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**UNOLS Council Meeting**  
**Thursday-Friday, June 20 & 21, 2002, 8:30AM**  
**University of Washington**  
**Marine Science Building, Room 123**  
**Seattle, WA**

*Appendices*

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*Thursday, June 20, 2002*

**Welcome and Introductions** – The UNOLS Council met in the Marine Sciences Building, Room 123 At the University of Washington (UW) campus in Seattle. Bob Knox, UNOLS Chair, called the meeting to order at 0830. Dr. Russ McDuff, Associate director of Oceanography at UW welcomed the group. Introductions were made around the room. Daniel Schwartz provided logistical information. The items of the meeting agenda, [Appendix I](#), were addressed in the order as reported here in. A list of meeting participants is contained in [Appendix II](#).

**Accept Minutes** - The Minutes of the February 2002 Council Meeting were reviewed. No corrections were made. A motion to approve was made and accepted.

**Nominating Committee** - Curt Collins presented the draft slate for the annual meeting. The Council approved the slate contingent on Peter Wiebe accepting nomination for Chair Elect. Peter still needs to meet with WHOI director, Bob Gagosian to discuss the responsibilities of the position. Marsh Youngbluth was nominated by HBOI for the Chair position.

**Fleet Renewal Plan implementation** – Mike Prince provided a synopsis of the current status of the Ocean Class and Regional Class Workshop plans. He reported that the focus of the workshops will be on more generic SMRs for each class and that it is important that we continue to receive responses. The data that has been received so far needs to be synthesized. At this point there are quite a few people willing to attend the Workshops and soon we will need to sort through this list of potential invitees and determine a way to proceed. There is still a need to recruit more Workshop participants, especially from non-ship operator institutions for the Ocean Class Workshop. The Ocean Class workshop also needs to get more science input. NSF has said it is okay to proceed, but that they would like to see more science input.

Wilf Gardner asked how we could stay within the size limits of the FOFC plan? Answer: These Workshops are intended to define the needs. It may turn out that the Regional Class of ships may look very different depending on the region they will operate in.

Discussion followed concerning how to utilize the input we are receiving to make choices and decisions:

Regional differences need to be identified – Bruce Corliss stated that it is appropriate to document what we have right now, but the challenge will be to forecast what will be needed in the next 20 to 40 years.

Create SMRs that look at long range needs – Dan Schwartz commented that projecting forward is important and that there are drivers for increased size: ROV use is increasing and will require bigger winches. Multibeam mapping and observatory support will become a driver for more space. Wilf Gardner commented that some of the observatory work might move to other types of vessels, as this is service-oriented type work. Dale Chayes remarked there are more multi-PI cruises and wonders if this will continue? He also suggested that more technologists and equipment designers should be included in the

SMR development process.

Mike said he has one week before we have to commit to the hotel for the Ocean Class Workshop. He briefly went over the attendee numbers. Mike then asked for approval to proceed and to send invitations to the people we would like to lock in (Steering Committee, Frank Sansone, Elizabeth Venrick, Stephen Miller and James Cochran). Council voted to go forward with both the Ocean Class and Regional Class Workshops and to lock in the science users. The Steering Committee will need to task themselves to recruit one sea-going scientist from their own discipline from a non-ship operator institution. Mike said he would also like to lock in the operational types for the meeting.

Mike asked if there was a need for there to be a technician representative at the Workshops, such as, Dana Yoerger, Jim Bellingham, Mark Rognastad, or Jay Tustin? Dale said that we have not done a good job in engaging the technical community. Dale was tasked to look for technologists to provide input and perhaps recruit two to attend the Workshops. It was noted that perhaps Observatory people should be included, possibly Craig Lee or Bruce Howe (UW).

Discussion then centered on what the process will be for putting together the information for the final report. There will be a need to identify and include the regional differences that might exist.

There was an inquiry about the design process and how community input would be included during that stage. The SMR and design process was then discussed in terms of whether or not it would include iterations and community input at the various steps. Annette DeSilva stressed the point that the Roadmap for Fleet renewal does exist and is posted on the web, <<http://archive.unols.org/fic/renewal/roadmap.html>>. Dale talked about the idea of drafting a description of a process for moving from SMR to design, to construction, and operator selection. He said we should recommend what we think is the best one or two ways to proceed, perhaps depending on funding agency.

The Roadmap draft is part of an iterative process that needs input to keep it up to date. If we do not suggest our version of the best plan to design and build, then we are left with existing programs and/or what the agencies come up with.

Dave Farmer, Dean of the Graduate School of Oceanography at URI, wrote a letter to Senator Reed of Rhode Island who is interested in inserting authorization language for the FOFC renewal plans. Senator Reed responded and asked which agency person to talk to. It was recommended that he speak with Margaret Leinen. Dan Schwartz commented that academic fleet renewal is a major topic of interest for the Oceans Commission.

Another discussion surrounded the subject of whether or not the Navy will submit a request for authorization and/or appropriation for building vessels in the FOFC plan. It appears that the Alaska Region Research Vessel (ARRV) and the FOFC plan have been presented to the NSF board. The request for funds to support the construction of the ARRV via NSF's Major Research Equipment (MRE) process would place the ARRV at the end of the queue in a long list of NSF major programs.

**Navy Oceanographic Ship Common Hull Study** – Annette DeSilva, summarized plans for the Navy's study. A kick-off meeting of the Navy's Oceanographic Ship Common Hull Study was held on May 29<sup>th</sup> at the offices of the Navy's contractor, JJMA, Inc. Representatives from NAVSEA, NAVO, the Oceanographer's Office, UNOLS, ONR, NOAA, NSF, USCG, and JJMA were present.

At the meeting, Capt. Houtman (ONR) provided an introduction and said that fleet renewal is a major focus. The House Armed Services Committee FY03 Defense Authorization included language within its report addressing support for oceanographic research within the 6.2 applied research account. This language states:

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

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

Annette said that the Navy intends to include all interested parties in the common Hull study – UNOLS, NSF, NOAA, USCG, and Navy. Representatives from all of these organizations were present. The Navy has contracted with the Naval Architectural firm of JJMA, Inc. Dan Rolland of JJMA will lead the program. Dan reviewed the goals of the study:

**Study Goal:** To reduce acquisition costs for new Navy oceanographic ships by examining the feasibility of a common hull platform suitable for research vessels and T-AGS missions. Can T-AGS and research vessel missions be performed by the same, or similar platforms, and is such a platform affordable to buy and operate (for all users)? Regardless of the conclusion, the study will help advance the process of defining requirements for new T-AGS and research vessels. The task was awarded 26 April 2002 for a 6-month planned duration.

The JJMA Common Hull Team includes:

- JJMA – Naval Architecture, Project Coordination
- Glostn and Associates – Requirements Development, design review
- ManTech Associates – Acoustic, sonar configurations
- BBN – Acoustics

Task Summary will be an iterative process to:

- Establish Requirements
- Refine and Modify
- Collect and analyze parametric data
- Research existing ships
- Survey available technologies
- Perform Rough Order of Magnitude (ROM) feasibility studies to determine platform characteristics
- Common Hull Assessment
- Recommendations

Collect parametric data for existing oceanographic ships and perform analysis

- US and foreign vessels included
- Consider non-oceanographic ships for innovative hull types
- Visit selected ships of interest for further info

The study will be an ongoing iterative process. It will provide real time feedback on requirements that drive design features and quantify their associated costs. The study will recommend modifications and refinements to requirements to enhance commonality.

Hull Types to be considered include:

- Monohull (all T-AGS and all but one AGOR recently in this category)
- SWATH
- SLICE
- Catamaran (fast ferry industry, USNS HAYES, ASRs)
- Trimaran (UK R/V TRITON demonstration ship)
- Others
- High Speed Ferries (HSV)

The study will:

- Perform feasibility studies to determine platform size and characteristics that meet requirements
- Computer synthesis modeling
- Look at innovative ways to achieve common hull that will meet different user requirements
- Hull form variations: parallel midbody, geoism
- Modularity: mission equipment, labs, propulsion plant, generating plant
- Common design features for scalable vessels
- Develop cost estimates for acquisition and operation

The Navy would like to include as many ships as possible in the study, including Regional vessels.

The study will recommend the best hull design as well as the most scalable hull design.

All of this is scheduled to be completed by 26 October 2002.

Immediately after the kick-off meeting Dan Rolland, Annette DeSilva, Dolly Dieter, Tim Pfeiffer, Capt Houtman, and NAVSEA stayed to review the Ocean Class parameters provided by Joe Coburn, Bob Knox, and Dave Hebert.

The next meeting is tentatively planned to be in approximately 6 weeks. It was suggested to try and coordinate this meeting with the Ship Scheduling meeting on July 17<sup>th</sup>.

**Status on ARRV Preliminary Design, model tests, community input, funding** - Larry reported on the ARRV progress and model tests:

- The model testing reports are near completion.
- Icebreaking through ridges is faster going astern.
- Acoustics – cannot meet ICES standards because of the azipods, but the ship is still fairly quiet.
- Azipod reliability has been examined.
- Crew retention issue – habitability, single staterooms, recreation room.
- Helo ops are still unresolved – takes up a lot of space and adds complexity.
- Ship will have a fisheries capability
- Ship will meet CASPPR (Canadian Arctic Shipping Pollution Prevention Regulations) requirements (double hull)
- Internal noise levels – meets IMO requirements

In review of the ARRV effort, there were a few recommendations that should be considered as part of the design efforts for the Ocean Regional Class vessels:

- Identify items that will need to be permanent equipment on the ship and those items that can be portable.
- Focus on habitability issues – noise, staterooms, air quality etc.
- Provide an ROV capability.

Contract design for the ARRV could be complete by the 1<sup>st</sup> or 2<sup>nd</sup> quarter of next year. The base shipyard contract cost is \$41.2 M. With add-ons the total is \$57M. Annual operating costs are estimated at \$5M/year. This is estimated on a 275-day operating year. This translates roughly to a \$17K ship day rate plus technician costs for a total day rate of \$20K. In August 2002, the draft preliminary design and model testing for ARRV should be completed.

The vessel is a very stable working platform in rough seas. It has good station-keeping capabilities and maneuverability.

The design requirements for the ARRV were reviewed:

Performance requirements:

- Open water requirements – sea keeping and station keeping
- Ice operations requirements – 2ft level ice, 7 feet ridges

## Regulatory requirements

- Structural requirements
- Safety requirements
- Pollution requirements – CASPPR
- Habitability requirements – limited handicap, OSHA

The ARR V preliminary design study included a good visual comparison of the aft working deck space on three different vessels, the ARR V design, WECOMA, and ALPHA HELIX. It was recommended that a similar graphic be prepared for the summer SMR workshops.

The hull geometry is a compromise for the ability to operate between open water (endurance, range, speed and quietness) and ice.

- Reamers allow an increased icebreaking capability.
- Azipod propulsion – electric motors directly connected to propellers – Advantages:
  - Superior maneuverability
  - Ice clearing ability
  - Improved ice ridge extraction
  - Reduced noise (inside the ship) and vibration
  - Mechanical simplicity
  - Construction simplicity

There was a question regarding the 2.5 level ice limit? This is a trade-off, more ice means more horsepower, which means more cost, weight and fuel carrying capacity.

There is a concern about intakes for science seawater. This is a problem on the HEALY when they are in ice because the intake is in the bowthruster well, which becomes clogged with ice almost immediately after entering ice. Other systems will be examined, such as on the PALMER.

Helicopter – There has been a lot of debate on whether or not to include the capability to land helicopters on this vessel. Coast Guard Helicopters and most others that might be used for personnel transfers are probably too big to land on this ship. It may be possible to provide space for smaller helicopters or just provide good hover space. This is still an open question.

**KILO MOANA Status report, Inspections and Science testing** – A report was provided prior to the meeting by Stan Winslow:

“On 20 June 02 we anticipate that the KILO MOANA will be turned over to UH. The judge in the mediation case between Lockheed Martin (Prime Contractor) and AMI (the shipyard) ruled in Lockheed Martin's favor last Sunday. AMI had been refusing to turn over the deed for the last 6 weeks until LM paid the additional costs AMI claimed. The judge ruled that AMI cannot hold the deed so they ‘re now working out the details of the transfer, which we anticipate, will be completed in time for a turnover to UH on Thursday. The crew is in Jacksonville or enroute. We will move the ship to Mayport Naval Base after the turnover for approx 30 days of outfitting.

One major engineering issue still remains and that is EMI. The fire alarm system is receiving some erroneous signals, especially when the bow thruster is used. An HF filter is being installed today to hopefully resolve that problem. It is scheduled to be tested tomorrow (Wednesday).

Our revised schedule has the ship arriving in early September in Hawaii. The delay in the delivery resulted in us postponing one cruise (Popp) until next year, and placing part (24 days) of another one (Michaels) on KOK. After arrival in Hawaii, KILO MOANA will do the remainder of the Michaels Cruise, then the Moen Cruise, and two HOT Series Cruises.

The last six months in this process have been trying-at best; however, we believe it will be worth it. Our work with the ship over the last six months has demonstrated that she is definitely on the cutting edge of technology in many ways and will be an outstanding addition to UH and the UNOLS research fleet.”

Larry brought up the issue of science testing and evaluation. He suggested having a fair, complete and somewhat formal evaluation of KILO MOANA's capabilities as a SWATH. It was decided to contact the PI's scheduled for cruises on KILO MOANA to ask them to evaluate and report on the vessel's performance. We need a good assessment of the hull form and its motions at sea. The FIC would like the PIs to evaluate the SWATH as a science platform, "how does it compare to a conventional monohull?" Larry has sent a letter to Brian Taylor recommending that a good assessment of the hull form is needed, as well as, constructive criticism. Larry reported that Brian was considering a dedicated assessment cruise. A proposal to support such a cruise was never written or submitted or funding. In summary, the FIC feels that both an assessment cruise is needed along with an ongoing assessment of the hull form.

Larry plans to contact Tony Michaels (USC) who is scheduled for an ARRV cruise and plans to provide him with a list of specific things to look at while on his cruise.

**Status of CAPE HENLOPEN Replacement effort** –Matt Hawkins provided a written report prior to the meeting. Annette summarized the report, which is provided below:

"There's a lot progressing behind the scenes, but not a lot of exciting stuff to report - still on target according to our original plan. Current status is still pretty much per our web site: <http://www.ocean.udel.edu/level1/ship/vessels/rvchreplacement/index.html> (Click "Current Status"). A press release put together by the University can be seen at: <http://www.ocean.udel.edu/newscenter/newship.html>

The next meeting of our design committee (DRVC) has been set for Wednesday, September 18th here in Lewes. Our plan is to build a full-scale mock up of the labs, vans, and aft deck to allow detailed review/comment.

Weights, structure, and lines are being refined in preparation for model testing, which is planned for mid-July. The goal is to have results back by the DRVC meeting in September, since we want to be able to report findings to the committee. Review by FIC should occur in October/November before specifications and drawings are finalized for bid.

Specification and "Preliminary Phase" drawings will be going out for bid in early 2003, with yard selected for "Final Design" by mid-2003. Construction still scheduled to begin mid-2004, with delivery at the end of 2005."

The University of Delaware, private donations, the National Science Foundation, and the Office of Naval Research plan to provide funding for the new vessel and its outfitting.

**Impact of Ocean Commission Hearings** – Bob Knox reported that what the Ocean Commission is hearing is fairly consistent in terms of fleet renewal. Bob got the impression from his testimony that things have gone well and that his presentation was non-controversial. Bob has drafted a response to some follow up questions. CORE and UNOLS have also been asked for information on inventories of ship's and ROVs beyond the UNOLS fleet. Core is conducting a survey and the UNOLS office is updating information in the small research vessel inventory.

### **Other venues for developing support for the FOFC plan**

Dan Schwartz said that an effort should be made to enlist the support of CORE's new president, Admiral Richard West, early in his term. Mike has met with some of the CORE staffers in an effort to better coordinate CORE and UNOLS efforts. A suggestion was made to bring CORE staff on UNOLS cruises. Every institution should be making sure their Congressional representatives are aware of the importance of fleet renewal, similar to what has been done in Rhode Island.

**Facilities beyond Ships** - Curt Collins presented a proposal to establish an aircraft facilities coordinating committee named the Scientific Committee for Oceanographic Aircraft Research (SCOAR). The proposal

is included in [Appendix III](#). They would initially work with the Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) at the Naval Postgraduate School (NPS) after being designated as the first national oceanographic aircraft facility under Appendix II of the UNOLS Charter. Curt said he has contacted the various agency representatives and they are in favor of the approach being proposed. He reports that they seem very supportive and thought it should go forward with CIRPAS as the first facility, with the ability to add facilities in the future. Because UNOLS Annexes are reviewed every three years, this can be viewed as a trial period.

Dennis Hansell asked what the task is for the Council. His concern is that he feels that he is not familiar enough with CIRPAS. He would like a formal presentation from CIRPAS. He doesn't feel qualified to vote on the second item on the ballot without more information.

### ***LUNCH BREAK***

Discussion on CIRPAS resumed after the lunch break with more detailed information presented so that the Council could then vote on recommending the proposal. Curt reviewed the tasking request that he sent to the subcommittee via email after the last Council meeting. He then reviewed the responses including the mission, goals, and objectives of the Aircraft Committee. Next he reviewed the facilities and programs at CIRPAS including their current list of projects.

The Facility operates a variety of different aircraft. The DeHavilland Twin Otter is the main manned aircraft. They also have an optionally piloted aircraft, the GA-ASI Pelican, and a couple of remotely piloted aircraft.

Curt also reviewed their instrumentation inventory. They have had successes in developing new instruments through small business initiatives. These instruments are categorized as facility, research, or other development.

Patty Fryer remarked that it seems as if there is an opportunity for small AUV deployments for fast response from aircraft. The consensus was that this is a good idea. Another role for SCOAR would be to facilitate these types of collaborations and innovated uses of the aircraft facilities. Discussion followed on applications for these small aircraft.

Tim Pfeiffer, the person who initiated the process of CIRPAS becoming a National Oceanographic Aircraft Facility said that he envisions a broader use of the facility in support of the ocean sciences as a result of this process.

A question arose as to whether adding SCOAR to UNOLS would increase the workload for UNOLS. Right now the funding is for travel only and a lot of the support for the committee will be provided by CIRPAS. ONR has indicated that they will support the UNOLS effort for this committee. NSF, NOAA, and ONR all see it as beneficial, but in the beginning, it would likely be supported similar to the AICC model (i.e. separately from the basic UNOLS budget).

Discussion began on specifics of the committee structure: The Scientific Committee for Oceanographic Aircraft Research (SCOAR) would be analogous to DESSC in that it would serve in an advisory capacity only. DESSC provides the link between the scientific community and the facility operator. They do not manage the facility itself, they only advise on it. The SCOAR can be dissolved by membership vote and can also be dissolved by a lack of funding.

More questions arose as to the utilization level of CIRPAS. The facility seems to be fully utilized in recent years. It is a facility that is being used (not dying) and it appears to have much potential for increasing access to the ocean community. Other questions were raised regarding the definition of a Full Operating Year and at what level are they now operating? What is their past operating level and projected operating level? These questions must be answered to ascertain if the aircraft are being fully utilized. If so the committee may be a means for identifying the need for additional assets. The committee could also help shape the design of future facilities.

Wilf made a motion to move ahead and put both ballots before the membership in September. The motion

was seconded. The ballot will be re-worded and also include additional information before it is re-circulated for final review.

CIRPAS is an operating facility at NPS. Information on the CIRPAS Committee and the proposal can be found in [Appendix III](#) or <<http://archive.unols.org/committees/scoar/cirpas/cirpas.html>>.

**ISM Briefing** - Morgan Turrell (UW) gave a presentation on the status of ISM compliance in the UNOLS fleet. His presentation is included as [Appendix IV](#). All of the large ships are ready for the July 1, 2002 deadline. Documents of compliance have been issued for the Nimitz Marine Facility (SIO), WHOI, LDEO, Hawaii and UW. They will be audited every year. REVELLE, MELVILLE, THOMPSON, EWING, and ATLANTIS have been issued Ship Management Certificates. KNORR's audit is this month and KILO MOANA will complete their audits before the start of operations. These ships will be audited every two years. Every USCG, ABS, and Port Entry Inspection are potential audits. Some smaller vessels were issued a Voluntary Compliance Certificate.

Plans for the future include refining ISM practices such as circulating personnel to spread a culture of safety and to reduce delays in training. New vessels will also be added to the regime.

Some comments/findings that have been received in response to ISM compliance are:

1. Avoid ISO-9000 certification - Early on they decided to avoid ISO 9000 certification, as it seemed to be geared more for industry.
2. Initial inertia - a lot of worry on the impact. These concerns are passing as it is realized that documentation is the major issue.
3. Some confusion and concentration on details
4. Now we have to maintain these systems.
5. There are real expectations for the science community to help make this work—not business as usual
6. Making science happen safely...without bureaucratic delay is our goal.

Morgan then went on to discuss some of the non-conformities. There is some misinterpretation of the ISM Code. Documentation requirements are significant. There are growing pains with personnel. There have been some auditor differences in interpretation of the new rules. The operators have also had to deal with problems related to gear failures and documentation numbering.

Morgan reviewed some of the new expectations for science:

1. ISM not a creation of RVOC. Law mandates it.
2. The Safety Management Systems will vary from operation to operation.
3. Basic knowledge of Safety & Environmental Policies and Procedures is necessary.
4. Auditors interpret ISM differently.
5. Have science party and crew briefings before initial deployments.
6. Have necessary paperwork ready particularly crew lists, manifests, HAZMAT, etc.

Future Benefits and Goals include:

1. Some fleet uniformity
2. Getting away from finger pointing and encouraging safety
3. Faster improvements to fleet
4. Web based info—easier access
5. Better Communications

ISM will be on the agendas for both RVOC and RVTEC meetings in the fall. There will be constant improvement and discussion in the community. Input from scientists is essential. The fear of the impact of compliance is subsiding.

In summary –

1. The fleet and the operators are in compliance before the July 1, 2002 deadline.
2. Continual improvement, support and training are needed.
3. Participation and cooperation with the community is necessary to keep the ships moving.
4. Our thanks to UNOLS, NSF and ONR for their financial, moral and technical support!



Discussion then followed:

A good recommendation for UNOLS to make would be to require all persons onboard to have passports in their possession so as to prove citizenship because of 96-hour port notice rule and because of homeland security rules. We also need to get the word out to scientists and operators about the notification of arrival requirements. Information can be found at: <http://www.uscg.mil/hq/g-m/pscweb/ISM.htm>

A recommendation was also made regarding sharing information on non-conformities so as to encourage faster solutions.

Question: Has there been any input from the user community? Answer: So far it has been positive. The users have been pleased with the higher level of attention paid to safety issues and the quickness in response to safety problems.

Tim Cowles just disembarked from the THOMPSON and he said that from the perspective of a Chief Scientist the operation of ISM went smoothly, however there needs to be more time allocated for holding pre-deployment meetings. A message needs to be sent out to the community that crew lists need to be provided 36 hours before departure or they cannot sail.

There will need to be a real effort to ensure that scientists are aware of Safety Management systems and safety plans. Everyone needs to have knowledge of the plan.

Dan Schwartz indicated that he is now sending a notice to all PI's that they will need proof of citizenship to sail.

For systems such as ROVs, AUVs the scientists need to bring their systems operating procedures aboard – these will then be adopted into the ship's procedures.

Dale Chayes asked about the potential magnitude of port state audits and inspections. Delays will be the number one risk of perceived non-conformity by a port state. Delays result in additional costs. This means that UNOLS ship operators need to be clean in clearance and other issues that could annoy port state authorities if they don't want to be found in non-compliance.

Another question was asked about whether insurance rates will go down? Rates will probably not go down due to other market pressures on the insurance industry.

The large ship operators provided brief status reports prior to the meeting:

From: Thomas Althouse <capt@mpl.ucsd.edu>  
Subject: Re: ISM Compliance

“SIO's ISM program has been operating for 1 year and received full ISM Certification as required by IMO and USCG regulations. Nimitz Marine Facility has a Document of Compliance and R/V's MELVILLE and ROGER REVELLE have Ship Safety Certificates. ISM programs are in place and operating on R/V's NEW HORIZON and ROBERT GORDON SPROUL and we currently plan to achieve 'Voluntary Compliance' for these ships in the near future.”

From: Joe Coburn <jcoburn@whoi.edu>  
To: office@unols.org

“The last (not really, it goes on forever) step in WHOI's compliance will occur on Friday when we have the outside (ABS) audit for voluntary compliance on R/V OCEANUS. The Office, ATLANTIS & KNORR all have certificates. Whoever makes the presentation should emphasize the fact that ISM is in force now - it does not wait to start until the deadline. WHOI is working to get the word out to science as far as its responsibilities as I am sure, are SIO, UW & LDEO. Here are 2 points to keep in mind:  
1- There are real expectations of science- it cannot be business as it always has been.  
2 - We are not in the business of turning science off, and will work to communicate, and facilitate science's compliance.”

From: Paul Ljunggren <marsupt@ldeo.columbia.edu>  
Subject: RE: ISM Compliance

“We had our external audits and received our documents:

SMC(for office) - 5 April 2002  
DOC (for ship)- 10 May 2002

Both were issued with deficiencies noted. The real problem for all of us is to continue to improve while also maintaining our systems.”

**Review the current status of Observatory development and UNOLS role** – Larry Atkinson (ODU) provided a brief report. The National Integrated Office of Ocean Observing (Ocean.US) is supported by nine agencies. Because we are not observing the oceans as well as we should, Ocean.US was formed to implement an integrated observatory system for the oceans.

An Observatory Workshop: The Sustained Integrated Ocean Observing System (IOOS) Workshop was held on March 10-14, 2002 at Airlie Center in Warrenton, Virginia. Over 100 attendees participated in this event. Ocean.US Director, Capt. Dave Martin and Ocean.US NSF Liaison, Dr. Larry Atkinson led the Workshop.

The workshop was held to look at the needs in the ocean, such as monitoring harmful algal blooms, managing facilities and other management/predicting responsibilities; as well as determining what sort of observations are needed to support these needs.

They recommended:

1. Enhancing the coastal buoy systems
2. Getting optical units out earlier
3. Get CODAR operational
4. Set priorities to totally survey the Coastal US
5. Determining what gliders can do. Put money into finding out.

The National Ocean Research Leadership Council (NORLC) has accepted their report.

The operational community and research community need to work together to develop an implementation for the integrated ocean observing system. This needs to be done right away so that Congress can get this into their budgets. A draft plan will be created by September.

Money is needed to support ecosystem monitoring. The Tropical Ocean Global Atmosphere Program (TOGA)-TAO/Triton Array systems are working and understood. They just need sufficient funding to maintain and improve the system.

Coastal observing systems need data management, regional systems, and funding for pilot systems. The budget estimates are \$138M initially with \$500M for operating a sustained system. Maybe a NOPP BAA for something on the order of \$25M a year for pilot regional systems will be needed. Each region will need to come up with a plan. Universities will need to be involved but cannot be expected to run the systems. There also needs to be people funded to actually use the data and it is doubtful that the support for this could be subcontracted. The researchers need to stay engaged. Governing of the system is also of high importance. The Ocean Commission has tasked Rita Colwell (NSF) to explain how it will be governed. Larry said he would provide copies of the report, OceanUS.net to the Council.

Discussion followed. Was there consideration of the impacts on the research fleet? This assessment has not been made as yet. One obvious requirement was the call for the total assessment of EEZ every five years, which is estimated as eight ship years worth of work.

Questions that need to be asked and answered are: To what extent are ships needed for research into sensor

development and to what extent are ships needed to deploy observatory systems?

The ocean observatories initiative at NSF includes a “Neptune like” plate level system, a regional coastal observing system and a buoy-oriented system. This is separate effort from the ocean observing system. There are problems with the MRE program for pre-funding development of the systems.

There is interest in a workshop to look at the specific science needs that would be addressed by cabled observatories. Alternatives may be cheaper, but they are not as high powered. Science justification needs to be further developed.

Larry says the role of the UNOLS Council is to continue to keep all eyes and ears open to observatory needs. Larry plans to go to research faculty around the country to get input on the requirements. Ocean.US may become an integrative program office for observatories.

Mike said he has contacted the Observatories Steering Committee – Ken Johnson (MBARI). He said Ken has stepped down as chair but he remains on the Committee. We need to continue our efforts to stay informed of this committee’s activities.

**Quality of Service Initiative** – Mike Prince presented the latest revised Post Cruise Assessment Report (PCAR). Mike said the text at the beginning of the online form is too long and needs to be more focused with elaboration available elsewhere.

Council reviewed the PCAR form, suggesting some wordsmithing, bullets, and to delete the word “praise.” Mike will make a bulleted list at the top of the form. He will also add a submit button at the bottom and include near it, a reminder of where the form will be sent.

There was then some discussion as to distribution of the PCA form. NSF and ONR both want all of the forms. The UNOLS Office and the designated ship operator have always received copies. If you click NOAA for funding, it will be sent to NOAA. You can also get a comeback copy. If you use the online system, you basically do not get control over the distribution.

Tim Cowles said that the Academic Fleet Review (AFR) revealed that the reporting process needed to be improved. The data set was incomplete and anecdotal. This is a big improvement. It will be an iterative process.

There was a discussion on the usefulness of the form and how the information received will be used. From an operator perspective – the comments are very valuable. Feedback will likely be from high quality operations and areas where there are problems. An ability to see trends will be useful.

We will also need to task the Agencies as to how they intend to use the PCAR. UNOLS can make suggestions on how the information should be used. Tim emphasized that this is a step in the direction of quality improvement and another part of the on-going process.

Mike would like the Council to approve this form and implement it. Wilf Gardner (motioned) and Patty Fryer (seconded) to approve with minor editorial comments. Council approved implementation of the new form. The UNOLS Office will submit the changed wording to Council for final approval.

Mike showed viewgraphs with statistics on submission of the reports. For 2002 we are at 15%. We would like to get good constructive input – a higher rate of input is desired but it does not necessarily need to be 100%.

Joe Ustach said that this is all we have been discussing in terms of quality of service. He reminded everyone that there are other elements in the area of quality of service and these also need to be defined.

**Acoustic Permitting Requirements** - Bob Knox reported on the subject of seismic cruises that may need marine mammal permits. Bob says that this is an important issue that needs to be addressed in the near future. The Navy has done a fair amount of work on the need for these permits, but the issues are not all that clear with some types of research activities. Curt Collins indicated that ONR has made some internal

procedures but not the operational Navy. UNOLS will need to work with NSF, ONR and NMFS to develop a practical approach for assisting scientists and operators when it comes to determining whether or not a permit is required and then obtaining the permits.

### ***Friday – June 21, 2002***

**UNOLS Committee reports** – Written reports were proved by SSC and FIC Committee Chairs in advance of the meeting and are contained in [Appendix V](#).

**Ship Scheduling Committee (SSC)** - Joe Ustach reported that 21 Letters Of Intent (LOIs) have been submitted by schedulers in preparation for the July scheduling meeting. No problems have been reported to date with the 2002 operations. Joe says they are going to try to isolate any potential high-risk cruises for 2003. This will begin with this scheduling meeting. Joe's full report is included in Appendix V.

Dan Schwartz reported that Charles Dragonette (ONI) would be attending the scheduling meeting. Dan also said that he received a message from Tim Pfeiffer informing ship schedulers that if they are going into any high threat areas to check with their insurance underwriters to see if there are any show stoppers. ONR doesn't want to waste a lot of time attempting to schedule a program that will be too expensive to support. Dan reports that there is a 2003 scheduled cruise to Vietnam for Ken Brink. Dan ran it through the check on one of the UNOLS web links. There were pages of feedback. We are waiting to hear from the underwriter.

Dan also said the RVOC Security Committee is looking into potential security training courses.

Mike Prince reported that Liz Tirpak from the State Department would also be at the scheduling meeting.

**Research Vessel Operators' Committee (RVOC):** The next RVOC meeting is scheduled for October 15-17, 2002 at Moss Landing Marine Laboratories and MBARI. Security will be a major topic at this meeting. Steve Rabalais reported that he attended the Ship Operations Cooperative Program (SOCP) meeting on February 12-13, 2002 in Seattle, WA. Steve said that SOCP is in the process of developing a security training tape. RVOC will receive five free copies and they will also provide tapes on other subjects.

**R/V Safety Standards (RVSS)** - Steve Rabalais reported that the review of the RVSS is underway and half of the chapters have been updated. The revised version will go to print after the RVOC completes its review and the Council approves the changes. If the report is to have a 2002 date the Council vote will have to be done by e-mail. Tom Althouse will lead this effort at the fall meeting. He provided a brief status report prior to the meeting:

From: Thomas Althouse <capt@mpl.ucsd.edu>  
Subject: Safety Committee

“Current major activity for the Safety Committee is continuation of RVSS periodic review. Review will be completed and routed to RVOC membership prior to Annual RVOC meeting for review. Revisions will be presented at the meeting for acceptance. Other activity is discussion with JMS regarding revision of Safety Video to correct a major error in the film. A new issue that I will be raising with the Safety Committee membership in July is what should RVOC/UNOLS policy on EEBD's in light of new SOLAS requirements for inspected ships.”

**Research Vessel Technical Enhancement Committee (RVTEC)** - Dale Chayes reported on the efforts to establish the Standards for Basic Technical Services. Dale reported that he attempted to do a search of shipboard equipment on the UNOLS Website and found that it was difficult to find the data. He said a Web-based source of up to date information on each ship's inventory of equipment would be developed. He said he spoke to Sandy Shor this past Friday and reported that Sandy suggested setting up a prototype template that individual operators can maintain at least on an annual basis. Dale says another idea would be to have a login database similar to the scheduling system. Operators would then be responsible for updating their own page. The difficult part would be keeping the inventory current and should include

information on spares. Each operator could have a technical equipment database. It would be password protected. A question was raised regarding whether or not these were items that the scientists had to pay for or were included in the standard equipment. At the moment it is hard to tell. It can vary and there is no way right now to get this information without calling the operator directly. Sentiment was expressed that there will always be differences between the institutions and that this is desirable. The difficult part will be to define the technical services costs. Dale said that he does not think it is a good idea to standardize. Tom Shipley questioned how a ship user could then prepare a proposal without knowing the costs. Wilf Gardner said that he too does not want the ships standardized but reiterated that ship users need to know the costs.

It was noted that the next RVTEC meeting would be held November 12-14, 2002 in Hawaii. Dale said he hopes to have the template ready by then.

**DEep Submergence Science Committee (DESSC)** – Patty Fryer reported on various DESSC related issues:

NOAA/NASA Link Symposium - Patty Fryer reported on the LINK Symposium held May 20-22, 2002 at Kennedy Space Center, FL. Patty said the idea was to get together technologists and scientists from NASA and NOAA, but that there was much difficulty, “a nightmare” in setting up the Workshop and getting the right people there. Attendees numbered 110 and, despite everything, they had some good results for their science objectives. Jim Bellingham (MBARI) was a speaker and his talk focused on AUVs and their potential use in areas such as mapping, event response, and observatories. Patty also was a speaker at the event and her presentation centered on Sensors and Tools, focusing on the needs of biology in sensing life in a particular environment, and the development of miniaturized and rugged sensors for chemical elements.

Patty said that the draft of the Workshop summary just arrived and that the report will be coming out soon. Patty says they also wanted a roadmap and inventory of tools available and for future tool development. It will be updateable and could lead to the identification of the need for a more focused follow on technology workshop. Annette said she has agreed to post an inventory of existing submergence assets including tools/sensors available as a Web-based roadmap.

Andy Shepard (NOAA) was acknowledged for working hard to make the Symposium productive. Patty said that Andy has talked to Craig McLean (NOAA) in regards to providing ongoing support. Patty also reports that Eric Lindstrom who was an ocean scientist that moved to NASA, will now go to on to Ocean.US

Question: What happened to the DESCEND technology follow-up? Answer: The Agencies didn't have any money immediately available to support this and it was also felt that there already had been several workshops with similar objectives. An inventory of the findings from these workshops needs to be compiled. Patty said that Barbara Moore (NOAA/NURP) asked that we participate in the Link Symposium.

Shallow Submergence Science Committee (ad – hoc) –Patty Fryer reported that DESSC set up the ad hoc committee that includes some DESSC members and others with shallow water experience. Shirley Pomponi (HBOI) is the Chair and an ex-officio member of DESSC. This committee is tasked with identifying key issues facing the shallow water community: To identify the inventory of assets available, identify the science themes and needs of the shallow water community and to identify the procedures and mechanisms that are in place or should be in place to fund the assets for shallow water submergence science. They were also tasked to define science directions that deserve additional effort and to look for other sources of funds for this type of work. It is hoped that over the next year they can coordinate the shallow water community. This committee is not envisioned to have a long life, but would make their recommendations and disband. Some of the ongoing activities may be folded into DESSC. At some point the DESSC terms of reference may need to be broadened.

New Deep Submergence Vehicles (DESSC) - Patty further reported on the DESSC meeting held in May 2002. Patty said that one topic of discussion was centered on the design plans for the new Deep Submergence Vehicle to replace ALVIN. The designs submitted by WHOI display a vehicle that is faster, has more bottom time and better view ports. Greater depth was also included in the design but it appears

that going deeper than 6500 meters is impacted by the need for different and more expensive syntactic foam. The timeline for the ALVIN replacement is to have a new vehicle ready by the time of the next ALVIN Overhaul in about five years. The estimated cost is 18 million dollars.

Patty also reported that in response to the perceived resistance to occupied submersibles from some people on the Hill, DESSC is putting together a statement of scientific and operational justification for occupied vehicles. Patty said she addressed the Ocean Commission about six weeks ago. In her presentation, she explained the visual advantages as well as maneuverability of the submersible. DSV ALVIN's reliability has been certified on a regular basis.

Patty went on to report that Dan Fornari has decided to step down as Chief Scientist at WHOI. She said that WHOI would like to replace Dan from within. At the moment they have not identified any one person and in the interim will form an internal Review Committee. Patty said that there is the possibility that they will replace Dan with a team of individuals. This may be of some concern, as it seems to be more effective to have one individual responsible for oversight of the facility.

Lastly, Patty reported that DESSC would be replacing two of its members. Joris Gieskes and Marv Lilley who will be stepping down this year. Nominations should be forwarded to the UNOLS Office.

**Arctic Icebreaker Coordinating Committee (AICC)** - Dale Chayes reported for Lisa Clough.

Dale received a message from Lisa prior to the meeting. There was a minor fire drill associated with the prohibition against any radiation use inside the HEALY. Lisa said that scientific berthing was also an issue because of a disagreement about how many staterooms would be used to achieve the fifty scientific berths. The need to accommodate additional new crew was having an impact on the number of staterooms available for the science party, but not the total number of berths. They also had to reverse their tracks to avoid native whaling.

The USCG has put together a formal Sources Sought Notice for support of the science systems on the icebreakers: HEALY, POLAR STAR, and POLAR SEA. The notice was widely distributed and it is unclear if any of the operators will respond, although UW does intend to respond. All responses are due by June 26<sup>th</sup>, and a proposal does not need to be submitted.

Icebreaker Scheduling Meeting overview: Ocean exploration had a request for 60 days. The representative had \$300 to \$500K total for science and ship. This amounts to approximately 10 days. The cost of transit alone to Norway for an Arctic East expedition would be \$2M. This would leave NSF as the sole support for the transit and there may not be enough work for the eastern Arctic to justify the transit. In this case HEALY will probably do the SBI support cruise in 2003 and the POLAR STAR and POLAR SEA will be kept home for maintenance.

The USCG has homeland defense obligations and so far this has not impacted the icebreakers.

Mike mentioned that there will be a hydrology panel in August and this may generate additional HEALY projects, but that overall the funded demand was lower than expected.

Dan Schwartz said that in regards to the isotope work, Matt Hawkins (UDEL) did a great job on the group purchase for vans. Dan said UW just received one and were approached by the USCG asking to borrow it to support the SBI cruise aboard HEALY. UW had reservations on lending out the van because two months aboard HEALY could turn it into a "mess". Dan said that Sandy Shor stepped in and said that he would support getting it cleaned if necessary. The issue of equipment loan and return policies needs to be addressed.

**Fleet Improvement Committee (FIC)** – Larry Atkinson addressed most FIC related items earlier in the meeting. A written report is included in Appendix V.

**UNOLS Goals and Objectives** - The subject of setting goals was revisited from earlier in the meeting. Mike Prince said he needs to finalize the UNOLS Goals and Objectives for the UNOLS Annual Meeting in September and also needs this for his proposal in January. Tim Cowles then suggested a more bulleted list

that consists more of general priority areas so that it is less of a detailed work list. Mike said he agreed and says that the *entire* list does not need to be included in his proposal. Denis Wiesenburg asked if all items listed were of equal weight and also asked if the list should be prioritized. For example he felt that planning for future facilities is very important. If we don't plan for the future it will be too late and other things will not happen. Wilf Gardner also said bulletizing would be good and also to not include items that cannot be achieved. Mike said that we need to identify all the areas that we think UNOLS will be involved in as the Council, committees, operators, individuals and the UNOLS office. Not all items translate to work by the office.

A suggestion was made to divide the list into ongoing activities and new initiatives or some other logical organization. Bob said that perhaps we could take a look at it after the meeting. This can be done over the next couple of months. Mike said that he would send out a revision to the Council based on comments received so far.

Patty Fryer then brought up the problem of late funding decisions and scheduling with regards to NOAA and Ocean Exploration. This impacts AICC and DESSC. Instead of a letter just from AICC, it was suggested that Patty, Lisa and Joe Ustach draft a letter to Craig McLean (NOAA) for Bob's signature.

### **Other Issues:**

**WINCH & WIRE Follow-on Activities** - Mike has attempted to do this with help from Jon Alberts (WHOI) and Tom Althouse (SIO) but they will need more assistance. Dale Chayes volunteered and was tasked to help write a proposal for a workshop and design of the next generation wire. Mike says that the vessel SMR process is helping to identify the needs.

**Status of NAVO ship time funding** – Bob said that nothing new has transpired as yet. CORE and Kathleen Ritzman (SIO) have been the major proponents in the past, but this year they have focused on other issues. There is currently no sign that this money will be inserted in the Navy's budget as it has in the past.

Paul Taylor and Gordon Wilkes (NAVO) have provided ship time requests. This is coastal work that could be done by local and regional vessels if it is funded.

**Z-Drive Meeting** – It was reported that the manufacturers in the Netherlands hosted a meeting last fall. This meeting was "okay" and it was agreed that they should meet again in the US. Linda Goad (NSF) has planned a meeting for September 11-13, 2002. The invitees include the propulsion people, the electric drive representatives, representatives from the center for quality, the operators and agency representatives. They will gather to discuss the scope of the problem - seals, gears, electrical, shafts and other factors as part of a root cause failure analysis. They will also look for long term solutions and discuss what they would like to see in propulsion designs for new vessels. They are also trying to grasp the cost in terms of science lost.

**AGU** – Mike asked for suggestions on how time should be spent at the fall AGU in San Francisco. Should we have a booth in the exhibit hall as has been done in past years? The cost of a few thousand dollars to do this is somewhat of a consideration. We did not have a booth in 2001. Mike asked for suggestions:

- A Poster on the technical services Web form – then a booth demo for it.
- "Do you use a ship?" banner – specifics on what it is.
- A suggestion was made that some of the Council members should sit in at the booth.
- The booth could be used to showcase fleet renewal and the draft SMRs, seeking community input.

### **Other forums**

MTS – October 2002 (paper on fleet renewal by DeSilva, Atkinson, Prince)

OIS – June 2003 – Oceanology meeting.

Oceans 2003 - September 2003

### **Opportunity for Additional Reports –**

**Agency Representatives** – Agency representatives were contacted prior to the meeting for any issues that they would want the Council to address. Tim Pfeiffer (ONR) and Mike Reeve (NSF) sent messages. Their items were addressed earlier in the meeting.

From: Pfeiffer, Timothy

“It appears that Kilo Moana is making substantial progress toward delivery, both in terms of technical ship building issues and also on the contractual side. No firm date yet, however.

In the context of quality of service, Woods Hole, Scripps, UW, and Hawaii, now all have their ISM programs in place. In addition, I'm very pleased to be able to say that Hawaii has also completed ISO 9002 certification. I think they're the first to have gone the extra mile to get 9002.”

From: Reeve, Michael R.

“Annette - Marine mammals, quality issues, why and to what depth a new submersible, and the relationship between SMR workshops and the Navy variable hull size study.”

**Other items -**

What is the timing of Admiral West's arrival at CORE – Bob Knox will follow-up and get back to the Council?

*The meeting adjourned at 11:15.*