UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ALVIN REVIEW COMMITTEE

Summary Report
of the
June 27, 28, 29, 1990 Meeting

Carriage House
Woods Hole Oceanographic Institution
Woods Hole, MA

Minutes of the Meeting

APPENDICES

ALVIN Review Committee
Minutes of Meeting

June 27, 28, 29, 1990
Carriage House
Woods Hole Oceanographic Institution
Woods Hole, MA

The meeting was called at 8:30 a.m. by Feenan Jennings, ARC Chair. Committee members, funding agency representatives from NOAA, NSF and ONR, WHOI operator representatives and UNOLS staff present for all or part of the meeting:

ALVIN Review Committee
Feenan Jennings
Dave Cacchione
Jeff Fox
Casey Moore
Doug Nelson
Geof Thompson
Gary Taghon
George Grice

Agency Representatives
Dolly Dieter, NSF
Keith Kaulum, ONR

WHOI
Dudley Foster
Don Moller
Skip Marquet
Barrie Walden

UNOLS Office
William Barbee

The ALVIN Review Committee Roster is Appendix I.

Before addressing items on the Agenda (Appendix II), **George Grice welcomed the ARC on behalf of the Woods Hole Oceanographic Institution.** After setting forth housekeeping details for the Committee members and affording them opportunity to meet with WHOI faculty, he noted several Woods Hole management concerns with the ALVIN program:

- **Vigor of the ALVIN program seemed to be waning.** Until recently, the ALVIN/ATLANTIS II facility had been oversubscribed by a factor of two to four. In 1989, ATLANTIS II operated for nearly the full year on non-ALVIN projects, in part because ALVIN was undergoing renovation and re-certification, but also because of low dive request pressure. Dive requests for 1990 had been adequate to generate a strong operating year for ALVIN/ATLANTIS II, but the facilities were just fully subscribed. Dives requested for 1991, **even before review, comprised only a marginally-full year's operation. Woods Hole management was concerned with this recent decline in dive-request pressure.**

- **WHOI was continuing to monitor closely ALVIN program management issues as had been discussed with the ARC at their 1989 meetings.** (The status of ALVIN management issues was discussed later during this ALVIN Review meeting.)

REPORT ON 1989 ATLANTIS II AND ALVIN OPERATIONS, STATUS OF 1990 OPERATIONS

Barrie Walden and others reported on the 1989 ALVIN overhaul, re-certification, limited operations and (early in 1990) Navy and NSF inspections.

Mechanical or system upgrades made during the ALVIN overhaul:

- All through-hull penetrators were replaced with a new design and newly-accepted model. Replacements were completed during ATLANTIS II's 1990 shipyard period.

- A new supplier for batteries had been found, apparently solving a potentially critical problem. Barrie Walden reported that ALVIN doesn't have adequate buoyancy to use a third battery tank. Power availability has not been a recent problem, however, because the recent conversion to a 120-volt system raised power-use efficiency.

- A long-standing problem in finding replacements for the gyrocompass was solved, at least for the time being. Two additional gyros, the same as the one currently in use, were located and purchased.

Dudley Foster was introduced as selectee for ALVIN Program manager. (Barrie Walden was to assume broader engineering management duties for Woods Hole.) A new ALVIN-Group expedition leader was to be selected within weeks of the meeting.

Barrie, George Grice and Dudley Foster discussed with the ARC the status of WHOI management of the ALVIN Group. Changes in pay structure, work rules, time at sea and berthing had been implemented (as discussed at 1989 ARC meetings). Under the new structure, eight months would be a full sea year. **Although the steps taken to date had alleviated some problems, there still remained a morale problem. Woods Hole management would continue to seek solutions. The consensus among ARC members and other scientists who had recently used ALVIN/ATLANTIS II was that the submersible and support ship facility had never served science better. At the same time, most users see evidence of an ALVIN Group morale problem. The recent users among the ARC agreed that there had not been and was not a safety problem, and some users suggested that recent management changes had led to improvements.**

ALVIN managers had recently attended a **Submersible Rescue Symposium**, with about 25 representatives of U.S., Soviet, French and Japanese submersible operators. The symposium was very successful, and may lead to a high-quality, stand-by rescue facility.

Three inspections, by the Navy, of ALVIN and of the Cawley A-frame and the NSF/ABSTECH inspection of ATLANTIS II, had been

scheduled around a Tampa port call early in 1990. Two of the inspections had been completed satisfactorily; but, because of logistics problems, schedule conflicts, and some misunderstandings, the Navy INSURV was deferred. **Keith Kaulum noted that ONR had committed to the revised inspection/certification processes and to their being completed effectively.** ONR and Woods Hole believed that the revised inspection/certification process should be workable. The Navy's INSURV had been rescheduled for some time in November.

Several adjustments had been necessary for 1990 operations. A project to be funded by USGS had been cancelled. The schedules for several projects around the cancelled one had been adjusted, and ALVIN/ATLANTIS II's 1990 operations had fewer days than desirable. Clearance for an Easter Island port call were first delayed and finally denied, with resulting schedule adjustments. There had been no significant operational delays due to ALVIN/ATLANTIS II.

The next ALVIN overhaul was being planned to begin late fall, 1992.

REVIEW OF REQUESTS FOR DIVES IN 1991

Dive Requests for 1991 are listed by region in Appendix III, and summarized in Appendix IV. Requests had been submitted in response to UNOLS announcement **Opportunities for Oceanographic Research, DSV ALVIN, 1991** (Appendix V). **Twenty requests for a total of 274 dives were received and reviewed.** The reviews were conducted following the ARC rules (Appendix VI). Not all of the requests were for work in areas where ALVIN/ATLANTIS II would operate in 1991. Two requests were for 1992.

The ARC recommended sixteen requests for a total of 224 dives. Five recommendations were of requests totaling 66 dives, either requesting the work in 1992 or necessarily deferred beyond 1991. Twelve requests for 158 dives were recommended to be scheduled in 1991. In addition, a non-ALVIN project had been proposed for ATLANTIS II, and was recommended.

SCHEDULE RECOMMENDATIONS FOR 1991

A provisional schedule for 1991 was outlined to include all 158 dives recommended by the Committee, together with one non-ALVIN project for about 30 days. This provisional schedule would begin with a non-ALVIN project requiring SEA BEAM off Mexico (January), followed by ALVIN projects in California Basins and in Guaymas Basin (February, March), three projects on the EPR (April-June), a project on Fieberling Guyot (July) and a series of ALVIN projects on Gorda-Juan de Fuca (August-October). **Although the tentative schedule was tight and efficient, the total work encompassed was less than a full year's operation. The**

ALVIN/ATLANTIS II would be unassigned after October. Further, Woods Hole operators and the ARC were advised that not all of the recommended projects were likely to be funded. Funding decisions were still pending on more than half of the tentatively scheduled ALVIN work. (The schedule in Appendix VII reflects funding decisions reached after the ALVIN Review meeting.) **Federal agency representatives accepted the tentative schedule,** although Keith Kaulum expressed concern that only one Navy-sponsored project (for six dives) had been requested or was on the schedule. The ARC shared his concern that few projects were being requested under ONR sponsorship.

ALVIN EQUIPMENT AND INSTRUMENTATION

Skip Marquet, WHOI, made a preliminary report to the ARC **on exciting prospects for employing remotely-operated vehicles (ROV's) from ATLANTIS II, in conjunction with and to supplement ALVIN operations.** The concept is made possible by the development of a small-diameter, relatively cheap fiber-optics cable designed for the ARGO-JASON ROV system. The cable would be employed off existing ATLANTIS II winches. The system would be operated by a three-person crew, and would not intrude significantly into AII space. The cable/vehicles make possible broadcast quality TV from depth, are very flexible as to power, number of channels, etc., and would be highly portable (e.g., on-off by project). In concept, the system could be used during the usual 11-hour nighttime window of no ALVIN operations.

The ARC was enthusiastic about the concept, although they deferred specific endorsement or recommendations pending a comprehensive proposal. They asked to be kept apprised as the concept is further developed.

Robert Tyce, head of NECOR Sea Beam operations at the Ocean Mapping Development Center, University of Rhode Island, reported to the ARC on newly-developed protocols and modes for supporting Sea Beam operations on ATLANTIS II.

After discussing briefly the history of the NECOR Sea Beam Group, and of their participation on Sea Beam operations on the ATLANTIS II in conjunction with ALVIN operations, three newly-developed modes of operations were described (Appendix VIII). The three modes:

Option 1, supported by a WHOI shipboard technician, is for occasional site location or transit, where surveys are not plotted and data preservation is not critical,

Option 2, would be supported by one OMDC engineer, and would support limited survey operations. Limited replotting and shipboard processing of the Sea Beam can be provided,

Option 3, would be supported by two OMDC engineers, and is appropriate for extensive Sea Beam operations. This mode routinely includes both shipboard and post-cruise processing ashore.

The ARC agreed that the three options should provide the flexibility needed to support the variety of Sea Beam operations appropriate for ALVIN/ATLANTIS II projects.

There had earlier been suggestions by ALVIN users that a **laser range finder would be of high utility for many ALVIN operations.** Barrie Walden reported that the ALVIN Group had looked into the system and had borrowed it for use on a few ALVIN projects. **A decision to purchase a system had not yet been reached; the range finder may not be as useful on most ALVIN projects as it has been on some other submersibles.**

REMARKS FROM FEDERAL FUNDING AGENCIES

Dolly Dieter reported that NSF is generally satisfied with ALVIN operations but does not anticipate any major increases in ALVIN funding. NSF has only minor concerns about the general level of ALVIN technology development.

NSF is concerned about the development of foreign submersibles with capabilities equal to or beyond those of ALVIN or any other U.S. submersible. The agency would prefer to support U.S. facilities rather than foreign ones. **The consensus in NSF is that the reduction in demand for ALVIN is a consequence of NSF (and other agency) emphasis on Global Change programs (WOCE, JGOFS, etc.) where there is little call for submersible-supported projects.**

Keith Kaulum noted the low level of ONR's ALVIN use again in 1991. Although ALVIN is clearly the first choice of ONR program managers when a submersible is required (because of its dependability and capability) only one major ONR program, Topographic Interaction, has significant need. ONR projects no more than level funding for ALVIN.

Problems expected in funding overruns on KNORR-MELVILLE could preclude any potential increase in ALVIN funding.

Word was relayed to the Committee **that NOAA's Undersea Research Program expected their ALVIN funding to continue about as in recent years.**

ARC members raised the issue of technology development to improve ALVIN capabilities for substrate sampling. The Committee was reminded that a Substrate Sampling Subcommittee had been considered in the past. After brief discussion, the ARC deferred action on this issue.

PLANNING FOR 1992 AND BEYOND

The Committee had been provided a summary of **Notices of Interest to Use ALVIN,** submitted 1983-1988 and still pending. While these Notices gave indication of nearly worldwide interest in using ALVIN, they were a poor basis for planning, even for 1992.

Interest continued in cooperative U.S.-France work in the Mid-Atlantic Ridge. There were strong indications of a U.S.-French cooperative field investigation in 1992 and of submersible work, including ALVIN. As had been indicated in earlier discussions, funding from NSF and NOAA would be through their established science program structure.

The Committee agreed that the critical element in their planning activities must be an effort to re-kindle the lagging interest in ALVIN-supported science and to revitalize the program. They agreed to again hold an **ALVIN Planning Meeting** in December, 1990 at the Fall AGU meeting in San Francisco. To promote renewed interest, the Planning Meeting would be reorganized to include a part on technology development and application and a report by the ARC on interest in using ALVIN, a potential operating itinerary for 1992 and the calendar for 1992 ALVIN dive requests.

The ARC also directed that an e-mail bulletin board be established for ALVIN.PLANNING. Objectives would be to foster the submission of ALVIN Notices of Interest and to enhance communication within the ALVIN community.

ALVIN ARCHIVING

The ARC had, at earlier meetings, encouraged WHOI to submit a proposal to improve the archiving of ALVIN records, data and samples. Such a proposal had been submitted, but declined by funding agencies. Questions had been raised on the level of use of ALVIN records, on the number of users and on whether or not the current state of the records discouraged or prevented their use.

Woods Hole's current priorities for ALVIN records were to preserve old ALVIN records, especially film records which are beginning to disintegrate; to establish and implement an effective cataloging system for current records and to catalog the old records. (The last priority would be formidable.)

The ARC endorsed a proposal to preserve old records and to catalog new records.

RECOMMENDATIONS FOR NEW ARC MEMBERS

Because of several resignations from the ARC in recent years, a regular rotation of members had been subverted. Five of the eight appointed members had terms expiring in 1990. The Committee agreed that such a wholesale replacement was not healthy, and agreed to recommend re-appointments:

Feenan Jennings for 2 years
Doug Nelson for 2 years
Casey Moore for 3 years
Mary Scranton for 3 years

Geof Thompson noted that he had completed two three-year terms on the ARC, and declined to continue on the Committee.

The Committee recommended Karen Von Damm, Oak Ridge National Laboratory, for a three-year term. (See Appendix I for ARC membership in 1992.)

The Committee recommended that, henceforth, regular ARC members be limited to not more than two consecutive three-year terms.

The meeting was adjourned at 12:15 on June 29.

UNOLS Review Committee for DSRV ALVIN

Rev. 4/91

(First Meeting 2/19/75)

1975

		Term Expires
A.F.	Richards, Chair, Lehigh	7/78
C.L.	Drake, Dartmouth	7/76
G.D.	Grice, WHOI	7/78
R.R.	Hessler, Scripps	7/77
G.H.	Keller, NOAA/AOML	7/77
S.	Murphy, U/Wash	7/76
C.	Rooth, RSMAS	7/76
K.K.	Turekian, Yale	7/78
T.J.	van Andel, Stanford	7/77
A.E.	Maxwell, WHOI, ex-officio	

1976

		Term Expires
A.F.	Richards, Chair, Lehigh	7/78
R.W.	Corell, UNH	7/79
M.C.	Gregg, U/Wash	7/79
G.D.	Grice, WHOI	7/78
D.E.	Hayes, L-DGO	7/79
R.R.	Hessler, Scripps	7/77
G.H.	Keller, OSU	7/77
K.K.	Turekian, Yale	7/78
T.J.	van Andel, Stanford	(resigned 9/76)
A.E.	Maxwell, WHOI, ex-officio	

1977

		Term
R.W.	Corell, Chair, UNH	7/76-6/79
J.B.	Corliss, OSU	7/77-6/80
M.C.	Gregg, U/Wash	7/76-6/79
G.D.	Grice, WHOI	2/75-6/78
D.E.	Hayes, L-DGO	7/76-6/79
A.F.	Richards, Lehigh	2/75-6/78
K.K.	Turekian, Yale	2/75-6/78
R.D.	Turner, Harvard	7/77-6/80
A.E.	Maxwell, WHOI, ex-officio	

1978

		Term
R.W.	Corell, Chair, UNH	7/76-6/79
J.B.	Corliss, OSU	7/77-6/80
J.M.	Edmond, MIT	7/78-6/81
M.C.	Gregg, U/Wash	7/76-6/79
D.E.	Hayes, L-DGO	7/76-6/79
K.C.	Macdonald, Scripps	7/78-6/81
D.C.	Rhoads, Yale	7/78-6/81
R.D.	Turner, Harvard	7/77-6/80
A.E.	Maxwell, WHOI, ex-officio	

1979

		Term
R.W.	Corell, Chair, UNH	7/76-6/82
R.N.	Anderson, L-DGO	7/79-6/82
J.B.	Corliss, OSU	7/77-6/80
J.M.	Edmond, MIT	7/78-6/81
K.C.	Macdonald, Scripps	7/78-6/81
D.C.	Rhoads, Yale	7/78-6/81
R.D.	Turner, Harvard	7/77-6/80
M.	Wimbush, URI	7/79-6/82
A.E.	Maxwell, WHOI, ex-officio	

1980

		Term
R.W.	Corell, Chair, UNH	7/76-6/82
R.N.	Anderson, L-DGO	7/79-6/82
J.M.	Edmond, MIT	7/78-6/81
D.E.	Karig, Cornell	7/80-6/83
K.C.	Macdonald, UCSB	7/78-6/81
D.C.	Rhoads, Yale	7/78-6/81
G.T.	Rowe, Brookhaven	7/80-6/83
M.	Wimbush, URI	7/79-6/82
A.E.	Maxwell, WHOI, ex-officio	

1981

		Term
R.W.	Corell, Chair, UNH	7/76-6/82
R.C.	Aller, U/Chicago	7/81-6/84
R.N.	Anderson, L-DGO	7/79-6/82
D.E.	Karig, Cornell	7/80-6/83
G.T.	Rowe, Brookhaven	7/80-6/83
F.L.	Sayles, WHOI	7/81-6/84
M.	Wimbush, URI	7/79-6/82
A.A.	Yayanos, Scripps	7/81-6/84
G.D.	Grice, WHOI, ex-officio	

1982

		Term
R.W.	Corell, Chair, UNH	7/82-6/85
R.C.	Aller, U/Chicago	7/81-6/84
J.K.	Weissel, L-DGO	7/82-6/85
D.E.	Karig, Cornell	7/80-6/83
G.T.	Rowe, Brookhaven	7/80-6/83
F.L.	Sayles, WHOI	7/81-6/84
M.	Wimbush, URI	7/82-6/85
A.A.	Yayanos, Scripps	7/81-6/84
G.D.	Grice, WHOI, ex-officio	

1983

		Term
R.W.	Corell, Chair, UNH	7/76-6/85
R.C.	Aller, U/Chicago	7/81-6/84
P.A.	Jumars, U/Wash	7/83-6/86
D.E.	Karig, Cornell	7/80-6/86
F.L.	Sayles, WHOI	7/81-6/84
J.K.	Weissel, L-DGO	7/82-6/85
M.	Wimbush, URI	7/79-6/85
A.A.	Yayanos, Scripps	7/81-6/84
G.D.	Grice, WHOI, ex-officio	

1984

		Term
R.W.	Corell, Chair, UNH	7/76-6/85
J.K.	Cochran, SUNY/Stony Brook	7/84-6/87
J.W.	Deming, Johns Hopkins	7/84-6/87
P.A.	Jumars, U/Wash	7/83-6/86
D.E.	Karig, Cornell	7/80-6/86
G.	Thompson, WHOI	7/84-6/87
J.K.	Weissel, L-DGO	7/82-6/85
M.	Wimbush, URI	7/79-6/85
G.D.	Grice, WHOI, ex-officio	

UNOLS Review Committee
for DSRV ALVIN

1985

		Term
R.W.	Corell, Chair, UNH	7/76-6/88
J.K.	Cochran, SUNY/Stony Brook	7/84-6/87
J.W.	Deming, Johns Hopkins	7/84-6/87
P.A.	Jumars, U/Wash.	7/83-6/86
D.E.	Karig, Cornell	7/80-6/86
W.	Ryan, L-DGO	7/85-6/88
G.	Thompson, WHOI	7/84-6/87
G.L.	Weatherly, FSU	7/85-6/88
G.D.	Grice, WHOI, ex-officio	

1986

		Term
R.W.	Corell, Chair, UNH	7/76-6/88
J.K.	Cochran, SUNY/Stony Brook	7/84-6/87
J.W.	Deming, Johns Hopkins	7/84-6/87
J.	Eckman, Skidaway	7/86-6/89
D.E.	Karig, Cornell	7/80-6/89
W.	Ryan, L-DGO	7/85-6/88
G.	Thompson, WHOI	7/84-6/87
G.L.	Weatherly, FSU	7/85-6/88
G.D.	Grice, WHOI, ex-officio	

1987

		Term
F.D.	Jennings, Chair, TAMU	7/87-6/90
J.K.	Cochran, SUNY/Stony Brook	7/84-6/87
J.W.	Deming, Johns Hopkins	7/84-6/87
J.	Eckman, Skidaway	7/86-6/89
D.E.	Karig, Cornell	7/80-6/89
W.	Ryan, L-DGO	7/85-6/88
G.	Thompson, WHOI	7/84-6/87
G.L.	Weatherly, FSU	7/85-6/88
G.D.	Grice, WHOI, ex-officio	

1988

		Term
F.D.	Jennings, Chair, TAMU	7/87-6/90
J.	Eckman, Skidaway	7/86-6/89
J.C.	Casey Moore, UCSC	7/87-6/90
D.C.	Nelson, UC/Davis	7/87-6/90
W.	Ryan, L-DGO	7/85-6/88
M.I.	Scranton, SUNY/Stony Brook	7/87-6/90
G.	Thompson, WHOI	7/84-6/90
G.L.	Weatherly, FSU	7/85-6/88
G.D.	Grice, WHOI, ex-officio	

1989

		Term
F.D.	Jennings, Chair, TAMU	7/87-6/90
D.A.	Cacchione, USGS	7/88-6/91
J.	Eckman, Skidaway	7/86-6/89
P.J.	Fox, URI	7/88-6/91
J.C.	Casey Moore, UCSC	7/87-6/90
D.C.	Nelson, UC/Davis	7/87-6/90
M.I.	Scranton, SUNY/Stony Brook	7/87-6/90
G.	Thompson, WHOI	7/84-6/90
G.D.	Grice, WHOI, ex-officio	

1990

		Term
F.D.	Jennings, Chair, TAMU	7/87-6/90
D.A.	Cacchione, USGS	7/88-6/91
P.J.	Fox, URI	7/88-6/91
J.C.	Casey Moore, UCSC	7/87-6/90
D.C.	Nelson, UC/Davis	7/87-6/90
M.I.	Scranton, SUNY/Stony Brook	7/87-6/90
G.	Taghon, OSU	7/89-6/92
G.	Thompson, WHOI	7/84-6/90
G.D.	Grice, WHOI, ex-officio	

1991

		Term
F.D.	Jennings, Chair, TAMU	7/87-6/92
D.A.	Cacchione, USGS	7/88-6/91
P.J.	Fox, URI	7/88-6/91
J.C.	Casy Moore, UCSC	7/87-6/93
D.C.	Nelson, UC/Davis	7/87-6/92
M.I.	Scranton, SUNY/Stony Brook	7/87-6/93
G.	Taghon, OSU	7/89-6/92
K.L.	Von Damm, ORNL	7/90-6/93
R.	Pittinger, WHOI, ex-officio	

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ALVIN REVIEW COMMITTEE
AGENDA
0800 June 27, 28, 29, 1990
Carriage House
Woods Hole, MA

Open the Meeting. Welcome and introduction by ARC Chair, Feenan Jennings.

Report on 1989 ATLANTIS II and ALVIN/ATLANTIS II Seasons, Status of 1990 Season and Preview of Factors for 1991. Barrie Walden and Woods Hole operators/management will review operations since the last meeting, preview remainder of 1990 and forecast for 1991. Schedule for next ALVIN overhaul/inspection and next ATLANTIS II drydocking.

Status Report on ALVIN Program Management. Aspects of WHOI management of the ALVIN program were discussed at the June, 1989 ARC meeting. WHOI operators and management will provide an update.

Review of Requests for Dives in 1991. Preliminary to ARC review, NSF, ONR and NOAA representatives will, insofar as possible, provide up-to-date funding information relating to all dive requests. ARC discussion and review of all new dive requests for 1991. ARC rules and procedures are attached. About 20 Dive Requests before the Committee.

Schedule Recommendations for 1991. 1. Based on review of dive requests, together with operational/logistical information from WHOI, ARC will develop schedule recommendations for 1991. 2. WHOI will follow those recommendations to develop a candidate schedule for ARC review. 3. ARC review and final schedule recommendations will be balanced against NSF, ONR and NOAA program/budget structure to assure that each agency's critical needs are accommodated.

Comments on ALVIN Program Funding, 1991 et. seq. by Agency Representatives. David Duane, NOAA; Dolly Dieter, NSF; and Keith Kaulum, ONR.

ALVIN Certification/Inspection Process. Changes in the certification process for ALVIN were of concern at ARC meetings during 1989. A certification cycle has been completed: ALVIN underwent Navy INSURV inspection and ATLANTIS II was inspected under the NSF/MARAD/ABSTECH program early in 1990. A briefing to the ARC (WHOI operators and agency representatives).

ALVIN Equipment and Instrumentation. Bottom navigation has been an issue to ALVIN users and operators for some time. The University of Rhode Island OMDC has provided several options for the use of Sea Beam aboard ATLANTIS II. Users have suggested equipment improvements on samplers and a system to range off objects on the bottom. Discussion among operators, ARC and agency representatives. (See correspondence attached.)

ALVIN Archiving. The subjects of deteriorating film records from early ALVIN dives and inadequacy of ALVIN archives has been before the ARC at several recent meetings. Various proposals have been suggested. Anything to report?

Submersible Science Study for the 1990's. This report, by a UNOLS study committee has been pending for a long time. ARC members should have a smooth draft before the meeting. Committee discussion.

Recommendations for New ARC Members. Because several recent appointments to the ARC were initiated by mid-term resignations of former ARC members and because these appointments were made for three years rather than for shorter unfilled terms, the orderly replacement schedule for ARC members is all screwed up. Current membership, with term expiration dates:

Feenan Jennings, Chair	7/87 - 6/90
Dave Cacchione, USGS	7/88 - 6/91
Jeff Fox, URI	7/88 - 6/91
Casey Moore, UC, Santa Cruz	7/87 - 6/90
Doug Nelson, UC, Davis	7/87 - 6/90
Mary Scranton, SUNY, Stony Brook	7/87 - 6/90
Gary Taghon, OSU	7/89 - 6/92
Geof Thompson, WHOI	7/84 - 6/90
George Grice, WHOI	3/82 - ex officio

Five members - Jennings, Moore, Nelson, Scranton and Thompson - have terms expiring this year. (Properly, either two or three terms should expire each year.) It would be bad if five ARC members were to be replaced in a single year. A proposal: Select and recommend two of the five expiring ARC members for re-appointment for two-year terms. Then

select and recommend three candidates for three-year terms, from among remaining ARC incumbents or the community at large. Results would be: two terms expiring in 1991, three in 1992 and three in 1993.

U.S.-France Bilateral and ALVIN Deployment on MAR. The possibility of promotion of ALVIN work in the Mid-Atlantic Ridge in cooperation with the French has been under development. What has developed? Scope and scale of a possible program? Constraints to ALVIN/ATLANTIS II deployment in 1992 and beyond.

Planning for 1992 and Beyond. Summaries of notices of intent have been furnished. U.S.-France plans may also apply. The ARC may wish to block out 1992 now or wait for results from a December 2, 1990 workshop in San Francisco, ALVIN.PLANNING, etc.

Timing for the Meeting. It should be a full meeting, but the Committee should be able to finish by Noon, Friday, June 29.

June 27:
Reports on ALVIN/ATLANTIS II Operations
Report on ALVIN Management
Review of Dive Requests for 1991
Preliminary Schedule Recommendations for 1991

June 28:
WHOI's Candidate Schedule for 1991
ARC/Agency Review and ARC's Final Schedule Recommendations
Funding Agency Comments
Report on ALVIN/ATLANTIS II Certification/Inspection
ALVIN Equipment, Instrumentation
ALVIN Archiving
Submersible Science for 1990's

June 29:
Recommendations for New ARC Members
U.S.-France Bilateral and ALVIN
ALVIN.PLANNING

ADJOURN AT NOON

June 29, 1990

LIST OF ALVIN DIVE REQUESTS FOR 1991 BY REGION AND DISCIPLINE

California Basins

1.	Smith, K.L.	Bio	5
2.	Smith, C.	Bio	6
19.	Childress, J.	Bio	12
			23

Guaymas

4.	Jannasch	Bio	10
			10

Gorda-Juan de Fuca, Cont. Margin

7.	Lutz	Bio	6(of 22)
9.	Stakes	G&G	8
10.	Carson	G&G	21
14.	Mullineaux	Bio	12
16.	Delaney	G&G	28
17.	Embley	G&G, Chem	20
18.	Schultz	G&G	6
			101

Hawaii

15.	Garcia	G&G	7
			7

EPR (north), Galapagos, Seamounts

3.	Levin	Bio, Phys	6
5.	Fornari	G&G	18
8.	Batiza	G&G	20
11.	Haymon	G&G	25
13.	Edmond	Chem	5
20.	Childress	Bio	28
			102

EPR (south), Way South

7.	Lutz	Bio	16(of 22)
12.	Edmond	Chem	10
			26

North Atlantic

6.	Sheldon	Engin	5
			5

Biology	101
Chemistry	35
G&G	152
Physics	6
Engineering	5

Total Dives: 274

APPENDIX IV

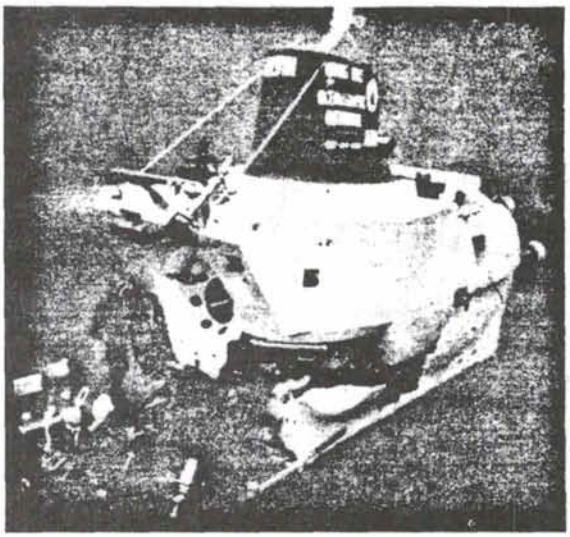
SUMMARY
ALVIN SHIPTIME REQUEST

June 29, 1990
Woods Hole, MA

Investigator	Associates	Area	Purpose	Sponsor	Date	Alternate	Dives	Remarks
1. Smith, K.L.	Reimers, C.E.	Santa Catalina Basin, 33° 14' N, 118° 37' W	Sediment Community oxygen consumption and particulate organic matter flux in the deep sea: long time-series measurements.	NSF	Nov. 1991	Feb. 1992	5	RECOMMENDED; NOT SCHEDULED FOR 1991.
2. Smith, C.R.	Deming, J. DeMaster, D.	Santa Catalina Basin, 33° 12' N, 118° 30' W	Community structure and dynamics in a newly dissolved deep-sea reducing habitat: lipid-rich whale bones.	NSF	Jan.-March 1991	April-Dec. 1991	6	RECOMMENDED.
3. Levin, L.A.	Mullineaux, L. Thistle, D. Leithold, E.	Fieberling Guyot, 30° 25' N, 127° 47' W	Physical and biological effects of flow over abrupt topography: Benthic boundary layer studies of Fieberling Guyot.	ONR	June 1991	May 1991	6	RECOMMENDED.
4. Jannasch, H.W.	Wirsen, C.O. DeLong, E. Molyneaux, S., etc.	Guaymas Basin, 27° 15' N, 111° 24' W	Microbiological studies of the Guaymas Basin Hydrothermal Vent System. Quantification of Chemoautotrophic productivity by Beggiatoa mats and hyperthermophilic bacteria; physiological, molecular and ecological approaches.	NSF	Jan.-Feb. 1991	March 1991	10	RECOMMENDED.
5. Fornari, D.J.	Perfit, M. Kastens, K. Casey, J. Edwards, M.	8° 20' - 8° 30' N; 103° 00' - 104° 31' W	ALVIN diving in the intra-transform spreading centers of the Siqueiros Transform.	NSF	March-July 1991	-	18	RECOMMENDED.
6. Sheldon, R.B.	Barth, C.H. Michne, J.D. Rhodes, W.G.	1)18°N, 64°W (4000 m) 2)48° 25'N, 72° 06'W, 3)38° 18'N, 69° 35'W	Recovery of Deep-Sea Corrosion Experiments. Retrieve test specimens deployed by ALVIN and/or TRIESTE in 1977, 1979, 1980, 1982, 1983 and 1986 to support long-term corrosion research program.	DOE	Summer 1991	Summer 1992 or 1993	5	TABLED; NO ATLANTIC PROGRAM IN 1991.
7. Lutz, R.A. Vrijenhoek, R.C.	Postdoctoral Fellow(s) Research Specialist Technician(s)	1) 17°-22°S;(E.Pac.Rise) 2) 62°-64° S; 58° W; 3) 46°-49°N; 129°-130°W	Gene flow, dispersal and systemic relationships of molluscs associated with deep-sea hydrothermal vents (Analyses of genetic variation will be conducted on a wide variety of molluscs collected using ALVIN at various deep-sea hydrothermal vent sites).	NSF	1991	1992	22	RECOMMENDED FOR 6 DIVES IN 1991.
8. Batiza, R.	Karsten, J. Duncan, R.A. Goldstein, S.	On-axis and near-axis of the East Pacific Rise at 9° 30' N	Radiometric Age Dating of MORB and Absolute Age Constraints on Temporal Variability of Magmatic Processes at the EPR at 9°30'N.	NSF	Spring or Winter 1991	Summer 1991	20	RECOMMENDED.
9. Stakes, D.S.	Moore, W.S.	47° 58' N, 129° 06' W	Application of Uranium and Thorium Series Isotopes to Studies of the Circulation of Hydrothermal Solutions and Growth Rates of Hydrothermal Chimneys.	NSF	1991	-	8	RECOMMENDED.
10. Carson, B.	Johnson, P. Holmes, M.	47°-48° N, 126° W	Authigenic Carbonate Deposits as Indicators of Fluid Expulsion from the Cascadia Margin.	NSF	July-August 1991	June-Sept. 1991	21	NOT RECOMMENDED.

Investigator	Associates	Area	Purpose	Sponsor	Date	Alternate	Dives	Remarks
11. Haymon, R.M. Fornari, D.J.	von Damm, K. Perfit, M. Lilley, M., etc.	E.Pacific Rise Crest 9-10° N 104° 10-20' W	Hydrothermal, Volcanological, and Geochemical Studies in Support of ODP Bare Rock Drilling.	NSF	March-April 1991	Feb.-March 1991	25	RECOMMENDED.
12. Edmond, J.M.	Craig, H.	30° S, 112° W, West of Easter Island	Submersible Studies on the Easter Microplate. Sampling of hydrothermal fluids at a "superfast" spreading center.	NSF	Summer 1991	-	10+	RECOMMENDED; REQUEST SUBSEQUENTLY WITHDRAWN.
13. Edmond, J.M.	Campbell, A.C.	21° N EPR 2,500 miles	Continuation of time-series at the hydrothermal vents at 21°N, EPR.	NSF	1991	-	5	Research clearance for Mexico will be required. RECOMMENDED.
14. Mullineaux, L.S.	Van Dover, C.L. Wiebe, P.H. Helfrich, K.R.	Juan de Fuca Ridge; 44°40'N, 130°22'W	Dispersal and dynamics of planktonic organisms in hydrothermal vent plumes.	NSF	August 1991	July 1991	12	NOT RECOMMENDED.
15. Garcia, M.	Mahoney, J. Muenow, D. Kurz, M.	South of Island of Hawaii, 18°50'N, 155°15'W	Internal and External Controls on Compositional Variation of Lavas from Loihi Seamount, Hawaii. To collect lavas from the rift zones of a submarine volcano to evaluate the nature and causes of compositional and vesicle variations in submarine lavas.	NSF	July-August 1991	Sept.-Oct. 1991	7	RECOMMENDED; NOT SCHEDULED FOR 1991.
16. Delaney, J.R.	McDuff, R.E. Smith, M. Lilley, M., etc.	Juan de Fuca Ridge, Endeavor Segment 129°W, 47°N	Interdisciplinary studies of Hydrothermal Flange Evolution, Juan de Fuca Ridge.	NSF	Early-Late Summer 1991	-	28	RECOMMENDED.
17. Embley, R.W. Hammond, S. Massoth, G. Feely, R.	McDuff, R. Lupton, J. Perfit, M. Trefry, V., etc.	Southern Juan de Fuca Ridge	Chemical, Dynamical and Geological Studies of Hydrothermal and Volcanic Systems on the Southern Juan de Fuca Ridge.	NOAA	July-Sept. 1991	-	20	RECOMMENDED.
18. Schultz, A.	Delaney, J.R. McDuff, R.E.	47°57'N, 129°06'W	Deployment of instrumentation to collect long-time series of volume and heat flux from diffuse hydrothermal percolation at Endeavor Segment Juan de Fuca Ridge.	1) NOAA 2) NSF	July-Sept. 1991	April-Nov. 1991	6	RECOMMENDED.
19. Childress, J.J.	Carney, R. Case, J.F.	San Clemente Basin, East Cortes Basin, Velero Basin	Studies on the Ecological Physiology of Midwater Animals. This project will use ALVIN to collect bathypelagic and benthopelagic species for studies of metabolic rates, enzyme activities, stable C and N isotope ratios, and abundance.	NSF	1991	-	12	NOT RECOMMENDED.
20. Childress, J.J.	Felbeck, H. Fisher, C.R. Nelson, D. Johnson, K., etc.	12°48'-50'N, 103°56'-58'W	Hydrothermal Ecosystem Research Observatory Program at 13°N. A joint US/French program to monitor vent sites at 13°N on the East Pacific Rise. The emphasis will be on the biology with monitoring of chemical and physical parameters which interact with the biology.	NSF	January 1992	-	28	RECOMMENDED; NOT SCHEDULED FOR 1991.

The University — National Oceanographic Laboratory System



Opportunities for Oceanographic Research DSV ALVIN at the Woods Hole Oceanographic Institution 1991

The Deep Submergence Vehicle ALVIN

The Deep Submergence Vehicle ALVIN, based at Woods Hole Oceanographic Institution, is designated a UNOLS National Oceanographic Facility. Diving time is available for qualified research projects selected on the basis of scientific merit and compatibility of the proposed research.

ALVIN is owned by the U.S. Navy under the purview of the Office of Naval Research and is operated by the Woods Hole Oceanographic Institution. Operations are supported under a Memorandum of Understanding among the National Science Foundation, the National Oceanic and Atmospheric Administration and the Office of Naval Research.

Planning and Scheduling for ALVIN

The UNOLS ALVIN Review Committee (ARC) makes recommendations for ALVIN-ATLANTIS II areas of operation two and three years in advance and makes schedule recommendations one year in advance of the operating year. Over the last several years the task of matching dives available on ALVIN with requests from skilled individual investigators has become critical and requires careful advance planning.

The ARC conducts annual workshops to solicit interest in using ALVIN two, three and more years into the future. The workshop held in December 1989 and Notices of Intent submitted there are the ALVIN Review Committee's principal source of planning information for the period 1991-1992 (until the next ALVIN overhaul).

Through this Opportunities for Oceanographic Research, DSV ALVIN, the ARC solicits requests for ALVIN dives, to be reviewed by the Committee in June 1990. On the basis of that review, the ARC will make 1991 schedule recommendations to the three funding agencies and to the W.H.O.I. operators.

Recent and Scheduled Operations

In 1989, ALVIN underwent a major overhaul which, together with the re-certification process, extended into August. For the remainder of the year, ATLANTIS II was engaged in several general oceanographic investigations and supported ALVIN on two projects, all in the northeast and north central Atlantic. At year's end, ALVIN/ATLANTIS II were deployed on the mid-Atlantic Ridge.

The mid-Atlantic Ridge project was completed and ATLANTIS II entered shipyard for periodic inspection and maintenance. ALVIN/ATLANTIS II will proceed to the Gulf of Mexico in mid-March for two investigations and will transit the Panama Canal in late April. ALVIN projects will be undertaken off Costa Rica, near the Galapagos and on the East Pacific Rise to mid-June. After a non-ALVIN investigation in the Guaymas Basin, ALVIN/ATLANTIS II will run northward for a July-September series of three projects on Juan de Fuca, Gorda and the subduction zone off Oregon. Several ALVIN projects off California and on eastern Pacific seamounts will complete the season.

Requests for 1991

ALVIN and ATLANTIS II should be in San Diego at the beginning of 1991. There should be no backlog of already recommended Time Requests. At ALVIN Planning Meetings in December 1989 and earlier, the ARC has noted interest in using ALVIN in the Pacific during 1991. Strong interest continues in the northeast Pacific, on the East Pacific Rise, Galapagos and nearby seamounts, in Guaymas Basin, in California coastal areas and for Gorda-Juan de Fuca and the Oregon subduction zone. Additionally, strong support was expressed for at least two extended deployments: the first to the southern East Pacific Rise and to other areas in the southeast Pacific as far as 60°S; the second to the western Pacific where interest has been shown for investigations in Lau, Fiji, Woodlark and Manus Basins.

In response to the interest shown, the ALVIN Review Committee expects that ALVIN/ATLANTIS II will spend most of 1991 in the Pacific; the Committee solicits and will consider ALVIN Time Requests for 1991 for any of the Pacific areas in which interest has been shown. The ALVIN Review Committee endorses the importance of an expeditionary component to ALVIN programs. While the Committee will continue to consider requests for expeditionary deployments, they emphasize that such initiatives must be promoted from within the user community. These programs must not only represent strong exciting science, but must also be well conceived and organized so that they justify a long deployment to remote areas. Ordinarily an expeditionary program should be composed of several well-articulated projects if it is to justify the time, expense and effort of a long deployment. The ARC will review Time Requests at their June, 1990 meeting, and recommend a schedule for 1991. Requests that cannot be accommodated in 1991 will be tabled.

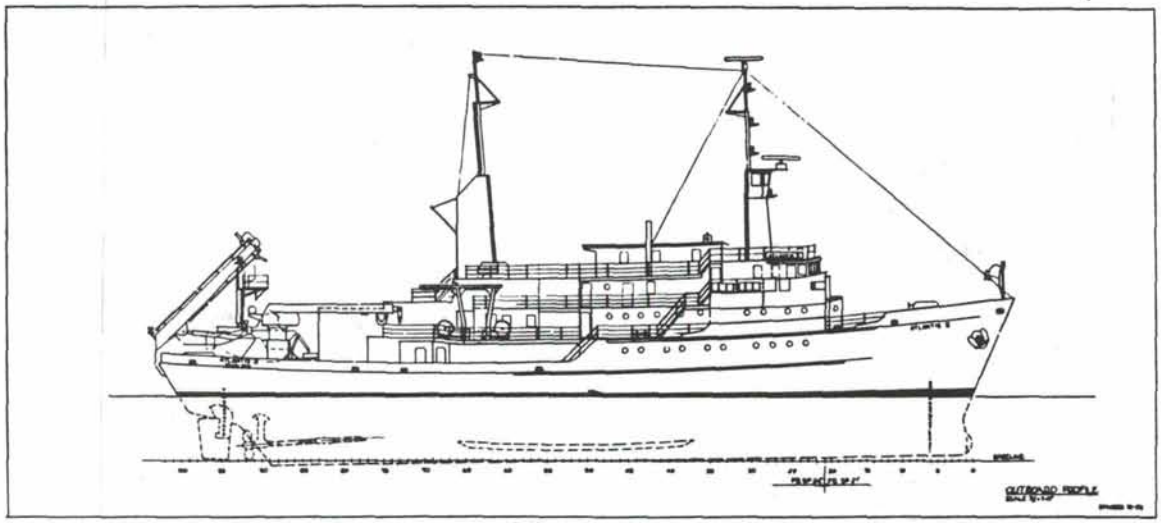
ALVIN Time Requests through UNOLS are for the use of the facility only and no research or travel funding is implied. Associated research proposals should be submitted in a timely fashion through usual channels to funding agencies. (NSF has reiterated their policy that proposals involving the use of UNOLS-operated facilities must meet a proposal target date not later than June 1 in the year preceding operations.) ALVIN Time Requests for which the associated science proposal has not been submitted by June 1 are of doubtful funding status and will not be reviewed by the Committee.

The ALVIN Review Meeting will be held in June 1990. Criteria for the review include scientific merit and suitability for ALVIN/ATLANTIS II. The Committee makes schedule recommendations based on favorably reviewed Requests.

Principal Investigators are expected to meet pre- and post-cruise obligations that may exist for operations within jurisdiction of foreign states.

Requests for 1991 should be submitted so as to arrive in the UNOLS Office by May 5, 1990. Requests should include the Request form or a copy together with the additional information on the intended investigation as requested in this announcement. Failure to meet the submission deadline will jeopardize consideration of the Time Request. Proposals should be addressed to:

Chairman, ALVIN Review Committee
UNOLS Office, WB-15
University of Washington
Seattle, Washington 98195
Telephone: (206) 543-2203



RV ATLANTIS II

SUBMISSION OF ALVIN TIME REQUESTS

Requests for the use of DSV ALVIN should be initiated by sending a completed Time Request form (copy overleaf) to: Chairman, ALVIN Review Committee, c/o UNOLS Office, WB-15, University of Washington, Seattle, WA 98195. Requests may be made by scientists and engineers at any university or research institution in the United States, and should be supported by one exposition of the proposed research which specifically addresses each of the following:

1. The nature and significance of the proposed research;
2. The scientific questions being asked and the approaches that would be used toward their resolution; how ALVIN will be employed is critical to the Committee's evaluation;
3. Justifications of the need for ALVIN to do this work;
4. The research site(s) and its justification;
5. Number of dives required, justification for the number of dives and any seasonal consideration; it is especially important to include a dive plan or other description of how each dive will be used, and why each is critical.
6. Likely requirements for future ALVIN dives (not requested here) for completion of the research;
7. Proposed number of scientists and engineers in the party;
8. Curricula vitae of principal participants;
9. Potential or current support for the proposed research effort; in virtually all cases science proposals should already have been submitted by the date of the Committee's review;
10. List of publications resulting from any previous ALVIN work.
11. Any special engineering required for dive operations;

NOTE:

1) Experience has been that ALVIN Time Requests covering items 1-7 in not more that 12 pages are most appropriate. Very long Requests bog down the review process. If science proposals are submitted, they should be appended to an appropriately concise Time Request. Items 8-11 should also be appendices to the Request.

2) If operations are to be carried out in foreign waters, the required clearances should be requested as early as possible. Collaboration with foreign scientists is encouraged.

3) If the program is not already funded, a comprehensive proposal must be submitted by the investigator to his/her sponsoring agency in the conventional way. The ALVIN Review Committee will submit scheduling recommendations for consideration by the research sponsor. Final scheduling depends on approval of the pertinent research proposal by the funding agency.

ALVIN Review Committee

F. Jennings, Texas A&M University
D. A Cacchione, U.S. Geological Survey
P. J. Fox, University of Rhode Island
J. C. Moore, University of California, Santa Cruz
D. Nelson, University of California, Davis
M. Scranton, State University of New York, Stony Brook
G. Taghon, Oregon State University
G. Thompson, Woods Hole Oceanographic Institution
G. Grice, Woods Hole Oceanographic Institution, ex-officio

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM
DEEP SUBMERGENCE VEHICLE ALVIN
TIME REQUEST

To: Chairman, ALVIN Review Committee
UNOLS Office, WB-15
University of Washington
Seattle, Washington 98195

DATE: _____

USE OF THE ALVIN SUBMERSIBLE RESEARCH SYSTEM IS REQUESTED FOR _____ FOLLOWS:
YEAR

PURPOSE: (Project, Title and brief outline of program)	
PRINCIPAL INVESTIGATOR: (Name, Title, Address, Telephone Number)	OTHER INVESTIGATORS INVOLVED:
PROPOSED CHIEF SCIENTIST:	TOTAL NUMBER OF SHIPBOARD PERSONNEL:

PROJECT REQUIREMENTS

# OF DIVES REQUSTED:	PREFERRED DATES:	ALTERNATE:
AREA OF OPERATIONS: LATTITUDE AND LONGITUDE (Attach page size chart showing location of dives and bathymetry)		
NAME OF NEAREST PORT:	DISTANCE:	NAUT. MILE:
ATTACH BRIEF DESCRIPTION OF PROPOSED ESCORT/SURFACE SUPPORT SHIP IF ONE IS REQUIRED. LIST SPECIAL EQUIPMENT REQUIREMENTS: (e.g., sensing, sampling and navigation requirements)		
COUNTRIES FOR WHICH RESEARCH CLEARANCE WILL BE REQUIRED:		

FUNDING STATUS

PLEASE INCLUDE THE GRANT NUMBER FOR PROJECTS ALREADY FUNDED, THE PROPOSAL NUMBER FOR PROPOSALS SUBMITTED

FUNDED

NOT FUNDED

FUNDING AGENCY:			(Please check one) PROPOSAL SUBMITTED: _____ WILL BE SUBMITTED: _____ TO: _____ DATE: _____ AMOUNT REQUESTED:		
GRANT NUMBER:					
AMOUNT OR ANNUAL RATE:	BEGIN DATE:	DURATION:	NEW PROPOSAL NUMBER:	OR	RENEWAL OF GRANT NUMBER:

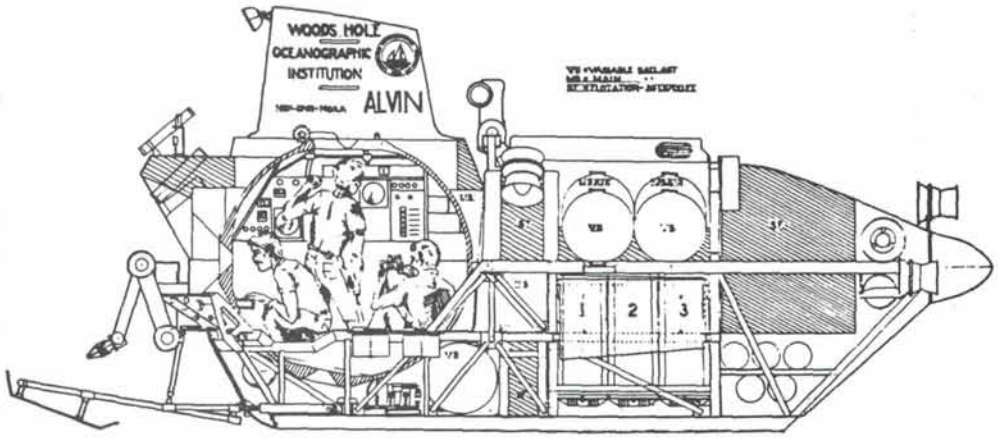
IMPORTANT: ATTACH MATERIAL ADDRESSING POINTS LISTED ON OVERLEAF

SUBMITTED BY: _____
SIGNATURE

APPROVED: _____
DEPARTMENT CHAIR or LABORATORY DIRECTOR

NAME, TITLE, ADDRESS & TELEPHONE NUMBER IF DIFFERENT FROM PRINCIPAL INVESTIGATOR:

TELEPHONE: ( )



DSV ALVIN

DESCRIPTION OF DSV ALVIN

Length: 7.6 meters (25 feet)
Beam: 2.4 meters (8 feet)
Draft: 2.1 meters (7 feet)
Full Speed: 2 knots
Cruising Speed: 1 knot
Cruising Range: 5 miles submerged
Displacement: 18 tons
Endurance: 72 hours
Normal Drive Duration: 6-10 hours
Depth Capacity: 4,000 meters (13,120 feet)
Complement: 1 pilot, 2 scientific observers

Ownership: The submersible ALVIN is a Navy-owned national oceanographic facility operated by the Woods Hole Oceanographic Institution and jointly supported by the National Science Foundation, the Office of Naval Research and the National Oceanic and Atmospheric Administration.

Communications: Sonar telephone, voice or code (submerged); marine band UHF radio (surface).

Navigation: Gyro compass; magnetic compass; forward-looking horizontal scanning sonar system (CTFM); echo sounder; indicators for depth and altitude; long baseline acoustic positioning system (by request).

Electrical Power: Three banks of lead-acid batteries configured for 120 VDC (450 Amp. hours) and 30 VDC (450 Amp. hours). A limited amount of 115 volt 60 cycle AC power is also available.

Hydraulic Power: The Science basket is supplied with 1 GPM of 1500 PSI hydraulic oil for science applications.

Data Logging: Most of the information obtained from the permanently-installed instrumentation is logged on 3-1/2 inch computer disks. Also, selected data is superimposed on the video camera images and recorded on 1/2" VHS tape. Contact the ALVIN group for more information.

Additional Capabilities: The submersible is designed to be versatile with respect to payload, space and power available to meet the differing needs of scientists using the vehicle. Scientific equipment which remains on board most of the time includes two remotely controlled mechanical arms, two 35 mm. cameras and a closed circuit video system with recorder. Additionally, specialized equipment such as hot water samplers, precision temperature sensors, a magnetometer and increased navigation capability is available but requires advance notice and may require additional funding for installation and operation. Contact the ALVIN group for further information.

To obtain further information regarding the ALVIN system capabilities or specialized equipment, contact:

Barrie B. Walden, Submersible Program Manager
Woods Hole Oceanographic Institution
Woods Hole, MA 02543
Telephone: (617) 548-1400 Ext: 2407

DESCRIPTION OF RV ATLANTIS II

Built: 1963
Beam: 44 Feet (13 mtrs)
Gross Tonnage: 1,529 tons
Displacement: 2,300 L tons
Crew: 27
Length: 210 feet LOA (64 meters)
Draft: 16 feet (5 meters)

Scientific Personnel: 9 ALVIN support team plus 1 corpsman plus 19 scientists.

Main Engines: Two GM 12-567E diesel engines driving through reduction gears with variable speed, hydraulic clutches. 2,000 shp.

Bow Thruster: 800 hp trainable. DC motor driving from main gear PTO.

Ships Service Generators: Two 480/120 volt AC 300-KW generators driven by CAT 353 diesel engines.

Propellers: Twin screw: 3 fixed blade; bronze.

Ownership: Built under grant from NSF. Conditional title rests with W.H.O.I.

Speed:
Cruising: 11.0 knots
Full: 13.5 knots
Minimum: Dead Slow

Endurance: 45 days

Fuel Capacity: 90,000 gallons

Range: 9,000 miles

Laboratories: wet - 400 square feet
dry (4) - 3,500 square feet plus 28' by 13' ALVIN hanger

Sewage System: Two type III holding tanks; five to ten days endurance.

Ship Equipment: For full range of oceanographic observations and work. One trawl winch: 30,000 feet 1/2" cable. One CTD winch 27,000 feet 0.303" cable or 30,000 feet 3/16" wire.

One Marine Crane: 20-ton capacity

One Hydraulic Powered A-frame: 18-ton capacity for launch and recovery of ALVIN.

To obtain further information regarding ATLANTIS II system capabilities or specialized equipment, contact:

Donald A. Moller, Marine Operations Coordinator
Woods Hole Oceanographic Institution
Woods Hole, MA 02543
Telephone: (617) 543-1400 Ext: 2277

April 15, 1987

Rules for Review of ALVIN Dive Requests
ALVIN Review Committee

1. Requests for ALVIN dives, having been solicited by the ALVIN Flyer will be reviewed annually, and principally at the ARC meeting held for that purpose in about May.

2. Extraordinary requests (e.g., those for which a later submission is warranted, or those for which ARC recommendations and funding decisions do not agree) will be reviewed at ad hoc meetings either by telephone or opportunistic assembly. The Committee discourages late submissions.

3. There is potential for conflict of interest on any dive request originating at a Committee member's institution or if any investigator listed on the request is from a member's institution.

4. The Chair will raise the questions of conflict of interest at the beginning of consideration on each request for dives. Notes for the meeting will reflect these queries and actions of the member(s) involved.

5. If a Committee member is listed on a request (or is, in fact, actively involved) that member will be excused from the room for all discussion, consideration and voting on that request.

6. For requests originating at Committee member(s)' institutions, or with investigators from their institutions, those Committee members so connected will be excused from the room for all discussion, consideration and voting on that request except that at the invitation of the balance of the Committee (and with that member's concurrence) members connected only by institutional affiliation may comment on requests. However, in no case will those members vote on the request in question.

7. If there remains a question concerning conflict of interest concerning any member(s) for an individual request for dives, it will be decided by vote of the balance of the Review Committee.

8. Voting Committee members will vote to rank individual requests for dives as:

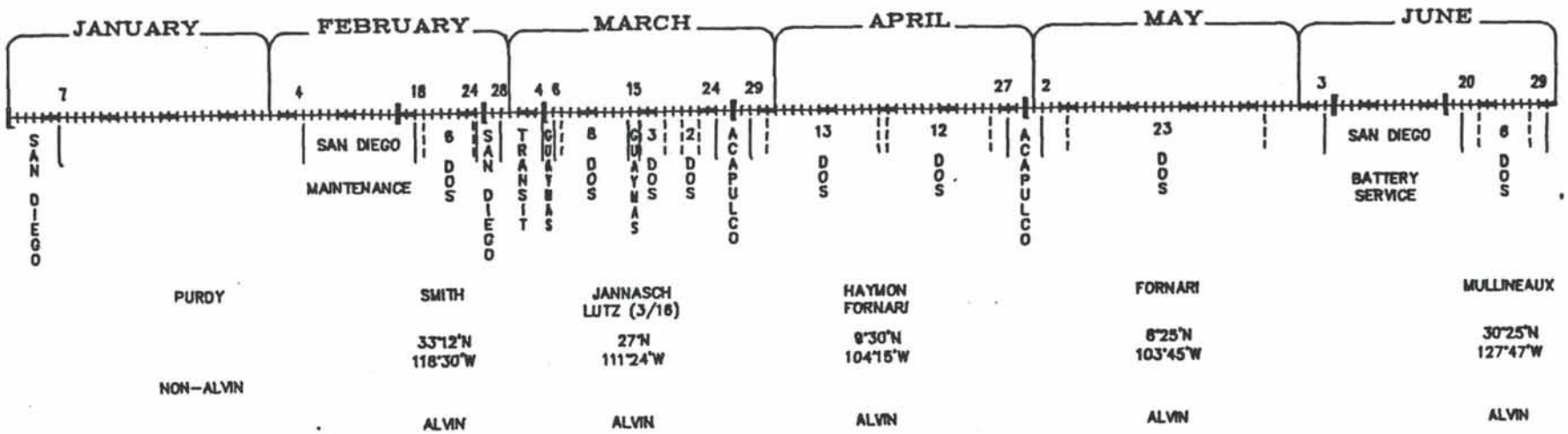
    1, outstanding
    2, excellent
    3, fair
    4, poorest ranking
    5, tabled--not ranked.

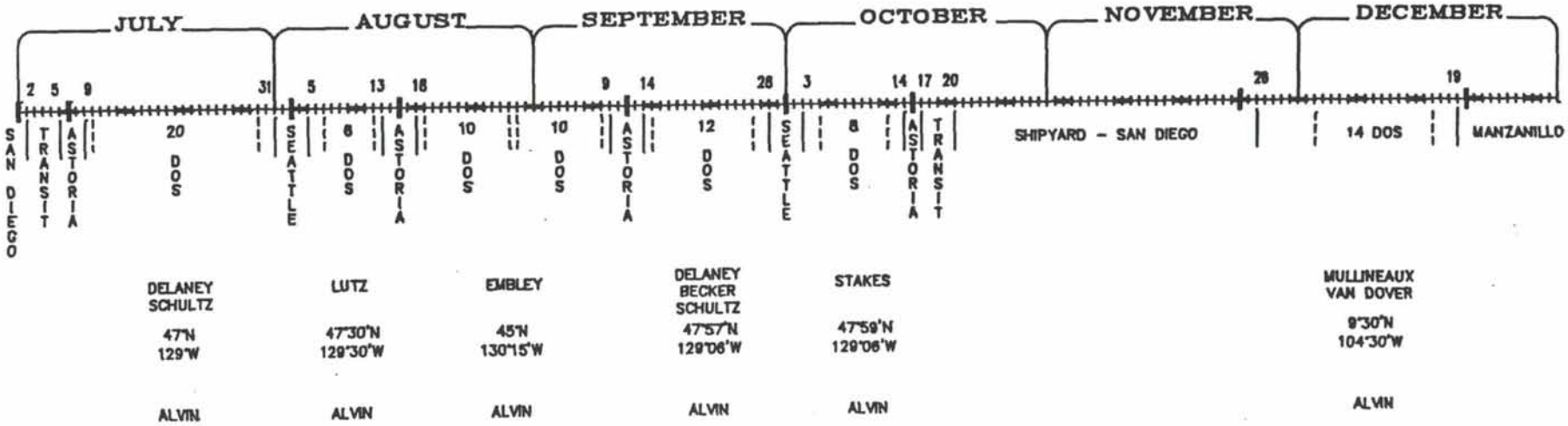
R/V ATLANTIS II & ALVIN OPERATIONS

1991

OPERATIONAL SCIENTIFIC SERVICES
WOODS HOLE OCEANOGRAPHIC INSTITUTION

26 FEB 91
~~6 FEB 91~~
~~3 OCT 90~~





University of Rhode Island
Ocean Mapping Development Center
NECOR/Sea Beam Operations Aboard the R/V Atlantis II

The Ocean Mapping Development Center (OMDC), a part of the University of Rhode Island Graduate School of Oceanography (URI/GSO) and the Northeast Consortium for Oceanographic Research (NECOR), supplies Sea Beam support aboard the Research Vessel Atlantis II (AII). Computer program development, hardware and software support, map production and personnel are supplied by OMDC and all contracting and billing take place there.

Billing Policy: The State of Rhode Island requires that a contract and billing account be in place prior to the cruise. The total number of charge-out days includes the number of days of time at sea, one day port time at the beginning of the cruise and one day of port time at the end of the cruise as well as any scheduled or unscheduled port days during the cruise. The port days cover maintenance and calibration of the system, briefing of incoming personnel and, if schedules allow, finishing any first-pass maps not completed during the cruise. This contract is set up directly with the URI/GSO OMDC; any inquiries regarding current rates and/or end products should be directed there.

Personnel: OMDC engineers will work a normal ten hour day and will have "on call" responsibility for twelve hours. Engineers are not available to the Chief Scientist for watch assignment but rather bear overall responsibility for the proper operation of the Sea Beam system. OMDC personnel will be available to change maps, operate and maintain the computer systems, advise and supervise in the production of postprocessed maps and, most importantly, monitor and maintain the Sea Beam to ensure the integrity of the data. At the beginning, and as needed throughout the cruise, OMDC personnel will instruct the watchstanders in proper operation and watchstanding. As stated above, the primary duties of the engineers while in port are the calibration and maintenance of the system; map production should not be expected.

Overtime: Normal policy is that no additional overtime above the normal ten hour day will be approved without prior written agreement with the Chief Scientist, who will be expected to pay for overtime in addition to the daily rate. Such overtime will be approved by the Chief Scientist and the OMDC before the work is done.

Operational Modes: There are three distinct modes of operation:

MODE 1: No OMDC personnel are aboard during the cruise. One Woods Hole shipboard technician, trained to operate the Sea Beam system on a "turn-key" basis, is available for operations. Raw data are logged to the MicroVAX, but no replotting or processing is available; data integrity cannot be guaranteed. Charges include a base maintenance fee (which on average allows one OMDC engineer to travel to the All at the beginning or end port for equipment maintenance), a per-hour usage fee and an archiving fee. This mode is designed for dive-site location only with no nighttime survey operations. No at-sea repair of the Sea Beam or MicroVAXes is available in case of failure. Mode 1 is intended for Alvin-only operations with limited site location or occasional transit operations where surveys are not plotted and data preservation is not critical.

Mode 1 Rate = $4,732/cruise plus usage rate of $70.00/hour.

MODE 2: One OMDC engineer is aboard for operation and maintenance of the Sea Beam and MicroVAX systems. Sea Beam data are collected and logged to the MicroVAXes. Limited replotting and processing of data are available dependent upon the number of hours of daily Sea Beam survey. Charges are based on a daily equipment fee, one engineer's salary plus overtime and an archiving fee. No shore-based processing is included; however, additional processing onshore can be funded by separate contract on a time-and-materials basis. In Mode 2 the products provided to the Chief Scientist at the end of a cruise are a real-time contour plot, a navigational track plot and such first-pass postprocessing charts as time and navigational considerations allow. The original unnavigated swath plots will be provided after they have been microfilmed.

Mode 2 is designed for combined Alvin/Sea Beam operations with daily dive site location in previously mapped areas and limited night survey operations (restricted by the OMDC engineers agreed-upon working schedule).

Mode 2 Rate = $1,323/day (cruise length plus two port days).

MODE 3: Two OMDC engineers are assigned for operation and maintenance of the Sea Beam and MicroVAXes and data processing. Sea Beam data are collected and logged to the MicroVAXes and processed on a daily basis. The amount of time necessary to process Sea Beam data and the resultant product is dependent upon type and quality of navigation available. All Mode 2 products are available in Mode 3 as well as more fully processed data. It may be possible to finalize navigation and to produce swath plots and gridded maps while at sea. However, final navigation and gridded products are not guaranteed aboard ship.

One day of shore processing time is included for each day of funded operation. Shore processing may include navigation work (if necessary) or various types of products available at the OMDC. These include pen plots of swath and gridded data, colorfill electrostatic gridded plots and various three-dimensional images. Requests for data must be coordinated through the Chief Scientist with written specifications for the number of maps, scales, boundaries, type of data and types of images. If more work is required than is actually funded by Mode 3 operation, additional products are available on a time-and-materials basis.

Mode 3 is the normal mode for Sea Beam cruises or for Alvin/Sea Beam cruises with extensive night survey operations. If scientists plan to use Sea Beam for more than fifty per cent of the nighttime operations and/or desire fully processed or gridded data sets, Mode 3 should be selected.

Mode 3 Rate = $2,084/day (cruise length plus two port days).

Watchstanders: Watchstanding the Sea Beam system will demand no talents beyond those normally expected of an oceanographic lab watchstander. However inattention to the Sea Beam system can cause loss of data; it is the responsibility of the scientist to impress upon watchstanders the need to frequently monitor Sea Beam status.

Sea Beam Reliability and Performance Limitations: Although the Sea Beam system is capable of rather stunning performance when compared to older wide-beam echosounders, it has limitations of which the user should be aware.

Sea Beam is corrected for roll and pitch of the ship. To accomplish this, the system is dependent upon a vertical reference system. On the Atlantis II this is an Ocean State Instruments Mode VRS-1 pendulum system with a Sperry Mark 19 3C Gyrocompass for backup. This system is subject to errors when the ship is maneuvering or rolling beyond system limits. The stated performance limits of the Sea Beam are 20 degrees roll and 10 degrees pitch. Rapid heading changes can cause data artifacts because the Sea Beam system relies on the vertical reference to beam steer. This reference is affected by rapid accelerations such as those generated during turns. If data are to be useful during maneuvering, the ship's officers and the OMDC engineers should be consulted to determine how best to maneuver the ship. During surveys it is necessary to allow for this by making gentle turns or extending the lines by about one mile to allow several minutes for the gyro to settle before reaching the area of interest.

In addition, certain headings in rough seas cause bubble sweep over the transducer dome. Bubbles moving across the face of the transducer domes will seriously impede Sea Beam operations. The most common effect when operating in rough seas is that little or no data will be collected when heading into the seas but an acceptable number of beams will be logged when running with the seas. Noisy conditions as described above will cause beam dropout. This is normally most predominant on the outer beams as they receive the lowest amplitude returns. Certain bottom and slope characteristics can also exacerbate the condition. If beam dropouts are common, the most immediate solutions may be to reduce the ship's speed or to survey on a different heading.

Another source of degraded data is interference from other acoustic noise sources. If these are to be operated during Sea Beam surveys, the OMDC engineers should be consulted in advance so that measures can be taken to reduce potential interference.

The most commonly misunderstood input to Sea Beam is the sound velocity profile. The SVP is not used to give corrected depths. The depth is always given in uncorrected meters based on 1500 m/sec. The SVP is used to correct ray path refraction in the non-vertical beams. Failure to properly correct for sound velocity will cause non-recoverable errors in both the crosstrack distances and depths for the non-vertical beams. The errors increase toward the outer beams. The sound velocity profile is constructed with the aid of an XBT measurement and historical SV/CTD data. The XBT recorder is supplied and supported by Woods Hole; the chief scientist should ensure that it is onboard and operating in order to obtain the highest quality Sea Beam data.

Shore Postprocessing: Shore processing is included as part of Mode 3 operations or can be funded on a time-and-materials basis. If scheduling permits, the person assigned will normally be one of the individuals who participated in the cruise. In Mode 3, this is a commitment of personnel time and not a specific amount of finished product. Navigation correction can be a highly unpredictable variable and cruises of similar length can take vastly different amounts of time to process.

The investigator will be expected to provide a written request indicating priorities and products desired. The chief scientist or another designated scientist must coordinate requests from various investigators to maximize processing time. Fully funded Mode 3 cruises have the highest processing priorities. Other requests are scheduled as OMDC personnel time dictates.

Products available include pen plots of swath and gridded data, colorfill electrostatic gridded plots and various three-dimensional images. Animation of three-dimensional images is possible, but is not provided under Mode 3 operations. It can be arranged under separate contract.

Data Archiving: The archiving of Atlantis II Sea Beam data for the oceanographic community is the responsibility of the University of Rhode Island. In order to protect the Chief Scientist and ensure Sea Beam data availability to the community, Sea Beam data will be released on the following schedule:

1. Survey track navigation will be available upon request.

2. Centerbeam depth data is to be forwarded to NGSDC one year after the end of the cruise, with the permission of the chief scientist. If the chief scientist stipulates, the data will be held for two years.

3. Sea Beam swath data will be forwarded to NGSDC two years after the completion of the cruise contingent upon agreement on a format.

4. Sea Beam swath data will be available to the oceanographic community two years after the cruise. Scientists wishing to access data earlier than this proprietary limit can do so with written permission of the chief scientist. After the two year time period, the OMDC strongly urges that the chief scientist be notified by the requestor.

Computer Usage: The postprocessing MicroVAX aboard the AII is available to the Alvin group and for general use during Sea Beam cruises to the extent that such usage does not interfere with normal Sea Beam processing. OMDC personnel will be the arbitrators of use conflicts as well as authorizing user accounts and assigning disk space. In the past the MicroVAX has been used by scientists aboard ship for processing of other data as well as providing a vehicle for continuation of work otherwise left at home. OMDC personnel will provide assistance for such work, however they cannot be expected to train scientists in programming or use of the VMS operating system.

If there are any additional questions regard Sea Beam usage, OMDC charges, data formats or contracts, please contact OMDC at the University of Rhode Island Graduate School of Oceanography directly. The Director of Operations is Joyce Miller, Box 75, Graduate School of Oceanography, University of Rhode Island, Narragansett, R.I. 02882. (401) 792-6874. An Anticipated Usage Form is attached, please complete this form and return it to the OMDC.

University of Rhode Island
Ocean Mapping Development Center
Anticipated Sea Beam Usage Aboard Atlantis II

Cruise: _____

Scientist: _____

This Anticipated Usage Form does not constitute a contract or any part thereof, but only indicates the scientist's intentions for use of the Sea Beam system aboard the Atlantis II.

I would like to use the Sea Beam system aboard the Atlantis II for surveying operations for the above-listed cruise from

Beginning Date:_____ to

Ending Date:_____

in Mode _____ .

Funded_____ Not yet funded_____

Date:_____

Signed:_____
Chief Scientist, Principal Investigator