

UNOLS Research Vessel Technical Enhancement Committee (RVTEC)
2006 Annual Meeting
Woods Hole Oceanographic Institution
Redfield Auditorium
Water Street, Woods Hole
October 16, 2006

Meeting Minutes

Executive Summary

RVTEC met on October 16, 2006 at Woods Hole Oceanographic Institution (WHOI). Bill Martin, RVTEC Chair, presided over the meeting. This was a compressed into a one-day meeting in order to accommodate INMARTECH to hear reports from Agency representatives and UNOLS Committee liaisons. Issues of interest were reported on and discussed as identified on the meeting Agenda (*Appendix I*).

Elections were held for the RVTEC Chair position prior to the meeting and Bill Martin was elected to a second term as Chair.

The RVTEC meeting was followed by the 2006 International Marine Technician Symposium that included a variety of technical sessions.

RVTEC Action Items

Radio Frequency Spectrum – A committee of Richard Perry (Chair), Steve Hartz, and Toby Martin will continue to survey RVTEC members to identify the frequency spectrum use from UNOLS vessels.

Safe Working Loads (SWL) – RVTEC members were tasked to review the SWL Standards document drafted by Matt Hawkins and provide comments.

Appendices

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IV	DESSC Report
V	UNOLS Report
VI	ADA Guidelines Subcommittee Report
VII	RF Spectrum Management Committee Report
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Meeting Summary Report:

Meeting Called to Order – Bill Martin, RVTEC Chair, called the meeting to order at 0845 and provided introductory remarks. Barrie Walden (WHOI) welcomed the group to Woods Hole and provided meeting logistics.

The agenda for the meeting is included as *Appendix I* and was followed as recorded here. Participants at the meeting introduced themselves. The participant list is included as *Appendix II*.

Accept Minutes – A motion was made and passed to accept the minutes from the 2005 Annual RVTEC meeting.

Agency Reports:

National Science Foundation (NSF) - Sandy Shor provided the report for NSF. His slides are contained in *Appendix III*.

Sandy reported on the NSF FY 2007 budget. At the time of the RVTEC meeting the NSF Appropriation for FY07 had not been passed and NSF would operate under a Continuing Resolution until after the November election. There is a modest increase for NSF included in both House and Senate bills, but the final budget won't be known until the budget legislation is signed into law.

FY06 was a very difficult one for OCE facilities, with Ship Operations projections indicating major shortfalls due to rising fuel costs and severe budget constraints. This led to UNOLS involvement in developing procedures for planning future vessel non operational periods and early retirements, and a drop of nearly 1000 NSF operating days (~30%) from 2005 to 2006. The impact of this on technician and instrumentation funding from NSF was substantial. The good news is that at year-end, NSF found that Ship Operation costs were not as high as feared, and FY07 began with substantial carry-forward funds to support ship costs, and modestly increased NSF ship time scheduled for 2007.

Sandy encouraged RVTEC to plan for group purchases in several areas. Additionally, NSF continues to encourage operators to give high priority to training and communication, and to support technician transfers between operators to educate each other and learn new ways to improve quality of service.

Sandy reviewed the Major Research Equipment Facilities Construction (MREFC) Initiatives and Future Plans. These include:

- Alaska Region Research Vessel (ARRV) construction – NSF expects MREFC funding to begin in FY07
- Scientific Ocean Drilling Vessel (SODV) - the MREFC funding began in FY06
- Ocean Observatory Initiative (OOI)- NSF expects MREFC funding to begin in FY07

There are a few Mid-Size (OCE) initiatives underway (in very general terms, mid-size initiatives are greater than a few million dollars and less than several tens of millions in cost). These include the:

- Regional Class Research Vessels (RCRV) acquisition. The design study is ongoing and operator selection is expected in FY07.
- R/V *Marcus Langseth* conversion
- Human Occupied Vehicle (HOV) design and construction by WHOI to replace DSV *Alvin*.

Lastly, Sandy reviewed key OCE personnel changes. In early 2006 a new OCE Division Director (DD) came aboard, Julie Morris. In turn, Acting DD, Larry Clark, returned to his position as Head of the Ocean Section. Michael Reeve, Head of Integrative Programs Section (IPS) including ship operations, will retire on October 31, 2006.

Navy – Bob Houtman provided the report for the Navy. Unlike the other agencies, the Department of Defense has a budget. They expect the ship operations budget to be level with the 2006 budget. This represents a base budget of about \$10M plus additional funding from other Navy organizations (NRL, NPS, etc). There are also plus-up funds of about \$4.1M that will be distributed to the large Navy ship operators.

The ship utilization projections for 2007 were low. As a result, the Navy decided that instead of laying up a large ship, in 2007 *Melville* will only be used for Navy projects.

Next Bob reported on recapitalization of the fleet. He has been working with Bob Winokur to draft the Interagency Working Group on Facilities (IWG-F) Fleet plan. The Plan has been submitted to the Joint Subcommittee on Ocean Science and Technology (JSOST) for review and comment. The plan is all inclusive and covers all of the federal research ships, not just academic research vessels.

An update on the Ocean Class acquisition process was provided. The Navy convened a Naval Research Advisory Committee (NRAC) to study whether the Navy should make future investments in the UNOLS fleet. The study determined that there was a significant benefit for the Navy to invest in UNOLS. A recommendation from the study was that the Navy should support acquisition of two new Ocean Class ships versus four ships that had been included in previous plans. The Navy has told Congress that they plan to move forward with acquisition of two Ocean Class ships and they will develop budget options over the next two years.

Discussion followed:

Q) Dale Chayes – Will the Navy require a designated ship (like *Melville*) into the future?

A) Bob Houtman – There were Navy programs that required a ship in the Western Pacific in 2007. *Melville* was a good match since it was already there. There have been some indications that the Navy need to return to the Western Pacific in 2008 for follow-on work.

Q) Shawn Smith – Will there be any data restrictions since the *Melville* operations are in support of Navy programs?

A) Bob Houtman – No, but let him know if any problems arise.

National Oceanic and Atmospheric Association (NOAA) - Mike Webb provided the report for NOAA. Like NSF, NOAA does not have their FY07 budget and is on a continuing resolution until November 17th. Their budget is very unclear at this time. They are looking for funds to repair the piers in Seattle that caught fire. Their new Fisheries Research Vessel *Bigelow* is still in the shipyard in Mississippi while they determine the nature of the motor problem. A big NOAA initiative is installing VSATs. This will be reported later in the meeting.

Discussion followed:

Q) What happened in the fire at Seattle piers?

A) Mike explained that in the early morning on July 5th, sometime after fireworks display, the NOAA pier caught on fire. Cars and trailers on the piers burned. Hydro data was lost. The piers are constructed of wood and have been condemned since the fire. NOAA leases the piers and the owner hasn't decided what to do with them. There are three possible causes of the fire that are being considered:

- The T-AGO's ship power cable had an electrical short and started the fire.
- Fireworks landed on the pier and caught fire.
- Electrical fuse box.

United States Coast Guard (USCG) - Jon Berkson gave the USCG report. The *Polar Star* and *Polar Sea*, ice breakers that were commissioned in the 1970s are reaching the end of design life. The ships provide McMurdo Station breakout and science support in the Antarctic. The *Polar Sea* short-term repairs are complete. The ship will conduct Deep-Freeze 2007 with *Oden*. The *Polar Star*'s crew has been reduced to 34 and is in caretaker status while they await a decision regarding future operations.

USCG Icebreaker *Healy* was commissioned for Arctic science. In 2006, the ship's science operations were cut short after a tragic diving accident resulted in the deaths of two crew members.

The final National Academy of Science report "Assessment of US Coast Guard Polar Icebreaker Roles and Future Needs" was released on September 27, 2006. The report emphasized the need for the U.S. to "project an active and influential presence" in both polar regions and to maintain a leadership role in Polar research, with an icebreaking capability to maintain access to Polar regions including year-round access to the Arctic. The report recommended the construction of two new icebreakers to be operated by the USCG. The report also recommended that the USCG receive maintenance and operations funds to "support an increased, regular, and influential presence in the Arctic", with other agencies providing incremental support for directed missions such as science.

2007 RVTEC Meeting – Bill Martin reported that Woody Sutherland (SIO) and Steve Poulos (U. Hawaii) both volunteered to host the 2007 RVTEC meeting. He asked meeting participants to think about this and it will be revisited later in the meeting.

UNOLS Reports:

Research Vessel Operators' Committee (RVOC) and Safety Committee - Bill Martin reported that the major RVOC items of interest to RVTEC concern establishing Safe Working Loads (SWL) for wire and the update of the Research Vessel Safety Standards (RVSS). The Safety Committee is about half-way complete with the RVSS update. There will be a couple of new chapters. Safe Working Loads is on the RVTEC agenda for discussion later in the meeting.

Fleet Improvement Committee (FIC) - Marc Willis reported on the various fleet renewal activities:

Regional Class – NSF is supporting the acquisition of the Regional Class ships, but they didn't have the internal experience to manage the construction effort. They signed a Memorandum of Agreement (MOA) with the Navy's PEO-Ships to manage the design/build contracts for the ships. A call for proposals to design and build the Regional Class ships went out and seven teams responded. In May 2006, contract awards were made to two teams, Dakota Creek and Nichols Brothers. The first design review meeting was held with each design team just prior to this RVTEC meeting. At the meeting, NSF alerted the teams that there is a construction price cap for each vessel. After a one-year design effort, one ship design will be selected for construction. The contract for construction of the first ship is expected in fall 2007. The ship is expected to take about two years for construction with another six months for outfitting. Solicitation for the operator of the first Regional Class ship is expected soon.

In early 2006, a subcommittee convened to review the science outfitting plans for the Regional Class vessels as called out by the Navy Statement of Requirements. The Subcommittee included Steve Poulos, Stewart Lamerdin, Dave Hebert, Bill Martin, Barrie Walden, Marc Willis, and Dale Chayes. There were some serious flaws with the original requirements. The Subcommittee met with NAVSEA and NSF in March 2006 and provided recommendations. They haven't heard back as to what was actually incorporated.

Ocean Class – As Bob Houtman reported earlier in the meeting, two ships are now planned.

Alaska Region Research Vessel – Funds have been included in NSF's FY07 MREFC. Stay tuned.

Science Mission Requirements (SMRs) for Global ships – Marc encouraged everyone to fill out the on-line form requesting community input regarding the Global Class SMRs. The form is available on the UNOLS web site at <http://www.unols.org/committees/fic/global/GCSMR_Survey_Form.asp>. It is very unlikely that there will be formal mid-life refit periods for the Global ships. Instead, they will be done incrementally. The SMRs will help the large ship operators make decisions regarding improvements.

UNOLS ships are now dry

Americans with Disabilities Act (ADA) Workshop findings will be reported later in the meeting.

Marc encouraged RVTEC to read Matt Hawkins draft SWL document.

Arctic Icebreaker Coordinating Committee (AICC) - Dale Chayes reported that the final report from the National Research Council Committee on the Assessment of U.S. Coast Guard Polar Icebreaker Roles and Future Needs: *Polar Icebreakers in a Changing World: An Assessment of U.S. Needs*, has been published and is available as a PDF free from <<http://www.nap.edu/catalog/11753.html>>. It recommends the USCG as operator of a multipurpose fleet.

The operational arrangements for supporting science on the *Healy* continue to be in serious flux. They have been coordinating support among LDEO, SIO/ODF with coring support from OSU. The NSF/OPP/Arctic program expects to issue a request for proposals for long term support someday.

Two of four scheduled science cruises on the *Healy* were successfully completed prior to a fatal diving accident after which the USCG canceled the rest of the operating season. A short underway period at the end of October for qualifications and training, followed by a shipyard and dry-docking period is planned.

The next AICC meeting will be hosted by the University of Washington in early January, 2007. The *Healy* schedule starts early in the year with a shakedown cruise in late February 2007.

Scientific Committee for Oceanographic Research (SCOAR) - Steve Hartz reported that SCOAR met in May, 2006 in conjunction with their first Airborne Ocean Science Conference at Moss Landing Marine Laboratories. About 35 aircraft-ocean/atmospheric scientists and operators attended.

SCOAR continues to contribute to discussions about a better method for disseminating information about the nation's fleet of research aircraft and about getting scheduled on one. The next SCOAR meeting is planned in mid November via teleconference and will take up the topic of a community survey of needed and desired airborne sensors.

Deep Submergence Science Committee (DESSC) - Annette DeSilva provided the DESSC report. Her slides are included as *Appendix IV*. In 2006, DESSC established criteria for incorporating new assets into the National Deep Submergence Facility (NDSF). NSF requested DESSC to develop the criteria because in the coming years there will be significant demand for new tools to support deep submergence research. There will also be a need for uniform community access to them. The criteria are available on the UNOLS web page at: <http://www.unols.org/committees/dessc/CRITERIADOCUMENT_062206.PDF>.

Applying the criteria, DESSC reviewed a request to add the Autonomous Underwater Vehicle (AUV) *ABE/Sentry* to the NDSF. DESSC recommended that it be added to the NDSF concurrent with the removal of the two towed vehicles *DSL-120A* and *Argos II*. The Council endorsed DESSC's recommendation in June 2006.

In order to better track the status of vehicle and system performance, DESSC will conduct debrief interviews of PIs who use the NDSF assets (*Jason*, *Alvin*, and *ABE/Sentry*). Participation in the debriefs will include DESSC, the science user, and the NDSF operator. Future DESSC meetings will include a summary reports of these debriefs.

NSF and NOAA tasked DESSC to establish safety standards for HOVs. This task arose because the replacement for *Alvin* will not be inspected and certified by Navy and because of interest in using or operating other human occupied submersibles such as the HURL and HBOI vehicles. Certification of the replacement HOV will be by the American Bureau of Shipping (ABS) as is done with several other existing HOVs. A committee was formed to develop these safety standards, which will be modeled after the UNOLS Research Vessel Safety Standards. Dana Wilkes is the Committee Chair. Meetings have been held and writing assignments were made. Major chapters will include HOV Operations, HOV Support Ship, HOV Handling Systems, Training Procedures for HOV Crew and Science User Safety Guidelines. This will be a multi-year effort with a goal of the document being completed before the new HOV comes on line. Monthly phone/web conferences will be held to review chapters and make changes as needed.

The 2006 DESSC Annual Planning Meeting will be held on Thursday, November 9th at the Seattle Aquarium. The meeting is in conjunction with the Western Society of Naturalists (WSN) meeting. This forum was selected in an attempt to better reach the deep submergence biologists.

Subcommittee Reports:

Post Cruise Assessment (PCA) Subcommittee Report – Mary Lynn Dickson reported on the activities and preliminary findings of the PCA Subcommittee. The PCA Subcommittee includes Curt Collins (Chair), Wilf Gardner, Mary-Lynn Dickson and Tim Askew. The percent return for Post Cruise Assessments (PCAs) for the UNOLS fleet is about 60% currently. PCAs submitted by Chief Scientists, Captains, and Marine Technicians for cruises conducted during the previous year for those ships were examined. The PCAs appear to be useful in soliciting critical comments on ship operations and associated science activities. The PCA process has been useful in identifying what worked well on the cruise and what needs to be improved.

The Subcommittee will recommend that the reports should be treated as privileged communications and with limited distribution (Chief Scientist, Principal Investigator, Marine Superintendent, Technical Services Manager, Ship's Master, Ship's Technician, Agency Ship Manager, Agency Science Manager, and UNOLS Office). The practice of posting PCAs on a ship's bulletin board should be discontinued.

The subcommittee also feels that the Marine Technician PCA report should be simplified so that it only addresses problems with the ship's scientific equipment. Lastly, the subcommittee recommends that the PCA grading scale be changed.

UNOLS Activities – Peter Wiebe, UNOLS Immediate Past-Chair, provided the report that covered 2006 UNOLS issues, activities, and accomplishments. His slides are included as **Appendix V**. Major activities included:

- Briefing the Naval Research Advisory Council on "What is UNOLS"
- Forming a subcommittee to develop procedures for Recommending Non-operational periods in the UNOLS Fleet. This document was then submitted to NSF, ONR, and NOAA.
- Peter, Dave Hebert (FIC Chair) and the UNOLS Office provided input to the IWG-F regarding their Fleet Renewal Plan

- The Marcus Langseth Science Oversight Committee (MLSOC) was formed. This is a new UNOLS standing committee.
- Initiated discussions on Codes of Conduct - The Impact of Scientific Studies on the Environment. A presentation was made at the UNOLS Council meeting on “High Seas” Conservation and Marine Scientific Research.

Peter reviewed the names of departing Council and Committee Members. He provided the UNOLS Council Election Results and the 2006 committee appointments. He then presented a chart showing the current Federal Oceanographic fleet renewal plans along with a chart that provides a projection of Fleet capacity into the future.

UNOLS developed a brochure to help answer the question, “What is UNOLS?” The brochure provides a short description of what UNOLS is and what it does. Committee structure and tasks, number of ships, their distribution, and decommissioning dates are included. The brochure provides the status of the UNOLS fleet today and status of funding.

Next Peter reported on the findings and recommendations from the UNOLS Council regarding budget shortfalls and procedures for recommending non-operational ship periods. The findings included:

- The shortfall in funding for the UNOLS fleet is not a short-term issue.
- The under funded situation of the UNOLS fleet is unlikely to be rectified in the near future.
- While NSF support for the fleet has, until recently, supported a nearly constant number of operating days over the past decade, Navy and NOAA support has been gradually declining. This trend is unlikely to be reversed.
- The under-funded situation for the UNOLS fleet could potentially become even worse as new larger ships replace the Intermediate and Regional ships.
- Maximum funding for science field programs can be preserved with cold lay-ups or reducing the fleet size.

The UNOLS Council has recommended a list of values, presented in order of priority, to be used when making decisions about lay-ups, partial lay-ups and retirements. In prioritized order, the values are:

1. Meeting Science Needs
2. Geographic Availability
3. Cost of Operations
4. Quality of Operations
5. Sharing the Pain
6. Diversity of Operators

As for 2007 fleet operation recommendations, nothing formal has been received from the agencies to date (10/2/06). However, no lay-ups are planned, although few schedules are at optimal levels.

Lastly, Peter reviewed the 2006 UNOLS Vision, Mission, Goals and Objectives as endorsed by the UNOLS membership. Details are included in Appendix V. The UNOLS goals for the upcoming year include:

- Promote broad, coordinated access to oceanographic research facilities (access)

- Support continuous improvement of existing facilities (improvement)
- Plan for and foster support for the oceanographic facilities of the future (planning)

Discussion followed:

Q) During ship lay-up periods, can operators use this time for training, etc?

A) Perhaps.

Q) Peter was asked if he was satisfied with incorporating the OOI needs into UNOLS.

A) Peter – Additional information is needed. The OOI is working to come up with a new estimate on how much vessel support is required for OOI. There was an NSB study and the UNOLS Chave report that estimated that amount of ship time needed. However, reality set in, and given the financial constraints, OOI is scaling down their estimates. Sandy Shor added that the funds for OOI construction has not yet started and may perhaps start in FY07, but could be pushed back to 2008. It is silly to try to make estimates at this time.

Q) Stewart Lamerdin expressed the importance of crew retention and training. He asked if the Council is addressing this issue.

A) Peter – the Council is not yet addressing this issue. They need to hear from RVTEC about the scope and nature of the problem.

q) Stewart Lamerdin – Should there be a letter from the RVTEC to the Council regarding this issue?

A) Yes

ADA Guidelines for UNOLS Vessels Committee – Joe Ustach reported on the effort to establish ADA Guidelines for UNOLS Vessels. His slides are included as *Appendix VI*. Joe reported that a Workshop was held on September 18-19, 2006 at WHOI. Some of the general observations included that physically disabled people will have big obstacles on most UNOLS Vessels. Visually and hearing disabled people will have fewer obstacles. Project information and details are available on the project web site at <www.unols.org/committees/fic/ADA/ADA_Guidelines.html>.

Joe reviewed some of the findings, technical concerns, and improvement recommendations that were identified during the workshop. For visual impairments, suggestions for improvements included computer compatibility with visual aid software, consistent lighting throughout work areas and vans, and proper signage. Physical impairment improvements included mounting items within reach (e.g. off/on switches), providing accessibility to ship provided equipment, lowering the height of benches, sinks, fume hoods, maintaining line of sight in labs, and providing lock downs for wheel chairs in labs.

Recommendations were suggested to address safety issues. These included:

- Improving pre-cruise communication among scientists, marine techs, ship's officers and crew
- Adding warning strips – tactile stripping at base and tops of ladders
- Start railings of ladders and on both sides of ladders
- Add high contrast coatings on trip hazards (cleats, tie-downs, etc.)
- Reduce obstacles in passageways
- Add strobe lights/visual cues connected to the ship's alarm system

- Institute a buddy system
- Emergency procedures/safety manuals should be available in a format that can be read by the visually impaired

Discussion followed:

Q) How will physically impaired individuals board and disembark from the vessel?

A) Joe replied that this will be one of the biggest hurdles and solutions are still being considered.

Q) Did the ADA Workshop address colorblind disabilities? – A) No

Q) How would a disabled person be evacuated from the ship during an emergency?

A) This was addressed at the workshop and it was suggested that the procedures that are currently in place to evacuate an injured person would apply.

Radio Frequency Spectrum Management Committee – Richard Perry provided a report on the subcommittee's activities. His slides are included as *Appendix VII*. The subcommittee includes Steve Hartz, Toby Martin, and Richard Perry (Chair).

Richard explained that the committee is working to document RF usage. They are documenting RF services utilized in an effort to preserve those services for continued usage by the oceanographic academic community. Competition for the RF spectrum is increasing and underused services are potential targets for aspiring users.

The survey covered shipboard RF usage both for science purposes as well as standard ships navigation and communication services. They also attempted to document specialized science gear usage.

The results of the survey were reviewed. The use of twenty four services was documented. Five new or future services were identified as being potentially of interest to our community. Richard explained that there were fewer than ten respondents to the survey at this time. The survey and results can be viewed at <<http://www.shipops.oregonstate.edu/martech/rvtec/2005/rf.survey>>.

Discussion followed on what should be the next steps - Where do they go from here? Bill Martin explained that the RVTEC survey was the first step. Peter Wiebe added by explaining RVTEC survey was chosen as the first step because they know the most about the shipboard uses. The next step would be to poll the scientists and instrumentation engineers to determine what additional RF spectrum uses they have or see coming. As a third step, the RF spectrum needs of the ocean observing systems should be evaluated.

The committee will continue to seek input from RVTEC to increase the response level.

Lunch Break

RVTEC Issues and Items of Interest:

Equipment Calibration – Bill reported that there was an email to the UNOLS office from a scientist regarding instrumentation calibration information. The scientist claimed that the shipboard marine technicians on the cruise did not know how to give it to the scientist. There appears to be some confusion since most technicians know how to provide this information and it is routinely provided. It was point out that there is some equipment that is not as standard and the calibration might not be obvious. Discussion followed on what should be provided to the scientists as standard calibration information. Some scientists request the equipment to be calibrated more frequently than standard practice. Barrie Walden suggested that calibration practices could be included in the on-line Technical Services document for each operation.

Defined Levels of Technician / Instrumentation Support Update – Annette DeSilva provided a brief status report on the effort to develop an on-line site for posting the technical services support information. This data base will be part of the UNOLS ship time request system <http://unolsweb.cms.udel.edu/STRS/Public/diu_login.aspx>. Annette displayed the site and showed where the ship users would eventually be able to access the technical serviced information. The delay in the project has mostly been due to limited people-resources. We are hopeful over the course of the next year the on-line system can be developed. Stay tuned.

HiSeasNet Update - Bill Martin presented slides that had been prepared by Steve Foley and Jonathon Berger (SIO). They are included as *Appendix VIII*. The slides provide the current status of HiSeasNet and the services that are provided. The services include installation for new ships, ship and shore equipment maintenance twice a year, satellite bandwidth, and Hub station connection to Internet.

The HiSeasNet C-Band (2.4m dish, Global coverage (excluding polar regions)) is now installed on *Atlantis, Kilo Moana, Knorr, Melville, Revelle, Seward Johnson, Thompson*, and will also be on the *Langseth*. Ku-Band (1.2m dish, mostly North America coastal coverage) system is installed on *Endeavor, New Horizon*, and *Pelican* (1m dish).

Slides showing antenna comparisons, Pacific and Atlantic Coverage, Ku-band coverage, and equipment downtime figures were provided. Most problems are user or ship related. The slides provided information about the problems experienced and possible solutions. These included:

- Power outage, antenna repoints, gyro failure, unfamiliarity with gear, etc.
 - Solution: Learn gear and ship quirks via training program under development
- Antenna pointing failures occur, but usually are not catastrophic
 - Solution: Upgrading older ship installations during maintenance to newer SeaTel antenna logic
- When equipment dies, it is usually RF gear, despite it being the “most reliable in the business”
 - Solution: Spare LNAs on board, encourage all ships to have on-board RF spares, depot converter and power amp spares in SD

Future HiSeasNet work includes development of a training program, bringing the *Langseth* system online, and continued routine maintenance/upgrades of all equipment.

NOAA VSAT Project - Doug Perry provided the report on NOAA's VSAT project. His slides are included as *Appendix IX*.

The VSAT Project Goals are to provide secure 24/7 WAN connection between deployed ship networks and the NOAA Trusted Campus Network. The goal is also to enhance safety, operational efficiency and crew morale. They will utilize a phased approach to spread acquisition costs over several fiscal years and hope to develop in-house expertise to reduce installation and maintenance costs.

The VSAT service would provide T1 WAN connection from the Earth-station/Gateway to NOAA Network Operations Center in Silver Spring, MD. Each ship operates within the NOAA Trusted Campus Network via the iDirect network and is protected by the NOAA Firewall. There is a dedicated bandwidth and shared segments with minimum 128 kbps up/down connections for each vessel. Voice over IP phone service is to be provided for each ship and connected to the NMAO VoIP server in Silver Spring. Doug reviewed the cost. The benefits are that the ships are "always connected" at sea, there is safer and more effective operations with improved morale, and there is a better value.

The annual cost estimate for each year between FY05 and FY08 was provided. The annual estimate for FY07 for equipment and bandwidth is \$770,000. Doug presented the project timeline and acquisition plan for installation of VSAT on the NOAA Fleet. The fleet configuration and network diagram was displayed. The Ku-Band system selection was reviewed along with its operating area. Next the C-band system selection was reported.

The VSAT implementation process includes the following steps: VSAT acquisition, a ship check, a weight and stability study, ship modification design, bandwidth acquisition, VSAT installation by a vendor, onboard training and testing, and lastly a service Level Agreement or in house support. Doug reported on the *Ron Brown* and *Rainier* installation and provided a few operational notes on Orbit reliability, SeaTel 9797, and Bandwidth usage.

SAMOS Ship Visits – Shawn Smith reported on the SAMOS initiative. He has participated as an observer on NSF ship inspections. They are working to build a better relationship between the observer and the data collector (FSU) and to explain why the SAMOS is important. They have prepared a manual that includes instruction on communicating with the SAMOS technicians. The manual will be available at the INMARTECH Symposium.

New UNOLS Wire SWL Standards – Matt Hawkins (U. Delaware) drafted a Safe Working Load (SWL) standards document that Bill Martin circulated to RVTEC prior to the meeting. Matt has requested input to the document. He could not attend the RVTEC meeting but will be available at the INMARTECH Symposium.

Discussion followed:

- Rich Findley – There is no discussion in the SWL standard of yield.
- Dale Chayes – This is a good start, there are a lot of assumptions and definitions that are not included in this document. They must be included for the document to stand on its own.

- Rich Findley – The wire yield must be addressed – it is much lower than the breaking strength. Once the wire starts to yield, the breaking strength changes. You must never yield the wire. The safe working load cannot be established unless the yield is known. The minimum working load should be based on yield. Once the wire reaches yield, it is useless.
- Bill Martin suggested that once this meeting is over and everyone has a chance to provide input, a phone conference with Matt could be arranged with all interested parties.
- Rich Findley asked who the wire engineer is. Where is the engineering? This document should address the safety of humans and equipment in over-the-side operations.
- Sandy Shor – The document describes a procedure. It is based on a study conducted by Matt who based it on UK safety standards. He asked if these procedures are straight forward enough to carry out. Bill Martin replied “no.”
- Rich Findley – The wire needs to be tested to determine where it will see the most load.
- Bill Martin – Tom Althouse has a way of testing wire diameter. After testing his wire, he determined it should be replaced. Barrie Walden explained that a magnetic (resistance?) test was used and Dolly has provided funds for the purchase of this instrument so that it can be shared among the ship operators. Rick Trask will present this during INMARTECH. Barrie briefly described the wire testing technique and explained that it could ride the wire during a cast. They plan to buy the testing equipment and circulate it to the users.
- Steve Poulos reported that he ran across an old file on wire testing. The engineer mic’d a cable as it went down on the *Moana Wave*. He will look for that piece of paper and circulate it.
- Bill encouraged the RVTEC to send him their comments and he will pass them to Matt and the Safety committee.
- Sandy asked if this should be a procedural item, or should it be an equipment check? Dale replied that both are needed. There needs to be a fundamental mechanical basis as well as an operational procedure that can be implemented. This is the closest we’ve come. Let’s come up with a list of questions for Matt. Then either generate another version or form a subcommittee.
- Barrie Walden – Over the last year they have been trying to get a feel for what is going on with the wires. They have been looking at sheave arrangements. They are looking at wire condition. If anyone has any other ideas of what sort of things should be looked at when determining wire life, let them know.
- Richard Perry – Perhaps we should document what is not safe.
- Has anyone taken any real numbers and put them into these formulas? Barrie – When a wire doesn’t look good, it tends to be a lot worse than it is.

- The question was asked if there are any synthetic wires in the fleet. Sandy – There are none in shared use, but there are some in special use and there is the MVP.

Break

New Business:

Mailing lists – There was a brief discussion on the UNOLS email lists. It was recommended that there be an annual check to determine who is included on the general RVTEC email distribution list and who is included on the Marine Tech Managers email list.

Data Distribution – Stewart raised the issue of data distribution and asked “What is the policy for providing data to individuals?”

- Sandy explained that if federal dollars purchased the data it is the responsibility of the PI to archive the data and then make it public after some period. The ship should not give away the PI data without the PI’s permission. You can put a check box on the pre-cruise form asking if certain data can be made available to others.
- Barrie – WHOI policy is that underway data is going to be given away unless otherwise indicated. PI data is not given away until two years and the PI is notified.
- Peter Wiebe – Cautioned that everyone needs to pay attention to law. If data is acquired on public funds, it has to be provided publically at some point. It varies, but two years is the max. He added that there is a need to manage the metadata.
- Bill Martin – UW has been given directive that their DIS data should be sent to LDEO for data archiving. Bill will add this to the cruise planning document.
- Dale –RIDGE is required to put their data into the Marine Geosciences Data System.

Nominating Committee – Marc Willis was nominated to serve as the RVTEC Nominating Committee for another two years.

2007 RVTEC Meeting – Three locations have been suggested as sites for the 2007 RVTEC Meeting – MLML, SIO, and Hawaii. Sandy requested that meeting be held at MLML. The Moss Landing Marine Laboratories will host the 2007 RVTEC Meeting.

Adjourn – the meeting adjourned at about 4:00 pm.