

# UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

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

UNOLS Office  
Woods Hole Oceanographic Institution  
Woods Hole, Massachusetts 02543

## ADVISORY COUNCIL

Minutes of Meeting held August 1-2, 1977  
Moss Landing Marine Laboratory  
Moss Land, California

### GENERAL

The following were present for both days, except as noted:

G. Keller, Ch.	J. Schubel
D. Frankenberg, V. Ch. (Abs)	T. Treadwell
R. Barber	F. Webster, <i>ex-officio</i> , Aug. 1 only
R. Fisher	W. Wooster, <i>ex-officio</i>
G. Gross	* * *
J. Martin	M. Jhrde
	T. Stetson

The meeting came to order at 0900 and after a welcome to the new Council members by the Chairman, the Draft Agenda was adopted as written. Item number 10 was set aside for the following day.

The following paragraphs are keyed to the Agenda numbers.

1. Report of Annual Meeting. The summary Report of the May 1977 Annual Meeting prepared by the Executive Secretary was approved.
2. Minutes of Last Meeting. The Minutes of the Advisory Council Meeting held May 12-13, 1977, were adopted.
3. Continued Role of ALVIN Report. This report, prepared by the ALVIN Review Committee, was received by the Advisory Council late last year. The Advisory Council accepted the report on the Continued Role of ALVIN and endorses recommendations concerning the continuing need for the facility, its operation and coordination as a National Facility, and the need for long range planning and coordination. Recommendations on funding support and technical improvements on ALVIN are being implemented. With regard to inadequacies of the present support ship (LULU), the Advisory Council recommends that NSF, ONR and NOAA as a matter of urgency should explore alternative solutions and proceed to implement the preferred one.

- 4-5. Coastal R/V Plans. At the last Annual Meeting, Drs. Barber, Gorsline, Schwartzlose, and Capt. Dinsmore were nominated UNOLS delegates to attend the Meeting on Coastal Ship Designs held 29 June 1977, Washington, D.C. Dr. Barber reported all attended a very worthwhile session and he was impressed by the expertise present.

The *MIT*/Gilbert 138' and *Miami*/Matzer 128' designs will receive further attention, parties involved addressing the recommendations resulting from this meeting.

A report of this meeting dated 20 July 1977 by Miss Jahrde is attached. It is hoped that the four delegates named above will continue to serve as needed. Although the Polar vessel design was not discussed, it is felt that should she be built, she should be operated as a National Facility under Division of Ocean Sciences.

6. Customs. Dr. Fisher reported local Customs has recently begun insisting that scientific gear and samples be manifested. Other Institutions have attempted to obtain relief from this provision by favorable interpretation of regulations, but have not been successful. After discussion, it appears SCRIPPS will present this case to local authorities. If relief is not forthcoming, Miss Jahrde indicated a move might be made at the Federal level. A memorandum concerning the SCRIPPS' problem is attached.
7. DWOG. Dr. Wooster's invitation of June 21st to UNOLS' Distant Water Operating Group (DWOG) resulted in the following representatives being appointed:

HIG	-	F. Campbell	DUKE	-	O. Pilkey(alt. E.Nelson)
U. of Alaska		J. Moore	L-DGO	-	D. Hayes(alt. S.Gerard)
U. of Wash.		F. Richards	URI	-	R. Sexton
OSU	-	G. Keller	RSMAS	-	J. Gibbons
SCRIPPS	-	R. Haines	WHOI	-	R. Dinsmore
TAMU	-	T. Treadwell			

Discussion raised a number of questions which should be addressed by this group such as: what procedure does NOAA and Navy go through for clearance, what should be the accepted minimum in final reports for Dept. of State and is the present clearance procedure working.

Activation of this group will commence shortly; no date was established for its first meeting.

8. USN-UNOLS Liaison Office. A letter had been received by UNOLS from Capt. Falkenstein, Ch. of Staff, Office of the Oceanographer of the Navy, proposing to set up a Washington liaison office which would manage UNOLS affairs. Discussion of the job description enclosed indicated that the Advisory Council feels it is inappropriate. The E/S was directed to write and so indicate.



9. International Dist. of R/V Schedules. Member institutions had been canvassed by a memo from the Executive Secretary, dated May 31st which included a copy of Mr. Sullivan's (Dept. of State) letter asking for comments pro and con on 1) making the "Oceanographic Ship Operating Schedules" available internationally and 2) making the Schedule itself international by including foreign countries.

All of those responding (except one) were largely negative on both counts for various reasons such as impossibility of timeliness, its being published by Navy, its including schedules of vessels not academic, etc.

Dr. Wooster will compose a reply to the Dept. of State on behalf of UNOLS.

10. Discussion of UNOLS Long-Range Planning Report. Discussion on this item occupied the second day of the meeting. Recent happenings such as the meeting of geologists in Mauritius and post-IDOE planning (PIP) have provided new ideas and information. Accordingly, this document (dated May '75) is now only a "working paper" and nothing further will be done beyond making use of it as it stands.

Other sources:

- a. Reports from 5 PIP workshops
- b. 7 Sept. 1977 PIP meeting (Barber, Gross, Webster, Wooster to attend)
- c. Past UNOLS reports
- d. Dr. B. Balley - Report from Denver meeting
- e. Directions for Naval Oceanography report
- f. Sea-Grant program
- g. Fleet utilization pattern
- h. OSB manpower study
- i. UCONN study on community base

#### ACTION.

In an attempt to develop some "boundary statements" or recommendations on how the fleet should be utilized or developed further by 1980, Dr. Wooster will ask PIP workshop conveners to comment on what impact reports of their workshops might have on facilities. Miss Johrde will see if there is useful material at the Foundation.

The focus of the November Council meeting (see Item 11) will be to develop recommendations regarding the fleet, after assimilation of the above material.

As a means of assessing progress, a one day session has been scheduled Sept. 21st (see Item 11) for the following: G. Keller, D. Frankenberg, G. Gross, R. Dinsmore, T. Stetson.

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11. Meetings.

Assessment group at 0930, 21 Sept. 1977, NSF, Washington, D.C. (see Item 10)  
Advisory Council, 21-22 November 1977, NSF, Washington, D.C.  
Advisory Council, 16-17 February 1978, RSMAS

12. Other Business.

Agency Interest. UNOLS Office currently receives modest funds via NSF for its operation from EPA, ERDA, NOAA, NORDA, and USGS. There is general feeling representatives should perhaps attend, but in any case receive notice of meetings. The problem is in identifying a proper party at those agencies. The Executive Secretary will work towards resolution of this problem.

Equipment. Dr. Keller deplored the fact the fleet does not have narrow-beam E/S capability. The Navy, NOAA and CHARCOT have them; price tag is on order of \$350K which probably explains why U.S. academic fleet does not.

Advisory Council Annual Reports. The Charter calls for an Annual Report by the A/C to the funding agencies. While several reports issue from UNOLS each year, it is noted the last Annual Report covered 1973. A committee consisting of G. Gross, T. Treadwell, and the Executive Secretary will commence to put together such a report on a calendar year basis.

Thomas Stetson  
Executive Secretary  
UNOLS  
8 August 1977

1. The Board of Directors shall have the authority to...

Section 2.01

2.1 The Board of Directors shall have the authority to...

2.2 The Board of Directors shall have the authority to...

2.3 The Board of Directors shall have the authority to...

Executive Director  
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NATIONAL SCIENCE FOUNDATION

WASHINGTON, D.C. 20550

Office for Oceanographic Facilities and Support

20 July 1977

TO: Distribution  
FROM: OFS  
SUBJECT: Meeting on Coastal Ship Designs, 29 June 1977

An ad hoc meeting was held in room 628, National Science Foundation, throughout the day of 29 June 1977, for evaluation of designs for coastal research vessels. A list of those attending is attached (Atch A).

The designs were developed under NSF/OFS grants to groups representing the scientific and ship operating community of four geographic areas. Lead institutions were responsible for the administration of the grants and final preparation of the design studies. The reports discussed were the following:

- OCE 76-08439, University of Miami--Rudolph F. Matzer Associates, Marine Architect--two ships, 128' and 100' LOA
- OCE 76-08440, University of Washington--L. R. Glostén and Associates, Marine Architect--one ship 134' LOA
- OCE 76-07106, University of Texas--Gulf Marine Design, Inc., Marine Architect--one ship 95' LOA
- OCE 76-07107, Massachusetts Institute of Technology--John Gilbert Associates, Marine Architect--one ship 138' LOA

Agenda

The agenda (Atch B) was followed essentially as written except that the general open discussion involving all participants was held in the early afternoon and a closed discussion by the evaluators was the last activity of the day.

Each of the designs had received preliminary technical review during April and May 1977 by the Interagency Committee on Ship Construction (ICSC). Questions and comments arising from that review had been provided to each design group, and these became the point of departure in each of the individual meetings during the morning session. The



general outline of items covered in the evaluation was similar to that set out in Attachment C, "Considerations for Evaluation of Conceptual Design Studies for Coastal Research Ships."

### Recommendations

In the final session, the evaluators first discussed the two smaller ships designed by Texas and Miami. The consensus was that NSF should not fund further development of these designs or, for that matter, to expect to use standardized designs for future construction in the 65-100 foot range. This advice was based on the following considerations:

- Scientific undertakings requiring small boats tend to be quite different from region to region; "coastal research" is not the same in a rocky coastal area as in a flat marshy one or in a reef environment.
- In the smaller boats, peculiarities of regional geography and sea conditions are crucial. In the southeast and Gulf, for example, very shallow drafts may be required for near-shore and estuarine work; the opposite is needed in the Northwest.
- The smaller boats are likely to be operated and maintained by the same individuals; i.e., they will not carry engineering specialists. Therefore, it is important that each ship and its powerplant be of a sort well-known to the local labor market and service facilities.
- Good stock hulls exist in this size range. Use of a suitable stock hull results in economical construction and predictable operating characteristics.
- The Miami and Texas designs, while fundamentally competent, show some negative results of attempting to put too much into a small ship.

In summary, the group recommended that when NSF funds construction of ships of less than 100' LOA, potential operators be instructed to select from suitable stock hulls and propose the adaptation and arrangements most suitable to the specific scientific and operational conditions of their geographic area.

Discussion then centered on the three larger designs: MIT/Gilbert, 138'; Washington/Glosten, 134'; and Miami/Matzer, 128'. In this category, the group felt that further development of new designs specifically for research



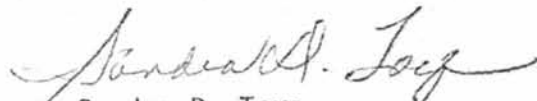
was warranted. All three ships were considered fundamentally sound in concept and engineering. After considerable discussion, however, the group recommended that only the MIT and Miami designs be developed further for NSF use. Two negative factors in the Washington design were cited:

-Seakindliness--the predicted motions would make this a very "stiff" ship.

-Propulsion plant--although the proposed power plant is an innovative concept, it has many potential pitfalls in maintenance and operating characteristics that make it questionable for a general service research vessel.

The group felt that the Miami and MIT designs should produce ships of generally similar capabilities, but with enough differences between them to allow for choices based upon funds available for construction and operation and on regional or institutional peculiarities of mission and geography. The MIT ship will be relatively heavy and deep-drafted; the Miami ship, lighter and shallower. As a consequence, the MIT ship will also be more costly to build and operate, though fully comparable estimates are not yet available. In terms of speed, range, endurance, and crew and scientific complement, the ships are quite similar.

Specific questions and recommendations were raised that should be addressed during the completion of the design efforts. For both ships, further development of designs should address a number of safety and stability factors: use of fireproof materials; performance under icing; floodable length, etc. The group felt that the pilot house arrangement of the Matzer design was superior and should be included in the re-work of the Gilbert ship. Considerations to be examined in the completion of the Matzer design include size of generators, installation of a fixed CO<sub>2</sub> system, and a powered bow thruster for low speed towing.



Sandra D. Toye

#### Attachments

Distribution: Participants  
 DAD/AAEO  
 DGC/AAEO Branch  
 Cdr. Dropp, OCEANAV  
 Dr. Frankenberg, UNC (UNOLS)  
 Dr. Keller, OSU (UNOLS)  
 Dr. Wooster, Wash. (UNOLS)  
 Mr. Stetson, UNOLS

Participants; Coastal Ship Design Evaluation  
29 June 1977

Interagency Committee on Ship Construction

- Bruce H. Barber, Marine Engineering Division, National Ocean Survey, NOAA
- Charles B. Cherrix, Chief, Division of Naval Architecture, Office of Ship Construction, Maritime Administration
- Warren C. Dietz, Chief, Design Branch, Naval Engineering Division, U. S. Coast Guard (could not attend; sent written comments)
- Stewart B. Nelson, Special Assistant to the Oceanographer of the Navy (Acquisitions)

UNOLS Designates

- Richard T. Barber, Director, Oceanographic Program, Duke University Marine Laboratory
- Donn S. Gorsline, Department of Geology, University of Southern California
- Robertson P. Dinsmore, Chairman, Department of Marine Operations, & Facilities, Woods Hole Oceanographic Institution
- Richard Schwartzlose, Marine Life Research Group, Scripps Institution of Oceanography
- Larry Clark, UNOLS Office (observer)

Gulf Coast Design Group - University of Texas

- Patrick L. Parker, Project Director
- John H. Thompson, Director of Operations, Port Aransas Marine Laboratory

New England Design Group - Massachusetts Institute of Technology

- Keatinge Keays, Project Director
- E. Gene Almendinger, Chairman, NECCRF Advisory Group, University of New Hampshire
- John W. Gilbert, Marine Architect, Gilbert Associates

Pacific Northwest Design Group - University of Washington

- Carl J. Lorenzen, Project Director

Southeast Atlantic Design Group - University of Miami

- James Gibbons, Project Director

NSF Staff

- Mary K. Johrde, OCE/OFS
- Robert B. Elder, OCE/OFS
- Sandra D. Toye OCE/OFS
- Albert F. Betzel DPP
- Herman Zimmerman, OCE/OS

## PROPOSED AGENDA

REVIEW MEETING -- COASTAL SHIP DESIGNS  
9 a.m.-5 p.m. Wednesday, 29 June 1977  
Conference Room 628, National Science Foundation

9:00 a.m.	Introduction, General Comments	Ms. Johrde, Head, OFS
9:15 - 10:00	Brief presentation on fundamental scientific assumptions; i.e., "mission profile" for each design.	Mr. Gibbons Mr. Keays Dr. Lorenzen Dr. Parker
10:15 - 12:15	Individual meetings of each design group with evaluators	
	10:15-10:45 Texas	Dr. Parker, Mr. Thompson
	10:45-11:15 Washington	Dr. Lorenzen
	11:15-11:45 Miami	Mr. Gibbons
	11:45-12:15 MIT	Mr. Keays, Dr. Almendinger, Mr. Gilbert
12:15-1:00	Lunch	
1:00-3:00	Discussion by evaluators	Mr. Barber Mr. Cherrix Mr. Dietz Mr. Nelson Dr. Barber Mr. Dinsmore Dr. Gorsline Dr. Schwartzlose
3:00-5:00	Open discussion; recommendations and conclusions	all



CONSIDERATIONS FOR EVALUATION OF  
CONCEPTUAL DESIGN STUDIES FOR COASTAL RESEARCH SHIPS

I. Engineering and Design

A. Hull and General Layout

- Is the overall design concept sound? Is it original or distinctive?
- Are there any problems of stability or other basic aspects of seaworthiness and safety?
- What will be the probable seakeeping/seakindliness qualities of the ship at cruising speeds? low speeds? on station?
- Is the general placement and allocation of space for machinery, personnel, scientific activities, and storage reasonable and appropriate?

B. Propulsion and Steering

- Is the recommended system appropriate to the design? Will it produce the speed, endurance, and ride characteristics desired?
- What will be the control and stationkeeping characteristics of the ship during normal scientific operations (0-6 kt.)?
- What redundancy, backup, or emergency capabilities are offered?
- Will excessive noise be a problem for personnel or scientific activity?

C. Habitability and Service Subsystems

- Is the power supply adequate for ship, scientific, and hotel load?
- Are replacement, control, and power supply for deck machinery well conceived?
- Are personnel spaces well-placed and comfortably laid out?
- Are heating, air conditioning, water supply, sewage holding and discharge, etc., adequate and in conformity with regulations?



## II. Scientific Capabilities and Limitations

- A. To what degree does the overall design concept fulfill the stated scientific requirements for the ship?
- B. What are likely to be the capabilities or limitations of the ship to perform routine oceanographic activities; e.g., trawling, towing, dredging, coring, placement and retrieval of heavy gear?
- C. Is the allocation of scientific spaces--deck, laboratory, storage, personnel--appropriate to the mission described and the size of the ship?
- D. What is a realistic assessment of the limitations of the ship for operations in terms of sea states, weather, seasonality, etc?
- E. Is the design concept sufficiently flexible to be adapted to scientific equipment and operating styles 10 or 20 years in the future?

## III. Operational Costs and Characteristics

- A. Is the stated crew requirement adequate for the operation of the ship as well as realistic for the scientific operations proposed?
- B. What will be the maintenance characteristics of hull and major machinery?
- C. What is the likely fuel consumption pattern for the ship?
- D. What is the probable admeasurement of the ship?

## IV. Construction Costs

- A. What would be the probable current construction costs of the design outfitted as described? as a bare hull?
- B. If a lesser sum were available, is the design amenable to simplification?
- C. Are there aspects of the design that are clearly uneconomical in any case?

V. Comparison to Other Ships and/or Designs

- A. Are there existing ships or categories of ships to which this design might be compared in terms of operating and handling characteristics?
- B. Are there aspects of this design that make it particularly well-suited (or ill-suited) for a given geographic region or type of scientific activity?

VI. Other

- Some studies may address scientific and communications outfitting requirements, and comment on these is welcome. NSF would normally fund construction and outfitting separately, however, so we do not view this as an important aspect of the design study at this stage.



SCRIPPS INSTITUTION OF OCEANOGRAPHY  
OFFICE OF THE DIRECTOR

LA JOLLA, CALIFORNIA 92093

14 July 1977

Dr. George Keller  
Chairman, UNOLS Advisory Council  
School of Oceanography  
Oregon State University  
Corvallis, Oregon 97331

Mr. Thomas Stetson  
Executive Secretary, UNOLS  
Woods Hole Oceanographic Institution  
Woods Hole, Massachusetts 02543

Gentlemen:

The accompanying memorandum sets forth a problem that very likely may not be new to Atlantic and Gulf Coast operators but certainly has not confronted us before three months ago. We believe that the situation may be turned around around by prompt action, en bloc, personal or otherwise, to intercede with national level Customs Officials, and that the long-term rewards in convenience are worth the effort to take such an action.

I ask that the Advisory Council 1 - 2 August agenda allow time for discussion.

With best regards,

A handwritten signature in cursive script, appearing to read "Bob".

Robert L. Fisher  
Associate Director

encl.

Manifests of Cargo (Equipment) Required by Oceanographic Vessels

It has been a long standing procedure for vessels of the SIO fleet to clear U.S. Customs outbound without listing scientific equipment. This was done on the assumption or understanding that scientific equipment was part of the ship's operating gear and was not to be considered as cargo. Subsequently upon return to the U.S. no manifest of cargo was submitted, on the tacit assumption that our ships never carried cargo as defined in Custom Regulations. Scientific specimens such as cores, rocks, and water samples were entered without a listing or comment from the inspector.

Recently R.V. Thomas Washington and R/V Melville, when entering Honolulu and San Diego, respectively, from overseas, were required to produce a manifest of cargo both for scientific equipment and for specimens collected during the voyages. This unexpected demand caused considerable delay in clearing the ship. In discussing the problem with our agent in San Diego, Shreve & Hays, were informed that henceforth a Form 4455, Certificate of Registration, with all scientific equipment of \$250.00 or more appended would be required for departing ships and that an Inward Foreign Manifest (Form 7527) listing the same equipment and all specimens obtained during the voyage would be required for re-entry.

This unexpected change of policy, or at the very least a new vigor in enforcement, will place an additional burden upon the Captain, the Chief Scientist, and the Resident Technician, both during operations at sea and on arrival at the first U.S. port. Inasmuch as the equipment is always returned to the U.S. (barring loss at sea through mishap) either with the ship or by separate van or shipment (where an inventory is included with the goods), it is difficult to find a compelling justification for the additional paper work exercise. Although the requirement is not new it has heretofore been given a lenient interpretation by the customs officials in San Diego.

Customs Officers in San Diego admit informally and candidly that academic research ships are in a gray area with respect to Customs regulations. In view of this, it is recommended that UNOLS investigate the desirability of a high level approach to the Bureau of Customs with the objective of returning to a lenient and sensible interpretation of the Customs regulations. We believe such an ameliorating decision will in no way be detrimental to the overall objectives of the Customs Bureau and will be of significant advantage and convenience to all the operating institutions.

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