UNOLS COUNCIL MEETING
Minutes

The Brookings Institution
1775 Massachusetts Avenue, NW
Washington D.C.
November 15, 2001

Meeting Appendices

I. Meeting Agenda
II. Participant List
III. WHOI Piracy Report
IV. R/V EWING (EW0110) Piracy Report
V. Report on Security Operations and Piracy Attack and their Impact on Scientific Operations
VI. Security Issues for Research Vessel Operations
VII. US Flag Research Ships – Anti-piracy/Terrorism
VIII. Developments in Marine Science Research Policy
IX. RVOC Security Committee
X. UNOLS 101
XI. Quality of Service Report
XII. UNOLS Standardized Van Design
XIII. UNOLS Draft Goals, Priorities and Mission Statement
XIV. Letter Requesting UNOLS Vessel Status for R/V SAVANNAH
XV. UNOLS Committee Reports

Welcome and Introductions: Bob Knox, UNOLS Chair, called the meeting to order and asked for a moment of silence in remembrance of those who have suffered in the attacks of September 11th. The meeting participants introduced themselves. The meeting agenda (***Appendix I***) was followed in the order as recorded in these minutes. A list of meeting participants is included as ***Appendix II.*** Bob explained that the purpose of the meeting is for open discussion on important issues facing UNOLS.

Accept the minutes of June 2001 Council Meeting. A motion was made and passed to accept the minutes of the June 2001 meeting as written.

UNOLS Issues and Discussion Items:

Security Issues for Research Vessel Operations - In the wake of the September 11th terrorist attack on the United States and the attack on R/V EWING in the western Gulf of Aden on 31 August, the UNOLS Council and Federal Agency representatives considered the immediate and long term implications of these events on Research Vessel operations. These incidents raise a number of questions about future UNOLS research vessel operations, not only in piracy- or terrorist-prone areas, but worldwide. A series of short presentations were made to help focus the discussion on issues such as threat assessment, training and operational procedures, and safety of

crew and scientists. Bob Knox introduced the topic. A summary of these presentations and subsequent discussion follows.

Woods Hole Oceanographic Institution (WHOI) – "Piracy at Sea"– Joe Coburn provided a report on piracy at sea and began with the definition of "piracy". His viewgraphs are included as ***Appendix III***. According to the International Marine Bureau (IMB), the definition of piracy is "An act of boarding or attempting to board any ship with the intent to commit theft or any other crime and with the intent or capability to use force in the furtherance of that act." Joe showed maps of South America, South East Asia and the Far East, and Africa each with the locations of attacks that occurred in the year 2000. In the year 2000 469 piracy attacks were reported. Of these, 307 involved vessel boardings. There were 8 hijackings, 72 people were killed and 99 were injured. South East Asia has had many attacks last year.

Joe explained that present day pirate vessels may appear as fishing boats, but they are armed with guns and grenade launchers. He showed examples of the victimized vessels, which include ferries, cargo vessels, fishing boats and research vessels.

EWING was conducting operations for the REDSOX program in the Gulf of Aden when attacked. The program was a study the outflow of high salinity water into the Gulf and the Indian Ocean. KNORR also carried out operations in support of the REDSOX program earlier in the year (REDSOX I - 11 February to 15 March, 2001). The outflow and spreading had not been investigated since the 1960's. The Red Sea outflow has unique characteristics that likely affect mixing and spreading into the Indian Ocean. The purpose of the research was to map out the water properties (salinity) of the outflow as it leaves Bab el Mandeb, descends across the continental slope and spreads through the Gulf of Aden. They planned to directly measure the currents associated with the outflow, and surrounding waters. They wanted to make the observations during maximum and minimum outflow (winter and summer) to identify any differences in how deep the outflow descends and which pathways the outflow follows.

WHOI took a number of security precautions in preparation for these operations. They refused to go into any ports in the region as they considered these high-risk ports. The operations embarked from Mobasa, Kenya and disembarked in the Saychelles. Consultants (former Special Forces, Presidential Security, Navy Seals) were hired for the cruise. They helped to organize operations, and train the crew and science party. There were two aboard during the cruise and they helped to serve as extra lookouts and key members of the crew response team. They advised on doing research stations smartly (in a security sense). They gave the crew and science a level of comfort so they could concentrate on their tasks. Joe showed the track chart for KNORR's REDSOX I cruise.

EWING's REDSOX II took place on 12 August to 12 September 2001. The attack on the ship took place on August 31st. Joe showed an actual video clip of the attack. A member of science party took the video. The attackers approached on a small boat and were armed with a rocket-propelled grenade. They fired on the ship. EWING personnel immediately took emergency security measures. After the attack, the planned cruise track was modified to keep operations away from the shoreline. A comparison of the salinity/pressure data collected during REDSOX I and REDSOX II was presented.

What's ahead? WHOI has no ship with cruises to high threat areas through 2002. The ships are prepared for security measures in terms of organization, procedures and training. They are plugged into intelligence sources. The issue of security has moved to a number one priority for both the federal agencies and science community.

Discussion followed:
Question – What happened if the ship was boarded?
Answer – The mission of the consultant was to not let the ship to be boarded.

Question - Did the consultants have actual experience in anti-terrorism?
Answer – It is unclear.

Question - Were the consultants armed?
Answer – No comment

Question – Where was KNORR during the EWING attack?
Answer – On the way home.

Lamont-Doherty Earth Observatory (LDEO), EW0110 – Paul Ljunggren continued the discussion with information about EWING and the security precautions that had been taken. His viewgraphs are included as ***Appendix IV***. The ship's top speed is 13-14 knots. The ship's crew is 21 and the science party can include 29 people. On Cruise EW0110 there were 19 members of the science party aboard.

Paul reviewed the 2001 ship schedule for operations in the Red Sea and Gulf of Aden. Operations began on 4 August with a seven-day transit from Piraeus for a Navy program in the Red Sea. The REDSOX II program followed this.

In preparation for work in the Red Sea and Gulf of Aden, LDEO contacted other ship operators and agencies regarding their experiences, points of contact, and procedures when operating in this area or similar areas. This included contacting NOAA, WHOI, geophysical operators, foreign R/V operators and the Department of State-Regional Security Officer on the embassy staff. Follow up contacts/sources of information included:

- Maritime security firms
- Office of Naval Intelligence
- Piracy Center Kuala Lumpar http://www.iccwbo.org/ccs/menu_imb_piracy.asp
- Maritime Security Council <http://www.maritimesecurity.org/>
- MARAD http://www.marad.dot.gov/
- National Imagery and Mapping Agency (NIMA)
  <http://pollux.nss.nima.mil/index/index.html>

Paul reviewed the measures that were taken prior to the REDSOX II operations to increase shipboard security:

- They added an additional bridge watch stander
- They employed a contractor to provide:

- Training for the crew during the leg from Piraeus to Djibouti. Training was for piracy detection, deterrence, and response.
- Assistance in developing a ship's security plan for in port and underway.

The incidence occurred 18 miles off the coast of Somalia at 10:48 a.m. in daylight. The crew observed a small boat approaching EWING. CTD operations were in progress. The small boat carried six people and was dropped from a fishing boat. The crew brought out the fire hoses and charged them. As the hoses were being filled and sprayed, the attackers brought out the grenade launcher. As soon as EWING came underway, the firing began. The ship began lock-down procedures. After 20 minutes the attackers gave up chase. There were no injuries and there was no damage to the ship. A mayday was made, but there was no U.S. war ship in area.

In response to the incident the following measures were taken:
- The LDEO Director, marine staff consulted with NSF, the PI and Chief Scientist as to the potential course of action.
- Science operations were limited to outside 50 nm of Yemen and Somalia.
- The public affairs office was alerted to prepare press release.
- Reports of the incident were made to other agencies.
- Discussions were initiated with the PI and NSF to revise the next scheduled EWING cruise (EW0111), a MARGINS program in the Gulf of Aden. The original cruise plan called for 80% of program operations within 50 nm of Yemen and Somalia.
- The Marine Superintendent and Marine Science Coordinator traveled to Djibouti for the ship's port call.

EWING arrived in Djibouti on 12 September and the science party departed the dame day. The EW0111 cruise in the Gulf of Aden (and Arabian Sea option) was canceled. The ship sailed for the Seychelles on 13 September.

In 20/20 hindsight:
- There is usefulness of a shore side contingency plan.
- There is benefit of increased training in shipboard security both in port and underway.
- Practices/policies regarding use of force/small arms on research vessels an/or use of shipboard security teams should be reconsidered.
- There should be guidelines for assistance to operators and sponsoring agencies in evaluating risks to personnel and vessels in specific areas/regions of the world.
- Recognition of operational risks associated with piracy, political instability and acts of violence should be given consideration when programs are being funded.

This type of violence takes everyone back, we need to be prepared. Paul showed a map of the Red Sea/Gulf of Aden reported incidents from 1995 to present. It shows an increase in attacks in the area. The attacks are to any type of ship.

While the ship was in Djibouti, Paul and John Diebold had chance to talk to crew. There had been division among the crew. Some strongly felt that the ship should have been armed. Amy Bower, Chief Scientist, felt strongly that the consultants be kept aboard while underway. Arming the ship opens a whole new set of concerns, however.

Discussion followed:

Question - Were other ship operators in that area contacted.
Answer - Paul indicated that he looked over the U. Delaware site to find other operators.

Question – Was there any comment from the lawyers/insurers regarding operations in high-risk areas (pre-knowledge).
Answer – They did not contact lawyers in advance of the cruise. The insurers do get the schedules in advance.

Question – Are the agencies willing to pay for extra insurance coverage to work in high-risk areas?
Comments - There are areas that are uninsurable. The LDEO risk manager was notified immediately after the attack. Dennis Nixon indicated that there is a website listing uninsurable areas, "war risk special areas." Access to the listing is restricted and Dennis is trying to get access. If operations are planned in any of these areas, your insurer carrier needs to be contacted to purchase war risk coverage. Lloyds of London meets weekly (every Thursday) to determine war risk areas. If operations are planned for a war risk area, coverage will need to be negotiated with your agent.

EW0110 Chief Scientist Report from Amy Bower – Prior to the meeting, Amy Bower (WHOI) provided a written report, "Security Operations and Piracy Attack and Their Impact on Scientific Operations." It is included as ***Appendix V***. The purpose of this report was to: 1) describe the attack from the Chief Scientists perspective and its impact on the scientific accomplishments of the cruise; and 2) to describe how some of the specific security precautions on the EWING and on the R/V KNORR interfaced with scientific operations, and make some suggestions on how these procedures might work better in the future. Amy's report summarized the operations accomplished prior to the attack, the attack itself and the revisions made to the science program following the attack.

After the attack, a restriction to remain 50 miles from Yemen and Somalia was agreed upon (with two exceptions). This had a major but not devastating impact on the research objectives of the cruise. There was an estimated 30% overall loss in terms of percentage of original objectives not met due to this incident. New cruise objectives were developed as a result of the revised operating area and Amy considers the cruise to be a success based on these new objectives.

From Amy's perspective, she wishes that security professionals had been on board EWING during REDSOX-II. It would have provided a better sense of security for the scientists. Amy's report comments on the REDSOX security procedures and their impact on science. She compared the KNORR's procedures with those on EWING. Her report also provides some recommendations including those related to lock-down procedures, shipboard communications, and portside sailing board postings. Assuming that US research vessels are going to continue to operate around the world, she feels strongly that UNOLS and the ship operators have to face the issue of unarmed and armed attacks and work together to develop a uniform approach to security on our vessels that would be standard across the board. In closing, Amy asks that the UNOLS

reaction to the incident on the EWING not be to restrict our vessels only to the safest waters, but rather to develop a plan to reduce the risk of harm to crew and scientists throughout the oceans.

A Scientist's Perspective by Brian Taylor – Brian Taylor was on the EWING research cruise immediately following the REDSOX II cruise. He provided a report on security issues for research vessel operations. His viewgraph is included as ***Appendix VI***. Brian stated that there needs to be a change in the way scientists propose and plan science. The science community needs to be able to continue research operations in all areas of the world, however, the level of risk involved with work in particular areas needs to be carefully assessed during the initial planning period. This needs to be an issue for all parties: reviewers, agency program managers, ship operators, scientists, technicians and the crew. Ship schedules and science plans are publicly available long in advance of the operations.

The morale and performance of the crew and scientists needs to be considered when planning and carrying out research operations. Security issues need to be dealt with long in advance of the cruise, preferably with prior training in the U.S. Alternate plans and operational options need to be developed if work is planned in high-risk areas. Certain operational areas may be limited by clearances. Station locations must be planned accordingly and be able to be adapted to changing risk levels. Also, there should be consideration of the restrictions placed on ships by certain operations such as towing gear.

Brian showed a map of the Gulf of Aden. Over the years, the French, U.S. and Japan have conducted research in this region. Getting access to the area over the years has been difficult. The science parties are aware that this is high- risk area. Brian showed the area available for research if a 50-mile shoreline buffer was in place. He commented that they would have been able to carry out his EWING cruise logistically, however, the crew morale was so low that it was not practical. As a result, the decision was made to cancel the cruise.

In closing, Brian emphasized that security training at home is needed. Security training on a regular basis should be conducted for operators that have global operations. It needs to be routine training and planned as such. The crew should feel as comfortable as possible.

The floor was open to questions and comments. Dolly Dieter commented that in the early 1990s they tried to conduct this type of training. Its effectiveness was questionable, largely due to a poor selection in the company providing the training. Jeff Callahan suggested that there should be universal security training for intermediate vessels and larger. In 2002, ENDEAVOR is scheduled to go to Brazil. Paul Ljunggren commented that logistically executing the training is difficult; the ship and crew are at-sea for long periods. But we need to do this. Joe Coburn added that we would want the crew to be able to train the science party.

Charles Dragonette (Office of Naval Intelligence) – Charles opened his discussion by saying that he was glad to be able to meet everyone at the meeting. He indicated that he plans to forward the weekly reports on "Worldwide Threat to Shipping" to UNOLS regularly. He said that it is very encouraging to hear that everyone at the meeting is on the right track. You must listen to the people who are actually on the water, along with their concerns. You also need to pass this information on to other people planning operations in similar areas. Charles reminded

everyone that volunteers support the IMB organization, which collects and distributes the threat reports. The information that they provide is concerned with piracy.

Charles went on to talk about the nature of various piracy attacks. Off the coast of Somalia there is a lot of hostage taking for ransom. There had been no reports of attacks in the EWING area. The EWING vessel looks similar to fishing vessels and this may explain why it was a target. Fishing vessels can be relatively easy targets since they have a low freeboard. There is no established government in the area of the EWING attack. When fishing boats get attacked or taken, it doesn't often get reported. Charles guessed that the attackers were looking for hostages for ransom when attacking EWING.

Charles indicated that EWING and KNORR did everything right in their operations in the Red Sea area. Their goal was to get out of harms way. How can ONI help? Security planning is necessary. In port risks are very high, higher than at sea. It is very important that once the crews are trained they continually run through attack scenarios. They must keep thinking of the security plans. If an attack is a dedicated terrorist act, it is probably too late to deter and time must be devoted to mitigate damage. Operators must listen to the crew and assess their comments.

The Worldwide Threat to Shipping weekly reports are issued on Wednesdays. The information is often two weeks old when it is received. There is no secret information on piracy in the reports. Everything that is known about attacks is included in the reports.

Shore managers need training as well as the shipboard personnel. There should be some level of identical training for everyone. Charles provided examples of training sites and offered to put UNOLS in touch with the right people. These would be classroom types of training. Paul Ljunggren commented that he appreciated the help that Charles has provided following the EWING incident. He recommended making effective use of the information.

Charles provided the web address of a private site that is run by an ONI employee, <http://www.downtothesea.com/>. It is comprehensive site containing information on security and attacks. Mike Prince commented that he would forward the weekly reports from Charles to RVOC and anyone else who is interested in the material. The UNOLS Office will also create a web page for security issues. It will contain links to pertinent sites. Charles added that information on attack incidents could be e-mailed to him.

The question was asked if use of guns would defer the pirates. Charles explained that it depends on the type of piracy. Simply shining a light on some of the smaller pirate operations can be effective. For acts of dedicated piracy it is best to lock-down. For the attacks made by Somalia in the daytime it is best to try to retreat. Virtually all attacks occur within site of land. Firing guns in coastal areas opens up a whole new area of problems.

United States Coast Guard (USCG) – CRD Rand – CDR Rand reported that he is from a newly formed USCG office for Port Security. The Office was established following the attacks of September 11th. The USCG has been training foreign countries on how to prevent attacks.

He emphasized that planning is key. More lessons will be learned from actual events. Starting in 1996, the USCG required that all large passenger ships have security plans.

You must be aware of your surroundings and be prepared to react accordingly. Fire hoses can be used to prevent intruders from climbing up the ship. Research vessel operations can make this very difficult if equipment is in the water. You need to determine if the equipment can be released from the ship. A plan must be in place.

The USCG has three levels of security plans ranging from high to low risk. USCG MSC Circular 443 explains how to prepare a plan. MSC Circular 623 explains how to prevent piracy. It includes lock-down and evasive measures. The International Maritime Organism (IMO) has an informative website <http://www.imo.org/>.

The USCG is deciding on whether additional security regulations are necessary. Will there be requirements for ships operating within U.S. waters to have a security plan in place? Many of the merchant ships have located their locks so that access is from the inside. Pilothouses may also have locks installed. However, if the pirates plan to take a ship, it will be very difficult to stop them. Much of the piracy that occurs is on ships of opportunity. When the vessels are in port, the crew should not discuss their operating areas and planned schedule.

Awareness is key. Preparedness is next and then execution. Weapons have not proven to be effective and are not being recommended. Use of weapons opens a whole new area of concern. It was suggested by one of the consultants to carry fake weapons. CDR Rand recommended not taking this measure. Tim Askew pointed out that if your ship carries arms you would need to declare them in foreign states. Sometimes the foreign state will lock them down. HBOI had a problem in South America carrying a weapon and in that case the captain was arrested. Arms are sometimes confiscated.

Peter Petrelis of MARAD was the next presenter. He began with a quick review of his background. He graduated from Maine Maritime in May 1981 and went to work with NEMA before coming to MARAD. He explained that MARAD provides shipping advisories http://www.marad.dot.gov/. He communicates often with Charles Dragonette often. MSC Circular 117A is in regard to maritime security and provides points of contact. For marine security issues, Peter can be contacted.

Oceanography of the Navy – Richard Hayes – Richard began by explaining that the Navy is very sensitive to piracy and terrorism since the attack on the COLE. He indicated that his report echoes many of the earlier comments. His viewgraph on U.S. Flag research ships – anti-piracy/terrorism is included as ***Appendix VII***. He explained that the Navy's role in anti-piracy and terrorism. The U.S. Navy will come to the assistance of U.S. flag vessels experiencing unlawful attacks when and where assets are available. However, it is often unlikely that a Navy ship will be in the immediate area of an attack. The U.S Navy does not provide U.S. flag research vessels with escorts or force protection assets. Ship scheduling should take into account the general security of the intended geographic areas of research. The ships' masters and crews should maintain a current situational awareness using the best available information. The Navy survey ships are not operating in the western SE Asia waters (high risk). Ships may submit

cruise plans and regular position report to appropriate Fleet Commanders for improved situational awareness and to facilitate response when warranted. This is something that UNOLS may want to consider. Other U.S ships currently do this. Rich recommended that UNOLS take a proactive stance in this.

State Department - Liz Tirpak and Margaret Hayes – Liz Tirpak began the report and introduced Margaret Hayes. Their viewgraphs titled "Developments in Marine Science Research Policy" are included as ***Appendix VIII***. Margaret came to the State Department in July from NOAA where she had worked since 1976. She was in the General Council Office and later became the Assistant General Council for fisheries.

After arriving at the State department Margaret was informed that Tom Cocke was planning to retire. At one time there was a department within State dedicated to marine science. Over the years this department has gone away and they are now trying to rebuild it. Liz has been hired to work on the research vessel clearance program. There is still a vacancy within the department that should be advertised soon. There will hopefully be a secretary hired for the office. There may be a Foreign Service agent position added. Suggestions on how the State Department can rebuild its marine science office are welcome.

Margaret listed some of the marine science programs that the Department of State are involved with. One area of involvement is with the United Nations Law of the Sea (LOS) Treaty. In the spring 2001 the Informal Consultative process began. The U.S. has not signed on. In the Summer 2001 the IOC Advisory Body of experts on the law of the sea met. In the fall 2001, the UN General Assembly will meet. Margaret commented that the Bush administration favors the ratification of the LOS treaty. This was announced at the Ocean Commission meeting. There are many things that the U.S. cannot do as a result of not signing the LOS Treaty. They cannot be an official member or the organization and they cannot participate in the IOC advisory body.

There are two LOS issues of concern to the Department of State: marine science and piracy. The Department of State received the resolution draft and thought that the piracy issue was too weak. They asked that it be recognized that piracy impacts marine science. They do not know if their language will be accepted. She has a copy of the second draft. The resolution needs to be adopted by the General Assembly by November 22nd. Liz continued with a discussion on vessel clearances. The LOS Article 245 indicates that there is Coastal State jurisdiction over marine science research conducted within the 200-mile Exclusive Economic Zone (EEZ).

Liz reviewed the post September 11th procedures regarding clearance requests. The lead-time requirements for requests must be met. Foreign collaboration is often necessary or helpful. There should be the ship operator's endorsement with a PI's clearance request. Electronic requests are recommended/encouraged, especially with the recent problems with the postal mail. The Department of State will try to make a threat assessment available to operators. Threat considerations include incidences of piracy, armed robbery, illegal trafficking, and/or absence of diplomatic relations and/or governing authority. Liz sent the UN a message asking what should be done when there is no recognized government of a Coastal State. There appears to be no clear answer to this problem. There is some wording that indicates if there is no reply to a clearance request access is denied. However in contradiction, by the LOS Coastal States have the

responsibility to respond. Therefore, there is no clear answer. It was noted that there is a paragraph in the LOS that indicates if no response is received – there is implied consent.

Bob Knox asked if there anything that UNOLS could do to encourage succession to the LOS Treaty? The Ocean commission passed a resolution unanimously to encourage succession.

DOS has travel warnings that are posted at http://travel.state.gov/warnings_list.html. There are also NIMA Maritime safety reports posted at <http://pollux.nss.nima.mil/index/index.html >.

RVOC Report – Steve Rabalais – Steve Rabalais, RVOC Chair, reported that before the EWING attack, the issues that we have been discussing today were relatively obscure. There was a general conception that this was a large ship issue. After September 11th it became a fleet wide issue. How should UNOLS vessels deal with port closures? What should be done about reports of bogus USCG vessels patrolling U.S. waters? At the RVOC meeting these sorts of issues were discussed with the U.S. ship operators, foreign operators and agency representatives. At the roundtable session a security committee was established and Dan Schwartz was appointed chair.

Charles Dragonette commented that a "Yellow Pages" for all ships and operators is under development. This is something that has been long needed. The pages will provide contact information for all foreign ports.

Dan Schwartz continued the report on the RVOC Security sub-committee. His viewgraphs are included as ***Appendix IX***. The initial members of the sub-committee include (besides Dan) Joe Coburn and Paul Ljunggren. Their purpose is to:

- Consider the spectrum of potential security threats confronted by academic fleet vessels.
- To establish contacts and an ongoing liaison – with the Navy, Coast Guard and law enforcement agencies for rapid access to information, advice and threat assessment...
- To participate in a dialogue with UNOLS Institutions and funding agencies while evaluating risks, missions, routing decisions, and options...
- To consider and recommend means by which the Fleet can enhance security & safety in response to a variety of threats.

Issues of concern include:

- Piracy and Research Vessels
  - Hotspots are fairly predictable
  - Warnings are distributed well after the fact
  - Incidents have occurred in the past (CALANUS 1981, etc, EWING 2001)
  - What's changed since 9/11? We can't assume mere robbery is the sole motive in an attack.

In the CALANUS 1981 attack the CALANUS was armed. Dan believes that they were able save the ship as a result of it being armed. Legally, there has been a case that defending the ship justified arming. Dan is not sure the passive approach (unarmed) is the right way to go. The worst-case situations must be recognized.

- Terrorism attack – these might include:
  - Direct attack by small boat (or when alongside a wharf, by boat, foot or vehicle)
  - Items/packages delivered to the ship may include explosives or bio/chemical agents.
  - Hostage situations.

- Alongside security in homeports. Some port agents are requiring checks. The UW ships are now being watched by campus police.

- Alongside security in foreign ports. Alongside security issues include:
  - Access control during science personnel change-outs, provisioning, bunkering. photo identification challenges at gangway.
  - Package receipt control/verification
  - Stowaway searches before departure
  - Eliminate "sailing board:" ship movements to be provided on a need-to-know basis.

- Underway security and threat recognition:
  - Utilization of professional security teams during operations or transits in tense areas (inventory and pre-screen firms offering this service)
  - Equipping and training for self-defense.
  - Threat recognition and rules-of-engagement.

Dan provided a list of resources that are available.
- Open-source intelligence (newsletter, list servers, etc) and the need to evaluate them as to quality and timeliness.
- Liaison with ONI, the State Department, USCG agents, port law enforcement, the Navy CiCs
- Host nations resources
- Secure communications

In conclusion the scourge of piracy has been with us a very long time. We are at war now and we must be prepared for any attempt by hostile individuals or groups to harass, attach, of board and seize our ships and harm the personnel whom we are responsible for protecting.

Council discussion followed. It was stated that UNOLS needs to think about science planning in respect to potential high-risk areas. Dennis Nixon added that ISM requires that security be addressed. In the past, security was addressed at relatively low levels; it will need to be readdressed. Crew training in security should be added to operational requirements. It should be a routine part of the system.

It was commented that if security procedures are recorded, then the security itself is violated. Security of the plan is required. Dan Schwartz indicated that for ISM purposes, you would need to report that a security plan is in place. The actual plan can be kept confidential.

Brian Taylor stated that earlier in the meeting it was reported that there are no operations planned for high-risk areas in 2002, but Brian pointed out that operations in high-risk areas are being planned in 2003 and there are proposed research areas that are currently under review. The issue is now. Bob Knox agreed that the issue should be addressed now and that there are actions that can be taken now. The question was asked if there are programs that should not be carried out because they will take place in high-risk areas? If so, who will make the decision to not schedule the program? There is probably a stepped approach that can be implemented now. There may be some programs that need to be curtailed. WHOI spent an estimated $66K for security on the REDSOX operation. The cost implications for added security need to be addressed. There are four parties involved in the security equation: the scientists, agencies, operators, and insurers.

LUNCH Break – During the lunch break Bob Knox provided a presentation, "UNOLS 101" to members of CORE and the House Staffers. His presentation is included as ***Appendix X***.

Security Discussion (continued) - After the Lunch break, the security topic was revisited. The discussion focused on actions that need to be taken in regard to piracy and terrorist activities. Some measures have already started. The RVOC established a security committee. It was recommended that scientists should be added as members to this committee. Security training and other security procedures need to be considered. Costs associated with required security measures needs to be identified. The question of how to deal with scheduling operations and clearances for high-risk areas needs to be addressed. It was suggested that when scientists submit a ship time request we ask the question of whether they consider their research area a high-risk; is the area classified as a "War Risk Area?" Threat levels should be assessed and high-risk programs will need to be considered. The community also needs to respect the ship captains' decisions when they decide not to go into particular places.

NOAA pulled their ship schedules from the Web for a short while. The USCG also removed their ship schedules from the web. Should UNOLS remove their ship schedules from the Web? It was noted that pirates usually select targets of opportunity and ship schedules are likely not consulted. It was suggested that the ship schedules should still be posted on the Web. If necessary, port calls and any other information can be omitted.

What is the role of the Council and agencies in security? What resources are needed to adequately address this issue? It was recommended that there should be a basic course "Security 101" across the board. Bob Knox wrapped-up the discussion by saying that we will need to think about issue further and continue the dialog. A security web page will be established on the UNOLS website with the reference links to various security sites.

FEDERAL Agency Issues:

Office of Naval Research (ONR) - Tim Pfeiffer reported that agency budget news has not changed since his report at the RVOC/RVTEC in October. There is an overall decline in the ONR funding level from last year, somewhat due to the recent navy operations. Some large

science projects have been declined. The proposals submitted for the DURIP funds were approximately three times as high as the available money. The agencies and operators continue to working out z-drive issues on the AGORs. All of the Navy owned large UNOLS ships are due for their INSURV inspection this year. They are working with NSF to incorporate a science element for this inspection.

There are a number of personnel changes to report. Fred Saalfeld, ONR Technical Director, has announced his retirement. Steve Ramberg has been promoted to the Executive Director position. Frank Herr will move into Steve's position as Department Head for Ocean, Atmosphere, and Space. Tim announced that Sujata Millick has accepted a position at Department of Commerce and will be leaving ONR before the end of the year. UNOLS thanked Sujata for her service to the fleet and wished her well in her new venture.

National Science Foundation (NSF) – Dolly Dieter reported that the UNOLS ship inspections would resume in two weeks starting at the University of Delaware. Jamestown Marine Service has the contract to conduct the inspections. In other news, NSF is in the process of redrafting their cooperative agreements and charter party agreements with the UNOLS operators.

Long Range Planning for the UNOLS Fleet – Bob Knox reviewed the status of the revised draft of the FOFC Long Range Fleet Plan. The second draft of the FOFC Fleet Plan is ready to be presented to the FOFC at their meeting tomorrow (11/16). If the FOFC agrees with the plan it will be forwarded to the NORLC on 4 December. The revised plan incorporates many of the UNOLS community comments that were gathered during the survey. The plan provides the names of the ships that will be going off line and the numbers of vessels that are needed for replacement. The report does not identify a source for construction funds. This is an important issue that will need to be addressed. The need for fleet renewal requires that Science Mission Requirements and Conceptual Designs be developed. There is an urgency to keep the renewal process rolling as it takes many years to fund and construct ships. The floor was open to discussion.

(Q) - Is any agency interested in taking a lead in this renewal effort? (A) – ONR and NSF are taking steps to look into this.

(Q) Will funding for ship construction be pursued under the NSF Major Research Equipment budget? (A) Ship construction might not be handled under the MRE. There is no line item in the MRE at this time. Rita Colwell's report to the Ocean Commission highlighted the importance of fleet renewal. The Navy is also dedicated to this issue.

Facilities beyond Ships and the National Deep Submergence Facility, the UNOLS Role - Discussion on this item continues from the last meeting. What is the role of UNOLS and FIC with regards to new technology development for observatories and other emerging oceanographic facilities? Should new relationships be built between UNOLS and agencies such as NASA that are interested in developing similar tools for exploration and research? What are the implications of the Ocean Exploration Initiative?

Bob Knox wrote a letter to Ken Johnson asking if there should be a UNOLS representative/liaison to the Observatories Committee. In response, Ken indicated that Larry Atkinson should serve in the role as liaison. Larry currently attends the Observatories Committee meetings representing the Ocean .US office.

The question was asked it there should be a UNOLS type organization to organize observatory equipment, such as equipment for the NEPTUNE project. These are the types of questions that need to be considered by UNOLS and the observatory programs. It was commented that the OBS program has a coordinating group that works with UNOLS in scheduling necessary fleet operations. There is an OBS steering committee for their pool of equipment. This may be a model to explore.

Quality of Service Initiative (QSI) - At the last Council meeting a subcommittee was identified to review the current on-line Post Cruise Assessment (PCA) form and recommend design improvements. Methods for increasing user feedback were to be explored as well. Mike Prince reviewed the status of the subcommittee's activities. His viewgraphs are included as ***Appendix XI***. The committee includes Wilf Gardner (TAMU), Tom Shipley (UT), Steve Rabalais (LUMCON), Tim Cowles (OSU), Dale Chayes (LDEO), Mike Prince (UNOLS office) and Laura Dippold (UNOLS Office). Mike showed a chart indicated the number of cruise assessment reports that have been received in 1999, 2000 and 2001 as well as the percent of reporting. The percent reporting is down in 2001, but many reports are usually submitted at the close of the year. The percentage of reports being submitted via e-mail is up in 2001. A second chart showed the percent of success being reported as well as days lost. The percent of cruise success reported by Chief Scientists over the three years is fairly level and above 90%. NSF uses "days lost" as a metric for performance in their Government Performance Reports. The chart shows a relatively low number of days lost due to ship problems.

Mike reviewed the areas of concern that were identified in the 2000 PCAs. Ship equipment and science equipment received the highest level of concern. Pre-cruise planning stands out as well. The 2001 PCAs mirrored the 2000 concerns with the addition of concern over data/computers.

Potential objectives for PCAs are:
- Safety and the inspection program.
- Shipboard scientific equipment program.
- Shipboard technician program.
- Science users for selecting best/most appropriate ships.
- Ship operators for unbiased kudos and recommendations for improvement.
- NSF for governmental performance review (days lost).
- UNOLS Council for gauging overall fleet support of science.

Some initial areas of focus that are being explored by the committee include:
- Concern about requiring that the form be submitted electronically. This would mean that the PI would most likely leave the ship before submitting form and submittal rate would likely go down.
- Improvements/redesign of the assessment form and questions, which may require professional assistance.

- Examination of the assessment form for the captain and marine technicians.
- The subcommittee will consider whether or not all PIs should be able to submit the form, or just the chief scientists.
- The NAVO and NOAA assessment forms will be reviewed.

Currently, there are three Post Cruise Assessment forms available for the Chief Scientists. The UNOLS online form <http://www.gso.uri.edu/unols/pcarform.htm> and the previous, but still used by the majority paper form. The paper form can be downloaded from the WHOI website at <http://www.marine.whoi.edu/planning/cruise_assess.pdf>. There is also a Captain's form which is a paper version created in the late eighties. This form can be downloaded from OSU's website at <http://www.oce.orst.edu/Vessels/martech/appendix_15.pdf>.

The first cut at a revised PCA form will attempt to:

- Combine everything into one form.
- Retain the best aspects of the online and original paper forms.
- Provide more focused feedback.
- Allow evaluation of the scheduling process and cruise planning in addition to the actual cruise.
- Be and ONLINE FORM

Sandy Shor pointed out that the cruise assessments are not sent automatically to the agencies, and most are never sent. This prompted discussion. The reports were originally developed by the RVOC. They decided to purposely not send them to the agencies. The reports don't always get completed or are often skimpy. This may be because the PIs do not know the objectives of the report. Linda Goad indicated that she would like the operators to send her the assessments. The reports could serve as a tool for identifying and correcting problems. Often the agencies are unaware of problems. Matt Hawkins reported that the University of Delaware has decided they would summarize the assessments and provide this report to the agencies. They also see it as a tool. Matt feels that the assessment as well as the operator response to the assessment report should be forwarded to the agencies.

Mike Reeve added that the agencies should see the PCA reports. Eventually he will need to go before the National Science Board and report on the quality of service measures that have been implemented for the UNOLS Fleet. Joe Coburn commented that this effort is worthwhile, but it not a formal quality improvement program. The NSF Fleet Review recommended a formal quality program.

Linda Goad asked if there would be an objection by UNOLS to sending the agencies the assessment reports. The Quality committee will take this recommendation for consideration. Dale commented that the information now provided by the PCA forms is subjective. It was suggested that the agencies send a written request for the PCA forms that could be circulated to operators and technicians for approval. Bob Knox offered that for the time being UNOLS send the assessments to the agencies unless there is an objection. It was recommended that Chief Scientists be notified that their reports are going to be sent to the agencies before they are actually sent. The UNOLS office will attempt to contact the 2001 Chief scientists and if successful begin forwarding the reports to the agencies. A comment will need to be added to the

PCA form to inform Chief Scientists that their assessments will be automatically distributed to the agencies in the future.

Standards for services provided by UNOLS Operators: Dan Fornari has requested that the UNOLS Council address the issue of in-port service fees. Can or should UNOLS Operators adopt a standard policy with regards to what the operator covers and what are paid for by the Scientist's grant? Is this part of a broader issue including establishing levels of service that are standard for other areas such as technical services?

Bob Knox raised the broader issue of base levels of service. This issue has been discussed by RVTEC. Dale Chayes reported that a subcommittee of Barrie Walden, Marc Willis, and Woody Sutherland was formed by RVTEC to address the issue of base levels of service. The group met at the last RVTEC meeting and Dale and Annette attended their meeting. They concluded that developing procedures for the various technical systems/services is a complex task. They decided that the root of the problem comes down to pre-cruise planning. If there was an established protocol for pre-cruise planning, the dialog between the science party and operator, the science group could be greatly improved. Improved communications would result in better-prepared cruises with no unexpected surprises. Barrie, Woody and Marc will try to develop this protocol. Dale indicated that the group welcomes input.

Sandy Shor indicated that he would like to have a listing of the services and equipment that are available across a ship class. What should a user expect to find when he/she comes aboard a particular ship. Sandy would like a codification. An added benefit of this sort of listing is that it could be added justification for instrumentation if a particular class ship is expected to carry it aboard.

John Diebold commented that what the subcommittee is doing is good, but it is addressing a different problem from that identified in Dan Fornari's message. Dan's problem of unexpected costs needs to be addressed before a PI ever submits a proposal. The PI needs to know what costs to expect so that they can be included in the proposal. These costs should be irrelevant of which ship the PI eventually gets scheduled on. John recommended that the costs (port fees, etc.) be more standardized among the various operations. He was on a subcommittee some time back with Mike Prince and Linda Goad to identify items that were not covered by the day rate (port costs, cranes, overtime, etc). Perhaps this should be revisited.

Sandy commented that these are two different issues. From his program perspective, he is interested in the technical levels of service issue. Sandy would like to see an inventory of instruments and services. Much of this information can be obtained right from the annual technical support proposals. Bob Knox requested that the subcommittee address this task. Creating an inventory is a good starting point.

UNOLS Standard Van Specifications – Matt Hawkins (U. of Delaware) reported on the effort to create UNOLS Standardized Van Designs. His viewgraphs are included as ***Appendix XII***. The effort was undertaken to:

- Enable economic transport by common carrier – "containerized cargo"
- Standardize design elements for benefit of the scientific user

- Facilitate group purchase – potential cost savings
- Make the vans interchangeable throughout fleet – not ship specific
- Improvements in safety through uniformity of design

Matt reviewed the features to make the vans interchangeable:

- Variable power inputs: 208-460Vac, single phase for lab vans
  Shore power connection
  3-phase for machinery and refrigerated lab vans only
- Two personnel doors and escape hatch – ensure two means of escape always available.
- Based on 20-foot ISO shipping container "foot print"

There are currently no international standards that dictate the construction requirements for scientific vans. SOLAS requirements are for ships. Classification Society standards do exist, but are not regulatory mandates. They were directed by international authorities to rely on the USCG for ruling on scientific vans on inspected vessels. The US Code of Federal Regulations, Subchapter U, 195.11 – "Portable Vans and Tanks" was used as a basis for design specifications and U.S. Coast Guard review. Other industry regulations were avoided. ABS and DNV standards were used for guidance. The goal was for clarification of existing regulations as opposed to creating new regulations.

Matt reviewed the results of the formal US Coast Guard review which were provided in a USCG letter dated May 24, 2001:

- Only power, chemical storage, and accommodations vans are required to be USCG inspected.
- Laboratory vans are NOT considered "accommodations".
- ABS high-speed vessel rules/side and aft deckhouse design pressures (2.0 psi for plate, 1.5 psi for stiffeners) considered acceptable minimum standard for portable accommodations vans on sea-going vessels. Must be secured in a "Sheltered Location" (i.e. not encounter significant wave action as with a side or aft deckhouse)
- Most portable vans are NOT required to have specific "Fire Rating" themselves.
- Allowed to take into account the "van/ship system" when considering the overall fire rating of the boundary. Location and van type determine the required fire rating of the "boundary".
- Accommodations vans must be of "incombustible materials" all around.

As a consequence of U.S. Coast Guard review, a standard 20-foot ISO container DOES NOT meet the bulkhead pressure requirements for an accommodations van. The container must be stiffened with 1.5 x 1.5 x 1/8" angle on every inward corrugation (11" O/C). For structural fire protection the following will be required:

- Aluminum suitable incombustible material for most van types
- Standard container must have wooden deck removed and steel deck inserted or "belly plate" added and wooden deck treated with fire retardant coating.
- Worst case scenario for Sub-Chapter U vessel is "A-30" – accommodations space next to lab over 500 square feet.
- Flame testing undertaken through USCG certified lab.

Various Specifications, ratings and inspection requirement details are provided in the Appendix.

UNOLS/RVOC considered the adoption of the accommodation van structural standards for all vans "normally occupied by personnel" regardless of inspection requirement – i.e. lab vans. At the RVOC 2001 Round Table discussion it was voted on and passed that all new ship-owned vans to be built to the new standards.

Matt reported on the next steps in the process:

- Consolidate information into a "UNOLS Van Manual" – hard copy and web based.
- RVOC sub-committee established to:
  - Develop a centralized inventory of existing vans – ship and science owned.
  - Determine overall fleet need for various van types, based on current condition and types available.
  - Develop van loan agreements that will address rental fees, shipping, etc.
- Promote new standards from the top down – program managers/directors – this will get the science vans to be designed to these standards.
- Establish van "pool" for the UNOLS Fleet.

The question was asked on how this will get enforced? Matt indicated that the USCG letter would help as back up. The word about the new van standards has not been widely distributed and we will need to make a strong effort to do so. Dolly Dieter indicated there would need to be a transition period. The new vans aren't even available yet. An article about the new van standards can be included in the UNOLS newsletter. Tim Pfeiffer asked Matt to send him an explanation of the van problems and new standards so that he can distribute them to the ONR program officers.

UNOLS Goals, Priorities and Mission Statement –Mike Prince reviewed the goals, priorities and UNOLS Mission statement. His viewgraphs are included as ***Appendix XIII***. He first presented the UNOLS Mission statement:

- *The University-National Oceanographic Laboratory System (UNOLS) is an organization of academic oceanographic institutions working in cooperation with agencies of the U.S. Federal Government to ensure broad access to modern, well operated, state of the art research vessels, submersibles and facilities required to support a healthy and vigorous research and education program in the ocean sciences.*
- *UNOLS is an advisory body that provides the mechanisms for coordinated scheduling and access to research vessels and facilities, co-operation and innovation by facility operators and broad community input to operators and federal agencies regarding current and future facility requirements for the ocean sciences.*

There was a question of whether the statement should mention foreign collaboration. It was recommended that the statement be posted on the UNOLS website for community comment.

Mike continued by reviewing UNOLS goals and in summary these are:

- Broad, coordinated access to oceanographic research facilities.
- Continuous quality improvement.

- Plan for and foster support for the oceanographic facilities of the future.

The objectives and priorities for 2002 were reviewed and fall under the three major headings of:

- Access and scheduling
- Continuous quality improvement
- Plan for future facilities

Specific 2002 objectives include:

- Create schedules by September
- Improve ship time and scheduling system
- Quality of Service improvement
- ISM implementation
- Arctic icebreaker science operations
- Fleet renewal process
- Monitor and stay engaged with the development of "Ocean Observatories" and other new uses of research vessels.
- Development of new facilities

Lastly Mike reviewed the 2000/2001 accomplishments and activities:

Access and scheduling:

- Completed scheduling of all UNOLS vessels by early October ensuring that scientific objectives were used as the primary consideration in making decisions whenever possible. Some projects were deferred to 2003 in order to provide the appropriate platform and facilities.

Continuous quality improvement:

- Planning for implementation of ISM Compliance on large UNOLS vessels.
- HEALY science systems testing was conducted and the ship is now operating in the Arctic.
- Started work on improvements to the Post Cruise Assessment system and considered other methods for implementing formal continuous quality improvement programs.

Plan for future facilities:

- The community was alerted to the need for fleet renewal.
- UNOLS provided a community response to the draft FOFC Long-range Fleet plan.
- New vessels are under construction or in the planning process: KILO MOANA, SAVANNAH, ALPHA HELIX replacement and CAPE HENLOPEN replacement.
- Upgrade and overhaul of the National Deep Submergence Facility: ALVIN overhaul, DSL120A, and Jason II.
- Development of standard specifications for shipboard vans including U.S. Coast Guard approved specifications.

Mike concluded by stating that this is a living document and will be posted on the UNOLS website. Community input is welcome.

Winch and Wire Follow-on Activities – Mike reported on plans to develop Science Mission Requirements (SMRs) for oceanographic wires, cables and ropes. A web form to gather input on wire and cable needs is posted on the UNOLS website at <http://www.unols.org/wire/wirespec.html>. Community input is needed! A subcommittee to address this issue has been formed to develop the wire and cable SMRs and includes: Fred Spiess/SIO, Albert J. (Sandy) Williams/WHOI, Andy Bowen/WHOI, Dan Fornari/WHOI, James Broda/WHOI, Roy Wilkens/UH, Craig Lee/UW, Stewart Lamerdin/MLML, Steve Rabalais/LUMCON, Dale Chayes/LDEO, Jon Alberts/WHOI, Tom Althouse/SIO, Mark Willis/OSU, Rich Findley/RSMAS, Theo Moniz/WHOI and Mike Prince/UNOLS. The goals for the committee are:

- To identify the scientific uses for current UNOLS wire/cables and develop Science Mission Requirements for a new generation of wire & cables.
- Create specifications for UNOLS Standard wires and cables to meet these requirements.
- Develop recommendations for introducing new standard wires and cables into the UNOLS fleet.

There will be meetings to review the feedback received from the web form.

UNOLS Vessel Status:

R/V SAVANNAH - Skidaway Institute of Oceanography submitted a letter requesting UNOLS vessel for their new R/V SAVANNAH. ***Appendix XIV*** contains a summary sheet of their NSF inspection that was conducted on 4-5 October 2001. The vessel was found to be in compliance with the Research Vessel Safety Standards. A Council motion was made and passed to accept SAVANNAH as a UNOLS vessel.

R/V KILO MOANA – The University of Hawaii has submitted a letter requesting UNOLS vessel status for their new vessel, KILO MOANA, subject to the successful completion of their ship inspection. The Council approved this request. Brian Taylor showed a few pictures of the ship. The ship specifications are contained on the web at http://www.soest.hawaii.edu/agor26/. The vessel launch is scheduled for Saturday, November 17, 2001.

Committee Activities: Each UNOLS Committee Chair submitted a written report prior to the meeting that included activities, issues or plans that have occurred since the June Council meeting. These reports are contained in ***Appendix XV***. Bob Knox briefly summarized each of the reports. Each Chair had the opportunity to raise additional issues:

Arctic Icebreaker Coordinating Committee (AICC) - Lisa Clough reported that the committee would devote a significant effort for post cruise assessment of HEALY's initial science operations in 2001. A debrief period for the HEALY AMORE cruise is scheduled for November 28th in Washington, DC. On Dec 10th, an evening session is planned at the fall AGU meeting in San Francisco. The PIs from the two 2001 HEALY cruises have been invited to report on their respective cruises.

DEep Submergence Science Committee (DESSC) – Patty Fryer could not attend the Council meeting. Annette DeSilva provided a report on issues of DESSC concern and upcoming activities.

NOAA/NURP Funding of the National Deep Submergence Facility: Patty Fryer requests that the UNOLS Council take this issue for consideration – This year NURP funding decisions may potentially result in major scheduling changes for the National Deep Submergence Facility. The alteration in planned and scheduled cruises impacts day rates for use of the assets and vessel. Additionally, these late decisions jeopardize the execution of already scheduled programs. This is true also of any other vessels impacted by these types of changes in funding of field programs. The problem is a recurring one. The timing of decisions regarding funding and scheduling of field programs should be altered so as to ensure that decisions do not need to be altered. We request the Council to consider ways that such a change in timing of decisions could be affected.

Bob Knox concurred with Patty's report, indicating that it is a recurring issue that impacts the UNOLS Fleet. The Council had no recommendations for ways to improve the situation but recognized that it is a real problem.

DESSC Planning Meeting: Planning for the annual DESSC meeting at the Fall AGU conference in San Francisco is well underway. The meeting will be held on December 9th. The format will be similar to previous meetings:

- 2001 Science Reports from users of ALVIN, ROVs, and other facility assets. (There will be time to hear from others since there are fewer ALVIN users as a result of its downtime for overhaul).
- NDSF Operators' report:
  - Work plans for 2002-3
  - ATLANTIS improvements – status
  - ALVIN Overhaul report
  - ROV Upgrade and field trial status
- 6500m Sub (proposal status) and a New ALVIN Construction Advisory Committee
- Agency and UNOLS Reports
- NOAA Ocean Exploration Initiative
- Shallow-water Submergence Science Ad Hoc Committee – the DESSC will hold an executive session during the lunch break to address shallow-water submergence science issues – science/technology needs, access, and funding. Shirley Pomponi will present approaches for meeting this groups needs. Mandate, membership and support for an ad hoc committee will be discussed.
- DESCEND technology follow-up plans (more below)
- Announce future meetings that will address submergence science and facilities:
  - Archeology Meeting at MIT (Dave Mindell)
  - AGU/ASLO meeting (see below)
- Public Outreach Activities

- Issues related to access to submergence science assets and funding.

AGU/ASLO Special Session:

A focus of the DESSC this year has been to more fully involve the biology community in standard DESSC interactions. Over the years the committee has done a good job at reaching the MG&G community, but has missed to some degree the biology community. In order to ramp up involvement of the biology community with DESSC discussions, DESSC will convene a special session at the AGU/ASLO conference in February 2002. The request for the special session has been granted. Patty, Shirley and Anna-Louise are the conveners. The session will follow a format similar to the December DESSC meetings, with science user reports, operator reports and an agency report. Along with biology and geochemistry, the session will also address shallow water submergence facilities. Users of the national facility as well as HBOI and MBARI assets have been contacted to submit abstracts. Submissions for a poster session have also being encouraged and response so far has been good. The session has been broadly announced through UNOLS and RIDGE, and others.

DESCEND technology follow-up plans:

- Compile and inventory of past workshop findings.
- Submit an EOS article.
- Technology workshop – options for carrying out an effective workshop are being explored.

Fleet Improvement Committee (FIC) – Larry Atkinson remarked that efforts would be made to initiate fleet renewal in the Gulf of Mexico region. Fleet renewal efforts in other areas are already underway to varying degrees. A community symposium for the Gulf region may be planned.

Research Vessel Operators' Committee (RVOC) – Steve Rabalais reported that UNOLS ship operators are facing a crisis to retain crew. The RVOC put together a crew retention committee during their 2000 meeting in Oregon. The committee came to the URI meeting with recommendations. This is an industry wide issue. New ideas on how to recruit and retain crew are needed. There is concern that ships will not be able to sail if there is not enough crew to fill ships. RVOC will continue to address this problem and attempt to develop more specific recommendations.

Ship Scheduling Committee (SSC) – Joe Ustach commented that with only six weeks until the end of the calendar year, about one third of the scheduled cruises are still listed as pending funds.

Council Elections and Membership Votes: Bob Knox reported on the results of the Council Elections and the Membership votes. Voting this year was conducted by mail ballot.

- The proposed Charter revisions were accepted.
- Three member applications were all accepted.
- Charlie Flagg was re-elected to the Council.
- Bruce Corliss was elected to the Council.

Meetings Dates – The date and location for the Council next meeting will be arranged via e-mail. A tour of KILO MOANA is being considered for a winter meeting in Jacksonville, FL.

Bob Knox closed the meeting and thanked the staff of CORE for all of their efforts in arranging the meeting.

The meeting was adjourned at 4:51pm.

Appendix I

Revised 11/9//01

Tentative Agenda

UNOLS COUNCIL MEETING

Thursday, November 15, 2001, 8:30 am

The Brookings Institute
The Stein Room
1775 Massachusetts Avenue NW
Washington, D.C.

0830: Call the Meeting: Bob Knox, UNOLS Chair, will call the meeting to order and provide an opportunity for introductions.

The purpose of the meeting is for open discussion on important issues facing UNOLS.

Accept the minutes of June 2001 Council Meeting.

UNOLS Issues and Discussion Items:

Security Issues for Research Vessel Operations - In the wake of the terrorist attack on the United States of September 11th and the attack on R/V EWING in the western Gulf of Aden on August 31, Council and Federal Agency representatives will consider the immediate and long term implications of these events on Research Vessel operations. These incidents raise a number of questions about future UNOLS research vessel operations, not only in piracy- or terrorist-prone areas, but worldwide. A series of short presentations will be made to help focus the discussion on issues such as threat assessment, training and operational procedures, safety of crew and scientists, as well as other issues that may be raised. Subsequent discussion should help to focus on action items and areas of responsibility for UNOLS Council, Committees and Operators as well as for Federal Agencies.

Anticipate presentations by:

- **Intro - Bob Knox**
- **WHOI (Joe Coburn)**
- **LDEO (Paul Ljunggren)**
- **Affected PI's (Brian Taylor. Review report by Amy Bower)**
- **Charles Dragonette - Office of Naval Intelligence**
- **Peter Petrelis - MARAD**
- **Richard Hayes - Oceanographer of the Navy**
- **Liz Tirpak - State Department**
- **USCG – CDR. Michael Rand**
- **RVOC - Steve Rabalais and Dan Schwartz**
- **UNOLS - Bob Knox (lead discussion and identify action items)**

LUNCH: Available at the meeting

During lunch Bob Knox will give a short "UNOLS 101" presentation, intended primarily for the benefit of congressional staffers and other meeting attendees who are unfamiliar with UNOLS and its major issues. He will touch on UNOLS basics (organization, membership, fleet, funding) and on two subjects of current federal significance: (a) piracy/security concerns for ships, and (b) fleet renewal. Much of this material will be familiar to UNOLS "old hands" and/or will be considered in greater detail during the regular meeting. Such "old hands" may well choose to skip this lecture. There will be no quiz, paper or final exam.

AFTER LUNCH

Federal Agency Issues Federal agency representatives will have an opportunity to raise any other issues that may warrant the Council's attention or require UNOLS consideration.

Long Range Planning for the UNOLS Fleet The revised draft of the FOFC Long Range Fleet Plan will be reviewed and discussed. Future UNOLS actions with regards to fleet planning, SMRs, conceptual designs, and shipbuilding management will be considered.

Facilities beyond Ships and the National Deep Submergence Facility, the UNOLS Role: Discussion on this item continues from the last meeting. What is the role of UNOLS and FIC with regards to new technology development for observatories and other emerging oceanographic facilities? Should new relationships be built between UNOLS and agencies such as NASA that are interested in developing similar tools for exploration and research? What are the implications of the Ocean Exploration Initiative? The status/response to Bob Knox's letter to Ken Johnson regarding a UNOLS representative/liaison to the Observatories Committee will be discussed.

Quality of Service Initiative (QSI): At the last meeting a subcommittee (Mike Prince, Wilf Gardner, Tom Shipley, Dale Chayes and Steve Rabalais) was identified to review the current on-line cruise assessment form and recommend design improvements. Ways to increase user feedback are also to be considered. The status of the subcommittee's activities will be reviewed.

Standards for services provided by UNOLS Operators: Dan Fornari has requested that the UNOLS Council address the issue of in-port service fees. Can or should UNOLS Operators adopt a standard policy with regards to what is covered by the Operator and what is paid for by the Scientist's grant? Is this part of a broader issue including establishing levels of service that are standard for other areas such as technical services? Report on discussions at RVTEC meeting.

UNOLS Goals, Priorities and Mission Statement Goals and Priorities were identified at the June Council meeting. These will be reviewed and updated if necessary for presentation in the UNOLS Annual Report.

WINCH & WIRE Follow-on Activities: - Mike Prince will report on plans to develop "Science Mission Requirements" for oceanographic wires, cables and ropes.

UNOLS Vessel Status – R/V SAVANNAH and R/V KILO MOANA. Formal requests to designate these vessels as UNOLS research vessels have been submitted pending completion of inspections.

UNOLS Standard Van Specifications – A brief update from Mathew Hawkins of the University of Delaware.

Committee Activities: Committee Chairs will have an opportunity to discuss activities, issues or plans that have occurred since the June Council meeting. A full annual report by each Committee Chair will be included in the UNOLS Annual Report.

Appendix II

UNOLS Council Meeting – November 15, 2001					
The Brookings Institute, 1775 Massachusetts Avenue NW, Washington, D.C.					
LAST	**FIRST**	**UNIVERSITY**	**Phone**	**Fax**	**Email**
Askew	Tim	HBOI	(561) 465-2400	(561) 465-2116	taskew@hboi.edu
Atkinson	Larry P.	ODU	(757) 683-4926	(757) 683-5550	atkinson@ccpo.odu.edu
Berkson	Jonathan	USCG	(202) 267-1457	(202) 267-4222	jberkson@comdt.uscg.mil
Black	Lee	BBSR.	(441) 297-1880 X 208	(441) 297-1839	lblack@bbsr.edu
Bodenstedt	Joe	USCG	(202) 267-1456	(202) 267-4222	jbodenstedt@comdt.uscg.mil
Brass	Garry	US ARC	(703) 525-0111	(703) 525-0114	g.brass@arctic.gov
Callahan	Jeffrey	URI	(401) 874-6584	(401) 874-6144	callahan@gsosun1.gso.uri.edu
Charland	Jay	CORE	(202) 332-0063 X207	(202) 332-9751	jcharland@COREocean.org
Chayes	Dale	LDEO	(845)365-8434	(845) 359-6940	dale@ldeo.columbia.edu
Clough	Lisa M.	ECU	(252) 328-1834	(252) 328-4178	cloughl@mail.ecu.edu
Coburn	Joe	WHOI	(508) 289-2624	(508) 540-8675	jcoburn@whoi.edu
DeSilva	Annette	UNOLS Office	(401) 874-6827	(401) 874-6167	office@unols.org
Diebold	John B.	LDEO	(845) 365-8367	(845) 359-6817	marscico@ldeo.columbia.edu
Dieter	Dolly	NSF	(703) 292-8581	(703) 292-9085	edieter@nsf.gov
Dragonette	Charles	ONI	(301) 669-3261	(301) 669-3247	cdragonette@nmic.navy.mil
Flagg	Charles .	BNL	(631) 344-3128	(631) 344-2060	flagg@bnl.gov
Gardner	Wilford	TAMU	(979) 845-7211	(979) 845-6331	wgardner@ocean.tamu.edu
Goad	Linda	NSF	(703) 292-7706	(703) 292-9085	lgoad@nsf.gov
Hawkins	Matt	UDEL	(302) 645-4341	(302) 645-4006	hawkins@udel.edu
Hayes	Margaret	State Dept.	(202) 647-3013	(202) 647-4353	hayesmf@state.gov
Johnson	Tom	LLO – UMN	(218) 726-8128	(218) 726-6979	tcj@d.umn.edu
Ljunggren	Paul	LDEO	(845) 365-8845	(845) 359-6817	pwl@ldeo.columbia.edu
Meehan	James M.	NOAA/NMFS	(301) 713-2363	(301) 713-1875	james.m.meehan@noaa.gov

Millick	Sujata	ONR	(703) 396-4530	(703) 696-2710	sujata.millick@onr.navy.mil
O'Clock	James W.	NOAA/OMAO	(301) 713-3435 X146	(301) 713-1541	James.w.O'Clock@noaa.gov
Petrelis	Peter	Maritime Admin	(202) 366-6252	(202) 366-3954	peter.petrelis@marad.dot.gov
Pfeiffer	Tim	ONR	(703) 696-6999	(703) 696-2710	pfeifft@onr.navy.mil
Prince	Mike	UNOLS Office	(831) 632-4410	(831) 632-4413	office@unols.org
Rabalais	Steve	LUMCON	(985) 851-2808	(985) 851- 2863	srabalais@lumcon.edu
Rand	Michael	USCG	(202) 267-6853	(202) 267-4677	mrand@comdt.uscg.mil
Rayder	Scott	CORE	(202) 332-0063 X210	(202) 332-8887	srayder@COREocean.org
Rayfield	John	House Resource C.	(202) 226-0264		John.Rayfield@mail.house.gov
Reeve	Michael R.	NSF	(703) 292-8581	(703) 292-9085	mreeve@nsf.gov
Schwartz	Daniel S.	U WA	(206) 543-5062	(206) 543-6073	schwartz@ocean.washington.edu
Shor	Alexander	NSF	(703) 292-8583	(703) 292-9085	ashor@nsf.gov
Smith	Holly	NSF	(703)292-7713	(703) 292-9085	hesmith@nsf.gov
Taylor	Paul H.	NAVOCEANO	(228) 688-5843	(228) 688-5602	taylorp@navo.navy.mil
Taylor	Brian	U HI	(808) 956-6649	(808) 956-3723	taylor@soest.hawaii.edu
Tirpak	Liz	State Dept.	(202) 647-0238	(202) 647-1106	TirpakEJ@state.gov
Ustach	Joseph	Duke	(252) 504-7579	(252) 504-7651	joeu@duke.edu
Webster	Eric	House Science Cm	(202) 225-8844	(202) 225-4438	Eric.Webster@mail.house.gov
Wiesenburg	Denis	USM	(228) 688-3177	(228) 688-1121	denis.wiesenburg@usm.edu
Wilkes	Gordon	NAVOCEANO	(228) 688-4376	(228) 688-5602	wilkesg@navo.navy.mil
Yoder	Jim	NSF	(401) 874-6864	(401) 874-6728	jyoder@nsf.gov

Appendix III

WOODS HOLE OCEANOGRAPHIC INSTITUTION

"Piracy at Sea"

Prepared by Richard F. Pittenger

19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

What is "Piracy"?

Where is it happening?

What are we doing about it?

19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Definition of "Piracy"

According to the International Marine Bureau (IMB)

"An act of boarding or attempting to board any ship with the intent to commit theft or any other crime and with the intent or capability to use force in the furtherance of that act."

Source: ICC International Chamber of Commerce

19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Attacks in South America 1 January to 31 December 2000

19 October 2001

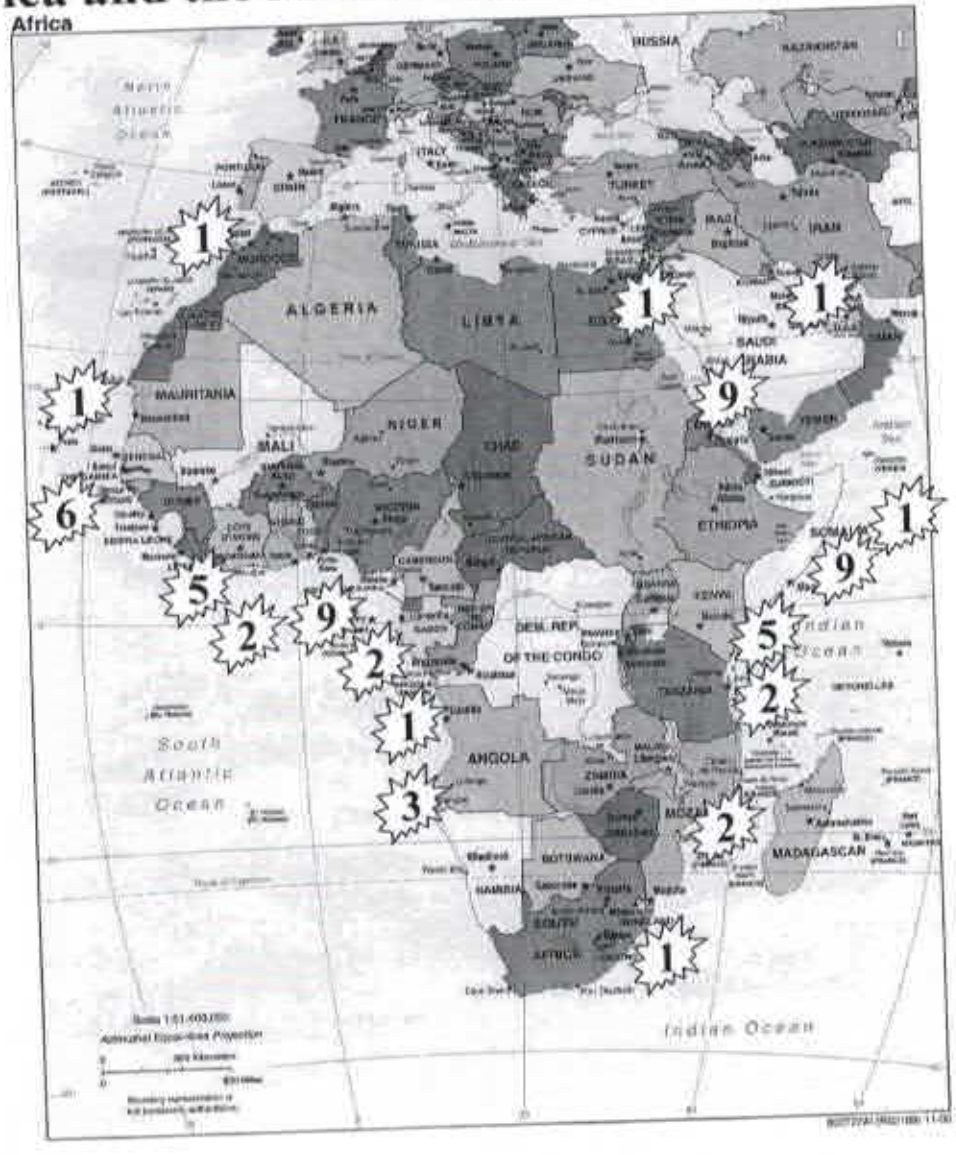
WOODS HOLE OCEANOGRAPHIC INSTITUTION

Attacks in South East Asia and the Far East 1 January to 31 December 2000

19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Attacks in Africa and the Middle East 1 January to 31 December 2000



19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Year 2000 Piracy Statistics

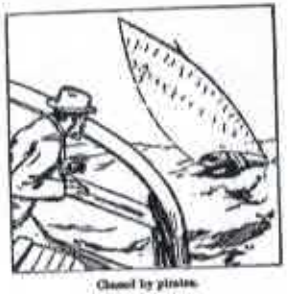
- **Attacks** 469
- **Boardings** 307
- **Hijackings** 8
- **Killed** 72
- **Injured** 99

http://www.iccwbo.org/ccs/imb_piracy/weekly_piracy_report.asp

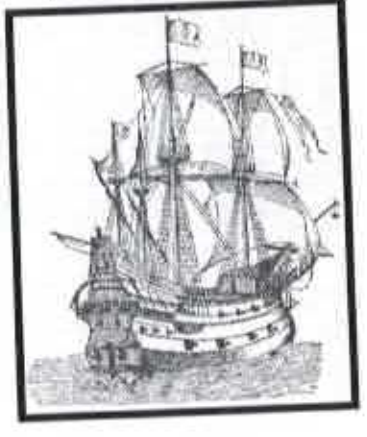
19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Pirates of Long Ago



Chased by pirates.



19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Present Day Pirate/Fishing Boats

19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Present Day Pirates

19 October 2001

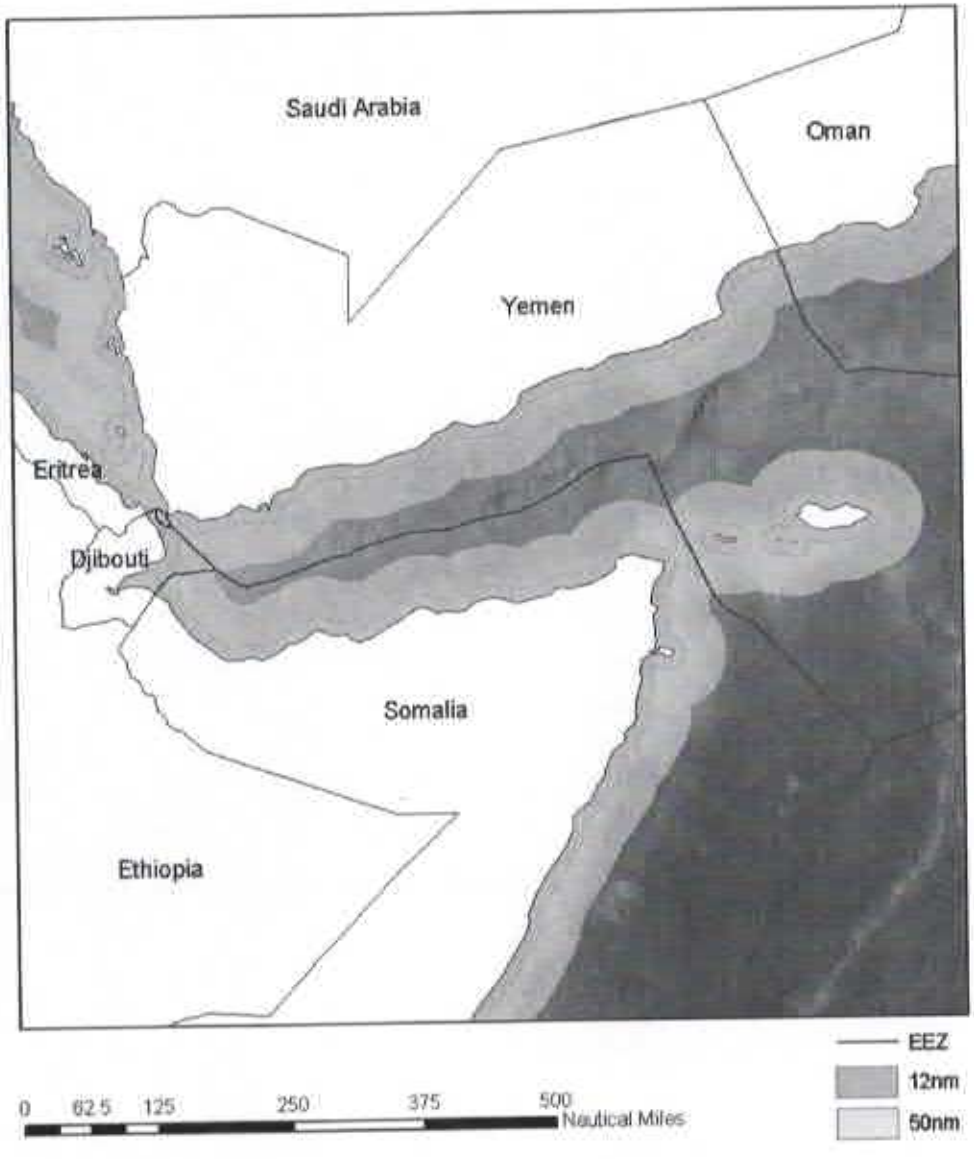
WOODS HOLE OCEANOGRAPHIC INSTITUTION

Victims

19 October 2001

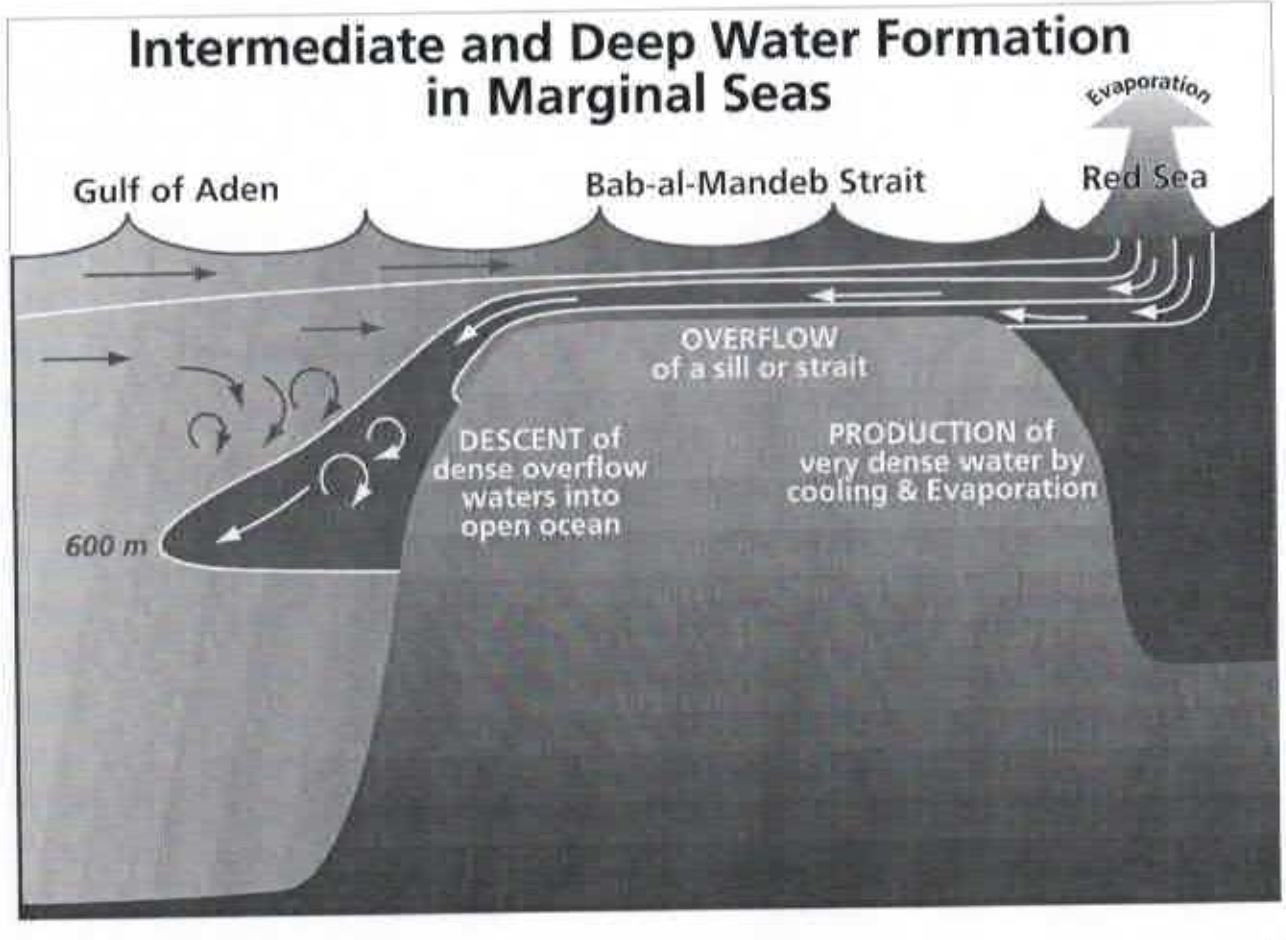
WOODS HOLE OCEANOGRAPHIC INSTITUTION

Gulf of Aden



19 October 2001

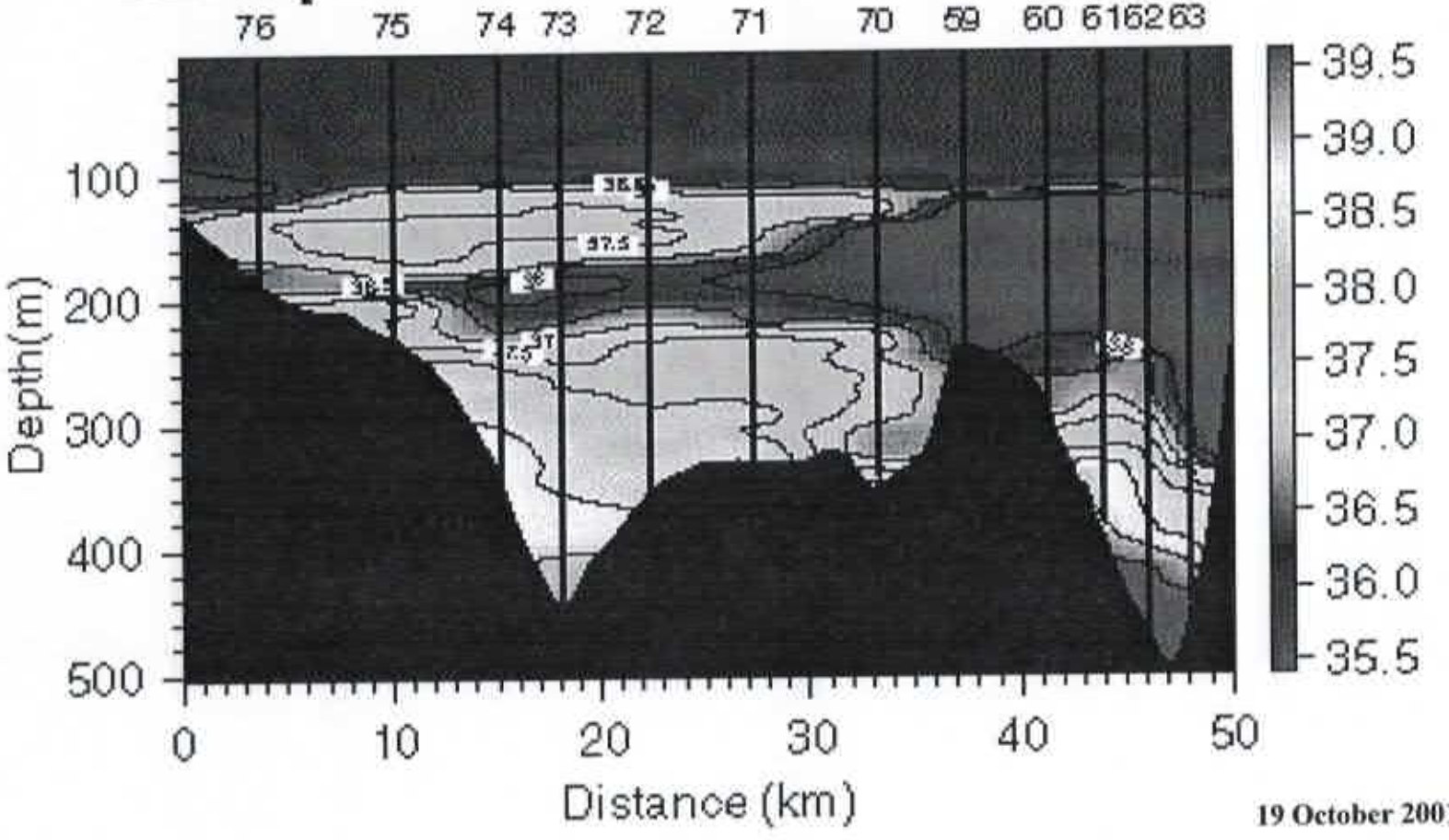
WOODS HOLE OCEANOGRAPHIC INSTITUTION



19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Salinity Plume Section 3 - February 2001

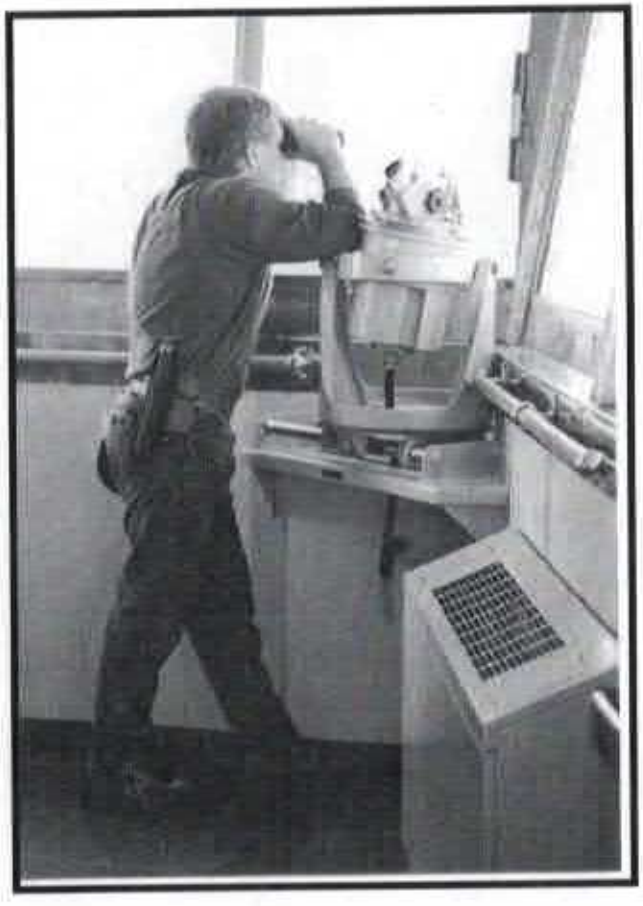


19 October 2001

WHOI Preps

- **Refused to go to any ports in the region**
  - **Embarked - Mombasa, Kenya**
  - **Disembarked - Seychelles**
- **Conferred with Science, Crew, Security Experts, Federal Agencies.**
- **Asked for intelligence support.**
- **Hired security consultants.**

- **Consultants: Former Special Forces, Presidential Security, Seals.**
- **Help organize, train crew and science party.**
- **Served as extra look-outs and key members of crew response.**
- **Advised on doing research stations "smartly".**
- **Gave crew and science a level of comfort so they could concentrate on their tasks.**



WOODS HOLE OCEANOGRAPHIC INSTITUTION

REDSOX I

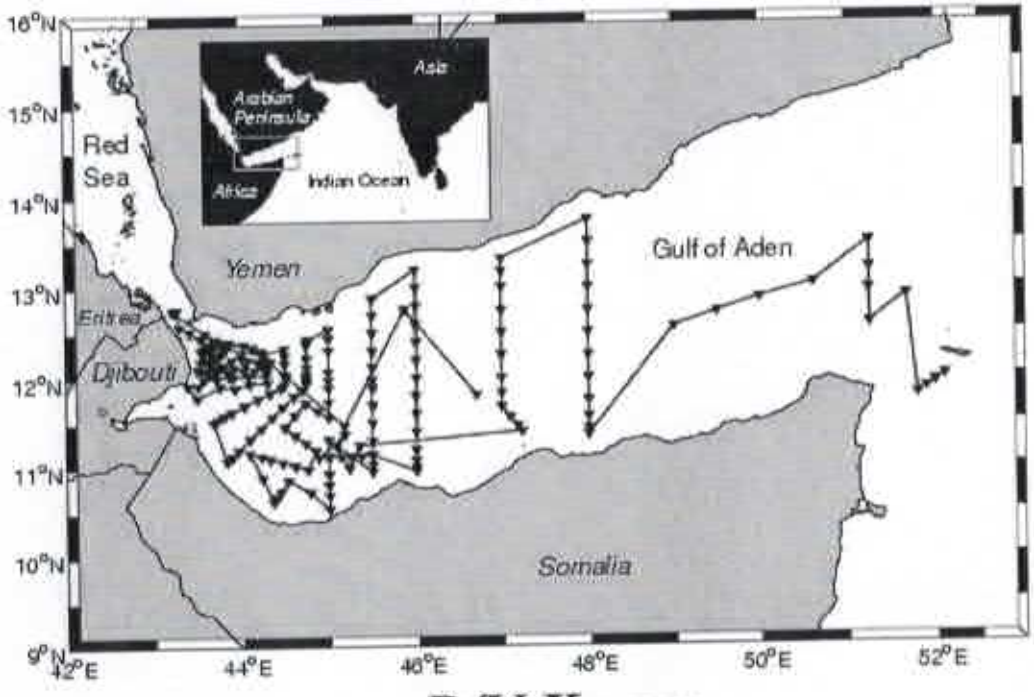
11 February – 15 March 2001

R/V Knorr

19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

REDSOX I
Track Chart



R/V Knorr

19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

REDSOX II

12 August – 12 September 2001

R/V Ewing

19 October 2001

Why go to the Red Sea?

- **Formation site for high-salinity water that spreads throughout Indian Ocean.**
- **Outflow and spreading of high-salinity water into Gulf of Aden not investigated since the '60's, and never with modern oceanographic tools.**
- **Red Sea outflow has unique characteristics (seasonality, low latitude) that likely affect mixing and spreading into the Indian Ocean.**

Purpose

- **To map out the water properties (salinity) of the outflow as it leaves Bab el Mandeb, descends across the continental slope and spreads through the Gulf of Aden.**
- **To directly measure the currents associated with the outflow, and the surrounding waters, using acoustic current profilers and floats.**

Timing

- **Make observations during maximum and minimum outflow (winter and summer) to identify any differences in how deep the outflow descends and which pathways the outflow follows.**
- **Cruises scheduled for February-March (*R/V Knorr*) and August-September 2001 (*R/V Ewing*)**

19 October 2001

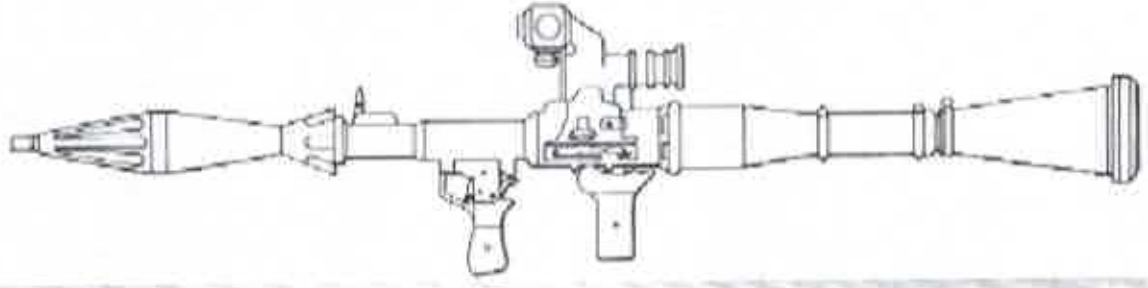
WOODS HOLE OCEANOGRAPHIC INSTITUTION

REDSOX II Attackers

19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Rocket Propelled Grenade (RPG)

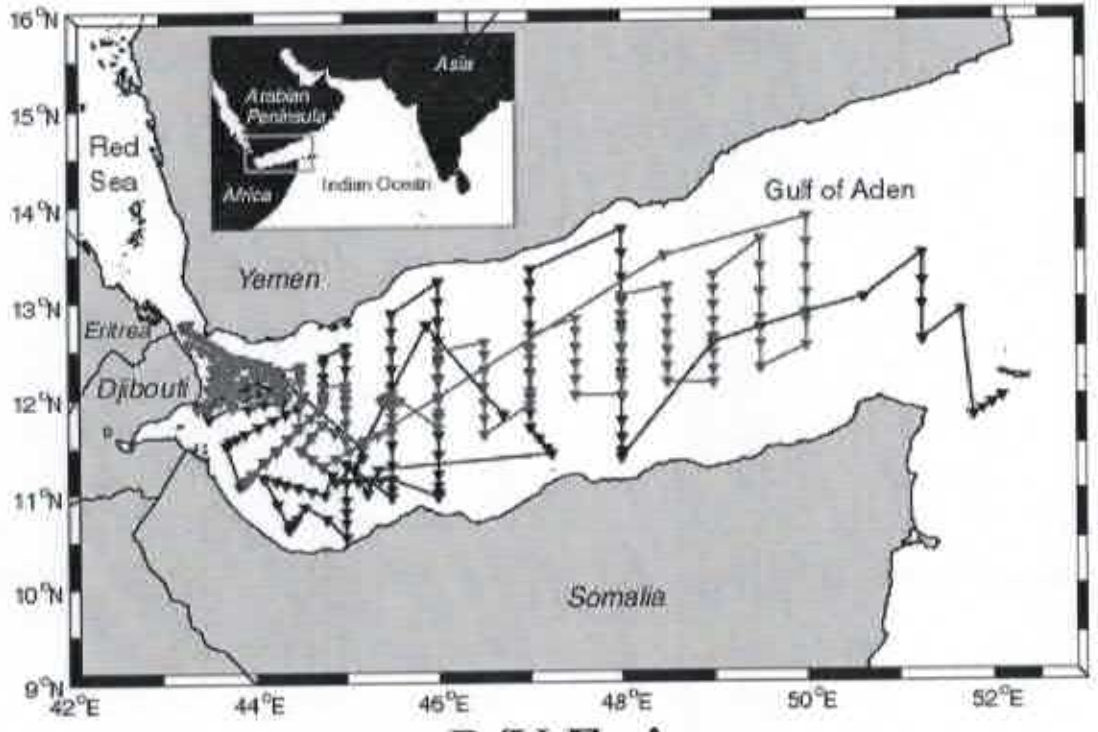


19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

REDSOX II

Track Chart

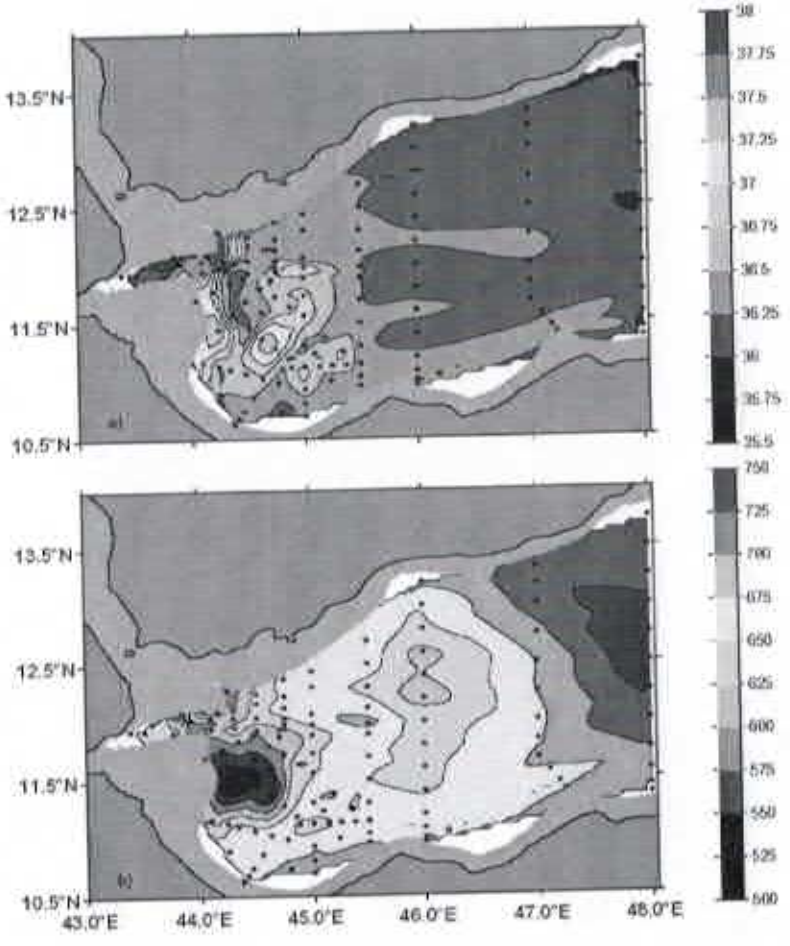


R/V Ewing

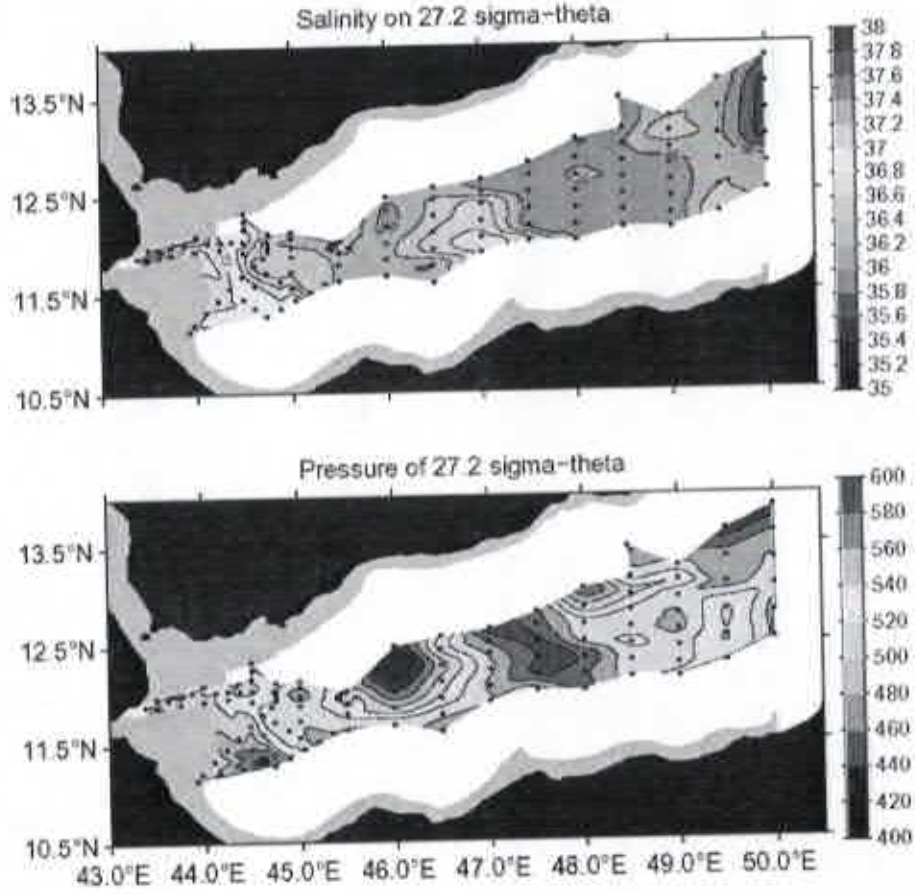
9 October 2001

Salinity/Pressure at 600m

REDSOX I



REDSOX II



19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION

What's Ahead?

WHOI

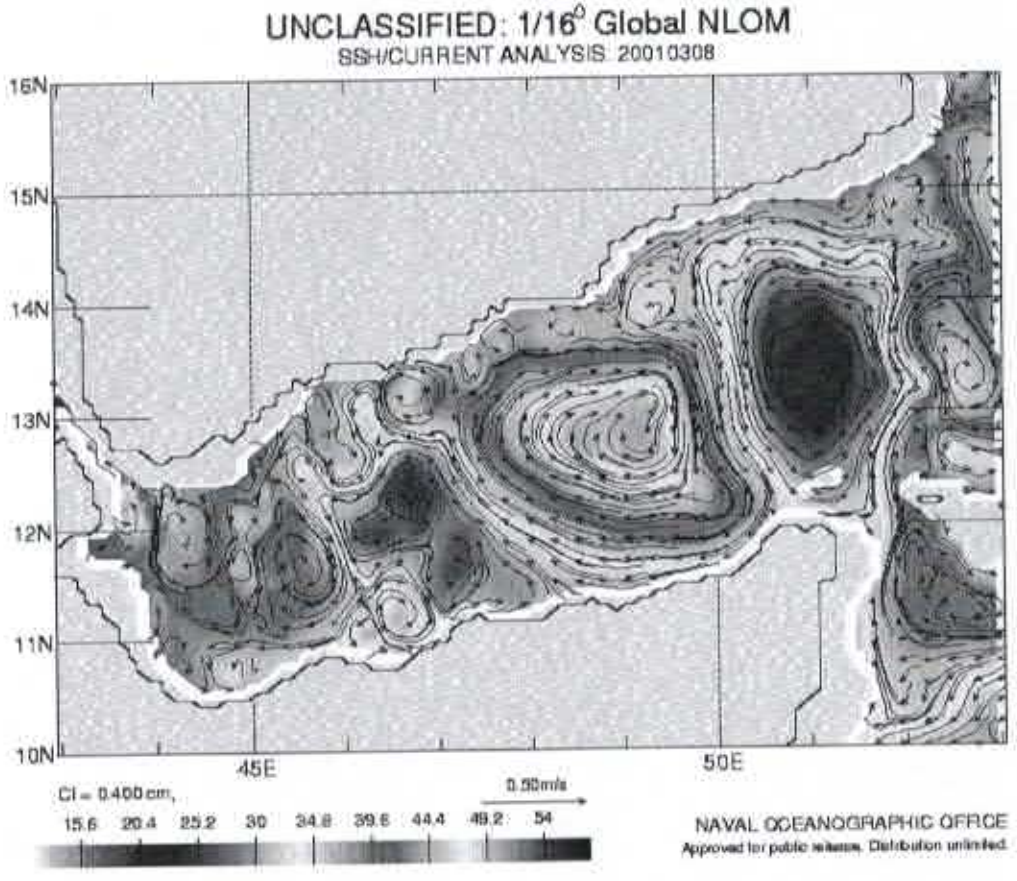
- **We have no ship with cruises to high threat areas through 2002.**
- **Our ships are prepared (organization, procedures, training).**
- **We are plugged into intelligence sources (eyes open, ears to the ground).**

Federal Agencies and Science Community

- **Issue has moved from *off-the-screen* to *number one*.**
- **Terrorism adds volatility and uncertainty.**
  - **What is the appropriate course of action?**

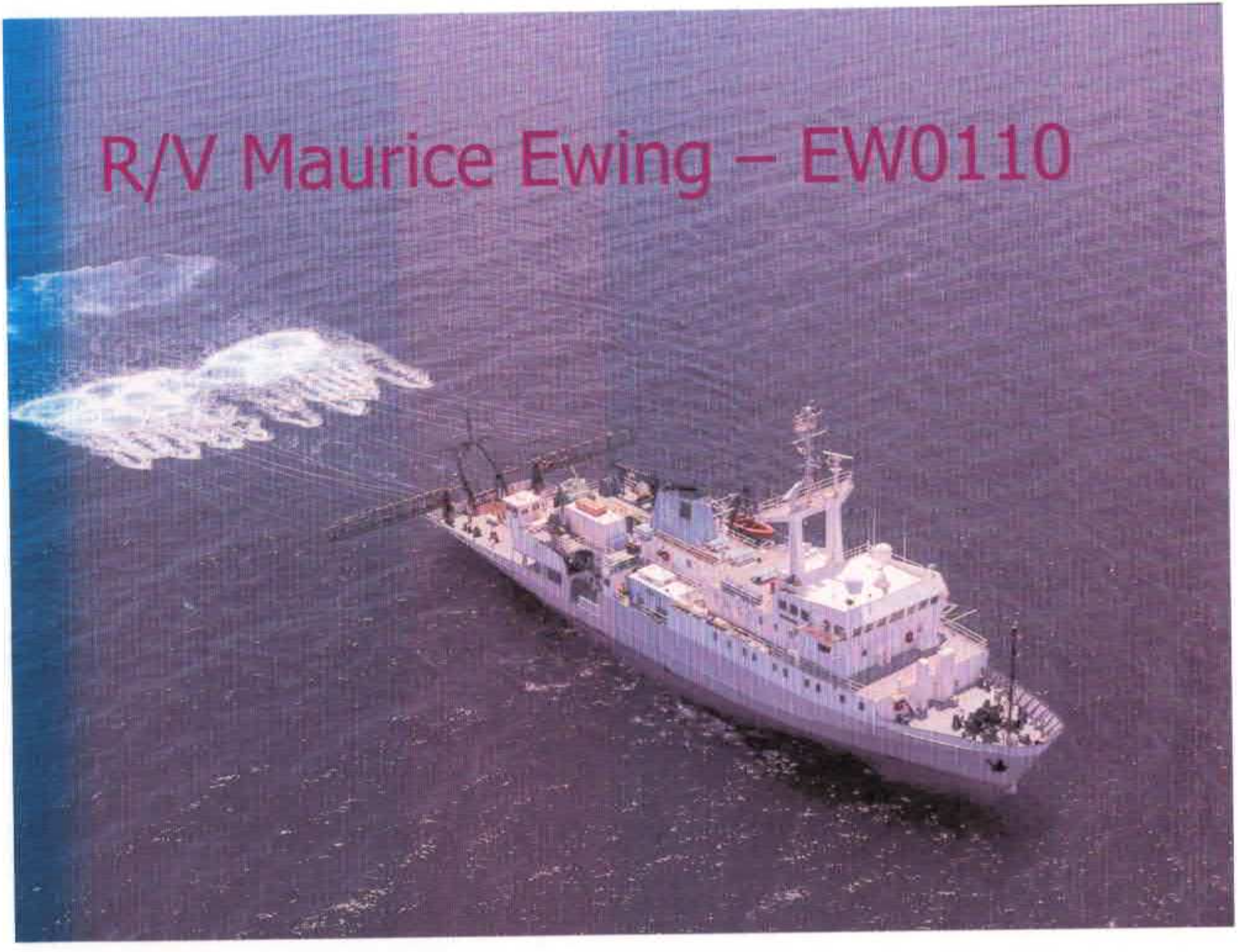
19 October 2001

WOODS HOLE OCEANOGRAPHIC INSTITUTION



19 October 2001

Appendix IV


R/V Maurice Ewing – EW0110

2001 Ship Operations Schedule

04 AUG 11 AUG	IN1/Red Sea/ Transit	N.A./None/ OCE00	Piraeus At Sea	8/NSF/F No
12 AUG 19 AUG	IN1/Red Sea/ Oceanography	Johns, Wm/RSMAS MPO/ONR	At Sea Djibouti, Sudan, Egypt, Saudi, Eritrea, Yemen, Djibouti	7/NAVY/F
21 AUG 12 SEP	IN1/Gulf of Aden/ REDSOX - Oceano.	Johns, Wm/RSMAS MPO/OCE98-19506	Djibouti Djibouti, Eritrea, Somalia, Yemen, Djibouti	26/NSF/F
15 SEP 21 OCT	IN1/Gulf of Aden/ MCS, OBS / ODP	Driscoll/WHOI/ OCE99-11877	Djibouti Seychelles Eritrea, Somalia,Yemen, Djibouti	41/NSF/F

In preparation for work in Red Sea/Gulf of Aden:

- Contacted other ship operators and agencies regarding their experiences, points of contact, and procedures when operating in this area or similar areas.
  - NOAA
  - WHOI
  - Geophysical Operators
  - Foreign R/V operators
  - Department of State-Regional Security Officer on embassy staff

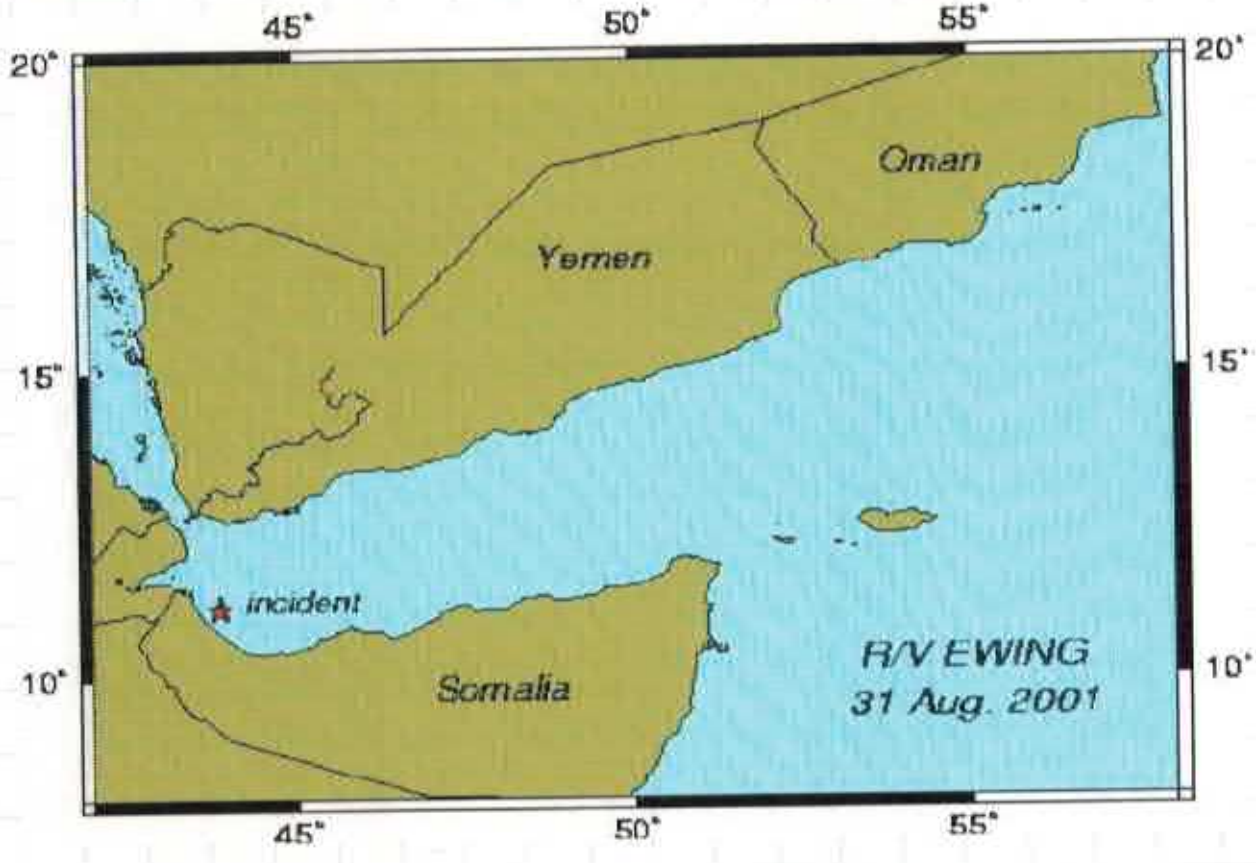
Follow up contacts/sources of information included:

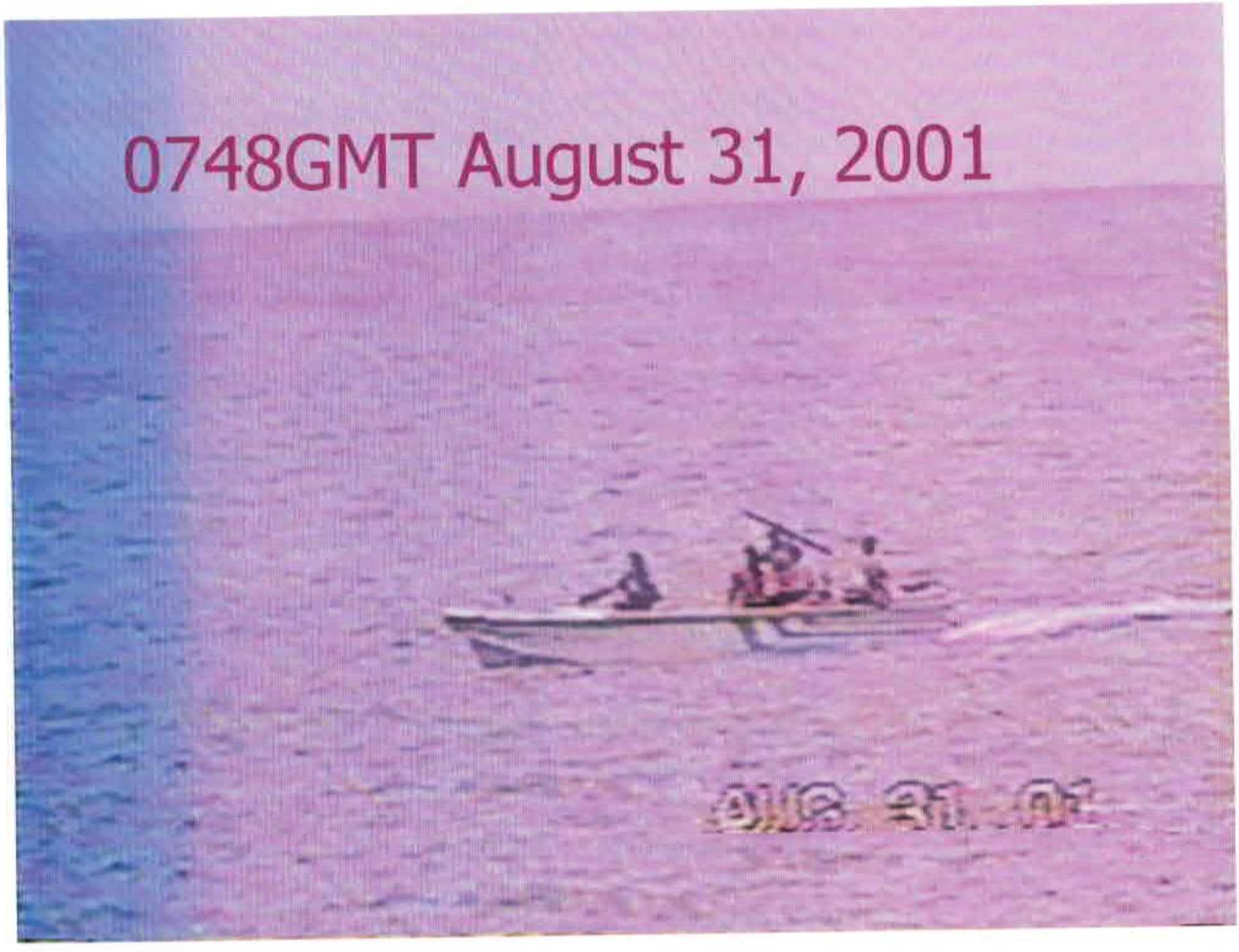
- Maritime security firms
- Office of Naval Intelligence, Charles Dragonette
- Piracy Center Kuala Lumpur
  - www.icbo.org/ccs/frame/frame/html
- Maritime Security Council
  - www.maritimesecurity.org
- MARAD
  - www.marad.gov
- National Imagery and Mapping Agency(NIMA)
  - pollux.nss.nima.mil/index/index.html

Increase in shipboard security:

- Added additional bridge watchstander
- Employing of contractor to provide
  - Training for crew during leg from Piraeus to Djibouti
    - Detection
    - Deterrence
    - Response
  - Assistance developing a ship's security plan
    - Inport
    - Underway

Gulf of Aden


45°
50°
55°
20°
15°
10°
Oman
Yemen
incident
Somalia
R/V EWING
31 Aug. 2001


0748GMT August 31, 2001

Response to the incident:

- LDEO Director, Marine Staff consulted with NSF, PI and Chief Scientist as to potential course of action.
- Science was limited to outside 50 nm Yemen and Somalia.
- Alerted Public Affairs Office prepare press release.
- Reports of incident made to other agencies.
- Begin to revise plans for EW0111, a MARGINS program in Gulf of Aden. 80% of program was within 50 nm of Yemen and Somalia.
- Marine Supt. and Marine Science Coordinator to Djibouti port call.

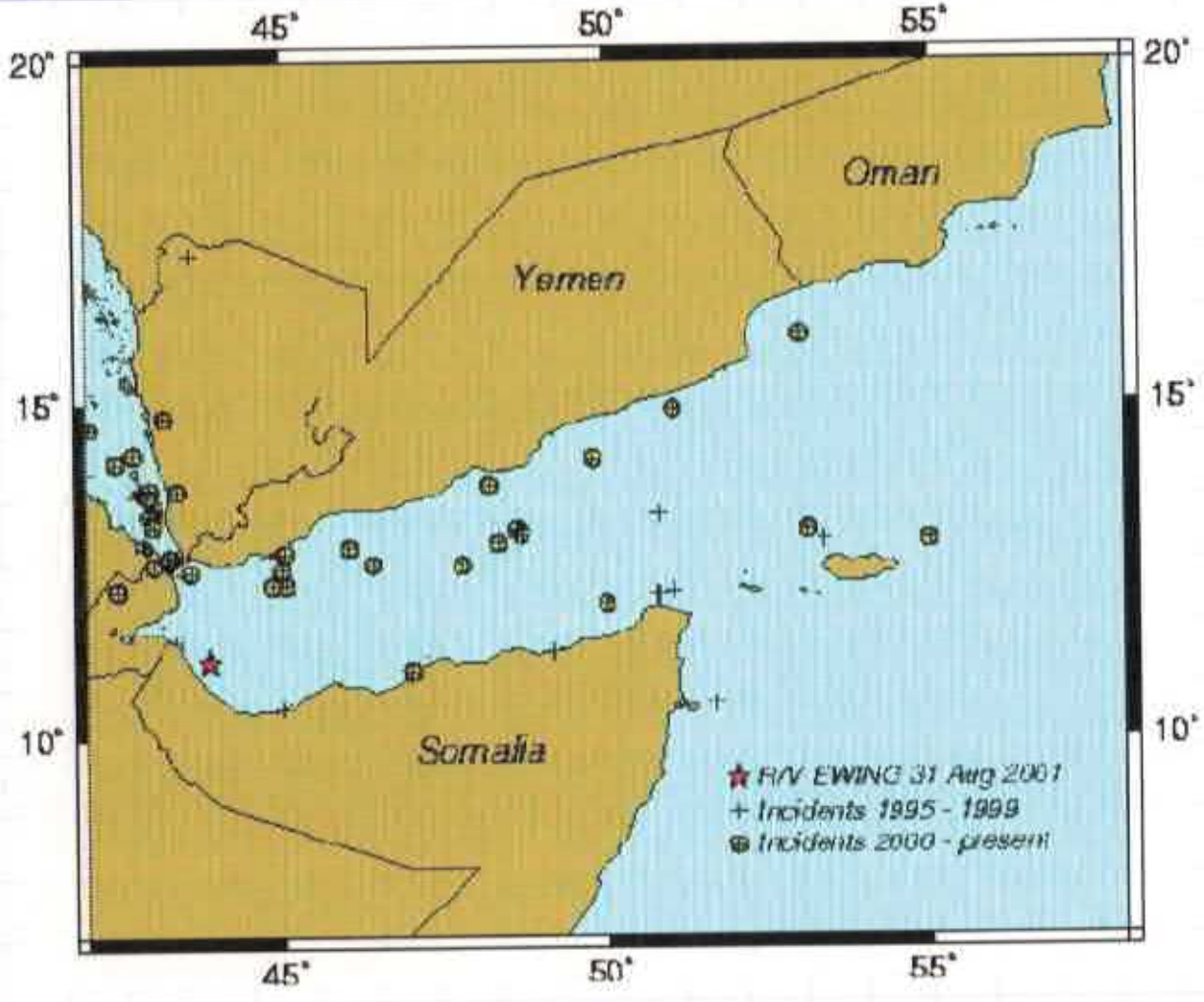
Arrival Djibouti

- EWING arrived 12 September.
- Science party departed 12 September.
- EW0111 in Gulf of Aden (and Arabian Sea option) canceled.
- Sailed for Seychelles 13 September.

20/20 Hindsight-

- Usefulness of shoreside contingency plan
- Benefit of increased training in shipboard security both inport and underway.
- Reconsider practices/policies regarding use of force/small arms on research vessels and/or use of shipboard security teams.
- Guidelines for assistance to operators and sponsoring agencies in evaluating risks to personnel and vessels in specific areas/regions of the world.
- Recognition of operational risks associated with piracy, political instability,and acts of violence should be given consideration when programs are being funded.

Red Sea/ Gulf of Aden Reported Incidents from 1995 to Present



Appendix V

pursuit, and we continued steaming away at full speed. When it was clear the pursuit was over and the small boat was out of sight, the "all clear" was given and we all returned to the main lab.

Shortly thereafter, I met with the captain and we agreed to take up again our CTD stations in the northern half of the gulf while we waited for advice from the States. This continued until about 2200, when the captain and I spoke with Mike Purdy and others at LDEO by telephone to discuss future operations for the cruise. They suggested a 50-mile restriction from both the Yemeni and Somali coast. I took about an hour to consider this and work with the other scientists on board to develop a new sampling plan with this in mind. During a second telephone conversation, I agreed with the restriction with a few exceptions: on two north-south crossings, we would be able to come within 35 nm of Yemen to sample particular features related to the bathymetry there, and farther east, we would need to get within 32 nm of Yemen to deploy a sound source mooring that was to be part of an existing moored array. This was agreed to, and we carried on with CTD operations.

The restriction to remain 50 miles from Yemen and Somalia has had a major but not devastating impact on our research objectives. A major branch of the Red Sea outflow is thought to follow the boundaries of the Gulf of Aden, primarily along the Somali coast. One objective was to test this hypothesis. As a result of the restrictions on the *Ewing*' s movement, we have not been able to study that aspect of the outflow during this cruise. Specifically, this resulted in the loss of about 40% of the planned CTD stations remaining in the gulf, and the need to re-locate a float time series site that had been previously established near Somalia. If I had to estimate the overall loss in terms of percentage of original objectives not met due to this incident, I would say about 30%, We re-designed our sampling plan to focus more on the large eddies that are present in the middle of the gulf. These eddies are also important in the spreading and mixing of the Red Sea Water. We replaced stations near the boundaries with more stations in the eastern gulf. Even so, the eddies could not be fully mapped due to the lack of stations near the boundaries. The new objectives were met and I consider the cruise to be a success based on the new objectives.

Security Procedures and Recommendations: Prior to REDSOX-l on the *Knorr*, Dick Pittenger at WHOI made the security arrangements for the cruise. The main precaution taken for this cruise was to put two security professionals on board for the entire cruise. As I understood it, their job was to provide training for the crew, watch for and assess any suspicious vessels, and advise the captain. There were no incidents during REDSOX-1. After that cruise, I contacted Paul Ljunggren at LDEO and described in detail what we had done scientifically on REDSOX-l and that we planned the same scope of work on REDSOX-2 on board the *Ewing*. At some point before REDSOX-2, Paul let me know that their plan was to put one security professional on the leg prior to REDSOX-2 (Piraeus -Djibouti) but not REDSOX-2.

Hindsight is always 20/20, but in retrospect, I wish security professionals had been on board the *Ewing* during REDSOX-2. I say this not so much because I think it would have been appropriate for them to fight off our assailants with non-lethal or lethal force, but because it would have provided a better sense of security for myself and the other scientists. To know that a security professional was always on watch, always looking out for potential threats, would have given us a better peace of mind to conduct our research. In my opinion, the fact that the *Knorr* had no attacks or incidents was not good reason to eliminate security professionals on the *Ewing* during REDSOX-2.

At this point, I will not describe all the security procedures that were in place on the *Knorr* and *Ewing*. This information is available elsewhere. Instead I will briefly comment on some of the procedures and their impact on science.

Both vessels had in place security plans for reacting to a perceived threat, which involved a series of heightened alert states. Regarding the science personnel, the plans were similar in scope but differed somewhat in the details. On the Knorr, science activities were to proceed as a potentially-threatening vessel (hereafter PTV) was sighted and approached us (conditions alpha and bravo). If it looked like boarding would be attempted, all scientists were to muster together in the mess deck (condition charlie) .If boarding was looking like it would be successful, "lock-down" conditions would be followed, where all ship' s personnel would be inside the ship, which would be secured from the inside, except for the two security professionals. Also at this point, women were to be sequestered separately in a hidden space below the engine room. On the Ewing, the boundaries between alert states were maybe not so well-defined to the scientists, but the gist was the same. One difference however, was that if boarding looked imminent, scientists were to go to their staterooms and lock the doors, remaining there until an "all clear" was broadcast over the P A system. No special arrangements were in place for the women on board.

The plan on board *Knorr* was never tested in a real situation, so it's hard to say how well it would have worked. On board *Ewing*, it was tested, and in general seemed to work fairly well from a science perspective. The situation escalated very quickly. The assailants were armed and used those arms against the vessel; the worst possible scenario. In light of this, it seemed to me that non-essential personnel, including all science personnel, should be inside the vessel as soon as a PTV is sighted approaching the ship, since it may not be obvious initially if the PTV is armed. As far as I can recall, this was not the planned procedure on either vessel.

The announcements to muster inside or go to staterooms should be made loudly and clearly so that all science personnel (as well as everyone else), whether sleeping or any labs or living spaces, can hear and understand the announcement. Some labs are very noisy and/or isolated. There were some issues in the *Ewing* incident related to not hearing announcements.

I have mixed opinion about the mustering and sequestering procedures for the science personnel. If the scientists are mustered together, I suppose there is a higher risk of violence to more people if the location of the group is discovered. On the other hand, being locked in one's room either alone or with one other person, can feel isolated, and

Appendix VI

Security Issues for Research Vessel Operations:
A Scientists Perspective (Brian Taylor 11/15/01)

* Assessing (reasonable) Risk
  - an issue for proponents, reviewers, program managers, ship operators, scientists, techs & crew
  - ship schedules & science plans are publically available long in advance

* Morale & Performance of Crew & Scientists
  - security issues need to be dealt with long in advance of the cruise
  - preferably with **prior** training in US

* Alternate Plans & Operational Options
  - op areas limited by clearances (EEZ+)
  - stations/towed gear restrict ship ops

Appendix VII

U.S Flag Research Ships

Anti-piracy/terrorism

- U.S Navy will come to assistance of U.S flag vessels experiencing unlawful attacks when and where assets are available
- U.S. Navy does not provide U.S flag research vessels with escorts or force protection assets
- Ship scheduling should take into account the general security of the intended area of deployment
- Ships Masters and crews should maintain a current situational awareness using best available info
- Ships may submit cruise plans and regular position report to appropriate Fleet Commanders for improved situational awareness and to facilitate response when warranted

Appendix VIII

DEVELOPMENTS IN MARINE SCIENCE RESEARCH POLICY

UNOLS 2001 - November 15

Margaret F. Hayes and Elizabeth J. Tirpak
U.S. Department of State
Office of Oceans Affairs

Dept. of State & MSR

- *Intergovernmental Oceanographic Commission (IOC)*
- *International Council for the Exploration of the Seas (ICES)*
- *North Pacific Marine Science Council (PICES)*
- *South Pacific Applied Geosciences Commission (SOPAC)*
- *Regional Fisheries Management Orgs.*
- *UN Regional Seas Programs*
- *Vessel Clearances*

U.N. Law of the Sea Treaty

- *Spring 2001: United Nations Informal Consultative Process*
- *Summer 2001: IOC Advisory Body of Experts on Law of the Sea*
- *Fall 2001: U.N. General Assembly*

Vessel Clearances at DOS

LOSC Article 245: coastal state jurisdiction over MSR conducted within the 200 mile exclusive economic zone (EEZ)

LOSC Article 250: communications concerning MSR projects shall be made through appropriate official channels

Clearance Trends

	1998	1999	2000	2001
Cruises	130	133	121	116
Requests	315	313	296	281
Actions	1940	1719	1381	1310

Post 9-11 Procedures

- Meeting lead time requirements
- Foreign collaboration
- Ship operator's endorsement
- Electronic requests
- Threat assessments

Threat Considerations

Incidences of piracy, armed robbery, illegal trafficking

and/or

Absence of diplomatic relations and/or governing authority

DOS Travel Warnings

http://travel.state.gov/warnings_list.html

Turkmenistan - 11/7/01
Macedonia - 10/22/01
Sudan - 10/5/01
Indonesia - 9/27/01
Tajikistan - 9/26/01
Pakistan - 9/25/01
Kyrgyz Republic - 9/21/01
Yemen - 9/19/01
Iran - 8/24/01
Sierra Leone - 8/20/01
Israel, the West Bank and Gaza - 8/10/01
Iraq - 7/20/01
Libya - 6/6/01
Liberia - 5/31/01
Algeria - 5/31/01

Central African Republic - 5/30/01
Solomon Islands - 5/1/01
Guinea-Bissau - 4/30/01
Colombia - 4/17/01
Bosnia & Herzegovina - 4/13/01
Democratic Republic of Congo - 4/11/01
Somalia - 2/16/01
Federal Republic of Yugoslavia - 2/13/01
Afghanistan - 12/12/00
Burundi - 12/7/00
Angola - 9/8/00
Lebanon - 8/28/00
Albania - 6/12/00
Nigeria - 4/7/00

NIMA Maritime Safety Reports

http://pollux.nss.nima.mil/index/index.html

General Information/Points of Contact
Geographic Locator (Region/Subregion)
Digital Nautical Chart® Home Page
US Notice to Mariners
NIMA Hydrographic Products Catalog
NIMA On-Line Navigation Publications
Marine Navigation Calculator
USCG Navigation Information
Broadcast Warning Messages
Anti-Shipping Activity Messages
ONI WorldWide Threats to Shipping
Mobile Offshore Drilling Units

Margaret F. Hayes
Director, Office of Oceans Affairs
U.S. Department of State
hayesmf@state.gov / V: 202-647-3013/ F: 202-647-1106

Elizabeth J. Tirpak
Oceans Research Clearance Coordinator
U.S. Department of State
tirpakej@state.gov / V: 202-647-0238 / F: 202-647-1106

Appendix IX

UNIVERSITY-NATIONAL OCEANOGRAPHIC
LABORATORY SYSTEM

UNOLS OFFICE
MOSS LANDING MARINE LABS
8272 MOSS LANDING RD.
MOSS LANDING, CA 95039

PHONE: (831) 632-4410
FAX: (831) 632-4413

Research Vessel Operators' Committee

SECURITY SUB-COMMITTEE

Briefing to the

UNOLS Council Meeting: 11/15/01

Daniel S. Schwartz, Chair, RVOC Security Sub-Committee

RVOC Security Sub-Committee

- Formed at RVOC Meeting, Newport, Rhode Island, 25 October 2001.

- Initial Members: Joe Coburn (WHOI), Paul Ljunggren (LDEO) & Dan Schwartz (UW).

RVOC Security Sub-Committee

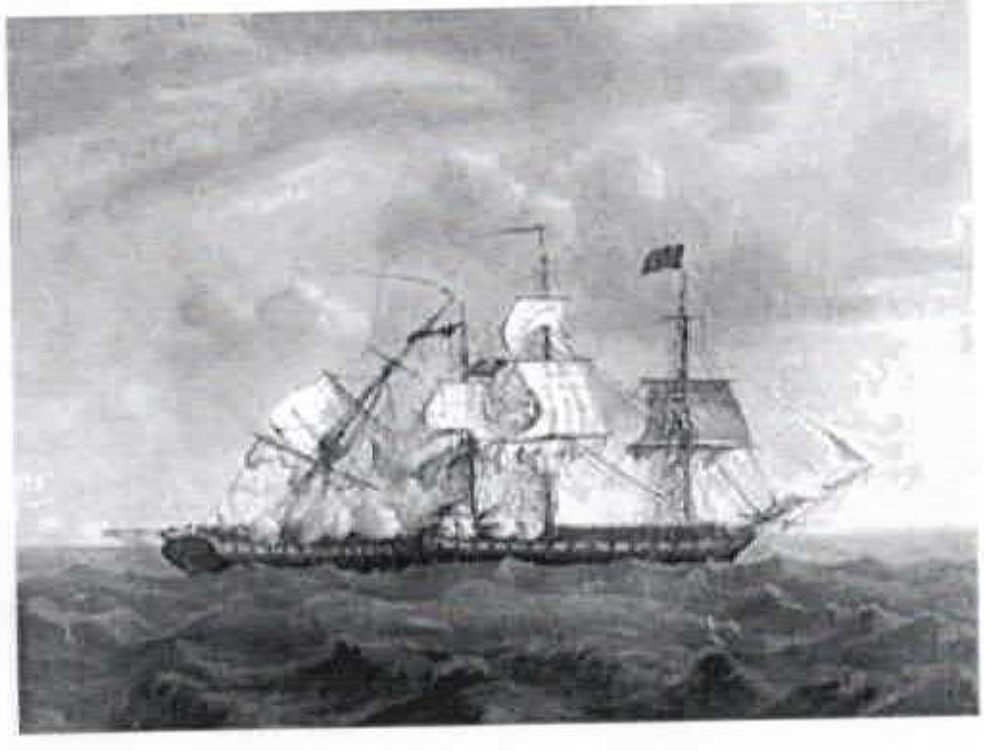
Purpose...

- To consider the spectrum of potential security threats confronted by Academic Fleet Vessels,...
- To establish contacts--and an ongoing liaison--with Navy, Coast Guard and law enforcement agencies for rapid access to information, advice and threat assessment,...
- To participate in a dialogue with UNOLS Institutions and funding agencies while evaluating risks, missions, routing decisions, and options,...
- To consider and recommend means by which the Fleet can enhance security & safety in response to a variety of threats.

RVOC Security Sub-Committee

Issues of Concern:

Piracy...



UNOLS Council, Nov. 15, 2001

RVOC Security Sub-Committee

Issues of Concern:

Piracy and Research Vessels

- *Hotspots are fairly predictable: Indonesia, Red Sea, Philippines, Columbia, Ecuador, Nigeria, etc.*
- *Warnings are distributed well after the fact*
- *Incidents have happened before (Calanus 1981, etc., Ewing 2001)*
- *What's changed since 9/11? We can't assume mere robbery is the sole motive (It could be another 'Cole', an Abu Sayef hostage grab, or an attempt to seize a vessel to launch other attacks)*

RVOC Security Sub-Committee

Issues of Concern:

Terrorist Attack...

UNOLS Council, Nov. 15, 2001

RVOC Security Sub-Committee

Issues of Concern:

The terrorism threat includes;

- *Direct attack by small boat (or, when alongside a wharf, by boat, foot or vehicle)*
- *Bomb and bio/chemical agent attack--an item smuggled aboard or delivered with science packages or ship stores*
- *Hostage situations*

RVOC Security Sub-Committee

Issues of Concern:

Alongside Security in Home Ports

Alongside Security in Foreign Ports

RVOC Security Sub-Committee

Issues of Concern:

Alongside Security issues include;

- *Access Control during science personnel change-outs, provisioning, bunkering... Photo identification challenges at gangway*
- *Package receipt control/verification*
- *Stowaway searches before departure*
- *Eliminate "sailing board:" ship movements to be provided on a "need-to-know" basis*

RVOC Security Sub-Committee

Issues of Concern:

Underway security and threat recognition...

UNOLS Council, Nov. 15, 2001

RVOC Security Sub-Committee

Issues of Concern:

- Utilization of professional security teams during operations or transits in tense areas (Inventory and pre-screen firms offering this service)
- Equipping and training for self defense (as per civilian-crewed MSC vessels)
- Threat recognition and rules-of-engagement

RESOURCES

- Open-source intelligence (newsletters, listservers, etc)--and the need to evaluate them as to quality and timeliness
- Liaison with ONI, State Dept., USCG, agents, port law enforcement, Navy CiCs
- Host nation resources--and evaluation as to reliability, trustworthiness of local officials
- Communications, COMSEC & Crypto

RVOC Security Sub-Committee

Conclusions:

The scourge of Piracy has been with us since before *triremes* sailed the Mediterranean. In recent years, smugglers of drugs, arms and illegal immigrants, and stowaways have become--in addition to the pirates--a significant threat to shipping.

We're now at war, and we must be prepared for any attempt by hostile individuals or groups to harass, attack, or board and seize our ships and harm the personnel whom we are responsible for protecting.

Appendix X

"UNOLS 101"

R. A. Knox

Associate Director, SIO/UCSD & UNOLS Chair

UNOLS Fall Council/Annual Meeting

November 15, 2001

Brookings Institution

TWO MAIN TOPICS

- UNOLS - what is it?
- UNOLS issues of federal/Congressional interest
  - Piracy and security
  - Long-range fleet renewal

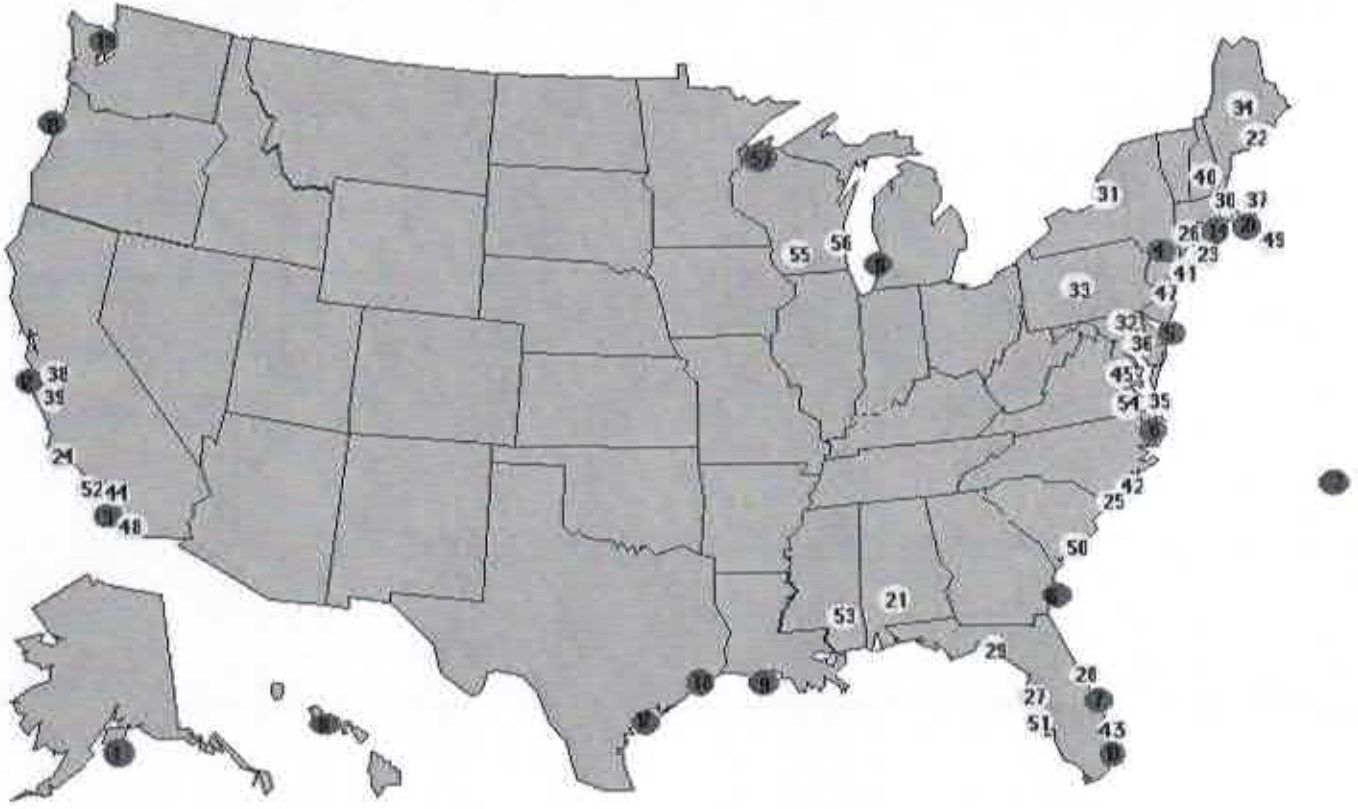
UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

UNOLS BASICS

- Founded 1971
- Association of academic oceanographic institutions
- Primary community voice/forum *re* research vessels
- Advisory body - NSF, ONR, NOAA, etc.
- Fleet-wide scheduling coordination and efficiency
- Fleet-wide safety and capability standards
- Capital planning advice
- 61 members, 21 operators, 28 ships
- Elected council, secretariat, major committees
- Not a ship operator or funding source

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

UNOLS Member Institutions



UNOLS Operator Institutions
UNOLS Non-Operator Institutions

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Class I/II

R/V *Roger Revelle*

OPERATING INSTITUTION	SHIP	OWNER	LENGTH (ft)
Scripps Institution of Oceanography	MELVILLE	Navy	279
Woods Hole Oceanographic Institution	KNORR	Navy	279
University of Washington	T. G. THOMPSON	Navy	274
Scripps Institution of Oceanography	**ROGER REVELLE**	**Navy**	**274**
Woods Hole Oceanographic Institution	ATLANTIS	Navy	274
Lamont-Doherty Earth Observatory	MAURICE EWING	NSF	239
University of Hawaii	KILO MOANA (under construction)	Navy	185

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Class III

R/V *Endeavor*

OPERATING INSTITUTION

Harbor Branch Oceanographic Institution
Oregon State University
University of Rhode Island
Texas A&M University
Woods Hole Oceanographic Institution
Scripps Institution of Oceanography
Harbor Branch Oceanographic Institution

SHIP	OWNER	LENGTH (ft)
SEWARD JOHNSON	HBOI	204
WECOMA	NSF	185
ENDEAVOR	**NSF**	**184**
GYRE	TAMU	182
OCEANUS	NSF	177
NEW HORIZON	SIO	170
SEWARD JOHNSON II (ex EDWIN LINK)	HBOI	168

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Class IV

R/V *Point Sur*

OPERATING INSTITUTION

Moss Landing Marine Laboratories
Duke University/UNC
University of Alaska
Scripps Institution of Oceanography
University of Delaware
Bermuda Biological Station for Research
Harbor Branch Oceanographic Institution

Louisiana Universities Marine Consortium
University of Texas

SHIP	OWNER	LENGTH (ft)
POINT SUR	**NSF**	**135**
CAPE HATTERAS	NSF	135
ALPHA HELIX	NSF	133
ROBERT G. SPROUL	SIO	125
CAPE HENLOPEN	UDel	120
WEATHERBIRD II	BBSR	115
EDWIN LINK (ex. SEA DIVER)	HBOI	113
PELICAN	LUMCON	105
LONGHORN	UT	105

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

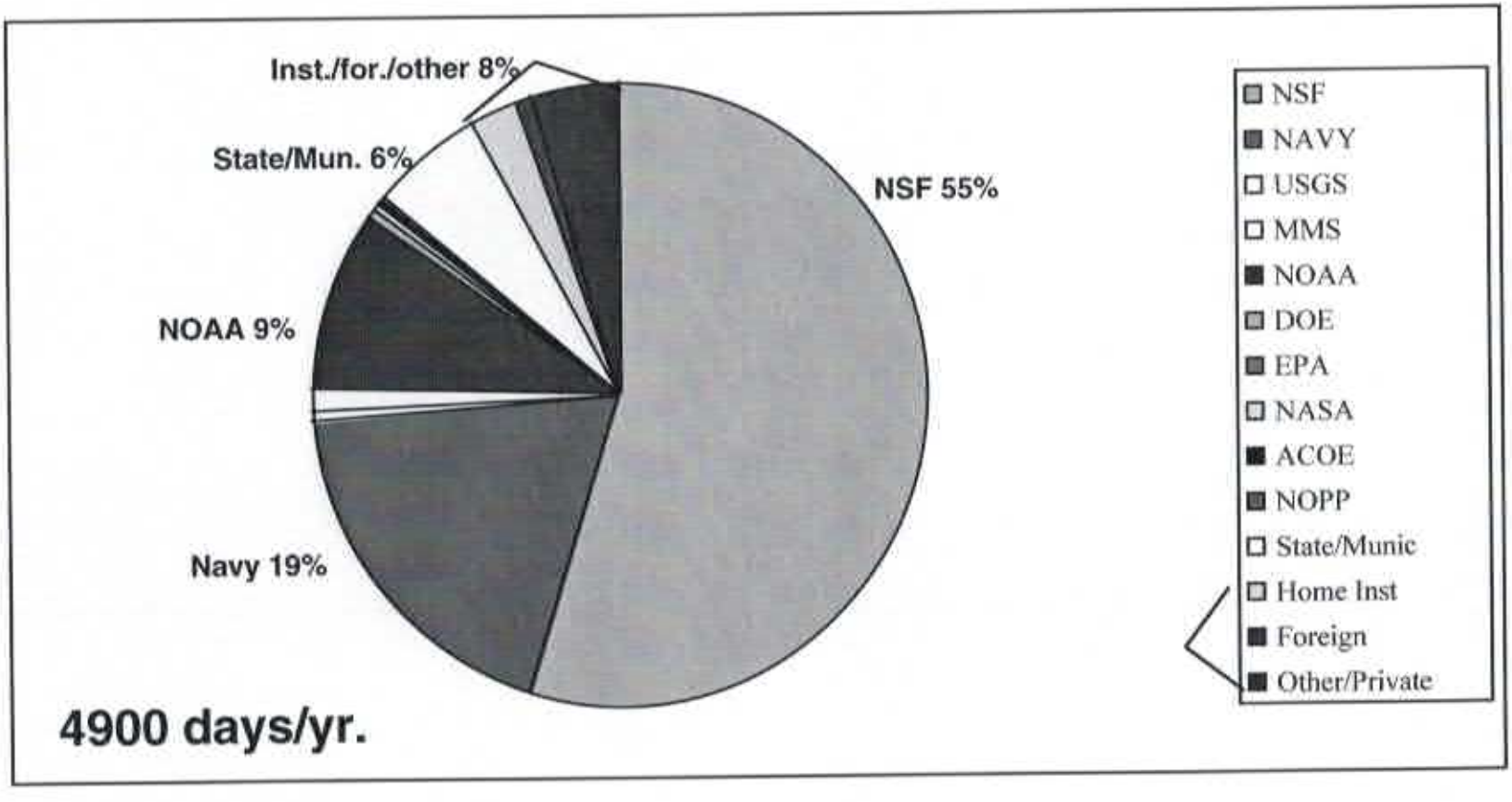
Class V

R/V *Blue Heron*

OPERATING INSTITUTION	SHIP	OWNER	LENGTH (ft)
University of Miami	WALTON SMITH	UMi	96
Smithsonian Tropical Research Institute	URRACA	Smithsonian	96
University of Minnesota - Duluth	**BLUE HERON**	**UMn**	**86**
University of Michigan	LAURENTIAN	UMich	80
University System of Georgia	BLUE FIN	UGa	72
University of Washington	C. A. BARNES	NSF	66

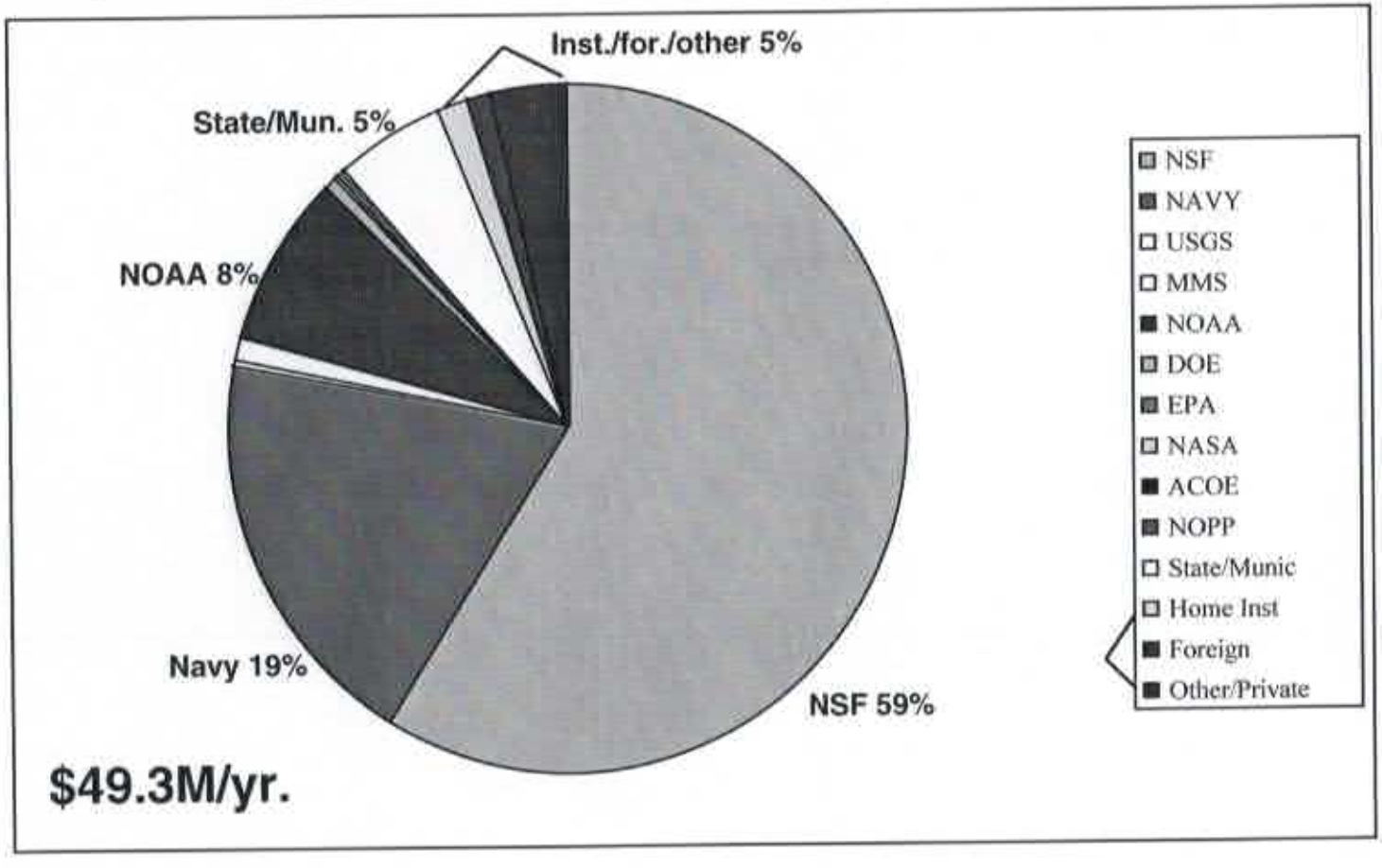
UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Operating Days 1996-2000 (%) by Fund Source



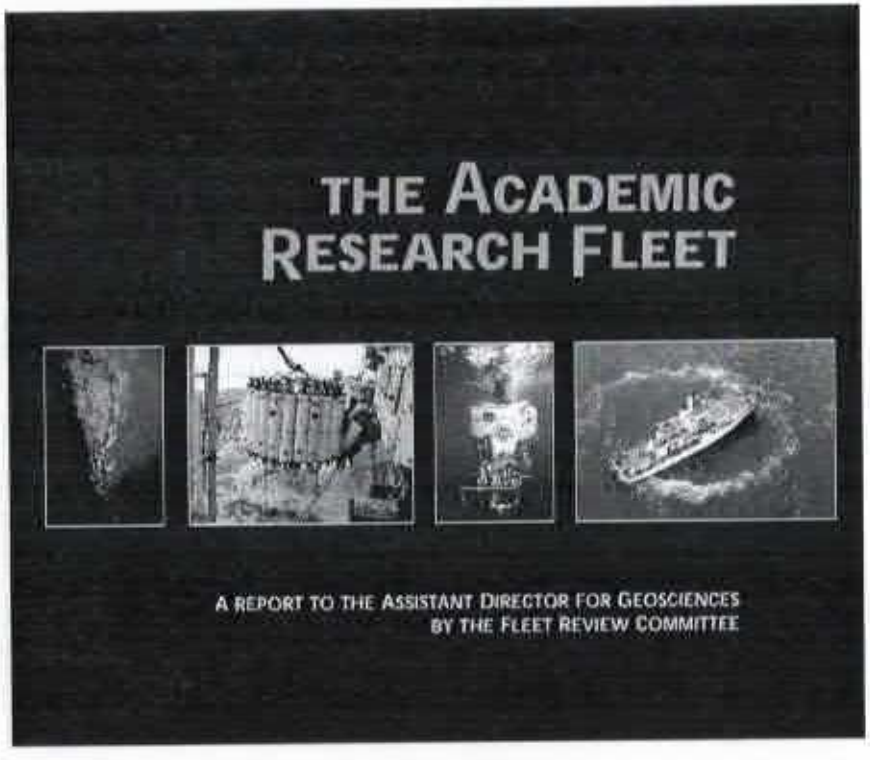
UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Operating Funds 1996-2000 (%) by Fund Source



$49.3M/yr.

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM



NSF, 1999

"The UNOLS system should be retained. The NSF-UNOLS current practices, using institutional operators funded by NSF and other federal agencies with centralized scheduling through UNOLS, seems to provide excellent access to the sea for US investigators. To the extent the committee can assess, costs appear to be comparable to or better than government operators, and not evidently different from costs of contracting commercial platforms."

www.unols.org

PIRACY

- Attacks in 2000 up 57% (1999); 450% (1991)
- 469 attacks, 307 boardings, 8 hijacks, in port/at sea
- 72 sailors killed, 24 injured
- Hot spots in Indonesia, Bangladesh, India, Straits of Malacca, Ecuador, Red Sea
- Objectives - cargo and/or ransom
- International Maritime Bureau - Piracy Reporting Center in Kuala Lumpur: http://www.iccwbo.org/ccs/menu_imb_piracy.asp

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

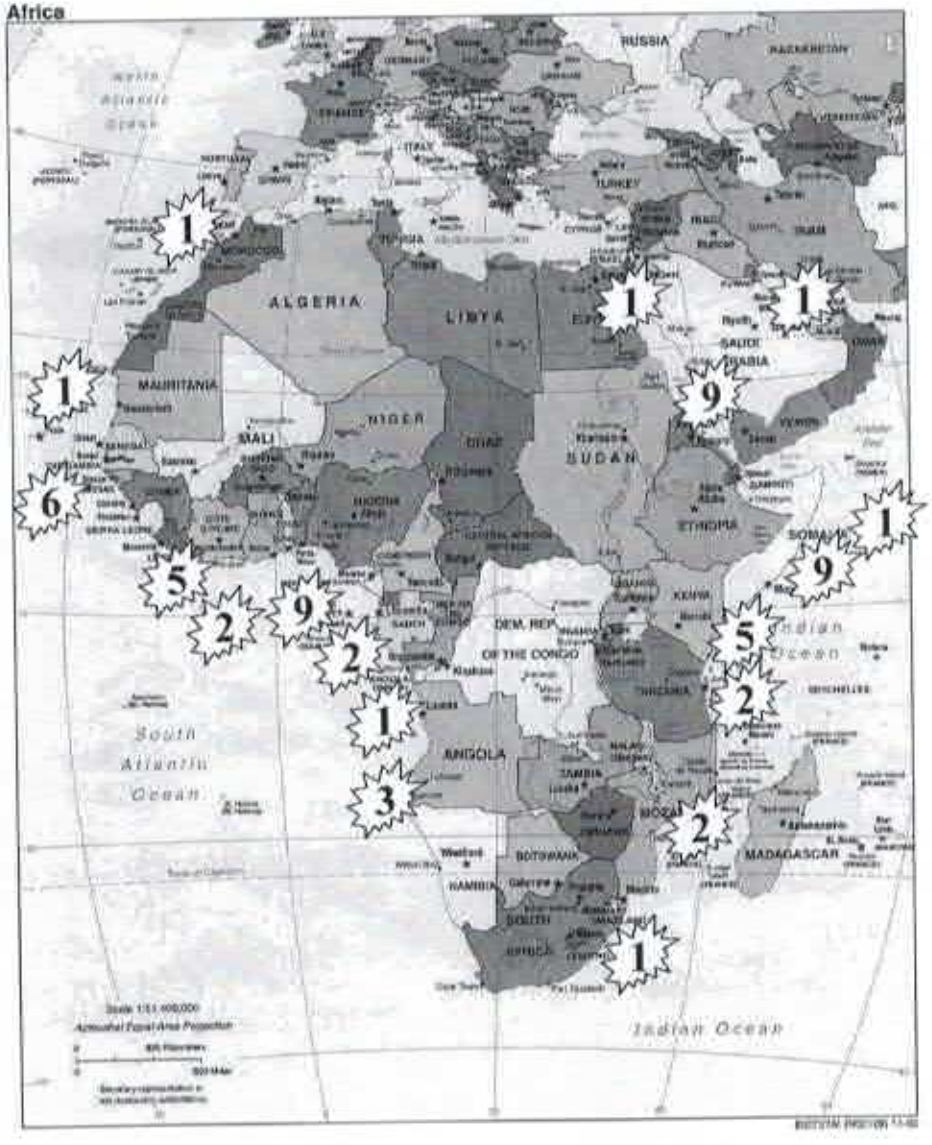
Attacks in South America 1 January to 31 December 2000

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Attacks in S. E. Asia and the Far East 1 January to 31 December 2000

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Attacks in Africa and the Middle East 1 January to 31 December 2000



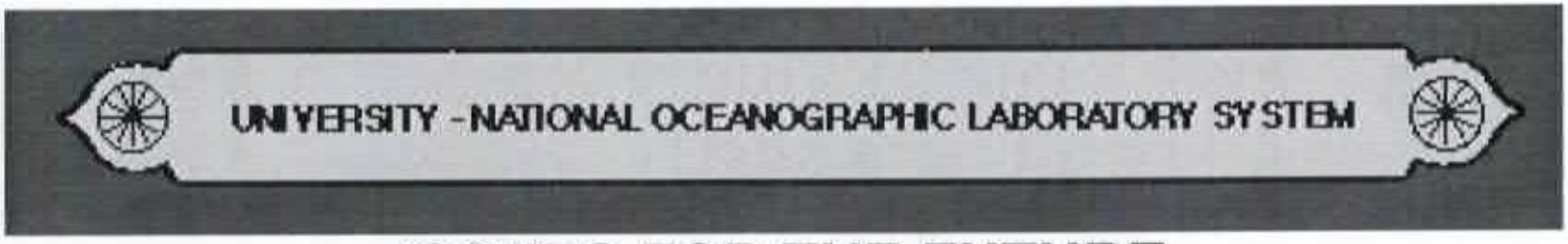
PIRACY AND UNOLS

- Red Sea Outflow Experiment (REDSOX)
- REDSOX I: Feb.- Mar. 2001 - R/V *Knorr* - security professionals aboard
- REDSOX II: Aug.-Sept. 2001 - R/V *Ewing* - security training on prior leg
- Gulf of Aden. Work near shore (outside 12 n. mi.) driven by scientific objectives

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

- REDSOX II, August 31: R/V *Ewing* attacked approx. 18 n. mi. off Somalia in western Gulf of Aden
- Small boat deployed from larger vessel
- Small arms, grenade launcher used

- Personnel into staterooms, other defensive steps taken, scientific work stopped, ship headed to open sea asap, etc.
- No injuries or damage
- Origin/objectives of attackers not known
- Subsequent scientific program modified/reduced



ISSUES FOR THE FUTURE

- Assessment of risks for planned programs/areas.
  - Decisions to relocate or not to do some programs?
  - Basis for such decisions?
- Increments of preparedness, watchfulness
  - Training for crew/scientists?
  - In-port and at-sea vigilance steps?
  - Persons/materiel arriving and leaving; stowaways?
  - Intelligence *re* threats?
  - Additional security personnel?
  - Arms, other devices?

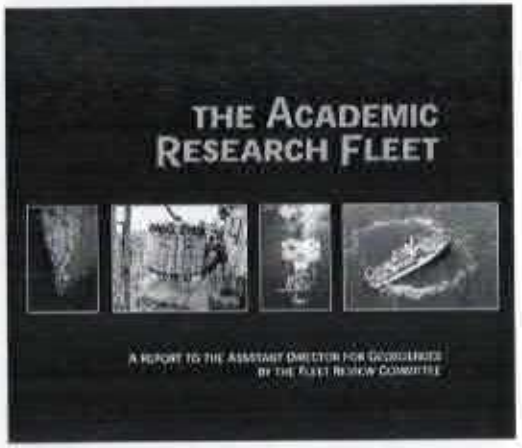
- Responses to impending or actual attacks
  - Shipboard defensive steps
  - Avoidance
  - Law enforcement or military assistance, communication
- Ordinary piracy vs. terrorism after Sept. 11
  - R/Vs - minor targets? But also accessible?
  - UNOLS vessels are American-flag
  - Similar in-port and at-sea concerns and preparations?
  - Obtaining appropriate intelligence/threat assessment for both?

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

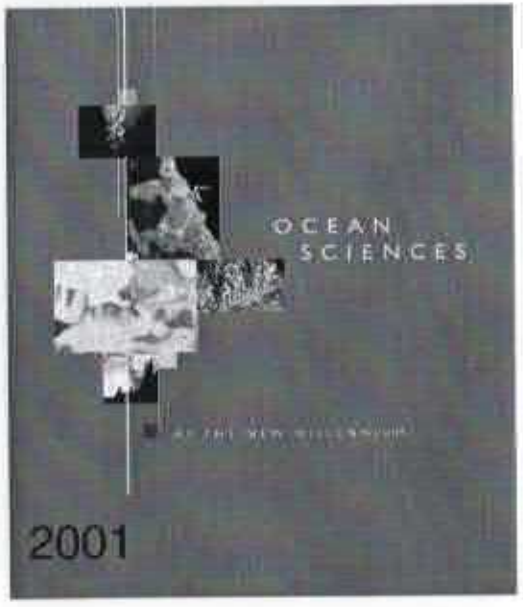
FLEET RENEWAL

- Several ships getting old, especially Class III-V
- Scientific requirements changing, increasing
- Long lead times for federal budget, design, build - AGORs: 1983 (science rqmts.) -1997 (*Atlantis* in service)

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM



"The federal agencies funding research in oceanography should prepare and maintain a **long range plan for the modernization and composition of the oceanographic research fleet which reaches well into the 21st century**. This will avoid the high cost of obsolescent facilities and provide the Congress with a unified roadmap for out-year allocations for vessels to support oceanographic research."



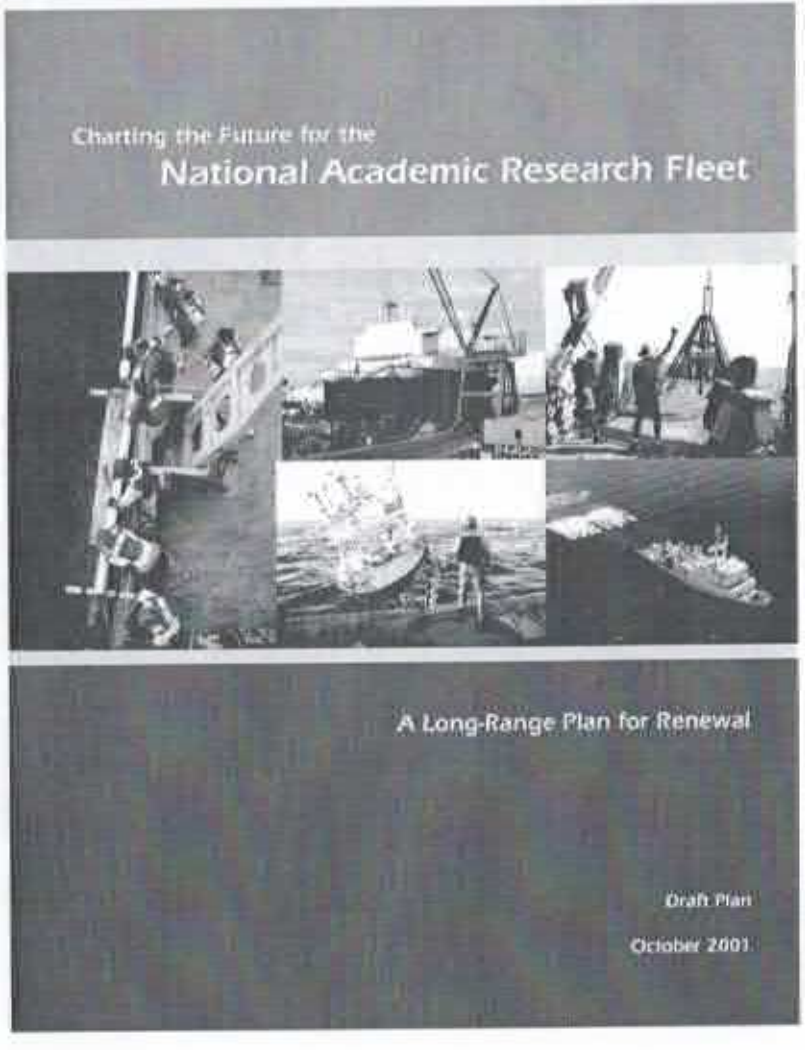
"Maintaining a modern, well-equipped research fleet is **the most basic requirement for a healthy and vigorous research program** in the ocean sciences."

FLEET RENEWAL - SCIENCE DRIVERS

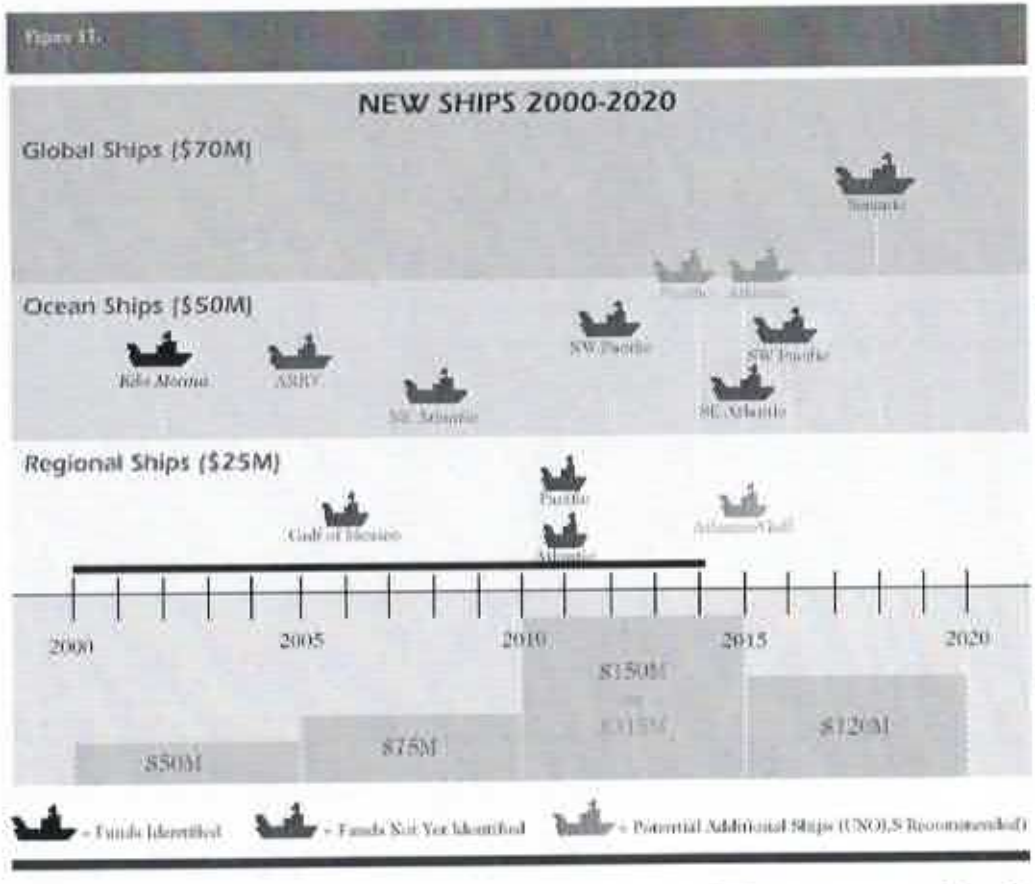
- Cowles/Atkinson NSF-supported workshop at OSU, summer 2000: revolution in observing methods (floats, AUVs, ...) implies *increasing* need for ships:
  - Global obs. suggest new research questions
  - Human/lab style shipboard analyses needed for variables not measurable in unattended mode
  - Targeted process experiments set in or suggested by global obs. context - including fast-response studies (ready reserve capacity)
  - Deploy/service parts of ongoing obs. systems
  - Past trends suggest 1 ship/decade increase

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

- Federal Oceanographic Facilities Committee (FOFC) - interagency group reporting to ORAP/NORLC. UNOLS is non-voting participant.
- Late 2000 - Initial draft plan
- Early 2001 - extensive UNOLS/community review and comment - open, on UNOLS web.
- Considerable UNOLS/FOFC agreement
- Main difference - degree of fleet strengthening projected and advocated
- Next draft (cover at right) now ready for FOFC approval, then to NORLC



UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM



- Major, long funding ramp, with or without enhancements ($395M; $560M)
- Interagency cooperation vital
- Funds/effort needed early to define mission requirements, do conceptual designs
- Logical role for UNOLS/FIC
- Need to keep up the pace (compare AGOR timeline in red)

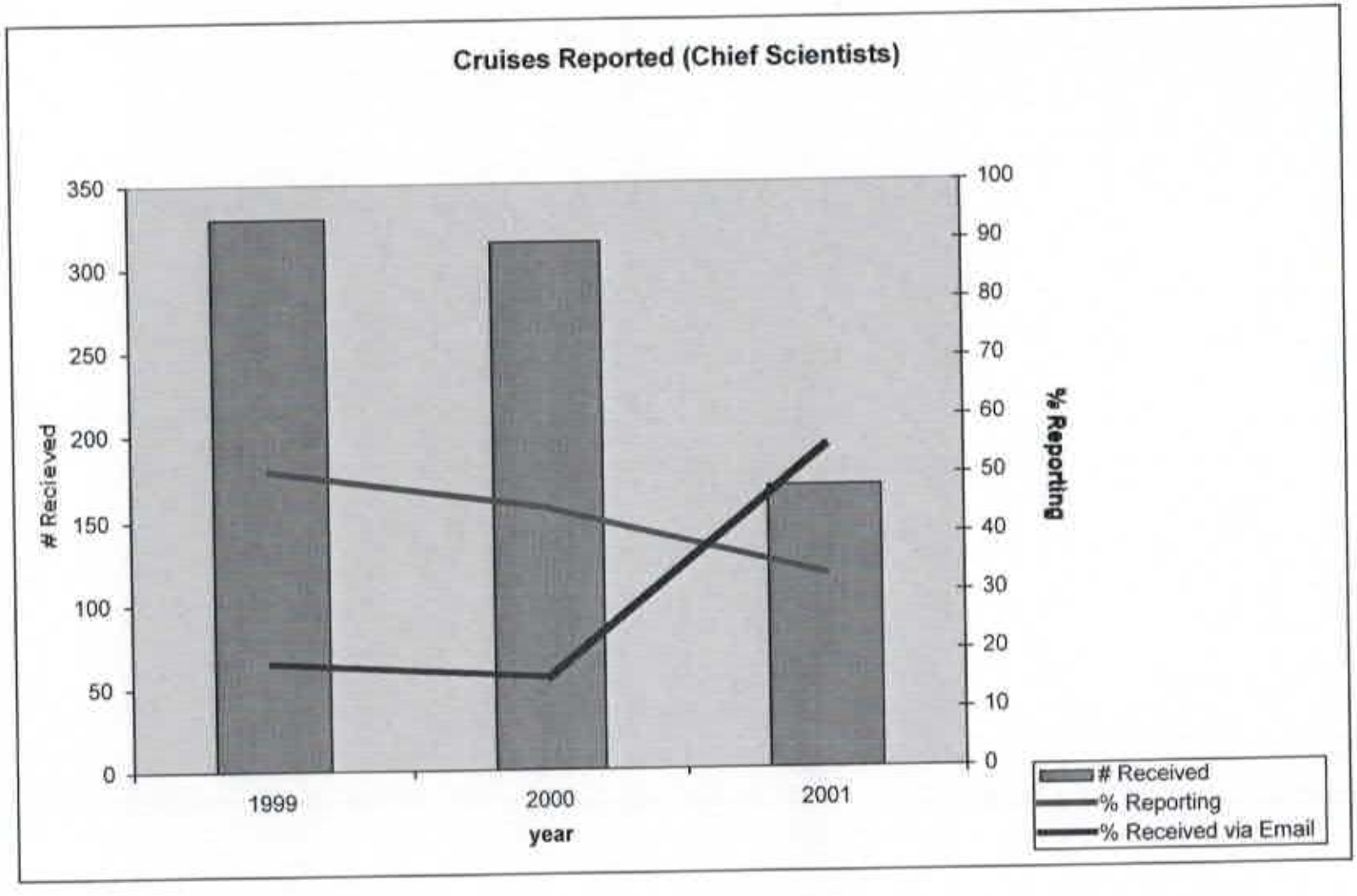
Appendix XI

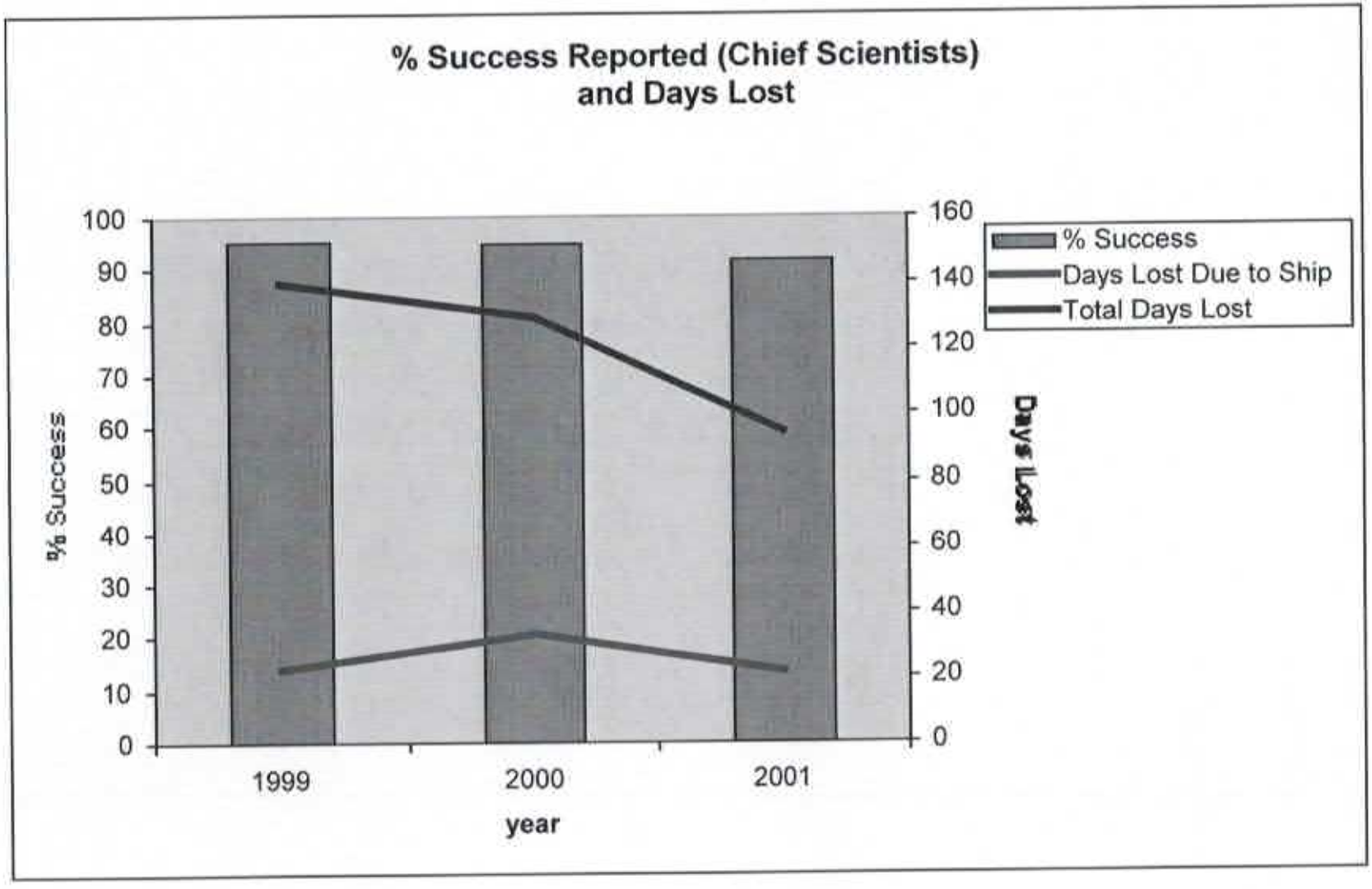
Quality of Service

Post Cruise Assessments

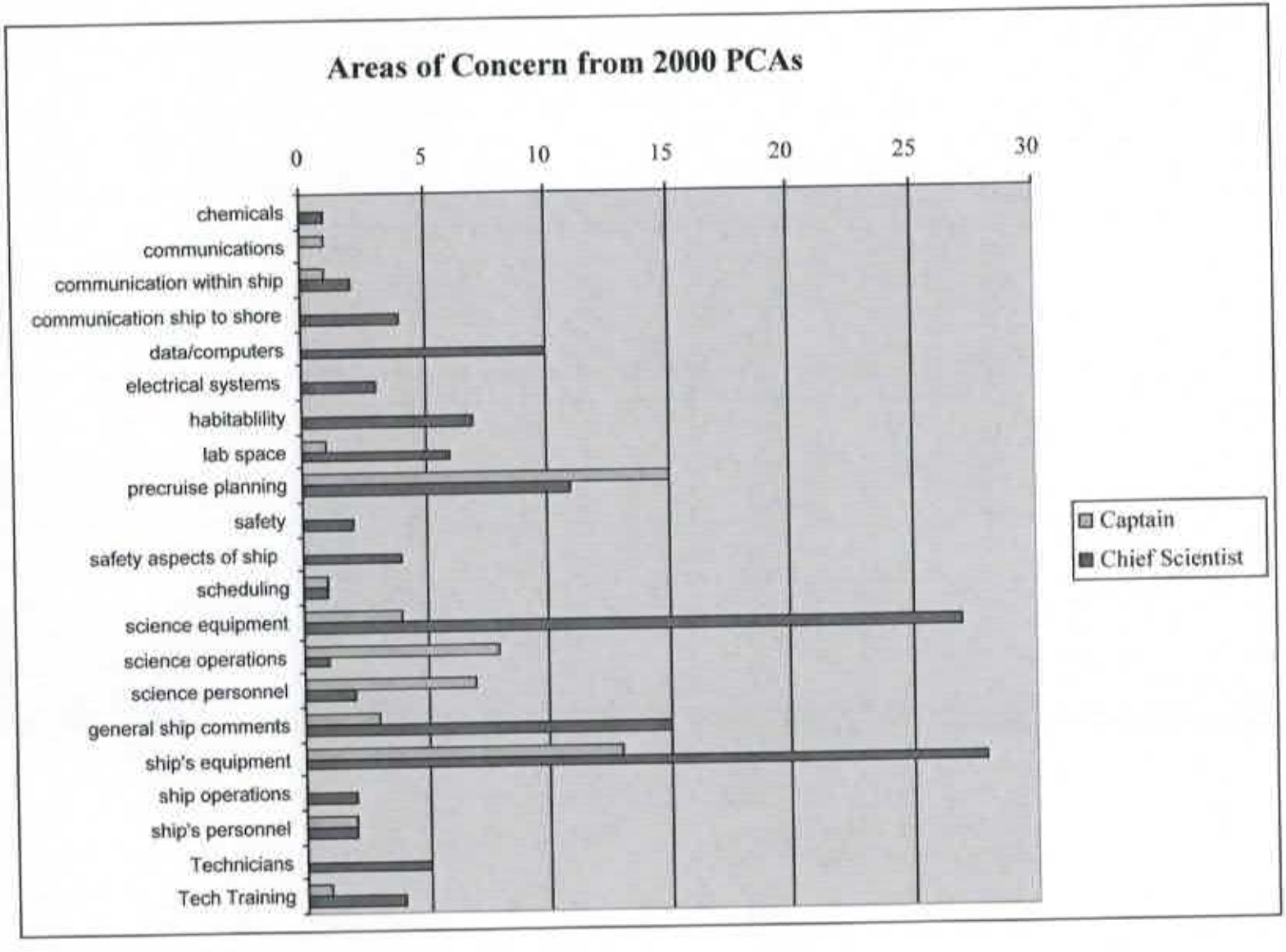
Committee to review PCAs

- Wilf Gardner (TAMU)
- Tom Shipley (UT)
- Steve Rabalais (LUMCON)
- Tim Cowles (OSU)
- Dale Chayes (LDEO)
- Mike Prince (UNOLS office)
- Laura Dippold (UNOLS Office)

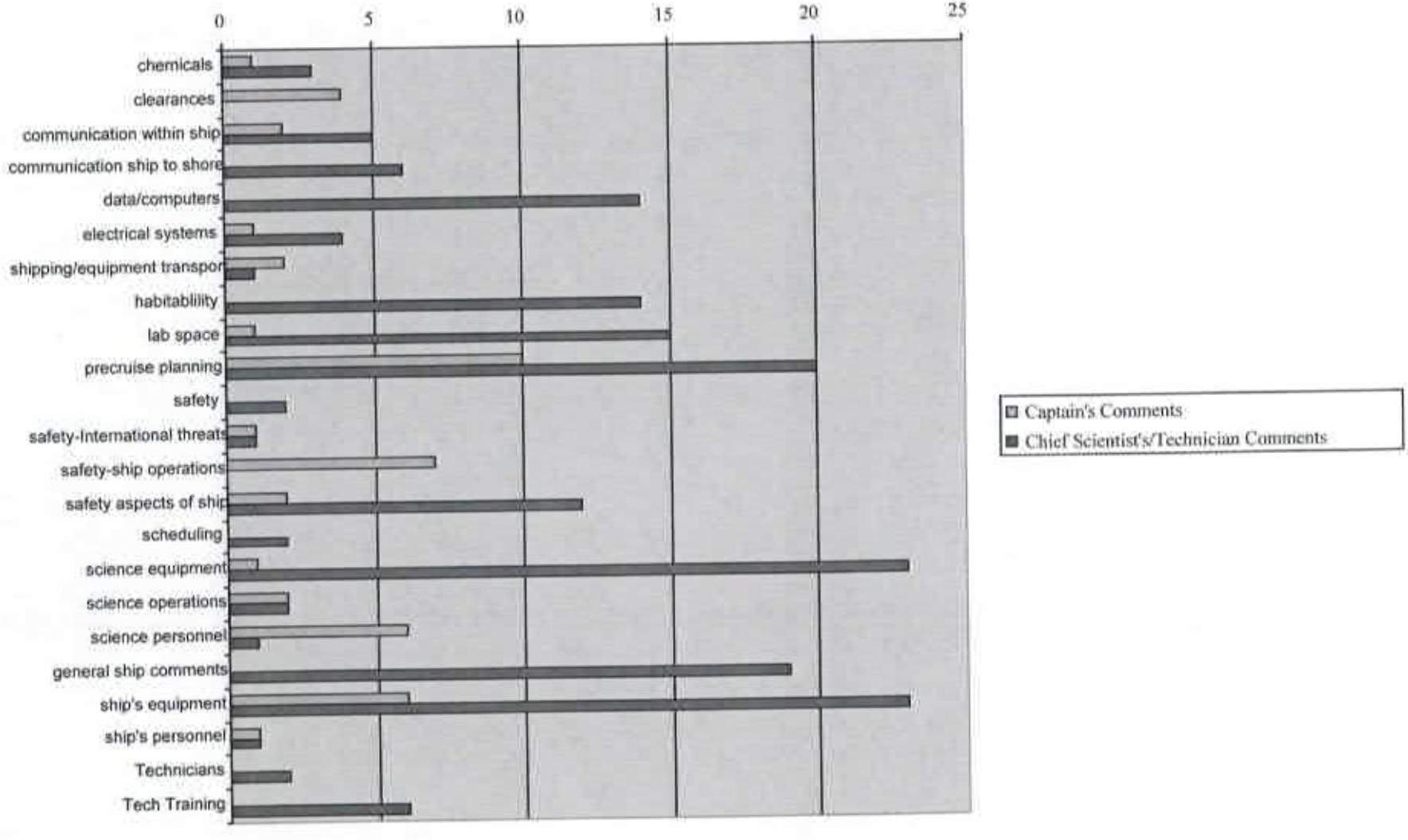

Cruises Reported (Chief Scientists)
Recieved
% Reporting
year
1999
2000
2001
350
300
250
200
150
100
50
0
100
90
80
70
60
50
40
30
20
10
0
Received
% Reporting
% Received via Email


% Success Reported (Chief Scientists)
and Days Lost
100
90
80
70
60
50
40
30
20
10
0
% Success
160
140
120
100
80
60
40
20
0
Days Lost
1999
2000
2001
year
% Success
Days Lost Due to Ship
Total Days Lost

Areas of Concern



Areas of Concern



Potential Objectives for PCA's

- Safety and the inspection program
- Shipboard scientific equipment program
- Shipboard technician program
- Science users for selecting best/most appropriate ships
- Ship operators for unbiased kudos and recommendations for improvement
- NSF for governmental performance review ('days lost')
- UNOLS Council for gauging overall fleet support of science

T. Shipley

Some Initial Areas of Focus

- Concern about requiring that the form be submitted electronically. This would mean that the PI would most likely leave the ship before submitting form and submittal rate would likely go down.
- Try to improve/redesign the assessment form and questions.
- This may require that we hire professionals.
- The agencies will be notified that the assessment form is being revised.
- The assessment form for the captain and marine technicians will also be examined.
- The subcommittee will consider whether or not all PIs should be able to submit the form, or just the chief scientists.
- The NAVO and NOAA assessment forms will be reviewed.

The Three Current Post Cruise Assessment Forms

- The UNOLS online form:
- http://www.gso.uri.edu/unols/pcarform.htm
- and the previous, but still used by the majority paper form:
- On WHOI pages:
- http://www.marine.whoi.edu/planning/cruise_assess.pdf
- There is also a Captain's form which is a paper version created in the
- late eighties.
- On OSU Pages:
- http://www.oce.orst.edu/Vessels/martech/appendix_15.pdf

First Cut at a revised form

- Combine to one form
- Retain best aspects of online and original paper forms
- More focused feed back
- Evaluate the scheduling process and cruise planning in addition to actual cruise.
- ONLINE FORM

Appendix XII

UNOLS Standardized Van Design

(November 2001)

Effort Undertaken to:

- Enable economic transport by common carrier – "containerized cargo"
- Standardize design element for benefit of scientific user
- Facilitate group purchase – potential cost savings
- Make interchangeable throughout fleet – not ship specific
- Improvements in safety through uniformity of design

Features to Make Interchangeable:

- Variable power inputs: 208-460Vac, single phase for lab vans
  Shore power connection
  3-phase for machinery and refrigerated lab vans only
- Two personnel doors and escape hatch – ensure two means of escape always available
- Based on 20-foot ISO shipping container "foot print"

UNOLS Standardized Van Design

(November 2001)

Review and Approval Process:

- There are currently no international standards which dictate the construction requirements for scientific vans. SOLAS requirements are for ships.
- Classification Society standards do exist, but are not regulatory mandates.
  American Bureau of Shipping (ABS) – "Rules for Certification of Cargo Containers, 1998" ***Cargo***
  Det Norske Veritas (DNV) - "Offshore Containers" (No. 2.7-1, 1995) ***Cargo***
  "Offshore Service Containers" (No. 2.7-2, 1995) ***Occupied Containers***
- Directed by international authorities to rely on USCG for ruling on scientific vans on inspected vessels.

Basis for Design Specifications and US Coast Guard Review:

- US Code of Federal Regulations, Subchapter U, 195.11 – "Portable Vans and Tanks".
- Other industry regulations avoided (Passenger Vessels, MODU's).
- ABS and DNV standards used for guidance.

~Goal: Clarification of existing regulations as opposed to creating new~

UNOLS Standardized Van Design

(November 2001)

Results of Formal US Coast Guard Review (Letter dated May 24, 2001):

- Only Power, Chemical Storage, and Accommodations Vans are required to be USCG inspected.
- Laboratory Vans are **NOT** considered "accommodations".
- ABS High Speed Vessel Rules/side and aft deckhouse design pressures (2.0 psi for plate, 1.5 psi for stiffeners) considered acceptable minimum standard for portable **Accommodations** vans on sea-going vessels. Must be secured in a "Sheltered Location" (i.e. not encounter significant wave action as with a side or aft deckhouse)
- Most portable vans **NOT** required to have specific "Fire Rating" **themselves.**
- **Allowed to take into account the "van/ship system" when considering the overall fire rating of the boundary.** Location and van type determine the required fire rating of the "boundary".
- **Accommodations** vans must be of "incombustible materials" **all around.**

SEE TABLE 1

UNOLS Standardized Van Design

(November 2001)

Consequences of US Coast Guard Review:

Structure

A standard 20-foot ISO container DOES NOT meet the bulkhead pressure requirements for Accommodations van.

- Container must be stiffened with 1.5 x 1.5 x 1/8" angle on every inward corrugation (11" O/C)
  - ~Provides room for thermal insulation and means of bolting mounting channel (Uni-strut)
  - ~Minimal addition of weight or cost.

Structural Fire Protection

- Goal: Contain the spread of fire (ship to van/van to ship)
- Aluminum suitable incombustible material for **most** van types (See TABLE 1).
- Standard container must have wooden deck removed and steel deck inserted (minimum 14 Ga) or "belly plate" added and wooden deck treated with fire retardant coating.
- Worst case scenario for Sub-Chapter U vessel is "A-30" – accommodations space next to lab over 500 square feet.
- Flame testing undertaken through USCG certified lab.
  - Stiffened **steel** container panel tested to "A-0" **(PASSED)**
  - "Van/ship system" (including air space between) to "A-30" **(Steel and Aluminum) ENABLE ANY VAN TO BE PLACED ANYWHERE ON BOARD.**
  - **Aluminum** van as designed does NOT meet "A-0" requirements on its own (OK for Lab and Accommodations vans per TABLE 1).

UNOLS Standardized Van Design

(November 2001)

UNOLS/RVOC considering adopting Accommodation van structural standards for all vans "normally occupied by personnel" regardless of inspection requirement – i.e. Lab Vans.

Per US Coast Guard Letter: "[for Lab vans]…design and material selection must [consider] forces and environmental conditions to which the vans … will be exposed."

~Voted on and passed at RVOC 2001 Round Table Discussion~
(All new ship-owned vans to be built to the new standards)

UNOLS Standardized Van Design

(November 2001)

Where To Go From Here?

- Consolidate information into "UNOLS Van Manual" – hard copy and web based.
  Available to Ship Operators and PI's.

- RVOC sub-committee established to:
  Develop centralized inventory of existing vans – Ship and Science Owned.
  Determine overall "Fleet" need for various van types – Based on Current Condition and Types Available.
  Develop Van Loan Agreements – Rental fees, shipping, etc.

- Promote new standards from the "Top Down" – Program Managers/Directors.
  NSF Inspection process to help determine existing van condition.
  Science owned vans built to new standards.
  Inclusion in RVOC/"Research Vessel Safety Standards".

- Establish Van "Pool" for UNOLS fleet ?

TABLE 1

- UNOLS Van Ratings and Inspection Requirements -

May 2001

-SPECIFICATION PENDING FLAME TESTING FOR INSPECTED VANS-

Van Type	Normally Occupied **or** Experiments Conducted Within	Panel Fire Rating (See Note 5)	Standard ISO Shipping Container able to be Modified or Used	USCG Inspected	ABS Certified	Applicable CFR's and Regulations
Laboratory General Purpose Isotope Electronics Core Processing	Yes (See Note 1)	Non-Combustible Materials (See Note 2)	Yes (With proper stiffening)	No	(See Note 4)	*ABS High Speed Rules* 46CFR 195.11 46CFR 190.10 46CFR 194.15 46CFR 188.10-11
Accommodation Berthing	Yes (See Note 1)	Non-Combustible Materials (See Note 2)	Yes (With proper stiffening/insulation)	**Yes** (See Note 3)	(See Note 4)	*ABS High Speed Rules* 46CFR 195.11 46CFR 190.10 46CFR 190.15 46CFR 190.20
General Storage	No	None	Yes	No	Yes	46CFR 195.11
Chemical Storage	No	A-0	Possible (With proper insulation/sheathing subject to testing)	**Yes** (See Note 3)	(See Note 4)	46CFR 195.11 46CFR 194.20
Power/Machinery	No	A-0	Possible (With proper insulation/sheathing) subject to testing)	**Yes** (See Note 3)	(See Note 4)	46CFR 195.11
Explosive Storage	No	A-15	Possible (With proper insulation/sheathing subject to testing)	No	(See Note 4)	46CFR 195.11 46CFR 194.10-15
Freezer/Refrigerator	No (Storage Only)	None	Yes	No	Yes	46CFR 195.11

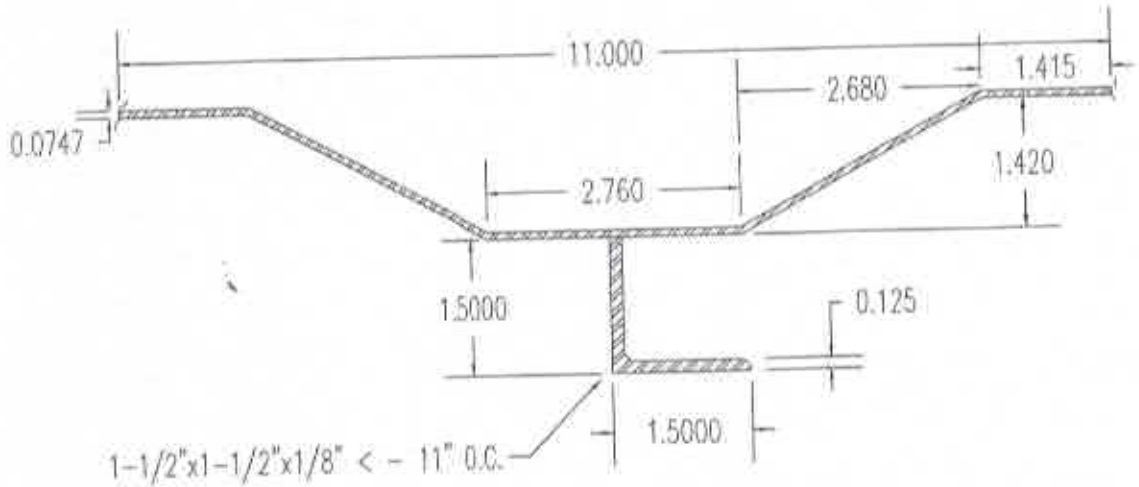
Note 1: Bulkhead pressure in ABS High Speed Rules/Side and Aft Deckhouse Structure (1.5 psi for stiffeners, 2.0 psi for plate) has been applied by UNOLS as a minimum for all vans "normally occupied by personnel". Vans to be in a "Sheltered Location".

Note 2: "Non-Combustible" = Steel, Aluminum or materials approved under 46CFR 164.009 (or equivalent)

Note 3: Certificate Posted. Inspect every 2-years.

Note 4: Once modified, container CFC Plate must be re-certified. Custom vans may be "TOP LOAD ONLY" in lieu of CFC plate.

Note 5: Panel fire rating indicates class of structural fire protection for the exterior panels of van on their own.



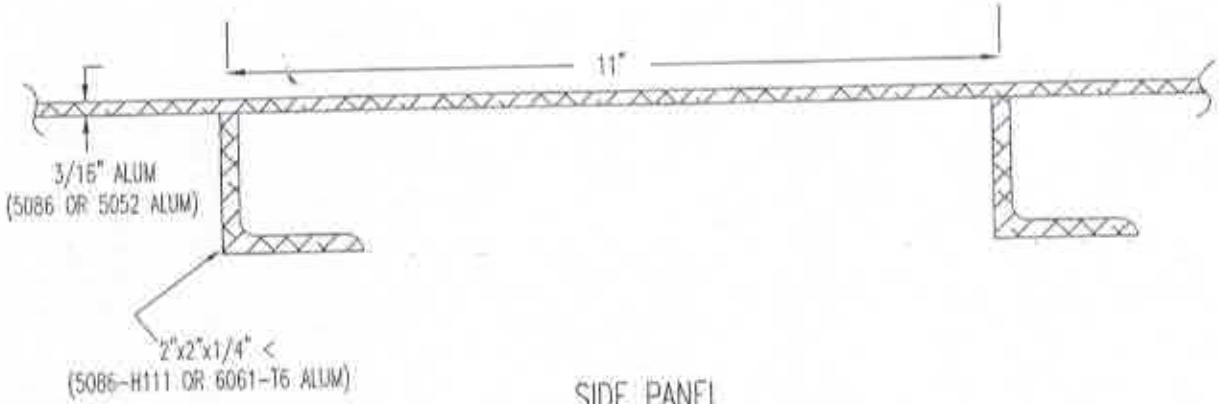
SIDE PANEL

STIFFENED STEEL CORRUGATED CONTAINER

UNOLS STANDARDIZED VANS

7/9/01

DO NOT SCALE

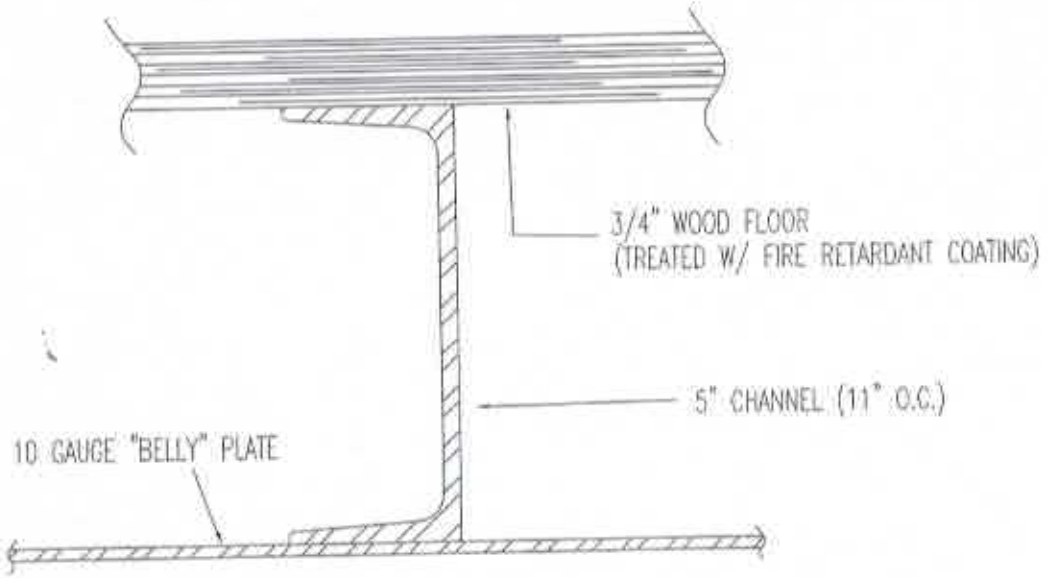


SIDE PANEL

ALUMINUM VAN

UNOLS STANDARDIZED VANS

7/9/01

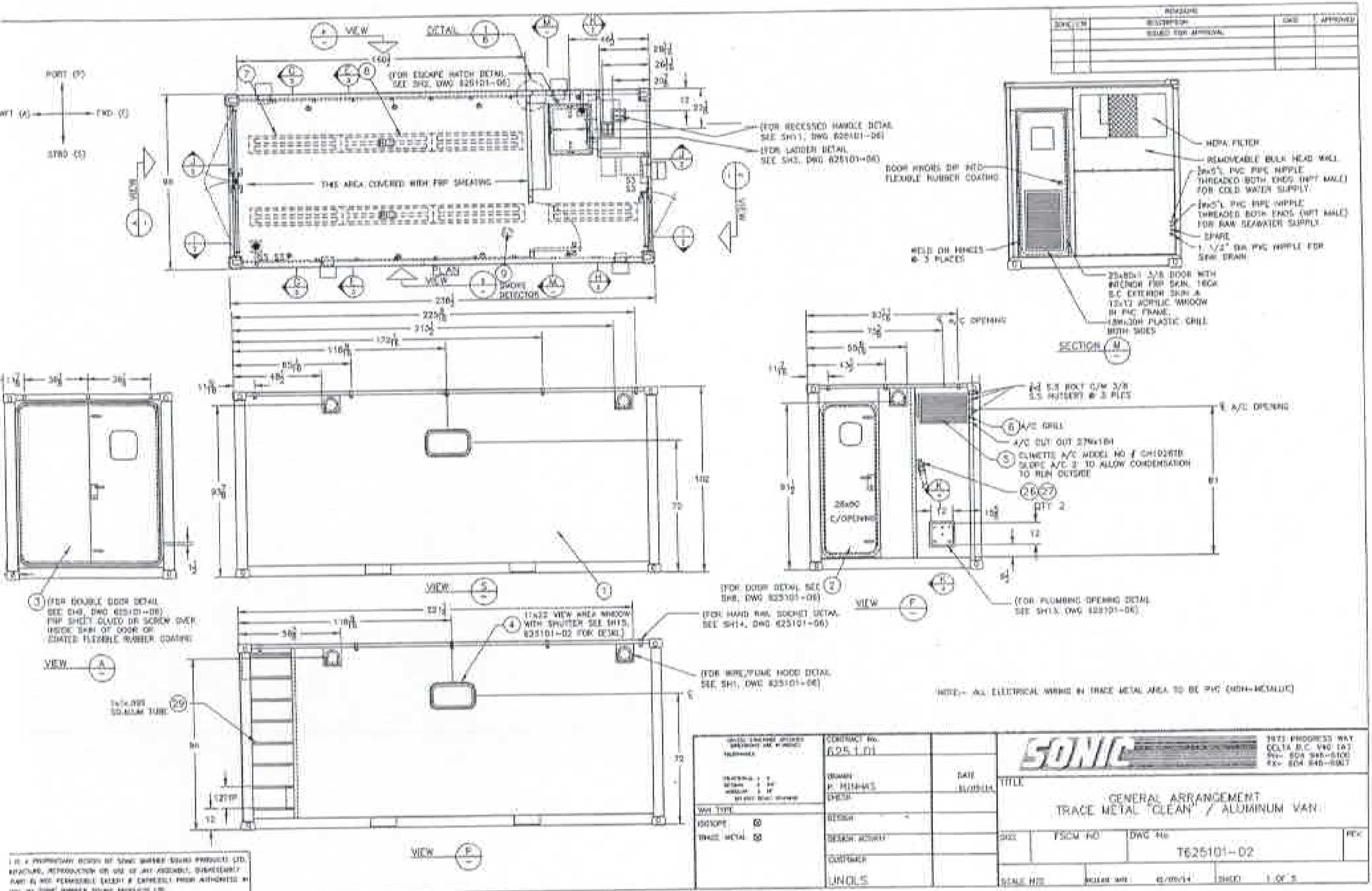


NOTE: WOOD DECK MAY BE REPLACED WITH STIFFENED 1/8"(MIN) STEEL OR ALUM PLATE AND BELLY PLATE OMITTED.

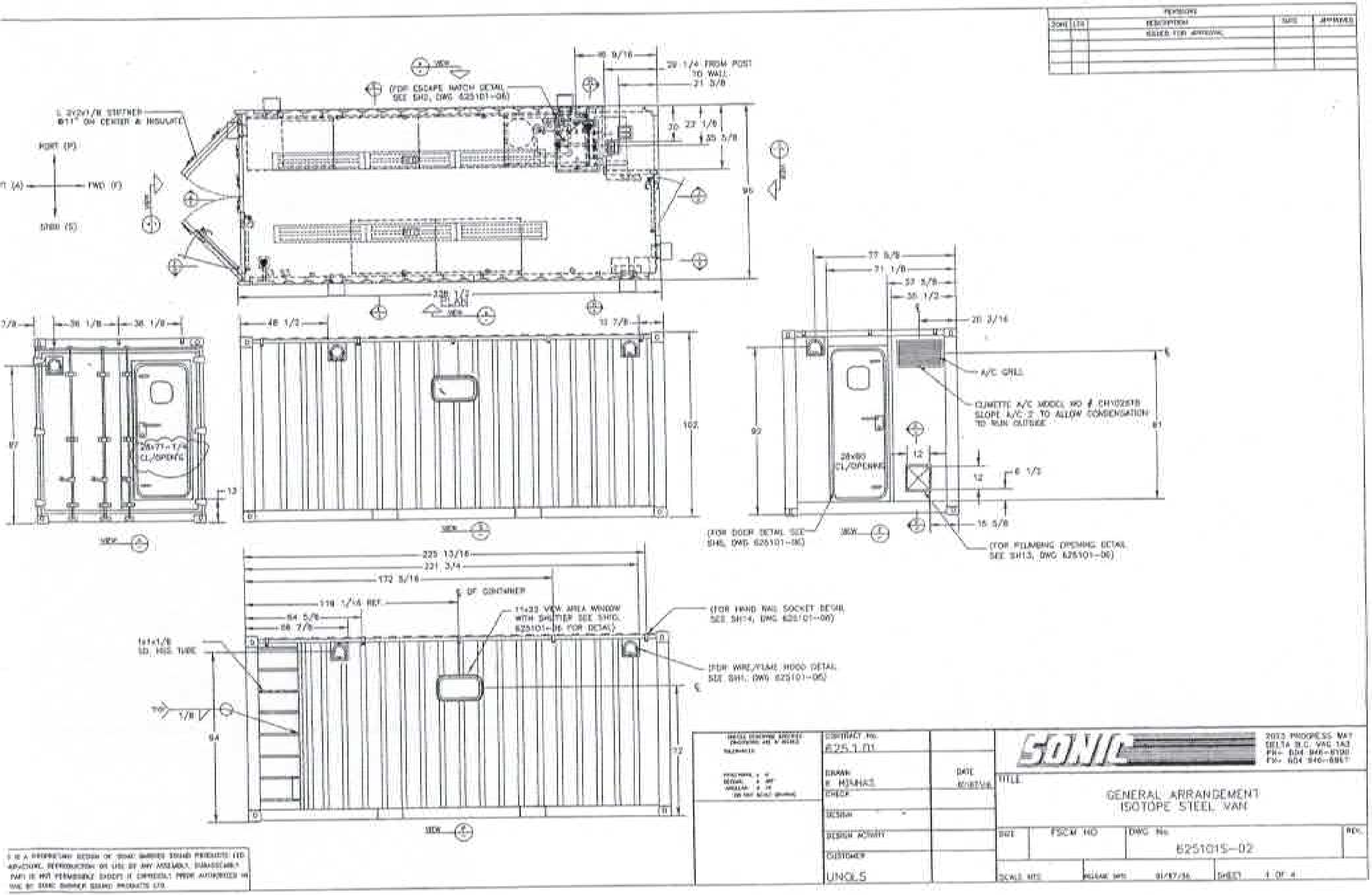
BOTTOM PANEL

STEEL CONTAINER OR CUSTOM ALUMINUM VAN

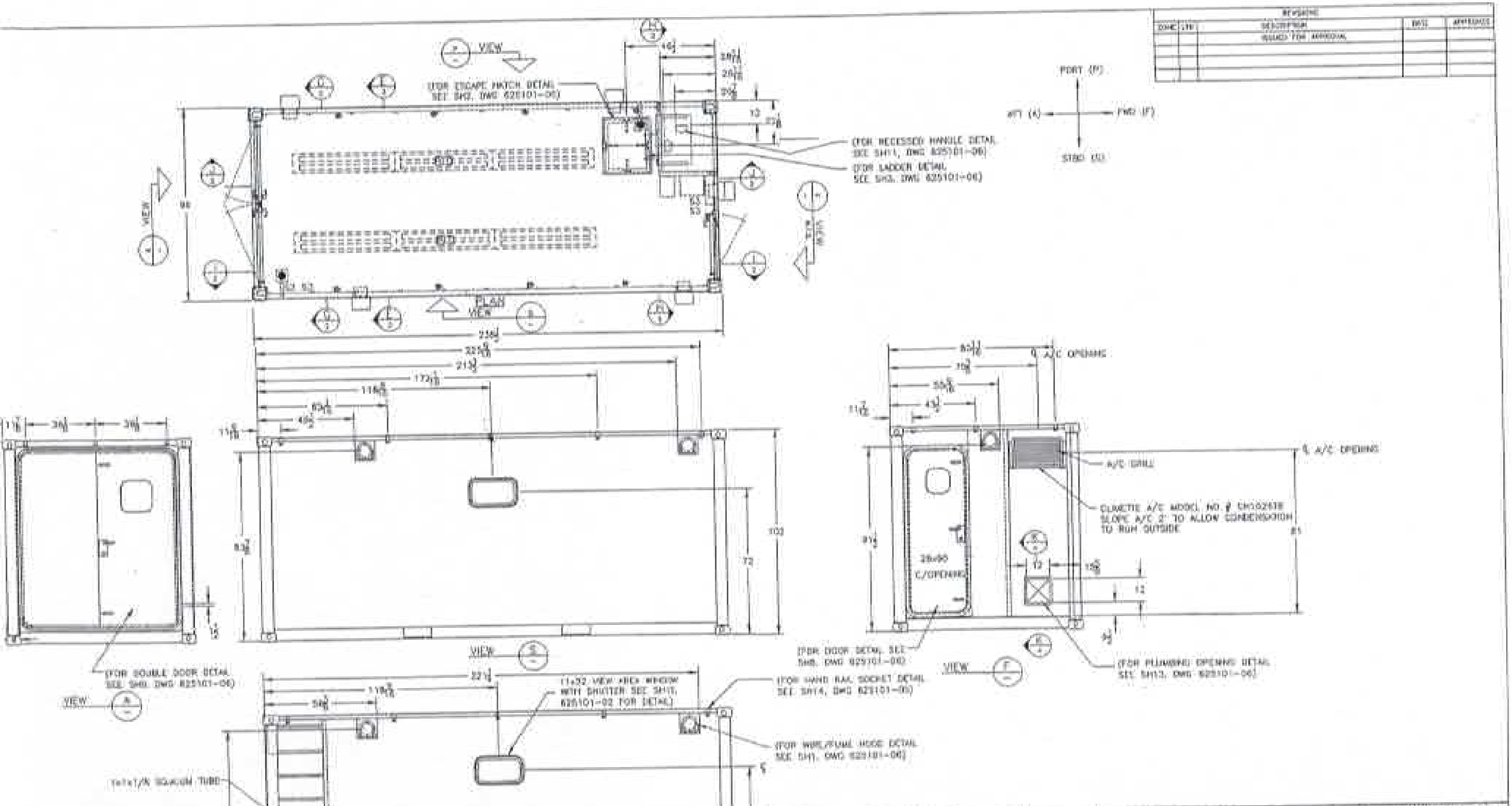
UNOLS STANDARDIZED VANS
7/9/01



(FOR ESCAPE HATCH DETAIL SEE SH2, DWG 625101-06)
THIS AREA COVERED WITH FRP SHEATING
(FOR RECESSED HANDLE DETAIL SEE SH11, DWG 625101-06)
(FOR LADDER DETAIL SEE SH3, DWG 625101-06)
SMOKE DETECTOR
PLAN VIEW
DOOR HINGES DIP INTO FLEXIBLE RUBBER COATING
HEPA FILTER
REMOVEABLE BULK HEAD WALL
WELD ON HINGES @ 3 PLACES
SPARE
SECTION
A/C OPENING
A/C GRILL
A/C CUT OUT 27Wx18H
CLIMETTE A/C MODEL NO # CH1026TB SLOPE A/C 2° TO ALLOW CONDENSATION TO RUN OUTSIDE
QTY 2
28x80 C/OPENING
(FOR DOOR DETAIL SEE SH8, DWG 625101-06)
(FOR PLUMBING OPENING DETAIL SEE SH13, DWG 625101-06)
(FOR DOUBLE DOOR DETAIL SEE SH8, DWG 625101-06) FRP SHEET GLUED OR SCREW OVER INSIDE SKIN OF DOOR OR COATED FLEXIBLE RUBBER COATING
(FOR HAND RAIL SOCKET DETAIL SEE SH14, DWG 625101-06)
(FOR WIRE/FUME HOOD DETAIL SEE SH1, DWG 625101-06)
NOTE:- ALL ELECTRICAL WIRING IN TRACE METAL AREA TO BE PVC (NON-METALLIC)
VIEW
DETAIL
PORT (P)
FWD (F)
STBD (S)
CONTRACT No. 625101
DRAWN K. MINHAS
CHECK
DESIGN
DESIGN ACTIVITY
CUSTOMER UNOLS
VAN TYPE
ISOSCOPE
TRACE METAL
SONIC
7673 PROGRESS WAY DELTA B.C. V4G 1A3
TITLE GENERAL ARRANGEMENT TRACE METAL "CLEAN" / ALUMINUM VAN
FSCM NO
DWG No T625101-D2
REV
SCALE NTS
SHEET 1 OF 5



REVISIONS
ZONE
LTR
DESCRIPTION
DATE
APPROVED
ISSUED FOR APPROVAL
L 2(2x1/8 STIFFNER @11" ON CENTER & INSULATE
PORT (P)
AFT (A)
FWD (F)
STBD (S)
(FOR ESCAPE HATCH DETAIL SEE SH0, DWG 625101-06)
40 9/16
29 1/4 FROM POST TO WALL
21 3/8
20
23 1/8
25 5/8
96
238 1/2
PLAN
VIEW
48 1/2
12 7/8
36 1/8
36 1/8
87
28x71-1/4 CL/OPENING
13
102
77 5/8
71 1/8
37 5/8
35 1/2
20 3/16
A/C GRILL
CLIMETTE A/C MODEL NO # CH10228B SLOPE A/C 2 TO ALLOW CONDENSATION TO RUN OUTSIDE
28x80 CL/OPENING
92
81
12
12
6 1/2
15 5/8
(FOR DOOR DETAIL SEE SH6, DWG 625101-06)
(FOR PLUMBING OPENING DETAIL SEE SH13, DWG 625101-06)
225 13/16
221 3/4
172 5/16
℄ OF CONTAINER
119 1/16 REF.
64 5/8
58 7/8
11x33 VIEW AREA WINDOW WITH SHUTTER SEE SH10, 625101-06 FOR DETAIL)
(FOR HAND RAIL SOCKET DETAIL SEE SH14, DWG 625101-06)
(FOR WIRE/FLAME HOOD DETAIL SEE SH1, DWG 625101-06)
1x1x1/8 SQ. HSS TUBE
1/8
84
72
CONTRACT No.
625.1.01
DRAWN
K. MINHAS
CHECK
DESIGN
DESIGN ACTIVITY
CUSTOMER
UNOLS
DATE
SONIC
2033 PROGRESS WAY DELTA B.C. V4G 1A3 PH- 604 946-6100 FX- 604 946-6867
TITLE
GENERAL ARRANGEMENT ISOTOPE STEEL VAN
SIZE
FSCM NO
DWG No.
625101S-02
REV.
SCALE NTS
SHEET 1 OF 4



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		ISSUED FOR APPROVAL		

CONTRACT No. 625101

DRAWN K. KIMHAS — DATE 6/07/02

CHECK

DESIGN

DESIGN ACTIVITY

CUSTOMER UNOLS

VAN TYPE

ISOTOPE

TRACE METAL D

SONIC

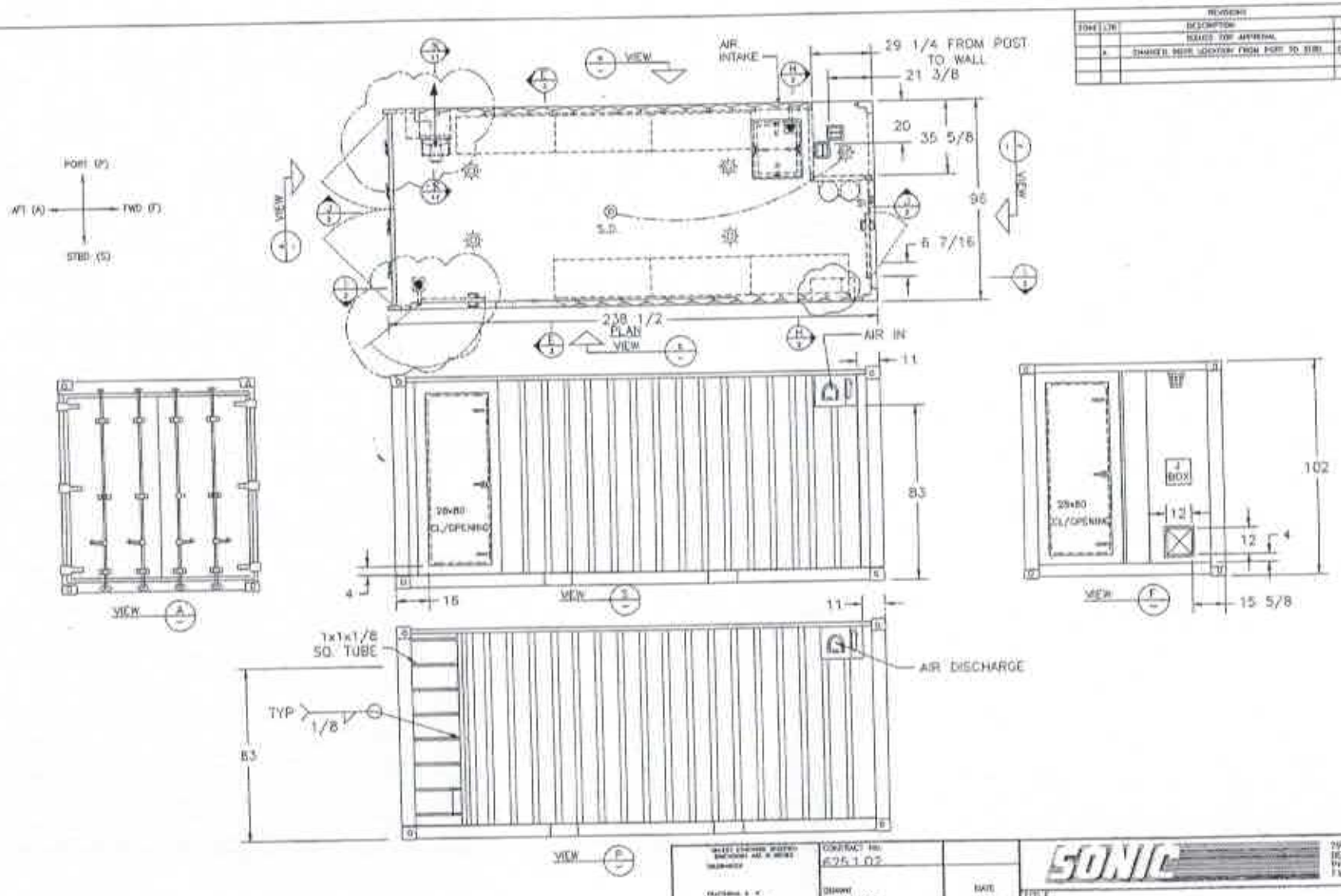
1973 PROGRESS WAY DELTA B.C. V4G 1A3 PH- 604 946-8100 FX- 604 946-6967

TITLE

GENERAL ARRANGEMENT
STANDARD ALUMINUM VAN

SIZE | FSCM NO | DWG No 625101-02 | REV. A

SCALE NTS | SHEET 1 OF 12



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		ISSUED FOR APPROVAL		
	A	CHANGED DOOR LOCATION FROM PORT TO STBD.	01/02/17	

CONTRACT No.	625102	
DRAWN	K. MONRAS	DATE 01/02/17
CHECK	ANDREW	DATE 01/02/17
DESIGN		
DESIGN APPROV.		
CUSTOMER	UNOLS	

SONIC
2973 PROGRESS WAY
DELTA B.C. V4C 1A3
PH:- 604 940-6180
FX:- 604 946-6967

TITLE
GENERAL ARRANGEMENT
CHEMICAL STORAGE VAN (STEEL)

SIZE	FSCM NO	DWG No	REV
		625102-02	A
SCALE NTS	RELEASE DATE 01/02/17	SHEET 1	

Appendix XIII

UNOLS Mission Statement

- *The University-National Oceanographic Laboratory System (UNOLS) is an organization of academic oceanographic institutions working in cooperation with agencies of the U.S. Federal Government to ensure broad access to modern, well operated, state of the art research vessels, submersibles and facilities required to support a healthy and vigorous research and education program in the ocean sciences.*
- *UNOLS is an advisory body that provides the mechanisms for coordinated scheduling and access to research vessels and facilities, co-operation and innovation by facility operators and broad community input to operators and federal agencies regarding current and future facility requirements for the ocean sciences.*

What the Charter Says

- **1. INTRODUCTION**
  - Recognizing the need for coordinated use of federally supported oceanographic facilities, the community of academic oceanographic institutions which use and operate those facilities, by virtue of this Charter, do hereby establish an organization of academic oceanographic institutions. The organization shall be named the University-National Oceanographic Laboratory System (UNOLS). UNOLS is solely an advisory body. Execution and enforcement of its recommendations are matters for member institutions and for agencies which fund the construction and operation of UNOLS facilities.

- **2. OBJECTIVES**
  - An objective of UNOLS is to coordinate and review the access to and utilization of facilities for academic oceanographic research, and the current match of facilities to the needs of academic oceanographic programs. UNOLS makes appropriate recommendations of priorities for replacing, modifying or improving the numbers and mix of facilities for the community of users. Another objective is to foster federal and other support for academic oceanography, thereby continuing and enhancing the excellence of this nation's oceanographic program. Emphasis is placed on ships and other seagoing facilities.

Goals

- **Broad, coordinated access to oceanographic research facilities:** Maintain a system that ensures broad access to research vessels and other facilities and provides for coordinated, efficient and effective scheduling of those research vessels and facilities.
- **Continuous quality improvement:** Foster co-operation between facility operators, funding agencies and research scientists with the goal of continuously improving the quality and capability of existing ocean science facilities and the quality, reliability and safety of their operation.
- **Plan for and foster support for the oceanographic facilities of the future:** Provide leadership and broad community input to the process of planning for and supporting the improvement, renewal and addition of facilities required to support the ocean sciences in the future.

Objectives and Priorities for 2002

Access and Scheduling

- Create effective and efficient schedules by mid September.
- Make improvements to the ship-time request and scheduling systems

Objectives and Priorities for 2002

Continuous Quality Improvement

- Quality of Service Improvement projects
- ISM implementation
- AICC to expand focus to improvement of all Coast Guard Icebreakers.

Objectives and Priorities for 2002

Plan for Future Facilities

- Fleet Renewal Process
- Monitor and stay engaged with the development of "Ocean Observatories" and other new uses of research vessels.
- Development of new facilities.

Create Schedules by September

- The ship scheduling committee will work with PI's and Agency program managers to identify scheduling issues and funding decisions as early as possible in an effort to solidify schedules by mid September, 2002 for CY 2003 operations

Create Schedules by September

- Every attempt will be made to meet the scientific objectives of all funded projects when creating schedules while at the same time minimizing the costs associated with dead-head transits and un-productive idle time.
- Idle periods will be utilized for maintenance and upgrade opportunities whenever possible.

Improve Ship Time and Scheduling System

- The UNOLS office will work with the Federal Agencies, PI's and ship schedulers to improve the systems that support ship-time requests and scheduling.
- The UNOLS Office will work with Federal Agencies to generate clear explanations to PIs of schedule compromises that may become necessary.

Quality of Service Improvement

- Update the Post Cruise Assessment process and forms to yield clear feedback. (formed working group).
- RVTEC to develop standards of service.
- Improve the scheduling system and process.
- Improve training and preparation for safe and secure operation of research vessels.

ISM Implementation

- Class I ship compliance required by July, 2002
- Create procedures that continue to enable flexible science operations within the constraints of ISM regulations.
- Ensure that scientists are aware of any new procedures and requirements.
- Work to clarify and promulgate safety-related responsibilities of scientific party members.
- Develop plans for voluntary compliance or other enhancement of R/V safety standards for smaller vessels.

Arctic Icebreaker Operations

- AICC will shift focus to science operations and outfitting of all USCG operated Arctic Icebreakers.

Fleet Renewal Process

- Stay engaged with the FOFC "Fleet Plan" process.
- Promote the budgeting of ship design and construction funds.
- Begin work on updating SMRs for Oceans, Regional and Global Class vessels.
- Promote concept design development for new vessels.

Monitor and stay engaged with the development of "Ocean Observatories" and other new uses of research vessels.

- Formally request UNOLS representation on the Observatories Steering Committee or other appropriate bodies as they are formed.
- Examine the long term impacts that Ocean Observatories and other new uses will have on the scheduling process, consider a new scheduling paradigm.
- Assess the impact of Observatories and other new uses on research vessel requirements.

Development of New Facilities

- Develop Science Mission Requirements and specifications for oceanographic wires, cables and ropes for the future.
- Provide community input on the development of new submersible assets and instrumentation.
- Improve shipboard scientific equipment utilizing group purchases and standard specifications to increase cost savings.

2000/2001 Accomplishments and Activities

Access and Scheduling

- Completed Scheduling of all UNOLS vessels by early October ensuring that scientific objectives were used as the primary consideration in making decisions whenever possible. Some projects were deferred to 2003 in order to provide the appropriate platform and facilities.

2000/2001 Accomplishments and Activities

Continuous Quality Improvement

- Planning for implementation of ISM Compliance on large UNOLS Vessels.
- HEALY science systems testing was conducted and the ship is now operating in the Arctic.
- Started work on improvements to Post Cruise Assessment system and considered other methods for implementing formal continuous quality improvement programs.

2000/2001 Accomplishments and Activities

Plan for Future Facilities

- The community was alerted to the need for fleet renewal.
- UNOLS provided a community response to the draft FOFC Long-range Fleet plan.
- New vessels are under construction or in the planning process: KILO MOANA, SAVANNAH, ALPHA HELIX replacement and CAPE HENLOPEN replacement.
- Upgrade and Overhaul of the National Deep Submergence Facility: ALVIN Overhaul, DSL120A, and Jason II.
- Development of standard specifications for shipboard vans including US Coast Guard approved specifications.

Appendix XIV

Skidaway Institute of Oceanography
University System of Georgia
10 Ocean Science Circle
Savannah, Georgia 31411

November 13, 2001

Mike Prince, Bob Knox and the UNOLS Council
UNOLS Office

VIA EMAIL: office@unols.org

I am sending you the summary sheet of our NSF inspection from JMS Naval Architects. The inspection was conducted on the *R/V Savannah* on the 4th & 5th of October 2001. The *R/V Savannah* was found to be in compliance with the UNOLS Research Vessel Safety Standards, in good condition and fit for service in the UNOLS fleet. I would be happy to send a complete copy of the Vessel Inspection Report if you desire one. We are hopeful that you will accept the *R/V Savannah* into the UNOLS Research Fleet. Please contact me if you need further information.

Sincerely,

Braxton Tesh
Superintendent of Marine Operations

BT:dp
Attachment

JMS
NAVAL ARCHITECTS
SALVAGE ENGINEERS

Marine Science and
Technology Center
1084 Shennecossett Road
Groton, Connecticut 06340
860.448.4850 voice
860.448.4857 fax
http://www.jmsnet.com
jms@jmsnet.com

26 October, 2001

R/V SAVANNAH

This is to certify that JMS did, at the request of Skidaway Institute of Oceanography, conduct a general condition survey of the R/V SAVANNAH on the 4th and 5th of October 2001 in Savannah, GA. The following personnel were present during the survey:

Skidaway Institute of Oceanography

Braxton Tesh	Superintendent of Plant & Marine Operations
Travis McKissick	Senior Marine Technician

R/V SAVANNAH

Raymond Sweatte	Master
Michael Richter	First Mate
Raymond Thomas	Engineer

Various other SKIO and vessel personnel were also in attendance.

The following report follows the format of the *NSF Ship Condition Form* and is a summary of conditions found. The results of this survey find that:

1. The R/V SAVANNAH is in compliance with the UNOLS Research Vessel Safety Standards. However, several areas for improvement are noted for attention in this report and in the Summary of Recommendations.

2. The R/V SAVANNAH is being maintained in a condition which meets or exceeds the standards usually expected of a research vessel of this size and service. The vessel is in a good state of material condition and is being maintained adequately.

3. The R/V SAVANNAH is fit for continued service.

For JMS,

JOHN M. RINGELBERG
Senior Inspector

T. BLAKE POWELL
Inspector

GWB
GREG W. BEERS
Science Inspector

Appendix XV

Committee Reports

UNOLS Council Meeting – November 15, 2001

Arctic Icebreaker Coordinating Committee

The big news for the AICC and arctic oceanography in general is that USCGC HEALY has just completed her first two science cruises, AMORE and ALTEX. We don't want to steal anyone's thunder, but things went really well! Highlights include the discovery of hydrothermal vents along the Gakkel Ridge, and a visit to the North Pole. Fortunately, both cruises included educational components, so you can access journals at the following web sites: AMORE (TEA Michelle Adams) http://tea.rice.edu/tea_adamsfrontpage.html and ALTEX (MBARI crew, especially Mike Pinto) http://www.mbari.org/education/cruises/Altex/

The POLAR class icebreakers had a busy year in the arctic as well. USCGC POLAR STAR completed an early season cruise to the St. Lawrence Island polynya (TEA Kathie Stevens, http://tea.rice.edu/tea_stevensfrontpage.html). USCGC POLAR SEA completed mooring turnarounds in the Bering, and there were plans for opportunistic science in Russian waters, but permission was denied. Schedules are still being finalized for 2002, but it looks like NSF will utilize every science day available on the three USCG icebreakers. One of the major programs in 2002 will be the interdisciplinary Shelf-Basin Interactions (SBI) project. We anticipate things will continue to be this busy in 2003.

Accordingly, the AICC is turning its full attention to science facilitation. We continue to work with the Coast Guard and funding agencies on long-range planning, underway and continuous data collection (What data should be routinely collected? Who's responsible for collection, and more importantly, quality control and data archiving?), science equipment needs for future cruises, and how to best advise the CG on setting expectations and protocols for "Science Of Opportunity" (SOO) cruises, topics that are familiar to several UNOLS committees. Briefly, the AICC is working with UNOLS to maintain a web site containing a rolling five year plan for icebreaker use, beginning with conceptual plans and updated to show proposal submission and status, and, for the lucky few, scheduling. To help facilitate planning, the CG has a planning manual on-line for HEALY (http://www.uscg.mil/pacarea/iceops/cpmanual/cpmanual.htm), and similar manuals for the POLAR class vessels are in the works.

We remind the community that requests for cruises on the USCG icebreakers follow the same procedures as those for UNOLS vessels. And to make the ship request procedure even more UNOLS-like, all proposals for arctic cruises are due on Feb 15th of the year preceding a cruise (i.e., to use the icebreakers in 2003, you'll need to get your NSF proposals submitted by 15 February, 2002). A scheduling meeting for the icebreakers will be held each summer, and several funding agencies (NSF, NOAA, ONR, USFW) have indicated their intentions to obtain icebreaker time for 2003.

Finally, we need to pass along updates on AICC and key Coast Guard icebreaker personnel. Inaugural AICC members Joe Coburn, Glenn Cota, and Dan Lubin have cycled off the committee. Our new members are Robert Bourke (Naval Postgraduate School), Margo Edwards (University of Hawaii), and Peter Minnett (RSMAS, University of Miami). Jim Swift has completed an outstanding five-year tenure as AICC chair, and as of 1 January, Lisa Clough has assumed the chair position. The AICC has also formalized ad-hoc representation from RVTEC (Dale Chayes) and RVOC (Daniel Schwartz). Of note for the Coast Guard, CAPT Dave Visneski is now the CO on HEALY, CAPT Dave Mackenzie is the CO of the POLAR STAR, and CAPT Keith Johnson continues as CO of the POLAR SEA. CMDR Joe Bodenstadt has replaced CMDR George Dupree as the icebreaker contact in Coast Guard headquarters. A key player in the scientific success of USCGC HEALY, CAPT Jeff Garrett (previous CO of HEALY) has been promoted to RADM- Congratulations Jeff!

The AICC can be reached by writing to the Chair (CLOUGHL@MAIL.ECU.EDU) or to the UNOLS Office (office@unols.org).

Report submitted by L. Clough

Deep Submergence Science Committee

The DESCEND brochure came out in December 2000 and was distributed at the San Francisco DESSC meeting. Copies will be provided at the UNOLS Council Meeting. This spring the DESSC pursued efforts to follow-up on the technology recommendations of the DESCEND meeting. An evening meeting held at the Oceanology Conference in mid-April helped define directions for more detailed discussions. The meeting (coordinated by Jim Bellingham, Annette DeSilva, and Dan Schwartz) consisted of an introduction and free flowing exchange on submergence facility needs and issues. Submergence technology needs and problems were identified. These are listed in the meeting report posted on the UNOLS Website at http://www.unols.org/dessc/descend/followon/april04.htm. Access and funding of assets were also discussed at the meeting. This continues to be a concern within the community.

Further pursuit of this follow-up activity is continuing. DESSC is currently engaged in synthesizing the efforts of various technology workshops that have been held over the last few months and is pursuing linkages with groups planning technology workshops in the near future. DESSC is interested in providing a means by which the submergence aspects of these meetings may be summarized and explored in greater detail and by which a roadmap for future directions in technology development may be defined.

DESSC held its summer meeting at WHOI at the end of May. At this meeting a summary of operations of other deep submergence activities was presented for MBARI, MPL, NURP, ROPOS and the US Navy. The agencies reported on recent activities and trends including the establishment of the NOAA Ocean Exploration program. The national facility report included an update on the overhaul of the Alvin, which was

completed in early June. The Alvin passed recertification in mid-June and is currently at work in the Atlantic. Upgrades to the NDSF ROVs continue on schedule and are expected to be complete by mid 2002.

DESSC discussed mechanisms by which it could improve its effectiveness in providing the community of marine biologists with a higher level of interaction with the National Deep Submergence Facility. To this end DESSC has applied to hold and been granted a Special Session at the ASLO/AGU meeting in Honolulu in 2001. The Special Session description is as follows (Patricia Fryer, Shirley Pomponi, Anna-Louise Reysenbach co-conveners):

"Recent advances in understanding submarine biosystems: Submergence Research"

Description: The use of submersibles and remotely operated vehicles provides a mechanism by which the marine biologist and geochemist can perform field work in extreme environments, collect samples, run experiments, and establish observatories on the sea floor and in the water column. This session will highlight recent advances in marine biology and geochemistry as pertains to systems investigated with these submergence vehicles including ridge crest studies, convergent and passive margin studies and research in the water column. Presentations on upgrades to existing vehicles and projected uses for the future will provide attendees with up to date information on the state of the art in submergence vehicles and systems. There will also be an opportunity for scientists to exchange feedback with other users of these vehicles and systems and with facility operators.

DESSC also discussed the status of archiving of data at the NDSF and discussed scheduling issues for both 2002 and beyond. DESSC also discussed efforts to broaden the user base of NDSF to include more researchers from the field of Marine Archeology.

Minutes for the DESSC meetings will be available soon at the UNOLS Web site at the following URL: <http://www.unols.org/dessc/>

Dr. Patricia Fryer

Fleet Improvement Committee

FIC was scheduled to meet in September just before the Council meeting. Many FIC members were stranded in route or never left their home.

Over the coming years the main activity of FIC will be to assure the development of SMR's in both class and regional sense.

SMR Activity:

With the FOFC plan for slightly different classes of ships, the retirement of ships and emerging regional (Gulf of Mexico for example) needs FIC suggests that many SMR assessments are needed.

It seems clear that new vessels will be built. SMR's are needed.

- Establish guidelines for producing SMRs including time line.
- Identify SMRs for development (based on new vessel classifications)
- Identify geographic regions where efforts should be initiated.

How will FIC work with the institutions? U. Delaware and U. Alaska are examples. The new OSU/URI consortium is another.

Should FIC raise the flag for the Gulf?

Fleet Renewal Efforts in Progress

- KILO MOANA - Status and Operation Plans
- Status report on Construction
- Science Shakedown Cruise planning
- Alaska Research Vessel - Status and FIC's Role in design review
- N. Atlantic and NW Pacific Oceans Class Vessels (OSU and URI plans)
- CAPE HENLOPEN Replacement Status
- SAVANNAH - Construction status and Operations Plans

At this point we should all understand the current situation regarding the FOFC process and what plans institutions are making.

Fleet Capabilities needed to support Observatory Work

- Will new ships be needed?
- What are the options?

Community Outreach

What is needed to keep and/or get the community involved? EOS letters? Information on WWW site?

FIC will:

- Continue to push NSF and other agencies to develop capitalization plans.
- Provide suitable material (SMR's, white papers) to NSF, NOPP and other agencies.
- Keep the community involved via letters to EOS etc.
- Review Fleet utilization projections

Research Vessel Operators Committee

The Research Vessels Operators Committee (RVOC) met on 24-26 October at the Oregon State University, Hatfield Marine Science Center. Present were operators, funding agency representatives, and others representing U.S. and foreign organizations involved in the operation of oceanographic research platforms. The latter group included, The Canadian Defence Research Establishment, Southampton Oceanography Centre (UK), Commonwealth Scientific & Industrial Research Organisation(Australia), SACLANT Undersea Research Center (NATO), Glosten Associates, Military Sealift Command, Netherlands Institute for Sea Research, and Sea Education Association. A brief overview of pertinent meeting topics follows:

- The Safety Committee to review the RVOC Training Manual with the intention of evaluating its potential for serving as the required training document for STCW and ISM certification.

- Chris Gobey representing SACLANT gave a brief summary of their effort to interface ISM into the science component on their vessels. Formal procedures are being developed for the operation of every piece of science equipment coming on their ships. The process will take about 6 months and will involve the development of Safe Operating Procedures (SOP) for all installed and transient science equipment on their vessels. In addition to developing SOPs for science equipment, all ship personnel have gone through Risk Assessment Training.

- Dr Andrew Forbes with the Commonwealth Scientific & Industrial Research Organisation in Hobart, Tasmania, and Major Michel Caron with the Canadian Defense Establishment, introduced us to their organizations and give a brief review of the capabilities of their research vessels.

- Hervey Andrew, Vice President of Marsh Marine and Energy spoke on the status of maritime insurance and warned that premiums will be increasing in the near future. Operators were encouraged to work with their brokers so they understand our efforts to reduce the risks of operating the fleet.

- A number of organizations including, University of Alaska, Florida Institute of Oceanography, University of Delaware, WHOI, Skidaway, and Sea Education Association presented plans for building new vessels at their institutions or reviewed progress on vessels already under construction.

- On the second day the meeting broke into 3 working groups, ISM Work Group, Personnel Recruitment and Retention Work Group, and Quality of Service Work Group. They met for about 2 hours after which the Chair of each group summarized their discussions.

The 2001 RVOC annual meeting was held in conjunction with the RVTEC on 23 October 2001, at the University of Rhode Island, in Newport, R.I. on 24 October, and again at URI on 25 October. Day 2 and 3 where convened without RVTEC in attendance.

On the first day of the meeting Federal Agencies provided updates on their activities and the UNOLS Office give a report. The remainder of the day was devoted to discussions on the Quality of Service Initiative, winch and wire issues, and presentations by various groups involved with ISM compliance on research vessels. Mike Prince introduced the Quality of Service Initiative and provided an overview of progress to date in the UNOLS committee assigned to this issue. Topics covered in the winch and wire section included presentations by Jon Alberts, WHOI, and the establishment of SMR's for the next generation of UNOLS wire ropes and cables, Tom Althouse, SIO, and safe working loads of existing UNOLS cables, James Stasny, Dynacon, and new over the side handling equipment, and Peter Wiebe, WHOI, on future science needs for wire ropes and cables. The ISM discussion included presentations by Morgan Terrell, U of W, on compliance efforts by Class I&II operators, Paul Stone, Southampton Oceanography Centre, and ISM issues addressed by foreign operators, and Doug Friskes, NOAA, with an up date on their ISM program. All of the topics discussed on the first day were relevant to both RVOC and RVTEC and, in general, both groups felt it was beneficial to conduct these discussions in joint session. Efforts are underway to formalize procedures for future joint meetings between RVOC and RVTEC.

RVOC reconvened on days 2 and 3 for their routine agenda and business items. Tom Althouse, Safety Committee, and Lee Black, Personnel Committee gave subcommittee updates. Crew recruitment and retention were highlighted as a critical issue facing operators of research vessels in the United States. A diminishing pool of qualified crew has made it increasing difficult for operators of UNOLS vessels to find qualified crew to fill new billets and replace personnel lost to other higher paying segments of the marine industry. Other topics discussed on day 2 included an overview of accident statistics, pay compensation studies on small UNOLS vessels, reports on the buyers and personnel conferences attended by RVOC members, and an introduction to the Ship Operators Cooperative Program (SOCP). After presentations by foreign operators, the meeting continued with research vessels updates, and presentations, on fuel cells and their potential applications on UNOLS vessels, new USCG drug testing policies, the new UNOLS medical services contract, and an insurance and admiralty law review.

The meeting continued on day 3 with a wrap up of new vessel updates and a presentation on security in the UNOLS fleet. A review of security related issues and an update on the incident on the R/V *Ewing* earlier this year in the Gulf of Aden, was followed with discussion by the operators, and general comments about ways to improve security onboard UNOLS vessels. The RVOC Business Meeting followed.

Action items adopted at the Business meeting included a vote to adopt ABS Safenet as the standard CMMS system product on UNOLS vessels. RVOC members also voted to accept the accommodations van panel design pressures described in paragraph (1) of the Coast Guard review letter (Serial H1-0101248, dated May 24, 2001) as the minimum structural standard for all new vans "normally occupied by personnel", including lab vans. A RVOC subcommittee was formed to address other van issues including inventory, science liaisons, and further actions related to new vans constructed for the UNOLS community.

Further action included the assignment of individuals to groups whose task it is to conduct salary surveys on Class I-III UNOLS vessels, an agreement to formulate an NSF Inspection Program evaluation form, a vote of confidence for the continuation of the compilation of accident statistics by the UNOLS office, a recommendation that RVOC become a member of SOCP, and a decision to encourage future joint interactions between RVOC and RVTEC.

The 2002 RVOC meeting will be hosted by MBARI and Moss Landing Marine Lab. E-mail ballots will be used to decide the meeting place for the 2002 annual meeting.

Research Vessel Technical Enhancement Committee

The Lamont-Doherty Earth Observatory of Columbia University in Palisades, New York hosted the 2000 Annual meeting of the Research Vessel Technical Enhancement Committee (RVTEC). The minutes of this meeting were (for the first time) approved by a combination of posting revised drafts to the web, soliciting comments, additions and corrections by email and then accepting the final version by email vote. Historically, the minutes were approved at the following annual meeting. During this meeting we tried a new format with "hands-on" technical sessions on several topics including Salinometer operation, wire termination and had a session on SeaNet training.

During the year, members of the RVTEC participated in the updated Winch and Wire Handbook, email based discussions related to wire safety and development of specifications for new wire and winches. Several members participated in a final shakedown of the science systems on the Healy on a short cruise from Seattle to San Francisco in late April, 2000 just prior to her departure for her first science cruises.

The Graduate School of Oceanography in Narragansett, Rhode Island hosted the 2001 Annual meeting on October 23-25, 2001. The first day of this meeting was joint meeting with the Research Vessel Operators Council (RVOC). There was a brief over-lap during the final day as well. During the joint sessions we received UNOLS and Agency reports, had presentations on winches and wires and then discussed the impact of ISM on our operations. We continued our breakout session format this year with sessions on debbublers, wireless communications and data acquisition systems. We had two discussions on the issue of level of service and have formed a working committee to continue pursuing this issue.

During our business meeting, Steve Poulos of the University of Hawaii was elected vice chair to replace Tony Amos who has served two terms (four years). After some discussion, it was agreed to evaluate the University of Hawaii as the venue for the 2002 annual meeting. Barrie Walden was nominated to be our interface with the organizing committee for INMARTEC 2002 that is being hosted by JAMSTEC. As currently scheduled, INMARTEC 2004 will be hosted by the British Antarctic Survey (BAS) and the Southampton Oceanography Centre. By rotation, INMARTEC 2006 should be hosted on the US East Coast and we need to identify likely hosts.

Ship Scheduling Committee Report

For the second year in a row, scheduling problems have persisted late into the year. The problems for both CY 2001 and CY 2002 involve multiple ship cruises, logistics of providing special assets (e.g. JASON, ALVIN, ROPOS, etc.), and timing of cruises to fit weather or seasonal windows. Each attempt to solve one problem sent waves of new problems rippling through other schedules. This has been especially frustrating in trying to schedule the multiple ship cruises for the Navy last year and for the GLOBEC cruises this year. As of early November, the GLOBEC issues have not been completely resolved.

Schedulers are presently facing many of the problems that critics of the first draft of the fleet renewal plan predicted would happen with a reduction in vessels. If there is a reduction, these problems will only get worse. FOFC and funding agencies take note.

With budgets still in the Great Unknown, there are still many days listed as pending on almost all ships' schedules. Be that as it may, the total number of days requested in 2002 is 5479. That is a reduction of 254 days from 2001. Part of that reduction is due to the Coast Guard pulling its schedule for HEALY off line because of the terrorism attacks. The main decrease in days comes in the Class IV vessels, with a decrease of 394 days requested from 2001. The comparison by class follows.

Class	2001 Days (% FOY)	2002 Days (% FOY)
I & II	2356 (87.3%)	2425 (89.8 %)
III	1149 (69.6 %)	1195 (72.4 %)
IV	1567 (96.7 %)	1173 (81.5 %)
Other	661.5 (100.2%)	686 (124.7 %)

Some of the reduction in Class IV comes from CAPE HATTERAS undergoing a half-year lay-up with the goal of completing a mid-life refit during that time. There also was a reduction in the number of vessels included in that class with SEA DIVER retiring from the fleet. LAURENTIAN, among the 'Other' category, also retired from the fleet at the end of 2001.