

**University-National Oceanographic Laboratory System**

**UNOLS**

**ADA Guidelines for Research Vessels**



**Fleet Improvement Committee meeting**

**10 October 2007**

# Committee Member and Observers

## Committee Membership:

- Terry Whitledge (UAF) – Chair, FIC Member
- Amy Bower (WHOI) – Sea-going Scientist
- Eric Buck (SIO) - Ship Master
- David Chapman (UDel)
- Jim Cochran (LDEO) - Langseth Conversion Rep, FIC Member
- Matt Hawkins (UDel) - Safety Committee Rep, New Vessel Operator
- Dennis Nixon (URI) - Risk Manager
- Al Suchy (WHOI) - Marine Superintendent
- Joe Ustach (Duke) – RVTEC Rep

## Corresponding Member:

- David Glover (WHOI) – Disabled Scientist

## Observers:

- NSF – Dolly Dieter and Holly Smith
- NOAA – RADM Behn and Stephan Manzo
- UNOLS – Peter Wiebe and Annette DeSilva
- PEOShips– Dave Barkdale
- LDEO Ship Operator - Paul Ljunggren

# **Americans with Disabilities Act (ADA) Guidelines for Research Vessels**

## **Background:**

- NSF indicated the need for new ship construction and ship conversion efforts to address ADA requirements. Although UNOLS vessels are not passenger vessels and fall under USCG Subchapter U Classification, vessels that support Federally funded academic research should be equipped and arranged as feasible to accommodate the disabled.
- Procedural guidelines to carry out shipboard operations by persons with disabilities are needed.

# ADA Guidelines for Research Vessels

## Tasks:

- Draft preliminary ADA Guidelines for the Regional Class acquisition effort.
- Convene a 2-day community workshop to define shipboard and procedural guidelines required to accommodate sea-going scientists with disabilities.
- Establish general ADA Guidelines for new ship construction/conversion.

## Implementation Considerations

Existing UNOLS Vessels – all classes. There are very few mobility improvements possible but hearing and sight impairments can be easily implemented

New UNOLS Vessels – all classes. All new vessels should have design phases that include recommended ADA design considerations. SMR's of all classes should be updated to include ADA considerations.

Other Issues: Issues other than structural design need to be considered. There is a special section of the Report that lists these issues that need to be considered By vessel operators or general UNOLS membership.

# Timeline

- Preliminary ADA Guidelines for Regional Class Vessels – 10 June 2006
- ADA Guidelines for new ship construction and conversions – first draft 13 September 2006
- Workshop – 18-19 Sept 2006 at WHOI (Knorr)
- Submit Draft ADA Guidelines to UNOLS for review – Oct 2006
- Procedural ADA Guidelines to UNOLS – recommendations will be provided to RVSS

# Regional Class

## Examples from R/V Hugh R. Sharp

- Main deck head expanded to accommodate hand-held shower, ADA sink and grab rails
- Door widths increased to 32 inches
- Width of main passage increased to 48 inches
- Conference room on main deck is convertible to stateroom with berth
- Modular lab benches can be adjusted to conform to ADA heights
- Placement of objects, controls and operating mechanisms normally accessed by the science party will be placed within reach range
- Visual and audible alarms will be provided
- Fire extinguishers, fire stations and emergency equipment will be mounted in recesses so as not to protrude into passageways
- Water tight door with a swing sill (approved by ABS) that can be opened for access giving a 2 inch sill to main deck
- Full stern loading ramp is envisioned for egress

# Jubilee Sailing Trust

Patron of the JST- HRH The  
Duke of York

**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 Jubilee Sailing Trust was established in 1978 with a donation from the Queen's Silver Jubilee Appeal Fund, following an idea conceived by its founder, Christopher Rudd.

The aim of the charity is to promote integration between able-bodied and physically disabled adults through the medium of tall ship sailing. This is achieved by enabling a mixed ability crew between the ages of 16 and 70 plus to crew a tall ship at sea. Voyages range between 4 and 11 days and able bodied and physically disabled people participate on as near equal terms as possible. There are no passengers; everyone works to the best of his or her ability.

<http://www.jst.org.uk>



Since her maiden voyage in 1986, the LORD NELSON has taken 21,874 people to sea. **Of these, 8,630 people were physically disabled and 3,394 were wheelchair users.** Their disabilities included: Cerebral Palsy,

Multiple Sclerosis, Spina Bifida, Paraplegia and many more...

The LORD NELSON is unique in being the only purpose built tall ship in the world. Her many facilities enable disabled crew to perform their duties independently alongside their able-bodied shipmates.

**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 of blind crew members and bright track radar for partially sighted crew. An induction loop and vibrator alarms have been installed for hard of hearing crew members.**

**There are special cabins, toilets and shower facilities for disabled crew and the ship is fitted with a mess deck, fully equipped galley, workshop and of course, a well stocked bar and saloon area.**

The special facilities on board both ships include:

- \*Flat, wide decks which facilitate access for wheelchair users.
- \*Lifts between decks for those with limited mobility - these can be operated by the user.
- \*A stair lift of the type used in the home.
- \*Vibrator pads fitted to the bunks which alert people who are deaf or hard of hearing in the event of an emergency.
- \*An induction loop fitted in the lower mess room to assist those with hearing impairment during the briefing sessions.
- \*Wide aisles below decks and low level fittings.
- \*Guidance track on deck to help blind and visually impaired crew remain central.
- \*Tactile pointers around the handrails on deck which indicate the direction of the bow and the stern.
- \*Bright track radar screen.
- \*Speaking compass with digital readout screen which enables blind people to steer the ship.
- \*Signs in Braille.
- \*Tactile surfaces at the top of stairways to alert blind crew.
- \*Power assisted hydraulic steering which makes it easy for people with little strength to steer the ship.
- \*'Unwin' fixing points throughout the ship so that wheelchairs can be secured during rough weather.

*"What an amazing ship... I couldn't believe that it was easier for me to get around on board than in my own home"*

## **Mary, Leatherhead**

Over 1,744 people were physically disabled and over 630 were wheelchair users.

Their disabilities included:

Amputation  
Blindness  
Cerebral Palsy  
Deafness  
Diabetes  
Muscular Dystrophy  
Epilepsy  
Head Injury  
Hemiplegia (Stroke)  
Hydrocephalus  
Multiple Sclerosis  
Osteoarthritis  
Paraplegia  
Polio (old)  
Quadriplegia  
Rheumatoid Arthritis  
Spina Bifida  
Spinal Injury

## Considerations to Improve Living Conditions

- Provide adequate lighting in all common living areas and staterooms
- Turning space into staterooms from passageways is needed
- Sliding pocket doors may improve clearance distance in staterooms
- Provide bunk restraint rails in all staterooms
- Large format signage should be provided for thermostat controls in staterooms
- Emergency procedure/manuals should be provided in a format (such as electronic) for visually impaired

## Considerations to Improve Working Conditions

- Install ship's equipment to improve limited reach access and for better visibility
- Lab benches, lab sinks and fume hoods should have adjustable heights
- Safety eye wash, shower pulls and pull down alarms should be mounted lower
- Lighting should be improved in laboratory spaces
- Large format data displays should be installed to improve visibility
- Access to shipboard vans should be improved
- Maintain line-of-sight in laboratories to help visually impaired

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# Staterooms

One designated Stateroom or convertible space for mobility impairments with access to the main deck. If feasible, a personnel rated elevator.

- Special considerations should be given for alarms in staterooms:

- Wigglers

- Vibrating Bunks

- Flashing strobes

- Provide modern lighting with brightness controls

- Berthing (RV806)

- Provide rail restraints for berths

- Desks (RV902)

- Toilet, Sink and Shower (RV604 to RV610)

- Possibly install pocket doors to improve floor space clearance

- Install signage for thermostat and other controls

# Common Living Areas

- Passageways (RV403)
  - Recessed protrusions
  - Hand rails and grab bars for mobility impaired
  - Tactile strips installed to alert for obstructions and/or steps
  - Improved lighting in stairwells and ladder areas
  - Door lips that are wheelchair friendly
- Public Restrooms (RV604 to RV606) – One on each accessible deck
- Drinking Fountains (RV602) - one on each accessible deck
- Mess Deck (RV902)
  - One table with clear access
  - Food and beverage service areas should be accessible
- Lounge/Library (RV902)
- Laundry Facilities (RV611) (Operational solution may be needed)



# Scientific Work Spaces

- Reduce reach distances to science equipment controls
- Improved lighting with intensity controls
- Install equipment with high contrast data displays
- Maintain line-of-sight in labs to the extent possible
- Lab bench height in Main/Wet/Computer/Electronics Lab (RV902;RV308)
- Adjustable heights for lab sinks and portable hoods
- Lower safety facilities such as eye wash, shower pulls and alarm pull downs
- Improve access for disabled to science and personnel vans

# Weather Decks

- Ladders – handrails should start before first step
- Gangway design should be developed to assure accessibility for both normal and emergency conditions
- Audible signals and induction mechanisms for hatchways
- Tactile stripping to alert of obstructions or steps
- Paint trip hazards a prominent color such as yellow
- Signage installed to alert of hazards (Refer to RV216)

