicians are found to be highly competent and of great benefit to science projects. (They are often essential, especially to science parties with little experience or from non-operating institutions.) Captain Dinsmore urged that steps be taken to implement effective technician networking.

UNOLS News. Tom Malone reviewed the last issue of UNOLS News, Volume 4, Number 2. Contents for the next issue, in December 1987, were discussed.

An issue had been raised from the UNOLS membership concerning rotation of the host institution for the UNOLS Office. Briefly, the UNOLS Charter simply states that "A

UNOLS Office will normally be established at a UNOLS Member Institution. No mention is made concerning how this institution will be chosen, whether or not the Office should be rotated among Member Institutions or schedules for rotation. Practice and tradition have established that the Office should rotate and that selection of the executive secretary and the host institution are linked. At least one UNOLS institution objected to the lack of specificity and urged that a process be established wherein prospective host institutions could understand the rules, and wherein the term of host institution (and presumably, the executive secretary) not be open-ended. The Advisory Council noted that the recently completed review of proposals to host the UNOLS Office had been complete and open. They agreed, however, the Charter should be amended to make the process explicit, and that terms for the office at a given institution should be limited (option to change at 3 and 6 years, mandatory change after 9 years).

The Advisory Council, having reviewed Jack Bash's letter to the UNOLS Chairman on ship lay-ups, accepted and endorsed the letter.

The Council tentatively scheduled Advisory Council and UNOLS meetings for 1988.

Advisory Council	March 3, 4, 1988	Place to be determined
Advisory Council	July 14, 15, 1988	Tentatively, Woods Hole
Advisory Council	October 26, 1988	Washington, D.C.
Ship Scheduling	October 27, 1988	Washington, D.C.
UNOLS Annual Meeting	October 28, 1988	Washington, D.C.

It was noted that there would also be an ALVIN Review meeting in June, a Ship Scheduling meeting in July (in Washington) and several Fleet Improvement Committee meetings, schedules to be set by respective chairs.

The meeting was adjourned at 4 p.m.

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ADVISORY COUNCIL MEETING AGENDA

8:30 a.m., October 21, 1987
Conference Room 2
American Institute of Architects
1735 New York Ave. N.W.
Washington, D.C.

Call the Meeting - John Martin.

Accept the minutes of the August 24, 25, 1987 Advisory Council Meeting.

Examine Agenda for October 23 UNOLS Meeting.

Chairman's Report - George Keller.

Advisory Council Report - John Martin.

Fleet Improvement Committee - Worth Nowlin will report on October 23. Discussion led by Keller, Dinsmore, others.

ALVIN Review Committee - Feenan Jennings will report on October 23. Discussion led by Bill Barbee.

ONR-NSF Research Fleet Policy - Comments on the ONR-NSF presentation on joint management of the fleet.

RVCC - Jack Bash will report on October 23.

Regional Ship Scheduling Groups - Joint Group meeting is on October 22.

Remarks from Federal Funding Agencies - Representatives will preview their status reports as they choose.

Clearances for Foreign Research - A preview, if appropriate. Status of the clearance process.

UNOLS Business - Materials have been distributed on changes to Charter, UNOLS Elections, and appointments to ALVIN Review Committee.

Advisory Council Standing Roles - Many of the Council's standing roles will have been covered in the review of the UNOLS meeting agenda. Others are covered here.

Cruise Assessments - Bob Dinsmore will review second quarter, 1987 Assessments and discuss improvements to the assessment process.

Vessel Inspections - Bob Dinsmore will summarize recent activities in inspection programs.

UNOLS News - Tom Malone. Vol. 4, No. 2, October, 1987 should be available. Contents for Vol. 4, No. 3 (early December 1987) will be discussed.

Radioactive substances aboard ships - Tom Malone will report to Council on regulations, policies and practices regarding use and disposal of radioactive substances aboard UNOLS ships.



RESEARCH VESSEL OPERATORS' COUNCIL

RVOC OFFICE
University of Rhode Island
P.O. Box 145
Saunderstown, R.I. 02834

(21) 077-6-85

Oct. 19, 1987

Dr. George H. Keller
Chairman UNOLS
Oregon State University
Research Office
Corvallis, OR 97331-2135

Dear George:

In your letter of 9 December 1986 you requested that RVOC develop a position paper on ship lay-ups. The following is that paper which has received the endorsement of the full RVOC at our meeting in New Hampshire 12-14 October 1987.

We believe that lay-ups will be a way of life for ship operators for the foreseeable future. This is partly the nature of the business because of the need to maintain a complete inventory of oceanographic vessels with different capabilities and the inherent mismatch of funding and hull availability. Recent history suggests that science has not been left ashore for want of a research vessel and that one to two ship years of ship time can not be funded annually. The types and sizes of ships which come up short of science seems to change to some extent from one year to the next. The focus of science to different geographic areas also changes. Ship mobility can often compensate for this but not always. Some years ships with special capabilities (such as Seabeam) are overworked while other years specialized ships and/or equipment go unused.

An optimum number of operating days for the various size vessels has been developed. This optimum number provides the best mix of operating days and maintenance days for the most cost effective ship operations. We believe that an effort should be made to maintain an optimum number of operating days on all "fully" utilized ships. Our operating experience suggests that this optimum number is as follows:

Class I & II	270 Days
Class III	250 Days
Class IV	220 Days

(Note: Smaller ships and Class IV ships for which some operational constraints apply, such as many short cruises in a given year, may be exempted from the minimum day rule.)

These numbers seem to balance dollar inflow with operating patterns and adequate maintenance time.

Ship's schedules which have significantly fewer days than the optimum are candidates for lay-up. What constitutes "significantly fewer days" is an arbitrary number, however, 80% of the optimum would seem to be a reasonable working figure.

Lay-ups are only effective if funds can be saved. It is believed that anything less than three months is not a lay-up but an extended inport period. Ship lay-ups in excess of 12-14 months (cold lay ups) create another problem and that is major start up costs. This paper will only address lay-ups of more than three months but less than fourteen. This we call a "warm" lay-up. Cost savings increase with months of lay-up to the point of becoming a cold lay-up.

The management of the lay-up must vary with the monies available. There are fixed costs of approximately one third the total annual operating cost which must remain. This includes insurance, security and shore staff. Approximately a third of the costs can be saved outright such as fuel, travel and food. The variable cost savings is in the middle third and is made up of crew costs, maintenance and supplies. Managers vary in their approach to this middle third. Some would prefer to keep as many of the crew in tact and perform maintenance in house. The other approach is laying off the crew and contracting out maintenance work. In any case all or a portion of this middle third is highly desirable for preserving the integrity of the ship.

During the life cycle of a research vessel periods of major overhaul or refit are necessary. If a vessel has an expected life of thirty years it could logically have a mid-life refit at about the 15-18 year time frame. With the advances in science and science equipment a major science refitting might be expected every 10 years or at the 10 and 20 year time. This suggests at least three major down periods might be expected in a ship's life cycle. These down periods could be worked into the lay-up planning.

Besides the major refits above, ships can use a rest for general maintenance. This could be a welcome respite from extended operations or a down time needed to repair or replace equipment. If maintenance money was made available for lay-ups they would become less distasteful and even welcomed.

Lay-ups have been traumatic partly because of the short notice given. This causes turmoil with the crew and prevents orderly maintenance planning. Learning of a lay-up in October for the following calendar year is not adequate warning. This has been known to be a problem for some time. In 1986 it was agreed that the lay-up decision would be made in July. In fact the decision came in October as in the past. The uncertainty of funded cruises plays a major part in this delay. Operators hang on in hopes that the August panel will provide funding for a goodly number of their cruises. In most cases this does not happen. The signs are normally clear in mid-summer with maybe 10-20% of cruises unfunded. This would suggest that ships with schedules including 60% or less of funded cruises will not likely "get well" with the August panel results.

Coupled with the short notice given is the long lead time necessary to properly engineer major repair work and then go through the full proposal process with its peer review. If this process does not start until October it is reasonable to expect that funding can not be made available until July or August of the lay-up year. Then it becomes difficult to get the work completed in the remaining time. Some of this time line can be shortened by advance planning. If all ships were encouraged to do advance engineering studies on a long range work package significant time could be saved. These work packages could also be reviewed by the ABSTECH or INSURV inspections. This process would assist the funding agencies with their priorities and probably cull out some of the plans. It could also streamline the proposal review procedure. Another idea to streamline the review process is to establish a review team for on site review. It would seem that any speed up in receiving upgrade money would be beneficial.

We believe the lay-up decision should be made based on an open forum discussion using logical criteria. The principal candidates in lay-up should be given the first opportunity to resolve the issue. If there were some assurances that upgrade funding would be made available it is likely that prospective lay-up operators would be willing to volunteer for lay-up.

The following procedures towards lay-ups are recommended:

Yr-15 mos 1) All institutions should be encouraged to establish a prioritized upgrade plan that has completed at least preliminary engineering.

Yr-12 mos 2) ABSTECH and/or INSURV should review these upgrades and make recommendations as to the viability of each item, possibly prioritizing the upgrade list.

Yr-8mos 3) Funding agencies advise the community as early as possible (Apr-Jun) as to the number of ship days that will be funded. The short fall can then be calculated.

Yr-6mos 4) Funding agencies pledge maintenance or upgrade funds for lay-up ships prior to 1 July.

Yr-6mos 5) Ships with light schedules in July become designated candidates for lay-ups. The following formula would apply:

Total Funded cruises scheduled	=	F
Total proposed but unfunded cruises scheduled	=	P
Optimum Days	=	O

$$F + .33P \geq .8 \times O$$

This presupposes that only 1/3 of the unfunded cruises, in July, will be funded by the August panel.

Optimum days are:

Class I & II	270
Class III	250
Class IV	220

(See note on Page 2 about smaller ships)

Yr-6mos 6) Operators are now given an opportunity to volunteer for a lay-up.

Yr-6mos 7) Those operators in the lay-up candidate category now get together, without outside assistance, to attempt to resolve the ship day shortfall.

Yr-5mos 8) Chairperson of the East and West Coast scheduling groups plus the funding agencies resolve shortfall unanswered by 6 and 7 above.

~~Yr-4mos~~ 9) Lay-up operator will circulate to active operators the resumes/vitae of all marine personnel who cannot be supported under anticipated lay-up funding. Active operators will make every reasonable effort to place these laid off personnel when vacancies occur and will co-operate in enabling them to return to the laid up operator when that vessel re-enters service.

Sincerely,

A handwritten signature in cursive script that reads "Jack".

John F. Bash
Chairman RVOC

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

An association of Institutions
for the coordination and support
of university oceanographic facilities

R.P. Dinsmore
15 October 1987

BACKGROUND ON THE AGOR-24 DESIGN

The Navy (NAVSEA) is doing a preliminary design study for the second new oceanographic ship for UNOLS - planned to be a SWATH ship. Their intent is to adapt a common hull to meet the requirements for several new ships other than oceanographic research. This common hull is shown on Figures 1, 2, and 3. From these, it can be noted that the lower hulls protrude 8½ feet outboard of the upper hull (working deck), and the lower hulls (and propellers) extend about 30 feet astern of the working deck.

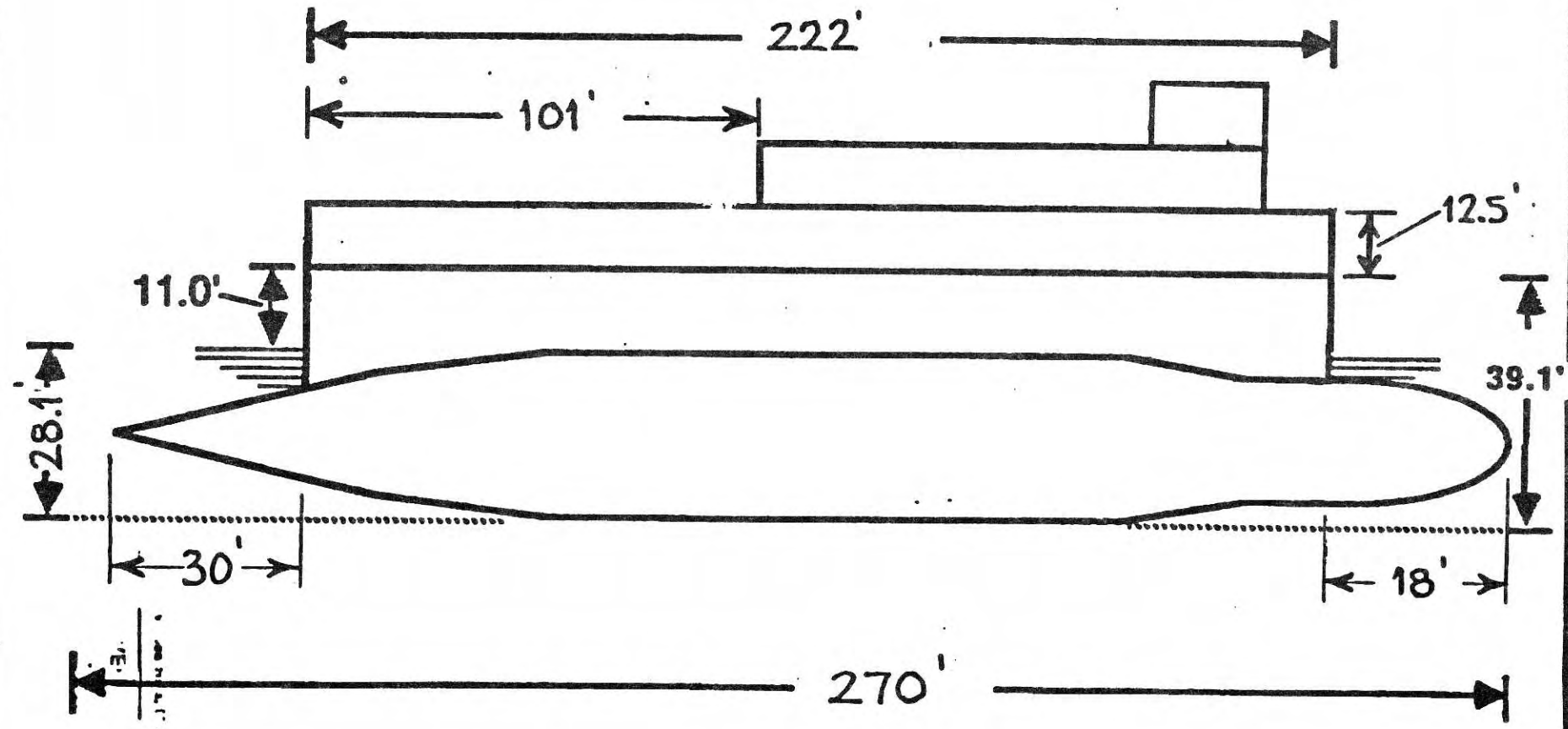
Concern over the hull arrangement has arisen, and recommendations have been offered more like Figure 4 (attached - all existing SWATHs are of this type). NAVSEA, however, still favors the baseline design, and have suggested installing large A-Frames and cranes to facilitate handling gear such as Figure 5.

Current specifications on the design are as follows:

LOA:	(Lower hulls)	270 feet
	(Upper hull)	222 feet
Beam:	(Lower hulls)	101 feet
	(Upper hull)	84 feet
Draft:		29 feet
Speed:		12 knots
Displacement:		5,332 tons
Crew:		22
Science Complement:		30
Propulsion:		Integrated Electric: 4 x 1500 kw gens; 2 x 1750 hp motors (Probably 2 x 2500)

5000 hp now.

SWATH COMMON HULL BASELINE (REDUCED) PROFILE

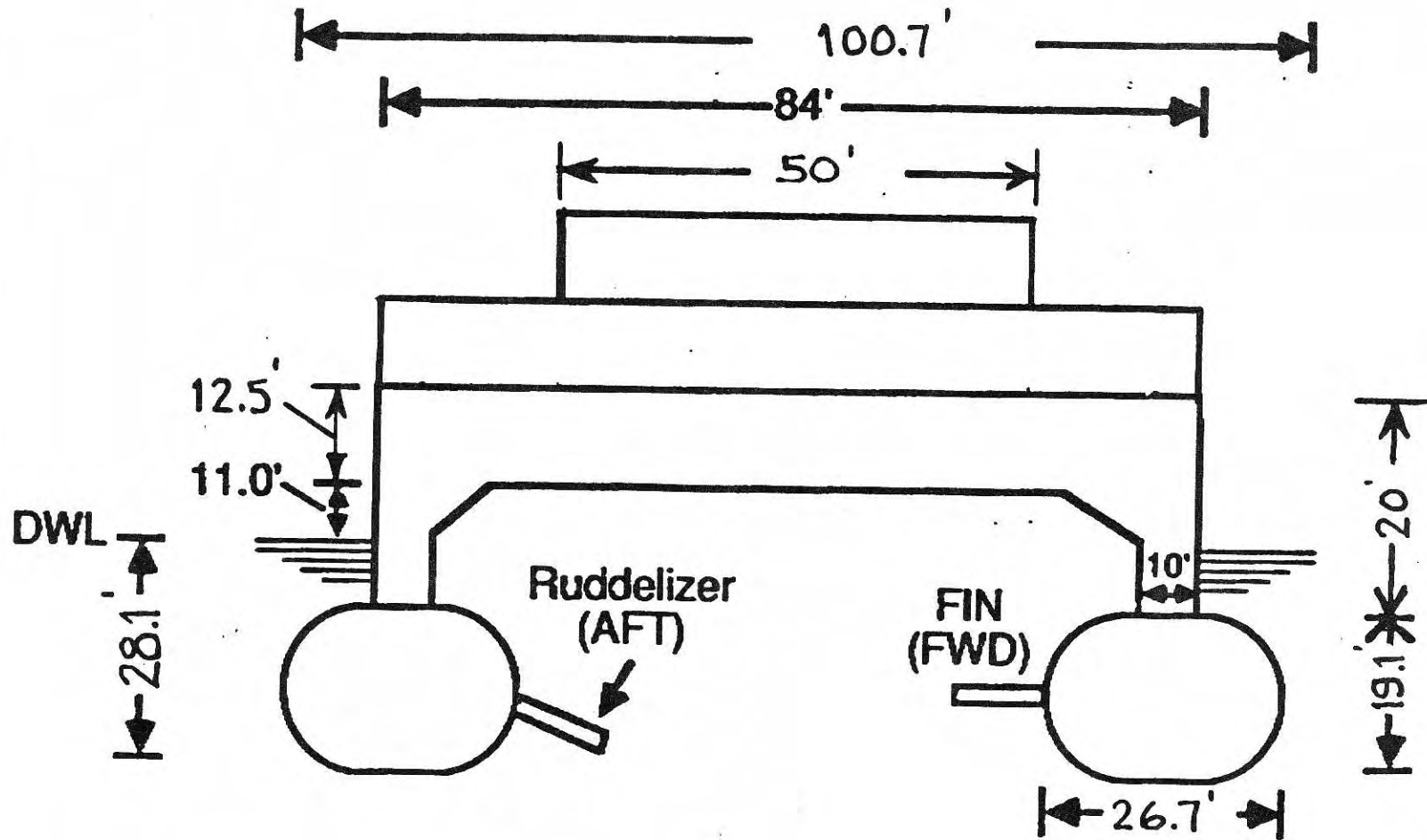


(NOT TO SCALE)

8/87

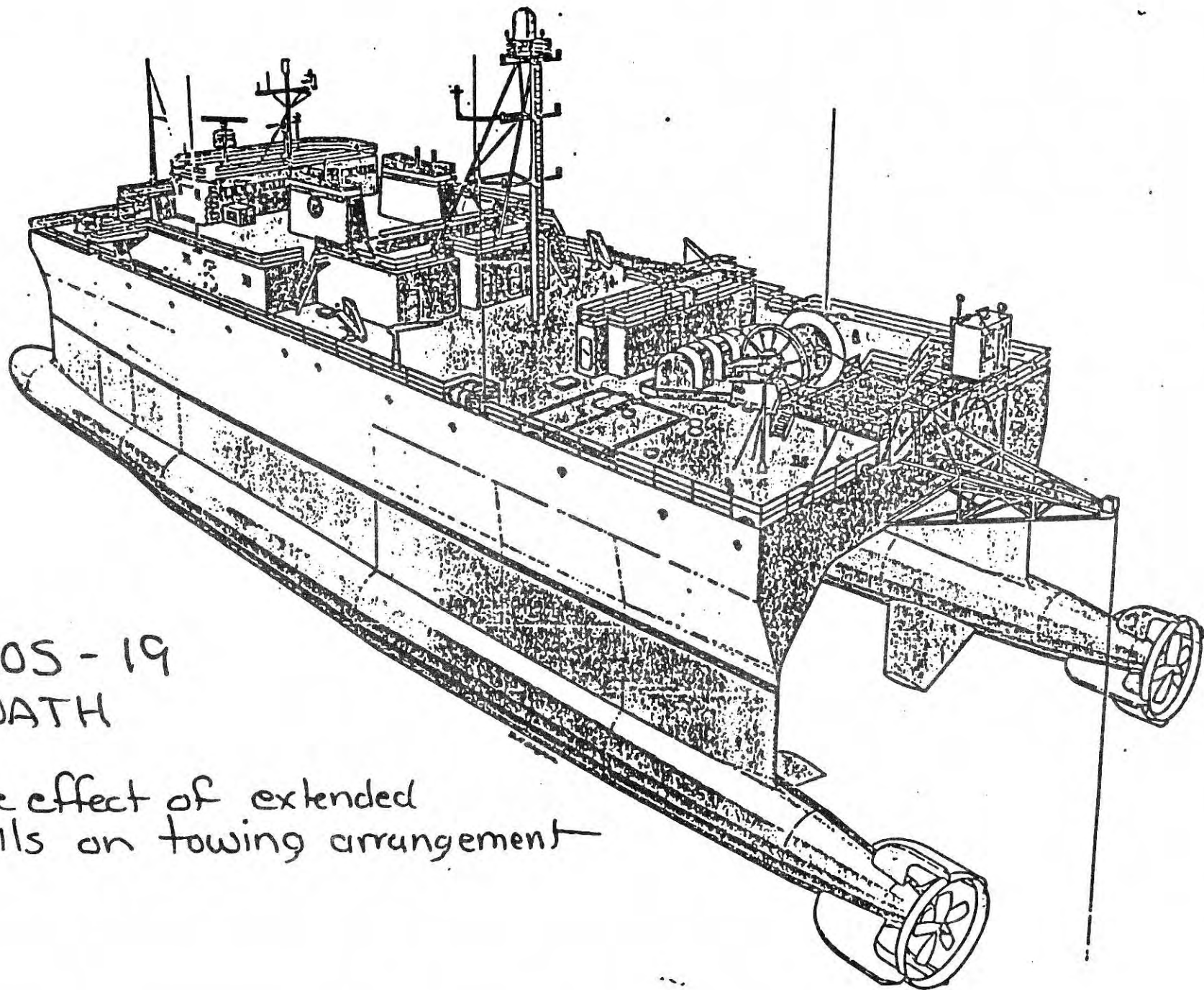
FIG-1

SWATH COMMON HULL BASELINE (REDUCED) MIDSHIP SECTION



8/87

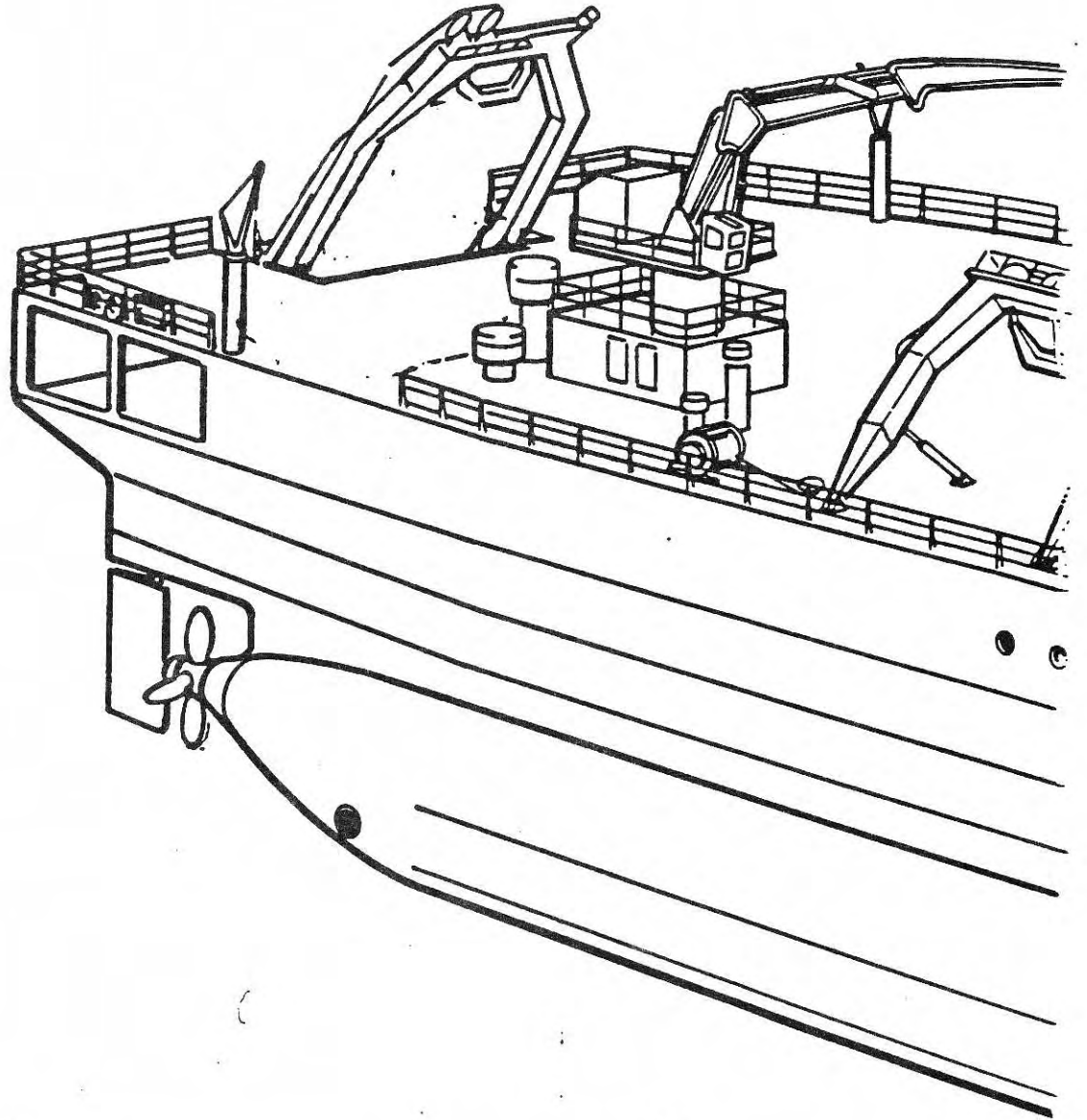
FIG. 7



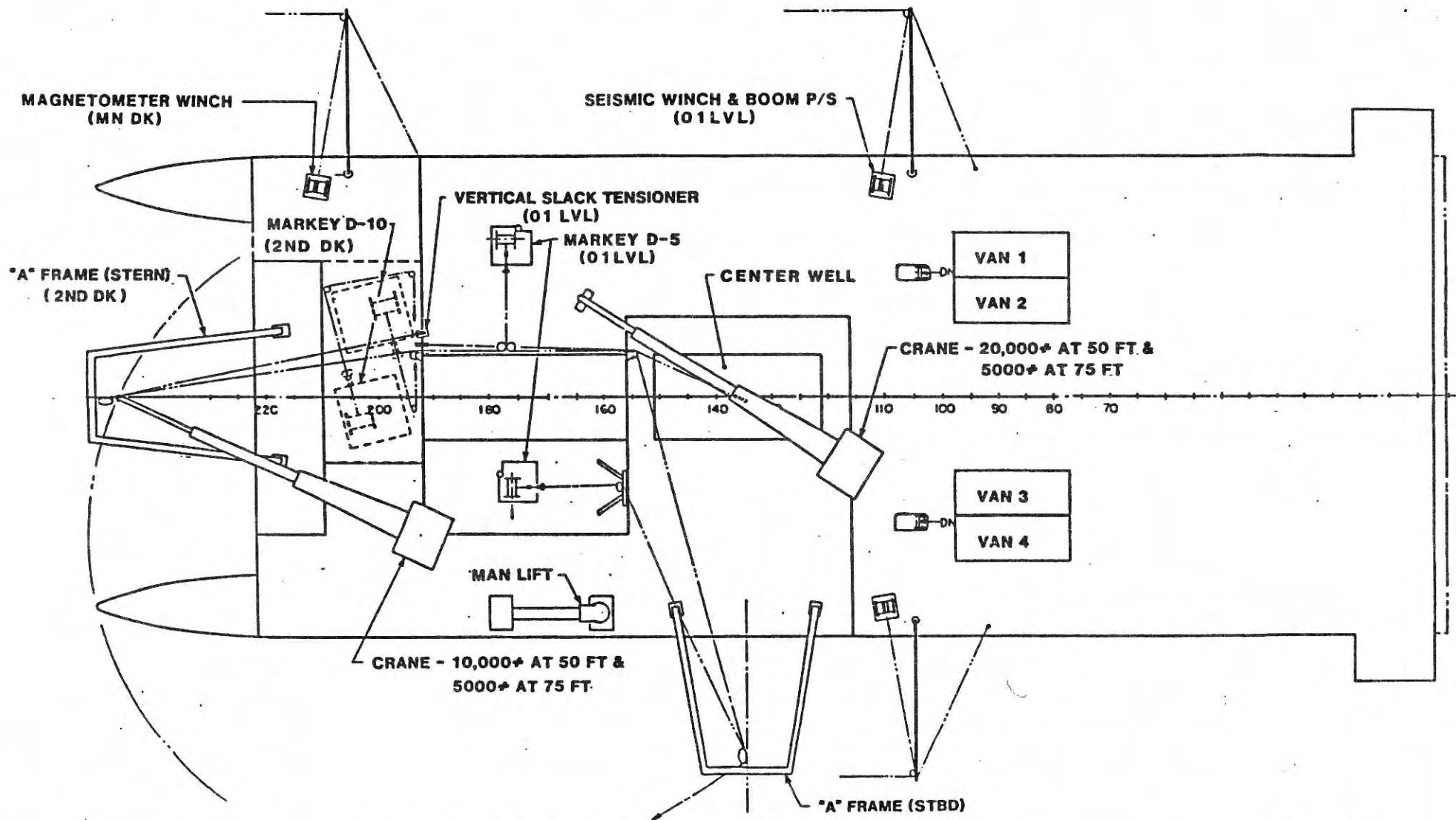
TAGOS - 19
SWATH

Note effect of extended
hulls on towing arrangement—

FIG. 3



TYPICAL "OVERHANGING STRUT"
SWATH STERN



PROPOSED T-AGS(O) OCEANOGRAPHIC HANDLING SYSTEMS

FIG 5

REPORT ON AGOR 14/15 OVERHAUL AND REFIT

The MELVILLE/KNORR Refit planning is approaching the completion of the Preliminary Design Phase. A copy of Draft Preliminary drawings are attached. Review, comments and suggestions are invited.

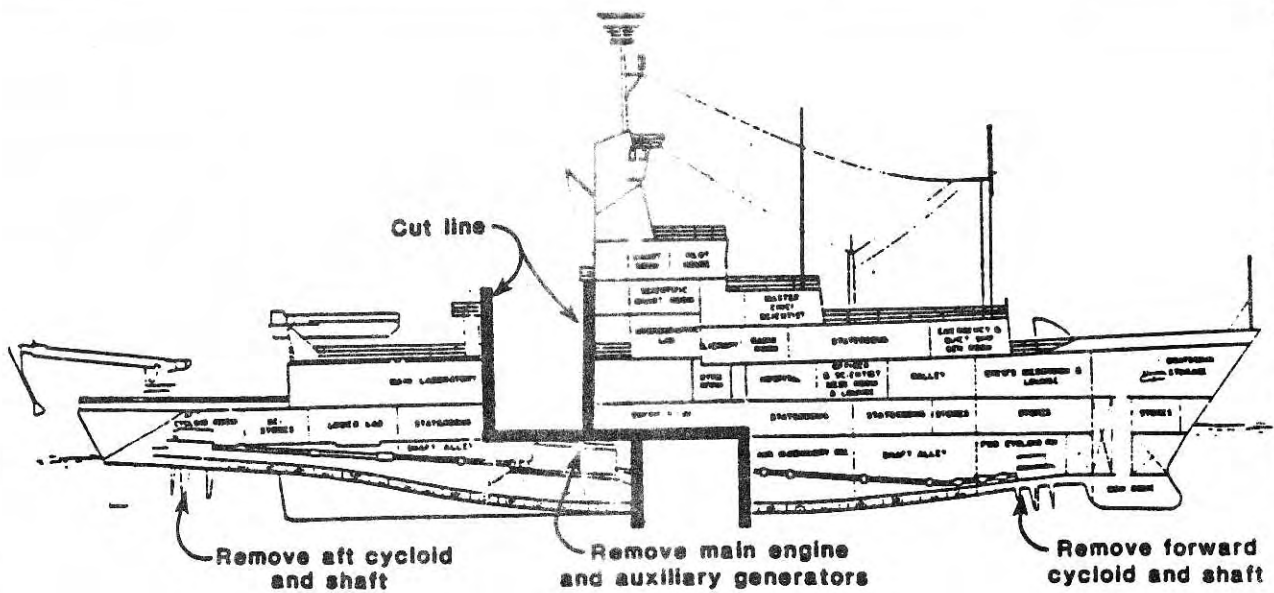
All design calculations presently meet or exceed the operational requirements and criteria which have been set.

A comparison of existing to new characteristics is given by the following:

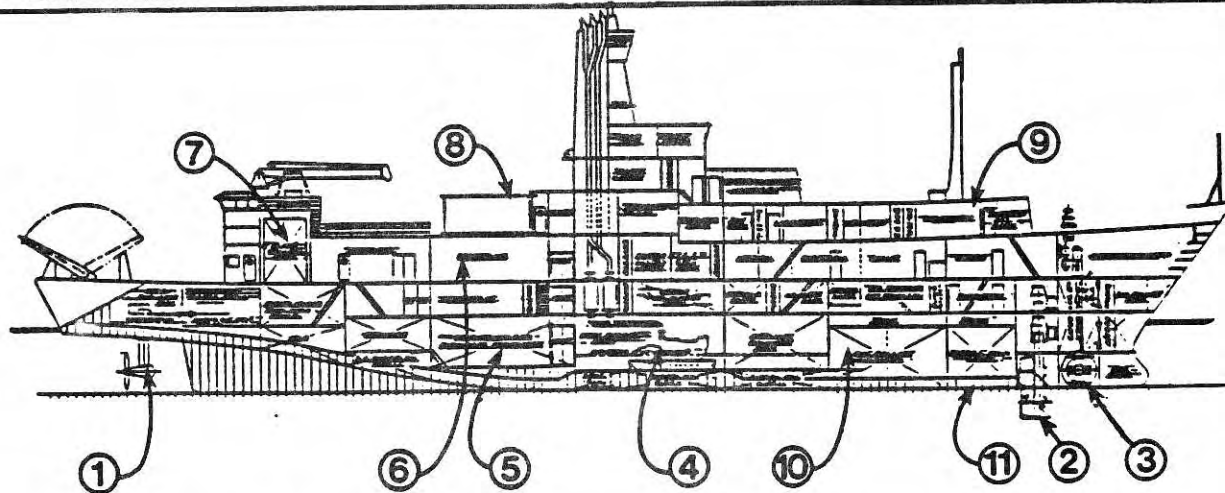
	<u>Existing</u>	<u>Proposed</u>
Length overall	245 feet	279 feet
Beam	46 feet	46 feet
Draft	16.5 feet	15.5 feet
Full Load Displacement	2,415 tons	2,670 tons
Gross tonnage	1,806 tons	
Propulsion Horsepower	2,800 HP	3,000 HP
Cruising speed	10 knots	12 knots
Maximum speed	12 knots	14 knots
Cruising range	10,000 miles	12,000 miles
Fuel capacity	110,000 gals.	121,000 gals.
Crew	24	24
Scientists	25	34
Lab space	2,400 sq.ft.	3,860 sq.ft.
Science storage	842 sq.ft.	1,324 sq.ft.
Main Deck working area	3,424 sq.ft.	3,764 sq.ft.
clear length	96 feet	126 feet

Current schedule for the project is as follows:

September 1987	Complete Preliminary Design
November 1987	Contract Design starts
February 1988	Commence long lead procurement
March 1988	Complete Contract Design
April 1988	Issue RFP for first ship
July 1988	Award contract for first ship
October 1988	First ship to yard
December 1988	Issue RFP on second ship
April 1989	Award contract on second ship
June 1989	Complete first ship
July 1989	Second ship to yard
August 1989	First ship in service
April 1990	Complete second ship
June 1990	Second ship in service

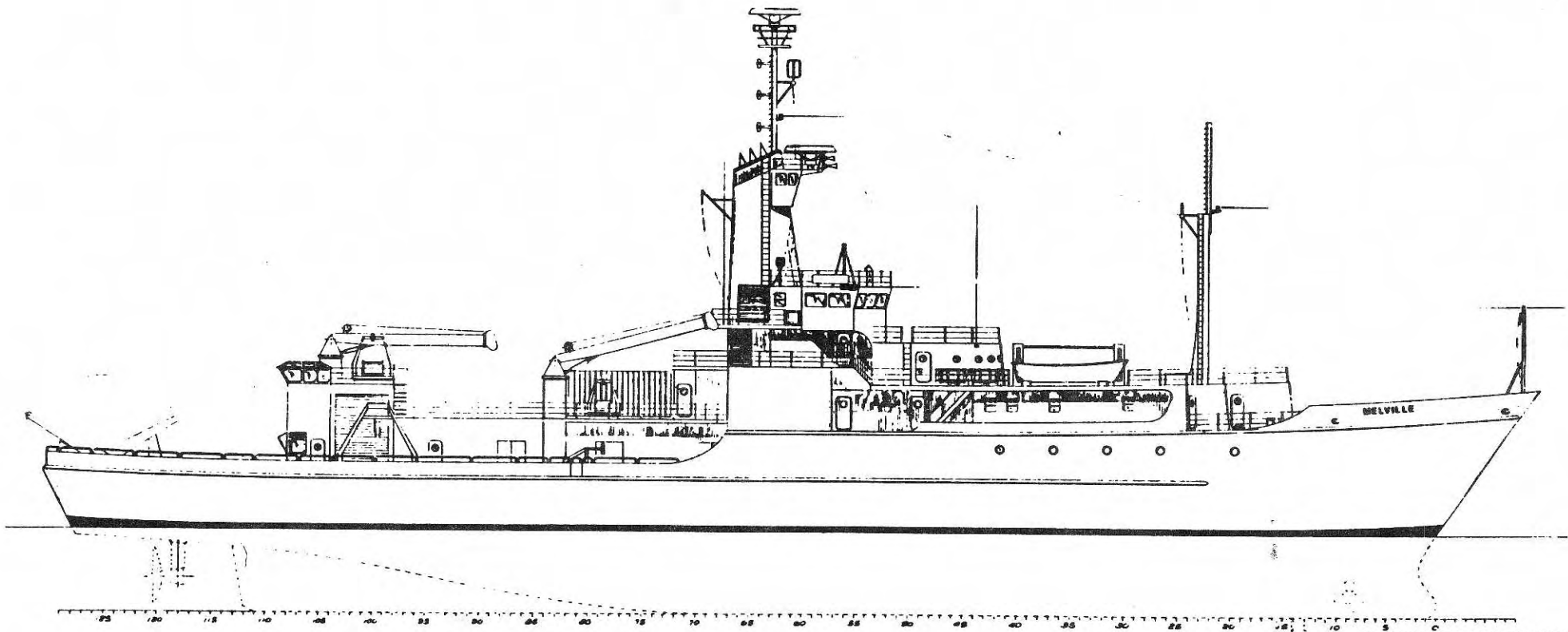


"Cut Line" and Removals



1. Twin 1500 HP 360° "Z" drive propulsors.
2. 900 HP bow thruster, retractable drive with hull fairing installed on bottom.
3. 350 HP tunnel thruster, rotatable 90° with hull closure fairing.
4. Engine room in new 34 ft. space. Integrated electric plant is three 1000 KW AC generators to a 600 volt bus.
5. Former engine room becomes new science storeroom. Hoistway access to laboratory spaces above.
6. Main laboratory area is lengthened by 34 ft. and refurbished.
7. Hanger/staging areas on port side aft and starboard side midships.
8. Provision for two laboratory vans on 01 Deck with direct access to interior of ship. New heavier crane to handle vans.
9. Former machinery space converted to staterooms.
10. New semi-active roll stabilizing tank.
11. New faired-in bow.


Summary of Modified Vessel

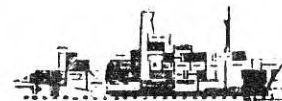
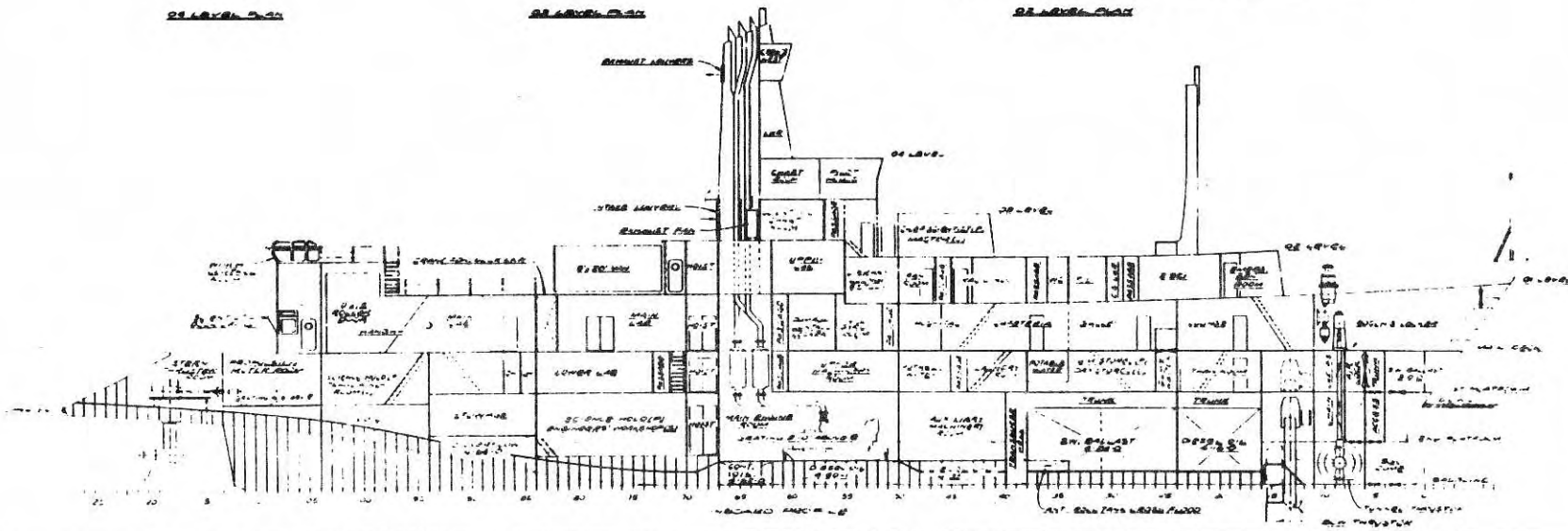
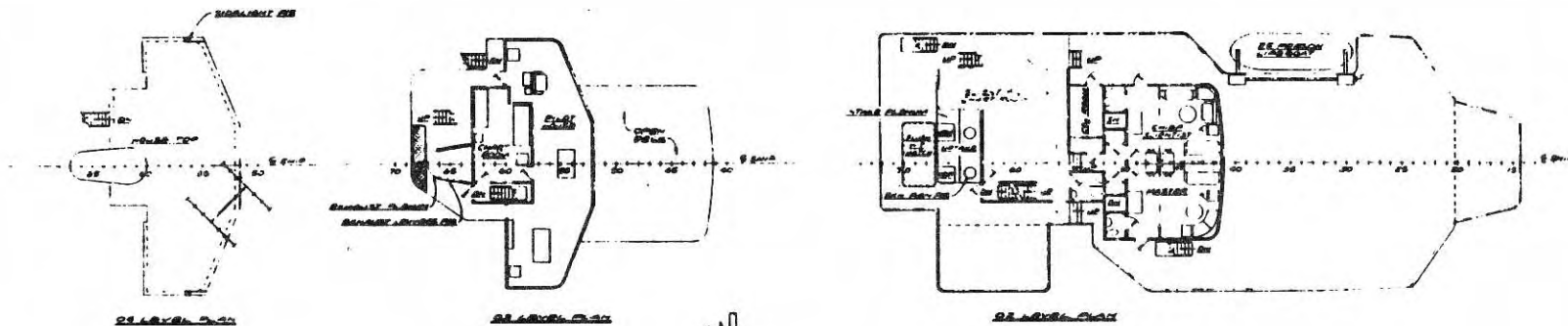


Woods Hole Oceanographic Institution
Woods Hole, Massachusetts

AGOR 14 — OVERHAUL AND MODIFICATIONS

Preliminary Outboard Profile

	THE GLOSTEN ASSOCIATES, INC. <small>CONSULTING ENGINEERS AND ARCHITECTS</small> <small>100 West 4th Street - New York, N.Y. 10011</small>		NO.
	DRAWN BY C. F. P.	DATE 1-10-67	DRAWING NO. 6718-3-14
	CHECKED BY J. P.	DATE 1-10-67	SCALE 3/8" = 1'-0"
	APPROVED BY J. P.	DATE 1-10-67	SHEET 1 of 1



Woods Hole Oceanographic Institution
 Woods Hole, Massachusetts

AGOR 15 — OVERHAUL AND MODIFICATION
 Preliminary Arrangements and Profile
 Midway Profile and Upper Decks

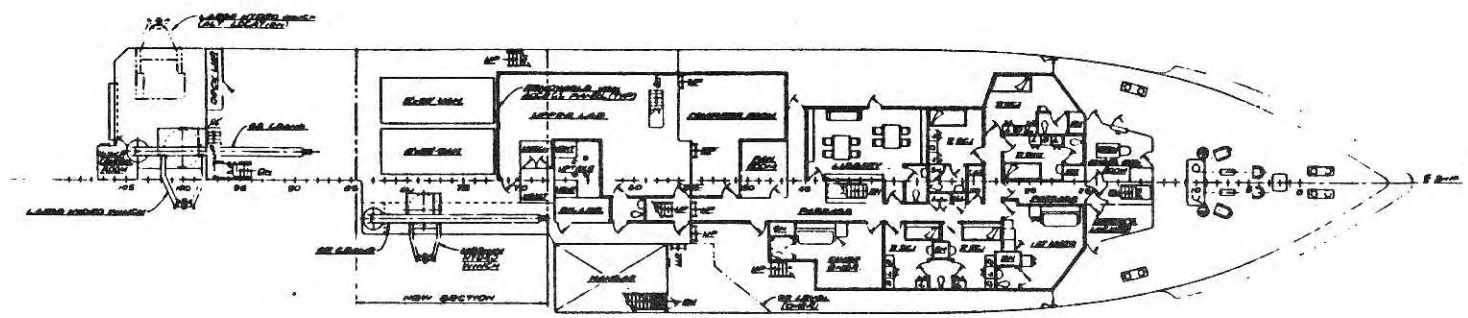
APPROVED

THE GUSTEN ALLEN SHIPYARD

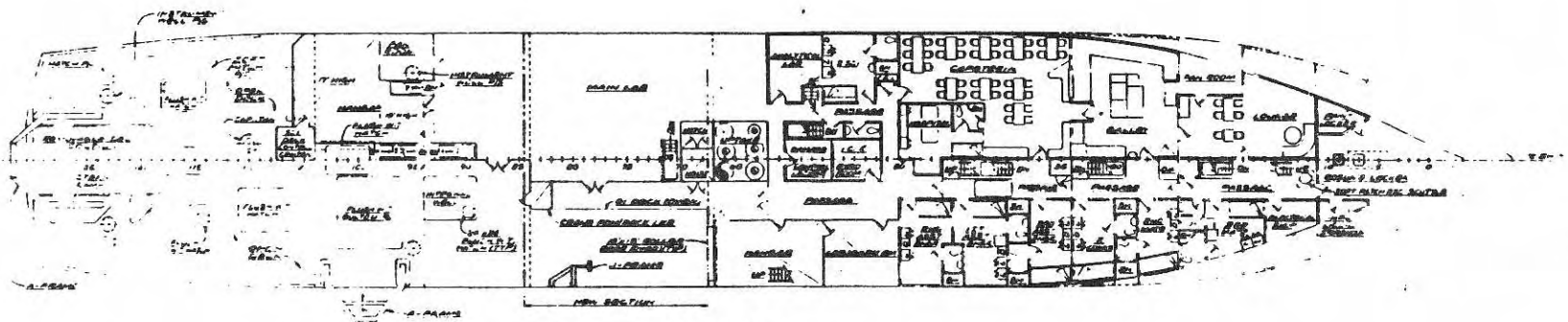
ORIGINAL: W.H. DATE: 8-48
 CHECKED: P. DATE: 3-50
 APPROVED: R. DATE: 5-50

PROJECT NO. 9710-2-15
 SCALE: 1/8" = 1'-0"

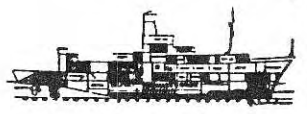
Sheet 2 of 3




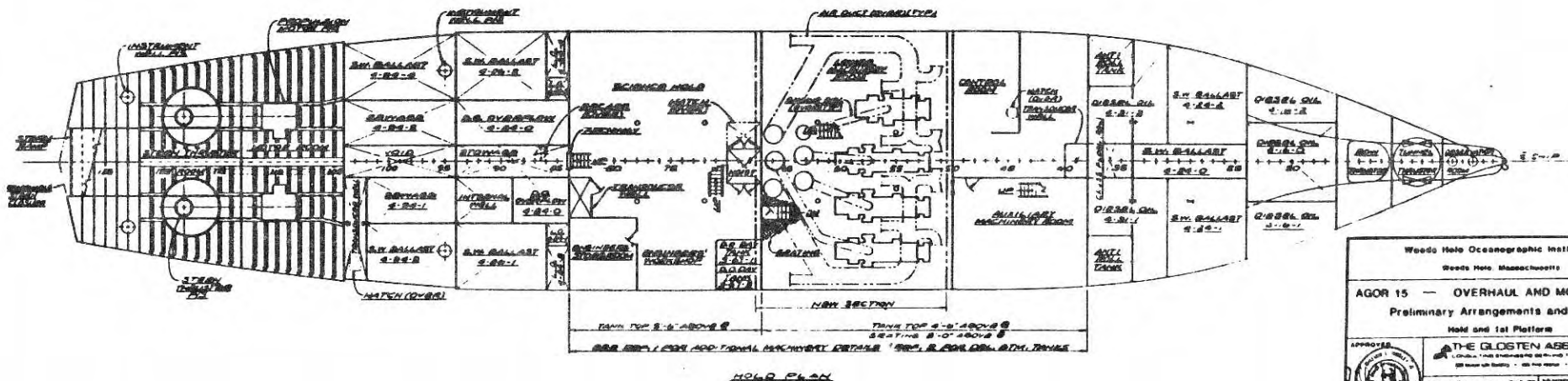
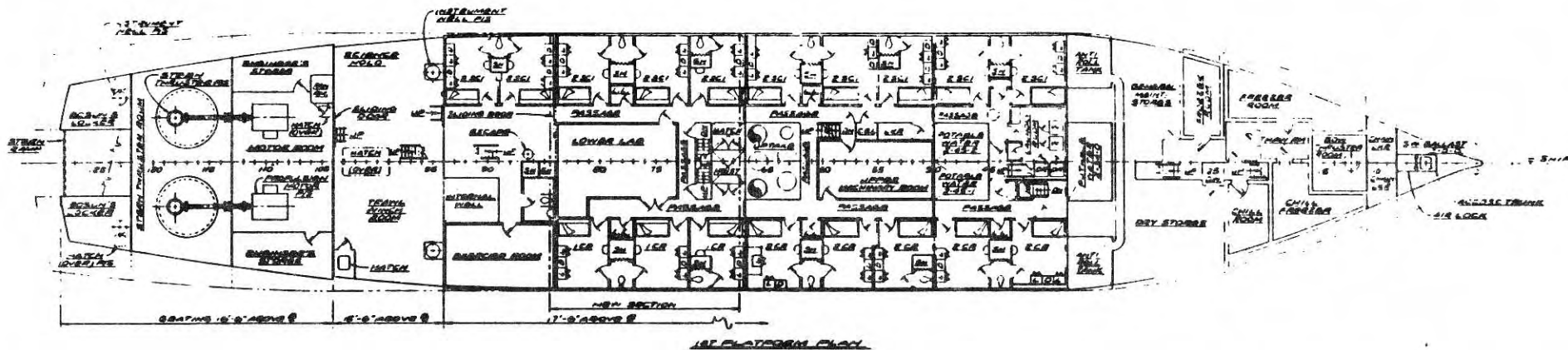
UPPER DECK PLAN



MAIN DECK PLAN



Woods Hole Oceanographic Institution	
Woods Hole, Massachusetts	
AGOR 14 — OVERHAUL AND MODIFICATIONS	
Preliminary Arrangements and Profile	
Main Deck and 81 Level	
 THE GLASTON ASSOCIATES, INC. 1000 W. 10th Street, Suite 100 Seattle, WA 98101 Phone: (206) 461-1111 Fax: (206) 461-1112	
DRAWN BY: [Name] CHECKED BY: [Name] APPROVED BY: [Name]	PROJECT NO: 8716-2-14 SCALE: 1/8" = 1'-0" SHEET 2 OF 2



Woods Hole Oceanographic Institution
Woods Hole, Massachusetts

AGOR 15 — OVERHAUL AND MODIFICATION
Preliminary Arrangements and Profile
Hull and 1st Platform

THE GLOSTEN ASSOCIATES, INC.
100 Commercial Street, Woods Hole, Massachusetts 02545
201 Woods Hole Road, Woods Hole, Massachusetts 02545

APPROVED: [Signature] DATE: 12/17/67

CHECKED BY: [Signature] DATE: 12/17/67

DATE: 12/17/67 SCALE: 1/8" = 1'-0" SHEET 1 OF 3

8716-2-15



UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

October 1987

UNOLS NOMINATING COMMITTEE

The Nominating Committee has assembled the following slate of candidates for UNOLS and the Advisory Council positions to be filled at the October, 1987 Annual Meeting.

THE SLATE

For Vice Chairman, UNOLS:

Donald F. Boesch	Louisiana Universities Marine Consortium
Jay Langfelder	Harbor Branch Oceanographic Institution
John Morrison	North Carolina State University

For Advisory Council - Member Representation:

Charles Eriksen	University of Washington
Jeff Fox (incumbent)	University of Rhode Island
Tom Johnson	Duke University Marine Laboratory
Art Maxwell (incumbent)	University of Texas, Austin
Rich Pieper	University of Southern California
Carolyn Thoroughgood	University of Delaware

For Advisory Council- Associate Member Representation:

Kent Fanning	University of South Florida
Tom Malone	University of Maryland



THE USE OF RADIOISOTOPES ON UNOLS VESSELS

The Problem

Research requiring the use of radioisotopes at sea has increased rapidly over the last decade. For the most part this has involved the use of low energy, beta emitters (^{14}C and ^3H). Both the frequency of use and the amount of activity used has increased and probably will continue to do so. The primary problems posed by the use of these isotopes at sea environmental contamination (mainly local, on board ship) and storage of waste. In addition, as the use of molecular biological techniques grows in biological oceanography, it is likely that requests will be made to use high energy, gamma emitters such as ^{32}P on our research vessels. Since most Universities are licensed by the NRC to use many of these more hazardous isotopes, it is at least technically possible that these isotopes could be taken to sea under current operating conditions. These isotopes pose a much greater health problem than the more frequently used beta emitters. Given the importance of radioisotopes (at both natural and experimental levels of activity) as tracers of biological, physical and geological processes and the unique problems associated with the use of radioisotopes on board ship, it is important that UNOLS establish policy and procedures for the transfer, use, storage, and disposal of radioisotopes for the UNOLS fleet as a whole.

Recommendations

1. The UNOLS Shiptime Request Form should be amended to include a section on isotope use which would include quantity, type and form of radioisotopes that will be needed to conduct the proposed research. This information should be used as one criterion for the assignment of PIs to research vessels.
2. All operating institutions should have an isotope users committee that will be responsible for insuring that the use of radioisotopes on board ship is in compliance with Federal, State, Local and Institutional regulations. To these ends, once a ship has been assigned and confirmed, a member of this committee should contact the appropriate PI(s) in order to formulate procedures for transfer, storage, use and disposal of radioisotopes. The PI will be responsible for coordinating these activities with their institution's Radiation Safety Department.
3. All operating institutions should provide PIs with a "cruise handbook" which includes detailed procedures for transferring radioisotopes, storage, use, disposal, monitoring work areas, and reporting and decontaminating spills.
4. Users should provide the operating institution with a detailed plan for compliance to these procedure.
5. A member of the ship's complement (e.g. an officer or a technician) should be trained as a radiation safety officer and will work with the appropriate PI(s) to insure compliance with safety regulations.
6. Work areas or vans designated for isotope use should conform to institutional regulations for such spaces and should provide adequate facilities for the proposed research.

This is not intended to be an exhaustive list of the issues that should be addressed, but a starting point. Currently, operating institutions conform to these guidelines to varying degrees. On the east coast, WHOI and URI are good

models. Problems arise in part because PIs and/or ship operators are often not well enough informed and important procedures are not initiated properly or with enough lead time. It is important that procedures be formalized and standardized in order to promote the safe use of radioisotopes on UNOLS vessels. At some point, UNOLS and the NSF (and, perhaps other funding agencies) may need to work with the NRC to develop procedures agreed to by both operating institutions and the home institutions of federally funded PIs.