

DRAFT
UNOLS ANNUAL MEETING
8:30 A.M., Friday, 15 October 2004
National Science Foundation, Stafford II Building, Room 555
4201 Wilson Boulevard Arlington, VA

Appendices

1. [Meeting Agenda](#)
2. [Meeting Participants](#)
3. [Report by UNOLS Chair](#)
4. [Keynote Address – Bob Winokur](#)
5. [Report by RADM J. Cohen, Chief of Naval Research, ONR](#)
6. [Report by Frank Herr, ONR](#)
7. [NSF Major Research Equipment Account Timeline](#)
8. [Fleet Improvement Committee Report](#)
9. [CAPE HENLOPEN Replacement effort](#)
10. [ARRV Design Status](#)
11. [EWING Replacement Plans](#)
12. [UNOLS Charter Revisions](#)
13. [UNOLS 2004 Council Slate](#)
14. [Arctic Icebreaker Coordinating Committee \(AICC\) Report](#)
15. [DEep Submergence Science Committee \(DESSC\) Report](#)
16. [Research Vessel Operators' Committee](#)
17. [Research Vessel Technical Enhancement Committee \(RVTEC\) Report](#)
18. [Ship Scheduling Committee \(SSC\) Report](#)
19. [Scientific Committee for Oceanographic Aircraft Research \(SCOAR\) Report](#)
20. [Thank You from Tim Cowles](#)
21. [2004/2005 UNOLS Goals and Priorities](#)
22. [Issues Before UNOLS, Elections Results, Appointments to Committees](#)

0800 Coffee and Pastries

0830 Introduction and Welcome: Tim Cowles, UNOLS Chair, called the meeting to order and welcomed everyone, noting that the attendance was much better in the absence of hurricanes. The meeting agenda is included as Appendix I and the attendance list is contained in Appendix II. He gave a brief summary of the issues of current interest to UNOLS and the accomplishments of the past year, which included the following ([Appendix III](#)):

- Fleet renewal – FIC has had a busy year.
- Regional Class SMR prioritization – FIC did a great job getting that done.
- Vessel retirement dates and Service Life Extension Programs (SLEPs)
- Ocean observatories facilities needs - UNOLS Report (Alan Chave, Chair).
- Deep Submergence Science Facilities
- Community input to NSF on *Alvin* Replacement and Hybrid Remotely Operated Vehicle (HROV) development

- Training session of National Deep Submergence Facility (NDSF)
- Arctic Coordination
- Aircraft for Oceanography – SCOAR -
- Vessel Scheduling – UNOLS Ship Scheduling Committee (SSC) resolved complex scheduling issues created by budget situation.
- Quality Improvement: Post-cruise assessment process, *Kilo Moana*: PI debrief after each cruise
- Community Engagement/Outreach
- MTS article on Fleet Renewal
- EOS article on aircraft for oceanography

Continuing issues:

- Effective assessment of science demand for facilities
- Marine mammals/acoustics/scheduling
- Ship security plans
- Support for recommendations of the US Commission on Ocean Policy report
- Frequency spectrum management and ocean observatories

Keynote Address

Robert Winokur, Technical Director for the Oceanographer of the Navy and the current chair for the Federal Oceanographic Facilities Committee (FOFC) provided the Keynote Address.

Tim Cowles introduced Bob Winokur who began by remarking that this was a little bit like back to the future. Having worked for years on oceanographic ship issues he had moved on to spend ten years doing satellite related work. Now he is back to ships. In his address this morning he will attempt to tell you what the Federal Agencies are doing, primarily with regard to renewal of the Oceanographic research fleets as well as with some related issues if there is time.

Over the last year the Oceanographer of the Navy's office was reorganized, combined with the Navy's Force Net command and has moved to Crystal City.

Interagency Activities

Key Inter-Agency Activities include:

- FOFC Fleet Renewal Plan update
- U. S. Council on Ocean Policy (USCOP)
- National Ocean Partnership Program (NOPP) Strategic Plan (Briscoe)
- Ocean.US update (Malone)

Bob discussed the various interagency activities – represented by a host of acronyms. It is mostly important to remember that there is a real attempt at coordination with regard to ocean science issues associated with these organizations. A lot of this interagency activity was stimulated by NOPP. Agency specific interests are usually maintained within the interagency focus.

Budget activities are a major focus for FY05 and FY06. Defense has a budget – but not a lot of flexibility given the expenses for current operations. They are starting to set the stage for FY07. At any given time they are working on three budgets.

FOFC was established over 20 years ago as the Federal Oceanographic Fleet Coordinating Committee (FOFCC). More recently the emphasis was broadened to include all oceanographic facilities and the reporting structure was defined such that FOFC reports directly to the National Ocean Research Leadership Committee (NORLC). Membership includes the National Science Foundation, Navy, NOAA, USCG, MMS, DOE, State and other agencies with ocean related programs. Their objectives include the exchange of information and the review of Federal requirements for oceanographic facilities.

Bob discussed the current Oceanographic Fleet of vessels over 40 meters, reviewed the ships in each fleet and the age of various vessels/fleets and therefore the need for renewal in all sectors of the federal fleet.

The current Federal Oceanographic Fleet consists of several components:

- Navy research and survey ships, which are relatively new over the last 15 years
- NOAA ships are in the process of being replaced.
- EPA is benefiting by the end of the cold war – getting Navy ships.
- USCG – *Healy* is new, but POLARs are aging.
- UNOLS Fleet with Navy, NSF and institution owned vessels.

It should be noted that the Navy has no more T-AGOS to give away.

FOFC Integrated Fleet Renewal Plan

A FOFC summary of activities both completed and planned include:

- September 2003 polled the agencies to see who would participate in Fleet renewal activities.
- April 2004 agencies surveyed with questionnaire
- July 2004 held retreat and created an outline and plan for completing the plan
- Additional workshops will be held
- 1st Draft 31 March 2005
- Draft for NORLC approval 31 July 2005
- Final report by 30 September 2005

Fleet Survey Questions was distributed to the various agencies seeking answers in the following areas:

1. A) What requirements does your agency have for oceanographic vessels?
B) What types of missions or research disciplines do the vessels require?
2. A) What is the composition of your agency's current oceanographic fleet?
B) What capabilities does it meet?
3. A) What are your agency's views on the composition of the academic fleet?
B) Does the composition need to change from the current plan for renewal?

4. A) Does your agency have a renewal plan for its oceanographic vessels?
B) Is there an implementation plan for the renewal?
C) Is it funded?
D) What controversial issues need to be considered?
5. Can your agency provide an estimate of the higher costs for maintaining an aging fleet vs. vessels that are operating within their expected life span?
6. Can your agency project how unmanned underwater vehicles (UUVs) may affect your use of the research fleet over the next 5-10 years?
7. Should local class vessels be considered in the next version of the FOFC plan?

A summary of some of the responses looks like this:

- A) Agencies with renewal plans - NSF, NOAA, ONR, USCG
- B) Agencies with current implementation activities - NSF, NOAA, ONR, USCG
- C) Funds for implementation - NSF, NOAA
- D) Issues to be addressed - Ocean Class, IOOS/ORION, UUV

The key elements of the coordinated national plan were described and Bob showed the outline of the report. He also discussed the potential impacts of not doing anything.

- Identify renewal cost and schedule for federally funded fleet
- Articulate needs with balance between operational missions and science initiatives
- Agency specific and coordinated funding strategies
- Address specific/special purpose vessel requirements
- Increase partnering opportunities, where possible, with respect to fleet operations and renewal
- Assess impact of emerging technologies, i.e. unmanned vehicles
- Assess impact of emerging needs, i.e. ORION, IOOS
- Reference ship design and concept studies
- Includes ships > 40m in length
- Includes polar vessels

Chapter Summary for the “Coordinated National Plan”

- Executive Summary
- Introduction
- Missions and Requirements
- Existing Capabilities/Capacities
- Gaps/Impacts
- Concept Designs
- Recommendations
- Implementation Strategies
- Summary

The Missions and Requirements chapter could include the following for each agency:

- Description/History
- Tools/technologies
- Vessel(s) type
- Days At Sea

Other vessel requirements (< 40m)

The Gaps and Impacts Chapter Outline addresses what happens if plan is not carried out:

- Gaps
 - Gap in Ship Days
- Impacts
 - Graph
 - Mission based summary of science loss due to gap in ship days
- Examples:
 - Impacts to the Nation
 - Cannot implement IOOS
 - Loss of National competitiveness
 - Increased maintenance cost

Key Challenges for FOFC renewal plan

- Right fleet size and composition to meet current and evolving needs –Regional, ocean, global class and special purpose
- Lessons learned from Academic Fleet Renewal Plan
- Agency specific plans
- Affordable
 - Construction
 - Operating costs
- Role of service life extension
- Timing –up to 10 years from concept to launch
- Partnering opportunities
- Charter vs. ownership for special facilities, i.e. cable layers heavy lift ships
- Leverage Committee on Ocean Policy (COP) report recommendations
- Ensure balance

The way ahead – coordination and cooperation with UNOLS is key to success of the FOFC plan, it is important to have consistent and complimentary messages. Work on the renewal plan has started and will become a concerted effort to achieve completion by 30 September 2005 and it will require a continuing dialog and an effort to harmonize schedules between FOFC and UNOLS/FIC in order to work together and attain our mutual goals.

Ocean Commission Report

The final report was issued 20 October 2004.

Final recommendations applicable to UNOLS include:

- #27-4(n) - Congress should create a mechanism to ensure a dedicated funding stream for critical ocean science infrastructure and technology needs. Spending

priorities should be based on the National Ocean Council's ocean and coastal infrastructure and technology strategy. High priority areas for funding include the following:

- the renewal of the University-National Oceanographic Laboratory System fleet and other essential air fleets and deep-submergence
- the ongoing modernization of existing assets, including telecommunications assets, laboratories, and other facilities.
- #8-9 c - Ocean.ED should promote partnerships among government agencies, school districts, institutions of higher learning, aquariums, science centers, museums and private marine laboratories to develop more opportunities for students to explore the marine environment, both through virtual means and hands-on field, laboratory, and at-sea experience.
- #27-6 c - The National Oceanic and Atmospheric Administration should establish four to six national virtual marine technology centers at existing institutions to provide coordinated access through electronic means, to cutting-edge, large-scale research technologies.

COP response Process:

- 20 December – administration has 90 days to respond and provide a statement of proposals to Congress.
- CEQ has the lead. The Interagency Ocean Policy Group (IOPG) has 9 working groups such as maritime transportation, education, research, etc.
- Chapter 27 of the COP report falls under the research committee.
- Recommendations vetted by IOPG/CEQ
- First meeting was a couple of weeks ago
- Focus will probably be on improving effectiveness and performance of existing programs.
- Public comments are welcome. Hearings are not planned. 30-day period to be announced in the federal register.

Bob quickly presented information on NOPP and IOOS/Ocean.US activities and then took questions. Bob's presentation is available in [Appendix IV](#)

Some discussion and questions followed. Wilf Gardner asked if UNOLS would receive a draft of the FOFC plan. Bob's answer is that not only will UNOLS receive a draft but also there will be an ongoing dialogue and chance for input before the draft is produced. Bob Knox asked how the recommendation for doubling the research budget would impact the FOFC plan. Answer, not sure how this will stand, but clearly if it goes forward, the facilities would not be adequate. The USCOP was asked where the funds for this might come from.

Federal Agency Reports - 2004 activities and forecasts for 2005 and beyond including implementation of the Fleet Renewal Plan.

Margaret Leinen, Associate NSF

Margaret came forward to provide a few remarks about NSF's role in fleet renewal. She said that it was terrific to hear from Bob on the continuing activities for fleet renewal. She referred to the comment by Bob about whether or not the first FOFC Fleet Renewal

document had had an impact. Clearly the answer is yes with regards to NSF's strategies for renewal, in particular for Regional Class research vessels, specialized vessels and other major facilities.

Within the Geosciences Directorate they have developed a plan to set aside funds for mid-size infrastructure (less than \$70 million). For research vessels and other facilities these funds would be in the base budget for the Ocean Science division and would not be directly tied to any particular vessel or facility. The amount of available funds would be tied to the overall NSF budget levels and distribution. The division would have control over planning how these funds are used. The Regional Class research vessels and the replacement Human Occupied Vehicle (HOV) would be supported through these mid-size infrastructure funds. Also supported will be the acquisition of a replacement for the *Ewing* by an available commercial 3-D seismic vessel, the *Legend* (ex *Western Legend*).

NSF has also approved several items for the Major Research Equipment (MRE) account in the next few out-years. This is an unprecedented event in terms of their normal budget requests. The Ocean Drilling Program (ODP) vessel and the Alaska Region Research Vessel (ARRV) are in the pipeline for MRE funding over the next few fiscal years. Actual funding will depend on administration and Congressional action with regards to the level of appropriated MRE budgets.

The FOFC Fleet Renewal plan was a tremendous success for NSF, allowing them to proceed with the development of new facilities. This was made possible by:

- 1) Strong leadership within the NSF Ocean Sciences Division.
- 2) A clear and strong partnership between the federal agencies and the academic community.
- 3) Strong leadership from this community to identify and articulate the science that would be enabled by developing these new facilities.

Margaret closed by saying that it is a worthwhile effort. As we go forward, take heart in the fact that this partnership between the agencies and community has been successful and it will be successful in the future with continued cooperation.

Office of Naval Research (ONR) - Ocean Class Planning Status (RADM Jay Cohen)

Rear Admiral Jay Cohen, the Chief of Naval Research (CNR) addressed the UNOLS meeting regarding plans for implementing that portion of the FOFC Fleet Renewal Plan related to developing new Ocean Class research vessels. He started by introducing Dr. Storns Walker, the new chief scientist at ONR. He also introduced Dr. Frank Herr the acting Head of the Ocean, Atmosphere, and Space Department at ONR. RADM Cohen joked that he is in his fifth year of a three-year assignment and he is not sure if he has to stay until he gets it right or if nobody else wants the job. However he feels that ONR is engaged in some exciting things and that he can help to enable our visions for the future. He asked that as we move forward and make decisions about facilities for the future that we try to think about where we will be 30 years from now. He indicated that he has a plan and has budgeted for the first increment of Ocean Class construction funds for the FY 2006 ONR budget. The amount and specific source of the funding is still to be

determined by the DOD, OMB budgeting process. RADM Cohen's slides are included as Appendix V.

RADM Cohen and his staff brought along three models, representing the three different hull forms that have been under consideration by ONR and UNOLS for future Ocean Class research vessels. The monohull was represented by a model of AGOR 23 (*R/V Thompson*), the SWATH by AGOR 26 (*R/V Kilo Moana*) and a high-speed catamaran designated as the *X-Craft*. The model was slightly modified to represent a possible AGOR configuration. He feels that the KILO MOANA is a well-designed vessel for its operating area but it has some shortcomings. When follow on vessels were discussed two years ago, the *Kilo Moana* design was more or less rejected out of hand because of a draft that was too deep and the difficulty of drydocking. Program cost for *Kilo Moana* was around \$55 million. A new monohull would be a known entity that would serve well. A new design would add more capabilities, but there is an added cost and some risk with creating a NEW design. Ship's in the AGOR – 23 class have been good platforms and would cost around \$60 million to build.

Three years ago, the Chief of Naval Operations (CNO) directed ONR to build an X-Craft. The model he showed is the Admiral's variant for a UNOLS research vessel. He has already paid for the design for the most part. This modified version has no gas turbines and has a sweet spot at about 24 knots. It can accommodate helicopters, Unmanned Aerial Vehicles (UAVs), cranes and working decks on either side (quarters). An elevator astern would allow loading mission modules (20 ft or 10 ft vans) and could potentially be used as part of a system for deploying instruments and equipment. The range is about 4000 kilometers. As built the X-Craft has a 350 ton capability. They have an unforgiving motion in slow speeds and rough weather. But they know how they can get better stability. He asked the audience, "wouldn't you want to transit at higher speeds – 24 knots?" Are we paying extra costs for slower speeds of transit (23% of time in transit)? We need to analyze the tradeoffs with fuel costs for a high-speed vessel. RADM Cohen asked that UNOLS take the opportunity to carefully re-evaluate the possibilities that the X-Craft offers for new Ocean Class research vessels and to provide him with a reasoned decision about which of the three hull forms would best meet our requirements. He will insist that we address the reasons behind this choice. In order to stay on track for making budgetary decisions for the next fiscal year, he is asking for our recommendation by February of 2005. If UNOLS decides that a new monohull is what we want and he can afford it that is what he will build. On the other hand, he wants to emphasize that we should consider if more monohulls are what we really want and we should consider something more cutting edge, such as an X-Craft. He also talked about keeping the vessels at sea longer with rotating crews, which is something we already do with the Global Class vessels. If it is a monohull, the admiral wants to ensure that it has as many locations for flexible mission modules (vans) out of the weather and have at least a hover spot forward for helicopter replenishment, although he would prefer a helicopter landing area.

The plan is for the Navy to have up to four new ships in the budget. They are able to build a UNOLS ship every 2 or 3 years depending on cost. They are building the x-craft

for \$68M. “The train is leaving the station – it is decision time.” ONR will honor the UNOLS decision. The Admiral will get invitational orders for a small UNOLS group to visit the X-Craft under construction at Nichols Brothers shipyard on Whidbey Island and the Admiral will join us if desired. There was some discussion about the economics of higher speeds and keeping vessels at sea and away from homeport for longer periods of time. The Admiral then turned the floor over to Frank Herr to go over the details of operator selection and vessel acquisition under their current plan. Frank Herr presented a briefing with slides, which are available as [Appendix VI](#).

First Frank discussed the potential Ocean Class operator candidate pool:

- Demonstrated ability to operate vessel of Ocean Class size.
- Vessel retirement as condition of proposal.
- Ongoing cost share with institution.
- Operators with suitable retirement vessels:
 - o WHOI – *Oceanus* (NSF)
 - o URI – *Endeavor* (NSF)
 - o OSU – *Wecoma* (NSF)
 - o TAMU – *Gyre* (State)
 - o HBOI – *Seward Johnson* (Inst)
 - o SIO – *New Horizon* (Inst)
 - o Regional Consortia (i.e., LUMCON, SECOR, NECOR, etc.)
 - o

The ship operator selection process would include the following components:

- Lease staffing with ASN RD&A – this has begun – John Freitag is working on this.
- RFP will be issued from ONR
- A proposal review board will be formed
 - o ONR code 32
 - o N61 (Oceanographer of the Navy)
 - o UNOLS
- CNR makes the selections
- Contract award for operator support to NAVSEA, set up Integrated Project Teams (IPTs)
-

Next, Frank covered the procurement strategy, which will be similar to what is being considered by NSF for the Regional Class vessels.

- Memorandum of Agreement (MOU) between ONR and NAVSEA
- 2 IPTs competing for design
 - o IPT contracts to start 1 Oct 2005
- Down selection to one IPT
 - o Build will be an option to original IPT contracts.
- 7 month design period prior to down select

- End result is Firm Fixed Price Bids from which one builder (IPT) will be selected.

Additional detail on the IPT concept was presented.

- Phase 1: Design competition by 2 shipyard teams who will be paid a fixed sum for design
 - ONR would own the designs at the conclusion.
 - Advisory team will include operator rep, naval architect, NAVSEA rep, UNOLS and technical experts as needed. Team works with both yards (IPT).
 - Shipyards submit Firm Fixed Price bids at the conclusion and builder selection is made.
- Phase 2 begins detailed design and construction.

A timeline for the project was presented. At this time next year they would like to be in contract with shipyards for phase 1 designs. Within the next three months they would like to start the process to select the operators. The down selection and award of the phase 2 contract would take place in the fourth quarter of FY-06.

Frank reviewed the hull studies and SMR development that will provide the basis for the eventual design contracts. These studies have examined the SMRs created by UNOLS with funding from the FOFC agencies and applied them to the three hull forms mentioned earlier. They were also used to examine the TAGS-51 and T-AGOS Stalwart class vessels as potential Ocean Class vessels. Throughout these studies the UNOLS Fleet Improvement Committee, Ocean Class steering committee and Council have been actively involved.

The key component of these studies has been to look at how well the various designs or hull forms meet the SMRs. The smaller version of the X-Craft with a displacement equal to the Navy's vessel, would not meet SMRs related to science accommodations, science payload, seakeeping and range. However a larger displacement X-Craft may be able to meet most of these SMRs. There is still some question about seakeeping ability. The studies also looked at costs associated with the different hull forms, both in terms of construction and operations. There was some discussion about noise, costs, and risk. The conclusion was that FIC and the Ocean Class Steering committee would carefully examine the X-Craft against the other hull forms with assistance from JJMA and ONR and provide a recommendation by sometime in February. A visit to the shipyard to see the X-Craft under construction would be arranged.

National Science Foundation (NSF) Report - Mike Reeve –Mike Reeve presented an overhead of the timeline for NSF Ocean Science's major facility renewal plans ([Appendix VII](#)). Their "notional" timeline is that the Alaska Region Research Vessel (ARRV) would be funded for construction through the MRE account by FY 2007 at a cost of \$82M. The replacement for the *R/V Ewing* is going forward beginning this year with the purchase of the 3-D seismic vessel *Western Legend*. This project will cost approximately \$20M spread out over the next few fiscal years. The development of a replacement Human Occupied Vehicle that would provide deeper diving capability than

Alvin is also a \$20M project, spread out over the next four years. Lastly, NSF intends to fund the design and construction of up to three Regional Class research vessels starting in FY 2007 at about \$25M per ship. The second ship would start in FY 2009 and the third in FY 2010. These ships would be funded from the Division's mid-size infrastructure budget described earlier by Margaret Leinen. The ships would all be the same design and the operator selection and procurement strategies will be similar to that described for the Ocean Class vessels by ONR. RFPs for operators and for IPTs could come as early as next summer.

National Oceanic and Atmospheric Administration (NOAA) – Beth White – Beth White reported on current NOAA activities. NOAA is very fortunate for the leadership from VADM Lautenbach and his support of the NOAA fleet. He clearly recognizes the need for replacement ships and aircraft. He has established as a primary goal the reduction in age of the fleet. Beth reviewed some of the recent actions that support that goal. Among others, the FRV1, *Oscar Dyson* has been launched and headed for Alaskan waters. FRV2, *Henry Bigelow*, is under construction at Halter shipyards. They were fortunate to stay clear of harm from the recent hurricanes. FRV 3 & 4 are in budgets over the next four years and they are verifying the requirements for possible FRVs 5 through 7. The USNS Ship *Capable* has been transferred to NOAA with \$18M to convert the vessel for use as an Ocean Exploration vessel. The USNS *Indomitable* has replaced the *McArthur* as the *McArthur II*. Several other T-AGOS vessels have been transferred to NOAA over the last few years and integrated into their fleet.

They are in the process of updating their renewal plans starting with Mission goal analysis and Mission needs analysis.

Charter money for use of UNOLS vessels has been on the rise with over \$7M planned for this year. There are also direct charter of UNOLS vessels by NOAA funded PIs and programs that add to this total.

Tim Cowles thanked Beth for the report and mentioned that she is in charge of the FOFC Working Group.

Department of State – Ray Arnaudo

Ray introduced himself and mentioned that most people who contact their office interact with Liz Tirpak. However she is in Honolulu for another meeting today. Liz has obtained funds to finish development of the research clearance tracking system that will be used to make sure details are received and transmitted on time. However, this won't help the speed of foreign government's processing and approval of clearances. Approval systems are many times archaic, obtaining clearances seems to be getting slower and some countries are becoming more particular. There have been some recent issues raised in conjunction with clearance requests related to seismic/acoustic permits. These have only complicated the normal clearance process. On a positive note, the NOAA Ship *Miller Freeman* recently received clearance to operate in Russian waters.

Ray mentioned the President's Office of Science and Technology Policy (OSTP) and their examination of the USCG Icebreaker operations and renewal issues. The State

department is participating because of the geopolitical importance of the icebreaker capabilities.

Dan Schwartz asked if there was any progress in the ratification of the U.N. Law of the Sea (UNCLOS) treaty. Dan felt that this administration supports ratification, but it has moved at glacial pace. Ray replied that there have been some problems with getting it through Congress. It is not currently on the agenda of the Senate due to objections of a couple of senators. If it does not get approved this session they will have to resubmit it. The Senate Foreign Relations Committee has approved it unanimously and would consider sending directly to the floor for the vote if resubmitted next session. It really has ramifications if we don't accede to this treaty. We don't have a seat at the table when it comes to making changes or major claims.

United States Coast Guard (USCG) – Jon Berkson.

One of the six high priority issues in the recent Ocean Commission Report was the refurbishment or replacement of the two Polar Class icebreakers (recommendation 27-4).

The *Polar Sea's* main motors have been condemned and although the ship is still in commission and has a full crew, they cannot sail for at least two years in order to make the necessary repairs. If funding is received by this fall the *Polar Sea* could be ready for Deep Freeze 2007. *Polar Star* motors are not much better, but are still within operational limits and they will carry out this year's Deep Freeze operations. *Healy* is fully operational, but will not be used for Deep Freeze. NSF will look for a 2nd ship to assist, most likely a foreign icebreaker from Canada, Finland or Russia.

NSF and USCG are working on a revised MOA for reimbursement, as directed by the House Appropriations committee. The Coast Guard has also contracted for and is completing a "Mission Needs Analysis" with Booze Allen Hamilton as the contractor. This analysis is required as a first step in a major facility procurement process, which applies to either mid life refit or replacement of the Polar icebreakers.

Also a Polar Icebreaker Summit has been convened by the President's OSTP to be held in early November. They will probably form an interagency oversight group and will look at the current status of icebreakers, what platforms are needed, funding mechanisms and develop a polar icebreaker policy.

In addition, the Department of Homeland Security appropriations bill directs that a National Academy study be submitted by 30 September 05 on the role of Coast Guard Icebreakers in support of Antarctic and Arctic science. Funding for this study is not yet clearly identified.

Fleet Improvement Committee (FIC) – Dave Hebert, FIC Chair, presented a report reviewing 2004 activities and future plans for the committee and UNOLS. His slides are contained in Appendix VIII.

Major areas of focus include:

- Regional Class – SMR Prioritization. Over the summer, FIC, the Regional Class Advisory Committee and others worked to prioritize the SMRs that have the most impact on the vessel operating costs. The priority list was in turn provided to NSF.
- Ocean Class – Phase II Study. FIC and the Ocean Class Steering Committee participated in a series of meetings with JJMA and the Navy to evaluate various potential Ocean Class hull forms.
- Global Class - SMR Development. A committee has been formed to update the 1989 SMRs for Global Class vessels. The SMRs will be useful as plans for Global vessel mid-life refits are developed.
- Ocean Observatory Facility Needs – FIC will communicate regularly with the ORION Office to keep abreast of ocean observatory facility needs and timelines.
- Input to FOFC Update of Fleet Plan
- Update UNOLS Fleet Improvement Plan
- *Kilo Moana* Debriefs – FIC has conducted numerous debriefs with Kilo Moana PIs. The debriefs will continue with a more focused set of questions and selective cruises.

A major focus for the coming year will be an update of the UNOLS Fleet Improvement Plan, which was last updated in 1995. In 2000 and 2001, UNOLS and FIC participated with FOFC in the preparation of the Federal long-range plan for fleet renewal rather than update the UNOLS plan. As FOFC begins work on an update to their fleet renewal plan it became apparent that the Federal agencies would need to develop a plan clearly constrained by projected budgets for the next few years. While it is extremely important to create a plan for how to best use limited resources and UNOLS/FIC will want to participate in helping to articulate those priorities, FIC also felt it is necessary for UNOLS to articulate what facilities would be needed to meet the needs of the scientific community given adequate funding for the many new initiatives and areas of inquiry that are being planned or proposed. For this purpose, FIC plans to update their Fleet Improvement Plan, which would try to support and endorse the FOFC renewal plans and provide a vision for what additional facilities might be required if funding becomes available. FIC plans to work closely with FOFC so that the two documents are consistent and complimentary to one another.

The draft outline for the FIC Fleet Improvement Plan is as follows:

- Executive Summary / Intro
- Identify Future Science Initiatives:
 - Biological Oceanography
 - Chemical Oceanography
 - MG&G
 - Physical Oceanography
 - Education
 - Ocean Engineering
 - Cross cutting initiatives (Observatories (in a broad sense))
- Current Fleet Composition and Utilization Trends
 - Current Fleet Description
 - Updated vessel retirement dates and SLEP costs

- Fleet Trends
 - Geographical utilization
- Future Fleet Projections
 - UNOLS and FOFC Plan Fleet Projections
 - Ship Construction Plans and realistic timelines
 - Addition of other facility projections (Ocean observatory, etc)
 - Other Facilities –aircraft, deep submergence facilities
 - Scheduling and operating modes
 - Shortfalls:
 - Differences between FOFC and UNOLS FIP
 - Consequences of not carrying out SLEPs
 - Tradeoffs between various scenarios
 - Extensions and expansions beyond the FOFC Plan
 - Future Fleet Composition
- Fleet Budget Projections and Requirements
 - Ship Construction Cost
 - Future Fleet operating cost estimates
- Recommendations

The timeline for completing this update to the Fleet Improvement Plan is:

- Finalize outline and assignments–15 November
- Coordinate with FOFC -winter
- Draft text and prepare projections –28 Feb 05
- First Draft –March Council Meeting
- Community review –April 1-30, 2005
- Second draft –Spring/Summer Council Meeting
- Circulate second draft for comment –Sept 1
- Final draft –September 30, 2005

FIC continues to stay engaged with institutions already involved with fleet renewal projects such as the University of Delaware, the University of Alaska and LDEO. They are also looking at areas such as the Americans with Disabilities Act (ADA) and the impact on SMRs and vessel design. Recent changes in FIC membership include Chris Measures completing his second term and the arrival of Jim Cochran from LDEO as his replacement. Dave concluded by saying that 2004 has been very busy and 2005 could be even busier. Clearly the Ocean Class process has suddenly been energized sooner than planned.

Consortium for Oceanographic Research and Education (CORE) – Tom Jones (CORE) reported that the recently released U.S. Commission on Ocean Policy Report has created some momentum on the Hill and they would like to see that continued in the upcoming year. Among other things, CORE feels it is very important for the MRE account to get funded so that the queue is cleared, allowing future projects to get attention. CORE would like to see the ARRIV funded in FY 2006 as an example.

On the budget front, there was a hit on the NSF/GEO/OCE budget in the House so they hope the Senate will do better. The Congress will return until mid November and many bills such as the VA/HUD bill (includes NSF) may not be approved until early next year. CORE is working hard to make sure that overall Ocean Science and Technology (OST) budgets stay at around 3%. It is a slow process getting these basic research budgets back up to what they were in earlier years. MRE markups have the House being close to the administration request, but not funding NEON and cutting a little from International ODP (IODP). The Senate has no new funding for MRE projects. The Conference Committee usually sorts these out so they end up closer to the requests. The Ocean Observing Initiative (OOI) and the ARRIV are expected in the queue for FY 2006, but if FY 2005 starts are not allowed then it backs up the entire queue of projects.

UNOLS Membership Votes

A total of 31 ballots were cast, with a quorum of UNOLS operator institutions represented.

UNOLS Charter Revisions - The UNOLS Council recommends the re-adoption of the UNOLS Charter in accordance with the revisions ([Appendix XII](#)). Re-adoption of the UNOLS Charter requires a membership vote for approval. Ballots were distributed to the member representatives.

UNOLS Elections: Elections for the following UNOLS Council positions were held:

- UNOLS Chair-Elect (2 year term) - Individual affiliated with any UNOLS Member Institution
- Non-Operator Representative (3 year term) - from among designated UNOLS Member Operator institutions
- UNOLS Council Member, (3-year term) At-large, affiliated with any Member Institution.

The slate of nominees can be viewed at: [Slate 2004.html](#) ([Appendix XIII](#)).

UNOLS Chair and Immediate Past Chair Announcement: This meeting marks the change of UNOLS leadership:

- Peter Wiebe, Chair-Elect, becomes the new UNOLS Chair.
- Tim Cowles, UNOLS Chair, becomes the Immediate Past Chair.

On-going Design and Construction Efforts

Cape Henlopen Replacement Vessel (CHRV) – Matt Hawkins, University of Delaware reported on the status of the CHRV (Appendix IX). The current schedule is for the *Cape Henlopen* to be retired from service on October 1, 2005 with operational funding based on a nine-month schedule. The new vessel will be delivered to Florida by a heavy lift ship on October 15, 2005. The UDEL crew will deliver the new ship to Delaware. From November 2005 through February 2006 they will cross deck equipment and complete the outfitting of the new vessel using UDEL funding. The new vessel should be ready to begin operations around March 2006.

The shipyard building the CHRV is Dakota Creek Industries in Anacortes, Washington. The yard was selected using a “Best Value” process and a contract was signed in December 2003. Matt reported on the major sub-contractors for propulsion, dynamic positioning and load handling systems. The shipyard has a reputation for very high quality work. New construction is done using “modular” build. This is their first experience with research vessels, but they have lots of experience with other types of workboats such as factory trawlers, Z-drive tugs and ferries. They have separate sides of their yard devoted to repair and new construction.

The final design phase took place during 2004 and construction is well underway. All major equipment has been ordered and is arriving at the yard. Preliminary outfitting has started. It will start “looking like a ship” in January 2005, when major outfitting should begin. Dock and sea trials will take place in the summer of 2005. Between now and the time of delivery, training for the crew will take place.

Matt showed slides of the construction to date. Their website will have updated information at: <http://www.ocean.udel.edu/ships&facilities/rvchreplacement/>. The shipyard’s website also contains a few pictures at: <http://www.dakotacreek.com/website/current.html>. Matt extended an invitation to UNOLS FIC or other and agency representatives to visit the shipyard.

ARRV Design status and funding - Terry Whitledge provided the status report and started by saying that it was an exciting time (*Appendix X*). They are on target and ready to proceed. He then reviewed some of the major design issues they have been dealing with. First of all are trying to make reasonable accommodations to meet the intent of the ADA. Guidelines for vessels published by the U.S. Access Board have provided a point of reference. They have designed one ADA compliant stateroom with the proper arrangements and dimensions for wheelchair access. The top bunk in that stateroom will be a pullman. There is one ADA water closet on the main deck. There will need to be a person-rated lift or elevator to get from the main deck labs and galley area to the staterooms. Passageway widths, door widths to key areas and other features such as ramps for watertight and weather tight doors are included in these design refinements.

They are also looking at the arrangements for the Baltic room and over-the-side handling equipment. Terry showed drawings of the Baltic room, outboard profile and main deck arrangements. They are looking at using a crane rather than a frame on the starboard side overboarding location to maintain flexibility and alleviate problems with interferences on deck. All drawings and other information are available at: <http://www.sfos.uaf.edu/arrv/>

As mentioned earlier, the expectation and hope is for funding in the FY 2006 MRE account. This funding would occur over two fiscal years. In the meantime they are holding back enough funding for some continuing design tasks until construction funding is authorized. These include:

- Propulsion system, especially electronic components
- Over-the-side handling system
- Scientific gear acquisition plan – wait until last minute
- Laboratory design
- ADA accommodations – waiting until final.

Otherwise the plans are all ready for the shipyard.

Load Handling System Workshop – Matt Hawkins

Matt is working with Tom Althouse, Andy Bowen, Marc Willis, and Jim Holik (RPS) with a goal to develop a conceptual design for the next generation over-the-side load handling system for the UNOLS fleet. This is nominally a one-year effort, jointly funded by NSF and ONR. The focus is on ship visits and field evaluations of existing systems. They must also address load handling system design standards, new wire standards, next generation science packages, motion compensation and “hands free” deployment and recovery. They have completed a majority of the ship visits and hop to address load handling system design standards at the RVOC meeting. They are providing some recommendations for solving problems on the *Kilo Moana*, many of which will be common themes applicable to the entire fleet. By January/February next year they should have a report to share.

EWING Replacement Plans - Jim Cochran

- Jim Cochran (LDEO) reported that the replacement effort started because the *Ewing* was due for a mid-life refit. LDEO sponsored workshop in Oct 2002 to identify the capabilities required to meet future science needs. The following objectives were identified:
 - Tow a longer streamer for 2-D MCS work
 - Tow multiple long streamers
 - Improved source array (better repeatability)
 - Linear Arrays
 - Maintain general purpose capabilities
 - In particular, ability to do over-the-side operations including deploying and recovering OBSs

It would not be possible to meeting all of these objectives on *Ewing*.

A workshop recommendation was:

- “Only a replacement vessel provides all desired capabilities. LDEO should investigate thoroughly the replacement vessel option with the National Science Foundation because it is the ONLY way to obtain the long streamer (6 km+) 3-D seismic capability, linear gun arrays, and improved general-purpose capabilities.”

Jim showed a photo of *Legend* (ex *Western Legend*) (**Appendix XI**). This existing 3-D seismic vessel was purchased from a commercial operator, Western Geco, Inc., at a very good price. The name "Western" was removed in Norway and a new name will be recommended in the future.

Jim showed a comparison of the specifications for the two vessels. The *Legend* is about the same length, but has about 10 feet more beam at 56 feet. It is about 50% larger in

displacement and has about twice the horsepower as the *Ewing*. Total complement of people is 58 compared with 50. The estimate is that the science complement would be around 38, although this issue is being looked at carefully as part of the conversion planning.

A *Ewing* Replacement Oversight Conversion Committee (EROCC) has been formed with Tom Shipley as the chair. The committee was charged to provide oversight on all aspects of the conversion of the *Legend* for use as a research vessel. The committee includes representatives from science, ship operations and industry. NSF and LDEO would also like to see a permanent operations oversight committee, modeled after DESSC, set up by UNOLS.

Jim's report included a list of science capabilities after conversion, including four 6 km streamers with up to 200m separation, four linear gun arrays, dynamic positioning, a high resolution 1 degree by 1 degree deep water multibeam, sub-bottom profiler and general purpose over-the-side handling and lab space exceeding the *Ewing's* capabilities. There will be more open deck space and room for 5 vans without affecting other operations.

The project timeline shows the *Legend* being ready for operations towards the end of 2005. Most likely that schedule will start in early 2006 if project stays on track. The summer was busy with a lot of the marine office staff spending time in Norway prior to accepting the ship. They took acceptance of the ship at the beginning of September and it has been delivered to Quonset Point in Rhode Island. The ship is now owned by LDEO, but will be purchased by NSF over the next few years. With the assistance of the EROCC they are developing the conversion plans.

Modification plans will address "Reflagging" as a U.S. vessel, providing for open deck space on the starboard side, removing about half of the seismic equipment, increasing the general laboratory area, creating the over-the-side capabilities, improving habitability and number of staterooms, install sonar systems, add dynamic positioning control systems, creating mammal observation and mitigation capabilities and improving general purpose capabilities.

They are working hard to finalize the plans in an effort to get the shipyard package out by the end of year and deliver the ship to a shipyard by next March.

UNOLS COMMITTEE REPORTS

Arctic Icebreaker Coordinating Committee (AICC) – Carin Ashjian – [Appendix XIV](#)

Dr. Carin Ashjian of WHOI, Co-Vice Chair of AICC, reported on the activities of the AICC in 2003/2004 some of which had already been reported by Jon Berkson. The AICC met in November 2003 at the USCG base in Seattle and in March 2004 at NSF. They completed debriefs of PIs for all 2003 Cruises. As part of the overall UNOLS Charter revision they approved a re-draft of the AICC Annex. They welcomed a new committee Member, Rolf Gradinger (UAF) who specializes in two (ice, biology) of the science areas they had targeted. A letter of support was sent to Tom Pyle (NSF/OPP) for continued education outreach programs in the Arctic via the Teachers and Researchers Exploring and Collaborating (TREC) program < <http://www.arcus.org/TREC/> >. As mentioned by

Jon earlier AICC has continued to work with the USCG to determine long-range solution for science system support and have participated in the Booz Allen Hamilton Mission Needs Analysis. They continue to monitor and maintain interest in issues relevant to Arctic icebreakers from the critical to the near mundane.

Healy operations for 2004 included five cruises:

- Deep-ocean Assessment and Reporting of Tsunamis (DART) in early May (Buoy Servicing)
- Shelf-Basin Interactions (SBI) Process Cruise I (40 days, May-June)
- SBI Process Cruise II (40 days, July-August)
- SBI Mooring Recover Cruise (30 days, September)
- NOAA Mapping (October)

There were two foreign port calls in Yokosuka, Japan and Provideniya, Russia. Also accomplished this summer was the installation and implementation of a Position and Orientation System (POS-MV) by Dale Chayes and colleagues from LDEO. *Healy* returns to Seattle on November 8.

Carin described some of the details of the SBI cruises. During the spring cruise they encountered heavy ice, which limited them to two shelf-basin transects, required a lot of backing and ramming and resulted in their being “pinched and beset” for a brief time. During the summer cruise they were able to sample along four transects and across the Barrow Canyon. They encountered very little ice, but some heavy seas instead. During the fall mooring cruise, there was also very little ice and all SBI moorings were recovered successfully. Overall it was an extremely successful science season with excellent outreach programs and worldwide news coverage including BBC, *U.S. News and World Report* and the PBS News Hour.

For 2005 the tentative plan is for *Healy* to leave Seattle around June 1st and conduct cruises in the Alaska margin for Dennis Darby, conduct either another NOAA mapping cruise or a NOAA Ocean Exploration cruise and then participate in a multi-PI trans-Arctic program in conjunction with the Swedish icebreaker *Oden* arriving in Tromsø, Norway around October 1st and back in Seattle via the Panama Canal around mid-December. In 2006 there are already several funded programs for work in the Western Arctic.

Both the *Polar Sea* and *Polar Star* returned from Deep Freeze 2004 in need of repairs. As mentioned earlier, three of the *Polar Sea*'s main motors were condemned making her unavailable until at least 2007. *Polar Star* has completed repairs and is undergoing a shakedown cruise from October 12 – 15. They are scheduled to depart for Antarctica on November 1st alone, but NSF is pursuing options to use a foreign icebreaker for assistance as the ice conditions are not going to be easy. There is a lot of fast ice and the B-15 icebergs are moving towards the Drygalski Ice Tongue, which could complicate matters.

AICC's interest in these broader issues stems primarily from a concern about the potential impacts on access to icebreakers for work in the Arctic. Therefore they are concerned about renewal of the icebreaker fleet and the potential shortage that may affect availability in the Arctic, as well as impacting the Antarctic programs. They are anxious

for the results of the Mission Needs Analysis and the impact this report may have on decision makers. Renewal of the MOU between the Coast Guard and NSF is of concern, but something AICC has little or no impact on.

In the meantime, AICC will continue to focus on improving the existing icebreaker facilities. As an example, this year a group from LDEO was contracted by the USCG to provide onboard science support, including integration of new science equipment such as the POS-MV. AICC will continue to work with the Coast Guard to help arrive at long-term solutions for this type of science support. AICC will hold their next meeting in November in Seattle and if possible, will conduct de-briefs for the five science cruises from this summer before the end of the year.

DEep Submergence Science Committee (DESSC) – Patty Fryer – [Appendix XV](#)

Dr. Patty Fryer, University of Hawaii, DESSC Chair reported on DESSC activities, 2003/2004 ALVIN and ROV operations, and National Deep Submergence Facility equipment/instrumentation upgrades. She also reported on submergence operations planned for 2005 and beyond as well as plans for replacement vehicles and new facilities.

2004 was a busy year for *Alvin* and for the ROVs. Patty's report includes a summary of operations as well as an estimate of requests for 2005 and beyond. *Alvin* completed its 4,000th dive this year. Also, *Jason II* set a record for its operations with a 72-hour dive in the water.

Patty summarized several reports available at the DESSC website and summarized the many changes taking place in the membership of the committee. Debby Kelley, University of Washington, will become the new Chair this December.

Woods Hole Oceanographic Institution (WHOI) is designing a replacement Human Occupied Vehicle (HOV) to replace *Alvin* that will be capable of going deeper and faster with new sensors and manipulators, and should be able to maintain the same bottom time. The development of this HOV will take place in two phases. Phase I will involve design and fabrication of the diving sphere. An evaluation will be made at the end of this phase based on success with key areas of risk before continuing with the Phase II of vehicle fabrication and testing. The anticipated final assembly timeframe is during 2007 with testing in early 2008 and science programs beginning mid-2008. A community oversight committee is in place and working with WHOI and NSF.

Another project taking place at WHOI is the development of a Hybrid Remotely Operated Vehicle (HROV). This will be a very deep diving (11,000 m) vehicle that can operate in an ROV mode or AUV mode. It will have a very light fiber optic tether that can be released at depth and recovered from the surface. Development is taking place with community input over the next couple of years.

DESSC will meet just prior to the Fall AGU meeting in San Francisco on December 12th.

Research Vessel Operators' Committee (RVOC) – Tim Askew – [Appendix XVI](#)

Tim Askew, Harbor Branch Oceanographic Institution, RVOC Chair, reviewed the activities of RVOC in 2003/2004 and plans for the 2004 Annual RVOC meeting to be hosted by the Bermuda Biological Station for Research (BBSR).

Last year's meeting was hosted by the University of Minnesota's Large Lakes Observatory in Duluth. This year's meeting at BBSR will address issues related to Vessel and Facility Security Plans, Safety Standards, Automated Monitoring Systems and ongoing areas such as crew retention, compensation, post cruise assessments and physical exams for crewmembers.

Implementation of security plans has become a bigger issue for the UNOLS fleet because the international and Coast Guard regulations will apply to the smaller, uninspected research vessels of the Intermediate class such as the *Seward Johnson*, *Oceanus*, *Endeavor*, *Wecoma*, *Gyre* and *New Horizon*. Tim Cowles asked what the timing for implementing these plans is. Tim Askew said that HBOI was trying to have theirs done by the end of the year and others should complete them as soon as possible, especially if a vessel is planning to go foreign.

Research Vessel Technical Enhancement Committee (RVTEC) – Steve Poulos – [Appendix XVII](#)

Steve Poulos, University of Hawaii, RVTEC Vice-Chair, reported on RVTEC activities in 2003/2004 and plans for the RVTEC Annual Meeting to be hosted by Florida Institution of Oceanography (FIO).

In 2003 the United States Coast Guard hosted the Annual RVTEC meeting in Seattle, WA. Key topics of the meeting included discussions on defining levels of technician/instrumentation support, wireless networking and data transfer, and ship to shore communications. Various issues were addressed including:

- Response to the post cruise assessment form
- Ship inspection programs, types of inspections
- STCW and ISM compliance
- Fleet renewal efforts – comments on SMRs
- Efforts to develop a next generation cable/wire design

A variety of technical topics were presented. The meeting included a factory tour of Sea-Bird Electronics, as well as a tour of the US Coast Guard Icebreaker HEALY at Todd Shipyard.

During the 2003 meeting, RVTEC endorsed the Technical Services Information Topic Outline. The outline includes the following major topics:

- • Vessel Operator Organizational Structure & Points of Contact
- Pre-Cruise Planning and Services
- Cruise Planning Details
- Cruise Loading and Setup
- Activities At Sea
- Post-cruise activities

An activity over the past year has been the SWAP Project (Ship-to-Ship/Ship-to-Shore Wireless Access Protocol). The goal of SWAP is to engineer a working set of hardware, software and networking configurations to provide various wireless services to the UNOLS fleet. A working group from RVTEC including led by Toby Martin (OSU), Val Schmidt(Lamont), Geoff

Davis(Scripps), have implemented a ship to ship and ship to shore wireless access protocol. The first shore-side installation was hosted (Jan 2004) at the Univ. of Hawaii Marine Facility with simultaneous pier side install on the R/V Kilo Moana. Subsequently the Wecoma & Revelle, & WHOI vessels have been equipped. Discussion is underway with respect to outfitting additional ships and port sites. A SWAP website is available at <http://data.ldeo.columbia.edu/admin/twiki/bin/view/SWAP/WebHome>.

The British Antarctic Survey and SOC in Cambridge, England hosted the INMARTECH 2004 meeting on September 20-23, 2004. There was representation by RVTEC members. INMARTECH 2006 will be hosted by Woods Hole Oceanographic Institution (B.Walden). Planning for the meeting will be discussed during the November 2004 RVTEC meeting.

This year's RVTEC meeting at FIO will be held on November 3-5. The meeting will include technical sessions on, ADCP Review, Towed Systems Inventory, SWAP, and the Moving Vessel Profiler (MVP). FIO and University of South Florida presentations and facilities tour will be provided. There will be reports on:

- Defining Levels of Technician/Instrumentation Support
- High-Resolution Marine Meteorology workshop (Shawn Smith)
- SeaNet Update
- Tentative: HighSeasNet
- RV Spectrum
- RIDGE 2000 and Margins cruise metadata
- MATE Activities

Dale Chayes' second term as Chair is ending. Nominations and Election of Chair will take place. Additionally a RVTEC Representative to the RVOC Safety Committee will be appointed. Bill Martin is completing his 2-year appointment.

Ship Scheduling Committee (SSC) – Elizabeth Brenner – [Appendix XVIII](#)

Liz Brenner, Scripps Institution of Oceanography, SSC Co-Chair, reviewed ship scheduling issues over the past year including agency budget shortfalls and their impact on ship schedules. The UNOLS ship operation plans for 2005 was briefly reviewed.

As reported to the council at the July Council meeting schedulers were busy preparing for the summer Ship Scheduling Meeting. The schedulers met at NSF in Arlington, VA JULY 21, 2004 to present their 2005 schedules. The meeting proved to be very productive. Business was conducted expeditiously with the help of program managers that were on hand to make decisions for pending or problematic cruises. A few issues were left unresolved to be worked on in the following months. The process went so smoothly that it was decided there would be no need for a fall Ship Scheduling meeting. In the months following several conference calls were made in order to resolve issues. Schedulers continued working with PIs and the funding agencies to accommodate the science on the right ship and at the right time of year. Committee chairs along with members of the funding agencies and large ship schedulers met via phone conferencing for a Scheduling Review meeting September 14, 2004. By that time most of the 2005 UNOLS fleet schedules were firming up and were ready to take on the challenge of the

NSF Ship Operations proposal with its new formatting requirements. Below are some of the problems/issues that came out of the Scheduling review meeting:

- *Alpha Helix* has only 8 days funded. Lay-up to be determined at a later day once OPP funding decisions have been announced, sometime after Thanksgiving. 59 days are pending.
- *Seward Johnson II* lay-up/maintenance for 2005
- *Cape Henlopen* will lay-up at the end of September and operate for 3/4 year.
- *Revelle* and *Melville* both in homeport at the same time. Difficult for crew rotation and for shore side personnel.
- NOAA days are still listed as pending. Could be problematic especially on large ships schedules.

The goal set by NSF and ONR for approximately 3 months of down time and maintenance in homeport for the large ships in 2005 has been for the most part accommodated. This helped NSF keep within their anticipated projection of funding just under 3200 days for CY2005 that includes transit, mobilization and demobilization days in ports other than homeport.

Approximately 274 days were reassigned in 2005. The science programs were either scheduled onto smaller ships or to a ship outside the fleet.

Approximately 379 days were deferred to 2006, this number is greater than the previous years deferment of approximately 327 science days. Both the reassignment and deferment of science days are due to a variety of reasons. Two examples are the lack of a suitable ship in the requested operating area or the over-subscription of facilities as in the DSL vehicles and OBS.

Again as in past years, NSF provided the largest amount of funds to operate the UNOLS fleet with approximately 67% of the entire 4740 operating days. Followed by NOAA at 13% and Navy for 11%.

Ship Schedulers continue working with Liz Tirpak and Roberta Barnes at the U.S State Department. Without their assistance it would be difficult for us to obtain the growing amount of clearances necessary for scientists to carry out work in foreign waters and for underway data collection.

UNOLS operating institutions are still in the learning curve for Incidental Harassment Authorization (IHA) and Environmental Assessment (EA) permitting process. We anticipate that in the future the identification of what type of work will need permitting will become clearer.

We would like to thank Mike Prince, UNOLS Executive Secretary and Linda Goad our NSF program manager for the assistance they continue to provide the scheduling committee with their extremely useful spreadsheets that have streamlined the entire scheduling process.

Scientific Committee for Oceanographic Aircraft Research (SCOAR) – John Bane – [Appendix XIX](#)

Dr. John Bane, University of North Carolina, SCOAR Chair reported on the committee's activities in their first year and plans for the future.

SCOAR is UNOLS newest committee and focuses attention on an area of facilities often overlooked in supporting ocean sciences, namely aircraft. They are the oversight committee for the Naval Postgraduate School's Center for Interdisciplinary Remotely Piloted Aircraft Studies (CIRPAS), which is the first UNOLS designated National Oceanographic Aircraft Facility.

The committee has held meetings at CIRPAS and at Ocean.US as part of an effort to collaborate with Ocean Observatories planners in determining the role of aircraft. Meetings have also included members of the Federal Interagency Coordinating group for Aircraft Facilities (ICCAGRA) and have been held in conjunction with their meetings. This will probably occur again in the future. The next meeting of the committee will be held by web/phone conference in November.

Presently the committee has four members, but they are interested in adding one more, especially with expertise in biological research and/or remote sensing.

SCOAR has started work on setting up procedures for making CIRPAS operate like a National Facility with work started on writing guidelines for becoming a National Oceanographic Aircraft Facility, articulating appropriate safety standards, setting up an online aircraft request form and working on methods for simplifying funding mechanisms for aircraft support. SCOAR has just submitted an article to *EOS* and to *Oceanography*.

Recognition of departing Council and Committee members

Departing Council and Committee member include:

- Council - Robert Knox, SIO, Charles Flagg, SUNYSB
- DESSC –Patricia Fryer, UH; Robert Embley, NOAA/PMEL; Anna-Louise Reysenbach, PSU; William B.F. Ryan, WHOI; Timothy Shank, WHOI, Richard Pittenger, WHOI (ex-officio); Daniel Fornari, WHOI (ex-officio)
- FIC-Christopher Measures, UH
- RVTEC-Dale Chayes' term as chair ends in November
- SSC-Jon Alberts, WHOI

Tim Cowles recognized departing Council members Charlie Flagg and Bob Knox with the presentation of a certificate of appreciation. Also, Captain Bob Houtman was recognized for his service to the oceanographic community and UNOLS upon his retirement from ONR and the Navy. The new UNOLS Chair, Peter Wiebe thanked Tim Cowles for his leadership and acknowledged that he will need his help in his new role as Immediate Past Chair. Peter also mentioned that they have a long relationship, going back to the days when he was Tim's post-doc mentor.

2004/2005 UNOLS Goals and Priorities

Tim Cowles presented the 2004/2005 UNOLS Goals and Priorities as established by the UNOLS Council.

❖ UNOLS Vision

- A healthy and vigorous United States research and education program in the ocean sciences requires broad access to the best possible mix of modern, capable and well-operated research vessels, aircraft, submersibles and other major shared-use facilities.

❖ UNOLS Mission

- UNOLS provides a primary forum through which the ocean science research and education community, research facility operators and the supporting Federal agencies can work cooperatively to improve access, scheduling, operation and capabilities of current and future academic oceanographic facilities.

❖ Goals

- Promote broad, coordinated access to oceanographic research facilities
 - Maintain a system that facilitates broad access to research vessels and other facilities.
 - Support coordinated, efficient and effective scheduling of research vessels and facilities
- Support continuous improvement of existing facilities
 - Foster cooperation among facility operators, funding agencies and research scientists with the goal of continuously improving the quality and capability of existing ocean science facilities and the quality, reliability and safety of their operation.
- Plan for and foster support for the oceanographic facilities of the future
 - Provide leadership and broad community input to the process of planning for and supporting the improvement, renewal and addition of facilities required to support the ocean sciences in the future

❖ 2004/2005 Objectives

- Access, Scheduling & Utilization (Ongoing Responsibilities)
 - Scheduling improvements - Improve systems and results to maximize access to facilities.
 - MMPA/ESA Permitting - Facilitate compliance and cruise planning.
 - Outreach and Education - Bring the knowledge of ocean science research to the public along with an understanding of the facilities needed to support that research.
- Continuous Improvement (Improvements to Existing Facilities and Systems)

- Quality Improvement - Use Post-Cruise Assessments as core of quality improvement plans
- Standards of Service - Set standards for facilities, instrumentation and service.
- Plan for Future Facilities (New Opportunities and Facilities)
 - Fleet Renewal - Support the implementation of existing FOFC plan, concept designs and funding for new ship construction.
 - Facilities Improvement Planning - Update the UNOLS Fleet Improvement Plan in order to assess the current and projected status of the Academic Research Fleet and other major facilities, detail the scientific facility requirements of the future based on recently published documents and make recommendations in support of the review and update of the FOFC renewal plan and for additional research vessels and facilities that may be required.
 - Icebreaker renewal – Support efforts to plan for and carry out service life extensions and science system improvements for POLAR Class icebreakers in addition to continued support for improvements to HEALY support of science.
 - Submergence vehicle renewal – Provide support for the development and design of vehicles and tools to enhance access for submergence science.
 - Seismic Research Vessel - support efforts to convert and begin operations of a new National Oceanographic Seismic Facility (research vessel).

Issues Before UNOLS

Various UNOLS activities and issues of interest to UNOLS Members have arisen during the past year. Tim Cowles quickly summarized those issues that had not been covered earlier in the meeting.

- ❖ Marine Mammals and Acoustic Permitting Issues
 - Issues discussed during yesterday's Council meeting.
 - Permitting Activities reported by Sandy Shor - NSF is working with NOAA Fisheries OPR to develop a programmatic permit that would underlie permits for individual seismic cruises.
 - NMFS Office of Protected Resources (OPR) - Steve Leathery – reported that their office is being reorganized and getting more resources to better handle the added workload of processing environmental assessments and permits.
- ❖ Frequency Spectrum Management Issue
 - The need to learn more about the way frequency spectrum is managed and how that might affect the ocean sciences was raised by Jim Yoder, NSF/OCE and members of the Ocean Studies Board early this year. Mike Prince and Dale Chayes explored this process and made contact with spectrum managers at NSF, NOAA, and the Navy as well as with the NRC's Committee on Radio Frequencies (CORF).
 - These spectrum managers and a representative of CORF addressed the Council yesterday, followed by discussion and the development of a strategy

for the ocean science community to stay abreast of changes in frequency allocations that might impact their research.

- Need to identify uses of the radio spectrum that are important to the Ocean Sciences
- Need to keep track of changes in radio spectrum allocations and the potential impact on ocean sciences.
- Need for a resource committee to serve as a liaison between the ocean sciences community and the radio spectrum managers.
- It was noted that the one oceanographer on the CORF is currently Otis Brown of RSMAS. This committee is funded by and mostly includes PI's funded by the NSF Astronomy division.
- The ocean observatory groups will have to pay close attention to this issue, since much of what they want to accomplish relies on data communication and remote sensing, such as with CODAR.
- ❖ Conflict of Interest Guidelines
 - This issue is related to National Facility oversight committees such as DESSC and SCOAR. NSF expressed their opinion that the recommendations of such a committee were more valuable if none of the voting members were associated with the facility operating institution. Members of the operator institution could still function as non-voting, ex-officio members of the committee. Tim Shank, who was a member of DESSC and employed by WHOI will not serve a second term and as of now, serves as an ex-officio WHOI representative of the biological sciences. No formal action was taken regarding the UNOLS charter or the DESSC terms of reference at this point, but UNOLS will take this concern into account will appointing committee members in the future.
- ❖ Quality of Service Subcommittee on Post Cruise Assessments (PCAR)
 - The new PCAR approach has been effective. The Council formed a PCAR review committee on which Linda Goad and John Freitag are also participating. Linda and John read all PCARs. The Council members of the review committee plan to review reports for all UNOLS ships on a three year cycle, looking for fleet wide issues of concern and for ways to improve the PCAR system, as well as the percentage and quality of the feedback received.
- ❖ UNOLS Cables Draft Performance Requirements
 - Performance requirements for next-generation small diameter fiber-optic or EM cable were written by Mike Prince, approved by the UNOLS Council and submitted to NSF, ONR and NOAA.
 - http://www.unols.org/publications/reports/wire/Cable_Functional_req.html
- ❖ Shipboard Over-the-Side Handling Systems (Manufacturer winch inspections and load handling system symposium).
 - Matt Hawkins reported that he is leading a team that is looking at different over-the-side handling systems on an international basis. They will document best practices and try to define some performance specifications that can be used for future systems. The goal is to develop systems that improve handling equipment in all weather conditions with a minimum of human intervention.
 - NSF is supporting winch manufacturers to visit ship facilities to inspect winch condition and conduct training with crewmembers as part of an effort to improve winch condition and reliability. The visits are about half done.

- ❖ Guidelines for Becoming a UNOLS Vessel
 - Information required from applicants incorporated in a revised document, which has been approved by the UNOLS council. This change reflects similar changes made to the UNOLS charter approved earlier today.
 - Thanks to Peter Ortner, Cindy Van Dover, Curt Collins and Charlie Flagg for leading this effort.
 - http://www.unols.org/info/200409_unols_vess_guidelines.pdf
- ❖ Defined Levels of Technician/Instrumentation Support – covered in RVTEC report.
- ❖ Research Vessel Security and new regulatory requirements
 - Tim Askew reported – will have impact on most ship operators.
 - Larger ship operators have implemented Ship and Facility Security Plans
 - Based on a recent Coast Guard notice it is possible that all research vessels over 500 GT international will be required to implement security plans.
 - Impacts cruise planning, scheduling and pre and post cruise logistics.
- ❖ R/V Safety Standards
 - Started on next review and update cycle
 - Plan to re-organize and modify standards to match current USCG and IMO regulations
 - Plan to clarify which standards are:
 - Required by law,
 - Mandatory for UNOLS vessels
 - by class or status
 - Recommended best practices
- ❖ UNOLS Dues Accounting
 - Balance:\$1372.12
 - Collected this year: \$1850.00
 - Spent this year \$1986.39
 - Reception \$1826.00
 - Gifts/memorials \$160.39
- ❖ UNOLS Calendar and activities at winter conferences
 - 2005 tentative calendar was shown. Updated version is available online at: <http://www.unols.org/meetings/2005/index.html>
 - UNOLS activities at the fall AGU meeting in San Francisco will include a DESSC meeting the day before, an organizational meeting of the Global Class SMR steering committee on Monday, AICC participation in a poster session on Thursday morning and a UNOLS booth all week.
- ❖ UNOLS Members may wish to raise additional issues.
 - Dan Schwartz – Raised the issue of charges in port away from homeport. These charges are sometimes significant and it is not always clear what the operator should cover and what the science party should cover. This is aggravated, because many times the invoice from agents does not arrive until several months after the cruise. The policies on these charges vary to some degree between operators. Dan mentioned that RVOC would be addressing this issue at the next RVOC meeting.

1500 Adjourn