DRAFT

UNOLS COUNCIL MEETING
Monday, June 2 and Tuesday June 3, 2003
University of Southern Mississippi
Gulf Park Campus
Long Beach, Mississippi

Meeting Summary Report

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Day One: Monday, June 2nd

Call the Meeting: Tim Cowles, UNOLS Chair, opened the meeting at 0830. The agenda for the meeting is included as ***Appendix I***. Meeting participants introduced themselves. The attendance list is included as ***Appendix II***. Denis Wiesenburg welcomed the meeting participants to Southern Mississippi University.

Accept the minutes of March 2003 Council Meeting – A spelling correction was noted. Additionally Curt Collins suggested a change regarding Regional Class tonnage issues. Curt will send his recommended change by e-mail. A motion was made and approved to accept the minutes with the revisions as noted.

Federal Agency Reports:

National Oceanic and Atmospheric Administration (NOAA) - Jim Meehan provided a NOAA report. As a result of budget cuts, the agency had to reduce the amount of ship time planned in 2003. This impacted both time planned on their own vessels as well as

time scheduled on UNOLS vessels. It is unclear whether the budget picture will improve for next year.

Construction of their new Fisheries Research Vessel (FRV) is progressing. All of the modules for the hull have been welded together. Launch of the vessel is planned for October 10, 2003 with delivery in August 2004. By August 2003, NOAA expects to have a contract signed for the construction of the second FRV. The ship will be similar to the first, but some differences in wet and fish lab arrangements and cranes are planned. These alterations are a result of regional operation differences and lessons learned. The first ship will operate off Alaska and the second ship will operate out of Woods Hole, MA. There are no funds for the third FRV in the FY04 budget. Efforts are being made to obtain the funds. If the third ship is not funded by the end of FY04, the option for this ship will expire. This may require re-bidding of the construction contract.

Office of Naval Research (ONR) - John Freitag reported on fleet renewal activities. The Regional Class study by JJMA is making good progress and they hope to have it complete by the end of the summer. Upon completion, NSF will plan to announce a Request for Proposals (RFPs) for the Regional Class design effort. The study indicates that a Regional Class ship that meets the desired Science Mission Requirements (SMRs) can be constructed and stay within budget (~$25M). The ship will likely exceed both the 300 and 500 GRT limits in order to meet the SMRs. The JJMA study is evaluating various acquisition options. These include the conventional model, the Circular of Requirements (COR) process, and the Integrated Project Team approach. JJMA predicts that the conventional acquisition process will take the most time and is the most expensive. During the conventional process Naval Architects work with operators to develop the ship conceptual, preliminary and contract designs, before going to bid for shipyard construction. In the COR process the shipyard configures a vessel to meet the COR. This is the process that was used for AGOR 23. The IPT approach teams the ship operator, shipyard, and Naval Architect at the start of the design and construction process. The Navy has used this approach with seven teams working on the same project.

John commented that the Council's recommendation to conduct the Ocean Class Phase II JJMA study in parallel with the Regional Class study was declined by ONR. They have indicated that the Ocean Class study will follow the Regional study.

John reported that the National Research Council is conducting an Ocean Studies Board study on Future Needs in Deep Submergence Science Facilities. NSF has requested that they provide their recommendations by the end of September 2003. The Navy has indicated that they will not provide funds for a new human occupied vehicle (HOV); however, they may be willing to conduct the submersible inspections and certification. ONR and NAVSEA are meeting to discuss the cost and effort required for the inspections. If affordable, the inspection might be the Navy's contribution to supporting a new submersible. The Council was concerned that if the Navy decides to perform the inspections, they should make it a long-term commitment.

UNOLS Discussion Items:

Federal Oceanographic Facilities Committee (FOFC) Meeting – Peter Wiebe provided a summary of the May 28th FOFC meeting. His viewgraphs are included as ***Appendix III***. Peter, Larry Atkinson, and Annette DeSilva attended the FOFC meeting. The agency participants and meeting agenda are listed in Peter's viewgraphs. The major discussion items included the development of an aircraft brochure, implementation options for fleet renewal, and integrated fleet plans vs. non-integrated fleet plans. The FOFC has put together a brochure on aircraft that support oceanographic research. The brochure can be viewed by clicking Aircraft Brochure.

The FOFC meeting devoted time to discussing the various implementation options for fleet renewal. The acquisition/implementation options considered include:

- New ship construction which can be supported by Federal, multi-agency, or state funds
- Private institution ship acquisition
- Conversion of existing vessels into research vessels
- Lease
- Charter of specialized ships
- Combinations and partnerships

The FOFC material provides examples for each option as well as the associated pros and cons.

Peter summarized some of the FOFC member comments on the implementation options. There was some question of whether multi-agency funding of ship construction is permissible. Frank Herr commented that there is need for a mixed fleet of both public and privately owned vessels. There is public policy value in having a mixed fleet. Margaret Leinen remarked that this administration is interested in outsourcing and this issue will need to be considered. The FOFC working group was tasked to provide an evaluation of what it would entail to study the leasing option. Margaret asked the group to provide a response in a month.

Peter reported on the FOFC's Integrated Fleet Plan discussion. Appendix III provides a table listing the pros and cons of an integrated plan. It also provides a table showing the various levels of integration that can be considered. Each agency had concerns regarding integration. There was concern over what would be feasible in terms of integration. The need to define each individual agency plan was stated. The FOFC working group was tasked to evaluate the level of effort needed to develop an integrated plan.

At the conclusion of the FOFC meeting there was time for round table comments. Frank Herr reported that Admiral Cohen has included funds for an Ocean Class vessel in the FY05 budget. They plan to conduct an Ocean Class study similar to the regional Class study in the fall. Margaret reported that the ARRV proposal would be put before the senior management for a decision to proceed to the MRE account. If approved, it will be in a budget beyond FY05. Admiral Fields reported that the Pinkerton report on NOAA

has been completed. The report addresses various security issues. NOAA is willing to discuss the findings with other organizations.

Council discussion followed Peter's report. There was concern over the interest in leasing options for research vessels. Since there are no funds currently identified for Ocean and Global vessels construction, the agencies will need to evaluate the leasing options to make sure that all options have been adequately considered. It was noted that leasing versus purchasing ships was studied as part of the Academic Fleet Review. UNOLS can provide this information to the FOFC working group.

It was recommended that Beth White (NOAA) be asked to report on the Pinkerton report findings at one of the UNOLS fall meetings (RVOC). The report's recommendations regarding security will likely apply to UNOLS vessels.

UNOLS Fleet Renewal Activities:

Regional Concept Development (JJMA Phase II effort) – Annette DeSilva reported on JJMA's Phase II effort. On May 28th a meeting was held at the National Science Foundation to review the status of JJMA's study on Regional Class Concept Development. Agency representatives, JJMA and UNOLS representatives attended the meeting. Dan Rolland (JJMA) presented viewgraphs summarizing the study's interim findings, status, and future plans. His presentation can be downloaded at <http://www.mlml.calstate.edu/unols/fic/regional/phase2_status_052803.pdf>. Annette reviewed Dan's slides:

The JJMA task is addressing the:

1) Acquisition Process - Analyze alternative acquisition approaches
2) Refinement of Concept Design - Refine Concept Design Within Cost Cap
3) Tonnage Analysis - Analyze tonnage of concept designs and regulatory impacts
4) Technology Investigation - Investigate innovative technologies to reduce manning, life cycle cost
5) Ship Specification Development - Develop specification and other design documentation to support next phase

Two concept variants were developed by JJMA and analyzed:

- Minimum (threshold) ship that meets the minimum SMRs
- Desired (objective) ship that meets the desired SMRs

Dan's slides include a table showing the concept variants versus the Regional Class SMRs. The desired SMR ship variant met all desired UNOLS SMRs. The minimum ship variant can meet the minimum UNOLS SMR value with the exception of storage space. The ship profiles were presented. Both designs have the science parties in double staterooms with the exception of the chief scientist, who has a single. Both variants have a crew of ten. Both designs call for the same propulsion system and both have double bottom tanks.

The JJMA PowerPoint viewgraphs include a seakeeping table of operabilities. The operating areas for the Gulf of Maine and the Pacific Northwest were analyzed. It was predicted that a monohull that meets the desired SMR ship design could meet the seakeeping criteria spectrum for both short and long crested seas. The on-station speed considered was 0-2 knots and the transit speed was directly from the SMRs. Dan suggested that in future SMR documents "deck wetness" be added as a parameter.

A chart showing the percent time operability versus wave height for a monohull was provided. There was a Council comment that it would be interesting to see this same chart for a SWATH design.

The seakeeping speed polar diagrams were presented. In summary, the models predict that:

- At SS4 all speeds and directions are met with roll stabilization tanks for both the desired and minimum SMR designs.
- At SS4 without roll stabilization tanks some roll lobes appear for the minimum SMR ship and with the desired ship in long crested seas.
- At SS5 with roll stabilization tanks the designs exceed the motion criteria during head seas transit.
- At SS6 with roll stabilization tank there will be some operability in beam seas with the desired SMR ship design
- At SS5 without anti roll tanks in short crested seas both designs exceed motion criteria. With the addition of anti-roll tanks there is a big improvement, but motion criteria is exceeded in head seas.
- At SS5 without anti roll tanks in long crested seas both designs (mostly) exceed motion criteria. With the addition of anti-roll tanks there is some operability in beam and following seas for the desired SMR ship.

Motion comparison charts of the SWATH and monohull design were presented. On station as well as transit conditions were evaluated. At SS4 the SWATH roll and pitch were better, but not to a large degree. Similar results were seen at SS5 and SS6, but in both cases the SWATH pitch amplitude is higher with a beam sea while on station.

The program costs for the desired and minimum SMR ships were presented and the estimated lead ship costs are:

- Desired ship = $28M
- Minimum ship = $25M

The desired ship variant is within the budget cap and does not require design trade-off decisions. Reducing ship capabilities to the minimum SMR variant achieves relatively minor savings at the expense of significantly reduced capability. JJMA indicates that there can be economy with a multiple ship contact (non recurring costs). They also suggest that an Integrated Product Team (IPT) design-to-cost approach could reduce risk and cost.

A variety of additional charts and slides were presented and included:

- Cost versus hull displacement

- Propulsion system
- Speed power and fuel consumption

The various acquisition strategies that are being considered by JJMA include:

- Conventional Approach
  - Develop Concept, Preliminary, and Contract Design
  - Then Solicit Construction Bids
- IPT with 1 Team Approach (Similar to AGOR 26)
- IPT with 2 Team Approach – eventually a single team is selected.

A schedule, cost, and pros/cons for each approach will be evaluated. The goals of a successful acquisition program are to:

- Satisfy NSF requirements for oversight and milestone decisions
- Remain below the cost ceiling
- Maximize mission capability
  - Maximize funds applied directly to ship construction
- Achieve early and effective community input
  - Ensure resulting ship meets needs
  - Minimize costly change orders

JJMA estimates that the conventional approach takes 3 to 3.5 years and the IPT approach is estimated at approximately two years. They also feel that the conventional approach is more expensive. Mike Reeve has indicated that he would like to see a cost comparison. The CAPE Class approach solicited Concept designs from several teams, and then used a community process to review and evaluate the designs to narrow the selection to two teams.

Morning Break

JJMA Phase II effort (continued) – Annette continued by reporting on JJMA's tonnage analysis for a design that could be <300 Domestic tons. To stay below 300 Domestic tons some SMRs cannot be met. Berthing changes would be necessary. The ship length is estimated at 132 LWL, which is shorter than the desired SMR length. Additionally, the ship would exceed the International tonnage limit.

JJMA plans to conduct a technology investigation to:

- Identify ship systems where life cycle costs are high and some improvement would be welcome
- Identify technologies that have potential for improving capabilities
- Perform feasibility analyses to determine if further consideration is warranted.

JJMA's study will assist NSF by providing information for an RFP. Initial efforts are underway to identify a suitable format and scope for specification. This will depend on the acquisition approach. The conventional approach usually requires detailed specifications or CORs. Streamlined approaches usually require abbreviated documentation. JJMA indicates that the likely approach will draw from previous AGOR

experiences. They will modify these based on lessons learned and unique aspects of the Regional acquisition.

The work still remaining on the Phase II effort includes:

- Further refinement of concept designs
  - Incorporate comments
  - Further development of mission systems
- Technology investigation
- Acquisition strategy analysis
- Specification development

They expect to complete the effort during the summer.

Council discussion followed. Their comments and concerns are:

- Operator selection - When and how will the operators be selected? It seems that the sooner decisions can be made, the better.

- Community feedback - Opportunities for community feedback and input must be clearly defined up-front in whichever acquisition process is selected. Periodic design reviews are needed and must be scheduled in advance. There is concern that the IPT approach will not allow UNOLS involvement until after the teams are identified. The RFP for design/construction from NSF should indicate how the community would specifically be involved in the process.

- JJMA effort – There is some concern that the JJMA Phase II analysis is encroaching on the conceptual design phase. It should not hamper the creative design process that could be offered by a competitive bid process. The SMRs need to be the foundation for the design.

- Ship specification – The ship specification for the RFP needs to be based on lessons learned. Mike Prince recently drafted a survey requesting input (lessons learned) on previous ship construction efforts and operations. The process used for design and construction of the CAPE Class should be carefully evaluated. We need to make sure that JJMA has feedback from other design efforts.

- UNOLS input to JJMA Study – FIC and the Regional committee should review the JJMA PowerPoint presentation. UNOLS should contact NSF and request that we have input to the report before it is submitted as final. The specification development and acquisition strategy are of major concern to UNOLS.

Congressional response to Navy's report on Fleet renewal – Congress requested that SECNAV report to the House Armed Services Committee on renewal plans of the academic fleet. John Freitag reported that ONR Code 32 generated the report and delivered it to Congress in February. No feedback has been received. The report supported the FOFC Fleet Renewal Plan and largely echoed the FOFC timeline. The timeline was accelerated in some areas. There was no funding identified for fleet renewal

in the report. It was suggested that CORE be contacted regarding Congressional feedback to the Navy's report.

Ocean Commission – The Ocean Commission report is being drafted and many think that it will contain language supportive of the need for fleet renewal. It was recommended that UNOLS provide a letter to the Commission that reemphasizes the need for renewal. Implementation should begin as soon as possible. Establishment of ocean observatories are expected to place increased demand on ship time. This was not considered in the FOFC plan. The UNOLS letter should also provide information on recent activities related to fleet renewal implementation. NSF has expressed an interest in supporting the Regional Class Construction effort, while no funds have been identified for Ocean Class construction.

ACTION – Peter Wiebe, Bob Knox, Larry Atkinson, and Tim Cowles volunteered to draft a letter to the Ocean Commission.

Ocean Class Vessels – There was nothing new to report. Tim sent a letter to ONR recommending that an Ocean Class Phase II effort on conceptual design development be initiated as soon as possible. In response, ONR replied that they would begin a Phase II study (similar to the one JJMA is conducting for the Regional Class vessels) after completion of the Regional Class study. This can be expected in the fall 2003.

In other areas, Tim reported that the Oregon Congressional delegation has indicated an interest in supporting development of new technologies, especially fuel cell technologies. OSU replied that main propulsion systems are not yet ready for this technology, but it may have potential for auxiliary power.

URI Vessel Plans – David Farmer, Dean of the Graduate School of Oceanography at the University of Rhode Island, sent a letter to Tim Cowles regarding potential interest in acquiring a ship from the Navy. Tim provided the letter to the Council at the meeting. It is included as ***Appendix V***.

The letter states that URI has entered into preliminary discussions with NOAA's Office of Ocean Exploration on the possibility of acquiring a Navy ship and converting it to support both ocean exploration and academic research. The ship under consideration is of the Navy T-AGOS class. The concept is that a ship of this class could be converted to function as an exploration platform, as required for NOAA's exploration program, while also fulfilling the requirements for an Ocean Class research vessel as defined by the UNOLS SMRs.

The ship is 224 ft. LOA, has twin screws, diesel electric drive, a bow thruster. Preliminary evaluations indicate that the ship has adequate fuel capacity for range considerations, ample berthing areas and a general layout appropriate for oceanographic research. Shortfalls in available laboratory space, deck outfitting and configuration would have to be addressed.

URI is in the early stages of discussion as to how such a ship might be converted, managed and operated. They have expressed that for it to be a viable option it must conform to the UNOLS SMRs for an Ocean Class ship, and be fully integrated into the UNOLS system including scheduling.

The Council briefly discussed URI's plans. It has been reported that a Naval Architect has looked over the design and estimates that it would cost in the range of $16M to $20M to modify the ship so that it could meet the Ocean Class SMRs. URI would retire ENDEAVOR if they acquired this vessel. The Navy ship is approximately half way through its life, 20 years. The situation raises many questions regarding the impact of these efforts on the Fleet Renewal Plan.

LUNCH Break

On-going Design and Construction Efforts:

Status on ARRV Preliminary Design, Model tests, Funding - No report.

Status of CAPE HENLOPEN Replacement effort – Matt Hawkins provided a letter to Larry Atkinson, FIC Chair, in advance of the meeting. The letter provides the status of their replacement effort and is contained in ***Appendix VI***.

The shipyard pre-qualification process is complete and final review of specifications and drawings is underway. The projected schedule for the remainder of 2003 is as follows:

- June 20 - Specifications and Drawings complete
- August 15 - Request for Proposals due; begin shipyard evaluations
- October 15- Shipyard selected
- November 1 - Notice to proceed with Final Design phase

Construction is scheduled to begin in May 2004 and take 18 months with completion in November 2005. Details of the project can be found at: <http://www.ocean.udel.edu/level1/ship/vessels/rvchreplacement/>. The cost of the ship is estimated at $12M.

EWING Mid-Life Improvement Plans – A status report was provided by LDEO in advance of the meeting and is included as ***Appendix VII***. Dale Chayes summarized the report.

Three options are being considered for the upgrade of EWING and the academic seismic capability. These options included:

- Maximize EWING's general purpose capability and enhance general MCS
- Outfit EWING with linear gun arrays (difficult to meet on EWING)
- Acquire replacement vessel suitable for 3D MCS and convert for general-purpose capability.

Lamont is in the process of evaluating proposals from Naval Architects to review proposed modifications to a 3D seismic vessel that is available for sale. Among the issues to be addressed are:

- GAP analysis to address re-flagging issues – this was a major issue in the acquisition of EWING. Issues on inspections, etc
- Structural review of proposed modification
- Trim & Stability review and assessment of vessel's science load carrying capacity
- Crewing requirements
- Estimate of deferred maintenance costs
- Dynamic Positioning
- Study of hydro acoustic noise and bubble sweep down (noise in respect to ACDP performance)
- Swath and sonar installations
- Draft of ship modification specifications to be submitted to shipyards for obtaining budgetary estimate.
- Science equipment and integration issues.

In early July a visit to a 3D seismic vessel in Norway is planned. Dave Hebert will participate in the visit as a representative of FIC.

The very preliminary estimate for conversion of this vessel is about $12M. The ship is a few feet shorter than EWING and 10 feet wider. It would have space similar to the UNOLS Global vessels. There are large deck and lab spaces available in the current configuration. The ship was built in 1991. The estimated operating cost is highly variable and depends on the type of seismic work to be conducted.

Dale requested that a presentation by LDEO on the EWING mid life options be added to the agenda of the September Council and Annual meetings.

CAPE HATTERAS Mid-life Status – Joe Ustach reported that the CAPE HATTERAS mid life plans included 29 work items. Of these, 18 are complete. All shipyard work is complete and was within budget. The remaining items will be completed dockside and should be done by the end of the year.

PELICAN Mid-Life Status – Steve Rabalais reported that after seven months of shipyard work, PELICAN is again in service. The ship just went through its post-shipyard sea trials over the weekend. The mid-life work went well. The ship was lengthened by 10 feet. They gained 35 tons of deck load. A new Dynacon winch with changeable drums was added. The cost of the mid-life improvements was $1.8M. Including equipment cost, the total is $2.5M.

Marine Mammals and Acoustic Permitting Issues – Mike Prince reported on the status of a potential UNOLS proposal for an in-house expert. He has been trying to get

feedback from organizations that have been involved with marine mammal permitting, including NSF, NMFS, universities and UNOLS operators.

NSF has indicated that they want UNOLS to wait before going forward with a proposal. They would first like guidance from the National Marine Fisheries Service (NMFS) regarding permitting thresholds. Mike has been in touch with Roger Gentry and Ken Hollingshead (NMFS) and they have indicated that there is need for assistance, but it can't come just from one person. They have recommended that UNOLS hire an expert consulting firm for acoustic permitting advice (perhaps through a retainer). They indicate that this would be better than hiring an in-house expert. However, a knowledgeable administrative or project person to track details and facilitate the process would be helpful as well.

Since things are on hold, Mike reported that no additional effort has been spent on defining the task statement for an in-house expert. We need to first hear from NSF. In discussions with NMFS, they feel that the problem needs to be better addressed by all of the agencies.

Mike reviewed the Ship Time Requests (STRs) for 2003-2008 to determine how many requests require support for multi-channel seismic (MCS) work, single-channel seismic (SCS) and multibeam work. For 2003 to 2008 there were 66 requests for MCS, 28 requests for SCS and 312 requests for multibeam support. Requests for 2004, indicate 38=MCS, 16=SCS, and 135=multibeam. NSF has indicated that multibeam does not need to be included in the total requests that might potentially require special acoustic permits. The percentage of ship time impacted by the permitting issue basically equates to almost one large ship. In reviewing the 2003 ship schedules, approximately 415 ship days were for support of MCS, SCS, and multibeam work, or 34 cruises.

The Council discussed the permitting issue and steps that UNOLS might want to take to help move the process along. Dale warned that if UNOLS decides to hire an expert, they need to be prepared to deal with the special interest groups that are concerned with the marine mammal and acoustic issues.

Tim Cowles will contact Jim Yoder (NSF) and Mike Purdy (LDEO) to discuss steps that can be taken to assist in the permitting process.

UNOLS Wires and Cables – Mike Prince reported on plans for developing new wire and establishing safe working load parameters. He had put together a proposal to support this effort and included it as part of the UNOLS 2003/2004 annual proposal. Part of the reason Mike submitted it as part of the UNOLS budget was so that the cost would be shared among the agencies. The agencies recommended that Mike remove the wire proposal from the UNOLS proposal. Instead, they asked Mike to draft a set of functional requirements for the new wire then circulate it to the community for review in a process similar to that used for the SMR development. They hope that if the community has a set of requirements to review, they will be more likely to comment and provide input. Once

the functional requirements have been developed, they can be used as a base for preparing a proposal.

Mike reported that little came out of the series of the meetings that have already been held regarding new wire specs.

The agencies are not opposed to supporting development of a new wire. They would like to have the performance specifications in place first. Tim Cowles commented that the new wire specs would need to consider ROVs and the increasing size of over-the-side packages. Mike indicated that the new wire proposal that had been drafted was not insignificant. It included engineering support, prototype development and testing.

Mike will make the first attempt at drafting the functional requirements and then circulate them to his working group and then to the Council for comment. This would be followed by community review. It was suggested that during the review, those people who respond and show interest in the process should be kept engaged for follow-on efforts.

There was some discussion on the standards for safe working loads. NERC has had to adhere to international codes on safe working loads (SWL) in order to be covered by their insurance agent. It is unclear whether IMO has addressed safe working loads. With a 5:1 SWL many of the operations that are currently carried out on UNOLS vessels would not be allowed. A 3:1 SWL would also be limiting. Jim Meehan commented that NOAA is also interested in this issue. They have been using the UNOLS standard.

Mike will work to develop draft performance requirements for the new wire and circulate it to the Council and people who volunteered to work on the project. He will try to get feed back before the September Council meeting.

Ocean Studies Board's (OSB) Committee on Future Needs in Deep Submergence Science – Annette DeSilva reported on the OSB Committee on Future Needs in Deep Submergence Science (***Appendix IX***). They held their first meeting on May 7-8, 2003 in Woods Hole. Information about the study, their task statement, committee membership, and meetings is contained on their website at <http://dels.nas.edu/deepsubmergence/>. The presentations that were made at the first meeting can be downloaded from the website. There is a button for community feedback.

The committee was tasked to assess the continued role of human occupied vehicles in deep submergence science, within the context of current and projected capabilities of remotely operated and autonomous vehicles, telepresence, seafloor observatories, and other non-human occupied technologies. They were asked to make recommendations regarding the mix of new facilities needed to continue to carry out world-class deep submergence science; and discuss innovative design concepts and technological advances that should be incorporated into any new submersibles to support current and future research needs.

The May meeting opened with a discussion of the Statement of Task by Dan Walker (OSB) and NSF needs by Jim Yoder. The committee was provided with an introduction to the National Deep Submergence Facility (NDSF). Dick Pittenger provided the committee with a history of the NDSF. Dan Fornari discussed NDSF's role in deep ocean research. There was an update on ongoing design efforts for an ALVIN Replacement. Various presentations were made by members of the science community on "Understanding the future of Deep Ocean Research: An Introduction." Bob Embley (DESSC Member) discussed that DESCEND report. Chuck Fisher, Pennsylvania State University, RIDGE Chair, provided perspectives from the RIDGE 2000 program. Jim Bellingham (MBARI) discussed the potential for expanding the role of unmanned vehicles in deep ocean research.

OSB has posted two questions on their website for community input:

- What are the compelling science questions that require access to waters from 4500m to 6500m, from 6500 to full ocean depth?
- How do you incorporate HOV, ROV, and AUV technology into your current research efforts (try to be specific, not philosophical)? How do each of these technologies limit or enable you to achieve your scientific goals?

The second committee meeting is scheduled for June 25-26, 2003 at the Hotel Monaco in San Francisco, CA. The agenda will be available in early June.

Peter Wiebe commented that at the first meeting Jim Yoder indicated that he would like the committee's recommendations by the end of September 2003. Specifically, they would like to be able to answer the question of whether NSF should support development of a new HOV (~$25M) in 2004 and 2005.

Working Group to address Observatory Facility Needs – Annette DeSilva reported on the working group efforts to address ocean observatory facility needs (***Appendix X***). The group met once on February 26th in Boston, MA. Their discussions addressed:

- Deep ocean observatory requirements for UNOLS vessels
  - H2O experience
  - NEPTUNE needs and Cable installation tools
- Deck handling and mooring deployment/recovery needs
- ROV and AUV requirements
- Mapping requirements
- Coastal observatory requirements
- Vessel characteristics, possible improvements, and recommendations for new vessel designs.

Since the meeting, Alan Chave (Working Group Chair) has been collecting additional information from the committee members on:

- Large Buoy servicing requirements
- Long Core winch and deck hardware
- Cable repair ships or comparable vessels
- Industry ROV capabilities

- Feasibility of purchase/lease of multipurpose heavy lift ship, including crew
- ROV and AUV needs
- Mapping sonars for observatory observations
- Examine Ocean and Regional SMRs
- Document aircraft needs
- Lab/deckspace configuration options
- Deck strengthening issues
- Shrouded nozzles
- DP systems

Progress has been slower than originally planned, but the group will have more to report at the September Council meeting.

The Council discussed facility needs. The Cowles/Atkinson workshop report estimated that ship demand would increase. The working group preliminary findings indicate that in addition to increased ship demand there will also be the need for larger, more capable ships for deploying and servicing ocean observatories. These requirements will need to be factored into future fleet plans.

Icebreaker Plans and Major Issues– Lisa Clough reported on Icebreaker upgrade plans and operations. It is estimated that a minimum of $400M is needed for the POLAR SEA and POLAR STAR refits ($200M each). Currently there is no science improvements included in the icebreaker refit plans. The community needs to address the science limitations of the Polar vessels.

The Polar vessels have an estimated hull life of 60 years. There is approximately 30 years left. It has been estimated that there is only 6-10 years left on their major machinery life and 0– 6 years left on auxiliary machinery life. Failures are occurring with increasing frequency. This summer NATHANIAL PALMER will go north to the Arctic because POLAR SEA is not available.

In the extreme case, if the POLARS cannot provide logistical support (due to their condition) to the Antarctic, two of the three US Antarctic science stations (McMurdo and South Pole stations) may need to be closed. At the very least, logistic support of the stations would have to change.

The POLAR class icebreakers are essentially unavailable for support of Arctic science missions for the next few years. Their need for refit combined with the harsh ice conditions forecast in the Antarctic will limit their operations. This will impact science support to the Arctic.

This year HEALY was required to support Antarctic operations. As a result, they broke their rule to limit annual operations to 180 days.

Lisa reviewed the icebreaker schedule year by year for 2004 through 2009. Her viewgraphs are included in ***Appendix XI***. The current scenario indicates that there will

be no icebreakers available to support Arctic work in 2008. That year POLAR SEA will begin its Service Life Extension Program (SLEP), requiring HEALY to support Antarctic Deep Freeze operations. In 2009 HEALY will again support Deep Freeze operations and POLAR STAR is slated to support Arctic operations in its place. NATHANIEL PALMER's contract runs out in 2007.

Lisa continued by reporting that there will be a workshop next week (June 11 & 12) in Seattle to identify science needs for the POLAR SEA and POLAR STAR that should be considered as part of their refits. The group will identify the science limitations of these platforms. The costs of the science upgrades will need to be estimated.

The option of replacing the POLARs as opposed to refits will be addressed by the Coast Guard. The costs of science upgrades will be considered. The costs of fuel (new versus refit) and the costs of crewing (new versus refit) will also be addressed.

An update on these issues and activities will be discussed at the September Council meeting.

Quality of Service, Post Cruise Assessment – Mike Prince reported on efforts to form a subcommittee to review post cruise assessments, identify problem areas, and evaluate the associated feedback and corrective measures. There has been little activity since the last Council meeting. At the last meeting a Post Cruise Assessment Report (PCAR) Review committee was formed and included Curt Collins, Wilf Gardner, Steve Rabalais, Linda Goad, John Freitag, and Dale Chayes.

Suggested tasks for the committee include:

- Determine the Council role in the review process
- Review the PCAR form and overall process
- Evaluate follow-up measures

It was recommended that the group meet virtually and then at the September meeting.

John Freitag remarked that there are several groups of people who submit PCARs (Captains, Marine techs, and the science users). There are certain questions that are only appropriate for certain people. Mike explained that a conscience effort was made to keep the form exactly the same for all. Some times Captains and Technicians provide good self-evaluations.

This committee needs to decide what to do with the material they receive. They will not take on the role of enforcement. It was agreed that the committee would finalize their recommendations regarding their role and present this at the September meeting.

State Department – Tim Cowles explained that Liz Tirpak is working at the State Department Research Clearance Office without assistance. She is working hard, but often clearance issues require 24-hour attention. There have been occasions over the past year that would have benefited by this type of office support.

The UNOLS Office will contact the marine operators to determine if they have encountered any clearance problems, and if so the nature of the problem. Tim can then discuss these issues with Margaret Hayes, Liz's supervisor.

Nominating Committee Report - Annette DeSilva gave a brief report on the Nominating Committee efforts. Bruce Corliss (Chair), Ron Benner and Peter Ortner have been working to establish a slate for the three Council seats opening in September. ***Appendix XIII*** includes details on these positions. The Committee will send the Council a draft slate in the next couple of weeks for their endorsement.

Introduce Draft UNOLS Objectives and Goals for 2003-2004 - Mike Prince drafted objectives and goals and circulated them to Council before the meeting. The intent was to brainstorm and come up with the top UNOLS priorities. Preliminary input received indicates that fleet renewal, ship scheduling, technical services, ocean observatory facility support, PCAs, and marine mammals/acoustic permitting issues top the list. This is based on six replies that were received. Mike would like input from the entire Council. The top priorities will be presented to the agencies and to the membership in September.

Tim encouraged the Council to think about the objectives, priorities and goals overnight and be prepared to discuss them in the morning.

Annual Meeting Plans – Tim Cowles reported that Admiral Richard West, CORE President, has accepted our invitation to be the key note speaker at the Annual meeting. Admiral West can give his perspective of fleet renewal implementation.

It was also suggested that at either the Council or Annual meeting we have a discussion on future opportunities, prospects and challenges. It would be interesting to present some of the issues that are arising, address some of the challenges that we are facing and try to engage the community in these discussions. We can try to alert them in advance that these will be the topics.

1700 ***Adjourn Day One***

Day Two: Tuesday, June 3rd

0830: Welcome – Tim Cowles welcomed the Council back for day-two discussions.

Annual Meeting Plans – The Council briefly discussed items that should be included on the Annual meeting agenda. These include:

- Fleet Renewal
- Icebreakers planning
- Deep submergence facilities
- Regional Class implementation process
- EWING refit/replacement plans

- Ocean observatory facility needs
- Quality of Service
- Technical Service Support
- Marine Mammals and Acoustic permitting

URI/NOAA Proposed Vessel – The Council revisited the topic on URI's plans to acquire a vessel. They had a number of concerns:

- All future ships should be consistent with the fleet plan.
- URI has indicated that the ship will be ready in 2004. This does not fit with the fleet plan timeline.
- By acquiring a used vessel, the research community would be compromised by a vessel that has not been specifically designed for science support.
- URI's plan lacks of institutional competition. The issue of open competition needs to be addressed. It was suggested that the agencies be encouraged to make the operator selections as soon as possible to prevent institutions from attempting to acquire ships that are not part of the plan.
- URI would be operating this ship as a community asset. The community needs to be engaged in the design and decision process.
- There is concern over the Ocean Exploration future funding support for the vessel. URI indicates that the ship will be utilized half its time by the Ocean Exploration program. Will this support extend into the future?
- The cost benefit of the conversion needs to be analyzed. Instead of URI pursuing this vessel, it was suggested that they be encourage to go to agencies with a proposal to do an engineering study to look at this class to determine if it is cost effective option for obtaining Ocean Class vessels. If it does look promising, the ships could then be openly competed by interested operating institutions.

The Council recommended that a letter be sent to URI expressing these concerns. Tim will begin to draft the letter. He requested that the Council send their input over the next week. The letter should clearly state the UNOLS position. The agencies should be copied on the letter, but not the community. The ship needs to meet the UNOLS SMRs.

There was a brief discussion on the UNH/NOAA's plans to acquire a WHOI SWATH vessel. WHOI had decided not to build the SWATH because of lack of funds. UNH has shown interest in such a vessel to support mapping. It would likely be a NOAA vessel. The RFP should go out soon.

Returning back to the Annual Meeting plans, it was suggested that we ask Admiral West to lead a discussion on how we get the funding for fleet implementation. Research ship demand is increasing. The agencies need to be aware of this increase. Budgets also need to be increased to support this increase in demand. The House Ocean Caucus should be engaged and invited to the meeting. There was a suggestion to hold the meeting on the Hill.

UNOLS Missions, Goals, and Objectives – Council members provided Mike with their priority lists at the start of the meeting. Mike compiled the input into a chart and quickly reviewed it. Fleet renewal was at the top of the list. It was suggested that the input be arranged into a top ten list. The list would represent the areas that we will address in the next couple of years. If needed items could be grouped into categories. As an example, the following items might fall under Facility Renewal:

- Academic fleet renewal (FOFC) implementation
- Ocean Observatory facility needs
- Submergence facilities
- Icebreakers

Some of the priorities will overlap and need to be integrated.

It was questioned whether or not education and outreach should be a role of UNOLS. Mike pointed out that it is in our charter.

The UNOLS Office will work with Tim and Peter to draft the list and circulate it to the Council before the September meeting. This will be on the Council meeting agenda for endorsement.

UNOLS Committee Issues (reports and discussion as needed)

Position Openings – FIC, AICC, and SCOAR - Tim Cowles requested Council endorsement for Marc Willis' appointment to FIC as liaison for RVTEC. The Council voted to approve Marc's appointment. There was discussion on the status of the FIC Chair position. One nomination for Chair has been received. The nominee is currently a member of the FIC.

The Council reviewed the AICC membership. Jim Swift has rotated off and Lisa Clough intends to complete her term in the winter. Some people have expressed an interest in serving as Chair. An individual who is familiar with AICC as well as HEALY and Arctic research is desired.

Carl Friehe, SCOAR Chair, will be stepping down to begin an IPA position at ONR. Additionally, the committee has not yet filled all positions. Carl sent a message to the Committee indicating that they should select a chair from within, and then fill the empty committee slots.

SCOAR - In other SCOAR areas, Carl has drafted a letter that SCOAR will ask the UNOLS chair to send to Margaret Leinen asking how NSF will fund aircraft operations on CIRPAS planes.

RVTEC – Dale Chayes reported that the USCG would host the 2003 meeting on 18-20 November in Seattle, WA. The University of Washington and NOAA have offered tours to the committee while they are in Seattle. An evening facility tour of SeaBird

Electronics is planned. HEALY will be in dry dock and if available will be open for an RVTEC tour.

RVTEC liaisons are being considered for the various UNOLS committees and subcommittees. Dale and Steve have discussed a liaison for RVOC. The RVOC Safety Committee and DESSC may also need an RVTEC liaison. Mike included support for the liaison travel to committee meetings as part of his proposal.

The efforts of the RVTEC subcommittee to define technical services were briefly discussed. The Technical Services Subcommittee is working to standardize the format for communicating the services that are provided. The group had a phone conference in March and will continue to draft outlines of the services that their respective organizations provide.

Morning Break

RVOC – Steve Rabalais reported that the University of Minnesota, Large Lakes Observatory in Duluth, would host the 2003 RVOC meeting on 8-10 October. The meeting agenda will include discussions on security, health and medical issues, crew retention, standards for training routines, ISM update, Sea Wave communications, and human factors in ship design. There will be a report on MMPA/ESA permitting experiences on EWING.

The issue of voluntary ISM compliance will also be addressed. Mike Prince had included cost for this in UNOLS proposal, but was told to take it out. Some ship operators are going forward anyway. RVOC feels that they should work towards bringing all ships into compliance or voluntary compliance.

It was brought to the Council attention that the NOAA AMLR project will be advertised for bid soon. In the past SIO and WHOI submitted a proposal to support AMLR. They each spent a lot of effort and funds to submit a proposal, but were declined. Bob Knox stated that the NOAA contracting process was cumbersome. Also the funding model for this work was different than the UNOLS model for ship funding support. Mobilization costs needed to be indicated. UNOLS accounting differs from that used commercially.

Ship Scheduling - Joe Ustach reported on ship scheduling and any associated security issues. Joe's report is included as ***Appendix XIV***. The letters of intents for 2004 are just starting to come in, so it is not clear what cruises will require extra security measures. Charles Dragonette at the Office of Naval Intelligence (ONI) will be asked to review potential schedules and offer security advice.

Initial projections show that although acoustic permitting issues and funding reductions impacted 2003 operations, fleet operating days are up from 2002. One of the biggest impacts on ship scheduling in 2003 was the cancellation of cruises to Vietnam.

Ship time demand for 2004 is very high. Mike Prince presented a chart showing funded ship time as well as programs that would likely be funded. Preliminary projections indicate that demand is higher than available ship capacity. This will be a major issue for ship scheduling. The large ships including KILO MOANA are oversubscribed. Some of the requested ship time will flow over to the intermediates. HOTS cruises will need to find a platform since KILO MOANA will be supporting programs away from homeport. Some of the ship time for 2004 represents deferring programs from 2003 due to budget shortfalls, acoustic permitting, and clearance issues. It is clear that there is a need for additional, more capable ships now.

On a down note, the CalCOFI program might end due to the state of California's financial problems. There are funds to support another year of operations, and then the future is unclear. It is uncertain whether NOAA can pick up difference.

The ship scheduling meeting is slated for July 23.

DESSC – Annette DeSilva reported on plans for the June DESSC meeting. Viewgraphs are included as ***Appendix XV***. The meeting will start with agency and UNOLS Reports. These will be followed by science reports from Patty Fryer and Debbie Kelley on their recent cruises. The National Facility operators report will cover NDSF vehicle operations summary, a status report on the WHOI archives, NDSF Chief Scientist replacement plans, and upgrades plans for the vehicles. The DESSC will discuss winter meeting strategies. The agencies have indicated that DESSC cannot hold their annual meeting at the Fall AGU meeting in San Francisco. Instead they have indicated that DESSC should hold their meeting at the Ocean Sciences Meeting in Portland, OR in January 2004.

Other areas to be addressed at the DESSC meeting include the OSB Committee on Future Deep Submergence Facility Needs, long-range planning issues, ocean observatory facility needs, outreach, education and archeology, and the New Alvin Design study.

Tim Cowles reminded us that access to shallow submergence assets still need to be addressed by DESSC.

SCOAR – Charlie Flagg reported on SCOAR activities. The committee held their inaugural meeting on February 25-26, 2003 at CIRPAS in Marina, CA. It offered an opportunity for the committee members to meet each other, the CIRPAS operators, and agency representatives from ONR, NSF_GEO/ATM, NOAA-AOC, and NASA. The group toured the CIRPAS facility and reviewed the facilities that are available, which include both human occupied and unattended vehicles.

The Committee reviewed their membership, goals, and objectives. Their initial goals include providing the ocean science community input to CIRPAS and promoting the availability of aircraft for ocean sciences. They like the concept of the ship time request form and a UNOLS-type model for scheduling aircraft. First they need to identify the

facilities that are available to support oceanography. They will use the aircraft brochure being developed by FOFC as a resource.

Mike Prince reported that he attended the NCAR aircraft scheduling meeting. A lot of time was spent at the meeting reviewing actual proposals and deciding how to best use the facilities.

FIC – Larry Atkinson reported that the Committee members continue to conduct KILO MOANA debriefs after each cruise. An article on the ship's preliminary operations was written by FIC that will be published soon in EOS. In general, the ship users have been pleased with the ship. The most common complaint heard during the debrief interviews concern the ship's high freeboard. This makes loading and off loading the ship more difficult. The ship has not yet had operations in rough weather and high seas. A moon-pool was added to the ship in early winter for CTD operation. However, there have been problems with the moon-pool doors and tight clearances. The CTD operations still must be conducted from over the aft end. The ship's ADCP is still not working. University of Hawaii had attempted to find competition for the sole provider of ADCPs. Unfortunately, the competitor they selected has not provided an operational ADCP.

FIC will provide the community with another update on KILO MOANA after a full year of operations.

The meeting adjourned at 11:45 am.