

Report of Meeting
of
UNOLS REVIEW COMMITTEE
for
DSRV ALVIN
February 19, 1975
Woods Hole, Mass.

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Submitted

Approved

R. P. Dinsmore
Executive Secretary, UNOLS
March 6, 1975

Adrian F. Richards
Chairman
March 6, 1975

UNOLS REVIEW COMMITTEE
for
DSRV ALVIN
Summary of Recommendations

February 19, 1975

1. An adequate information brochure should be available to prospective ALVIN users. This should include capabilities, policies, and standard equipment available to the user. It should also include other equipment and instrumentation available together with their capability and the arrangements and additional costs for their use.
2. As a matter of high priority the external camera system should be replaced. This will upgrade that capability commensurate with newly developed ALVIN technology. It is understood that the cost for such a system is approximately \$14,000.
3. The Committee although recognizing the preemptive authority of funding agencies, and NOAA in particular, as contained in the Interagency Agreement, recommends that all proposed or intended use of ALVIN be subjected to the same review.
4. The Committee further considered that its role extended to recommending the application of deep submersibles to scientific and technological research including the development of new techniques, areas of investigation, support and use arrangements and the general furtherance of manned undersea platforms for oceanographic research.
5. For the 1975 season the Committee recommends the accomplishment of nineteen projects totalling 97 use days. Specific assignments based on the judgement of the Committee are contained in the Report of the Committee.
6. The Committee considers it imperative that a scientifically sound and viable program be developed for 1976 which will attract the additional funding (\$250-300K) necessary to implement a full years availability of about 140 use days.
7. The Committee encourages the use of group arrangements for "consortia" use which can cut across both laboratory and sponsor lines. This should increase both the overall scientific merit and provide a flexibility of use.
8. The Committee recommends an improved system of announcements for ALVIN use including widespread dissemination both by mailings and journals. Scientific articles, wherever possible, should be encouraged.

Report of Meeting
UNOLS REVIEW COMMITTEE
FOR
DSRV ALVIN

19 February 1975 - Woods Hole Oceanographic Institution

1. The first meeting of the DSRV ALVIN Review Committee convened on 19 Feb 1975 at the Woods Hole Oceanographic Institution.

Present were:

Dr. George Keller, AOML, Member
Dr. Arthur Maxwell, WHOI, Member
Dr. Stanley Murphy, Univ. Wash., Member
Dr. Adrian Richards, Lehigh, Member
Dr. Claes Rooth, Univ. Miami, Member
Dr. Richard Backus, WHOI, Acting Member
Dr. George Shor, Scripps, Acting Member

Mrs. Sandra Toye, NSF, Observer
Mr. Joseph Bennett, ONR, Observer
Dr. Don C. Beaumarrriage, NOAA, Observer
Dr. Robert Dill, NOAA, Observer

Mr. Larry Shumaker, WHOI, ALVIN Manager
Mr. William M. Marquet, WHOI, ALVIN Group
Capt. R. P. Dinsmore, UNOLS Executive Secretary

2. Dr. Arthur Maxwell acted as temporary chairman and welcomed the group to the first meeting. He noted that Drs. Backus and Shor had been invited to act as members in the place of several regular members who were unable to attend.

Dr. Arthur Maxwell submitted the tentative agenda which was adopted. A copy of the agenda is Appendix A.

Dr. Maxwell reviewed the background of the ALVIN as a national facility. This commenced with the May 1972 recommendation of UNOLS and was finally realized with the Interagency Agreement of November 11, 1974 (Appendix C). The UNOLS Review Committee pursuant to a National Oceanographic Facility was developed and approved by UNOLS on January 15, 1975. A list of the members is given by Appendix B.

Dr. Maxwell noted that the funding for Calendar Year 1975 provides for \$900,000 divided equally between Navy, NSF and NOAA.

3. Mr. Larry Shumaker presented a briefing on the DSRV ALVIN: its capabilities, its operations, services and constraints available to users. These are largely contained in a newly issued "DSRV INFORMATION" Booklet which was available to and examined by all members.

Of particular concern was the "standard" equipment to which users would have access. This includes the following:

1. CTFM sonar - standard navigation system
2. Long range fathometer
3. Short range altimeter (height off the bottom - less than 100 feet)
4. Water current meter
5. Water temperature
6. Two EG&G 35mm cameras with synched strobe
7. Two hand-held 35mm cameras with individual synched strobes
8. TV system with monitor and video tape recorder
9. Gyro compass and magnesyn compass
10. Manipulator with a large variety of tools
11. Cassette tape recorder
12. Stop watches, clock and timer
13. Various pingers and transponders
14. Underwater telephone with transponder, pinger, depth and altitude capabilities
15. Various depth gauges
16. Underwater lights

Other equipment such as the small rock drill, movie cameras, and the advanced navigation system and others are "optional" items which must be arranged for by the user usually at additional expense. For example: the advanced navigation system is available with the requirement of one use day for installation and an extra technician (cost about \$6,000 per 10 day cruise).

It was recommended that these and other information be available to a prospective user in an improved brochure.

Mr. Shumaker explained the operations of ALVIN which is summarized as follows:

- . The "normal" operating year for ALVIN extends from 1 Jan - 30 Sept. Depending on the area of operations and transit time involved, there is normally available about 140 "use days".
- . A use day is defined as a day underway manned, loaded and prepared for diving. The actual number of dives is usually less than use days and depends on factors such as weather, site travel and other operational considerations.
- . The 1975 season is scheduled to commence on or about 1 April 1975. Available funding will provide about 100 use days of which 26 represent previous commitments (5 ONR-ROWE, 11 NOAA-COOPER, 10 ARPA-SHUMAKER) and 5 days for certification dives. About 69 days remain available for assignment.
- . During a full year (1976) \$900K funding alone will provide about 60 use days. In order to achieve a full 140 use day year, an additional \$250K would be needed.
- . A normal cruise is from 10-14 days. Maximum endurance of 96-ft support ship LULU is 14 days. LULU accommodates a maximum of 6-8 scientists. Average speed during transit is 5 knots, but can be towed up to 7 knots.
- . During operations more than 30 miles from port require an escort ship whose characteristics vary with the nature and location of operations. Under optimum conditions a 65-ft vessel is adequate.

Mr. Shumaker reported that the external camera system presently installed on ALVIN proved inadequate on the FAMOUS operation and that a new system has been recommended by participants to be compatible with the data logging system. A statement of this deficiency and of the need to upgrade the capability is contained in Appendix F. Woods Hole Oceanographic Institution is presently preparing a proposal to upgrade the external system with a two camera system with digital data frames. The cost of the system is about \$14,000. The Committee unanimously recommended as a matter of high priority that the ALVIN capability be upgraded by the replacement of the existing external camera system.

4. The Role of the Committee was examined. Appropriate references were Annex II to the UNOLS Charter (Appendix D); the Interagency Agreement dated November 11, 1974, and attachments thereto (Appendix C) and a draft Terms of Reference for the Committee (Appendix E).

It was the opinion of the Committee that its role to review the scientific merit of proposed use of ALVIN could not be adequately achieved unless all intended utilization were made available to it. The effective use of ALVIN as a high performance research tool depends on a fully coordinated and integrated program. The references here were in regard to NOAA and ONR proposed projects which had not been submitted to the Committee until the day of the meeting. The Committee although recognizing the preemptive authority assigned to funding agencies, and NOAA in particular, as contained in the Interagency Agreement, strongly recommended that all proposed or intended use of ALVIN be subjected to the same review.

The Committee further considered that its role extended to recommending the application of deep submersibles to scientific and technological research including the development of new techniques, areas of investigation, support and use arrangements and the general furtherance of manned undersea platforms for oceanographic research.

In recognition of the foregoing, appropriate statements were included in the draft Terms of Reference (Appendix E) which was then approved by the Committee.

5. Views of the funding agency observers were presented by those individuals present:

Mrs. Sandra Toye (NSF) stated that the view of NSF is ascertain to whether a 3 year committment to fund ALVIN can establish whether that facility can become a essential tool for scientific research. There are presently no funded NSF projects which require the use

of ALVIN. NSF is looking to the Committee and to ALVIN to establish a viable role. NSF recognizes that the current funding does not provide for a full years support but approves of any action to gain additional funding which will extend the available days to the benefit of the whole program.

Dr. Don Beaumarriage (NOAA) affirmed that ALVIN was an important factor in NOAA's MUS&T program and welcomed the role that ALVIN and the Committee would serve. He stated that NOAA projects submitted for ALVIN under the Interagency Agreement have been, and will be, subjected to the highest scientific review standards. In order to assist the Committee in its work NOAA has no objection to submitting the proposed NOAA research to the Committee and that NOAA would take due consideration of the Committees' recommendations.

Mr. Joe Bennett (ONR) endorsed the statement of Mrs. Toye and agreed that ONR wants to see the Committee define a viable program for ALVIN as a useful scientific tool. He advised that there is no intention by ONR to preempt its one-third share and fully desires that ONR projects undergo the same review as all others. He stressed however that the two ONR projects submitted through him (HOLLISTER & HEEZEN) have a high priority within ONR.

6. Before proceeding further the acting chairman proposed that the election of a chairman be accomplished (Agenda item 9) in order that the permanent chairman might preside during the remainder of the meeting. He suggested that the chairman automatically accede to a three year term and that the remaining members draw for the one-two- and three year terms. On agreement by the members he opened the floor for nominations.

Dr. Adrian Richards was elected as chairman and agreed to serve. He thereupon assumed this duty.

Drawing for year terms resulted in the following assignments:

One Year (to expire July 1976):

Drake, Rooth & Murphy

Two Years (to expire July 1977):

Hess, Keller, Van Andel

Three Years (to expire July 1978):

Richards, Turekian, Grice

7. The Executive Secretary summarized the proposals received. He reported that following the general announcement of December 18, 1974 (Appendix G) Twenty formal requests for the 1975 season had been received by the deadline date of February 15, 1975. Coincident with the meeting, three NOAA projects and two ONR projects were submitted. In addition four requests for 1976 and one for 1977 have been received. A chartlet showing location of proposed use is Appendix H.

A summary table of proposed use for 1975 is given in Appendix I.

A profile of the requests is as follows:

General

Total Number of Proposals	25
Number of use days requested *	171 days
Number of principal investigators	25
Number of academic Labs	10
Number of Federal Labs	4
Number of other Labs	1

By Area

Northern Area: (north of Delaware)	
Proposals	12
Use Days	83
Mid Atlantic Area: (Delaware to Georgia)	
Proposals	4
Use Days	17
Southern Area: (Florida & Bahamas)	
Proposals	12
Use Days	72

* For the sake of uniformity, "dives" and cruise days requested were equated evenly as use days.

By Agency Funding Research (or proposed to fund)

ONR (incl. ARPA).....	43 days
NOAA	36 days
NSF	77 days
Other.....	10 days
Unspecified	5 days

Total 171 days

By Discipline

Biology	118 days
Geology	39 days
Physical.....	11 days
Engineering.....	13 days

Total 171 days

Comparison with Woods Hole

WHOI.....	59 days
Other.....	112 days

Total 171 days

Of the 171 proposed use days 26 are previously funded and committed and 24 have been specified by NOAA pursuant to its share of the Interagency Agreement.

SUMMARY:

- . Estimated 1975 use days available - 100
- Days required for tests .. 5
- Days prev. committed26

Total 31

- . Days available for new projects..... 69
- Days specified by NOAA 24

-
- . Days available for remaining projects ..45

The Committee noted that for the 45 use days available apart from the NOAA designated days, 121 days requested by 20 investigators were in competition.

The Committee then turned to the task of reviewing the individual proposals using as a basis:

- . scientific merit
- . demonstrated need for submersible time
- . feasibility for ALVIN operations

The requests took many varied forms ranging from full scale scientific proposals to the single sheet request form, and in the case of several NOAA projects - a simple line item. The Committee recommended that, in the future, a reasonably uniform system of required information be used and instructions included in an improved ALVIN proposed users brochure.

Of the 25 proposals for 1975 two did not demonstrate a justifiable need for submersible time; two set forth excellent to good science for first rate submersible utilization but for reasons of location and/or time constraints would be best deferred until 1976; and another was a non-scientific survey not feasible in this period.

Of the remaining twenty proposals all merited consideration to some extent.

The NOAA and ONR projects ranked well with the others based on the information which was available and the Committee found no quarrel with recommending their accomplishment, although one fell into the geographical constraints noted above for deferral.

The Committee noted that seven proposals actually constituted a consortium arrangement cutting across both laboratory and sponsors lines. This appeared to be an excellent approach which strengthened the overall scientific merit when taken as a whole and at the same time provided a much needed flexibility. The Committee recommended that future arrangements of this sort be greatly encouraged.

8. Of the proposals recommended for accomplishment the Committee applied its review judgements subject to the constraints noted and bore in mind the interests of the funding agencies. The Committee, therefore, recommends the following awards of use days in 1975:

Recommendations for 1975

<u>Proposal</u>	<u>Use Days Requested</u>	<u>Use Days Recommended</u>
BIOLOGY CONSORTIUM (W.H.O.I., U. Mass, Harvard, Scripps) (GRASSLE, SMITH, TURNER, FARRINGTON, SANDERS, REX, JANNASCH, HESSLER, ROWE)		
W.H.O.I. Deep Stations	30	15
Tongue of the Ocean	7	8
ROWE (WHOI) NSF Request	10	5
ROWE (WHOI) ONR Request	10	5 *
STAIGER (RSMAS)	20	
GINSBURG (RSMAS)	8	12
COLIN (U. Puerto Rico)	2	
SHUMAKER (WHOI)	10	10 *
MUSICK (VIMS)	4	3
HOLLISTER (WHOI)	7	7
COOPER (NMFS)	11	10 *
MARTIN (NOAA)	2	4 **
COHEN (NMFS)	14	11 **
KELLER (AOML)	8	7 **
	143	97

The profile of this recommended arrangement is:

No. of Projects19
 No. of Principal Investigators.....19
 No. of Academic Labs..... 7
 No. of Federal Labs 4

Use days by Agency

ONR..... 24
 NSF..... 39
 NOAA..... 32
 Other..... 2

Total 97

Use Days North..... 53
 Use Days Mid..... 7
 Use Days South..... 37

Total 97

* Previously committed, funded days

** Specified by NOAA under Interagency Agreement

The Committee in cooperation with the WHOI Deep Submergence Group developed a tentative 1975 schedule using the above recommendations. This schedule is presented as Appendix I.*

9. Requests for 1976 on hand were reviewed in a preliminary fashion. These included four requests specifically for 1976 and two recommended to be deferred from 1975 proposals.

One proposal for the Los Angeles Bight appeared unlikely at this time. Another proposal by the Deep Sea Drilling Project but without specific dates and location was considered for information purposes only. A proposal for the Campeche Escarpment was directed to be returned noting that shipboard field work should be accomplished to further demonstrate the need for submersible use.

The major proposal for the Cayman Trough Study was reviewed favorably. Further information on the commitment of Naval survey ships and surface research vessels was requested. **

It was noted that the proposals for 1976 (46-52 use days) already exceed the projected number of allowable use days (40) (exclusive of NOAA proposals) which the presently projected funding will allow. It is anticipated that a sizable number of additional proposals can be expected. The Committee considers it imperative that a sound and viable program be developed which will attract the additional funding (\$250-300K) necessary to implement a full years availability of 140 use days in 1976.

10. The Committee discussed means of better informing the community of the uses, capability and availability of ALVIN. These included:
 - . More adequate announcements
 - . More complete user information manual with handout sheets on component systems

* The schedule presented is a minor variation based on corrections to travel time and slight changes in dates. It bears the date 3/1/75.

** As of the date of this report the Oceanographer of the Navy in memorandum 2/19/75 Ser 159/N33 has directed USNS WYMAN to conduct advance surveys.

- . Encouraging investigators for more timely and related publication material. It was noted that three previous users have published no material on ALVIN related work; four additional investigators had published once each. A coming issue of SCIENCE (Hammond) will contain an excellent article of ALVIN work in the FAMOUS Project.

11. It was agreed to hold the next meeting of the Committee during the first two weeks in October 1975 during which time proposals for 1976 schedule will be considered along with outlooks for 1977. Of special importance will be the additional funding needs for a full 1976 season.
12. The agenda having been completed and the work of the Committee considered finished, the meeting was adjourned.

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

DSRV ALVIN REVIEW COMMITTEE
First Meeting - February 19, 1975
Carriage House Conference Center
Woods Hole Oceanographic Institution

TENTATIVE AGENDA

1. Convene - 0830 - 19 February
2. Introduction - Dr. Arthur Maxwell (acting chairman)
 - . Background of the development of ALVIN as a National Oceanographic Facility
3. DSRV/ALVIN - DSRVT/LULU - Mr. Larry Schumaker, Head of WHOI Deep Submergence Group
 - . A briefing on capabilities, constraints and other factors for ALVIN/LULU operations.
4. Role of the Committee
 - . Annex II of UNOLS Charter
 - . Interagency support agreement for DSRV ALVIN with Annex and memorandum.
 - . Draft UNOLS Terms of Reference for Review Committee.
 - . Discussion of role of committee, procedures, agree on and approve terms of reference.
5. Statements and views of Federal Agency Observers.
6. Review of proposals received for use of ALVIN.
7. Recommendations for current year.
8. Outlook for 1976.
9. Committee Membership
 - . 1-2-3 year terms
 - . election of chairman
10. Other Business
11. Next meeting

- NOTE: 1. An annotated agenda and background material will be sent shortly.
2. Accommodations directory and map are attached.

February 3, 1975

APPENDIX A

UNOLS
NATIONAL OCEANOGRAPHIC FACILITY
DSRV ALVIN REVIEW COMMITTEE

MEMBERS

- Dr. Charles L. Drake
Department of Geology
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- Dr. George Grice
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(206) 543-6600
- Dr. Adrian F. Richards
Director
Marine Geotechnical Laboratory
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- Dr. Claes Rooth
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- Dr. Karl K. Turekian
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New Haven, Connecticut 06520
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- Dr. Tjeerd Van Andel
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Stanford University
Stanford, California 94305
(415) 497-3727

OBSERVERS

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Office for Oceanographic Facilities
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Arlington, Virginia 22217
(202) 767-2847
- Dr. D. C. Beaumarriage, Director
Manned Undersea Science &
Technology Office, NOAA
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Rockville, Maryland 20852
(301) 496-8391

SECRETARIAT

- Capt. R. P. Dinsmore
Executive Secretary, UNOLS
Woods Hole Oceanographic Institution
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(617) 548-1400 Ext. 352



DEPARTMENT OF THE NAVY
OFFICE OF THE OCEANOGRAPHER OF THE NAVY
HOFFMAN II
200 STOVALL STREET
ALEXANDRIA, VA. 22332

IN REPLY REFER TO
OCEANAV:se
Ser 1032/N411
11 November 1974

MEMORANDUM FOR THE DISTRIBUTION LIST

Subj: DSRV Alvin Support Agreement

1. DSRV Alvin Support Agreement with one annex has been signed by the three principals involved and is hereby distributed for information and implementation.

J. EDWARD SNYDER, JR.
Rear Admiral, U.S. Navy
Oceanographer of the Navy

Distribution:
Under Secretary of the Navy
CNR
Administrator, NOAA
Director, NSF
Office, University - National Oceanographic Laboratory System ←
COMNAVOCEANO

MEMORANDUM OF AGREEMENT CONCERNING SUPPORT
OF DSRV ALVIN

In the belief that DSRV Alvin is a unique national asset and in the belief that Alvin provides a significant capability to the oceanographic research community; and in the further belief that a reasonable assurance of operating support is a necessary pre-condition to the establishment of a sound scheduling and utilization program, the Department of the Navy, National Oceanic and Atmospheric Administration (NOAA), and the National Science Foundation (NSF), hereby agree to the following:

1. Within the limits imposed by Congressional action and/or the availability of funds, the agencies will provide support for operating costs of DSRV Alvin for a period of three years, from 1 January 1975 through 31 December 1977. Funds will be provided in equal shares by the three agencies in the course of each operating year.
2. DSRV Alvin will be operated during this period as a National Oceanographic Facility. Proposals for use of Alvin will be evaluated by a specially-constituted Review Committee to be named by the University National Oceanographic Laboratory System.


Representatives of the funding agencies and WHOI will then establish the number of dives that will constitute the year's work and prepare a schedule, giving appropriate consideration to the mission requirements of the funding agencies, the recommendations of the Review Committee, and the logistic feasibility of the proposals.

3. Woods Hole Oceanographic Institution (WHOI) will operate and maintain DSRV Alvin. Use of Alvin by WHOI personnel shall, however, be subject to the same reviews and constraints as projects of other users. Title to Alvin is retained by the Navy, and nothing in this agreement shall be construed as impinging upon the basic conditions controlling the assignment of the vessel for operation and maintenance to WHOI by the Navy, recognizing that the submersible Alvin must be maintained in a material condition which will allow uninterrupted Navy submersible certification.
4. It is agreed that Navy retains the right to preempt Alvin scheduling for search and recovery operations involving life saving or National security. Preempted projects will be appropriately rescheduled.
5. Costs for operations of oceanographic research surface vessels and for project support are not to be paid from funds provided under this agreement.

6. Approximately six months before the termination of this agreement, the supporting agencies, UNOLS, and WHOI will review and evaluate the DSRV Alvin program to determine future disposition and use of the vessel. WHOI must plan expenditures during the period covered by this agreement in such a way that termination costs could be borne without additional funding in the event that termination of the program is recommended.
7. The level of funding for each operating year and specific manner of contribution shall be negotiated annually by the supporting agencies and WHOI. Agreed-upon levels for the first year are set out in an annex to this agreement. This annex may be amended periodically by mutual agreement of the supporting agencies.
8. This agreement terminates on 31 December 1977. Except for the routine re-negotiation of the support annex, an agency wishing to terminate this agreement prior to that date or to alter its obligations under this agreement must provide formal notice to the other participants at least six months in advance.

Signature

Date: 7 November 1974



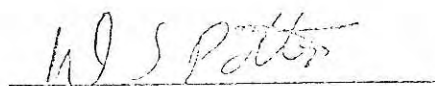
Dr. H. Cayford Stever

For the National Science Foundation



Dr. Robert M. White

For the National Oceanic and
Atmospheric Administration



Dr. David S. Potter
31 October 1974

For the Department of the Navy

ANNEX TO MEMORANDUM OF AGREEMENT CONCERNING SUPPORT
OF DSRV ALVIN

ARTICLE I - Period of Performance

This annex provides for execution of the provisions of the Memorandum of Agreement for the operating year from 1 January through 31 December 1975. Funds have been provided by NOAA for Alvin operations through 31 December 1974.

ARTICLE II - Funding

Operations support in the total sum of \$900,000 will be provided during this period. Funds will be provided to Woods Hole Oceanographic Institution (WHOI) through an award to be administered by the National Science Foundation (NSF).¹

Each of the participating agencies agrees, within such limits as may be imposed by Congressional action or availability of funds, to contribute \$300,000 during this period in accordance with the following schedule:

<u>Sum</u>	<u>To be contributed by</u>	<u>Not later than</u>
\$300,000	National Science Foundation	1 January 1975
\$150,000	Department of the Navy	1 April 1975
\$150,000	Department of the Navy	1 July 1975
\$300,000	National Oceanic and Atmospheric Administration	1 October 1975

Transfer of funds to NSF from the Navy and from NOAA will be accomplished upon submission of Standard Form 1080 to their respective Financial Management Officers in accordance with appropriate procedures.

¹ Pursuant to Section 5(e) of the NSF Act, the National Science Board must approve any award administered by the Foundation in an amount over \$500,000 per year. Since the contemplated award will fall within this category, National Science Board approval is now being sought.

ARTICLE III - Liaison


For the Department of the Navy, RADM J. Edward Snyder, Oceanographer of the Navy.

For the N.O.A.A., Dr. Donald P. Martineau, Deputy Associate Administrator.

For the National Science Foundation, Mary K. Johrde, Head, Office for Oceanographic Facilities and Support.


Signature

Date: 7 November 1974



Dr. H. Guyford Stever

For the National Science Foundation



Dr. Robert M. White

For the National Oceanic and Atmospheric Administration



Dr. David S. Fisher

For the Department of the Navy

11 October 1974

MEMORANDUM FOR THE UNOLS ALVIN REVIEW COMMITTEE

Subj: DSRV Alvin Scheduling

Ref: (a) Memorandum of Agreement concerning Support of DSRV Alvin
(b) Annex to Memorandum of Agreement concerning Support of
DSRV Alvin - Funding.

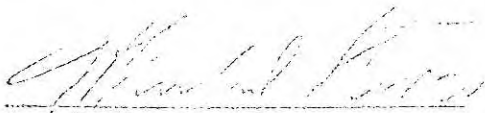
1. This memorandum is to set forth specific guidelines for scheduling DSRV Alvin in execution of the cooperative agreement provided by references (a) and (b).

2. The following conditions must be observed by the UNOLS Alvin review committee:

- One-third of the annual dives shall be used for projects specifically designated by NOAA.
- The remaining two-thirds of the dives may be assigned to projects selected by the Review Committee. The Committee shall, however, accord appropriate priority to investigators conducting projects supported by Navy and NSF in establishing dive schedules.
- Liaison representatives listed in the annex to the agreement will resolve scheduling conflicts.

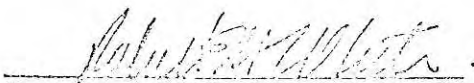
Signature

Date: 7 November 1974




Dr. H. Coryford Stever

For the National Science Foundation



Dr. Robert M. White

For the National Oceanic and
Atmospheric Administration



Dr. David S. Potter

For the Department of the Navy

31 October 1974

UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

ANNEX II

to the Charter

National Oceanographic Facilities

1. In addition to regular institutional UNOLS facilities there may be identified National Oceanographic Facilities, defined as those facilities, specialized and otherwise, that are made available for the use of qualified scientists from any institution and the use of which shall be determined by a UNOLS Review Committee.
2. A research vessel or other research facility may be designated as a National Oceanographic Facility upon the approval of the UNOLS Membership after review by the UNOLS Advisory Council, with the concurrence of the owner and operator of the facility and with reasonable assurance of support. National Oceanographic Facilities may be multi- or special purpose facilities and may be designated for the entire annual operating period or any significant period thereof.
3. The purpose of National Oceanographic Facilities is:
 - To provide oceanographic vessel and other facility support to scientists who do not operate or have available the required facilities.
 - To provide for the support and use in academic research of specialized and unique facilities.
4. A Review Committee for each facility shall be established for the purpose of considering proposals for facility use and for recommending programs to be scheduled. Members of the Committee shall be nominated by the UNOLS Advisory Council and shall be appointed by UNOLS. Members shall serve for terms of three years on a rotating basis. Each institution operating a National Oceanographic Facility may designate an ex-officio member in addition to those members appointed by UNOLS. The Review Committee shall elect its own Chairman from among the members appointed by UNOLS.
5. In recommending the allocation of facility time the Review Committee shall act primarily on the scientific merit of the proposed research and its compatibility with the individual facility.
6. Operational scheduling of the facility will be the function of the operating institution. The time frame for scheduling generally shall be in accordance with Annex I of the UNOLS Charter.
7. Information and announcements advertising the availability of a National Oceanographic Facility will be a joint function of the operating institution and the UNOLS Office.
8. Receipt, acknowledgement, collating and structuring of requests for facility use will be the function of the operating institution in consultation with the UNOLS Office.
9. An annual report to UNOLS on the use of each National Oceanographic Facility will be prepared by the appropriate operating institution in cooperation with the Review Committee and UNOLS Office.
10. Requests for funding the operation of the facility will be the responsibility of the operating institution.

Approved and adopted: May 5, 1972, College Station, Texas

Terms of Reference
UNOLS DSRV Review Committee

1. The UNOLS DSRV Review Committee shall operate pursuant to appointment by UNOLS and in accordance with Annex II to the UNOLS Charter. In addition, each funding agency will be invited to designate an official observer to the Committee.
2. A role of the Committee shall be to consider and recommend the application of deep submersibles to scientific and technological research by users. This shall include the development of new techniques, areas of investigation, support and use arrangements and the general furtherance of manned undersea platforms for oceanographic research.
3. The Review Committee shall consider all proposals for use by DSRV ALVIN and shall recommend to the operating institution on such matters as acceptances, rejection, deferral and priority.
4. In considering the proposals for use of the DSRV ALVIN, the Review Committee shall be guided primarily by the scientific and technological merit of the proposed research. In addition, however, the Review Committee shall consider the compatibility and feasibility of the proposed research and the constraints of the operating institution. The Review Committee also shall bear in mind the priorities and interests of funding agencies.
5. The Review Committee may sponsor with approval by UNOLS such meetings, study groups and workshops as required, including an annual scheduling meeting for the presentation and open discussion of proposed projects.
6. The Review Committee may establish whatever peer group review procedures it believes desirable in conjunction with the research program of the DSRV ALVIN as a National Oceanographic Facility.
7. The Review Committee shall hold a regular annual meeting for the purposes of its business, and may hold special meetings as necessary.
8. An annual report of activities shall be made to UNOLS.

APPENDIX F

Statement regarding the external camera system for DSRV ALVIN submitted to the ALVIN Review Committee 19 February 1975. Compiled from reports of previous users.

The prime function of a submersible is to provide in situ observations and measurements - it gets the eyeball to the scene of the action. Such a vehicle, however, is not effective unless the observations can be recorded and a hard copy obtained. In the case of eyeball observations photography provides the only means for a permanent record and thus cameras have to be of prime concern for an effective use of ALVIN.

Under the sponsorship of O.N.R., A.R.P.A., and more recently N.S.F. an advanced mapping system has been developed for ALVIN. This system centers around a bottom acoustic transponder navigation system and an eight-channel analog data logger which act as a mobile frame of reference to which observations, samples, and pictures can be related. It is possible with this system to map features on an accuracy of 10-15 meters and bearing accuracies of 5°. Although this system operated with surprising reliability in the Mid-Atlantic Ridge as a part of Project FAMOUS, a large amount of scientific information was lost to an inability to relate photographic information to the track of the submersible. It was possible to know, for example, the orientation and position of the vehicle within a relative time frame of 2-3 seconds while it was impossible to resolve photographic information to less than 5 minutes on the average. This was due primarily to a poor camera system aboard ALVIN and improper knowledge of its mechanical behavior.

The present EG&G cameras lack a means of being accurately tied into the navigation because of the camera clocks (watches) and frame counters which are not adequate. An improved camera system with a digital data frame superimposed on each photograph and accurately tied into the navigation time base is needed to effectively utilize ALVIN photos.

Project FAMOUS had available to it the best systems (navigation, cameras, TV) yet developed for ALVIN. As a result of this project and the development of a very good navigation system we now find the camera system (external EG&G units) to be a weak link in an effective use of ALVIN. It is imperative that ALVIN photographs be tied into the navigation so the dive and its observations can be reconstructed to provide a meaningful record.

As a result, a considerable amount of detailed mapping information was technically possible but in fact could not be done due to the erratic behavior of the camera system. A simple solution to this problem can be made through the purchase of a new camera system possessing a digital data frame which is superimposed upon each frame. This will eliminate frame to frame dependence, greatly reduce the manpower needed in data reduction, and insure a major increase in the amount of useful photographic information.

DSRV ALVIN

OF

WOODS HOLE OCEANOGRAPHIC INSTITUTION

The Deep Submergence Research Vehicle ALVIN of the Woods Hole Oceanographic Institution has been designated a National Oceanographic Facility for a major part of its annual diving schedule. Diving time is available to qualified researchers selected on the basis of scientific merit and compatibility of proposed research.

Description of DSRV ALVIN

ALVIN is equipped with an extensive instrumentation suite including navigation and obstacle avoidance sonar, underwater telephone, radios, water current and temperature monitors, underwater lights, 35mm cameras and strobes, underwater television system and a mechanical manipulator capable of lifting up to 50 lbs. of bottom samples. Sample baskets and racks are carried for transporting collected samples back to the surface. There are provisions both inside and outside of the submarine for the installation of specific mission devices or instruments. 30 and 60 volts DC and 115 volts 60 cycle AC is available to power such devices. Precision bottom navigation systems are now operational and available for precise bottom tracking of the submarine. Normal life support system will provide suitable atmosphere for three people for 72 hours with a back-up emergency supply of about six hours.

Speed:
 Cruising - 1 kt
 Full - 1.5 kt

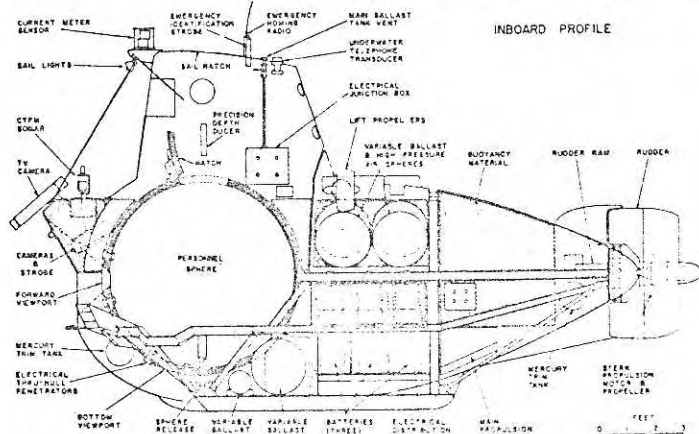
Endurance: 8 hrs. @ 1 knot

Max. Depth: 12,000 ft.

Crew: one

Scientists: two

Built: 1964



ALVIN is normally supported by her tender, DSRVT LULU, and is carried on board when not diving. LULU is a 105-ft catamaran type and carries a complete shop and repair facility. She also provides berthing and messing facilities and laboratory and work space for six scientists. The usual ALVIN/LULU cruise is ten to fourteen days.

DSRV ALVIN is owned by the Office of Naval Research, U.S. Navy, and is operated by the Woods Hole Oceanographic Institution. Operations funding as a National Oceanographic Facility is by the Office of Naval Research, National Science Foundation and the National Oceanic and Atmospheric Administration.

Proposals for use of ALVIN are now being solicited for the 1975 and 1976 diving seasons. Requests for 1975 use should be submitted by February 15th using the attached Submersible Time Request Form and providing additional information on the intended research. Investigators who have previously submitted requests need not resubmit unless changes exist.

The 1975 diving year will commence about April 1st in the Florida-Bahamas area and will extend northward as the season progresses. For cruises significantly offshore, arrangements must further be made for an escort vessel.

Proposals for the use of ALVIN through UNOLS are for facility use only and no research or travel funding is implied. Associated research proposals should be made through the usual channels to granting agencies.

Submersible time requests will be reviewed by a scientific committee for the purpose of recommending projects to be accomplished. Basic criteria will be scientific merit but programs supported by ONR, NSF and NOAA will be assigned certain priorities.

The attached Form "REQUEST FOR SUBMERSIBLE USE" and other inquiries should be addressed to:

UNOLS OFFICE
 Woods Hole Oceanographic Institution
 Woods Hole, Massachusetts 02543
 Tel: (617) 548-1400 X352

SUBMERSIBLE TIME REQUEST

TO: WOODS HOLE OCEANOGRAPHIC INSTITUTION WOODS HOLE, MASSACHUSETTS 02543	and/or	UNOLS OFFICE <input type="checkbox"/> (check)
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SHIP REQUESTED (if no specific ship, leave blank)

ALVIN / LULU

PRINCIPAL SHIP USE <input type="checkbox"/>	(where project will be chief use of ship)
ANCILLARY SHIP USE <input type="checkbox"/>	(on a shared or not-to-interfere basis)

PURPOSE (project title and brief outline of scientific objective)

CHIEF INVESTIGATOR (name, title, address, tele.no:)

OTHER SCIENTISTS INVOLVED

TOTAL NUMBER OF SHIPBOARD PARTY

PROJECT REQUIREMENTS

ESCORT SHIP REQUIREMENT (large, small & why)	
SHIPBOARD EQUIPMENT NEEDED	
SPECIALIZED FACILITIES OR INSTRUMENTS REQUIRED	
SUPPORTING PERSONNEL NEEDED (technicians)	
EXPLOSIVES CARRIED	RADIOACTIVE MATERIAL

MINIMUM NUMBER OF DIVE DAYS NEEDED
OPTIMUM INCLUSIVE DATES
ACCEPTABLE ALTERNATIVES
AREA AND DEPTH OF OPERATIONS (attach page size track chart)
UNDEPWAY and/or STATION REQUIREMENTS (attach sampling plan if available)

FUNDING STATUS

FUNDED		
FUNDING AGENCY		
GRANT NO:		
AMOUNT OR ANNUAL RATE	BEGIN. DATE	DURATION

NOT-FUNDED	
PROPOSAL SUBMITTED <input type="checkbox"/> WILL BE SUBMITTED <input type="checkbox"/>	TO:
DATE:	AMOUNT REQUESTED:
NEW PROPOSAL <input type="checkbox"/>	or RENEWAL OF GRANT NO:

OTHER SHIPS, LABS, AGENCIES TO WHOM REQUESTS HAVE BEEN SUBMITTED

DATE OF REQUEST

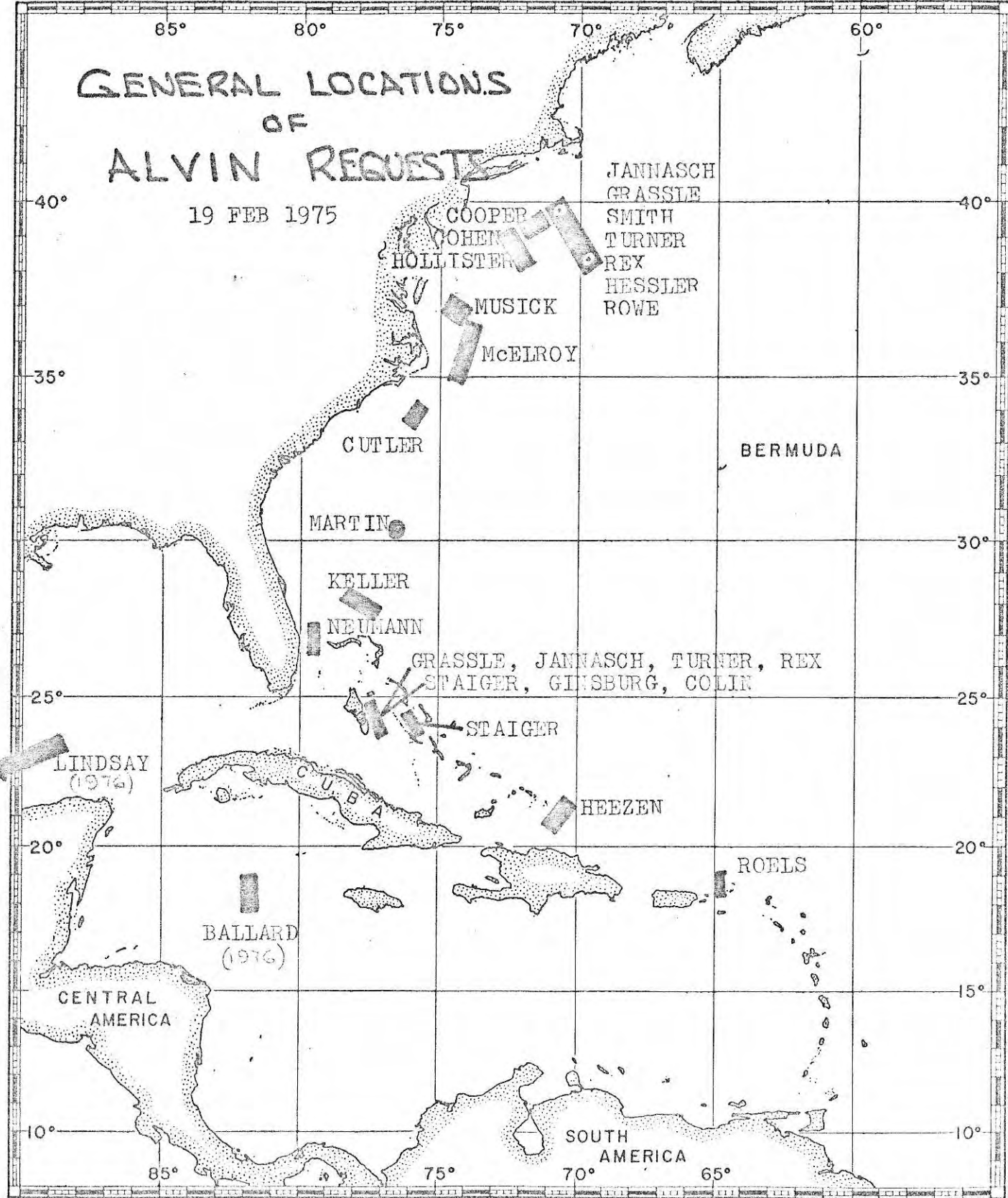
SUBMITTED BY (name, title, address, tele.no if different from chief investigator)

SIGNATURE

APPROVED BY (department chairman or lab.director)

GENERAL LOCATIONS OF ALVIN REQUESTS

19 FEB 1975



ALVIN USE REQUESTS

13

INVESTIGATOR	INST.	USE DAYS	AREA	DATES	PURPOSE	SPONSOR (NOTE 3)		
BIOLOGY CONSORTIUM	GRASSLE	W.H.O.I.	3 3 3	W.H.O.I. Bottom Stas. do Tongue of the Ocean	June August April - May	Population dynamics of deep sea organisms	NSF	
	SMITH	W.H.O.I.	5	W.H.O.I. Bottom Stas.	June - July	Metabolism of deep sea animals & communities	NSF	
	TURNER	HARVARD	2 2 2	W.H.O.I. Bottom Stas. do Tongue of the Ocean	June August (Any)	Deep Sea Fouling and Boring Organisms	ONR	
	JANNASCH	W.H.O.I.	1 1	W.H.O.I. Bottom Site Tongue of the Ocean	June - July January - February	Microbial activities in the deep sea	-	
	REX	Univ. Mass.	2 2	W.H.O.I. Bottom Stas. Tongue of the Ocean	(Any) (Any)	Composition of Benthos	NSF	
	HESSLER	Scripps	5	W.H.O.I. Bottom Stas.	Summer	Benthic megafaunal photo-surveys & re-colonization experiments	NSF	
	ROWE & FARRINGTON	W.H.O.I.	7	W.H.O.I. Bottom Stas.	Summer	Rates of Biological and organic Geochemical Processes in the deep ocean	(NSF)	

*(total Biology Consortium)**(30)
(7)**W.H.O.I. Bottom Stas.
Tongue of the Ocean*

ROWE (1)	W.H.O.I.	10	W.H.O.I. Bottom Sta. (Deep Station #1)	Summer	Characterization and causes of zonation in the Deep Sea	NSF	
ROWE (2)	W.H.O.I.	5	W.H.O.I. Bottom Sta. (Deep Station #2)	Summer	Sediment Fauna Relationships	ONR	NOTE 2
STAIGER	RSMAS	10 10	Tongue of the Ocean Exuma Sound	May - August	Quantitative analysis of Benthic Fish Pops.	(NSF)	
GINSBURG	RSMAS	8	Tongue of the Ocean	-	Deep Reef Wall and fore reef margins	NSF	
NEUMANN	U. N. C.	6	N.W. Straits of Fla.	September - October	Investigation of lithified bioherms	(NSF)	

ALVIN USE REQUESTS

1975 (CONT.)

INVESTIGATOR	INST.	USE DAYS	AREA	DATES	PURPOSE	SPONSOR (NOTE 3)	
KELLER	A.O.M.L.	8	S.E. Blake Plateau	May	Sedimentary Processes Great Abaco canyon	NOAA	NOTE 1
COLIN	U. PUERTO RICO	2	Tongue of the Ocean	April - August	Qualitative observations of fish species on steep escarpments	U.P.R.	
MUSICK	V.I.M.S.	4	Norfolk Canyon	July or September	Ecosystem structure	NSF	
CUTLER	Syracuse U.	6	Cape Lookout, N.C. 34°N, 76°W	April - June	Relationship of vert. dist. of bottom currents to benthic invertebrates	Syracuse Univ.	
McELROY	Bolt, Beranek & Newman, Inc.	5	Cape Hatteras, N.C.	July - October	Spectral measurements on a single fish species	(ONR) (NSF)	
ROELS	Lamont	1	St. Croix, V.I.	(Any)	Pipeline Inspection for artificial upwelling	(NOAA)	
HOLLISTER	W.H.O.I.	7	Hudson Canyon	Fall	Sediment Dynamics	ONR	
HEEZEN	Lamont	10	Southern Bahamas	Summer	Carbonate Platforms & erosion processes	ONR	
MARTIN	NOAA	2	Blake Plateau	May - June	Instrument Recovery	NOAA	NOTE 1
COHEN	NMFS	14	Hudson Canyon	June	Fishery & Contour Cur- rent & Deep Dumpsite	NOAA	NOTE 1
Total 1975 Requests		145					

PREVIOUSLY COMMITTED

TESTS AND CERTIFICATION							
TESTS AND CERTIFICATION	-	5	(Any)	Commence. Ops.	Certification	-	
SHUMAKER	W.H.O.I.	10	(Any)	(Any)	System Development	ARPA	
COOPER	NMFS	11	East Coast Canyons	June - August	Megabenthic Studies	NOAA	
ROWE	W.H.O.I.	5	W.H.O.I. Bottom Sta.	Summer	Sediment Fauna Relationships	ONR	NOTE 2

Total 1975 Commitments
and Requests

176

NOTE 1 - Specified by NOAA under Interagency Agreement.

NOTE 2 - 5 days requested; 5 days committed. Total 10.

NOTE 3 - Parenthesis show proposed sponsorship; otherwise firm.

ALVIN USE REQUESTS
1976

INVESTIGATOR	INST.	USE DAYS	AREA	DATES	PURPOSE	SPONSOR
BALLARD	W.H.O.I.	30	Cayman Trough	January - April 1976	Detailed investigation of Cayman Trough and zones of Plate Divergence and Translation	(NSF)
LINDSAY	U. of Texas	8	Campeche Escarpment	October '75 - May '76	Sediment dispersal and role of canyons in controlling the growth of carbonate platforms.	(NSF)
DEEP SEA DRILLING PROJECT	Scripps		Atlantic New Cone North of Puerto Rico	(1976)	Evaluate deep drilling reentry work	NSF
LASKER	S.W. Fish. Cen. NMFS	10	Los Angeles Bight	Spring 1976	Microscale vertical and horizontal patchiness of plankton	(NOAA)
1977						
VAN ANDEL	OSU	18	Panama Basin northeast of Galapagos Islands	January - May 1977	Hydrothermal processes in the Galapagos rift zone	(NSF)

NOES 5/1/75

TENTATIVE SCHEDULE
RESEARCH SUBMERSIBLE ALVIN
1975

APPROXIMATE DATES	USE DAYS	AREA	INVESTIGATOR(S)	PROGRAM	RESEARCH FUNDING AGENCY
1 Jan-19 Mar		Upkeep and Maintenance			
20-31 Mar		Transit to Bahamas			
1-13 Apr	(5)	Tongue of the Ocean	Sea Trials and Certification		
14-21 Apr	8	Tongue of the Ocean	Grassle, Jannasch Turner, Rex, Sanders	Deep Sea Biology (Collab. Program)	NSF ONR
22 Apr-4 May	12	Tongue of the Ocean	Staiger Ginsburg Colin	Benthic Fish Populations Deep Reef Wall Geology Deep Fish Species	NSF NSF U.P.R.
5-14 May	10	Tongue of the Ocean	Shumaker	Systems Development	ARPA
15-19 May		Transit			
20 May-27 May	7	Blake Plateau	Keller	Sedimentary Processes, Great Abaco Canyon	NOAA
28 May-1 June	4	Blake Plateau	Martin	Instrument Recovery	NOAA
2-6 June		Transit and port replenishment			
7-10 June	3	Norfolk Canyon	Musick	Ecosystem Structure	NSF
10-14 June		Transit to Woods Hole			
15-22 June		Maintenance			
23 June-4 July	10	East Coast Canyons	Cooper	Megabenthic Studies	NOAA
8-18 July	10	W.H.O.I. Deep Ocean Stations	Rowe, Farrington, Grassle, Sanders, Turner, Rex, Smith, Jannasch, Hessler	Deep Sea Biology (Collab. Program)	NSF ONR
22 July-2 August	11	Hudson Canyon	Cohen, et al	Fishery Investigations Contour Currents Deep Dump Site	NOAA
3-11 August		Maintenance			
12-22 August		(O P E N)			
26 Aug-5 Sept	10	W.H.O.I. Deep Ocean Stations	Rowe W.H.O.I. Bio. Collab.	Zonation in Deep Sea Deep Sea Biology	NSF NSF
6-14 September		(O P E N)			
15-27 Sept	12	Hudson Canyon	Rowe Hollister	Sediment Fauna Relations Sediment Dynamics	ONR ONR
28 Sept-31 Dec		Annual Overhaul			

1975 Summary

97 Use Days
14 Trials and Certification
24 Transit Days

135 Operating Days
(20 Days remain available open)*

RESEARCH SUPPORT

39 NSF
14 ONR
10 ARPA
32 NOAA
2 (other)

97 Use Days
(20 Days remain available open)*

* (Addnt Ops Funding Required)