

**UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM**

# **UNOLS COUNCIL MEETING**

## **SUMMARY REPORT**

**September 19, 1996**

**National Science Foundation  
Board Room 1235  
4201 Wilson Boulevard  
Arlington, VA 22230**



**Meeting Report  
UNOLS COUNCIL**

**Room 1235  
National Science Foundation  
4201 Wilson Boulevard  
Arlington, VA  
19 September 1996**

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*Thursday, 19 September 1996*

**INTRODUCTION** - The UNOLS Council met in Room 1235 of the National Science Foundation on 19 September, 1996. The participants of the meeting are listed in *Appendix I*. The items of the agenda, *Appendix II*, were addressed in the order as reported below. The meeting was called to order at 8:30 a.m. by Ken Johnson, UNOLS Chair.

**ACCEPTING MINUTES** - The minutes from the July 1996 Council meeting were accepted as written.

**COMMITTEE REPORTS:**

**Research Vessel Operators' Committee (RVOC)** - Mike Prince, RVOC Chair, provided the report for the Committee. He reviewed plans for their upcoming meeting to be hosted by Florida Institute of Oceanography (FIO) and the University of South Florida. The meeting will be held on 22-24 October. The first day of the meeting will be devoted to old and new business and reports from committees and agencies. Special reports will be provided by FIO, foreign country marine operators and other marine organizations. Dennis Nixon will report on liability and insurance issues. On day two there will be a discussion on working with new partners and how these partnerships could impact UNOLS operations. They will try to determine what changes will be necessary to accommodate these new users. Three workshops are planned. A committee, chaired

by Bill Coste, will review and refine draft medical and physical standards to be used by UNOLS operators in job descriptions and for physical examinations given to shipboard employees to establish a set of physical standards for ship crews. A workshop is planned to discuss strategies for maintaining a healthy and productive UNOLS fleet in an era of challenging budgets. They will address how to measure the effectiveness of the fleet. The third workshop will address crew and scientist training programs. The safety committee is developing a safety orientation video to be shown to science parties before beginning science operations on a cruise. The last day of the meeting will host a round table discussion of the marine superintendents.

**DEep Submergence Science Committee (DESSC)** - Mike Perfit, DESSC Chair, provided the DESSC report. He began by reporting that construction of ATLANTIS is going well and is ahead of schedule. Delivery of the ship is expected to take place before 15 April 1997. Science operations are planned to begin in June. ATLANTIS II has been sold. The A-frame has been removed from the ship and is being refurbished for reinstallation on ATLANTIS.

The ROVs have a busy schedule for the remainder of this year and their operations have been very successful. Dan Fornari's cruise on the Mid-Atlantic Ridge was carried out in the spring. Currently JASON is operating from THOMPSON on Juan de Fuca for Paul Johnson. In this cruise, JASON completed 87 continuous hours of operation on the bottom.

Mike reported that a mini DESSC meeting was held just prior to the Council meeting at NSF. The meeting provided the opportunity for DESSC members to meet with the operator and agency representatives to discuss plans, schedules and upgrades of ALVIN and the ROVs. Also it provided an opportunity for WHOI to present their plans for integrated deep submergence management and operations. The plan listed personnel responsibilities of the operator for both shipboard and shorebased operations. It provides scenarios for ALVIN operations combined with ROV operations on ATLANTIS. It also gives guidelines for utilizing the ROVs in a "fly-away" mode. The plan is in the draft stages and will be refined in the upcoming months.

Mike provided the ATLANTIS/A-II/ALVIN schedule (all view graphs presented by Mike are included in *Appendix III*). ALVIN was offloaded from A-II on 9 July to begin its overhaul period. A-II left WHOI for the last time in July and arrived in New Orleans for removal of the A-frame. The A-frame will be refurbished before installation on ATLANTIS. Builder trials for ATLANTIS took place in August and Acceptance trials are scheduled for 15 November. Although delivery of the ship with the ALVIN modifications completed is scheduled for 15 April, it is anticipated that the ship will be ready in the February/March time frame.

Next, Mike showed a map of the ALVIN and ROV operation sites for 1997 and beyond. ALVIN, for the first time, is scheduled to operate on the Southern East Pacific Rise. Also in 1997, the ROVs are scheduled to operate in the Western Pacific. They will visit the site of the Derbyshire, which is a vessel that sunk in 1986. This is a European funded cruise to perform a forensic survey of the vessel. Since the vessel and vehicles will be in this area, an NSF funded cruise for Patty Fryer was also able to be efficiently scheduled. Mike presented the 1996/97 Jason/Argo/AMS-120 fly-away schedule. Seven cruises are scheduled to be performed over a 14

month period on five different vessels. This presents a very full schedule since an average of six weeks is required for shipping the vehicles between sites.

WHOI has prepared two 1997 schedules for ATLANTIS operations. Option A was generally accepted by the Ship Scheduling Committee. Under this scenario, ATLANTIS and ALVIN would begin operation in June in the Atlantic. At the end of July the ship would transit through the Panama Canal and resume operations off San Diego. In the fall, operations would take place on the southern EPR. The first tethered vehicle operation off ATLANTIS would take place in October. ATLANTIS would return to San Diego in March 1998 to begin its required Post Shakedown Availability (PSA) period. Because the ship is required to return to the states to undergo the PSA, some of the funded work at the SEPR will not be able to get scheduled. Option A, however, is more efficient for the UNOLS fleet as a whole. Option B is favored by the operator. It marries the ROVs and ALVIN earlier than Option A. ATLANTIS could complete its PSA in January 1998 before going to the Southern EPR. As a result there are no constraints to return to the states before completing all funded work at SEPR. Mike presented the cruise tracks for options A and B. Also presented was a world map showing the areas of interest for ALVIN operations. Interest areas for ALVIN and the ROVs are global and include the Western Pacific, Southern EPR, Mediterranean and Indian Ocean. DESSC has identified global heroes to coordinate programs for these regions.

Mike continued his report by discussing upgrade plans for ALVIN. Over the past year, DESSC polled the community to learn what they would most like upgraded on ALVIN. Dan Orange and Cindy Van Dover compiled a prioritized list of these upgrades. They include upgrades to the datalogger, payload capacity and power. The full list of 11 items can be found in *Appendix III*. Many of the items identified as requiring upgrades will be completed during ALVIN's present overhaul period.

The Navy has reported that they will retire SEACLIFF and TURTLE. SEACLIFF is scheduled to retire in FY98 and TURTLE will retire in FY97. They are preparing a letter which will request DESSC to survey the community on their opinion of what should be done with SEACLIFF and TURTLE.

Mike concluded his report by providing a summary of the ROV operations carried out during Dan Fornari's cruise to the Lucky Strike area on the Mid-Atlantic Ridge. He showed a pie chart of the vehicle operations and days spent during various operations. He also showed examples of the DSL 120 survey and the bathymetric data.

**Fleet Improvement Committee (FIC)** - Eric Firing, FIC member, provided the Council with a status report prepared by Chris Mooers, FIC Chair, see *Appendix IV*. Chris was unable to attend the meeting. FIC has developed a draft Interim Fleet Improvement Plan (IFIP) which needs more refinement before release. FIC has begun preparations for the 1998 Fleet Improvement Plan (FIP98). FIP98 will focus on the academic fleet profile needed in the year 2010. FIC has placed a higher priority on ensuring the capability of the fleet rather than maintaining a large fleet. As a result, FIC is studying the technological upgrading of the fleet as real-time data platforms. FIC has established a subcommittee to study various ship technologies such as; external and internal

communications, data transfer, meteorology instrumentation, winches and wires and shipboard computers. The subcommittee includes Peter Betzer, Bob Detrick, Rich Findley, Eric Firing and Bess Ward. FIC will focus its winter meeting on outlining science mission requirements for a mid-Pacific general purpose oceanographic vessel. It was noted that the lack of long-range ocean science planning, especially for large science projects/programs, is a serious limitation in planning for the future fleet.

**Ship Scheduling Committee (SSC)** - Don Moller, SSC Chair, reported on the results of the ship scheduling meeting from 9 September. Approximately 95 percent of the scheduling issues have been resolved and all but two programs (Karson and Silva) have been assigned to ships. NOAA and NAVOCEANO requested UNOLS ship time and were able to be accommodated. The NOAA programs include the FASTEX program to be carried out on KNORR in the North Atlantic. A FOCI program is planned in the Gulf of Alaska using WECOMA. A moorings program is scheduled using Harbor Branch's vessels in the South Atlantic and a program is scheduled on REVELLE in the Equatorial Pacific. NAVO requested eleven cruises and all were able to be accommodated.

Scheduling of the UNOLS intermediate and small vessels went smoothly. Large ship scheduling, however, was very dynamic and posed many challenges. Requests for the large ships were spread across the globe and many had strict time constraints. These constraints included mooring retrievals and launches, ROV operations, seasonal weather windows and ODP survey work. Don presented a map showing the programs which had time constraints. Next, Don presented a view graph of the charge days for each UNOLS ship for the years 1995, 1996 and 1997 (see *Appendix V*). All of the large ships had full schedules with the exception of REVELLE which is on the light side. The intermediates are all a bit undersubscribed for 1997. The small vessels, with the exception of SEA DIVER and LAURENTIAN have good schedules. The total charge days for 1997 is 4,774, however this number does not include ship time for BLUE FIN and URRACA which could add an additional 300 days to the total. This represents a big increase over last year. As was shown in Don's final view graph, this increase can largely be accredited to the addition of NOAA and NAVO's ship time. The increase represents a lot of hard work in building new partnerships.

**Research Vessel Technical Enhancement Committee (RVTEC)** - Rich Findley provided the Council with plans for the upcoming RVTEC Annual Meeting. The meeting will be hosted by Harbor Branch Oceanographic Institution on 11-13 November in Fort Pierce, Florida. The first day will begin with discussions on new instrumentation and communications. The communications discussion will address SeaNet, MSAT and Direct PC. A conducting cable workshop is planned for the afternoon and will run into the morning of the second day. A tour of HBOI's facilities and SEWARD JOHNSON will take place in the afternoon of the second day. The third day will include the following reports, updates and discussions:

- Technician and Equipment Database Subcommittee Report
- Data Standards Workshop
- CHIRP Inter-comparison Update
- Show and Tell

- Elections of a Chair
- Long Range Instrumentation Planning
- NAVO Technician Requirements
- Updating of Action Plans

Rich encouraged all institutions to send as many of their technicians as they can to the meeting. Also, he encouraged NAVO and NOAA to send their technical representatives.

**Arctic Icebreaker Coordinating Committee (AICC)** - Ken Johnson reported that Jim Swift has agreed to chair the AICC. The Committee's focus will be to work with the U.S. Coast Guard to gain access to the Arctic for oceanography. The Committee held an organizational meeting on 11-12 September at NSF. An Executive Summary of the meeting is provided as *Appendix VI*. Members of the committee include Lisa Clough, Joe Coburn, Glenn Cota, Kelly Faulkner, Lawrence Lawver, Dan Lubin, Jim Swift and Tom Weingartner. The committee is reviewing the National Research Council report, "Arctic Ocean Research and Supporting Facilities, National Needs and Goals." They will also provide oversight to the construction of the Coast Guard's icebreaker, HEALY.

The draft terms of reference for the Committee were reviewed by the Council. If adopted they will become Annex VI to the Charter. The Council suggested that RVTEC and Navy representatives should be included on the Committee. It was also suggested that someone who served on the PALMER Oversight Committee should also serve on AICC. It was decided that the Committee will remain at eight members for the time being and additional people will be asked to serve on an ad-hoc basis as needed. Paragraph two of Section 2 was reworded to give a more positive tone. Jack Bash reviewed changes to the first paragraph of Section 3 which refer to committee size and term lengths. The amended Annex VI is included as *Appendix VII*. It will be presented to the UNOLS membership at the Annual Meeting for adoption.

## **AGENCY REPORTS**

**National Science Foundation (NSF)** - Dolly Dieter began the NSF report by saying that the NSF facilities budget is expected to be approximately level for the next year. Mike Purdy continued by reporting that the NSF FY97 funding bill has gone through conference with a 5.1 percent increase. In other activities, the Directorate for Geosciences is planning to convene a series of "town meetings" with the community to discuss goals and objectives. The meetings are expected to be informal, open exchanges of ideas, concerns and suggestions. They will be held at many of the upcoming scientific conferences including: GSA, AGU, ASLO and TOS. The schedule is provided in *Appendix VIII*.

NSF has prepared a response to the language regarding the Academic Research Fleet in the NSF Appropriation Bills under consideration by the House Appropriation Subcommittee and the Senate Committee on Appropriations. Appended to their response is the letter from Ken Johnson regarding the UNOLS fleet. Mike expected NSF's official response to be ready for release by early October. (Note: Since the meeting, NSF's response was released.)

**Office of Naval Research (ONR)** - Sujata Millick provided the report for ONR. She began by giving the budget outlook for the upcoming year. It is expected that 6.1 funding will be level to slightly declining. (Note: Since the Council meeting, the FY97 appropriation was signed. The FY97 budget is \$22M less than the FY96 budget.) The ship operations budget which supports ONR and NRL ship time is slightly up at approximately \$6 million. Sujata reported that support for the operation of FLIP over the past few years has been subsidized by NAVSEA at approximately \$500K per year. This helps to lower the day rate of FLIP to its users. At the end of FY97, FLIP will be transferred to ONR and the subsidy will end. Day rates will most likely go up unless the user base is increased. Bill Gaines (SIO/MPL), operator of FLIP, plans to hold an open house on FLIP on 13 December at Scripps. He will also have a booth at the AGU conference in San Francisco in the hopes of attracting new FLIP users.

The Council questioned why ONR's 6.1 funding was declining when the CEB had recommended level funding. Sujata explained that it is difficult for money to be fenced for specific interests. However, oceanography support at ONR remains high with the establishment of three Chairs.

**National Oceanographic and Atmospheric Association (NOAA)** - Scott McKeller provided the NOAA report. NOAA has deactivated DISCOVERER and MALCOLM BALDRIDGE. NOAA's new AGOR, RON BROWN, has been launched and will be delivered in March 1997. In budget issues, the House recommended level funding for NOAA in FY97. The Senate recommended a \$4M decrease. As a result, the budget went to conference and a continuing resolution was expected. (Note: Since the Council meeting, NOAA's appropriation was signed, eliminating the need for a Continuing resolution. NOAA's total budget is \$11.5M less than its FY96 budget.) NOAA's OAR support for UNOLS ship time is budgeted at \$3M in 1997. In 1998, \$2.6M is expected to be budgeted for UNOLS ship time. The \$3M and \$2.6M are new funds from the Fleet Management program; it will not impact the budgets for science programs. In the final mark-up, the NURP budget is level at \$12M for FY97.

**Department of State (DOS)** - Tom Cocke reported that there has been a very good response by PI's in meeting post cruise obligations. There are just a few backlogs and his office is waiting two months before giving warnings. This year there have been problems with coastal states not responding to clearance requests. Ship captains are hesitant to proceed into coastal waters without papers. Clearances are rarely easy to obtain. France is now requiring four months advance notice for clearances. Mexico is requiring six months notice. Problems with Russia continue with all clearances for this year denied (three).

**Oceanographer of the Navy (OON)** - Pat Dennis gave the report for OON and began by introducing Captain Tim Schnoor of NAVO who will be overseeing the funds for NAVO ship use. He then introduced Captain Dieter Rudolph from NAVO who was instrumental in working with UNOLS to schedule the NAVO cruises. Captain Rudolph reported on the National Ocean Partnership Act (NOPA). Under NOPA, NAVO's partnership with UNOLS is becoming a big success. While all of the Navy's survey vessels are away from home waters, UNOLS ships will be used to characterize the waters close to the U.S. These waters are used by the Navy as training

areas. NAVO is impressed by the data processing capabilities onboard the UNOLS vessels and hopes that the partnership with UNOLS will be a long-term one.

In budget issues, NAVO does not expect to see decline or growth. All overhaul work to modify the vessel, WATERS, has been stopped. WATERS is an ex-cable layer which was transferred to NAVO for use as a survey platform. The Navy is completing their fleet modernization program. PATHFINDER, TAG-60, has been operating since summer and is planned to work in waters away from the U.S. for the next ten years. SUMNER and BOWDITCH (TAG-61 and TAG-62) are both in operation. SUMNER will be at MTS in September and will be open for tours. BOWDITCH will be in Washington, DC on 12-15 October for tours. HENSON, TAG-63, is scheduled to be launched in October. There is a possibility that funds may be appropriated for a TAG-64 construction. Captain Rudolph also reported that a new SWATH ship has been earmarked for the academic research fleet.

CAPT Rudolph finished by noting that 1998 is the "International Year of the Ocean." Portugal will host the event. He encouraged representation from all of the U.S. fleets and hopes that all agencies will be able to have their ships sail into Portugal at some time throughout the year.

**JOI/CORE** - Terry Schaff reported on JOI/CORE activities. The National Ocean Partnership Act (NOPA) has been appropriated \$20.5M, however, the appropriation is stuck in conference. (Note: Since the Council meeting NOPA became law). The Act indicates that \$7.5M of the funds be designated to support the Navy's use of UNOLS vessels. The remaining \$13M is to support mainstream programs, such as: MEDEA, educational programs and general partnership interests. There is hope for continuation of the Act into the future with the inclusion of other partnerships in addition to Navy. The UNOLS/Navy partnership has worked out very well and has been a big success for NOPA.

### **UNOLS ISSUES:**

**Scheduling Procedures** - Ken Johnson introduced the topic of reviewing the current scheduling procedures. Although the current procedures have worked well in the past and the vast majority of science programs requesting ship time have been scheduled, the process is becoming more complex. Part of the complexity is due to the addition of new users to the fleet. Some of these partnerships became firm late in the scheduling process. Yet, this year's addition of nontraditional users have made UNOLS ship schedules more efficient and cost effective. It was pointed out that the scheduling process may be more difficult because users have greater access to schedules and reports as a result of electronic communications. Ken asked the Council to think about the procedures and that they would revisit the topic later in the meeting.

**Congressional Funds for a SWATH Vessel** - Ken Johnson began the discussion on the status of the SWATH vessel. The appropriation for funds for a SWATH vessel is in conference and negotiation with the White House. The conference report, if signed would appropriate funds to Navy. Although this process is unusual, it was pointed out that it is in the best interest of DOD to operate as directed by Congress. The language of the Bill is not known at the time of the meeting and as a result many questions went unanswered. (Note: Since the meeting the Conference



language has been released). The committee recommends an increase to the budget request of \$45M to provide the additional funding needed to build a SWATH based on the TAGOS-23 class. The committee directs the Navy to negotiate a time sharing agreement with the university or institute that will operate it, whereby a certain portion of the ship's annual operating time would be dedicated to meeting the Navy's needs. The Navy is to report on its progress in achieving this agreement by December 15, 1997. During discussion by the Council it was pointed out that plans for this vessel were not identified in the Fleet Improvement Plan. Also, there was concern over operating support once the vessel is built. It was suggested to look towards NOPA. The Council tasked FIC to look at the oceanographic requirements and establish Science Mission Requirements (SMR) for the mid-Pacific. A SWATH study was performed by UNOLS in the late 1980's. The report will be resurrected and distributed to FIC.

On a separate ship construction issue, NSF is preparing a long range plan which should be ready for a first review in November. The plan addresses ship refits and Major Research Equipment (MRE) expenditures. A coastal research vessel is included as part of the MRE for the year 2010. The ARV will most likely drop out of the MRE.

**Scheduling Procedures (Continued from earlier in the meeting)** - Don Moller continued the discussion on scheduling procedures by explaining the issues facing the Ship Scheduling Committee:

- 1) Reduced funding levels from the traditional funding agencies,
- 2) Introduction of NAVO and NOAA ship time requests,
- 3) A changing user group (more users from institutions from in-land states),
- 4) More users from institutions other than the operator institution,
- 5) Multi-agency support,
- 6) Increased equipment needs,
- 7) PIs with multiple cruises per year, and
- 8) E-mail and network communications scheduling process.

The scheduling discussion was opened to the Council and Federal representatives for comment. The following comments/recommendations were made:

- The current process is messy, but it works. It needs smoothing.
- The scheduling process is suffering from an information flow problem.
- PIs need more information on the ships' capabilities.
- The 831's are too vague. After funding, there should be another level of detail on ship needs.
- The back page of the 831's many times do not get filled out and submitted.
- PIs should be contacted by the operator before placing them on a schedule.
- The community needs educating on the scheduling process.
- We need standards for allocation of transit time with four major players now funding UNOLS ship time.

It was suggested that an ad-hoc committee be formed to review the scheduling process. Ken Johnson will draft a charge for the committee and try to recruit volunteers. It was recommended that the committee should include two agency representatives, two schedulers and two scientists.

**Preliminary 1998 Fleet Improvement Plan (FIP98)** - Discussion on this item was tabled.

**UNOLS Review** - Jack Bash presented a pre-proposal for support of the UNOLS Office. He noted that since the proposal's preparation, there have been several changes. For example, the budget calls for support of a seven person AICC, but it has been decided to increase the committee size to eight people. New to this year's proposal is the addition of the NSF Inspection. UNOLS has been asked to handle the contracting out the inspection. The proposal also requests support for an additional person to the UNOLS Office. The Council noted that justification of the fourth person should be clearly stated in the proposal. The fourth person will be required to handle the increased computer/electronic communications demand. The Council moved to accept the pre-proposal. Ken Johnson will write a letter endorsing the pre-proposal. His letter will be appended to the proposal.

**NAVO Liaison** - Jack Bash explained that NAVO and UNOLS had considered hiring a liaison to assist in scheduling NAVO ship time. The individual would need to be knowledgeable in scheduling cruises, shipping equipment and technical issues. NAVO decided that rather than hire a new person, they would appoint Gordon Wilkes to act as this person.

**NOAA/UNOLS Cooperation** - Ken Johnson began a discussion on planning of the NOAA/UNOLS cooperation. The process is evolving. Ken introduced Steve Piotrowitz from NOAA and explained that Steve has been communicating with UNOLS on this issue. Some of the issues under discussion include allowing NOAA labs to apply for UNOLS membership. Also, there is discussion of whether NOAA's new AGOR, RON BROWN, should become a UNOLS vessel. This ship is not clearly associated with an institution. It will be replacing MALCOLM BALDRIDGE and will be homeported in Charleston, S.C.

During the Council discussion on this issue, it was noted that the "U" in UNOLS represents "University." We need to proceed cautiously. There can be benefits and ramifications to NOAA's labs and ships coming under the UNOLS flag. Since NOAA needs to use the UNOLS vessels, they need to have representation. Also, the more interaction between UNOLS and NOAA, the more comfortable NOAA will become with the UNOLS vessels. There will be greater chance for scientific exchange. The cooperation will provide another tool for efficiency in ship scheduling.

In June, UNOLS explored the NOAA fisheries vessel needs. There are two parts to the fisheries requirements: fish stock assessment and fisheries oceanography. The UNOLS vessels are best suited for the fisheries oceanography work.

**SECOR Update** - Virginia Newell, Assistant Dean from the University of Miami, gave a report on the status of the South Eastern Consortia of Oceanographic Research (SECOR). The consortia, originally formed in 1988, has recently become revitalized. They have three full members: University of Texas, University of Miami and Texas A&M. The NOAA OAR lab has joined as an Associate Member. The Consortia covers the Intra-Americas Sea region which consists of the Gulf of Mexico, the Southeast U.S. coast, Florida Straights and the Caribbean. They are establishing a framework within which to structure ship and technical support. Their

emphasis will be on science needs and a workshop is planned for early 1997. Recently in response to an RFP from Antarctic Support Associates (ASA), SECOR won a contract with ASA to provide technician support for PALMER and POLAR DUKE. The contract is with the University of Miami with the other SECOR institutions listed as subcontractors. Last fall SECOR submitted a proposal to NOAA for the operation of their vessels, BROWN and DELAWARE II.

In other University of Miami news, Ken Johnson reported that he received a letter from Otis Brown regarding replacement plans for CALANUS, see *Appendix IX*. Plans to replace CALANUS were placed on hold due to a high construction cost estimate. However, the University has now decided to proceed by exploring a stock catamaran hull design. Their consensus is that a stock design could be configured as a shallow draft coastal zone research vessel and built for a reasonable cost.

**Rethinking the Status of a UNOLS Vessel** - Bob Wall reported that the subcommittee has not been very active since the Orlando meeting. They are examining what it means to be a UNOLS vessel. They will work on their tasking for the next meeting.

**Post Cruise Assessments** - Mike Prince reported that he and Peter Betzer have been redesigning the Post Cruise Assessment report. They have drafted an on-line questionnaire to be filled out by the cruise PI, technician and ship captain, see *Appendix X*. Once completed, the form should be submitted electronically to the marine operator and the UNOLS Office. The operator would be responsible for responding to all reports received. UNOLS will provide a yearly summary of all reports. The report is meant to provide constructive feedback for future operations. It is also an important tool in identifying equipment which may need replacement or upgrade. It was recommended that Ken Johnson attach a cover letter to the form indicating why it is important to submit. Mike will put the draft form on the World Wide Web at [color.mlml.calstate.edu/WWW/marineops/draft.html](http://color.mlml.calstate.edu/WWW/marineops/draft.html). He encouraged all to demo the form and provide feedback.

### **New Ship Construction:**

**REVELLE** - Bob Knox reported that REVELLE is now at Scripps. The cruise from the shipyard to San Diego went well and is described in the UNOLS Newsletter, Volume 13, No. 2, page 4. When asked about cruise speed, Bob indicated that it is 12.5 knots; however, the fuel consumption is a little high and they are looking into it. The noise problem which had been experienced originally on THOMPSON has been improved on REVELLE and ATLANTIS. This was achieved by lining ducts, installing air conditioning and tightening noise specifications for the ship. Praise was given to the shipyard representatives; Robert Hinton, Ed Peterson and John Thompson, for their oversight in the construction of the new AGORs.

**ATLANTIS** - Dick Pittenger provided a timeline for ALVIN, ATLANTIS II and ATLANTIS, see *Appendix III*. ALVIN was offloaded from AII in July and will undergo an overhaul before integration with ATLANTIS. ATLANTIS II was removed from service in July. After a retirement ceremony at Woods Hole (see UNOLS Newsletter, Volume 13, No 2, page 5), the ship transited to New Orleans for removal of the A-frame. The A-frame is being refurbished and will be installed on ATLANTIS. AII was sold and will be used for fisheries research in the Pacific

and Gulf of Alaska. Dick showed the outboard profile of ATLANTIS with the deep submergence modifications highlighted, see *Appendix XI*. The modifications are very functional and everyone is pleased with the design. DESSC's oversight to the design was useful. ATLANTIS will begin operations in early June, 1997.

#### **Mid-Life Refits:**

**POINT SUR** - Mike Prince reported that the overhaul of POINT SUR went well and the ship resumed operations in April. Any future improvements to the ship would be focused on enhancing the science capabilities.

**NEW HORIZON** - Bob KNOX reported that there were no surprises in the mid-life refit of NEW HORIZON. They have only a few tasks unfinished because time ran out. These items will be completed when the ship is in port. Although the time was short, the funding was sufficient. The mid-life changes were aimed at increasing the range of the vessel.

**CAPE HATTERAS** - Duke/UNC, with the assistance of an architect, is still considering a stretch of CAPE HATTERAS.

**UNOLS at AGU** - Jack Bash reported that UNOLS is planning to have a booth at AGU. The booth will have posters describing UNOLS issues, committee activities and the newly formed AICC. We will be looking for volunteers from the Council and membership to staff the booth.

**UNOLS Council Membership** - Peter Betzer, Nominating Committee Chair, presented the slate for the UNOLS Council elections to be held at the Annual Meeting, see *Appendix XII*.

**UNOLS CHARTER** - The Council voted to readopt as amended Annex V of the UNOLS Charter, "The Research Vessel Technical Enhancement Committee." The amendment limits terms of the Chair and Vice Chair to no more than two consecutive terms.

**ANNUAL MEETING** - Ken Johnson reported on plans for the Annual Meeting. Admiral Gaffney will deliver the keynote address. Bob Dinsmore, the first UNOLS Executive Secretary, will recount the 25 year history of UNOLS.

#### **OTHER BUSINESS:**

**UNOLS Ship Inspections** - Jack Bash reported that an RFP will be advertised for the UNOLS ship inspection service. It will be a five year contract, subject to an annual review. The Council recommended that the whoever is awarded the contract should have an intimate knowledge of UNOLS.

**CALENDAR** - The Council discussed the time and site for the winter Council meeting. Dennis Hayes offered to host the meeting at the Biosphere in Arizona. The suggested date for a two day meeting was 16-17 January.

*The meeting was adjourned at 4:50 p.m.*

# APPENDIX I

Council Meeting

September 19, 1996

<u>NAME</u>	<u>AFFILIATION</u>	<u>PHONE/FAX/INTERNET ADDRESS</u>
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Tom Cocke	Department of State	(202) 647-0240/(202) 647-1106/tcocke@state.gov
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Don Elthton	NSF/OCE	(703) 306-1586/delthton@nsf.gov
David Epp	NSF	(703) 306-1586/depp@nsf.gov
Rich Findley	U of Miami	(305) 361-4175/(305) 361-4174/rfindley@rsmas.miami.edu
Eric Firing	U of Hawaii	(808) 956-7894/(808) 956-4104/efiring@soest.hawaii.edu
Jennifer Greenamoyer	CORE	(202) 232-3900x240/jgreenamoyer@brook.edu
Dennis Hayes	LDEO	(914) 365-8470/(914) 365-8156/deph@ldeo.columbia.edu
Ken Johnson	MLML	(408) 755-8657/(408) 753-2826/johnson@mlml.clastate.edu
Bob Knox	SIO/UCSD	(619) 534-4729/(619) 535-1817/rknox@ucsd.edu
Cindy Lee	SUNY, Stony Brook	(516) 632-8741/(516) 632-8820/cindylee@ccmail.sunysb.edu
Bruce Malfait	NSF/ODP	(703) 306-1581/bmalfair@nsf.gov
Scott McKellar	NOAA	(301) 713-3435x135/smckellar@roc.noaa.gov
Sujata Millick	ONR	(703) 696-4530/(703) 696-2007/millics@onrhq.onr.navy.mil
Don Moller	WHOI	(508) 289-2277/(508) 457-2185/dmoller@whoi.edu
Virginia Newell	U of Miami	(305) 361-4967/vnewell@rsmas.miami.edu
Mike Perfit	U of Miami	(305) 361-4175/(305) 361-4174/rfindley@rsmas.miami.edu
Tim Pfeiffer	U of Delaware	(302) 645-4341/pfeiffer@udel.edu
Dick Pittenger	WHOI	(508) 289-2597/(508) 457-2185/rpittenger@whoi.edu
Dave Powell	U of Miami/RSMAS	(305) 361-4832/(305) 361-4174/dpowell@rsmas.miami.edu

Mike Prince	MLML/RVOC	(408) 633-3534/(408) 633-4580/prince@m1ml.calstate.edu
Mike Purdy	NSF/OCE	(703) 306-1580/mpurdy@nsf.gov
Steve Rabalais	LUMCON	(504) 851-2808/(504) 851-2874/srabalais@coco.lumcon.edu
Tom Royer	U of Alaska	(907) 474-7835/(907) 474-7204/royer@ims.alaska.edu
Capt. Dieter Rudolph	Naval Oceanographic Off.	(601) 688-4203/(601) 688-5287/dkr@navo.navy.mil
Terry Schaff	CORE	(202) 232-3900/tschaff@brook.edu
Capt. Tim Schnoor	Oceanographer of the Navy	(202) 762-1002/(202) 702-1043/960@usno.ocean.navy.mil
Alexander Shor	NSF	(703) 306-1578/ashor@nsf.gov
Brian Taylor	SOEST/U of Hawaii	(808) 956-6649/(808) 956-2538/taylor@soest.hawaii.edu
Jim Trees	Naval Oceanographic Off.	(601) 688-4370/(601) 688-5514/strees@navo.navy.mil
Robert Wall	U of Maine	(207) 581-1435/(207) 581-1426/robert_wall@voyager.umeres.maine.edu
Richard West	NSF	(703) 306-1579/(703) 306-0290/rwest@nsf.gov
Beth White	NOAA/OAR	(301) 713-2465 x184/(301) 713-0163/ewhite@oar.noaa.gov

# APPENDIX II



## UNOLS COUNCIL MEETING

Thursday, 19 September 1996, 8:30 a.m.  
National Science Foundation, Room 1235  
4201 Wilson Boulevard  
Arlington, VA

**Call the Meeting:** Ken Johnson, UNOLS Chair, will call the meeting to order at 0830 hrs 19 September 1996.

**Accept Minutes of July, 1996 Meeting.**

### **COMMITTEE REPORTS (Reports should be limited to changes since the July Council Meeting)**

**Research Vessel Operators' Committee** - Mike Prince, Chair, will provide an update summary of RVOC activities.

**DEep Submergence Science Committee** - Mike Perfit, Chair, will report on the updated ALVIN and ROV operations.

**Fleet Improvement Committee** - Eric Firing will report on the progress of FIC activities.

**Ship Scheduling Committee** - Don Moller, Chair, will summarize the 9 September Ship Scheduling and Schedule Review meetings highlighting those ships with less than optimum schedules for 1997 and new programs of both NOAA and NAVO.

**Research Vessel Technical Enhancement Committee** - Rich Findley, Chair, will provide an updated report on the progress of RVTEC.

**AGENCY REPORTS** - Reports from representatives of NSF (D. Heinrichs), ONR (S. Millick), NOAA (Capt. Mulhern), NURP (B. Moore), USCG (CDR Rooth) on funding outlooks and special projects. The Department of State (T. Cocke) will provide an update on foreign clearance problems. Pat Dennis (OON) will report on matters from the Oceanographer of the Navy and NAVOCEANO.

### **UNOLS ISSUES**

**Congressional Funds for a SWATH Vessel** - Ken Johnson will lead a discussion on the issues surrounding the possible Congressional funds for a SWATH.

**Arctic Icebreaker Coordinating Committee** - Ken Johnson will review for the Council the progress of setting up this new UNOLS Committee. A vote on the new Annex VI is scheduled for the Annual meeting (see Enclosure 1).

**Preliminary FIP98** - There will be a discussion on the Preliminary Fleet Improvement Plan for 1998.

**UNOLS Review** - Jack Bash will present a pre-proposal on the UNOLS Office support for discussion and consensus. (Enclosure 2)

**NOAA/UNOLS Cooperation** - Ken Johnson will lead a discussion on the NOAA/UNOLS cooperation planning including the possibility of NOAA labs becoming UNOLS members.

**Rethinking the Status of a UNOLS Research Vessel** - Bob Wall will follow up on his subcommittee work of (re)defining what it means to be a UNOLS Vessel.

**Post Cruise Assessments** - Peter Betzer and Mike Prince will review progress in redesign of the Post Cruise Assessment reports.

**Scheduling Procedure** - Don Moller will discuss evolving changes in the scheduling procedures. Are more changes needed?

**New Ship Construction** - Bob Knox and Dick Pittenger will update the Council on the status of the REVELLE and ATLANTIS.

**Mid-Life Refits** - Bob Knox and Mike Prince will discuss the progress of mid-life refits for the NEW HORIZON and POINT SUR respectively.

**SECOR Update** - Virginia Powell will provide an update on the activities of SECOR.

**UNOLS Council Membership:** Peter Betzer, nominating committee chair, will present the slate for the membership elections. The terms of Ken Johnson, Chair; Peter Betzer, Vice-Chair; Tom Royer, Operator Representative and David Karl, At-large Representative are expiring. Ken Johnson and Tom Royer are eligible for second terms.

**UNOLS Charter** - Vote to readopt Annex V of the UNOLS Charter, "The Research Vessel Technical Enhancement Committee," as amended.

**Annual Meeting** - Ken Johnson will briefly discuss the plans for the UNOLS Annual Meeting scheduled for 20 September 1996.

**Calendar for UNOLS Meetings** - The Council will discuss the winter meeting site.

#### Meeting Schedule

MEETING	LOCATION	DATES
AICC	Arlington, VA	11-12 September 1996
DESSC (Mini)	Arlington, VA	18 September 1996
UNOLS Council	Arlington, VA	19 September 1996
UNOLS Annual	Arlington, VA	20 September 1996
RVOC	St. Petersburg, FL	22-24 October 1996
RVTEC	Ft. Pierce, FL	11-13 November 1996
FIC	TBD	TBD
DESSC	San Francisco, CA	14 December 1996

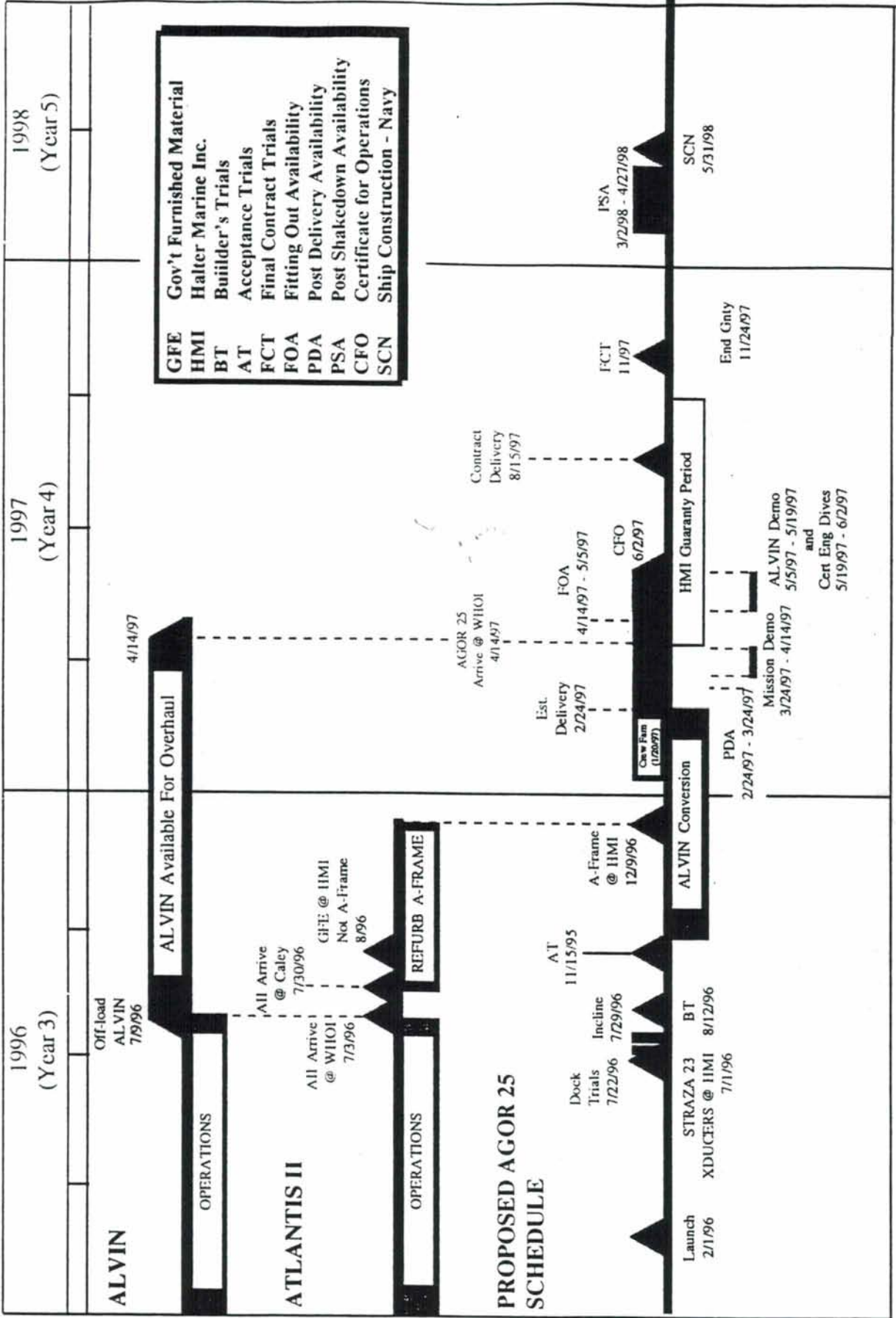
#### *Adjournment*

**A wine and cheese reception is scheduled for 1800 to 2000 hrs in the Renaissance Arlington Hotel Ballroom.**

# APPENDIX III

# AGOR 25/ATLANTIS II/ALVIN Schedule

(Estimated Delivery - 24 Feb 97)



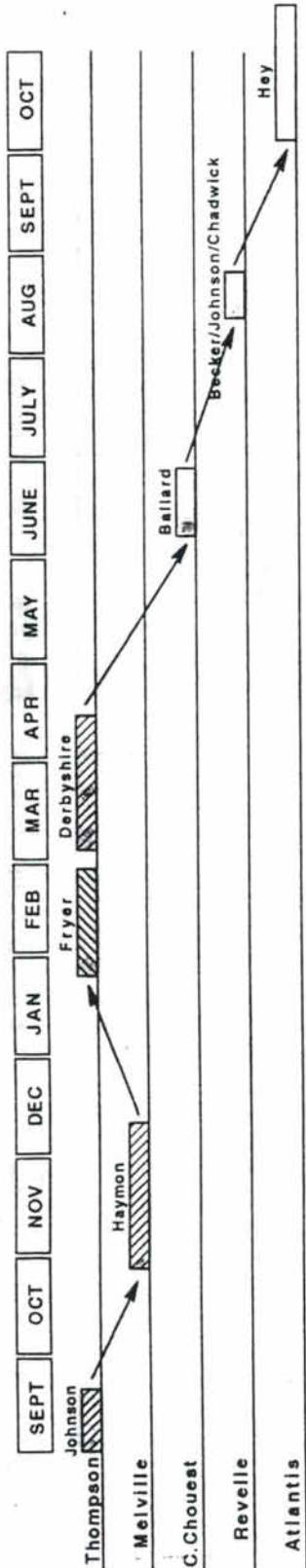
- GFE Gov't Furnished Material
  - HMI Halter Marine Inc.
  - BT Builder's Trials
  - AT Acceptance Trials
  - FCT Final Contract Trials
  - FOA Fitting Out Availability
  - PDA Post Delivery Availability
  - PSA Post Shakedown Availability
  - CFO Certificate for Operations
  - SCN Ship Construction - Navy




▲ - MILESTONES    ▲ - TESTS & TRIALS/OPERATIONS    ■ - YARD PERIODS

'95, '97

Jason/Argo/AMS-120

'96, '97



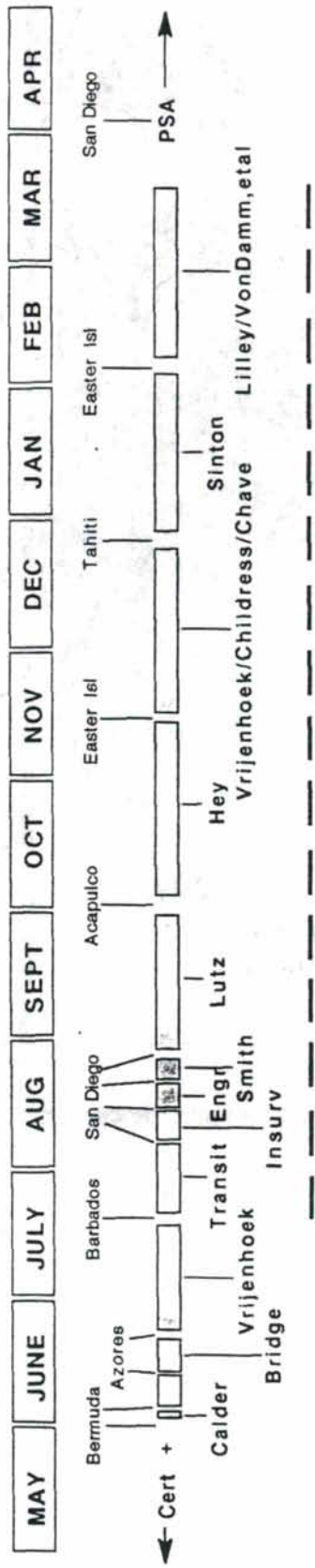
- Jason 
- Argo II 
- AMS-120 
- F.O. Winch 

Moller - 9/15/96

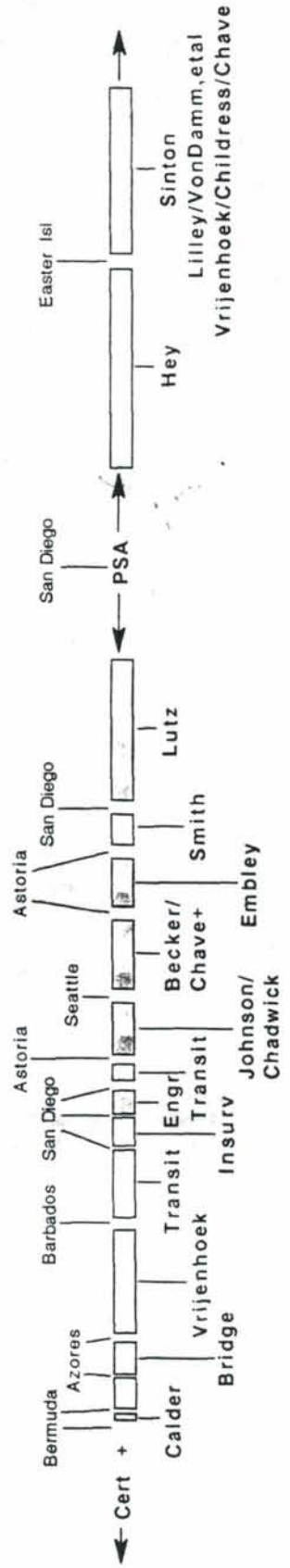
# 1997 ATLANTIS 1997

(Dated: 15 Sept. '96)

## OPTION A

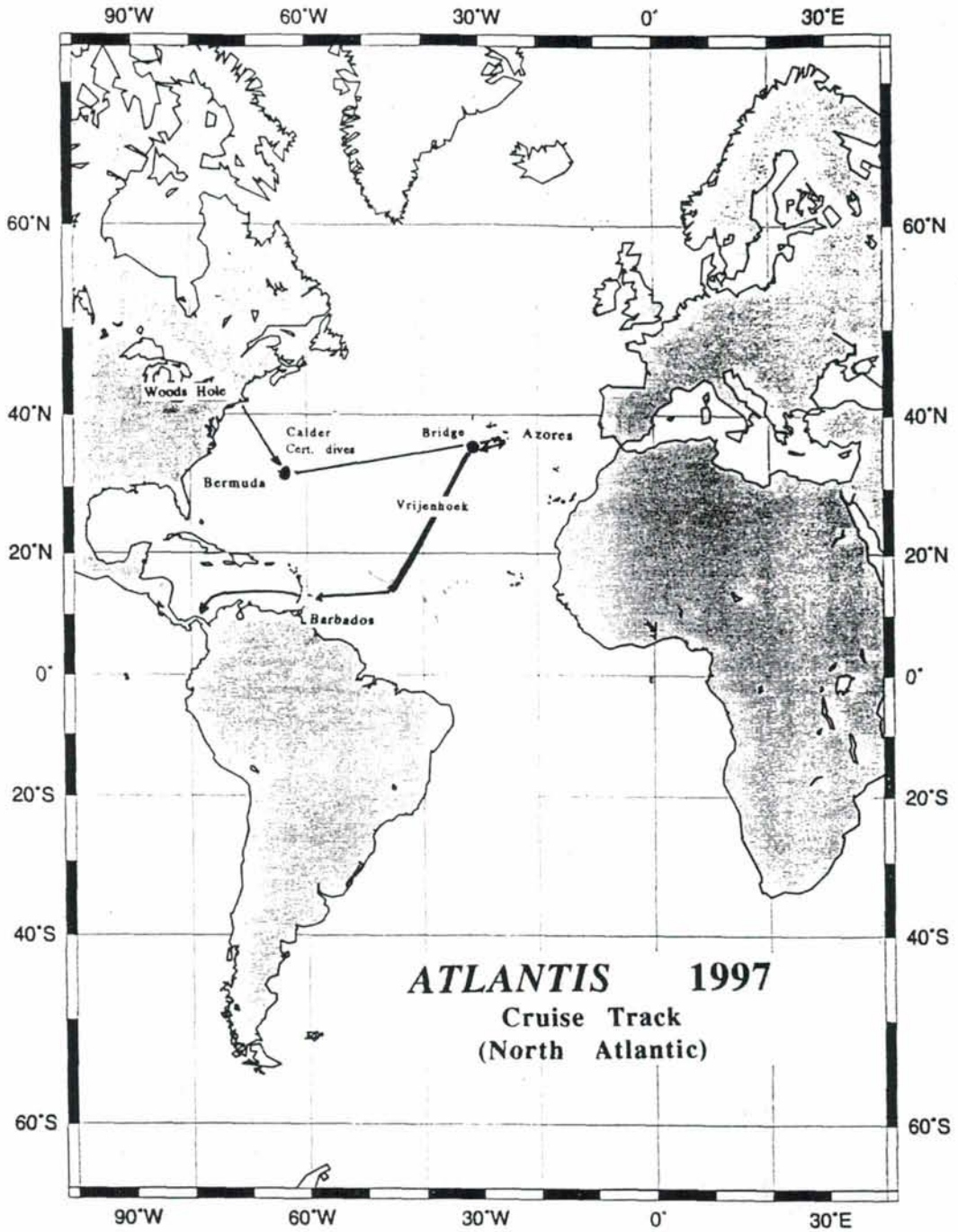


## OPTION B



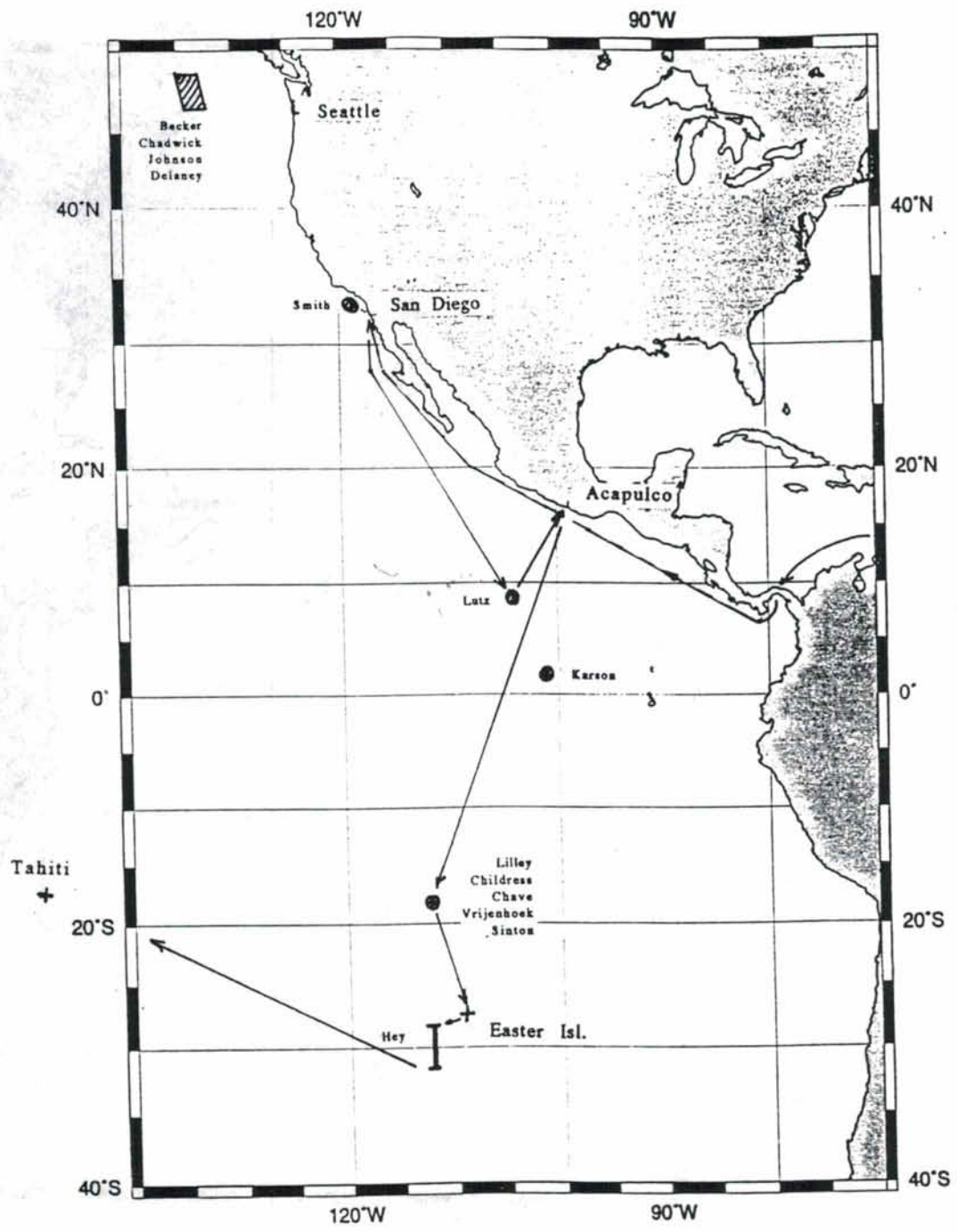
Jason [ ] AMS-120 [ ]  
 Argo II [ ] Alvin [ ]

D.Moller - 9/15/96



MOC04: Atlantic Ocean





**ATLANTIS 1997**

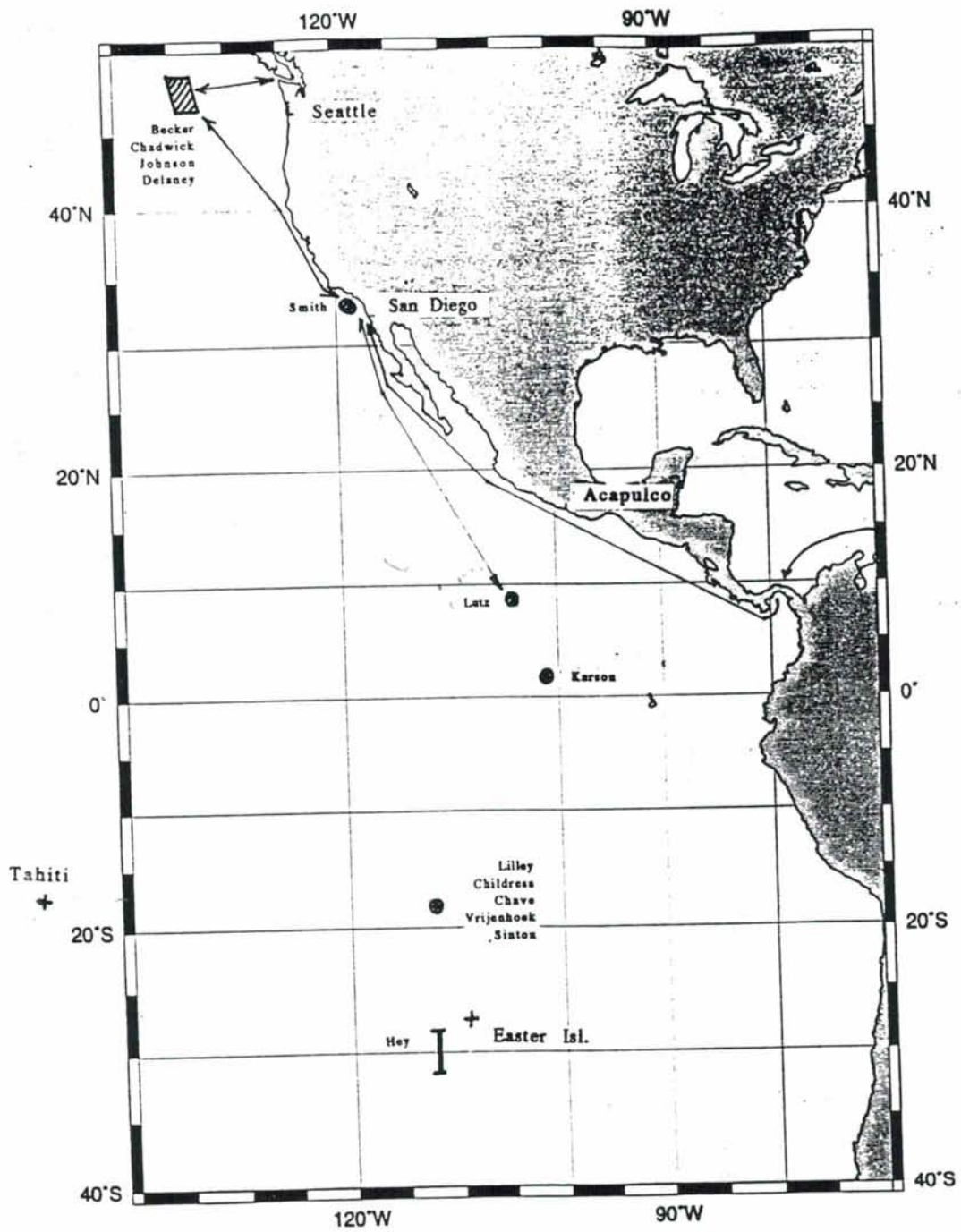
Cruise Track

OPTION A

MOC 11: Equatorial Pacific Ocean







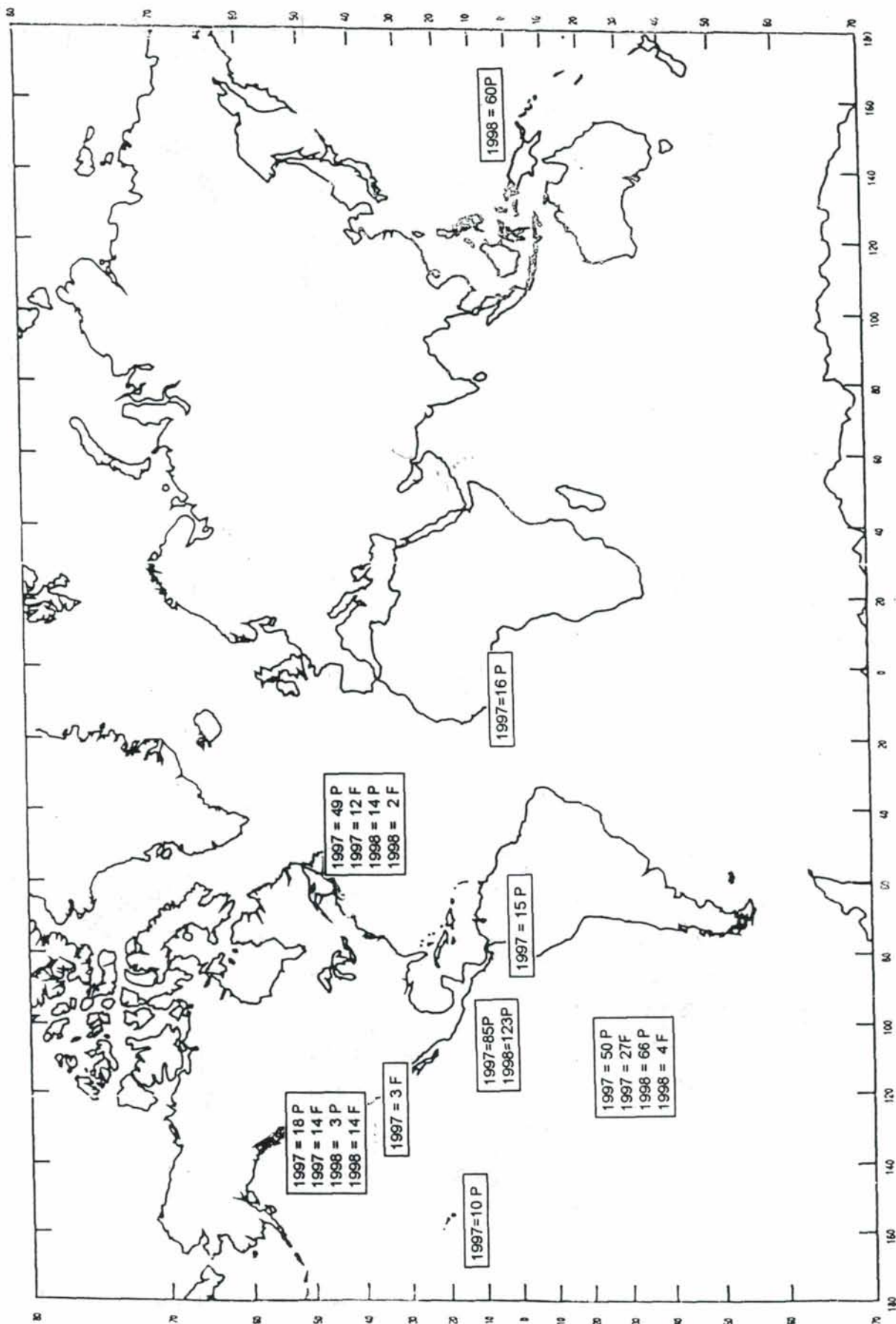
MOO11: Equatorial Pacific Ocean

**ATLANTIS 1997**  
Cruise Track

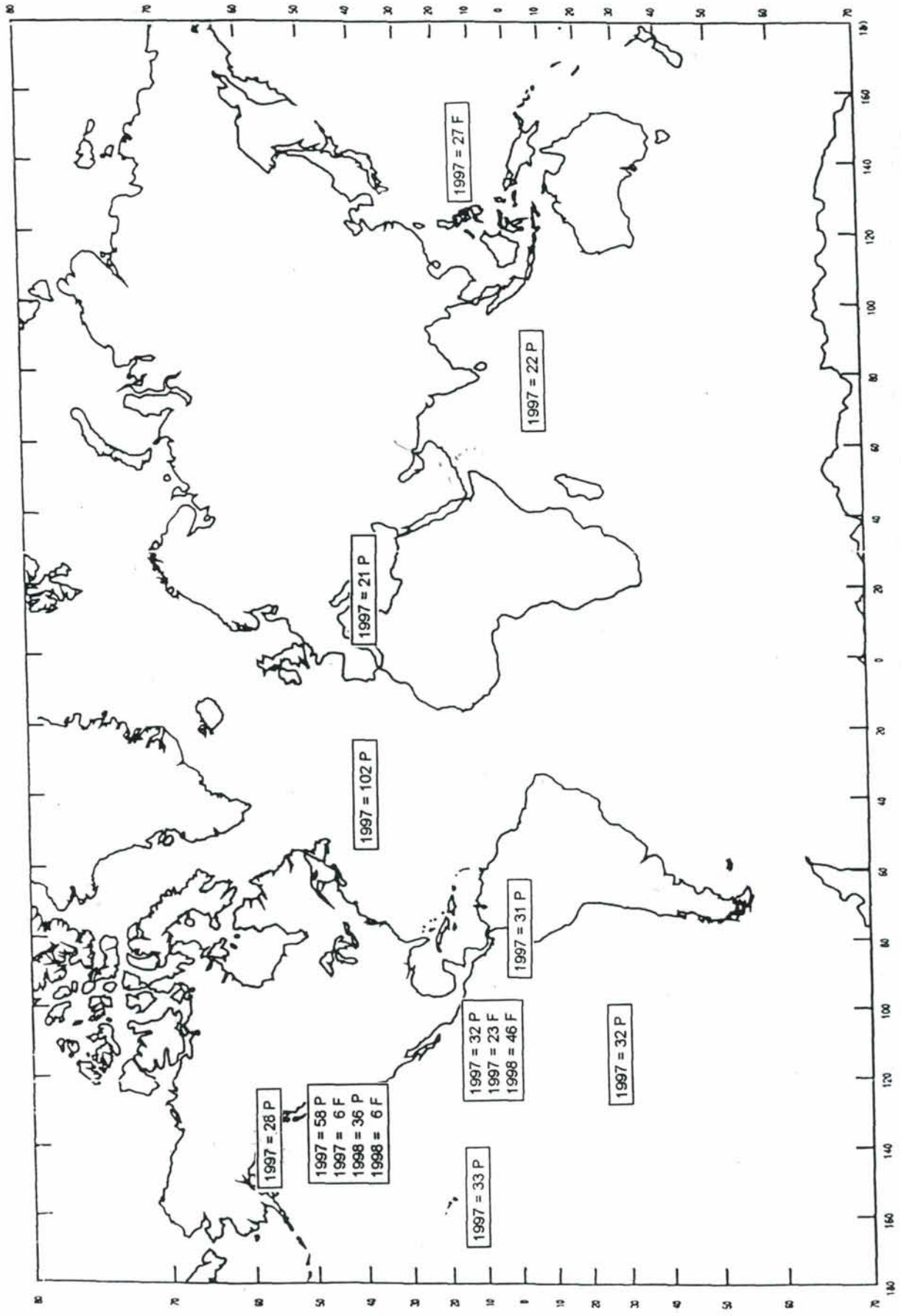
OPTION B



# ALVIN AREAS OF INTEREST - 1997 AND BEYOND



# ROV AREAS OF INTEREST - 1997 AND BEYOND



## ALVIN UPGRADE/OVERHAUL - ITEMS AND ISSUES

Dan Orange and Cindy Van Dover

17 September 1996

### HISTORY

- June '95 Discussion at DeSSC Meeting - early overhaul and integration with Atlantis present an opportunity to increase functionality/upgrade systems.
- Fall '95 Solicitation to community for input. Responses to Van Dover and Orange by Jan '96.
- Feb '96 Preliminary list to WHOI for comment. Replies incorporated.
- Spring '96 DeSSC (Perfit) discussions with funding agencies, DeSSC.
- May '96 Prioritized list to DeSSC. Lengthy discussion at DeSSC meeting with operator, agencies.
- Aug. '96 Schedule special DeSSC meeting with agencies, operator to discuss overhaul opportunities.
- Sept. '96 Revised priority list, suggestions.

### PRIORITIES (in order of importance)

#### 1. Datalogger/video upgrade.

This is essential for ALL kinds of science using ALVIN and needs to be matched to JASON. Data format needs to be user friendly, overlays for all video need to be standardized (with inherent flexibility), delivery to scientists needs to be routine and flexible, there needs to be a minimum standard of training for science users so that all scientists and pilots, including new users and trainees, are aware of all capabilities.

#### 2. Add syntactic foam.

This is my second priority because available science payload often does not match demand. This is an upgrade that ALL scientists can use to advantage -- no discriminating by discipline here. One of several #1 priorities of original DESSC list.

#### 3. Power.

Add wiring as needed to 3rd battery compartment. Power limitation is a big issue -- having a test bed seems valuable from both science and operator's view. DSOG also needs to collate post-dive data: (why were dives terminate? Pilot/battery stats?) to allow for power analysis.

4. (tie) Obtain dual head scanning sonar
4. (tie) Obtain 4 slurp pumps with chambers  
Relatively low costs put these items higher on our list than they otherwise might be -- big gain, small bucks.
5. Laser ring gyroscope.  
The existing gyro is archaic, and all scientists depend on good heading information.
6. Image infrastructure.  
Incorporate the infrastructure (wiring, beta deck at no cost, etc.) necessary to upgrade imaging over the next three years (digital cameras, etc.).
7. Improve the in-hull 35 mm cameras.  
All users identified that this is an essential component of the post-dive data, and that the present system needs upgrading. Although digital photography is on the horizon, the need for basic film photography will remain for some time.
8. Homer Probes  
Obtain and incorporate Homer Beacon and 2-5 Responders. These allow a trivial return to a site of interest. Batteries last for 5 years.
9. Pencil cameras  
Obtain 2 pencil video cameras and wiring for flexible placement on the sub.
10. (tie) Obtain an improved CTD pump
10. (tie) Obtain a flat LCD monitor
11. Obtain a new set of push cores with core catchers

### **Van Dover/Orange Essential List**

Items 1-7 must be incorporated at a minimum. 8-9 offer substantial capabilities at a relatively low cost. 10-11 are important, and should be included if the work is required during overhaul.

### **Comments/Other Issues:**

#### **Power training sessions.**

DeSSC strongly recommends that the operator and the committee utilize the AGU meeting to raise the issue of power usage with the community. Furthermore, a power training video would be a great benefit to the scientists, and could be viewed in the galley immediately following the exposure suit video at the beginning of the cruise.

#### **VB System**

The VB system will need to be upgraded in the near future, although we hope that the current system works until the next overhaul. DSOG needs to design and plan for VB replacement this overhaul.

## **Navigation**

The number of transponders available "free" (transparent cost) to science needs to be increased. The current number of 4 for 15 dives is inadequate. This may require the purchase of some transponders now.

## **In-Hull Navigation Receiver**

The existing receiver is a custom-built box, and is outdated and difficult to repair. We need to replace this with an off-the-shelf, well-documented and supported system. This was identified as a high priority among the community and the committee. This may not be covered in the navigation proposal and needs to address during this overhaul.

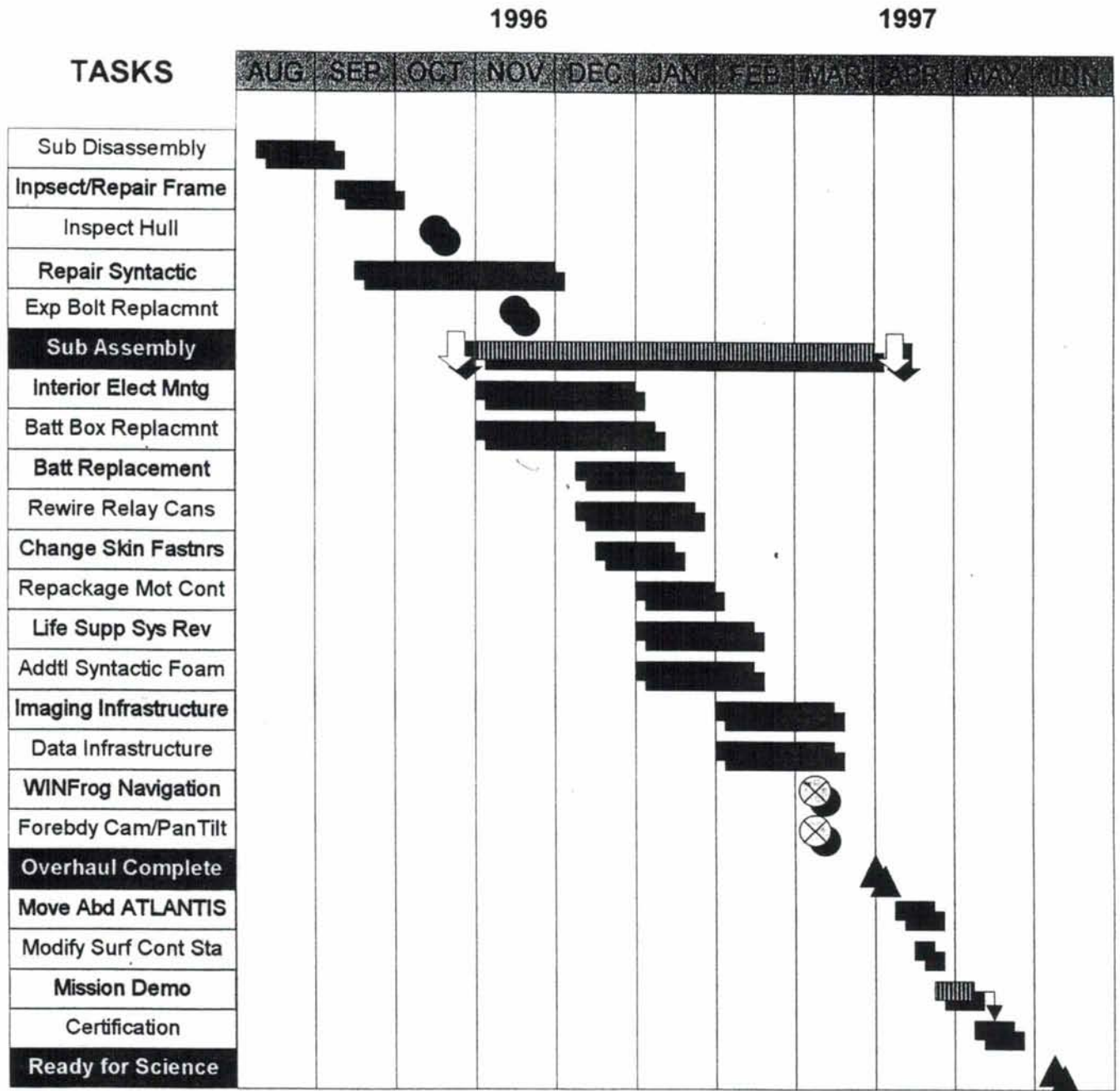
## **Already paid for; to be incorporated during overhaul:**

- pan and tilt
- new 3 chip video camera
- Domed housing for video cameras (Ballard to acquire, available to DSOG?)

## **Other items discussed at the May '96 DeSSC meeting:**

- Digital imaging for ALVIN/Jason/ARGO (separate proposal)
- Remote data logging via inductive coupling (see Fornari memo)
- Acquire next-generation GeoCompass (utilizes fluxgate magnetometer)

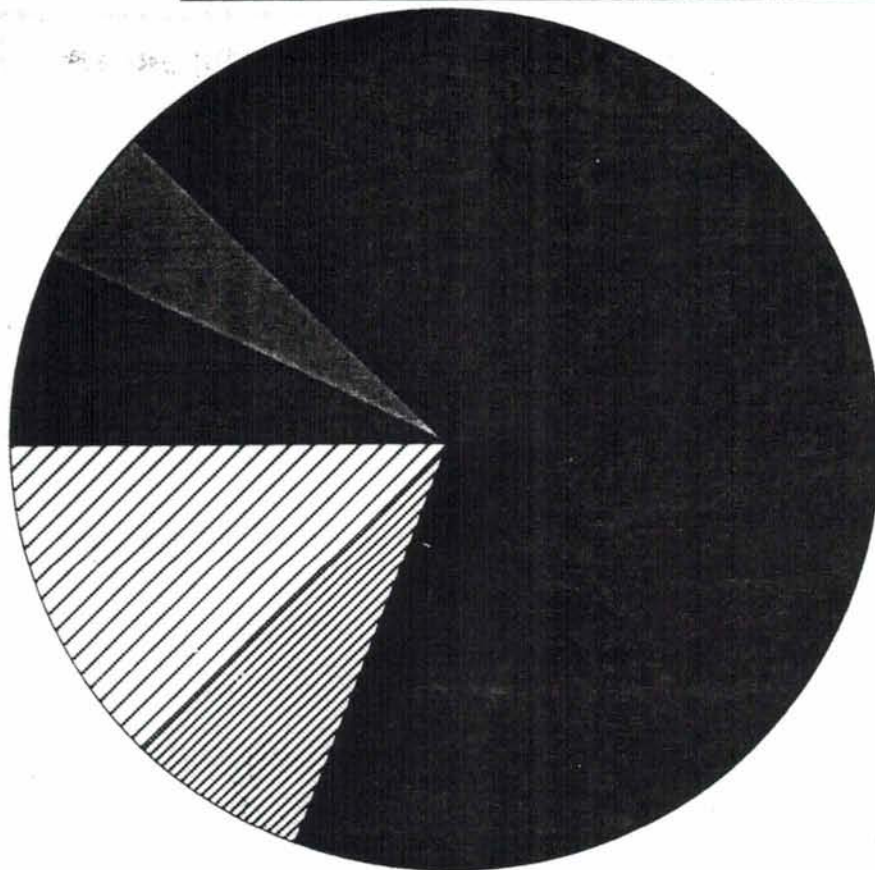
# ALVIN OVERHAUL SCHEDULE



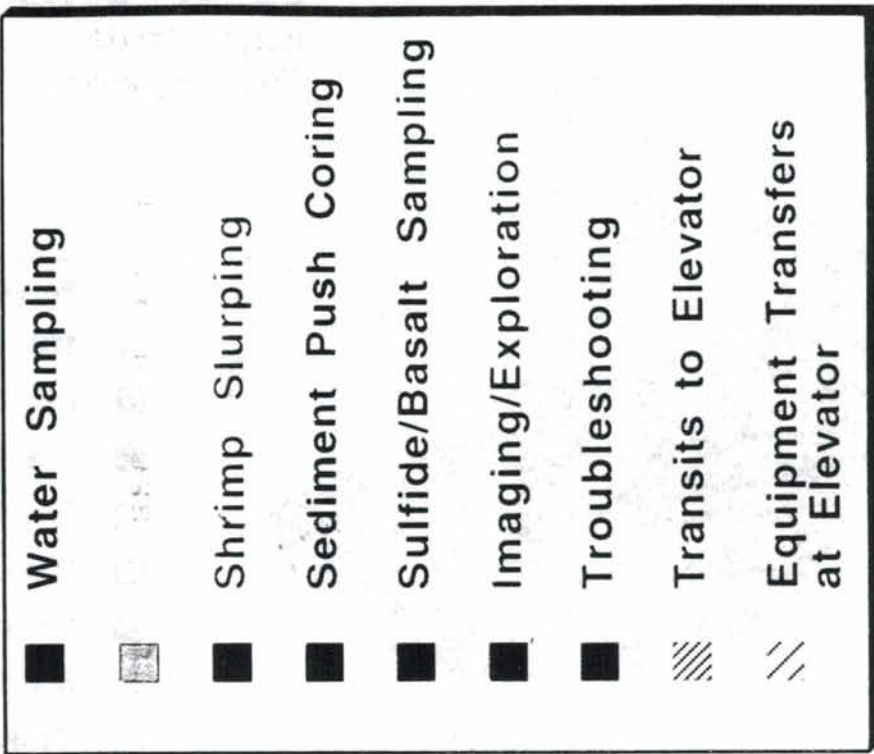
**ROV Cruises**

-   
**Johnson**
-   
**Haymon**
-   
**Fryer**
-   
**Derbyshire**
-   
**Ballard**

**Summary of Science and Vehicle Operations  
 For All Jason Lowerings LUSTRE '96  
 Lucky Strike - 1996 R/V Knorr 145-19**

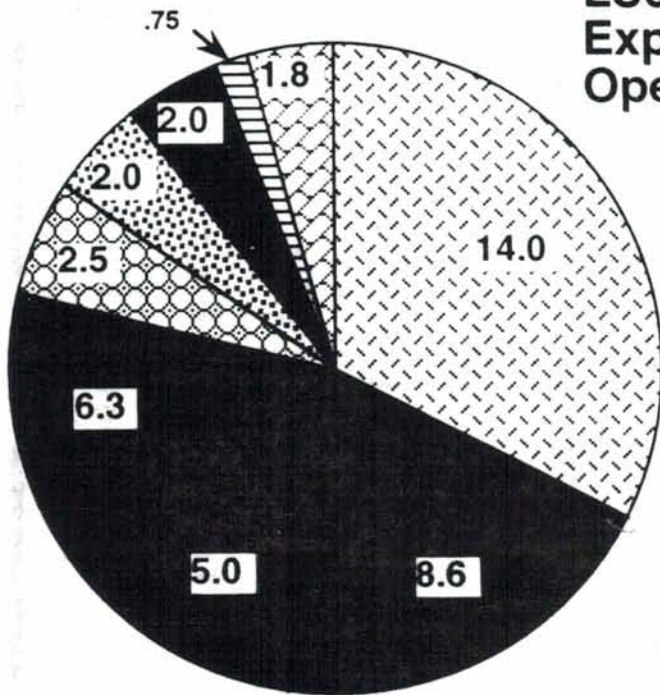


**Total On-Bottom Time: 89hr 31min**

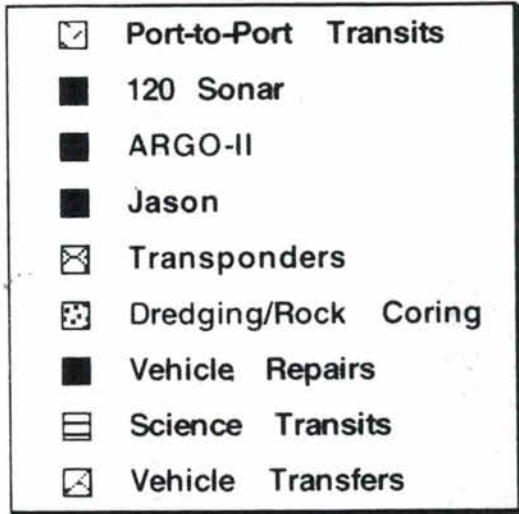


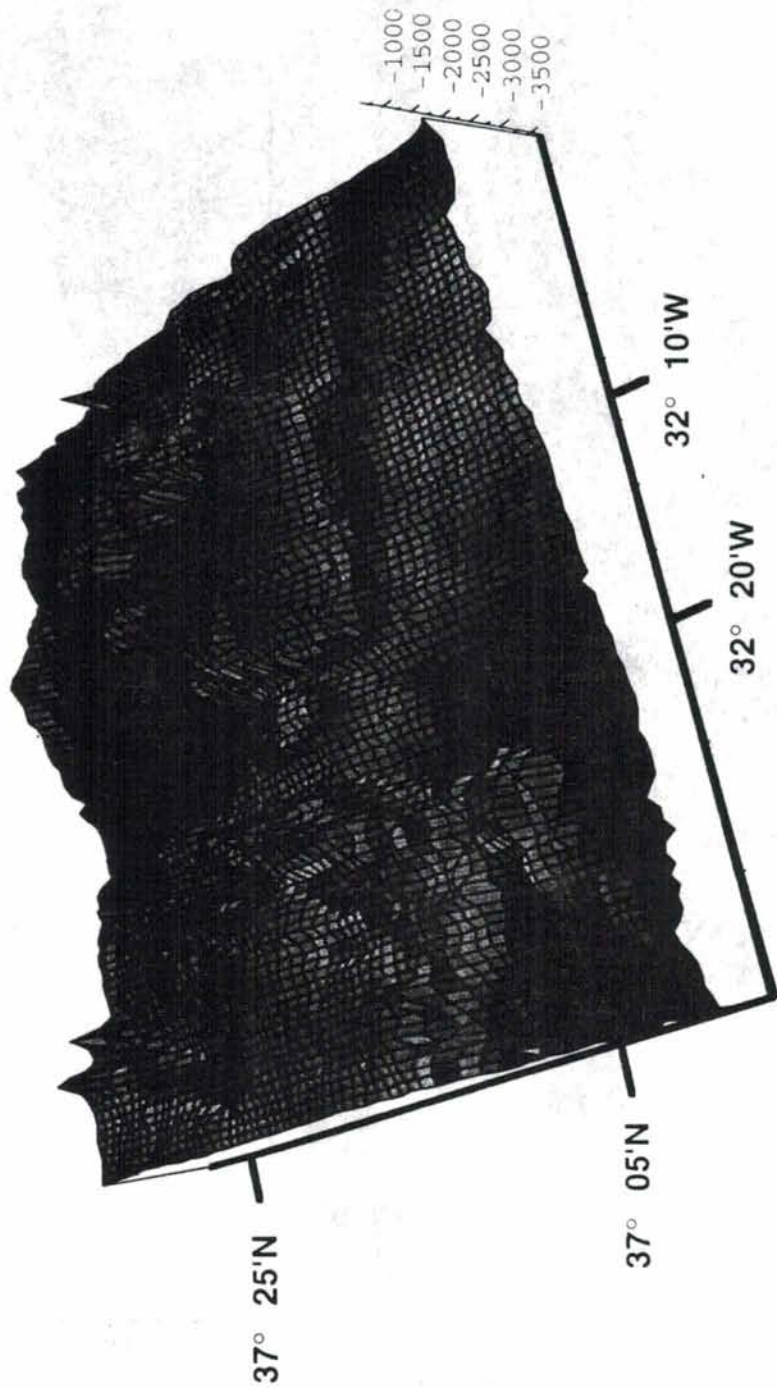


**LUSTRE '96  
LUcky STRike  
Exploration 1996  
Operational Summary**



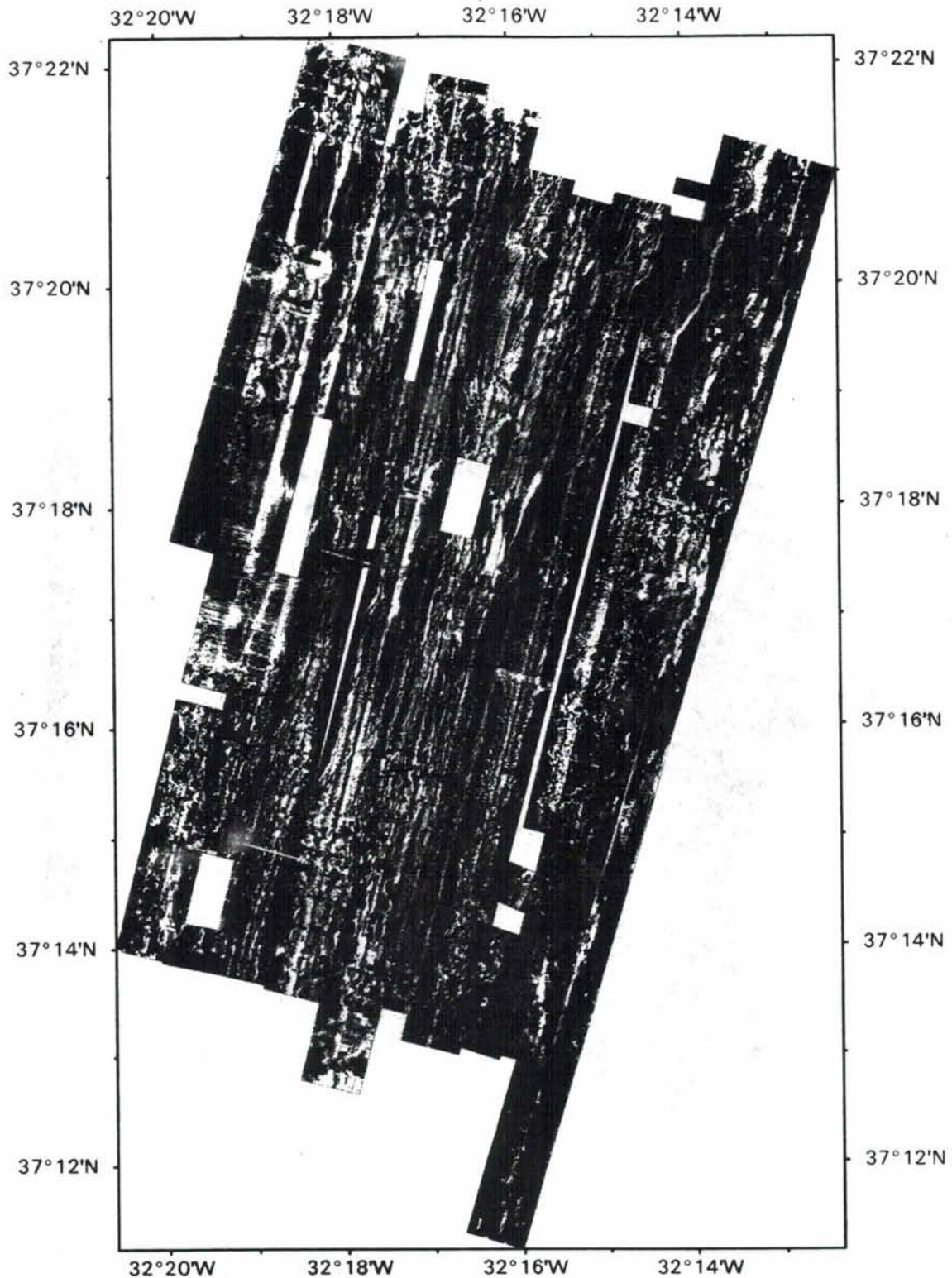
Time (days)



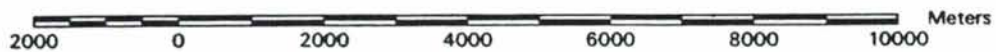


# LUSTRE '96

## DSL120 Northern Survey - Along Axis



Scale 1:100000



# APPENDIX IV

## UNOLS FIC Report

Prepared by Chris Mooers, 5 Sep 96

1. FIC has been engaged in contingency planning in case downsizing of the UNOLS Fleet becomes necessary. It has prepared a draft Interim Fleet Improvement Plan (IFIP), as a follow-up to the "Betzer Report", that outlines generic options. However, the IFIP awaits updates on NAVO's and NOAA's likely demand for the UNOLS Fleet and other revisions.
2. FIC has been laying the groundwork for FIP98 and several important factors have come to light in the process of developing the IFIP that suggest a strong need to focus FIP98 on the UNOLS Fleet of 2010. For example, while our attention has been focused on the short-term problem of excess capacity, many of our present vessels will be retired by 2010. Hence, the clearest possible vision of the fleet needed for 2010 is required to lay the groundwork for new construction early in the next decade.
3. FIC has been placing a higher priority on ensuring a highly capable fleet rather than necessarily maintaining a large size for the fleet. To this end, it has groups studying the evolution of the fleet as real-time data platforms and the technological upgrading of the fleet. (Eric, please discuss the ideas you and Rich Findley have been developing.) Also, it has received briefings from ONR program managers on developmental programs for AUV's and RPV's, which have the potential to extend the experimental capacity of R/Vs.
4. FIC will focus its (early) winter meeting on outlining science mission requirements for a mid-pacific general purpose oceanographic vessel. Scientific representatives from the Univ. of Hawaii and California institutions will be invited to participate. Placing such a vessel in the context of overall regional needs for the fleet in 2010 will be an important step. If this process is effective, similar consideration of the future scientific needs of the other three major regions will be attempted as input to defining national needs for the fleet of 2010.
5. Overall, the lack of long-range ocean science planning, especially for large science projects/programs, is a serious limitation for planning the future fleet. Fortunately, the OSB has recently initiated a large ocean science planning effort that should help in that regard.

# APPENDIX V

## Charge/Operating Days (1995-1996-1997)

	1995 Total	1996 Total	1997 Total
Atlantis II	319	93 *	206 *
Ewing	310	304	270
Knorr	350	279	284
Melville	297	297	276
Revelle		98 *	222
Thompson	333	248	291
Edwin Link	175 *	187	200
Endeavor	228	156	208
Gyre	122	229	@100
Moana Wave	195	145	186
New Horizon	240	190 *	216
Oceanus	187	178	202
Seward Johnson	271	305	204
Wecoma	145	197	195
Alpha Helix	144	73	161
Cape Hatteras	175	0	278
Cape Henlopen	198	189	170
Longhorn	72	128	118
Pelican	182	180	@200
Pt. Sur	164	136	203
Sea Diver	180	134	33
Sproul	183	192	136
Weatherbird	154	170	134
Barnes	77	84	134
Bluefin	75	101	?
Calanus	48	70	102
Laurentian	91	52	45
Days	4915	4415	4774

\* Overhaul or partial service

Note: Based on data presented at Sept 9 '96 scheduling meeting

D.A.M.- 9/11/96

**UNOLS FLEET CHARGE DAYS**  
(by Agency & Year)

	1996		1997	
	<u>DAYS</u>	<u>%</u>	<u>DAYS</u>	<u>%</u>
NSF	2763	62.6	2787	58.3
ONR	565	12.8	554	11.6
NOAA	160	3.6	342	7.2
NAVO	0	0	419	8.8
OTHER	<u>927</u>	21.0	<u>672</u>	14.1
<b>TOTALS</b>	<b>4415</b>		<b>4774</b>	

Note: Based on data presented at Sept 9 '96 scheduling meeting

D.A.M.- 9/11/96



# APPENDIX VI

**DRAFT**  
**AICC Meeting**  
**Executive Summary**  
**11-12 September, 1996**  
**James H. Swift, Chair, AICC**

The UNOLS Arctic Icebreaker Coordinating Committee (AICC) has been established and the first meeting was held at NSF headquarters in Arlington during 11-12 September 1996. AICC membership includes:

Lisa M. Clough	East Carolina University
Joe Coburn	WHOI
Glenn F. Cota	Old Dominion University
Kelly Falkner	Oregon State University
Lawrence A. Lawver	University of Texas at Austin
Dan Lubin	UCSD/California Space Institute [not at meeting]
James H. Swift (chair)	UCSD/SIO, 0214
Tom Weingartner	University of Alaska [not at meeting]

Business at the meeting included:

- Review of background and history leading to establishment of the AICC.
- Review of interagency coordination of past Arctic cruises.
- Review and discussion of Coast Guard icebreaker support.
- Discussion of AICC charter.
- Review of Healy design, construction, and science input.
- Discussion of AICC Action Items and plan for focus.

The meeting was considerably aided by the attendance and participation in forthright discussions by several senior Coast Guard officers and numerous senior NSF officials.

Discussions were fruitful and the intended business moved forward well. The openness of the Coast Guard in all discussions and their commitment to the process begun with establishment of the AICC were commendable and perhaps the chief reason this meeting was successful. Progress can be laid to two factors: (1) The findings and recommendations found in the National Research Council report, "Arctic Ocean Research and Supporting Facilities, National Needs and Goals" clearly weighed on the minds of all participants and their parent agencies and constituencies. (2) The Coast Guard's commitment to change and to making the Coast Guard icebreakers, and especially the Healy, platforms of first choice for Arctic polar research were expressed from the top down and both respected and supported by all Coast Guard personnel present. This included not only support for the AICC but also an unprecedented degree of enthusiasm to make progress on the business at hand.

A summary of discussion and all Action Items will be included in the AICC meeting report. Particulars include placing scheduling of Arctic research aboard Coast Guard icebreakers into a UNOLS-like framework beginning immediately, acceptance by the AICC of its role in coordinating that research, and an accelerated effort by the AICC to gain an in-depth

understanding of the detailed plans and specifications for all Healy science spaces and systems. To accomplish the last the AICC is preparing to review existing plans and documents and will undertake an intensive study session in New Orleans in early November. To help raise community awareness and participation the AICC recommended that the Coast Guard participate in a UNOLS commercial poster at the fall AGU meeting and that the AICC host a one-hour early evening information and discussion session at that meeting. There are, of course, a host of unresolved issues. However, the spirit of cooperation and progress was unmistakable. The AICC is grateful to UNOLS, NSF, and the Coast Guard for splendid support, interest, patience, and guidance.

# APPENDIX VII

## ANNEX VI TO THE CHARTER

### ARCTIC ICEBREAKER COORDINATING COMMITTEE

#### 1. INTRODUCTION

The U.S. Coast Guard, NSF and UNOLS have agreed to establish a UNOLS Committee that will address research support for U.S. academic science investigators carrying out Arctic research aboard U.S. Coast Guard icebreakers. Particular concerns of this Committee are the USCG icebreakers POLAR SEA, POLAR STAR and HEALY. It is envisioned that these vessels will represent the major focus of the Committee.

The Arctic Icebreaker Coordinating Committee shall operate pursuant to appointment by UNOLS and in accordance with the UNOLS Charter. This annex will be incorporated as Annex VI to the Charter.

#### 2. PURPOSE

The purpose of the AICC is to provide polar science projects with planning and scheduling assistance, facilitate communications between scientists, science funders and facility providers. It is to provide oversight and advice to the U.S. Coast Guard for the purpose of enhancing facilities and science aboard their icebreaker fleet. Incumbent in this is fulfilling an ombudsman role for the arctic science community, insuring efficient and effective utilization of U.S. icebreakers. It is also the responsibility of the AICC to promote new technology for arctic assets and to maintain cutting edge capability for these facilities.

The Charter is intended to promote the best utilization of arctic facilities, provide sufficient lead time for planning purposes, and provide incentives for the scientific community to organize the needed critical mass of research projects. The AICC will work with the user community, Federal sponsors and the operators of other polar facilities to encourage expeditions using U.S. Coast Guard icebreakers in a phased manner that meets the needs of a wide spectrum of arctic scientists. Additionally, the AICC will encourage the advancement of cooperative international programs for the enhancement of multidisciplinary arctic science throughout the academic community.

#### 3. MEMBERSHIP

The Committee will include eight polar scientists with diverse disciplines serving three year-terms (except for the make up of the original committee whose term will be staggered with two two-year members, three three-year members and three four-year members). Individuals may not serve more than two consecutive terms. Representatives from the USCG, NSF, ONR, NOAA and the Arctic Research Commission will be expected to participate in the committee's meetings and activities. The Chair of this Committee will be an ex-officio member of the UNOLS Council and will keep the Council and the UNOLS membership informed of its activities.

#### **4. SPECIFIC TASKS FOR THE AICC**

Specific tasks of the Committee will be:

- Provide construction oversight for HEALY's scientific spaces and outfitting.
- Provide coordination for ice breaker scientific program scheduling.
- Participate in initiating and planning arctic science projects.
- Facilitate liaison between scientists and science funding agencies to support icebreaker utilization. The AICC will fulfill an ombudsman role for the arctic science community.
- Respond to requirements relating to the scientific mission for HEALY.
- Critique science operations for all USCG icebreakers.
- Provide advice on science equipment needs.
- Provide advice on technical support.
- Provide advice concerning international cooperation of scientific programs and facilities in the Arctic.

#### **5. MEETINGS**

The AICC will meet no less than twice annually to discuss issues within its charge. Funding for these meetings will be administered similar to that of other UNOLS standing committees.

#### **6. COORDINATION**

The AICC will include the UNOLS Fleet Improvement Committee, the UNOLS Research Technical Enhancement Committee and the UNOLS Research Vessel Operators' Committee on issues appropriate to these committees.

# APPENDIX VIII

**Town Meetings  
Directorate for Geosciences  
National Science Foundation**

The Directorate for Geosciences (GEO) of the National Science Foundation (NSF) is planning to convene a series of "town meetings" with the geosciences community to discuss the goals and objectives that NSF seeks to accomplish through the support of the geosciences. These are intended to provide a forum for the geosciences community to discuss with NSF/GEO staff issues central to the future of our sciences. Given the outlook for constrained budgets and the impacts of budget cuts in other agencies, the discussions will focus on the scientific strategies and management approaches that are under consideration by GEO to achieve those goals while continuing to protect the health of the geosciences.

"Town meetings" are presently being arranged in conjunction with the following scientific meetings:

GSA	Denver, CO Wednesday, October 30 Colorado Convention Center	October 28-31, 1996 5:45 to 7:45 p.m. Room A202-204
AGU	San Francisco, CA Sunday, December 15 Moscone Center	December 15-19, 1996 Time: TBA Room: TBA
AMS	Long Beach, CA Monday, February 3 Long Beach Convention Center	February 2-7, 1997 12:00 noon to 1:30 p.m. Ballroom B
ASLO	Santa Fe, NM	February 10-14, 1997
TOS	Seattle, WA	April 1-4, 1997
AGU	Baltimore, MD	May 19-23, 1997

The NSF/GEO booth is also planned for these scientific meetings.

These "town meetings" are expected to be informal, open exchanges of ideas, concerns and suggestions and are scheduled for two hours each. Senior staff from NSF's Office of the Assistant Director for Geosciences and from GEO's Divisions of Atmospheric, Earth and Ocean Sciences will participate.

The specific dates, times and locations of the "town meetings" will be advertised as far in advance as possible and at the scientific meetings at which they are to be held. Your comments on the proposed "town meetings," their format, and the issues to be discussed are invited. Please send comments and suggestions to: [geo@nsf.gov](mailto:geo@nsf.gov)

**GEOLOGICAL SOCIETY OF AMERICA (GSA) ANNUAL MEETING AND EXPOSITION**

The first of these "Town Meetings" is scheduled in conjunction with the Geological Society of America's Annual Meeting in Denver, Colorado on October 30, 1996. While the meeting will be held in the GSA space at the Colorado Convention Center, GSA registration will not be required. Security personnel will be instructed that individuals attending the GEO "Town Meeting" are allowed entry without conference registration/badges. Since the Oklahoma City Bombing trial is being held in Denver, tighter security procedures could be implemented during the GSA Meeting. If you are planning to attend the GEO "Town Meeting" as a non-GSA participant, please send your name and affiliation via e-mail to [geo@nsf.gov](mailto:geo@nsf.gov) in case we have to go to a roster system for building access. For non-GSA participants attending the GEO "Town Meeting" who would like to take advantage of the conference while in Denver, GSA has one-day passes available at \$138.00 and Exhibit-only passes for \$20.00. Additional information is available from GSA at (303) 447-2020 or via e-mail at [meetings@geosociety.org](mailto:meetings@geosociety.org)



# APPENDIX IX



September 18, 1996

Dr. Kenneth Johnson  
Chair - UNOLS  
Moss Landing Marine Laboratory  
P.O. Box 450  
Moss Landing, CA 95039

Dear Ken:

You wrote to me some time ago regarding the ideas and plans that we are developing for the replacement of the Calanus. In the letter, you described the typical process that has been used for research vessel design, including the role of the UNOLS Fleet Improvement Committee (FIC), the development and preparation of a set of Science Mission Requirements (SMRs), and the involvement of the user community. I would like to provide an update of the various aspects of our design process.

RSMAS has been considering a replacement for the Calanus for some time but it has been a lengthy and complex process. In 1993 and 1994, the Rosenstiel School's Ship Operations Committee held numerous meetings with Calanus internal and external users to define characteristics such as size, shape, type, length, and draft. From these discussions, the primary determination, driven by the requirement for a shallow draft vessel to work in Florida Bay, the Florida Keys, and the Bahama Banks, was that the vessel needed to be a catamaran.

We were aware that during this period discussions were taking place about coastal zone research and that there was a growing recognition of the importance of the near-shore areas and the stresses being placed on them. Concurrent with this was discussion on funding for the research and the platforms which would be required to accomplish it. In the June 1994 UNOLS Fleet Improvement Plan Update, FIC produced a set of general characteristics and scientific capabilities, and also stated that mission requirements (SMRs), and design will vary from region to region. Subsequently, FIC was to produce SMRs and proposed designs tailored to each region. We are not aware that these SMRs have been completed to date.

In the Florida Bay region particularly, several large research and monitoring programs are progressing and more are being proposed. We believe that there is an urgent requirement for a shallow draft vessel to service these regional needs. Consequently, we developed a set of draft SMRs and assembled a list of general characteristics. Concurrently, fund raising activities were started to support the construction of the vessel.

Design issues were many and varied. A preliminary design contract was let to Lock Crowther and Associates. While this firm produced preliminary plans, this approach was terminated because of high initial construction cost estimates and the death of Mr. Crowther. The option of a stock catamaran hull was explored and discussions were held with various yards to obtain preliminary cost estimates. After visits to and cruises aboard a number of catamarans, the consensus was that a stock design meeting the draft and load carrying requirements could be configured to a shallow draft coastal zone research vessel and built for a reasonable cost. The decision was made by the Rosenstiel School's Ship Operations Committee to proceed with this approach.

To obtain broader community input, in mid-1995 a presentation of the concept, backed by the list of general characteristics and the draft SMRs, was made to the South Florida Coastal Zone Workshop. The concept was also reviewed by groups in the region such as Florida Institute of Oceanography, NOAA's Atlantic Oceanographic and Meteorological Laboratory, Harbor Branch Oceanographic Institution, and individuals at Texas A & M and University of Texas, member institutions of SECOR. The responses, ideas, and input were incorporated using the 1994 FIC guidelines, where applicable. I believe that you will find reasonable agreement with their suggested general scientific capabilities for small expedition vessels. To date, we have held discussion about construction with three groups, two of which have prepared initial profile and deck layout sketches.

I appreciate your letter of support for our efforts and trust that this information about our design process concurs with the UNOLS perspective of the appropriate design process.

Regards,



Otis Brown  
Dean

# APPENDIX X

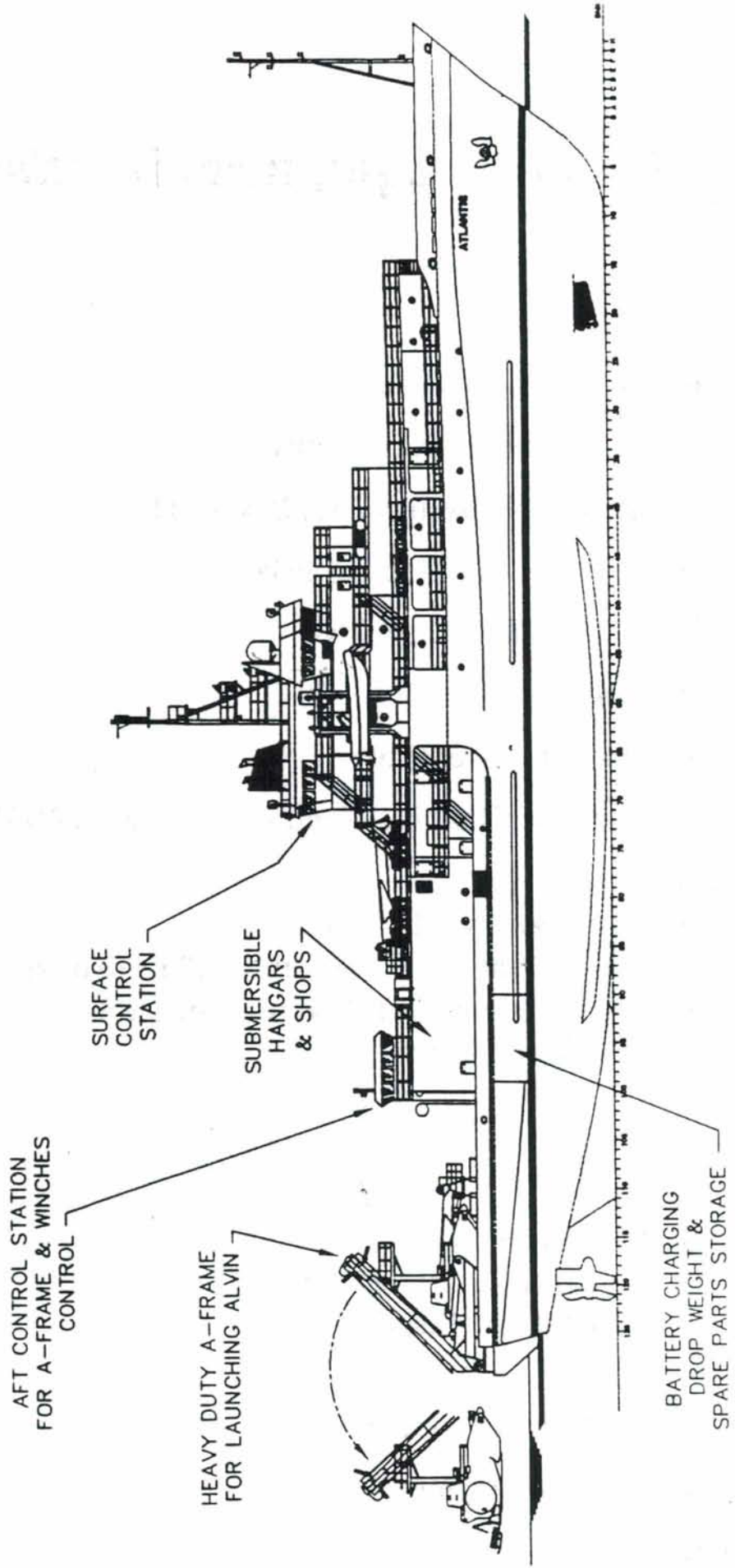
## DRAFT POST CRUISE ASSESSMENT REPORT (9/17/96)

Please complete and E-Mail to Prince@mlml.calstate.edu and unols@gso.uri.edu

- 1) Ship's Name:
- 2) Cruise dates:
- 3) Chief Scientist:  
Master:  
Marine Technician:
- 4) Name of project/cruise, cruise or leg #:
- 5) Type of work:
- 6) Area of Operations:
- 7) Were the science objectives of this cruise met? yes no  
Please explain, especially if objectives were not met
- 8) Number of days lost:      Reasons for lost days:
- 9) Are there changes you would recommend before this ship is used again for this or similar projects that would improve either the safety of the operation or the results?
- 10) Any suggestions for improving the pre-cruise planning and coordination, logistics, shore support or living conditions on the vessel.
- 11) Any comments or praise regarding the vessel's operation, equipment, ship's personnel, technicians, shore support or science party.
- 12) Name/position of person completing this form:
- 13) Return e-mail address (or alternate method for response):
- 14) If there are important questions you would rather communicate orally please feel free to call the Marine Superintendent(phone #) or the executive director of UNOLS(401-874-6825).

# APPENDIX XI

# Outboard Profile of *R/V Atlantis* with Deep Submergence Modifications Highlighted



# **Installed Equipment in *Atlantis***

**P-Code GPS**

**Doppler Speed Log**

**Dynamic Positioning System**

**Acoustic Positioning / Navetronix**

**Swath Bathymetry System / SeaBeam 2112**

**Bottom Profilers / 12 kHz, 3.5 kHz**

**ADCP / Narrow Band 150 kHz**

**2 Air Compressor / Price A-300**

**IMET / Sea Surface Sensors**

**Attitude Sensors (Heading, Roll, Pitch, Yaw)/ASHTEC + Hippy**

**Winches**

- **Two Markey DESH-5**  
10,000 m .322EM or 1/4" Hydro-wire
- **One Traction with Dual Storage Reels**
  - **Fiber Optic (.68")**
  - **EM**
  - **9/16" Trawl wire**

**Cranes**

- **2 Telescopic Cranes**  
42,000 lb. lift capacity
- **2 Portable "Hiabs"**  
2,200 lb. lift capacity

**Van Spots - 6 above main deck**

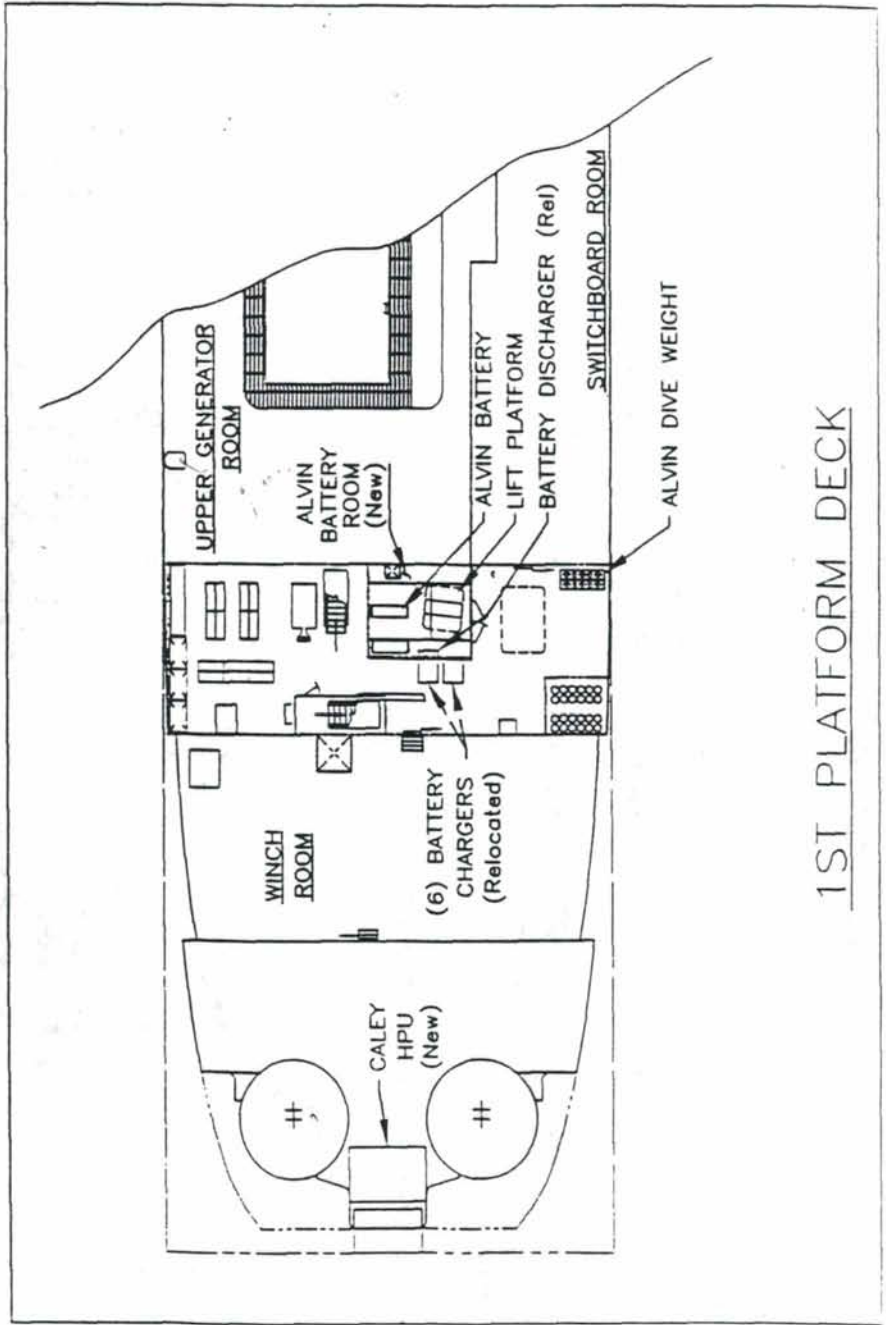
**Lab Space - 4,000 square feet**

**Science Berths - 24**



## *Alvin* Dive Weight, Battery Charging and Spare Part Storage

- Co-located conveniently immediately below *Alvin* hangar.
- Battery service facility includes charger, storage for replacement battery and hydraulic lift for removing/installing heavy battery units.
- *Alvin* uses 1,000 lbs. of steel as descent weights on each dive. Typically the ship will carry 75,000 lbs. of expendable weights.
- Having an adjacent dedicated large spare parts storage for submersibles will greatly enhance the at-sea groups' efficiency.



## Plan View of Atlantis Main Deck

### New Features:

#### Alvin A-Frame and Tracks

- A-Frame will be taken from *Atlantis II*, completely refurbished and new, more powerful hydraulic system.
- Positive control traversing and track system to move *Alvin* into and out of hangar.

#### Alvin Hangar

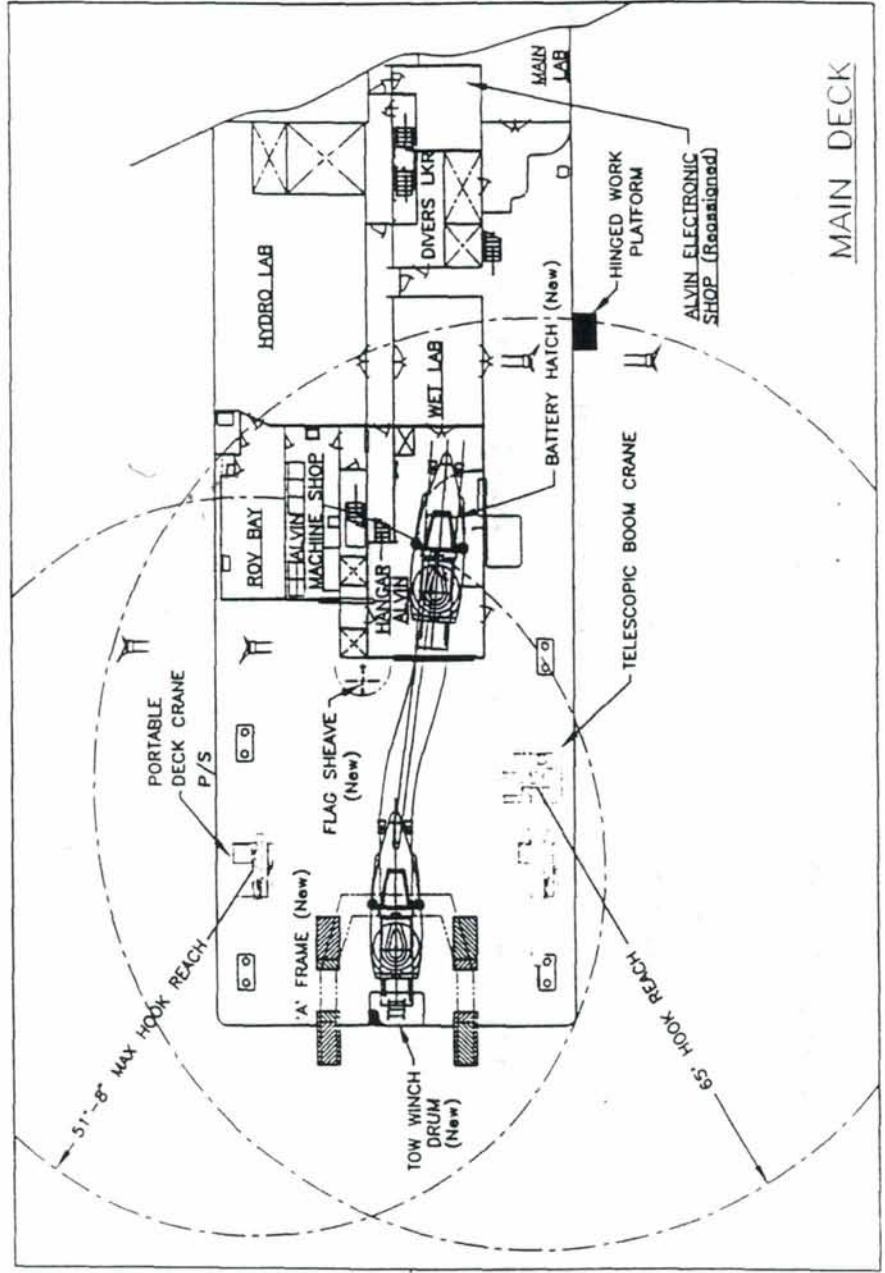
- To provide secure, covered storage and easy access for maintenance.

#### Shops (Mechanical, Electric, and Electronics)

- Near hangar for efficiency.

#### ROV Bay

- For Storage and maintenance of WHOI ROV's.



# APPENDIX XII

**UNOLS COUNCIL SLATE**

**UNOLS CHAIR** (2 year term):

Ken Johnson Moss Landing Marine Laboratory

**UNOLS VICE-CHAIR** (2 year term):

Tom Malone University of Maryland  
Tom Royer University of Alaska

**AT-LARGE** (3 year term) - individual affiliated with any UNOLS Member Institution:

Richard Feely PMEL/University of Washington  
Clare Reimers Rutgers University

**OPERATOR REPRESENTATIVE** (3 year term) - from among designated representatives of Member Operator institutions:

Dennis Hansell Bermuda Biological Station for Research Inc.  
Eric Firing University of Hawaii