

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

REPORT OF FIFTH ANNUAL MEETING

DSRV ALVIN REVIEW COMMITTEE
MARCH 30-31, 1978
NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C.

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JUNE 1978



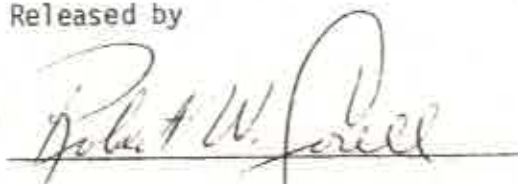
This report combines the results of the Fifth Annual ALVIN Review Committee Meeting with material documenting calendar year 1977 and thus constitutes the Annual Report on this National Oceanographic Facility from the ALVIN Review Committee to the UNOLS Advisory Council and funding agencies.

Prepared by



Thomas Stetson
Executive Secretary
UNOLS

Released by



Robert Corell, for the Committee
Chairman
ALVIN Review Committee

SUMMARY OF COMMITTEE ACTION

30-31 MARCH 1978

- Candidates to replace three outgoing members of the ARC were developed (item 4 p.3)
- Archiving of Film & Data Policy agreed to in principal. Wording to be worked out (item 5 p.3)
- Sample Distribution Policy (item 6 p. 3)
- Agency credits should be incorporated in any films or TV specials made by National Geographic Society (in letter to M. Grosvener)
- Committee reaffirmed its hope that the UNOLS Submersible Science Facilities Study would go forward (item 7 p. 3)
- 1980 & Beyond. The Committee developed and approved the following statement:

The 1980 diving season coincides with the calendar year. The Review Committee, using available preliminary proposals and an initial review of operational considerations, projects that the Atlantic and the Panama Basin will be the major operating areas for 1980. The final decision on the areas of operation will be guided by the quality of the scientific proposals received. The Committee considers 1981 and 1982 to be open. However, proposals written for the Committee are encouraged so that substantial evidence exists upon which to base a decision regarding operating areas up to two years in advance. The Committee will declare major operating areas as early as possible, but always in response to substantive research proposals.

- Workshop. The Committee recommended a joint Galapagos/Panama Basin Workshop to be held prior to January 1979 (item 9 p. 5)
- The Committee recommended the tentative 1979 schedule (Appendix V)

ALVIN REVIEW COMMITTEE

Minutes of Meeting
March 30-31, 1978
National Science Foundation, Room 628
Washington, D.C.

The meeting came to order at 0835 and the Draft Agenda was adopted as written, with the addition of a review of the annual advertising flyer. Dr. Corell prepared an additional agenda for guiding the second day discussions (see page 5).

The numbered paragraphs below are keyed to the Agenda items. Participants are found in Appendix I.

1. The Minutes of the August 9, 1977 meeting were voted as written.
2. & 3. Review of 1977 Season and Upgrading. Mr. Shumaker reviewed the 1977 season and recent upgrading. His report is attached as Appendix II. Of especial interest is ALVIN's new Titanium frame and refurbishment of LULU. The latter included rehabilitation of living spaces (starboard pontoon), enlarged escape trunks extended to upper deck, increased air conditioning, rewiring and replacement of saltwater piping.
4. Committee Candidates. Suggestions were solicited to replace Drs. Grice, Richards, and Turekian whose terms expire in June. Candidates were ranked with attention to discipline, whether a prior user, etc. The list will be submitted to the Advisory Council and finally ratified at the Annual Meeting.
5. Archiving of Film & Data. Captain Dinsmore and Dr. Turner prepared a statement entitled "ALVIN Film and Data Archiving Policy" (dated 24 March 78). The Committee adopted it in principle, with some changes in wording and with the addition of a standard package of film and video tape to be provided per dive by the Deep Submergence Group. Details of this package are included here as Appendix III.
6. Sample Distribution Policy. After considerable discussion, Drs. Corliss and Turekian agreed to continue their efforts on a policy statement. A final draft should be in the secretary's hands by April 21, 1978, which will be distributed for review. Drs. Grice and Turner agreed to review the section dealing with biological samples. The Committee may be asked to act as a body of appeal when disputes arise.
7. UNOLS Submersible Science Facilities Study. The Committee would like to see this go forward. The document outlining the task has undergone several revisions and may require more. Mechanics of funding and overseeing remain to be worked out.

The following agenda was composed at the close of the first day and was generally followed on the second day. Action on the items is indicated in italics.

1. Completion of Review of 1980 Proposals
 - *Committee action is indicated in Appendix IV.*
2. Alvin Program for 1980 & Beyond
 - *See para. 9 p. 4*
3. Review Draft 1979 Schedule
 - *See Appendix V for ARC's tentative recommended schedule.*
4. Complete Review of Film & Data Sample Distribution Policy
 - *See para. 6 p. 3*
5. UNOLS Submersible Science Facilities Study
 - *See para. 7 p. 3*
6. Revision of Flyer and Proposal Deadline/Guidelines
 - *See para. 9 p. 4*
7. Discussion of Agency Funding Agreement
 - *Little discussion was had. The Committee notes that by its approval of the 1979 tentative schedule (175 user days) it is "pushing" the agency budgets.*
8. Discussion of Support of Transponders and Acoustic Navigation System
 - *The Deep Submergence Group has developed a pool of transponders and needs help in maintaining it. Ownership of items should be no problem, as there are directives from the agencies concerning accountability. A policy governing ANGUS should be developed by Woods Hole to inform users of costs, liability, etc.*
9. Galápagos/Panama Basin Workshops
 - *The Committee recommended the holding of a joint Galápagos/Panama Basin Workshop prior to January 1979. It is hoped that this would aid in the coordination of equipment and logistics as well as to review experiments planned.*
10. World Chart of ALVIN Dives
 - *The Committee felt a world chart in some form showing where ALVIN had worked with a simple data code indicating what type of data were obtained would be useful. Mr. Shumaker said he had almost such a chart and would make it available.*

PARTICIPANTS

The following were present for all or part of the meeting:

ARC Members (with terms)

R.W. Corell, Ch., 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, <i>ex-officio</i>	2/75-6/78

OTHER PARTICIPANTS & OBSERVERS

D.C. Beaumariage	NOAA/MUS&T
W.P. Muellenhoff	NOAA/MUS&T
M.K. Johrde	NSF/OCE
N.R. Anderson	NSF/OCE
T. McLellan	NSF/OCE
D.F. Heinrichs	NSF/OCE
R.B. Williams	NSF/OCE
B.T. Malfait	NSF/IDOE
H. Zimmerman	NSF/OCE
R.E. Wall	NSF/OCE
T.E. Pyle	NORDA
T. Christensen	NORDA
K. Kaulum	NORDA
R.P. Dinsmore	W.H.O.I.
W.M. Marquet	W.H.O.I.
L.A. Shumaker	W.H.O.I.
T.R. Stetson	UNOLS

ALVIN
1975-1977
DIVE UTILIZATION

	<u>1975</u>	<u>1976</u>	<u>1977</u>
TEST, TRAINING & CERTIFICATION	4	13	2
ENGINEERING (ARPA)	5 (p)		
SURVEY & INSPECTION (NAVY)	1	16 (p)	3 (p)
NON-SCIENCE SEARCH	1	3 (p)	
INSPECTION (LAMONT)		1	
SCI. INSTRUMENT TESTS		1	
V.I.P.		2	
RADWASTE INVESTIGATION	3	5 (p)	
PHYS. OCEANOGRAPHY			2
BIOLOGY	35	28	33
GEOCHEMISTRY			24
GEOLOGY	<u>9</u>	<u>21</u>	<u>37</u>
TOTALS	58	90	101

(p) - paid for by agencies outside the Joint Agreement

ALVIN 1977

74 INDIVIDUALS MADE ONE OR MORE DIVES AS OBSERVERS ON ALVIN REPRESENTING THE FOLLOWING 34 INSTITUTIONS AND ORGANIZATIONS.

ATLANTIC OCEANOGRAPHIC & METEOROLOGICAL LAB (NOAA)
CATAWBA COLLEGE, SALISBURY, N. C.
FAIRLEIGH DICKINSON UNIVERSITY
FLORIDA STATE UNIVERSITY
GODDARD COLLEGE, INSTITUTE OF SOCIAL ECOLOGY
HARVARD UNIVERSITY
COLUMBIA UNIVERSITY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
NATIONAL MARINE FISHERIES SERVICE, NEFC (NOAA)
NATIONAL MARINE FISHERIES SERVICE, WASH. D.C. (NOAA)
NATIONAL OCEAN SURVEY (NOAA)
NAVAL AIR DEVELOPMENT CENTER
NEWFOUNDLAND MEMORIAL UNIVERSITY
OREGON STATE UNIVERSITY
RICE UNIVERSITY
SANDERS ASSOCIATES
SMITHSONIAN INSTITUTION
STANFORD UNIVERSITY
STATE UNIVERSITY OF N.Y. AT ALBANY
UNITED STATES GEOLOGICAL SURVEY
UNIVERSITY OF CALIFORNIA, BERKELEY
UNIVERSITY OF CALIFORNIA, SAN DIEGO, SIO
UNIVERSITY OF CHICAGO
UNIVERSITY OF DELAWARE
UNIVERSITY OF EDINBURGH
UNIVERSITY OF MIAMI
UNIVERSITY OF MILAN
UNIVERSITY OF MINNESOTA
UNIVERSITY OF NORTH CAROLINA
UNIVERSITY OF RHODE ISLAND
UNIVERSITY OF PARIS
UNIVERSITY OF TEXAS
WOODS HOLE OCEANOGRAPHIC INSTITUTION
WESLEYAN UNIVERSITY

II. ALVIN OVERHAUL

Serious planning for the 1977-78 ALVIN overhaul began in May of 1977 when it first became apparent that the existing frame had developed extremely severe cracking in welded areas which had already been repaired many times. Representatives of two metal fabrication firms were called in separately and discussions regarding price and material for a new frame were held. As a result of these conferences bids, based on a preliminary design, were requested from one contractor for a frame constructed in aluminum and from the other for a frame constructed in titanium. The final decision to construct the frame in titanium was based on several factors, with strength, maintainability and light weight being primary. In addition it was felt that the cracking problem was aggravated by the differential metals reaction between titanium and aluminum. A purchase order for the frame was issued on 29 June to Titanium Fabrications Division of Titanium Industries, Fairfield, New Jersey. The other contractor declined the opportunity to bid in titanium.

During the preliminary design phase it was decided to

nificant power saving on each dive.

Overall it is believed that with the reduced maintenance costs due to the titanium frame and the remounting of the main propulsion box, and the added reliability gained in the other systems, this lengthy overhaul will prove to have been very cost effective.

III. LULU OVERHAUL

Since the original construction of LULU as an unpowered launch and recovery platform in 1965 it has grown by a process of accretion into a sea-going vessel. Unfortunately, since many of the systems were not designed for the continuous usage they now see, and much of the equipment was obtained as surplus from the Navy, i.e. old and worn when originally installed, the ship has been subject to numerous breakdowns in recent years and has also accumulated a number of essentially unsafe conditions.

After an inspection by a NSF/ONR/NOAA appointed review group confirmed these discrepancies the decision was made to carry out a complete yard overhaul to correct the problems and to improve the general habitability of the ship. A proposal to NSF, but for the intended support by all major supporting Agencies, was submitted on 14 Oct. 1977 in the amount of \$270,000. \$115,000 was granted on 15 Dec. 1977 and planning for an additional \$100,000 is pending. The following major items have been accomplished:

- Replacement of "dormitory" berthing with two person staterooms.

in bunks in the main berthing compartment.

Finally, the main gear units for the recovery cradle were found to be beyond economical repair and are being replaced along with the lifting chains which have reached the 5 year mark.

While these improvements will not make LULU fully comparable in comfort and capability to other oceanographic ships, the removal of safety problems and the increase in overall efficiency of personnel should provide for significantly improved operations.

APPENDIX III

Standard Film and Video Tape Package

The standard ALVIN film and video tape package consists of:

- 100 feet of black and white and 100 feet of color film for the external cameras.

- up to ten rolls of 36 exposure color film for the internal 35 mm cameras, and

- one 30-minute reel of video tape.

Variation within the cost of these items may be requested prior to a dive. Variation incurring greater cost requires an additional funding commitment prior to a cruise.

INVESTIGATOR	ASSOCIATES	AREA	PURPOSE	SPONSOR	OPTIMUM	ALTERNATE	ESCORT	DIVES	COMMITTEE ACTION
									# = Approx. User Days
1979 Pacific (Continued)									
11. Burns, R. NOAA	J. Lavelle S. Swift	Off Calif.	Benthic resedimentation assoc. w/deep ocean mining	NOAA	May- Sept '79			18	14
12. Cacchione, D. Clarke, S. Field, M. Greene, H. U.S.S.S.		Calif. Cany. & slope	Geologic processes Hazard assessment	USGS	Sept - Oct '79	May- June '79	None	20	16
13. Cohen, D. NOAA	M. Jones	Galapagos Vents	Biol. exploration of fish	NOAA	During Galapagos leg		KNORR	5	6
14. Edmond, J. M.I.T.	R. Ballard J. Corliss J. Dymond L. Gordon	Galapagos Vents	Chem. & Geology of Vents. Use ANGUS	ONR 1	Jan '79			10	15
15. Grassie, F. W.H.O.I.	R. Hessler H. Sanders R. Turner H. Jannasch C. Wirsen J. Tuttle K. Karl M. Perry P. Jumas K. Smith et. al	Galapagos Vents	Biological exploration Use ANGUS	NSF 2	Jan- Mar '79		KNORR ?	24	I. 17 II. 14
16. Honjo, S. W.H.O.I.	D. Spencer et al.	Panama Basin	LEBBLE Series I	NSF 1 ONR 1	May- Aug '79		KNORR? (require 25 buxks)	21	19
17. Lowrie, A. Handschumacher, D. NOAA	J. Roquebert R. Cockeatham	Panama Basin	Study ext. spreading center, Morgan Rift	ONR	Spring '79	Flexible	Yes	8	First Alternate
18. Holcomb, T.									
19. Malahoff, A. NOAA	R. Perry R. Embrey	Panama Basin	Micromorphology of volcanic seds.	NOAA	Spring '79			25	18 in for '80
20. Spiess, F. Macdonald, K. S.I.O.	Orcutt, Lowen- stein, Boegeman, Cox, Filloux, Luyendyk, Ballard Green, Shih, Normark et al.	E. Pacific Rise 21°N Tanager FZ	RISE 03 Geo. & geophysics	IDOE 2	7 MR-30AP 20 AP-20RA		MELVILLE NEW HORIZON	40	I. 18 II. 18

INVESTIGATOR	ASSOCIATES	AREA	PURPOSE	SPONSOR	OPTIMUM	ALTERNATE	ESCORT*	DIVES	COMMITTEE ACTION # = Approx. User	
1980 Atlantic/Gulf										
26. Bryan, M. Thompson, G. M.H.O.I.	H. Dick M. Mottle P. Fox	Kane F.Z.	Crustal Studies	NSF 1	Jul-Aug '80	Open		12	No specific action	
27. Butler, J. Harvard		Bermuda	Pet. in seds.	NSF	Open			?	No specific action	
28. Fox, P. SUNY, Albany	K. Crane S. DeLong J. Dewey J. Francheteau M. Pittman W. Kidd	Oceano. F.Z.	Geology	NSF 1	July- Aug '80		Yes	15	No specific action	
29. Heirtzler, J. M.H.O.I.	J. Milliman F. Grassle R. Houghton	N.E. Seamounts Michael	Geol. & Biol. Use ANGUS	NSF/ONR 1	May-June '80		Yes	8	No specific action	
30. Houghton, R. M.H.O.I.	H. Schmincke H. Staudigal	Madeira Is. Group	Petrology	NSF 1	May-Sept '80	Summer '81	METEOR	?	12	No specific action
31. Rona, P. NOAA	M. Mottle G. Thompson K. Crane	No. Atl. Ridge	TAG Hydrothermal Project	NOAA	Jun 1- Jul 15	Jul 15- Sept 1	RESEARCHER June	15	No specific action	
32. Voge, A. M.H.O.I.	R. Presley D. Reid H. Sanders	Orca Basin G. of Mexico	Biol. & Phys. Properties	ONR ?	Spring '80	Any	GYAE	7	Withdrawn	
33. Bonatti, E.	W. Ryan	Romanche/ Verm. F.Z.	F.Z. geology	NSF 1 ONR 1	Open		Yes	10	No specific action	
34. George, R. UNC		Deep Sea Station Off No. Carolina DOS 1,2	Biology Benthic ecology	NSF 1				?	No specific action	
35. Turner, R. MCZ	C. Berg F. Grassle H. Jannasch C. Wirsen	New Station Off P. Rico	Benthic ecology	ONR 1	Jul-Aug '80			10	No specific action	
35A. Turner, R. MCZ	Ditto	TOTO	Benthic ecology	ONR 1	Late '79		Early '80	10	No specific action	
35B. Turner, R. MCZ	Ditto		Benthic ecology	ONR 1	Dec '79- Feb '80			10	No specific action	
35C. Turner, R. MCZ	Ditto	Panama Basin	Benthic ecology	ONR 1	Jan- Feb '80		Follow above	10	No specific action	

SUMMARY OF 1977 DIVE SEASON

APPENDIX VI

Date	Dive No.	Location	Sponsor/ Purpose	PIC/CP	Obs.	Time			Depth M/Ft.	Remarks
						Dive	Surf	Sub.		
1-3-77	695	Autec Harbor	Joint Agreement Training	R. Hollis	J. Sepenara G. Brady	1155	1230	0-35	30'	Hollis Solo Dive
1-4-77	696	24-39N 77-36W	Joint Agreement Biology	D. Foster	D. Cohen J. Staiger	1044	1700	6-16	2030m	
1-5-77	697	23-54N 77-10W	Joint Agreement Biology	R. Hollis	J. Staiger D. Pawson	0945	1659	7-14	1354m	
1-6-77	698	24-46.2N 77-37.3W	Joint Agreement Biology	L. Shumaker	D. Cohen D. Pawson	0815	1221	4-06	1931m	
1-7-77	699	25-01.8N 77-43.6W	Joint Agreement Biology	D. Foster	D. Cohen J. Staiger	1144	1734	5-50	2570m	Appendix VI
1-9-77	700	25-07.8N 77-35.8W	Joint Agreement Biology	L. Shumaker	D. Cohen J. Staiger	1245	1742	4-57	2478m	
1-10-77	701	25-28.1N 77-17W	Joint Agreement Biology	D. Foster	D. Cohen J. Staiger	1015	1738	7-23	3663m	
1-11-77	702	25-23.9N 77-11.4W	Joint Agreement Biology	L. Shumaker	J. Staiger D. Pawson	0937	1748	8-11	3215m	

Date	Dive No.	Location	Sponsor/ Purpose	PIC/Cp	Obs.	Time			Depth M/Ft.	Remarks
						Dive	Surf	Sub.		
1-29-77	710	17-48.9N 64-39.8W	NADC Inspection	L. Shumaker	F. Bliss T. Binczewski	1112	1604	4-52	880m	Cut float line
1-30-77	711	17-52.8N 64-43.1W	Joint Agreement Geology	L. Shumaker	R. Dill W. Glad- felter	1045	1811	7-26	366lm	
2-3-77	712	17-50.2N 64-42.7W	NADC Inspection	D. Foster	R. Straw T. Binczewski	0932	1347	4-15	2627m	
2-17-77	713	0-47.7N 86-09.3W	Joint Agreement Geology	J. Donnelly	T. vanAndel J. Corliss	0905	1552	6-47	2500m	Water valves on basket in- operative
2-18-77	714	0-47.7N 86-09W	Joint Agreement Geology	D. Foster	T. vanAndel J. Dymond	1130	1814	6-44	2525m	Tested valves at 60V col- lected 4 bots. of water
2-19-77	715	0-47.7N 86-09.2W	Joint Agreement Geology	J. Donnelly	J. Corliss J. Edmond	0945	1839	8-54	2495m	Collected 8 water samples
2-20-77	716	0-47.6N 86-07.9W	Joint Agreement Geology	D. Foster	J. Corliss J. Dymond	0929	1834	9-05	2516m	Collected 8 water samples
2-21-77	717	0-47.9N 86-08.5W	Joint Agreement	J. Donnelly	J. Dymond J. Edmond	1116	1840	7-24	2495m	Collected 8 water samples

Date	Dive No.	Location	Sponsor/ Purpose	PIC/CP	Obs.	Time			Depth M/Ft.	Remarks
						Dive	Surf	Sub.		
3/9/77	726	0-47.2N 86-07.7W	Joint Agreement Geology	L. Shumaker	J. Dymond J. Edmond	1000	1833	8-33	2493m	
3/10/77	727	0-47.4N 86-08.9W	Joint Agreement Geology	J. Donnelly	R. Ballard J. Corliss	1002	1911	9-09	2680m	
3/11/77	728	0-47.5N 86-07.6W	Joint Agreement Geology	L. Shumaker	J. Edmond L. Gordon	0949	1903	9-14	2488m	
3/12/77	729	0-35.8N 86-05.4W	Joint Agreement Geology	J. Donnelly	D. Williams J. Dymond	1028	1932	9-04	2723m	
3/13/77	730	0-48N 86-07.3W	Joint Agreement Geology	L. Shumaker	J. Corliss T. Atwater	0930	1959	10-29	2473m	
3/14/77	731	0-46.5N 86-09.3W	Joint Agreement Geology	J. Donnelly	J. Dymond R. Ballard	1051	1853	8-02	2692m	
3/15/77	732	0-38.6N 86-07.2W	Joint Agreement Geology	L. Shumaker	D. Williams K. Green	0855	1823	9-28	2763m	
3/16/77	733	0-47.3N 86-07.8W	Joint Agreement	J. Donnelly	J. Edmond J. Corliss	0949	1905	9-16	2496m	

U	Date	Dive No.	Location	Sponsor/ Purpose	PIC/CP	Obs.	Time			Depth M/Ft.	Remarks
							Dive	Surf	Sub.		
	4/13/77	742	17-58.4N 81-33.6W	Joint Agreement Geology	L. Shumaker	G. Thompson J. Stroup	0753	1507	7-14	2775m	
	4/25/77	743	26-36.6N 79-43.8W	Joint Agreement Geology	J. Donnelly	G. Weatherly M. Wimbush	0911	1545	6-34	500m	
	4/26/77	744	26-03.8N 79-29.8W	Joint Agreement Geology	J. Donnelly	G. Weatherly M. Wimbush	0921	1642	7-21	709m	
"	4/30/77	745	24-53N 77-40W	Joint Agreement Geology	D. Foster	W. Schlager N. James	1123	1914	7-51	2116m	Worked near Turner wood tower #3
"	5/1/77	746	24-50.3N 77-39.5W	Joint Agreement Geology	L. Shumaker	W. Schlager R. Hooke	0956	1827	8-31	2086m	
"	5/2/77	747	25-00N 77-43.7W	Joint Agreement Geology	D. Foster	W. Schlager N. James	0918	1639	7-21	2554	
"	5/4/77	748	24-43.8N 77-43W	Joint Agreement Geology	R. Hollis	N. James R. Hooke	0909	1635	7-26	982	
"	5/5/77	749	24-00.3N 77-14.8W	Joint Agreement Geology	D. Foster	W. Schlager N. James	0941	1837	8-56	1320	

U	Date	Dive No.	Location	Sponsor/ Purpose	PIC/CP	Obs.	Time			Depth M/Ft.	Remarks
							Dive	Surf	Sub.		
	5/23/77	758	27-05.3N 76-51.7W	Joint Agreement Geology	R. Hollis	J. Warne H. Mullins	1113	1950	8-37	3638m	
	5/24/77	759	27-08.4N 77-08.9W	Joint Agreement Geology	D. Foster	J. Kofoed D. Lambert	0859	1602	7-03	1980m	
	5/28/77	760	27-04.1N 79-19.9W	Joint Agreement Geology	R. Hollis	C. Neumann T. Scoffin	0929	1659	7-30	625m	
	5/29/77	761	27-04.0N 79-18.8W	Joint Agreement Geology	D. Foster	J. Land T. Scoffin	0848	1613	7-25	611m	
	5/30/77	762	27-03.1N 79-19.3W	Joint Agreement Geology	R. Hollis	C. Neumann J. Land	0857	1712	8-15	620m	
	5/31/77	763	27-05.4N 79-13.4W	Joint Agreement Geology	D. Foster	C. Neumann A. Hine	0849	1437	5-48	455m	
	6/1/77	764	26-54.8N 79-09.6W	Joint Agreement Geology	R. Hollis	A. Hine J. Land	0848	1524	6-36	452m	
	6/12/77	765	37°51.9N 73°57.5W	Joint Agreement Geology	R. Hollis	A. Malahoff R. Embley	1100	1745	6-45	545m	

Dive No.	Date	Dive No.	Location	Sponsor/ Purpose	PIC/CP	Obs.	Time		Depth M/Ft.	Remarks	
							Dive	Surf Sub.			
773	7/29/77	773	39-46.3N 70-41.5W	Joint Agreement Biology	D. Foster	F. Grassle R. Turner	1057	1908	8-11	1777m	
774	7/30/77	774	39-46.0N 70-40.6W	Joint Agreement Biology	R. Hollis	B. Hecker L. Morse	0957	1704	7-07	1756m	
775	7/31/77	775	39-46.0N 70-40.6W	Joint Agreement Biology	D. Foster	R. Warren R. Turner	0925	1448	5-23	1748m	Salvaged Grassle fr mud vehicl
776	8/1/77	776	39-46N 70-40.6W	Joint Agreement Biology	R. Hollis	R. Turner L. Morse	0930	1425	4-55	1740m	
777	8/3/77	777	38-17.0N 59-36.2W	Joint Agreement Biology	D. Foster	F. Grassle R. Turner	0903	1855	9-52	3657m	
778	8/4/77	778	38-18.1N 59-36.5W	Joint Agreement Biology	R. Hollis	F. Grassle B. Hecker	0920	1652	7-32	3636m	
779	8/24/77	779	40-14.6N 86-06.6W	Joint Agreement Geology	D. Foster	W. Ryan M. Cita	1014	1716	7-02	1572m	
780	8/26/77	780	41-02.2N 66-20.8W	Joint Agreement	R. Hollis	D. Hanselman E. Miller	0950	1702	7-12	1514m	

Date	Dive No.	Location	Sponsor/ Purpose	PIC/CP	Obs.	Dive	Time		Depth M/Ft.	Remarks
							Surf	Sub.		
9/13/77	789	39-47.3N 70-13.9W	Joint Agreement Biology	D. Foster	J. Schlee K. Pecci	0919	1347	4-28	1886m	
9/23/77	790	38-17.8N 69-35.3W	Joint Agreement Biology	R. Hollis	R. Turner R. Cuhel	0924	1912	9-48	3632m	
9/24/77	791	38-18N 69-36.2W	Joint Agreement Biology	D. Foster	C. Berg J. Sulanow- ski	1101	1844	7-43	3628m	
9/26/77	792	38-17.9N 69-35.5W	Joint Agreement Biology	R. Hollis	F. Grassle L. Morse	0856	1651	7-55	3638m	
9/27/77	793	39-46N 70-40.6W	Joint Agreement Biology	D. Foster	F. Grassle R. Turner	1054	1625	5-31	1780m	
9/28/77	794	39-46.0N 70-40.6W	Joint Agreement Biology	R. Hollis	C. Berg L. Morse	1110	1841	7-31	1756m	
10/3/77	795	Woods Hole Harbor	Joint Agreement Testing	L. Shumaker	V. Cullen	1106	1126	0-20	4m	Trim Dive

PROPOSED USE PROFILE

A profile of PROPOSED USE for 1979 and how it compares with the years 1975-1978 follows:

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
<u>GENERAL</u>					
Total number of proposals	25	30	24	23	26
Number of dives requested	115	160	210	207	314
Number of use days predicated	171	246	333	306	471
Number of principal investigators	25	31	21	19	25
Number of academic labs	10	14	18	10	8
Number of Federal labs	4	4	3	3	6
Number of other labs	1	1	0	0	1
<u>BY AREA</u>					
Northern Area (No. of Delaware, W of 60°W)					
Proposals	12	14	7	10	1
Use Days	83	91	85	111	12
Mid-Atlantic Area (Del. to Ga., W of 60°W)					
Proposals	4	3	1	2	3
Use Days	17	27	10	19	45
Southern Area (Fla., Bahamas & Caribbean)					
Proposals	12	13	15	8	4
Use Days	72	114	152	92	33
Central Atlantic (E of 60°W)					
Proposals	--	--	1	3	0
Use Days	--	--	20	84	--
Pacific Ocean					
Proposals	--	--	3	--	18
Use Days	--	--	56	--	381
<u>BY AGENCY FUNDING RESEARCH (or proposed to fund)</u>					
ONR	43	50	66	51	48
NOAA	36	49	70	40	129
NSF	77	113	187	201	213
Other	10	17	0	0	49
Unspecified	5	17	10	14	32
TOTAL DAYS	171	246	333	306	471
<u>BY DISCIPLINE</u>					
Biology	118	115	150	97	144
Geology/Geochemical	39	94	165	171	276
Physical	11	23	12	38	45
Engineering	13	14	6	0	6
TOTAL DAYS	171	246	333	306	471
<u>USE DAYS PROPOSED BY WOODS HOLE PERSONNEL</u>					
W.H.O.I. personnel	59	89	43	75	68
Outside personnel	112	157	270	231	405
TOTAL DAYS	171	246	333	306	471

UNIVERSITY NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

DEEP SUBMERGENCE RESEARCH VEHICLE ALVIN
TIME REQUEST

To: Chairman, ALVIN Review Committee
UNOLS OFFICE
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

Date: _____

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

PURPOSE (Project Title and brief outlines of program) _____

PRINCIPAL INVESTIGATOR (Name, Title, Address, Tel. No.) _____

OTHER INVESTIGATORS INVOLVED _____

PROPOSED CHIEF SCIENTIST _____

TOTAL NUMBER OF SHIPBOARD PERSONNEL _____

PROJECT REQUIREMENTS

NO. OF DIVES REQUESTED _____ PREFERRED DATES _____ ALTERNATE _____

AREA OF OPERATIONS (Attach page size chart showing location of dives and bathymetry).

NAME OF NEAREST PORT _____ DISTANCE _____ NAUT. MI.

ATTACH BRIEF DESCRIPTION OF PROPOSED ESCORT SHIP IF ONE IS REQUIRED. LIST SPECIAL EQUIPMENT RE-
QUIREMENTS (e.g. sensing, sampling and navigation requirements),

FUNDING STATUS

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

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

ATTACH RESEARCH PROPOSAL OR PRELIMINARY PROPOSAL AS DESCRIBED ON OVERLEAF.

SUBMITTED BY _____ SIGNATURE

TITLE, ADDRESS & TEL. NO. IF DIFFERENT FROM PRINCIPAL INVESTIGATOR

APPROVED _____ DEPARTMENT CHAIRMAN
OR
LABORATORY DIRECTOR

