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UNOLS COUNCIL MEETING

Thursday, September 26, 2002, 8:30 am

National Science Foundation
Room 1235

Meeting Summary Report

Appendices

I. Agenda

II. Attendees

III. Fleet Renewal – FIC Report

IV. Post Cruise Assessment Report

V. 2002 UNOLS Accomplishments

Bob Knox, UNOLS Chair, called the meeting to order at 0830. The meeting participants introduced themselves. The meeting agenda is included as ***Appendix I*** and the attendance list is included as ***Appendix II***.

Accept minutes of June 2002 – The minutes of the June 2002 Council meeting were approved as written.

Fleet Renewal Plan Implementation: The Council and meeting participants discussed the Fleet Renewal Plan and the implementation strategies. The discussion began with a report by Larry Atkinson, Fleet Improvement Committee (FIC) Chair, on the FIC meeting and renewal activities. Larry's slides are included as ***Appendix III***.

Larry emphasized that UNOLS, the agencies and the community need to keep the fleet renewal process moving and stay on track.

The Congressional (HASC) report language requires the Navy to provide a report to Senate by 1 Feb 03: "The committee believes that scientific knowledge of the oceans and ocean environments makes a critical contribution to U.S. national security and commercial vitality. The committee notes, that in large part, U.S. scientific expertise in oceanography and ocean sciences is sustained by the Office of Naval Research and the National Science Foundation partnership that provides oversight of the University-National Oceanographic Laboratory System (UNOLS) fleet.

The committee recognizes the age of the UNOLS fleet and the need for a rational plan for renewal of the fleet over the next ten years. Therefore, the committee directs the Secretary of the Navy to submit to the Senate Committee on Armed Services and House Committee on Armed Services no later than February 1, 2003, a report detailing specific requirements and outlining a specific plan for UNOLS fleet renewal. The report should include specific recommendations on the numbers of each class of ship to be maintained in the UNOLS fleet, their geographic distribution, the schedule for their replacement, and estimates of ship construction costs."

At the FIC meeting, Jim Yoder announced that NSF is considering a new mechanism for funding mid-size infrastructure. This mechanism may be a method for funding Regional vessel construction as long as the cost per ship is limited to $25M. NSF would like to be able to begin construction in 2005. This means that the Science Mission Requirements (SMRs) for the Regional Class vessels must be available soon. Conceptual Design development will be based on the parameters defined by the SMRs.

The FIC meeting included a report from Dan Rolland, a Naval Architect from JJMA, on the preliminary findings of the Navy's Common Hull study. The purpose of the study was to minimize acquisition costs and maximize technology leverage for new Navy oceanographic ships by examining the feasibility of a common (or similar) hull platform for future AGOR (UNOLS Ocean and Regional Class) and T-AGS ships. The study also included the development of Rough-order-of-magnitude (ROM) designs for each ship class considered. A variety of hull forms were considered and included, the monohull, SWATH, SLICE, Trimaran and catamaran. The preliminary findings of the study reveal that there is minor commonality of desired capabilities among the Ocean Class and Regional Class vessels and the Navy T-AGS. It would not be a practical option for acquisition of the UNOLS and T-AGS vessels.

Larry showed the FIC Roadmap flowchart and indicated that we currently in the SMR development phase. The Roadmap shows that community input is needed during almost all phases of the renewal process. Community feedback is essential.

Ocean and Regional Class SMR development is in progress. Community meetings for each ship class were held this summer in Salt Lake City, UT to establish science mission requirements. Seagoing scientists, ship operators, naval architects, marine technicians and agency representatives participated in the workshops. The draft SMRs will be available on the UNOLS website after a summary and table are added. Then the documents will be open for community review.

The various SMR parameters that were considered included accommodations, operational characteristics, over-the-side and weight handling, science working spaces, science and shipboard systems, construction, and operation and maintenance costs. There are some Ocean Class and Regional Class SMRs issues that will require additional attention:

- Identify areas where consensus could not be reached.

- Address regulatory concerns – What are the implications of limiting the Regional ship sizing to <500 GT and $25M?

- Should the Regional vessels be designed as a class of vessels?

- How do geographic operating differences impact ship design?

The SMR areas that may need additional attention include speed, sea keeping, station keeping, noise standards, and acoustics. Additional mission scenarios are also needed. These will be included as part of the SMR document.

In summary, the next steps in the SMR process will be:

- Add a short summary and table to each of the SMR documents

- Regional class - add text to note that geographic regions may have differences in design requirements

- Post the documents on the UNOLS website.

- Announce to the community that the SMRs are available for review and comment.

- Make the SMR documents available at the UNOLS booth during the fall AGU Meeting.

Larry continued with reports on the various design efforts in progress. The ARRV model tests are nearly complete. It has been decided to remove the helicopter capability. Terry Whitledge will give a full report at the Annual Meeting.

KILO MOANA has entered the fleet and is beginning science operations. The ship is the first SWATH vessel in the UNOLS Fleet. The unique characteristics of the vessel make at-sea science operations different from conventional hull ships. FIC plans to evaluate the vessel as a science platform. They are conducting phone debrief interviews. Larry reviewed the debrief questions and asked the meeting participants for feedback. It was recommended by FIC that there be a motion evaluation performed between the SWATH and monohull ships. Both KNORR and MELVILLE have POS-MV systems to measure motion. The Sea State conditions during ship operations should also be recorded with the motion data. This information is needed so that we can make educated decisions regarding SWATH and monohull choices. Chris Measures will show a video of KILO MOANA during the lunch break.

Larry remarked that the design plans for the CAPE HENLOPEN Replacement Vessel (CHRV) are proceeding. The design provides for a highly capable ship 138-ft in length with a 33-ft beam. The estimated cost for the project is $10M to $12M (design and construction). University of Delaware's process for designing a replacement vessel has been a great model of how to include the community in the process.

Larry reviewed the timeline for the Ocean Class vessels. The timeline outlines the traditional design/construction process. There are other options for design and construction that may be faster, but FIC is very concerned that the community have the opportunity to be engaged in whichever process is taken.

Larry summarized the FIC task items:

- Proceed with the SMR process and engage the community input.
- Keep the renewal process moving.
- Conduct KILO MOANA phone debriefs.
- Call for nominations for new FIC members.

In closing, Larry took the opportunity to show a few pictures of his University's new vessel, R/V FAY SLOVER. The ship is 55 feet in length and has a speed of 22 knots.

Ocean Commission Hearings – Bob Knox reported that there is nothing new to report. The Commission heard about the need for fleet renewal repeatedly. The staff has been developing a matrix of available ocean facilities that includes ROVs, facilities, submersibles, ships, etc. The Commission's final report is due in June.

Bob reported on the CORE/UNOLS breakfast with Congressional staffers. The breakfast included presentations by Carolyn Thoroughgood, Vera Alexander and Bob Knox. There was a live webcast from REVELLE in operations off Hawaii. The breakfast was well attended and included staffers. These are the types of activities that need to continue to keep fleet renewal at the forefront.

Aircraft Facilities – Mike Prince reviewed the ballot issue for establishing CIRPAS as a National Oceanographic Aircraft Facility and establishing the Scientific Committee for Oceanographic Aircraft Research (SCOAR). The proposal before the Membership is to include the facility at CIRPAS as a National facility and to also approve the formation of an advisory committee for these types of facilities. The agencies seem supportive of adding CIRPAS as a National Facility.

Mike advised the Council that if CIRPAS becomes a National Facility the status of the Naval Post Graduate School (NPS) would change from Non-operator to Operator institution (NPS is the operator for CIRPAS). If NPS is an operator institution, then Curt Collin's status on the Council would change and this would violate the council membership balance in accordance with the UNOLS Charter. Approval is needed to keep Curt on the Council.

There was some discussion on the Charter ambiguities/inconsistencies. In this particular case we went with the higher standard and are requiring membership approval of the Facility.

Mike reviewed the proposed SCOAR committee membership. Carl Freihe (UC Irvine) has agreed to serve as the Chair. Other potential members include John M. Bane, Jr. (University of North Carolina), Charles Flagg (Brookhaven National Laboratory), Ken Melville (SIO, MPL) and Daniel D. Riemer (University of Miami). Additional members may be added. There will be ex-officio members from CIRPAS and California Institute of Technology.

Nominating Committee: Curtis Collins, Nominating Committee Chair, review the nominations for the Council Slate.

UNOLS CHAIR (2 year term) – Individual affiliated with any UNOLS Member Institution:

Dr. Tim Cowles – Oregon State University

Dr. Marsh Youngbluth – Harbor Branch Oceanographic Institution

UNOLS Chair-Elect (2 year term) - Individual affiliated with any UNOLS Member Institution:

Dr. David Hebert – University of Rhode Island

Dr. Peter Wiebe – Woods Hole Oceanographic Institution

Operator Representative (3 year term) - from among designated UNOLS Member Operator institutions:

Dr. Garry Karner- Lamont-Doherty Earth Observatory of Columbia University

Dr. John Kelley - University of Alaska at Fairbanks

Dr. Peter Ortner- U. Miami/Atlantic Oceanographic and Meteorological Laboratories

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

Dr. Denis Wiesenburg - University of Southern Mississippi

Dr. Doug Ricketts - University of Minnesota, Large Lakes Observatory

Dr. Toby Garfield - San Francisco State University, Romberg-Tiburon Center for Environmental Studies

There were no comments on the slate as presented.

Dennis Hansell is completing his second term on the Council. The Council extended their appreciation for his service.

Quality of Service Initiative – Mike Prince reported that the revised Post Cruise Assessment (PCA) has been implemented. He provided a summary of reports received. These are included as ***Appendix IV***.

His summary showed:

- The number of reports received using the new form since 7/1/02.

- The response by ship

- The percent of new PCA from chief scientists and from ship captains

- The total PCA forms received (old and new)

One of the next steps is developing a way to make it easy to complete the form from aboard ships. There is some concern that we might get too many PCA reports. The Office will keep abreast of this.

In summary:

- The new form is generating many reports with useful feedback in the comments.

- The ratings seem to promote good descriptions.

- Some reports just use the ratings – no comments.

- It is too early to evaluate the benefit or meaning of the ratings.

- There have been several objections to the rating system by the science parties.

Next steps:

- Need to phase out old form and set up automatic reminders,

- On board access to improve return – We will work with several institutions to make the form accessible on board without being connected.

- Create online method for drafting responses.

- Create meaningful summary reports for operators, council and agencies from PCARs

- Use feedback to make improvements, quality program

- System wide quality monitoring – Council, operators, agencies.

The floor was open to discussion. It is important to have a clear statement at the top of the PCA form explaining the purpose of the form and how the information submitted will be used. Joe Coburn asked if the operators would still receive the PCA reports, as they are a very valuable source of information –Yes.

Chris Measures commented that on his recent cruise aboard a SIO ship he opened the PCA process to the entire science party. This was a trial process. Bob Knox remarked that some of the reports received from Chris' cruise were "off the wall," but most were useful. SIO feels an obligation to respond to all reports. Now that there are multiple reports from the same cruise, they plan to respond in a consolidated way.

It was questioned why the marine technician response is so low. Mike replied that this issue will be addressed at the upcoming RVTEC meeting in November. The marine techs currently are not on the distribution for the PCAs submitted by the Chief Scientists. Many have expressed an interest to be on the distribution. It is likely that this would increase feedback from the Technicians as well.

Mike Reeve thanked the UNOLS Office for getting the form up and running.

Committee Activities: Full committee reports will be provided at the Annual Meeting.

Ship Scheduling Committee (SSC) – Joe Ustach was pleased to report that most of the 2003 scheduling problems have been resolved. This is in large part due to the efforts of the PIs, schedulers, and agency program managers. Joe provided a rough estimate of the scheduled utilization for 2003. The small vessels are estimated to be at full capacity. The Class IV vessels are scheduled at approximately 87% capacity. This includes the time for the CAPE HATTERAS mid-life improvements. The Intermediate ships are scheduled for 78% utilization. The large ship demand is high, 98% capacity (225 – 310 days). Since some of the work is still pending, some programs may drop out and some things may be added.

There are some programs requesting large ships that had to be deferred to 2004. There was a long look at these programs to determine if they could be carried out by intermediate ships. Some work was put on the SEWARD JOHNSON II, which had a light schedule. The primary reason for deferring programs until 2004 was due to demand for ROVs, survey work, and multi-mission programs.

Chris Measures asked if we should revisit the FOFC plan projections with the latest ship time statistics. If demand continues to increase, we will run out of available ships soon if they are not replaced.

Research Vessel Security and the impact on scheduling (SSC & RVOC) –Dan Schwartz (Chair of the RVOC Security Subcommittee) reported that there is a lot of maritime security information on the web and some of it is useful. The operators have

been asked to check their schedules and consult their underwriters if their ships will be entering any questionable areas.

Other security measures that are being taken include:

- Making local inquiries regarding security issues.

- Communicating with the State Department.

- Monitoring various security websites.

- Distributing the weekly Worldwide Threats messages sent by the Office of Naval Intelligence to the UNOLS ship operators.

In 2003 work is scheduled off Vietnam. Being there and getting there involves going through high-risk areas. They are taking all measures possible to provide security to the science party and vessel. This included special instructions for port stops, shipments and operations in general.

Dan reported on new regulations from the USCG regarding arrival and departures to/from U.S. ports in order to enhance Homeland Security. Included in these rules is a requirement for a 96-hour notification on ship movements and a new USCG form on all personnel must be listed along with citizenship, passport numbers and birth dates. Personnel documentation for the crew and science party is important and all must bring passports for foreign travel. U. Washington is requiring that the science party list be provided no later that four days before the cruise and no changes will be allowed after that time. This includes participation by foreign observers.

R/V Safety Standards (RVSS) and RVOC Report – Tim Askew (RVOC Vice-Chair) reported that the 2002 RVOC meeting will be held in Moss Landing, CA and will be hosted by Moss Landing Marine Labs (MLML) and Monterey Bay Aquarium Research Institute (MBARI). A variety of presentations are planned include a report on ship design and its effect on crew and sickness, research vessel security, and winch and wire standards. Jamestown Marine will report on ISM compliance and feedback from the NSF inspection program. Woody Sutherland and Sandy O'Brien will discuss radioisotope use on vessels. NOAA will report on their medical standards for science parties. An update of the RVSS has been in progress over the past year. A few outstanding items remain. A review of the RVSS update will be done after the RVOC October meeting. After RVOC review the update will be forwarded to the Council for endorsement.

Defined Levels of Technician/Instrumentation Support (RVTEC) – Annette DeSilva reported that this has been an issue that has been extremely difficult to get off the ground. RVTEC sees some complex issues associated with defining standard levels of service. However, RVTEC does recognize that this is important and that they need to address it. A session is planned at their November meeting.

In addition to defining levels of service, there is also a desire to establish an inventory of scientific instrumentation and capabilities by ship. Dale and Annette have been discussing various approaches to establishing an inventory. This will be addressed as well at the RVTEC meeting.

NASA/NOAA LINK Symposium (DESSC) – Patty Fryer reported on the NASA/NOAA supported LINK Symposium held on 20-22 May 2002 at NASA's Kennedy Space Center, <http://www.thelinkproject.org/index.asp>. The purpose to the symposium (as stated on their website was to:

- "Facilitate technology exchange between the ocean and space science and engineering communities through technical sessions;
- Highlight recent and future advancements in technology that may benefit both ocean and space exploration;
- Describe the role of technology in deep sea and interplanetary exploration and their potential to answer fundamental questions about the origin and distribution of life;
- Provide a forum for inspiration and vision for future cooperative sea-space efforts."

Technical sessions were held. Jim Bellingham chaired a session on AUVs, Patty chaired a session on sensor and tools, and Barbara Moore was the Chair for a session addressing human submergence habitats and submersible needs.

They would like to make an inventory of sensors and tools available on the web. – Andy Shepard will provide this information to the UNOLS Office for posting. It will be a living resource. Andy is also trying to get funding for some of the major recommendations from the symposium.

Shallow Submergence Science Committee – ad hoc (SSSC) – Patty Fryer continued with at report on the SSSC ad-hoc committee. The SSSC met before the May DESSC meeting. The major issues that they addressed were:

- Development of science themes for shallow submergence science.

- Developing an inventory of available shallow submergence assets.

- Reviewing the process for access of shallow submergence facilities.

- Evaluating the mechanism for funding these facilities.

- Discussion on ways to increase the funding base for submergence science.

These items will require further attention. We will be hearing more from the SSSC at the December DESSC Meeting.

New Deep Submergence Vehicles (DESSC) – Patty Fryer reported that Woods Hole Oceanographic Institution has been funded to conduct a design study for an ALVIN replacement. The design would call for a 6000+ meter vehicle. ALVIN is reaching the limit for design variations. Bob Brown (WHOI) has assembled a scientific group to advise on the project. This group met in May, following the DESSC meeting.

In a related topic, there has been interest expressed in developing a full ocean depth human occupied vehicle (HOV). DESSC feels that this would not be practical and would not best serve the submergence community. They recommend that an AUV be used for full ocean depth work.

The new Jason II is operational and has been field-tested. They have been successful with long lowerings. A tremendous amount of work was accomplished using the vehicle for Paul Johnson's cruise. The Keck Foundation and NSF funded the new vehicle.

The question was asked what would be the benefits of a new ALVIN. Science and operational improvements include:

- Increased bottom time.
- Increased energy capacity.
- Improved fields of view.
- Increased access to the seafloor.
- Improved interior ergonomics.
- Increased interior electronics and science payload.
- Reduced physical and chemical disturbances to science study areas.
- Improved battery access.

AICC – Lisa Clough reported that the HEALY conducted a very successful science mission for SBI over the summer. She reported on a number of issues that were addressed at the AICC meeting:

- The AICC is addressing a new clearance issue involving Native American hunting issues and other cultural differences. A post cruise assessment was completed for a HEALY cruise and it addresses cultural differences.

- The AICC is continuing with science user debriefs for HEALY. The agencies are involved in the debriefs. The Polars will also be included in future debriefs.

- AICC plans to send a letter to the agencies recommending that underway data be collected at all times from HEALY when practical.

- Radioactive Use – The policy aboard HEALY is that no radioactive substances will be allowed "in the skin" of the ship.

- Polar Class Midlife – The Polar Class icebreakers are facing their 30-year midlife (full life is 60 years). If there is to be a mid-life upgrade, AICC will recommend that the science community participate in the planning.

Break

Other Issues:

Ocean Commission - The last Ocean Commission regional meeting (Chicago) was held earlier in the week. Bob Knox reported earlier in the meeting on UNOLS involvement in the Ocean Commission hearings.

ISM Status of Compliance - Bob Knox reported that all of the large ships are in compliance. Tim Cowles remarked that each institution has a slightly different approach to the compliance requirements and procedures. Joe Coburn explained that in order to meet the deadline for compliance, the large ship operators did not have an awful lot of time to consult with each other. The operators have not gotten together yet, but they can and are willing to do this. The ISM compliance requires many new pre-cruise obligations both from the operator and the science users. Dan Schwartz indicated that many of the procedures could be revised, so if one institution has a better method let the operators know. Joe remarked that OCEANUS has also received a certificate of voluntary compliance.

WINCH & WIRE Follow-on Activities - Mike Prince reported on plans to develop "Science Mission Requirements" for oceanographic wires, cables and ropes and to develop standard criteria for safe working loads (SWL). Last year, Mike had posted a community call for science mission requirements for wire. One response was received from Kenneth Coale. A couple of ad hoc meetings were held to try to get input to the process, but nothing has gotten off the ground. Mike will prepare a proposal that outlines a detailed approach for developing a next generation wire. Focus is on the CTD cable with the capability to lower heavier packages to deep depths without straining the wire. This won't be easy and will require experts. The proposal will include design of a prototype wire. They will also need to address safe working load criteria. A program similar to the computerized program for stability is desirable. Mike is working with a group of people to prepare the proposal. This will be an item of discussion at the November RVTEC meeting.

There are safety regulations and some insurance issues that may be associated with the safe working loads. The British have some pretty tough safety requirements that they must adhere to. Mike has been in contact with the British regarding their safe working load criteria. They are requiring safety factors of 2.5 for their wires.

Status of NAVO Ship Time Funding – Bob Knox reported that NAVO funding for ship time is not going to happen this year. It has been dwindling and never could added to the Navy's budget. For those that have supported NAVO ship time, the relationships formed have been good.

Paul Taylor added that the NAVO/UNOLS work was a six-year program and the Navy benefited greatly from it. On behalf of NAVO, Captain Rudolph, the late Gordon

Wilkes, Paul, and CMDR Jim Trees he extends a big thank you. Mike remarked on all of Gordon's efforts that went into making the program a success.

Fleet Capabilities needed to support Observatories – Larry Atkinson reported that there is a lot of observatory operations and planning underway. It is hard to imagine that ship time demand won't go up. Some of the observatory experts have provided feedback to the SMRs. UNOLS will need to keep watching this. There may be some urgency in trying to define their facility needs as well as maintenance issues.

Discussion followed:

Beth White commented that FOFC is also interested in this.

Observatories will require regular maintenance as well as repair during sudden failures. Facilities will need to provide support for event response work.

Dan commented that TOGA-TOA is an operational observatory system. There are plans to move the TOA array to the weather service. They don't have much experience with the ship operations and it will be interesting to see what sort of support they will need.

Mike commented that the observatory/facility issue has the attention of FOFC. Larry Atkinson is on Ocean.US and is also involved with observatory issues. UNOLS needs to stay in touch with this and be aware of observatory meeting venues.

UNOLS Outreach Forums – Mike Prince reported on upcoming UNOLS outreach activities. UNOLS will have a booth at the fall AGU meeting. The booth will feature fleet renewal. At the MTS Oceans 2002 meeting, Annette will present a paper on the fleet renewal process.

UNOLS Proposal and Future Meetings – Mike is preparing a proposal for 2003/2004 and will have it drafted in the early part of 2003. This will include a 3-year proposal for the next grant. The proposal will be peer reviewed. Input will be needed from committee chairs and the Council. Travel will be a part of the proposal, so we need to establish the meeting schedule for 2003/04.

Review goals and priorities for the coming year - Mike Prince reviewed the goals for 2002, accomplishments, and priorities for the coming year. These are included in ***Appendix V***.

The goals for 2002 included:

- Create schedules by September – accomplished.
- Improve ship time and scheduling system – this is ongoing.

- UNOLS office will work with the federal agencies, PIs and ship schedulers to improve the systems that support ship-time requests and scheduling.

- A planning meeting was held July 18th followed by e-mail discussion on scheduling system improvements.

- Trial changes to existing system were developed and tested.

- Some minor improvements have been implemented.

- A proposal for a comprehensive new system is being developed.

    - Quality of service implementation

- Completed revision of post cruise assessment form and implementation.

    - Improve training and preparation for safe and secure operation – ongoing.
    - ISM Implementation – All of the large ship operations are in compliance. We need to ensure that scientists are being kept informed.

Mike will provide a brief report of major items at the council meeting.

Next Mike reviewed the goals for next year. There was some discussion on how to present the information. It was suggested that the list be a bulleted list of highlights. With the full list provided as a handout.

2003 Calendar - The 2003 calendar was discussed. AICC would like to move their meeting to February in Seattle. There was some discussion of having FIC joining them.

We discussed the September week of UNOLS meetings and their timing. It was generally agreed that this format is working and would continue.

There was some discussion on the UNOLS/CORE relationship. We need to make sure that they continue to be engaged in our fleet renewal efforts.

The meeting was adjourned at 1630.