

**UNOLS Workshop
Establishing ADA Guidelines for Research Vessels**

**September 18 & 19, 2006
Smith Building Conference Room
Woods Hole Oceanographic Institution
Woods Hole, MA**

Meeting Minutes

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September 18, 2006 - Day One, Smith Conference Room:

Welcome and Introductions – A UNOLS workshop to establish American with Disabilities Act (ADA) guidelines was held on September 18-19, 2006 in the Smith Building Conference Room, Woods Hole Oceanographic Institution, Woods Hole, MA. Terry Whitledge, ADA Committee Chair, called the workshop to order. The workshop agenda is attached as *Appendix I*. Participants introduced themselves. The participant list is included as *Appendix II*. The workshop included sea going scientists, scientists with disabilities, a risk manager, agency representatives, and ship operators. Terry emphasized that the draft ADA Guidelines document are a work in progress and the workshop should be an opportunity to provide input to the draft.

Preliminary Review of Draft ADA Guidelines for UNOLS Vessels Document – Terry Whitledge reviewed the draft ADA Guidelines document <http://www.unols.org/committees/fic/ADA/documents/ADAGuidelines_091306.PDF> that was provided to the workshop participants prior to the workshop. He explained the process used to develop the draft and identified the areas of the document that require workshop discussion.

Terry reviewed the project background and committee membership (*Appendix III*). He explained that Research Vessels are not passenger vessels. The tasks for the project are to:

- Draft ADA Guidelines for the Regional Class acquisition effort
- Convene a 2-day community workshop
- Draft ADA guidelines for the UNOLS fleet that address both structural and procedural issues.

In developing the draft guidelines, existing documentation was evaluated. These included Terry's ADA white paper <http://www.unols.org/committees/fic/ADA/ADA_WhitePaper_draft.PDF>, ADA Guidelines for passenger vessels <<http://www.access-board.gov/pvaac/revised-draft.htm>>, and the designs from R/V *Sharp*, R/V *Langseth*, and the Alaska Region Research Vessel (ARRV). Terry explained that they would like to complete the draft guidelines before the October 2006 Council meeting.

The Regional Class ADA Guidelines were drafted by the Committee and provided to NSF as requested in June. In drafting the Regional guidelines, the ADA modifications that had been implemented on the R/V *Sharp* were considered. Matt Hawkins (U. Delaware) explained that implementing ADA modifications on a small vessel is a challenge. The sheer number of obstacles on a research vessel made this a real challenge. U. Delaware began the effort of implementing ADA modifications on R/V *Sharp* at the end of the concept design phase/beginning of preliminary design phase. A fifteen-inch bulkhead is required on watertight doors. A drop sill was installed in the bulkheads to allow passage by wheelchairs and is ABS approved. The drop sill has proved to be very convenient while in port because it allows ease of access during equipment loading. The sill must be up while underway. Matt explained that they haven't had been able to redesign the ship's loading ramp for ADA access. One of the concerns is how to deal with obstacles that are always changing.

Terry provided information on the Jubilee Sailing Trust. It is a unique charity that aims to promote the integration of people of all physical abilities through the challenge and adventure of tall ship sailing. The ship has access throughout for disabled crew, including wheelchair users, with flat wide decks and powered lifts. There is a speaking compass for the use by blind crewmembers and bright track radar for partially sighted crew. An induction loop and vibrator alarms have been installed for hearing impaired crewmembers. There are special cabins, toilets and shower facilities for disabled crew.

Agency Remarks:

National Science Foundation – Dolly Dieter reported on NSF's interest in this project. Federal facilities are required to comply with ADA. In response, NSF asked UNOLS to form a committee to determine what is reasonable. The *Sharp* design considered ADA access. The ARRV was able to address it. The Regional Class ships will need to address it as well. Once the ADA Guidelines are established, it will be on the table for FIC to determine how to incorporate them into the Science Mission Requirements (SMRs).

Bob Houtman (ONR) remarked that the ADA Guidelines should be incorporated into the SMRs so that there is one official document.

Terry Whitledge asked how the Regional ADA guidelines that were provided to NSF in June are being implemented. Bob Herman (PEO-Ships) stated that they would not forward the ADA Guidelines to the two design teams. Instead, they will give the Guidelines to the one selected team after the ship design has been selected.

Office of Naval Research – Bob Houtman reported that the Navy is still looking for funds for construction of the Ocean Class ships. They are very interested in having the ADA requirements in place before the Ocean Class design process. It is important to have the ADA Guidelines incorporated into the SMRs. They are also interested to see what can be done as retrofits.

National Oceanic and Atmospheric Administration – Michael Abbott reported that NOAA is involved with fleet renewal and are interested in what comes out of this effort.

ADA Access Board – Paul Beatty (Access Board) reported on their effort to establish ADA Guidelines for Passenger Vessels. He will give a brief history of the project and how it has been carried out. Paul explained that ADA is a civil rights law and it applies to the public and private sectors. ADA does not apply to the Federal Government.

The Access Board is an independent agency. The Access Board writes standards that are the minimum that must be applied. The Department of Justice and Transportation are the enforcers. The standard was written in the 1980s and guidance was written in 2004. It is not the standard, but it provides guidance. It addressed buildings and other modes of transportation.

The Access Board has worked to draft ADA guidelines for passenger vessels. They put together a committee. They did not address Research Vessels in their effort. They focused on the USCG definition of “Passenger Vessel.” The board published a draft Passenger Vessel guidelines based on Committee recommendations and land based facilities. The committee has published a revised draft <<http://www.access-board.gov/pvaac/revised-draft.htm>> and the public comment period runs into November 2006.

The ADA Access Board does not specifically refer to the USCG definition of “Passenger Vessel.” They often consider definitions in the dictionary, in which case the research vessels might fit as “Passenger Vessel.” The Access Board is trying to address the ambiguities. They did not have research vessels in mind when they drafted the “Passenger Vessels”

Discussion followed:

- Dolly asked for the definition of large and small ships. Paul stated that ships that accommodate 150 day-passengers and 49 overnight passengers are considered large.
- Dave Chapman commented that he doesn't think that we should get hung up on whether the ships are “passenger vessels” or not. As public accommodations the ships should be obligated to comply. Although standards may not exist, we should be working in that direction. Dave understands that there are federal exemptions, but there are still responsibilities to comply.
- Terry Whitledge stated that when he reviewed the Passenger Vessel guidelines, he couldn't find weather deck references for ADA. Paul stated that the guidelines apply to all areas unless exempt. They have indicated that employee areas are exempt. The passenger vessel guidelines might not be the best reference in determining what is reasonable for Research Vessels.

- Matt Hawkins stated that he feels that the UNOLS ADA Guidelines, (Chapter 5) should refer to the Research Vessel Safety Standards (RVSS). The RVSS should include specific guidelines for safety in operations. Eric Zettler commented that there should be a statement that the RVSS address each impairment (visual, hearing, and mobility). Each cruise is unique as well as the ships.
- There was discussion on wheelchair lock-downs. On the weather deck, there are plenty of areas that the chair can be locked-down to. Terry also suggested lock-downs in the lab.
- Paul Johnson asked if specialized wheelchairs had been considered. Ones that could be locked-down. Terry replied that committee members have suggested this and it may be a solution.

Mid morning break

Workshop Discussion Session 1: Amy Bower moderated Session I. This session focused on identifying the concerns of people with disabilities regarding operations aboard research vessels and discussed these concerns with the individuals responsible for ship safety. The goal was to work together to find solutions. Amy opened the discussion and said that they should try to identify the challenges and obstacles that have not been addressed. The discussion addressed accessibility issues associated with:

- a) Safety
- b) Working Conditions
- c) Living Accommodations

Discussion:

Evacuation Procedures - Amy raised the topic of incapacitated personnel and evacuation procedures. Reply) There are emergency procedures in place for evacuating incapacitated personnel. Similar procedures could be applied for both an incapacitated individual and an impaired individual.

Special Wheelchairs - Dave Glover stated that it is unacceptable to provide a special wheelchair for a mobility impaired person. Chairs are specifically designed for the individual. Frames are rigid.

Post-Evacuation Procedures - Dave Glover also added that guidelines for post-evacuation procedures are needed. Once a physically impaired person has been evacuated from the ship or “rescued” they are totally out of their element and there is a good chance that no one will be available to assist the individual. It is a very important issue.

Buddy System - Amy asked if the buddy system is acceptable. She brings a buddy aboard while at sea. Terry replied that the *Jubilee* requires a buddy system in some situations. In many cases the buddy must be knowledgeable in the area of the disability. Dave Glover cautioned about the Good Samaritan law. If someone has responsibility as a “buddy” he/she is required to be trained because they would not be covered under the Good Samaritan law. The Samaritan law protects individuals who come to the aid of an individual and accidentally do something wrong while

attempting to assist. Dennis Nixon explained that the Good Samaritan law applies to only trained professionals; EMTs, Nurses, doctors, etc. It does not apply to the untrained. He recommended the buddy system for all of the science party. Amy asked what the other scientists felt about the “buddy system.” Terry stated that the buddy system is common during bad weather or at night on vessels. There was a question about the diving buddy system. Terry explained that in diving they usually have both buddies and tenders. Paul Johnson commented that the buddy system worked well for him. He seeks assistance from many members of the scientific party to serve as buddies, not just one individual.

Through out the discussion during Session I, comments, suggestions, and issues associated with working conditions, living accommodations, and safety were recorded onto PowerPoint slides. The information contained on these slides is provided below:

- Working Conditions
 - Wheelchair accessibility of ship provided equipment is needed
 - High contrast for deck obstacles
 - Standardize data outputs- navigation, meteorology, lat/long
 - Maintain line-of-sight in the labs
 - Accessibility of navigation output
 - Shipboard Van access – living and science
- Living Conditions
 - Adequate Lighting is needed
- Safety
 - Warning strips - Tactile stripping at the base and top of ladders, on weather deck edges.
 - Railings at the start of ladders on both sides
 - Adequate lighting all areas – especially at ladders
 - Avoid trip hazards – high contrast paints
 - Reduce passageway obstacles
 - Establish and area of refuge/mustering area
- All areas
 - Adequate lighting
 - Gangway – accessibility
 - Audio signals (door open/close, etc)/ induction mechanisms
 - Establish a pool of adaptive equipment (vans, wheelchairs, etc)
 - Provide guidance for communicating with disabled persons for captain, crew, and marine tech support – this should be addressed in early stages of pre-cruise planning. Include this on the pre-cruise planning form.
 - Incorporate ADA Accessibility and Procedures in the RVSS.
- Issues
 - General Communications
 - Immersion Suits - modification is needed – customized for disabled
 - Post “rescue” procedures

- Buddy System – investigate legal responsibilities
- Passageway widths and turn-around space.
- Elevator reliability

Workshop Discussion Session II: During Session II draft ADA guidelines for research vessel structural modifications were reviewed and discussed. Items that require resolution were identified. Terry Whitledge moderated the session. He reviewed the design features of the Alaska Region Research Vessel (ARRV) that were incorporated to accommodate ADA. (*Appendix IV*). Glosten Associates and the University of Alaska evaluated options for ADA access to the ship's bridge, but determined it would not be accessible. They also could not accommodate ADA access to the marine mammal observation platform. Dave Glover suggested exploring a piston lift system. For watertight enclosures, the ARRV will have a door within a door system to allow passage by individuals in wheelchairs. There will be a personnel lift to access the laundry facilities and they will address access to laundry machine knobs, etc.

Dave Glover pointed out that some of the passageway widths in the ARRV design seem narrow. A 32" passageway would work if the wheelchair can approach head-on. If passageway areas are only 36" wide, the wheelchair would be unable to turn around. They will need a turn-around radius of about 5 feet.

Brittany asked about the use of tie-downs for wheelchairs. Dave Chapman stated that on public transportation, individuals with wheelchairs can back up the chair into clamps and they work pretty well. They allow the user to release themselves independently. The other type of wheelchair restraint is a big seat belt devise.

Amy asked Terry how they decided which ADA modifications to select for the ARRV design. Terry explained that they decided which areas would be essential for the science party to have access to. These include labs and staterooms. They tried to provide make as much as possible ADA accessible.

Dave Chapman commented that there is no mention in the ARRV design of gangway access for impaired individuals. Terry stated that egress issues for the ARRV will present a big challenge due to the extreme tides that are experienced in that region. They don't have a solution yet. Amy suggested that they evaluate a ramp that has switch backs. Terry also indicated that they would look at what is being done in the airline industry

Lunch Break

Workshop Discussion Session III: Session IV was to review and discuss the draft ADA guidelines for research vessels and identify items that should be explored further during the ship tour. Terry Whitledge moderated the session. Discussion and suggestions followed:

- Matt Hawkins explained that the lounge on the R/V *Hugh Sharp* was designed so that it could be converted to an ADA stateroom as needed. However, he commented that the ship's passageways do not have 5' turning radius for wheelchairs.

- Dan Rolland suggested that for the Regional Class design effort we should provide the yard with a list of spaces that a disabled person should be able to access. He feels that this would give the design/yard flexibility in meeting requirements. Bob Houtman added that we should identify the minimum list of requirements for meeting ADA.
- Cruise ships are wired to accept portable kits for alerting hearing impaired individuals during emergencies. There was concern that a wiggler device might not wake up disabled individual on a ship because of the ship's noise and vibration.
- It was suggested that ADA staterooms be equipped with portable refrigerators for medications.
- There are portable alarm systems for vision and hearing impaired individuals that could be used in staterooms and labs. These include vibrator systems and vibrating beds.
- Elevators or platform lifts were suggested for access to various ship levels; however, there was concern about having to rely on the elevator. A back-up system should be considered.
- There was discussion on how shipboard science vans could be ADA accessible. Automatic door openers should be considered.
- The next generation of the ROV *Jason* van should consider ADA modifications.
- Modifications that could improve accessibility for visually impaired persons were suggested. These included:
 - The handrails on ship ladders should extend before the first step/
 - Tactile stripping or rubber textured/bump strips should be installed to alert people of tripping hazards or ladders
 - Signage should be large and in Braille. There is an ADA requirement (216) for signage that should be applied.

Mike Prince, UNOLS Executive Secretary, could not attend the workshop, but he sent an email message to the workshop participants. His message is also contained as ***Appendix VII***.

Annette, Terry, and Dolly,

This picture of John Martin hangs on the wall at MLML in the area dedicated to his memory. Through out his professional career, John was a paraplegic resulting from Polio as a teenager. He did not let this stop him from going to sea and pursuing his research. It did create obstacles and made it harder, and the efforts you are undertaking this week and through out this project are something that he would have strongly supported.

Several important discoveries related to iron fertilization in the oceans, the impact on productivity and the potential impact on global warming resulted from work that John was able to carry out despite his disabilities.

You might consider dedicating your effort to John and others like him.

I hope that you have a productive workshop and I wish I was there.

Regards, Mike

Mid-Afternoon Break

R/V Knorr Ship Visit – Workshop participants spent the remainder of the day touring the R/V *Knorr* to identify potential areas that could be modified to accommodate persons with impairments. Annette recorded observations and suggestions made during the tour:

Observations and suggestions:

- Main Lab:
 - Some items are mounted too high.
 - Lab benches, lab sinks, and fume hoods should be lower for access by wheelchair users
 - Eye wash height would need to be lowered
 - Alarm accessibility for wheelchair users
- Ladders:
 - Warning strips
 - Lighting
 - Gates
- Door lips are needed.
- Fire-pulls would need to be lowered
- Protectors are needed on sharp objects (axes)
- Science users with mobility impairments should be reminded to bring spare parts for wheelchairs and prosthesis.
- Hand rails/grab bars are needed for wheelchair users
- Guide Dogs – Be sure to check on any International Regulations regarding guide dogs
- Bunks – sleeping restraints are needed.
- For wheelchair users, there must be space for turning into staterooms from passageways
- Idea – use sliding pocket doors for ADA staterooms
- Weight of doors can be an issue for wheelchair users.
- Use tactile strips to assist visual impairments; however, there might be associated upkeep/rust issues. As an alternative, consider diamond strip surfaces.

Guidance:

- Learn from experience
- Know your limitations
- Communication is key.

Day-one adjourn

September 19, 2006 - Day Two, Smith Conference Room:

Call to Order Day Two – Terry Whitledge called day two of the meeting to order and provided a brief summary of day one discussions. He asked for comments regarding the ship tour:

- Al Suchy commented on the gangway and explained that WHOI had constructed it for the tour. As it turned out, there was considerable difficulty getting a wheelchair down the gangway. The stop bars that were added to the gangway to prevent a wheelchair from rolling backwards while boarding the ship were a big problem when departing. The bar spacing prevented the wheelchair wheels from rolling down the ramp.
- Amy felt the tour was useful
- Dennis Nixon stated that after observing the challenges of moving through the *Knorr* on a wheelchair, there would be little that could be changed on an existing ship that would significantly allow access for mobility impairments. However, modifications could be incorporated into new ship designs. On the other hand, improvements could be incorporated into existing ships to assist the visually impaired that would be helpful to all ship users.
- Dave Chapman provided a sketch of the toilet room (*Appendix V*). Matt Hawkins pointed out that there is a margin plate for each bathroom of traditionally 6". Bathroom margin plates should be no larger than 2" – or use a trough drain.
- Signage is needed for climate control switches.
- A picture of a door within a door was also presented.
- Dave showed a picture of a wheelchair restraint. It was similar to those found on buses.
- Dave stated that the gangway on the R/V *Savannah*, a 97-foot ship allows ADA access to the ship. It is a good simple solution, but it might not work well in regions with extreme tidal ranges.
- Mark suggested that an accordion type platform might be a way to load and offload gear as well as people.

Discussion on findings and recommendations from ship tour – The findings and recommendations from the ship tour discussed:

- Lab benches are adjustable and can be arranged for wheelchair accessibility.
- Sink heights can be adjusted for wheelchair access.
- Benches are modular and can be adjusted for ADA access
- Fume hoods can be portable for ADA accessibility
- Knee room is needed for wheelchairs.
- The pre-cruise planning form could include questions to allow science users to identify any ADA requirements and lab arrangements.

- It was recommended that tests be run on the ship’s data acquisition programs to determine if magnification software for visual impairments is compatible.
- Dolly Dieter asked how modifications could be implemented to accommodate individuals without use of their arms.
- Special immersion suits would be needed for impaired persons. It was suggested that the operators of the *Jubilee* be contacted to determine what suits they use. A wider range of immersion suits needed
- It was suggested that we communicate with the operators of the *Jubilee* and send them the workshop recommendations for feedback.
- Paul Beatty suggested that the ADA guidelines that are adopted by UNOLS should use “RV###” for specifications. He also indicated that there are ADA spacing provisions for staterooms, labs, etc. He can send the code to Terry
- Warning strips - Tactile stripping at the base and top of ladders, on weather deck edges should be added.
- Railings at the start of ladders on both sides are needed.
- Adequate lighting in all areas is needed – especially at ladders
- Avoid trip hazards – use high contrast coatings
- Reduce passageway obstacles
- Establish and area of refuge/mustering area
- Gates at the top of ladders could be considered
- Audio signals (door open/close, etc)/ induction mechanisms
- Establish a pool of adaptive equipment (vans, wheelchairs, etc)
- Provide guidance for communicating with disabled persons for captain, crew, and marine tech support – this should be addressed in the early stages of pre-cruise planning. Include this on the pre-cruise planning form.
- Incorporate ADA Accessibility and Procedures in the RVSS.

Issues

- General Communications – improvements are needed
- Immersion Suits - modification needed – customized for disabled
- Post “rescue” procedures must be established
- Buddy System – investigate legal responsibilities
- Adequate wheelchair passageway widths and turn-around space.
- Elevator reliability issues (back-up needed)
- Guide dogs – International Regulations should be evaluated
- Weight of doors can be an issue.
- Tactile strips – upkeep/rust issues, consider diamond strips

The full list of all workshop and ship tour issues, suggestions, and recommendations is included in *Appendix VI*.

Mid-Morning Break

Identify Revisions, Actions, and Recommendations Required to Finalize Draft ADA Guidelines – Terry reviewed the draft ADA Guidelines document and comments from the

workshop discussion were incorporated. The revised draft is included as *Appendix VIII* and additions are highlighted.

Various open issues and post workshop activities were discussed:

- Annette will open access to the password protected ADA project web pages. The site will be available at <http://www.unols.org/committees/fic/ADA/ADA_Guidelines.html>.
- Dave Chapman will send Terry information on the Disney ADA kit description: door knockers, etc.
- A recommendation was made to design a van that is ADA accessible.
- Accessibility and Emergency Egress Suggestions were discussed. It was recommended that a slide system (like on airplanes) be considered for emergency egress. Disabled persons should have a self-release mechanism if strapped in during an emergency.
- Recommendation - have a special session at a future RVOC meeting on how to accommodate ADA.
- Dennis Nixon stated that he investigated the legal case involving the buddy system. He found that it was an assault case and this is why Good Samaritan Law would not apply. Therefore, we can recommend the buddy system.
- Gangways – there are textured surfaces that could replace the raised bumps. Also there could be a minimum width specification.
- Amy suggests that Accessibility and Egress issues should be the highest priority item.
- Paul Beatty added that the gangway width as a minimum of 36-inches should be specified. The gangway cleats should be identified as an issue.
- Amy raised the issue about the Captain's role in deciding whether or not to allow an individual to participate in a cruise. Where does this get addressed? On what level have Captains turned away science party members with disabilities in the past? The Captain should have enough information to make an informed decision. Captain Buck suggested that there be words added to the RVSS with uniform guidance to Captains and crew regarding ADA guidelines. Education is key in determining whether or not an individual with a disability can be accommodated.
- Annette stated we need to inform the community about ADA modifications that can be implemented on existing platforms. Terry said that he would add a section to the ADA Guidelines document and we will encourage operators to implement these modifications to existing ships. There are relatively low cost items that would greatly enhance the capability of the ships to visually and hearing impaired individuals.

Assignments and Timeline – Terry Whitley will update the document and provide it to the ADA committee for review.

He thanked WHOI for the work they did in hosting the meeting.

The workshop adjourned at noon.