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# Adaptive Sailing Resource Manual


*In Cooperation with the International Association for Disabled Sailing*

IFDS






This body of work grew from the original Disabled Sailing Manual from IFDS and contributions to that by Pauline and Ian Harrison, Jackie Kay, Phil Vardy and other IFDS volunteers. Information for the current Manual was compiled/written by Debra Frenkel, LCSW and Betsy Alison, Paralympic Coach for US Sailig with thanks and gratitude to all of those who have contributed to the contents including: IFDS, Sailability Australia, Sailability Rutland, Gowrie Group, local organizations, other agencies and individuals. This work has been completed because of the many volunteers and participants connected to adaptive sailing.

Thank you all.

## From the President of US Sailing

US Sailing is proud to present the Adaptive Sailing Resource Manual. In this guide you will find useful information regarding the adaptation of your facility to support and accommodate people with disabilities. The manual provides detailed instruction on how to properly adapt your boats, train instructors and volunteers, learn about different types of disabilities and recruit new sailors for your program and much more!

Sailing is a sport of freedom – of the wind, water, body and spirit. This manual is designed to help you develop programming that shares the freedom of sailing with people with disabilities. You will be pleasantly surprised to understand just how practical this is for your organization. The manual will show you how!

Thank you to Debra Frankel, Betsy Alison, IFDS, Sailability, our US Sailing staff, and the many local organizations, agencies and individuals who worked tirelessly to put together the Adaptive Sailing Resource Manual.

We hope that you find this incredibly helpful in developing and implementing your Adaptive Sailing Program.

See you on the water!

**Tom Hubbell**
**President, US Sailing**

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## From the President of the International Association for Disabled Sailing

The IFDS is thrilled to see this co-operative venture with US Sailing come to fruition. The collaboration and sharing of resources to make this Adaptive Sailing Resource Manual available has been very worthwhile for all of us. It supports the values of IFDS which are equity, opportunity to excel and empowerment for sailors with disabilities.

IFDS exists to promote sailing activities for people with any type and degree of disability. I am certain that the IFDS members (Recognized National Authorities) will use the knowledge and advice captured in this manual. It will enable them to expand the horizons and opportunities for those with a disability who want to explore sailing of all kinds be it cruising, racing or just pottering around on the sea, river or nearby lake.

This Manual will help anyone with an interest in growing the sport, anywhere in the world, to make that happen.

Many thanks to all who have contributed to making this Adaptive Sailing Resource Manual possible.

Kind regards.

**John Twomey**
**President, IFDS**

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# I. INTRODUCTION-GETTING STARTED

A community is made up of all sorts of individuals. Our philosophy at US Sailing is that everyone should have access to the sport of sailing. We support the development and promotion of sailing for people regardless of their skill level and physical abilities. With this manual, we hope to assist you in becoming more aware of the needs of those living with a physical or mental impairment. We also want to help you make your facility universally welcoming and safe.

## What you need to know

This manual is full of information that will offer the ability to include your community members with disabilities in the sport of sailing. This section is a look at *"How to Get Started at a Glance."* It is possible to get overwhelmed when seeing all that is offered in this manual. Here is an outline to put you at ease and get you started. Remember, the goal is bringing the sport of sailing and the enjoyment of it to those who may not otherwise have the opportunity to experience the freedom and excitement that sailing offers.

**Here are a few suggested steps to help you get started:**

1. **Do research**
   Since you're reading this manual, you've taken the first step towards creating a successful adaptive program. Many organizations fear that their program isn't equipped to run a program because they don't have the facilities/resources, funding or proper staff training. However, as you'll find in this manual, there are a variety of inexpensive adaptations that will allow you to run a very successful program without over extending your resources. Additionally, this manual provides a variety of suggestions for how to best equip your staff and volunteers, to teach sailors with disabilities. It's also highly recommended that you reach out to other organizations for suggestions.

2. **Prepare your equipment**
   Prepare your sailboats, safety boats and facilities by making necessary modifications. It is beneficial, whenever possible; to include someone with a disability in your planning as they will be sensitive to what needs to be done. In this manual we show examples of a variety of modifications and adaptations that will make this process easier.

3. **Design a program**
   Holding a "Come and Try!" day is a great way to introduce individuals with disabilities to sailing, as well as recruit for your program. Design the day so that you have activities both on the water and additional sailing related activities on land. **DON'T FORGET TO HAVE FUN!!!** Make it a social event. Remember, at the end of the day your ultimate goal should be to teach someone to sail. Additionally, figure out ways to retain sailors after the initial sailing day. You won't get 100% of participants returning but retention is a key goal for any program.

4. **Train your staff/volunteers**
   Explain how the program will operate and make sure everyone is properly trained. If you need additional support, contact your local hospital or universities with Physical or Occupational or Recreational Therapy programs to see if any therapists would like to volunteer their help.

5. **Find sailors**
   Pick a date, time and let your local community know. Get the word out! Local social service agencies can connect you with potential sailors through hospitals, Special Olympics, Therapeutic Recreation Departments (at the city or county level) or veterans groups. Be sure to ask members of your sailing center to see if they know of individuals or groups who should be asked to join in.

6. **Plan the next steps**
   Once you run a one day program, decide what your next step will be. Develop conversations with local agencies to see if you can coordinate a regularly scheduled opportunity for sailors with disabilities. Look into grants and additional revenue streams that may be available specifically for your organization.

## Equipment needs for a new adaptive program

The following is a brief list of what might be used in your initial proposal to start an adaptive sailing program:

- Boats: 1-3 of the same type of boat that are already or can easily be made accessible, i.e. Access Dinghies; Freedom 20s; Sonars; any open cockpit keelboat that is easily adapted or wide, stable dinghy such as a Flying Scot.
- Trailer or Dry Rack storage for the boats or tie up area alongside a permanent or floating dock
- Safety boat
- Safety boat trailer/dry rack storage
- Life Jackets/PFD's
- Whistles
- Lift to transfer sailors from dock to boat such as a Hoyer lift (not necessary to begin, but a real benefit if available) or transfer box
- Lift harness (if you have a lift)
- Two-way radios
- Bailers or hand pumps (need dependent upon boats)
- Floating marks (for instruction and practicing skills)
- Mushroom anchors for marks
- Bullhorn/Loudhailer
- Tools and toolbox
- First Aid kit
- Program Release/Waiver (for participants and volunteers)

Additional needs for your specific venue may be necessary. There are a great number of organizations and people who will offer their expertise and experience to assist you. Feel free to contact them through the resources listed at the end of this manual.

## II. DISABILITY AWARENESS

There are a wide range of disabilities, and even the same type of disability will affect people differently. Some categories of disabilities and some challenges they may present include:

1) *Disabilities that may limit physical mobility*: spinal cord injury (SCI), cerebral palsy (CP), paralysis (paraplegia or quadriplegia), muscular dystrophy (MD), fibromyalgia, cystic fibrosis, amputations, multiple sclerosis (MS), arthritis, and spina bifada.
   - **Possible Challenges for Sailing:**
     - Equipment may need to be adapted to suit the person's needs.
     - The instructor/volunteer may need to assist with helping the sailor on and off the boat.
     - The sailor may fatigue easily due to muscle weakness and spasticity.
     - Mobility issues may increase susceptibility to hypothermia in cooler conditions and hyperthermia in hot, humid conditions.
     - There may be some difficulty with balance on and off the boat due to coordination issues, level of spinal cord injury/paralysis, and sensory loss.
     - Reduced sensation or paralysis in the limbs could lead to injuries of the feet and legs. It is advisable to wear sneakers while sailing and pad any acute edges on the boat and equipment. Padded shorts and pants are recommended in addition to a cushion or padding under the buttocks of those with spinal cord injuries.
     - Loss of bladder or bowel control.

2) *Developmental disabilities:* Down syndrome, traumatic brain Injury (TBI), cerebral palsy, autistic spectrum disorders, cystic fibrosis, muscular dystrophy, epilepsy, and diabetes
   - **Possible Challenges for Sailing:**
     - Balance may be a problem on and off the boat.
     - Sailors may fatigue easily.
     - Depending on the disability, it may be necessary to modify some of the sailing equipment.
     - The instructor/volunteer may need to assist with helping the sailor on and off the boat.
     - Sensory impairments may reduce the ability to feel pain, and an injury may go unnoticed.
     - Diabetics need to monitor their blood sugar levels. Ask the sailor what his/her needs are and familiarize yourself with their treatment and action plans. The sailor might need to keep their insulin nearby in a cool dry place as well as a snack should they have an insulin reaction (low blood sugar).

3) *Visual impairments:* Anything that causes a person to have difficulty seeing such as: congenital blindness, amblyopia, strabismus, cataracts, diabetic retinopathy, glaucoma, and macular degeneration.
   - **Possible Challenges for Sailing:**
     - Sailors may have difficulty becoming oriented within the facility. This can include the direction of the water and docks, location of boats and equipment.
     - Difficulty understanding the direction and distance to the buoys and other boats on the water. Audible aids and cues can help the sailor.
     - Difficulty understanding the direction that the wind is coming from, and the velocity of it. Sensory cues will help the sailor. Additionally, giving consistent and frequent communication

and feedback while out on the water will be helpful and useful to the visually impaired sailor.
    - Not understanding where everything is positioned within the boat. Using tactile cues and different size lines, as well as an orientation, will help familiarize them with the boat.

4) *Hearing impairments:* Anything that affects a person's hearing such as conductive hearing loss such as sensor neural hearing loss, auditory neuropathy spectrum disorder, mixed hearing loss, and central hearing loss.

    - **Possible Challenges for Sailing:**
        - Difficulty identifying specific control lines, sheets and fittings. Labels on equipment and visual cues, such as marks on particular lines or fittings, will be beneficial to the sailor.
        - Unfamiliarity with the facility or sailing area. Using maps and charts provides a great resource for acclimation
        - Miscommunication on when to perform actions such as moving the tiller or trim a sail. Creating well-defined (and agree on) clear visual signals with the hearing impaired sailor will solve this problem. For example, thumbs up means sail is at a good trim, thumbs down means sail needs adjusting. Waving your hand side to side means let sail out; tapping your knee means trim sail in.

5) *Cognitive disabilities:* Autism, Traumatic Brain Injury (TBI), Dementia, Attention Deficit disorder (ADD), dyslexia, dyscalculia, Aphasia, learning disabilities or some kind of difficulty with cognitive calculation or processing.
    - **Possible Challenges for Sailing:**
        - Proficiency of the sailor's water safety skills.
        - The movement of the boat under sailing or an abrupt change in motion (like heeling over in a gust of wind) may cause him or her to become fearful or erratic.
        - Misunderstanding of expectations and directions. Be concise and deliberate when communicating.
        - Problem-solving for the sailor may be difficult in a pressurized situation. Positive reinforcement, encouragement, and consistency should help the sailor process and remember the sailing training.

Keep in mind that people living with the disabilities mentioned above may use a mobility, visual, or hearing aid such as a wheelchair, walker, or cane. Some might be accompanied by a family member or personal care attendant (PCA). The individual may be able to walk without assistance but may have difficulty navigating stairs and other barriers. Sitting and/or standing for extended periods of time may be a concern for some participants. Certain medications can affect their endurance, stamina, and focus. It is important that you ask the participants in your adaptive sailing program what their concerns and needs are, be sensitive to those needs, and monitor the activities they are participating in to make sure that they are comfortable and enjoying their sailing experience.

Some topics that you may want to review with your staff and volunteers when working with individuals with disabilities and special needs are:

- Viewpoint
- Communication
- Personal space
- Wheelchair information
- Prosthetic devices

## View point

Having a disability doesn't automatically qualify as needing assistance.

First and foremost, if you think someone may require assistance, **ask if they would like help!** If they accept, ask them how best to help and listen carefully to what they tell you. NEVER assume that you know best how to help a specific individual. If they do not know how to facilitate some aspect of an activity, you might suggest possible solutions. Individuals with disabilities should be encouraged to take an active, supportive role in the operation of the program and to do as much as possible on their own. This enhances their independence and gives them an opportunity to be an asset to the program.

Training and support to acquire new skills should be offered to those with disabilities as it would be to any other sailor at the facility. It is important for participants with disabilities to be given achievable tasks and be encouraged to progress at whatever rate they are comfortable.

*TIP: It is best to always refer to the ABILITY rather than DISABILITY. The focus should be on achievement, acknowledging and nurturing the ability.*

## Communication

Some people with disabilities may have difficulty with communication.

It is important to establish how a non-verbal person communicates YES and NO. Ask them to show "yes" and then "no". Communication might become easier when you phrase questions requiring a YES or NO answer. If the person is not able to even give you a "Yes or No" response, ask the person who brought the participant to the sailing center how much the participant understands and what the best way to communicate with that individual is. The PCA (Personal Care Attendant), family member or friend should be able to show you significant signs or communicative mannerisms that are identifiable and helpful.

You need to be patient when a person has difficulty with verbal communication. If you can't work out what the person is trying to tell you, ask them to slowly repeat what they've said. Don't be embarrassed to say that you can't understand. If you have a question, just ask. Speak to them in a clear and concise tone, keeping your sentences short and simple. Give them time to answer and never cut them off by finishing their sentences.

When speaking with a person in a wheelchair, talk directly to them. Do not talk around or over them to their PCA or companion. Try getting down to eye level and make sure they can hear you.

When interacting with someone with a hearing impairment, it is important to keep in mind that some of these individuals may have partial hearing loss and can communicate fairly well. Other hearing impaired individuals

might read lips or use sign language. Be mindful of how they prefer to communicate. If they communicate through sign language and you do not have someone on staff or a volunteer who can sign, that participant may want to bring a sign language interpreter to the sailing sessions.

When communicating with someone with a visual impairment, always make sure you introduce yourself and let them know you're there. It is equally helpful to let them know if you are leaving an area. They may request your assistance but never assume that it is needed. The individual may have a guide dog. Always check with the individual on how to interact with the guide dog. Remember, that this is a service animal.

Communication is a two-way process. Relaying a message through speech or a communication aid is ineffective without a careful listener. When a participant is communicating with you, focus on them and listen to what they are saying. You may want to repeat back the message you think they sending to you to confirm it. After you have given instruction to the sailor, it may be helpful to have the individual repeat back what you are communicating to ensure understanding.

Most importantly, staff and volunteers should always be observant, respectful, and pleasant to anyone coming to sail at your center.

## Personal space

The use of personal space and physical interaction can be a type of non-verbal communication. Personal space requirements vary from person to person. Unwanted intrusions into personal space might lead to a person withdrawing or having an outburst, depending if he/she has a behavioral disorder.

A **physical interaction** is one of the most important non-verbal signals. Touching can be perceived as a very positive thing, but it can also be perceived as a negative. On the positive side, touching is one way people demonstrate protection, support, and caring. In its negative context, touching may signal superiority and dominance. A person with a disability may not necessarily want to be touched or assisted but is unable to communicate that. Staff and volunteers need to be aware and sensitive to this issue. Be cognizant of the reaction you receive. If you attempt to assist someone stepping on the dock and reach out to hold their arm, they might not be able to speak up to tell you "no". Pay attention to their facial expressions or body language. Are they looking angry or worried? Are they trying to pull away? Be aware of how your physical interaction is making that person feel.

## Wheelchair information

Do not assume that a person in a wheelchair wants to be pushed. ALWAYS ask first. A person's wheelchair is part of their personal space. It's almost an extension of them and should be treated with respect. You should never lean on or hold the wheelchair unless you are assisting. Never leave the chair unattended without first putting on the brakes. After the participant transfers into the boat, make sure their wheelchair is moved well away from the edge of the dock or water. Try not to leave the wheelchair in the sun/weather while unoccupied. If there is no shelter or cover for the chair, consider turning the cushion upside down or flip the chair over to protect the seated area from the sun or weather.

There are many different models and styles of wheelchairs. People with upper body strength will generally use a **manual wheelchair**. Manual wheelchairs need to be pushed or self-propelled. Manual wheelchairs come in a wide variety of sizes, colors and performance levels.

Some issues to be aware of with a manual wheelchair: If the chair is difficult to push, the tires may be flat or low on air. It might be helpful to have a bike tire pump on site with some nozzle fittings in case of a low or flat tire. Uneven ground, sand, and large stones should be avoided because it is very difficult to push a wheelchair over those surfaces. While on the dock it might be a good idea to keep the brakes on to help keep the chair from rolling.

Some manual wheelchairs do not have brakes and if left empty and unattended should be flipped over to keep from rolling. Try not to let the cushion lay on the ground. Remember, the sailor will need to sit on that cushion when they return from sailing.

**Power Wheelchairs** are a bit more complicated. They too vary in size and shape. To move a power wheelchair manually, there is a small wheel/knob/lever inside the back wheels, which can be unlocked. Note that these chairs are very heavy when unlocked into manual mode, some exceeding several hundred pounds. Power wheelchairs need to be turned off when stationary to keep the battery from dying and to prevent any accidental, unanticipated movement. If you need to move a power wheelchair, ask the owner of the chair for his/her permission and for any specific instructions that might be needed. The electronic controls are extremely sensitive to touch. So great care must be taken when attempting to operate/move one, especially when near the water's edge.

*TIP: Wheelchair users know their equipment, so ask them to review how the chair works before trying to maneuver it.*

## Prosthetic devices

A prosthetic device or prosthesis basically refers to the replacement of a body part, for example an arm or leg. Some people are born without body part(s) and some people have to have body part(s) amputated due to an injury or illness. Sometimes sailors leave their prosthetic arms and legs on the dock when they head out on the water. Make sure that the prostheses are safely secured or stored, perhaps in the dock house. It might be a good idea to designate a space so that prostheses stay dry and that you and the sailors always know where they have been put for safe keeping.



# III. FACILITY REQUIREMENTS

Many people with disabilities sail successfully at venues with no special facilities or adaptations. Challenges with physical access can be managed with a positive attitude and minimal loss of independence for sailors who have disabilities. Prior to inviting individuals with disabilities to your site, you may need to make a few adjustments to your venue and familiarize your staff and volunteers with adapting instruction and/or boats.

Accessible facilities benefit *everyone.* Much of the following can be introduced easily at the design stage or at minimal cost if changes need to be made to your site.

Take a look at your sailing center and ask yourself the following questions:

- Do I have docks that are accessible to a person in a wheelchair?
- How will a wheelchair-using newcomer get into a boat?
- Are my restrooms accessible?
- Are my parking lot, walkways, and building doorways accessible?

Consider borrowing a wheelchair and navigating around your facility to see what challenges you come up against. This is a good way to become sensitive to the needs of someone who uses a wheelchair. You may notice that signs, doors, counters or other things are difficult to reach, maneuver around or utilize. You can also simulate being visually impaired by blindfolding yourself (accompanied by a sighted partner) to give yourself an important perspective of obstacles and dangers for someone who cannot see. While assessing your facility, consider the following:

## Ramps, Stairs, Docks and Pontoons & Shore Launching

### *Ramps*

Ideally, ramps should have gentle slopes and level areas near doorways to prevent wheelchairs rolling back down the ramp when opening a door. Level areas that break up longer ramps give those in wheelchairs a place to rest. If the rise and fall of the tide at your facility is greater than 3 feet (approximately 1 meter), the ramp may become very steep at low tide (greater than 1:7 ratio). Wire mesh, non-skid pads or industrial strength rubber mats can be laid over areas which may be slippery when wet to prevent a wheelchair from sliding. Hand and guard rails can be installed on either side of the ramp for safety and additional support.

If the ramp cannot be extended to make the slope gentler, consider:

- Adding treads no wider than 8 inches (20cms) for wheelchair users. This width allows the wheels of a chair pass easily either side of the treads;
- Adding non-skid pads or treads to make the surface non-slip when wet;
- Providing extra help on the dock at low tide to assist sailors getting up or down the ramp.

### *Steps and Stairs*

Some wheelchair users can manage a small step independently but two or more steps may require a small ramp or physical assistance. Graduated longer ramps or elevators provide an alternative to stairs but are more costly to install.






There are stair lifts on the market that provide a less expensive option for installing an elevator. Some lifts are open to the elements and others are enclosed. If you think you might want to add an elevator or lift to your building there are grants for such projects available through local government agencies, charities, or local service organizations/foundations.


### *Docks & Pontoons*

The dock, or pontoon, should be wide enough to allow two wheelchair users to pass by each other, but this is not absolutely necessary (approximately 6 ft. / 180 cm). It is important for the dock to be stable and not tilt over and submerge if everyone moves to one side. It should have a non-slip surface with minimal gaps to prevent the small wheels (front casters) on the wheelchair from getting caught (carpeting, webbed canvas or wire mesh may be used to cover the gaps.) A wooden strip (1 in. x 1 in. / 25mm x 25mm) along the edge of the dock would be very helpful to alert a person with a visual impairment to the dock perimeters, and to prevent wheelchairs from accidentally rolling into the water.


### *Shore launching*

Shore launching requires a firm, smooth beach, surface or ramp. If necessary, this can be improved by laying carpet, planked walkway, heavy duty rubber matting or plywood on top of the surface.



Though wheelchairs can be pushed safely a little way into salt water, they should not be in the water for long periods of time. The salt should be washed off as soon as possible and any mechanical parts lubricated. A beach wheelchair could also be used as an option. These chairs can be rented or purchased, and if you do a lot of shore launching, they might be a good idea for your sailing center.

Depending on the type of disability, some sailors might have a hard time staying upright in the beach wheelchair since they aren't as supportive as typical wheelchair. The sailor will need assistance with moving around in this type of wheelchair. There are power beach wheelchairs on the market, but they are far more expensive.

### *Transfer Box or Board*

Individuals who have good upper body strength might use a transfer box/board. This is a box with a hinged board attached that when opened up, provides a ramp to slide from the box top to the boat. Position the transfer box/board so that they can transfer from their wheelchair onto the box, then slide onto the boat and maneuver themselves into sailing position. A transfer board allows the sailor to transfer directly from their chair to the boat by sliding from one to the other.






### *Hoyer, Electronic Lifts*

There are many different types of lifts that can be used to assist in the transferring of people with disabilities. These lifts are extremely helpful with larger people who may be difficult to lift manually. ANY lift used must be approved to hold significant body weight and must meet the requirements of the Department of Health. A hydraulic Hoyer lift is used at many sailing sites. These are very easy to use as long as they are mounted securely in a convenient position on the dock that allows easy access to the boat being used. Although the mount will be permanently placed on the dock, the lift itself can be removed and stored indoors when not in use.

An electronically powered lift will do the same work as a hydraulic pump lift without having to manually pump it up and down. These approved lifts can be easily found on the internet – they are often utilized as pool lifts.

**Note**: Do not exceed the recommended weight limits for the hoists that you use at your facility.

### *Slings or Lifting Harnesses*

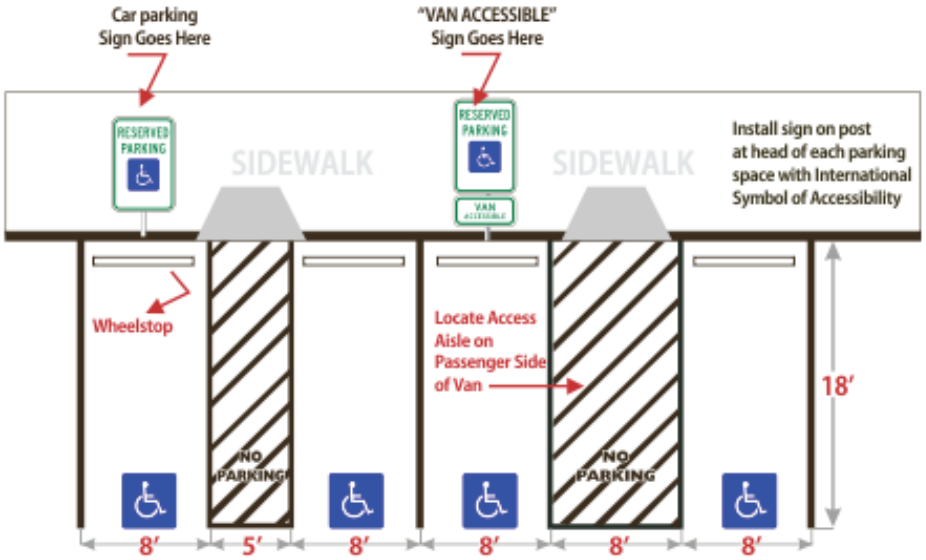
Slings or a lifting harness are needed for both the Hoyer and Electronic lifts. Some sailors will have their own personal slings/harnesses that they prefer to use. However, the sailing center should meet the requirements of the Department of Health when selecting types of slings for the facility. Slings that cradle the sailor around the back and buttocks and that cross between the legs are highly recommended because they offer the extra safety of keeping a person from sliding out of the sling during the transfer. Some sailors prefer to use climbing or mountaineering harnesses typically used by big boat bowmen.






### *Accessible Parking Spaces*

Parking should be available close to the sailing center's building, dock or beach with enough space for a car door to open completely, or for a van to lower a ramp. Clear signage for designated spaces reserved for drivers and passengers with disabilities should be made available.




**OPTION 1 - ACCESSIBLE PARKING**

Car Parking space 8' wide minimum with access aisle 5' wide
Van parking Space 8' wide minimum with access aisle 8' wide

### *Signage*

Signs that use a large font size and style (sans serif), high contrast, and are displayed at a consistent height will be helpful to those with visual impairments that can read visually and by touch. Make sure the lettering is highly contrasted to the background and that all signs have a non-glare finish. Consider using red or black text on an all-white background. Tactile characters should be all uppercase, thin, raised or etched, and widely spaced. You may also want to include Braille when having new signs made for your sailing site.



### *Accessible Doorways*

The width of the door frame should be a minimum of 36" to accommodate most wheelchairs and ideally have 36" of *clear* space when the door is open. A good color contrast between the door frame and the surrounding walls is helpful for people with visual impairments in identifying the doorway. If there is a lip or a step up or down, consider posting a sign and laying caution tape or painting the threshold a bright color to draw attention to the lip or step. Handles and/or grab rails on the inside and /or outside of a door make it easier for people to pull themselves through the doorway. Lever handles make it easier for those with a disability to open doors.




### *Pathways/Walkways*

Ideally, pathways and walkways should be hard surfaced (not sand, gravel or muddy grass) and clear of any obstructions. For rough or uneven surfaces, you can use old carpet, sheets of wood, metal grids or snow fences on the ground to provide a temporary solution for accommodating wheelchairs and people using prosthetic devices. If you have a program with many participants who are visually impaired, having inset guidance tiles to allow easy navigation of sidewalks and walkways at your facility.



### *Accessible Restrooms/Changing Rooms*

The following features can help make an existing restroom more accessible: Wide doors with a pull rail on the inside; non-slip floor surface and grab rails by toilets, sinks and showers, both vertical and horizontal in position. A seat or bench for changing with nearby clothes hooks set at a reachable height is ideal. Toilet stalls with doors opening outwards with pull rails are also ideal.


### *Accessible Shower(s)*

An accessible shower should have a level floor with the floor sloping gently to a covered drain hole. Some kind of waterproof seating such as a shower bench/stool or a fold down wall mounted seat, or even a plastic garden chair with arms can turn a regular shower stall into an accessible one. Showers should ideally have grab rails, and a detachable hand held showerhead (easy conversion kits available at any hardware store), and water controls at a height that can be easily reached when seated.





### *Classroom/Social/Common Areas*

Any areas used for general instruction or meeting should have clear unobstructed space for wheelchairs to move around in with adequate pathways between tables and other fixed obstructions. Avoid using throw rugs on the floor. Throw rugs tend to be very slippery since they do not stick to the floor and people can easily trip over them when using a cane or walker. Low height serving tables/counters are also helpful for wheelchair users.

Tables with chairs or moveable benches (not fixed/attached benches) are preferable to allow a wheelchair to easily replace a chair. If you are looking to add seating to your facility, you can purchase wheelchair accessible picnic and park tables.



# IV. SAFETY, RISK MANAGEMENT & INSURANCE

## Safety Considerations for People with Disabilities

Sailing is a safe sport as long as policies and procedures that have safety in mind are implemented and followed. Generally, the same policies that your program has with all participants (like wearing PFDs while on docks or near the water) should be the same for participants who have disabilities. However, there are a few considerations that are important to discuss in this manual.

When specific tasks are being done, like transferring onto the boat or securing the sailor in a seat on the boat, it is important to examine how you are handling that task. Is the way the task is being handled safe for you and for the sailor? Is there a safer way of doing it? It can be very helpful to brainstorm with instructors, caregivers, and the sailors themselves to determine what works best and most safely for everyone.

Safety should be a cornerstone of your sailing program. The rest should be pure fun, sport and enjoyment.

### *Communication*

*"Ask the Participant"* is a good mantra to remember. Does the participant have a problem that might affect either their own safety, or the safety of others? If the individual is unable to communicate well – ask a caregiver or the person who is accompanying the sailor. If there is a safety issue, it is important to inform anyone who will be working with this individual and devise a plan (keeping that specific issue in mind) to insure the safety of the sailor and others. For example, a person with paraplegia may tell you that he/she has an injury on his/her foot, and it is covered in a bandage and sock, but must not hit/rub against any other object and needs to be protected from injury. You may want to wrap the person's injured foot in a towel or some soft foam and tape it on to ensure that the foot remains clear of additional harm.

### *Behavioral issues*

For behavioral issues that may pose a safety concern for the individual sailor or someone else on board, you may want to assign a personal aid or instructor for one on one attention to that particular individual. This will enable a consistent, strong structure for the sailor to follow. Having the aid follow up and help maintain order in the classroom/on the boat, will help protect not only the individual from harm, but others as well.

With some groups of disabilities, you may have several participants who have behavioral issues. If you do not have an existing policy on behavior at your center, you may want to formulate one. This can be done with advice from the leaders of the particular group you are working with, and might include behavior modifications, rewards, and appropriate discipline (which might include expulsion).

### *Hypothermia, Heat Exhaustion & Dehydration*

Attention should be given to any person who may have a disability and not be personally aware of the dangers of hypothermia and heat exhaustion. Some participants may have no sensory feeling of "cold" or "hot", or be unaware of the meaning of that feeling. Similarly, some participants may find it difficult to judge their stamina accurately. (Sunscreen and hats are extremely important and should be worn by these individuals.) Some individuals with spinal cord injuries do not sweat below their injury level – so for those with high levels of injury (especially cervical injuries) cooling through sweat evaporation my not be possible. Having misting spray bottles of water on hot days can be very helpful. Under the direction of the sailor, an instructor might spray mist on the face and arms of a sailor to promote evaporation on a hot day to cool the sailor.

Participants need to take water with them while engaged in activities and need to be encouraged to drink fluids while they are out on the water to avoid dehydration.

### *Autonomic Dysreflexia*

Autonomic dysreflexia, also known as hyperreflexia, refers to an over-active Autonomic Nervous System, which causes an abrupt onset of excessively high blood pressure that, if not treated promptly and correctly, could lead to stroke or seizures (or in extreme cases, death). Persons at risk for this problem generally have spinal cord injury levels above T-6. Autonomic dysreflexia can develop suddenly and is considered a medical emergency. It occurs when an irritating stimulus is introduced to the body below the level of spinal cord injury, such as an overfull bladder or an ingrown toenail. The stimulus sends nerve impulses up the spinal cord until they are blocked by the lesion at the level of injury. Since the nerve impulses are blocked by the injury and can't reach the brain, a reflex is activated that increases activity of the sympathetic portion of autonomic nervous system. This results in spasms and a narrowing of the blood vessels which causes a sudden rise in the blood pressure. Signs and symptoms of autonomic dysreflexia are a pounding headache, goose pimples, sweating above level of injury, slow pulse, high blood pressure (>200/100), red face, blotching of skin above injury level, restlessness, nasal congestion, nausea, and cold clammy skin below the level of injury. Though this is not a common occurrence, instructors and volunteers should be watchful for signs of autonomic dysreflexia when working with sailors with high level spinal cord injuries, especially those who are quadriplegics.

### *Personal Flotation Devices (PFDs)*

Coast Guard approved Personal Flotation Devices (PFD's) must be worn by each person near or on the water. Most people with disabilities can use foam core vest style PFDs. If for some reason, the sailor's movement is hindered or obstructed by the foam core PFD or if their body type or stiffness will not allow a regular foam PFD to be worn, the inflatable vest type PFD provides an alternative.

*TIP: For safety reasons and to prevent injury, inflatable PFDs should NEVER be worn underneath restraining harnesses or straps!*

It is important that each sailor try on a PFD to make sure that it fits, and if possible, test it while actually in the water with someone assisting. This is to insure that it adequately supports the sailor! Sometimes crotch straps may need to be used for someone who has no upper limbs to prevent the vest from sliding up over the head when in the water. Since a PFD is a very personal item and should fit the individual requirements of a sailor, it is highly recommended that each sailor purchase and maintain their own PFD!

*TIP: It is every sailor's personal responsibility to test their safety equipment and be sure that it is always in proper working order!*

### *Risk Management*

Many sailing programs mandate **swim checks** for new sailors. A swim demonstration might not be possible, especially for a high level quadriplegic that needs assistance with dressing and transferring. In some cases, you will be able to modify a swim check to be a floating requirement with the appropriate PFD, whereas in others you'll need to eliminate the swim check completely. Be cognizant of your participant and their capabilities.

Additionally, for those who cannot swim, you may want to modify your instructor-to-sailor ratio or increase the number of safety boats on the water. If possible, you might be able to do a swim check in a heated swimming pool. Many sailors with disabilities can swim and/or float.

Hypothermia/Heat Exhaustion can be a higher risk for individuals with disabilities. Depending on the level of spinal cord injury he/she may not be able to gauge or regulate their body temperatures like able-bodied sailors, so they need to be reminded of appropriate weather gear/dress options and monitored to make sure they are okay. It's especially important to get sailors on or off the boat quickly, and out of the element such as excessive heat and sun.

Some sailors with disabilities may not drink enough because they don't have a way to eliminate while on the boat or don't want to, which puts them at a higher risk for dehydration. All participants need to be encouraged to drink fluids.

Paralyzed limbs are also a concern and should be handled with care, especially when the person is being lifted in and out of the boat. Make sure that someone is tending to the loose limbs to guard them from harm. Sailors with paralysis can get hurt, bruised or cut and not know it due to a lack of feeling below their level on injury.

Once safely in the boat, it is helpful for the sailor to secure loose limbs together (legs with a Velcro elastic strap) or a hand secured onto the tiller if skippering the boat. Again, ask the sailor what they prefer and what they think will work best.

As stated earlier in this manual, special seating is important for sailors with disabilities to insure stability, safety and keeping the individual from being injured, especially on sensitive pressure point areas. The sailor should wear protective clothing on his/her legs and feet, i.e. socks, shoes, leggings/pants, and use a cushion for pressure relief. Please see the seating section in the Boat Adaptations section. Cushions are vital pieces of equipment for sailors with disabilities since they provide essential skin protection, comfort for those with limited movement when they will be seated for long periods of time, and helpful for those with limited trunk stability to maintain a certain degree of support. Jay Protector cushions that strap onto the legs and waist to protect the backside/buttocks or a Roho cushion are two examples of sailing appropriate cushioning options.

Medications may be necessary for some sailors, and as such, they may need to carry it with them, i.e. asthma inhalers; heart medications; etc. The sailing center/instructor should know about the medication and know what it is used for in case of an emergency. Otherwise, medication, as with any other sailor, should not be administered by staff/volunteers.

## Insurance

Insurance coverage for sailing organizations varies widely. Some insurance programs cover adaptive sailing activities without need for policy endorsements (changes) however; you should not rely on that to be the case. Have the leadership of your sailing organization contact your insurance agent and clearly outline the adaptive programming you are planning to add. If additional information is needed, here are some of the elements you should offer to help establish a program scope for your insurance carrier.

- Number of adaptive sailing participants
- Number of staff and volunteers
- Number and type of boats involved
- Training of staff (US Sailing Certifications, etc.)
- Frequency and duration of sailing sessions
- Location of sailing sessions

All activities on the water pose inherent risks that cannot be avoided. Asking all volunteers and participants to sign a standard waiver/hold harmless agreement is prudent and commonly instituted in other instructional sailing programs.

Many of the solid risk management techniques outlined in Gowrie Group's Burgee Program Safety Manual apply to adaptive sailing programs as well. Orientation and training of your staff and volunteers is critical. Leadership and a cultural awareness of safety at your sailing organization will make the necessary difference to ensure a safe environment for your employees, volunteers and participants. Make sure everyone knows what they are expected to do in case of emergency -- for an on the water incident, should they call 911/Channel 16 or both? Who will take control in an emergency situation? A pro-active awareness of adaptive sailing participant's unique characteristics, as outlined in this book, such as reduced stability or an inability to regulate body temperature, is required of the people leading your program.

Should you program acquire adaptive equipment such as Hoyer lifts, transfer benches, ramps, etc. you should review your insurance policy limits to make sure that this property is adequately covered for loss. The bottom line is that insurance coverage is available. Pay attention to risk management issues that are unique to adaptive sailing as well as those that are common to all sailing programming. Vigilance pays.

# V. STAFF, VOLUNTEERS & PARTICPANTS

## Staff

Having a key person dedicated to the inclusion of adaptive sailing into your organization is essential to the program's success. As with any new program, there are many facets to setting up the program: recruiting volunteers and participants, and then implementing the actual program. Sailing program staff members do not need any formal disability certifications to instruct individuals with disabilities, however, training in disability awareness and managing volunteers is very important.

It is essential that the person in charge of the adaptive sailing program at the sailing venue be well supported by his/her co-workers. The program cannot and should not be operated by a single individual. It takes a community to make any sailing program work to its best and fullest capacity. That is why volunteers are equally as important as staff.

### Instruction and Coaching for Sailors with Disabilities

Anyone interested in teaching sailing to people with a disability should be aware of the critical distinctions between instructing and coaching. Also important are physiological distinctions between sailors with disabilities and those without that may affect the learning process. Following are some of the major components of each area.

#### *Components of Instruction*

The term instruction refers to a very hands-on process where each action of the student must be carefully planned, monitored and controlled in order to provide a safe environment conducive to learning. The instructor takes a greater responsibility for the physical safety of the sailor. Particularly for sailors with a disability, this means being increasingly aware of and watching for possible dangers and concerns.

The term coaching refers to a more fluid and advanced form of instruction in the education of sailors. When coaching, the instructor focuses on the higher performance aspect of maneuvers, activities and perhaps competition to streamline basic skill sets that the sailor already has learned. It is more "hands off" with the sailors taking more responsibility, independence and control of the boat and their surroundings.

The biggest difference between teaching sailing to people with a disability compared to those without is for the instructor to *have a clear understanding of the physical, emotional and/or mental parameters* that may pose any limitations the sailor's ability to perform certain tasks. Otherwise, the theory, actions, tactics and strategy are just the same.

#### *Common concerns*

Some common concerns instructors should monitor when working with sailors with disabilities include:

- Increased possibility of heat- and cold-related problems may occur because of an inability to monitor and control body temperature due to the nature of the disease or physical injury. This primarily occurs in sailors with spinal cord injuries, but may also affect some CP, amputees and others.
- Dehydration may become a concern due to an actual or perceived inability to relieve oneself on the water, resulting in an unwillingness to drink enough fluids to maintain adequate levels of hydration.

- The potential for sailing related injury is increased because of reduced stability, hand function or mobility. This can include being "stuck" on the leeward side; losing balance during sudden maneuvers or when responding to sudden changes in wind; unknowingly getting limbs wrapped in lines or caught on equipment.
- Lack of personal awareness of injuries sustained may occur due to loss of sensation to extremities. Injuries can range from splinters, minor and major cuts and abrasions, to broken bones.

Outside of these areas of concern, instructors should make every effort to provide instruction that is identical to that for able-bodied sailors. Being overprotective and "mothering" the sailor may limit or eliminate opportunities to experience the thrills, challenges and adventures offered by the sport. Sailors with a disability often have greater ability to concentrate and to adapt to increased challenges. They often possess a higher level of interest than their able bodied counterparts. Additionally, sailors with physical disabilities may have greater than average strength and or ability in their remaining limbs or senses which can be of enormous benefit to their skills as sailors.

Just as they would with any sailor, the instructor should hold detailed conversations in advance with each participant to determine the sailor's unique needs, abilities or requirements.

### *Components of Coaching*

Coaching is a more hands-off approach to learning than fundamental instruction, and typically refers to the continued refinement of basic or already established skills. Again, care should be taken to monitor areas where sailors may be unaware of their own limitations. Body-temperature related issues seem to be the most common areas needing monitoring.

Outside of physical monitoring, time should be dedicated to evaluating the sailing process. Adapting standard techniques to accommodate an individual's limitation during common maneuvers (tacking…) can provide great opportunities for rapid improvement in skill and ability. Perceived limitations in mobility and stability can often be easily overcome with training, planning, and teamwork. In coaching, no limitation should be taken for granted. Every effort should be made to assist athletes in improving all necessary skills. Artificial impediments caused by an assumption of inability to perform a skill are most damaging and should be avoided. As with instruction, controlled trial-and-error and step-by-step analysis are critical components of the process.

### *Instructional Materials*

Several national sailing organizations have developed manuals which contain detailed plans and procedures for sailing instruction and coaching that include sailors with disabilities. Among these organizations are US Sailing, the RYA (Royal Yachting Association), CYA (Canadian Yachting Association), and Sailability in Australia. These materials are readily available through national websites which can be found in the resources section of this manual.

## Volunteers

Volunteers are often the best workers because they are volunteering for something they believe in and enjoy. Volunteers are a tremendous resource when a sailing program provides sailing opportunities for individuals with disabilities. They can assist in numerous ways both on land and on the water from simply making sure the sailor has water, to assisting with transfers, to the actual sailing while on the water as the "able-bodied" assistant.

People with disabilities often travel with others out of necessity for assistance, e.g. family members, siblings, friends, or hired caregivers/attendants. These individuals have the potential of becoming some of your best volunteers and new members. They are already familiar with the nuances and needs of people with disabilities and are comfortable with assisting.

Please remember that volunteers are similar to employees in the fact that they need to have an orientation as to the policies and procedures at the center; disability training/awareness; and specific task assignments. Volunteers who are not managed and occupied may feel unneeded or unwanted and may not return. Always remember to thank them. Thanks and acknowledgment is always appreciated and will encourage the return of volunteers.

### *Job Descriptions for Volunteers*

Individual programs should determine their own requirements and formulate their own job descriptions. Depending on how you choose to develop and implement your adaptive sailing program, volunteers can be made responsible in any of the following suggested positions:

- Assist on the docks with lifting, getting supplies, maintaining dock areas
- Participate as an Able-Bodied Assistant/Skipper aboard the boat
- Boat preparation – rigging, carrying sails, launching, sailing training/instruction, rescue, etc.
- Serving on an Advisory Committee
- Volunteer Coordinator
- Social Coordination – Welcoming, Planning and implementing social activities
- Program/Regatta Advisor
- Assist with securing of Program Needs – Equipment, Maintenance, Facilities, Boat Adaptations, etc.
- Assist with Meals – planning, preparation, service, clean up
- Coordination of bookings for sailing/boating days.
- Assist with communicating days of activities/programs.
- Assist with the development and implementation of all local sailing activities.
- Assist with recruitment and retaining participants
- Assist with Marketing and Public Relations of program
- Assist with Fundraising activities
- Membership secretary

### *Skills required*

- Group Leadership – leadership, organization, energy & enthusiasm
- Sailing Specific – competent sailor, boat handling, sailing knowledge, trainer certification
- Social – friendly, sociable, good interpersonal skills
- Practical – creative/innovative, task-oriented, able to complete objective
- Specialist – first-aid qualifications, fund-raising, accounts management, writing/good communicator

*Every volunteer should know what is expected of them (and what is not). Check that they can and want to do what they are asked.*

### *Recruiting Volunteers*

Adaptive Sailing Programs are often high profile, attractive activities. Often passers-by in addition to families, friends and caretakers become engaged in the activities. Anyone may be a possible participant/volunteer. Knowledge of sailing is not required, just willingness to be helpful. There are jobs, from office work to on water activities for everyone who is willing to assist, including people with disabilities as well! When preparing to recruit for volunteers, you may want to invite a sailor with a disability to accompany the head of the adaptive sailing program when they go to selected groups and describe the program and present the opportunity to assist. Having the sailor talk about what sailing means to them and the importance of all those volunteers in making the program possible can help in the recruitment of your volunteers (and with funding possibilities).

*The following are a few groups from which volunteers may be recruited:*

- Sailing/Boating Activities/Clubs
- Junior sailors as coaches, dock persons, shore helpers and transfer assistants
- Community minded individuals
- Recreation workers in the disability field
- Hospital Workers, especially physical therapists and their trainees
- Large companies that encourage volunteerism
- Local community/religious/civic organizations
- Social Service Agencies, e.g. Rotary, Kiwanis, Lyons, Masons, Scouts, etc.

*Steps in Recruitment:*

- Invite a sailor with a disability to present with you at any of your local groups.
- Contact US Sailing and ask for a copy of the Adaptive Sailing video, which can also be helpful in your presentation.
- After you make your presentation, invite them out to sail with the adaptive sailing program for free to experience the program first hand.
- Before leaving, get contact information for anyone who is interested in volunteering.

Once you have your staff, volunteers and facility ready, all you will need is sailors. Recruiting participants can be fun, but challenging at the same time. Just as with able-bodied individuals, some people will be ready to jump into a new activity, whereas others may need some help working through their fears and insecurities.

### *Retention of Volunteers*

You may want to consider having a Volunteer Coordinator, who can assist with recruiting and maintaining your group of volunteers. This person should be aware of the different reasons why people become volunteers. To ensure they remain content and motivated, it is important to identify these reasons and make sure that your volunteers gain whatever they were hoping to from becoming involved with the Center's activities. People tend to become volunteers for the following reasons:

1. **Social** – Meeting new people, spending time with friends and family, having fun.
2. **Educational/Career** – Gain experience in a certain field or fulfill course requirements
3. **Health** – Getting "out and about" to stay active
4. **Emotional** – A sense of satisfaction at a job well done; an increase in one's self-esteem; giving back to the community; and to share talents and abilities.

**Volunteers want to feel: Needed, Useful, Part of a team/community and Welcome!**

1. An orientation is an essential part of any volunteer program if you wish to ensure the retention of the volunteers. An introduction to your program and the key personnel will encourage volunteers to stay involved.
2. Allow for a period of adjustment. A Volunteer Coordinator should be aware of differing personalities and the potential for "clashes." Carefully monitor potential problems but allow for a period of "balancing" of personalities to occur before intervening.
3. It is important not to pressure a new volunteer into being available more often than he/she is comfortable.
4. Clear expectations/job descriptions are most beneficial to volunteers.
5. Monitoring attendance - If they do not attend, call them to check why (their health, other commitments, unhappy with group etc.).
6. Build team spirit by having volunteers work together/using a buddy system
7. Recognition for the volunteer's contribution to the adaptive sailing program is most important in the retention of good volunteers. Every program will have different ways of recognizing their volunteers. Some suggestions are:

    - Recognition Certificates
    - Personal praise while on the job – Simple "Thanks!" is appreciated
    - Writing letters and postcards of thanks
    - Giving identification pins, T-shirts
    - Acknowledging them in local/national newsletters
    - Presenting volunteer awards at the End of the Season Celebration
    - Awarding Boating/Sailing privileges
    - Holding events in honor of volunteers
    - Acknowledging efforts during committee meetings
    - Honoring people with a farewell when they move away from the area
    - Providing Boating/Sailing time at the end of the day. This ensures volunteers finish their day with pleasant thoughts and also builds a sense of camaraderie between each other.

*Volunteers are very special people. Treat them as such. Always remember the volunteer's contribution and importance. They can be your best workers and public relations personnel.*

Note: More important, however, are the intangible rewards, which ultimately provide the motivation to return: a sense of personal satisfaction, commitment to the merit of the program, sense of belonging, and awareness of personal growth as a result of the experiences. Committed volunteers are great recruiters. Their enthusiasm and pleasure make volunteering a "cool thing to do," encouraging others to become involved as well. In some cases, the experience can be life changing. A boat driver who volunteered to assist at the first Paralympic regatta in Atlanta said that next to his wife and child, that was the most important thing that had ever happened to him, and that furthermore, he would never park in a disabled parking space again!

*Having fun, enjoying the water and the sailors, feeling useful and productive – all combine to produce an effective, well-functioning volunteer program*.

Note: Some will come, try it, and go away. In some cases, a volunteer leader may have to ask that someone not return for various reasons – showing up late, not notifying the program of inability to attend an event, etc. In these circumstances, it is best to let them go with a simple thanks/symbol of gratitude.

### *Check local requirements for volunteers*

- Check for local legislation which might affect volunteers – e.g. background checks for people working with young people, severely disabled/vulnerable people
- Insurance – Make sure volunteers are covered by a group public liability insurance policy at your center.

## Disability Etiquette/Training for your Volunteers

The key to successful training is **clear communication**. Tasks should be outlined specifically so that the volunteers understand what is expected of them. The training should include disability awareness and very clear definition of the tasks to be done. Also important is commitment from the volunteers for which they are being depended upon to do what they say they will do. The communication works both ways. Volunteers need to be made to feel free to make known their own limitations and expectations. Sailing is supposed to be fun, but it won't be for someone with a bad back who attempts to lift a sailor into a boat. There will be others who can provide the necessary physical strength. Volunteers also need to know where to report, when and to whom. Having a clearly identifiable person on site is vital to successful identification and completion of tasks. The overall focus of training, then, is centered on the needs of the population being served and meeting those needs to the satisfaction of all involved.

Clarifying what volunteers need to have with them such as sunscreen, a life jacket and whether they need to bring their own water and food is also important. They also need to know the time expectations involved.

### *Attitude*

*A person with a disability is just that – A person with a disability*. People with disabilities have special needs and may need extra assistance, or be unable to do some tasks. However, the majority of people with disabilities are capable, contributing members of the community. The vast majority of all people with a disability are engaged in full or part-time employment – paid or unpaid.

Some of the volunteers may be uneasy when meeting a person with a disability for the first time. They should treat a person with a disability just the same as he/she would treat any other person.

If there is a feeling that a person may require assistance, he/she should be asked if they would like help, and then inquire how best to help. It is important for them to be given achievable tasks and be encouraged to progress at whatever rate they are comfortable. The person should not be left struggling with a task that is beyond their capabilities for too long, otherwise, they may become frustrated and downhearted.

The Sailing Center should encourage participants to take an active supportive role in the operation of the program. Participants should be provided training and support to acquire new skills. Remember that people with disabilities, often don't see themselves as disabled and prefer to be treated just like everyone else and should be.

*It is best to always refer to the ABILITY rather than DISABILITY. One's disability is not focused upon; one's ability is acknowledged and nurtured.*

Volunteers and staff should be observant, respectful, pleasant – but most important be relaxed and enjoy the interaction!

## Recruiting Participants

Every community has individuals with a disability. Those individuals can be reached in a number of ways. When recruiting for your program, it is best to make personal contact with potential participants. Invite an experienced sailor with a disability to go with you to talk to potential recruits and have a time and date for a "Come and Try" day to invite those folks to participate.

The community of people with disabilities is very diverse and may include those with physical disabilities, developmental disabilities, learning disabilities, visual/hearing impairments, or those with multiple issues. You will want to decide which population you would like to invite to participate first. If your facility is not yet wheelchair accessible, you can begin your program with individuals who are ambulatory and have other disabilities, i.e. developmental/learning disabilities, or participants who are blind or deaf. If your facility is fully accessible, you may want to start with a population that has more physical disabilities. Either way, you can begin serving those with disabilities regardless of your facilities capability. As for instruction considerations, there is more regarding those needs in the Instructional Techniques section of this manual.

*Note: A "Come and Try" day is a day set aside for potential new sailors to come and try the sport of sailing. It may include a ride/brief instruction. It can be designed as a full day of activities or just a brief sail for each attendee. Be prepared to present your action plan and dates of the program to encourage your newcomers. See a template for that event in the Resources section of this manual.*

*Here are some ideas for recruiting new sailors:*

Contact your local (city and county) parks and recreation departments and ask for their Therapeutic Recreation Department, or for the person who provides therapeutic recreation within their system. Most cities and counties have at least one person who is assigned to programs for people with disabilities. If you are in a smaller town which does not have that specific designation, ask the Parks and Recreation Departments to whom they refer disabled citizens for recreation.

Once you have your contact, ask if you can meet with them and make a presentation regarding adaptive sailing. (At some point, a natural partnership may happen, and you may be able to share in expenses toward the program as it grows.) In addition to parks and recreation departments, the following may also be helpful in the recruitment of your participants: local/national disabled sports organizations; local agencies that serve people with disabilities; rehabilitation centers; schools; your local media; and simple word of mouth.

### *Retaining Sailors*

As in any program, a method for retaining sailors is important. You may want to set up a "Buddy System", partnering new members with more established ones. Monitor the sailors' attendance, by phoning and encouraging their return. Find out if there is a reason they are not returning, i.e. a health issue, an unpleasant experience, or if there is a lack of transportation. Periodically, organize social activities to encourage greater involvement and interaction.

Providing activities after sailing season ends may also keep your sailors interested during the off-season. In the winter months try reaching out to another adaptive program in your area that might offer a sled hockey or adaptive skiing program.  These other activities may provide opportunities to recruit new sailors too!

# VI. INSTRUCTIONAL TECHNIQUES

When teaching sailing to those with a disability, you may need to modify some teaching and instruction methods and techniques.

Though it is not necessary to have special certifications for your instructors to teach sailing to individuals with disabilities, it can be very helpful for instructors to take a basic sailing instructors course from their national governing body. US Sailing offers Level 1 Sailing Instructor and Level 2 Senior Instructor courses that are designed to provide instructors with information on how to teach more safely, effectively, and creatively. Instructors develop knowledge and skill in teaching sail theory, sail controls, introductory management skills, and powerboat operation for emergency situations. The goal of these courses is to produce highly qualified instructors, thereby reducing risk exposure for sailing programs.

Some instructional programs, like US Sailing, may offer workshops or clinics specifically designed to help instructors and volunteers with disability specific teaching techniques and methods. Check your national training programs to see what is available to you.

**TIP:** Remember that sailing theory, rules, and tactics are the same for everyone, although physical parameters may be different when working with sailors that have a disability.

Overall, as stated throughout this manual each individual is unique and has different learning abilities and styles. Although it is difficult to make generalizations regarding a specific disability, below is an attempt at offering some suggestions/guidelines in approaching the more common issues within a disability group.

## Paraplegics & Quadriplegics

Most people with paraplegia and quadriplegia will be able to speak and communicate his/her needs and participate in developing creative adaptations that will make the sailing experience easier and safe. Once the challenge of adapting the boat is complete (secure, supportive appropriate seating; necessary straps for hands/feet; limb protection from hard surfaces, etc.), sailing instruction should be the same as any other sailor.

## Brain Injuries

When instructing an individual with a brain injury, take into consideration that processing and memory may be difficult, so it is important to talk slowly, clearly and to provide small amounts of information at one time. Break the task down into components. You may find that you need to repeat procedures a number of times before they stick. Visual aids in the classroom and on the boat may be helpful, i.e. using flashcards to show the different parts of the boat.

Written materials in larger print may also be helpful with individuals with brain injuries because they sometimes have a difficult time with reading material that has small print as it may appear to them as a blur.

Each instructor will need to determine the amount of information that can be processed by a participant, including the capacity of short and long term memory, and adjust accordingly.

This may all seem overwhelming, but if you can remember that you have a person who is most interested in sailing, and who is thinking and living beyond what others expect of them, you, your staff and volunteers will all benefit from sharing in the experience of assisting these sailors to learn and enjoy the sport of sailing.

## Visual Impairments

When in the presence of a person with a visual impairment, it is best to speak directly to them, using their name, which lets them know you are speaking to them. Talk clearly, but not louder than normal. It is always helpful to announce your presence, introduce yourself and let them know you are leaving when you do, so they are not left talking to someone who is no longer present. Be specific with directions, i.e. direct him/her to the left from his/her position instead of saying, "over there."

If/when you are walking with a person with a visual impairment, talk to the individual while guiding them and give them directions to avoid difficulties, i.e. tell them there is a step/object in front of them, slow down until they feel it with their cane or foot and then proceed forward. When guiding, allow the person with a visual impairment to hold on to your arm at your side or place a hand on your shoulder. This will allow him/her to walk a step behind you and have an idea what is coming in front of them by the way you move.

Basically, being with a person who has a visual impairment should heighten your awareness of your surroundings and in turn, assist them with avoiding any possible hazards.

When instructing a person with a visual impairment, speaking clearly and giving the fullest explanation of technique will be extremely helpful. Remember that they visualize in their mind so your description will be very important. Try to use tactile triggers like tape on a line where it inserts into a cleat, whipping thread on a control line at intervals to make for easy adjustment, bright or contrasting color for those with mild impairments. Use countdowns or cadences to help visually impaired sailors on their coordination with teammates on board. Use other sensory directives to help visually impaired sailors function best within the boat. Avoid use of "visual cues" with those who are completely blind.

Sometimes it may be helpful if the person can feel the instructor actually performing a particular movement or the instructor moves the person through the movement. And offering verbal feedback on the progress of an activity that may naturally be observed by people with vision can be very helpful and encouraging.

## Hearing Impairments

Individuals with hearing impairments may use hearing aids, lip reading, sign language, or written notes to enhance their communication with others.

### *Hearing aids*

Hearing Aids only amplify sounds; they do not clarify them much. Background sounds also get amplified and this makes it difficult for the person to isolate sounds. So, if possible, background noises should be kept to a minimum. Also, remember that when sailing, the wind may affect the ability to hear in general, and therefore can be more challenging for someone who is hearing impaired, so alternative communication may need to be established, i.e. hand signals.

When a person with a hearing impairment is lip reading**,** it is best to be at the same height level as the person you are speaking with to make it easier for them to read your lips. Try to be in good lighting with the light to the back of the individual with a hearing impairment. Poor lighting also makes lip reading difficult. Conversations should be kept simple and to a minimum in order to avoid confusion. It is also good to remember that talking quickly, moving a lot, or smiling while speaking make lip reading difficult. Additionally, beards and mustaches make lip reading very difficult if not impossible.

When giving instructions in the presence of someone with hearing impairment, be sure you have the person's attention so they can ascertain the whole message. Hand gestures and facial expressions can be very helpful in making the meaning clear. Use standard movements/body language that people with hearing impairments can understand. Make sure you keep your hands away from the face, so the person can still read your lips and expression. Check that you have been understood. This can be done with a simple "okay" sign with a hand, During the activity, signs such as the wave of a flag, flick of lights, or tap on the shoulder may be required if the person is unable to hear a whistle.

### *Written Notes*

Written notes can be used any time necessary or appropriate, but it is best not to rely on them unless absolutely necessary. It is better to communicate via methods described above. With patience and practice, you will find what works best for you and the hearing impaired individual.

*Special Note:* There is a risk *of social isolation* for those with a hearing or a visual impairment because of difficulty in participating in conversations, so efforts should be made to include and encourage those individuals in conversation.

## Intellectual Disabilities

An intellectual disability is life-long disability that affects the cognitive processing ability of an individual, such as Down syndrome.

An instructor needs to be aware of some common denominators among the population of people with intellectual disabilities. Any one individual may not display all of the following characteristics, but rather some of them, and to varying degrees: inability to think in abstract terms; lack of decision making ability; poor short term memory; learning difficulties and generally a few literacy/innumeracy skill; poor co-ordination and mobility skills, often due to lack of appropriate opportunity, or inconsistent concentration spans.

Those involved with instructing sailors with an intellectual disability should acknowledge that the level of expectation is crucial. Keep verbal instructions basic and brief. Be clear, precise, deliberate, sequential, and then reinforce your message.

When instructing individuals with intellectual disabilities, demonstrating the activity and allowing the person to participate in the demonstration gives the participant a standard with which to model his/her performance. People with an intellectual disability tend to learn more by doing than looking and listening. When teaching new skills, be sure to move the sailors through the desired motions. Praise and encouragement are very important.

Break down skills into small teaching components, ensuring each part is learned fully before progressing. Review and repeat skills, and drill in many different ways and situations. Then reinforce. Remember also that reinforcement should be spontaneous and immediate. Teach basic skills. Keep practice time on specific activities short to avoid loss of concentration and boredom. Be sure to vary your activities and drills.

While sailing, a person with an intellectual disability may become fearful and react in an unexpected manner. These sailors should be monitored closely until their level of confidence is ascertained. On the other hand, a sailor with an intellectual disability may show no concern for his/her own personal safety or the safety of others. Again, initial close monitoring is necessary.

Consistency in crew and basic equipment is both important and helpful for individuals with an intellectual disability.

Always check with caregivers/family members and participants themselves as to how they are feeling when they arrive, and if there is anything specific that needs to be monitored that day. This is most important for those participants who may be more dependent and be less able to advocate for themselves.

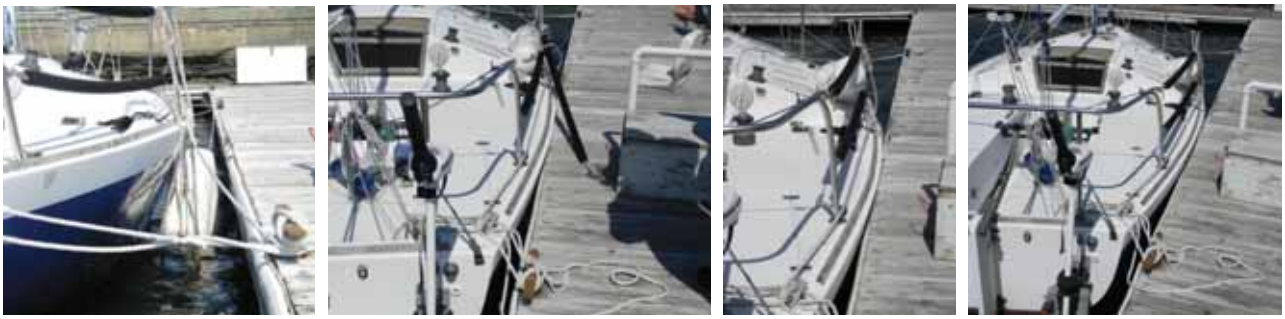
*Most importantly, enjoy the experience of sharing and learning with your sailors. Most staff and volunteers derive as much out of the experience as does the individual with the disability.*

## Transferring/Lifting

Individuals with physical disabilities may or may not need assistance in transferring from their wheelchairs or crutches, to the boat from the dock. Transfers can be done in a variety of ways. In every instance, the boat must be secure to the dock.

### *Positioning*

In most cases a boat will naturally drift away from the dock, especially when bumpers are being used. In order to properly prepare the boat for a transfer, remove the bumpers and bring the boat alongside the dock. Ensure as much contact as possible between the dock and the boat. Disconnect any life lines/guard rails to provide a clear pathway between the transfer box and the boat.



Place the transfer box in a location where there is enough space to deploy the flip-top. Ideally the flip-top will be positioned so that the end rests just inside the boat's toe rail, or approximately 6"- 8" from the edge if there is no toe rail is. Please refer to the pictures for proper positioning.

### *3 Stage Independent Transfer*

This is for sailors that use a wheelchair, have difficulty standing or may have a visual impairment who do not need much assistance except to hold wheelchair steady, or act as a guard/support:

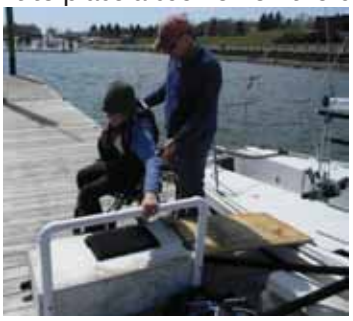
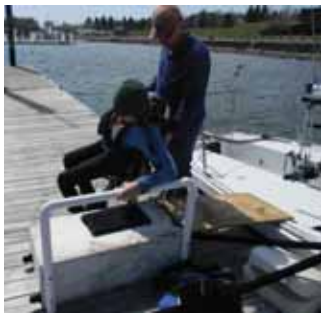
**3 Stage Independent Transfer**

- Move from the chair or standing position to a sitting position the dock
- Shift the buttocks from the dock to the deck of the boat then transfer the legs. Some sailors prefer to transfer legs then buttocks
- Move from deck to cockpit


Note: Never assume that you know how to move or transfer someone in a wheelchair/with a disability better than he/she or their caregiver does. It is best to ask first HOW you may assist them in a transfer, and WHAT works best for them. If they are unsure, you may make suggestions as to how to proceed.

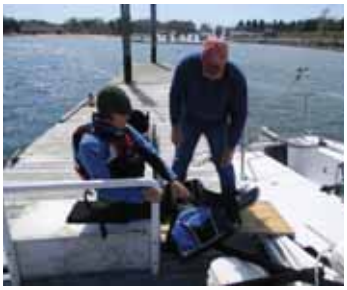
**3 Stage Transfer with Assistant**

1. Move from the chair or standing position to a sitting position on the dock or transfer box. You, or the sailor, may want to place a cushion on the box.


2. Have the sailor position themselves so that they are facing the boat. Shift the buttocks from the dock to the deck of the boat then transfer the legs. Some sailors prefer to transfer legs then buttocks.





3. After they've transferred into the boat, have them move from deck to cockpit. It is helpful to have them shift forward.

**Note:** Never assume that you know how to move or transfer someone in a wheelchair/with a disability better than he/she or their caregiver does. It is best to ask first HOW you may assist them in a transfer, and WHAT works best for them. If they are unsure, you may make suggestions as to how to proceed.

*TIP: Contacting a local hospital/rehabilitation center to request that a physical therapist to train staff/volunteers on correct lifting can be very helpful, in both learning correct lifts and connecting with the organization for recruitment of future sailors.*

### *1-4 person full body lift*

A body lift from a wheelchair to the boat can be done with the assistance of 1-4 people to lift (lifters), but is most commonly done by two lifters. The proper ways to do this should be demonstrated by someone who has been trained in order to maintain safety for both the lifter and participant. It is most important to LISTEN to the person you are transferring, or to their companion/caregiver if they cannot communicate. They will direct the lifters as to the best way to assist in the transfer. Make sure that the disabled sailor's back is well supported by someone who can handle the weight, the knees of the sailor must be supported, and feet kept free from catching on anything during the transfer.

### *1-Person Full Body Lift*

It is important to have a second person stabilize the boat at all times during the transfer.

**Note:** Anyone who is lifting a sailor in and out of a chair, or in and out of a boat, should remember to lift from the knees when they stand up and not use their back to facilitate the lift. This will help prevent unnecessary back injuries!

### *2-Person Extremity Lift (not best for sailors with shoulder injuries)*

The sailor crosses his/her arms across the chest and grips own wrists. One lifter stands behind the sailor and reaches under sailor's armpits at the shoulders and reached around to grasp the sailor's forearms. The second lifter reaches under the knees of the sailor. Both lift simultaneously to move the sailor from chair to dock or boat using proper lifting techniques (lifting through the knees not the back).

### *The two-person side to side transfer*

The lifters will stand on each side of the sailor, facing each other. Bending at the knees and keeping the natural curve of their spine, the lifters will place one hand each behind the sailor's back and one hand underneath the sailor's thighs and knees. Together, they will lift the sailor up and cradle him/her. They will slowly move to the boat or chair and gently lower the sailor down, bending at the knees and using their legs for support.



### *One on One Personal Assistance*

A sailor with a disability may not need a full body lift, but may still need some assistance for balance or stability. For instance, someone with cerebral palsy who uses crutches may need some support for stability while lowering into the boat or swinging their legs into position, but may be able to manage most of the rest of the transfer by him/herself. A sailor with a visual impairment may need help placing a hand or foot on the boat. A paraplegic may be able to transfer out of their chair and onto the dock, but may need help to shift their legs onto the boat while they lift their body onto the deck. Again, it is most important to ASK what assistance is needed, LISTEN, and abide by the response given.

# VII. EQUIPMENT ADAPTATIONS

We know that sailing is a great sport for people with physical disabilities because it accommodates such a wide range of disabilities and with the use of adaptive equipment; individuals can function as independently as possible. Sailors with disabilities can participate both recreationally and competitively. Most can get out on the water with minimal adaptations to whatever boats and equipment are available. A person with a disability may have issues with stability, mobility, hand function or vision. Many different adaptations have been designed, developed and installed to help those sailors who need some adaptive equipment to enable them to sail to their full capacity.

**An adaptation** is something put, or changed, in a boat to enable a person with a physical disability to control a boat safely and comfortably. An adaptation is intended to maximize the ability of the sailor while minimizing the impact of the disability on his/her sailing.

*TIP: The adaptations that the individual uses in his/her every daily life to drive a car, move his/her wheelchair or get around at home may also be used aboard a sailing vessel.*

Though some sailboats have been designed with people with disabilities in mind, most have not. The Access dinghies are a perfect example of boats successfully designed to accommodate wide ranges of disabilities. They are actively sailed and raced throughout the world. Two of the more successful racing classes are the Sonar and the 2.4mR, both designed without any special consideration of the needs of people with disabilities but easily adapted to allow both disabled and able bodied sailors to compete side by side. Adaptive equipment, some of which is extremely simple and economical to fabricate, enables sailors with disabilities to be extremely competitive at events from club to World Championship levels.

Even if a disabled sailor's interests do not lean toward competition, many of the adaptations have stemmed from disabled racing sailors. They have taken the lead in developing adaptations that range from the very simple to highly engineered, all with the thought to improve a sailor's functional performance on board. Actually, many boats can be easily adapted to meet the needs of the individual sailor. For many sailors, regardless of disability, a standard factory prepared boat is perfectly adequate. People who are new to sailing or still experimenting to find the best solutions to their own physical challenges should make temporary adaptations that can be easily installed and removed until they are completely comfortable with their adaptive equipment.

Below you will find photographs of some of the adaptations currently being used by sailors. Many other kinds of modifications are possible to enable a sailor to maximize capabilities and allow the individual to focus their attention on sailing.

Examples of some items that can be used to adapt any boat might include a camping or yoga mat, short lengths of rope, a wood plank (smooth, no splinters) or a plastic cooler, and rolls of duct tape and electrical tape. With these items, one can create:

- A padded, non-slip seat
- Padding around sharp objects in the cockpit
- A "bench" to assist transfer from side to side
- Extra loops of rope to grip or form handles and provide stability in the boat
    - Extensions to sheets

For sailors with disabilities, the following guidelines are important:

- Minimize obstructions within and around the boat.
- Establish a consistent location of equipment and control lines on program boats, especially for visually impaired sailors
- Check all equipment carefully. Breakage is frustrating to deal with for any sailor but it may present a bigger problem for the less agile.
- Lubricate mechanical parts and increase purchase in lines where necessary to minimize the strength needed to operate them.
- Tape anything that is likely to snag lines like cleats on the mast, loose mast blocks, clevis pins, or compass brackets.
- Align cleats with lines to facilitate release by a single hand.

Before trying to engineer complex adaptations, it is important to identify the problem area(s) that might be helped by adding an adaptation.

The IFDS Functional Classification Manual which is used to determine eligibility for Paralympic sailing competition identifies and examines four critical physical areas of functionality:

1) **Mobility** – The ability to move around or transfer within the boat
2) **Stability** – Compensation for the movement of the boat which may affect the ability to sit up straight when the boat heels, respond to movements of the boat while sitting, or to resist being pulled forward against the pressure of a line when trimming or winching.
3) **Hand Function** – The ability to operate or grip control lines, wheel and/or the tiller. The ability to both push and pull.
4) **Vision –** The ability to see.

## Mobility-Impairment Adaptations

Sailors with mobility-impairments may need something to hold onto for balance when crossing the boat. Sailors with single or double leg amputations (with or without prostheses/"artificial legs"), or those with other disabilities that affect balance may use a simple athwartship grab bar when sailing.



Others whose disabilities prevent them from standing – such as paraplegics and double leg amputees sailing without prostheses – might use a simple transfer bench. In order to keep the boat level, moving to the windward side, it is difficult for a person without legs or with paralyzed legs and/or with poor trunk stability to slide from side to side during maneuvers. Often a transfer bench is used in conjunction with a grab bar because there may be times when it is necessary to cross while the boat is flat or even to get to the "high side" from the "low side."

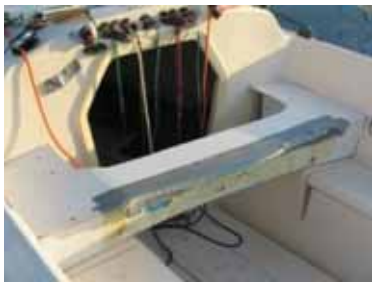
This can made easier with the following possible adaptations: placing a plank of wood across the boat, so that the sailor can slide from side to side across the plank, or by using some other object like a cooler, a shower bench, or dense foam cushions that can be fitted to close the gap between the two sides of the cockpit area.









Many people with mobility impairments (particularly double above knee amputees and paraplegics) are extremely strong in the arms and shoulders. On a larger boat where the installation of a grab bar is impractical, a length of line (at least ½ inch in diameter) tied from rail to rail (or lifeline stanchion to lifeline stanchion) can provide sufficient manual assistance to a person with a disability who usually relies on sliding from side to side.

### *Harnesses & straps/belts with quick release fasteners*

Harnesses & straps/belts with quick release fasteners are often used to secure the sailor to the seat and add safety, comfort and stability for the sailor who cannot physically hold him/herself upright. The belt is used across the lap and chest, and the harness around the shoulders. Be sure that quick release fasteners are secured in such a way as to make them easy to reach and release by the sailor, a crew member or a sailing companion.



### *Leg straps*

Leg straps may be used to keep an individual's legs (if weak or paralyzed) secure and a safe from injury. Sail ties or elastic material with Velcro work best by securing the legs at the ankles/calf/thigh areas. Each sailor will be able to provide feedback as to what works best for him/her.



## Stability-Impairment Adaptations

Loss of stability occurs when the core muscles around the hips and/or abdominal area do not function properly. While this is a problem for most, but not all, spinal cord injuries and neurological or musculoskeletal conditions, it can also be a problem for leg amputees with very short or non-existent residual limbs. Some sailors may not have the trunk stability or upper body strength to stay upright independently. Some solutions for stability issues might be to use a seat that provides more trunk or back support like a go cart seat or other high backed molded seat, suction handles, grab bars, lateral supports, or a good harness.


A simple solution is to have something within reach to hold on to or lean into. The grab bar mentioned above can perform double duty. Sometimes a length of thin line running through surgical tubing can be made into a hand/arm hold. A sailor can either hold on to the line or pass an arm through the looped handle and lock it into an elbow. A simple handle may also be attached to deck or cabin top for support. Transfer seats or benches can be made using simple and common materials. A sturdy, plastic cooler might be wedged in between bench seats to form a simple transfer bench or perhaps a shower bench used in the same manner.





### *Seating*

For those with reduced trunk stability or limited use of the legs, it may be useful to have a seat with a back, sides, and a lap and/or chest belt. Seating adaptations may vary from simple padding to specialized swinging seats. Cushions are important as well. Basic plastic garden/patio chairs, securely fastened to the boat and with the back legs cut down to rest on the cockpit seat or an old modified wheelchair frame can provide simple trunk support. A quick release strap system to hold the sailor into the seat provides additional support/stability. Some boats have a standard seat built specifically to fit the boat, like in the Freedom 20. The Freedom has built-in molded seats that include harness straps for added stability. The Ideal 18 adapted seats are stock padded boating chairs mounted on simple plywood bases with chest and/or lap straps.



Customized seating systems can be designed and built for someone with a more severe disability. Some sailors have had specially designed chairs made with added padding or straps to support his/her individual needs. More sophisticated devices, such as swiveling transfer seats have been designed to allow sailors to transfer from side to side and are being produced world- wide. Such seats need secure installation and may require permanent adaptation or drilling. These transfer seats offer access to sailing for very disabled skippers and crew, and the ability to transfer from side to side allows the skipper better field of vision when driving the boat. Seats may also be derived from modified wheelchair bases, boat seats, and golf cart seats.

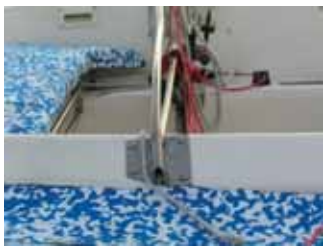


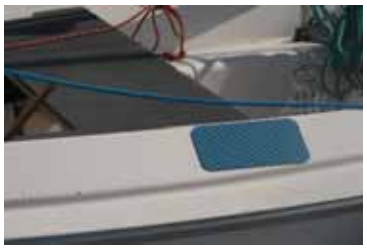



Local colleges/universities/rehab centers may be able to assist in the design, cost, and construction of such seats as well as other adaptations.

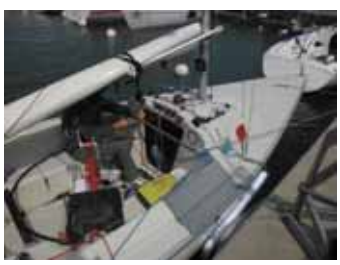


**Surfaces:** Sailors may find a non-skid surface to be useful for additional stability. This can be achieved with the use of a camping mat, fiber-backed carpet, or a non-slip bath mat and can be attached by tape. Other sailors may prefer a highly polished surface for ease of movement across the boat. Each sailor must determine what is most effective for him or her.









## Hand Function

Lack of or limitations in hand function may affect one or both hands (amputations and high level spinal cord injuries) or may be associated with general muscle deficiency and weakness as experienced by those with MS, ALS or other neurological conditions. Above elbow arm amputees with the ability to trap a line between residual limb and chest or below elbow amputees with the ability to grip a line in an elbow joint are highly functional on a boat.

Quadriplegics with severely compromised hand function may be unable to trim a line – except with a power winch – but may be quite capable of steering a boat. Depending on the individual sailor's triceps, biceps and shoulder function and/or limitations, steering with a tiller may be difficult so alternative steering systems like a steering wheel, tractor/rod or power steering using a joystick and an autopilot ("Auto helm"), or Sip and Puff may be better options.



### *Electronics*

There is an increased growth in the design and development of electronically assisted steering and sheet trimming. Some boats are designed specifically to incorporate these systems, while others are readily and easily adapted for their use. There are three types of control systems:

- **4-way joysticks** are the simplest and most reliable to use using either foot/toes or hand/fingers to manipulate the toggle. The electric joysticks usually control both the tiller and sails, moving the tiller in and out to let the sails go in and out and moving it left or right to move the boat left or right (using the joystick to steer in the same desired direction, like driving a car or riding a bicycle, opposite of that of a "regular" tiller.)
  Chin controlled joysticks have also been used for this same purpose for those with quadriplegia who may also use a chin controller for their wheelchairs.

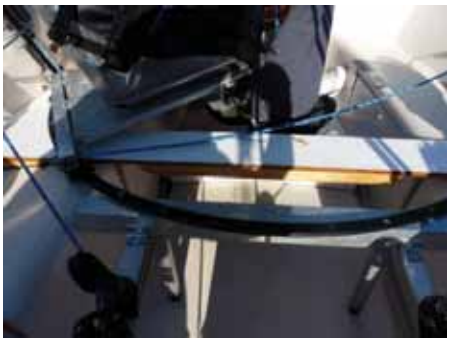

- **Sip and Puff** is used in instances where severe quadriplegia may limit the use of a joystick. A sip and puff control which allows a person with quadriplegia to use a straw like mechanism in which they control sail movement by how they blow, sip or bite the control. Blowing moves the sail out; sipping moves the sail in; biting in certain ways controls the rudder. Each sailor should use his/her own personal module to guard against spread of infection. This is an added expense which can be avoided if the sailor can manage a joystick.

- **Paddle switches** are great for people with severe CP and the like who have difficulty with fine finger movements and struggle with breath control for sip and puff systems.

As always with the use of any device, safety for the sailor is of utmost importance!

## Steering & Tiller Modifications

Sailors with disabilities (particularly of the lower limbs) have a lot to do with their hands and are less agile when moving across the boat if transferring is necessary. It is important that the helmsman not be hindered by the tiller during maneuvers. Seating modification might be enough to solve this issue but the tiller may need to be shortened or extended. If the person cannot grip the tiller or the extension, you can use semi-elastic straps with Velcro closures or duct tape (yes, duct tape!) to secure the sailor's hand to the tiller/extension.



Some individuals prefer the duct tape method because they can have more control by having their hand taped into the ladder extension tiller. If not, the following might be possible solutions:

- Lengthen, shorten, or hinge the tiller in relation to the sitting position of the helmsman.
- Add a ring (wheelchair caster tire, etc.) to the tiller end to provide easy grip for sailors with weak hands or hand prosthesis.
- Tension the tiller to introduce resistance to its movement, especially if the sailor has to let go of it during a tack or gybe. Tension can be introduced with the addition of shock cord. It is important to make sure that that sailor has the upper body strength to control the tiller.
- Fix the tiller in a chosen position to free hands for rope work. This can be important if the sailor has effective use of only one hand.
- Consider wheel or lever steering if the sailor must sit in the center of the boat.



Sometimes a steering wheel may be easier for the person with a disability. These wheels may include specially adapted grips, knobs or spokes, depending on the individual's disability. It is best to ask the person with the disability what they think would be best for them to have the most control. For some it may be that a system similar to that used to maneuver their wheelchairs is best or they may have another idea of what they think may work. Remember, they know their bodies and abilities better than anyone else so it is always best to get their input.


For quadriplegics who lack triceps function, two handed steering, using a tiller, may be the simplest adaptation: the tiller is pulled with the aft hand and the forward hand also pulls on a line which runs to the other side of the boat, through a turning block, and back to be attached to the tiller. The compromise here is that, without a sophisticated translating, rotating, seat, the sailor will be unable to transfer across the boat. It will provide a starting point and as sailing ability and interest improves more sophisticated devices may be employed.

### *Modifications to Running Rigging*

The following items are standard on many boats, and many are of particular benefit to sailors with disabilities:

- Lines led back to the cockpit if all of the crew must remain in the cockpit of a boat designed for sitting out.
- Quality blocks with roller bearings reduce friction.
- Increased purchase on lines decrease the effort required to pull in lines.
- Cascade rigging for the boom vang increases purchase without increasing the length of line to be pulled in. Consider terminating the vang line at the boom so that it can be pulled downwards using body weight.
- A mainsheet operated from the boom may be easier for some sailors to operate than one operated from the floor or Barney post (the post in the cockpit of a smaller sailboat where you attach the mainsheet).
- Coarse and fine tune control of mainsheet and jib tension enable a sailor with weak hands to haul in the sheet with the course control and tension the sheet with fine control. This is done by using a block and tackle tied into the bitter end of a main or jib sheet.



### *Sheet end modification*

Simple modifications to the end of a sheet can be of great help to sailors who lack fine motor control or strength in the fingers. Some examples might be a ball or handle on the end of a line, or an extra-large knot. A sailor with a visual impairment may appreciate similar modifications so that he/she can identify different lines by touch.

## Visual Impairment

Another significant and common disability is visual impairment. Sailors with visual impairments need tactile cues to find equipment on the boat along with verbal direction or audio cues to assist with steering near obstacles. Tactile cues like tape on a line, knots in certain positions, use of cadences for timing transfers and actions are very helpful to sailing well. Lines are hard to identify when loose. Different sizes and textures of lines make life easier for visually impaired sailors in the same way that different colored lines aid the sighted to trim the proper controls in a hurry.

Braille labels can help new sailors learn the boat parts (Braille label makers can be found inexpensively on the internet) and adding texture to clutch arms will make them more distinct. Consider replacing cleats with clutches on bigger boats.

Also, tactile maps and audio compasses replace visual maps as an to aid navigation. An audio compass is one that speaks by the press of a button offering the position of the vessel, wind direction, and the degree the vessel is pointed.

### *Orienting a New Visually Impaired Sailor*

Prior to sailing, individuals who are visually impaired may find it helpful to feel detailed boat models to understand how the boat, sails and rigging work together. Here are a few suggestions to help orient them:

- Have a “Where’s the wind” discussion prior to boarding to show how to feel the wind on the nose, cheek, ear, back of neck. A small boat model with a boom for the sailor to hold can assist understanding of points of sail.
- Keep up a conversation as you walk new visitors to the boat so they can follow the sound of your voice. Let them know you are available if they should they want an elbow.
- Have the boat tied tight to the dock prior to boarding, with fenders removed to eliminate any gap so a foot won’t get caught between the dock and the boat. If the boat has a shroud or other object to hold on to while boarding, have that part of the boat tight against the dock.
- Prior to boarding, provide a verbal description of how to board. For example, “Hold on to the shroud with your left hand. Step up 6 inches – now you’re on the deck. Reach a hand straight out to find the

boom. Step down 6 inches – now you're on the bench. Take another big step down, now you're standing in the cockpit." Give friendly verbal direction as the person boards, but don't just grab a person's hand. Respect boundaries – a person will tell you if assistance is desired.

- Before leaving the dock, encourage sailors to walk around the cockpit and get oriented to key equipment: tiller, boom, mainsheet and cleat, jib sheets. Demonstrate how the boom will move back and forth and how the mainsheet controls it. Indicate any tripping hazards.
- Consider using a clock reference with the 12 at the bow, 6 at the stern. Talk about the wind position at 2 o'clock.
- Once you've boarded the boat, repeat the "Where's the wind?" discussion. Have students point to the wind and talk about where it feels on the body. Turn over the tiller to the new sailor and let them feel how the wind moves across their body as they move the tiller.
- Finding the center of the boat, as in "center your tiller" can be a challenge for a person who cannot see. Some sailors use their body to find center, by knowing where the end of the tiller extension fits under their arm, or by placing the balls of their feet on a foot brace. Ways to communicate "center" through the body will vary with every sailor and every boat, so it's important to encourage creativity in getting comfortable with the boat.
- As you begin to raise the sails, let beginners know that the sails will rattle for a few minutes and that water from rain or condensation may drip on them.

### *Advancing Visually Impaired Sailors*

As sailors who are visually impaired learn sail trim, crew positions, lines and fittings, they will become more independent with responding to wind shifts and boat heel. Just like sighted students, as they progress they will need less guidance, to a point where a sighted guide is only needed for avoiding traffic and obstacles.

*TIP: Before leaving the dock, make sure you review the different lines and locations, the cockpit, the tiller, the boom, and any obstacles that may hinder mobility or cause injury with a VI sailor until he/she feels safe and comfortable.*






Blind sailing also has expanded from fleet racing opportunities to include one-on-one match racing for teams of visually impaired sailors with no sighted guides on board. This type of sailing is conducted in keelboats using the Homerus Autonomous Sailing system. Three acoustic buoys, each with a unique signal, define the course and boats have their own sound signal that changes when on port or starboard tack.




Elite level blind sailors are classified on a three point scale which ranges from B1 to B3:

**B1** Total Absence of perception of light in both eyes, or some perception of the light but with the inability to recognize the form of a hand at any distance and in any direction.

**B2** From the ability to recognize the form of a hand to a visual acuity of 2/60 and/or visual field of less than 5 degrees.

**B3** From a visual acuity of above 2/60 to a visual acuity of 6/60 and/or a visual field of more than 5 degrees and less than 20 degrees.

**Class Rules:** Sailors who intend to race should check that any modifications or adaptations made to the boat will fall within class rule guidelines. A false floor in a boat may be acceptable at the club racing level but not in open competition. Many of the boats most commonly used by sailors with disabilities in competition have allowances in their class rules for adaptations for sailors with disabilities. Before a modification is made to a boat, the class rules should be checked to see that the particular change is allowed. If no racing is intended, any kind of modification is fine. And as with anything related to sailing, safety of the device proposed is critical.

## Specific Examples of Adaptation Needs and their Solutions

The degree of independence can vary greatly from sailor to sailor, as can the equipment required for them to go sailing. Below are some examples of specific impairments and possible solutions.

### *Issue: Paralysis or missing legs*

**Task(s) –** Need to balance the boat; need to be able to see; may need help to get from side to side.

**Solution(s)** – Provide a way of sliding from side to side and getting up onto the deck, if possible, by using a plank of wood, bath seat, transfer bench, blocks of foam, swinging seat, bars, grab handles, push-up handles, or any other creative adaptation that works for the individual sailor.

### *Issue – Reduced trunk stability*

**Task(s)** – Need to control the boat from a secure, upright position

**Solution** – Provide back and sideways support by using a plastic chair, old wheelchairs/their parts, or custom made seating. You may also need to use belts/ harnesses that have a quick release to secure the individual in place so they do not fall over while sailing.

### *Issue – Need easier access and ability in pulling lines from a fixed sailing position.*

**Task(s)** – Need to control sails and tune the boat; Need to reach & pull control lines.

**Solution** – Bring the lines back in the cockpit; provide additional purchase, knobs and loops for easy access and improved control.

### *Issue – Reduced strength, mobility, and reach*

**Task(s)** – Need to steer the boat

**Solution(s)** – May need to shorten or extend the tiller, lifting tiller, or the ring on tiller end. You can also use shock cord, wheel, fixing points for tiller, the audio compass, knots in the lines, or specific colors as designators, all depending on what is best for the individuals' needs.

### *Issue – Need to protect the individual's buttocks*

**Task(s)** – Sitting for a long time

**Solution(s)** – Utilize cushions (range, camping foam, Jay protectors, etc.) There are special cushions made for those who use wheelchairs; many sailors will have one with them that can be removed from their chairs and be used on the boat. Best practice, however, it is to have a separate cushion for the boat, thereby allowing people to keep the one for the chair clean, dry and always useable and not have to worry about it being wet or bothered by the water, especially saltwater.

### *Issue – Hands busy with many things all at once*

**Task** – Displaying a protest flag (only for boats >6 M)

**Solution** – Utilize a pull cord with a quick release.

### *Issue(s) – Severely reduced mobility, stability and strength (for sailors with severe disabilities)*

**Task** – Steering and controlling the sails

**Solution(s)** – Utilize servo assisted steering and sail controls

# VIII. BOATS

There are several classes of sailboats that are popular and frequently used by adaptive sailing programs: Freedom 20, Access Dinghy (Access 2.3, Access Liberty, and SKUD 18), Sonar, 2.4mR, Martin 16, Hobie Trapseat, Challenger Trimaran, Ideal 18 and the Flying Scot. Most are keelboats that require only minor adaptations in order to accommodate a person with a disability. In fact, just about any boat that has a stable platform has the potential to be used for instruction in accessible sailing programs.

The features of a suitable boat should include: the boat having a stabilizing keel or weighted centerboard; an open uncluttered cockpit; and lines that can be easily accessed.

****Boats that are currently popular and used by sailors with disabilities worldwide are included in this section with reference information as to where you can learn more about each individual boat:**

## Access Dinghies

*http://www.accessdinghy.org*

Access Dinghies come in a variety of models/designs and colors! They are fun little dinghies that are easily adapted to a wide variety of disabilities by utilizing a joystick steering system and sling seat. They are available in molded hulls to seat either one or two crew. They come in a variety of colors and are perfect for grassroots, entry-level programs. The centerboard in the Access Dinghies are heavily ballasted with lead, and fill with water once they are dropped, making the boats virtually uncapsizable.

The **Access 2.3** (length 7'6", single sail) and the **Access 303** (length 10', Main sail and Jib) are used in a number of community sailing programs around the world. Both can be crewed by 1-2 people and both are utilized in a number of regattas, offering increased socialization and experience for your new and seasoned sailors. Along with the Access 2.3 and the Access 303, Access Dinghies also offers the **Liberty (**length 12'), which was designed to be a faster, high-pointing sailing dinghy.

*Access 2.3*


*Access 303*


*Access Liberty*

## SKUD 18

The SKUD 18 (Length 19') is a high performance design by Access Dinghies that was utilized for the first time in the summer 2008 Paralympics, in the two person keelboat event. The SKUD 18 can be handled in a variety of crew configurations. The helmsman can transfer manually and be steering with tillers, or be in a fixed seat on the centerline using a manual joystick, push/pull rods, or a servo assist joystick with full control of all functions. The forward crew can either be on the centerline, transferring manually, or using a swinging seat. As with all the Access Dinghies designs, the SKUD18 can be sailed by all levels of physical ability.



## Freedom 20

*http://www.catalinayachts.com*

The Freedom 20/Freedom Independence **(**length 20' 6") is built by Catalina Yachts. This keelboat was designed for extraordinary accessibility with two mounted pivoting seats, one for the helmsman and one for the forward crew. The freeboard is low and the side decks are uncluttered to facilitate getting onboard and easy mobility for anyone who does not need to be in secured into a seat. This boat is also very good for first time sailors, as it is extremely stable and gives the new sailor a great feeling of stability. It has added stability due to the ballast ratio and vertical center of gravity. It has a self-tending jib and simplistic, efficient rigging and is great for a new sailor who may have limited ability.



## Hobie Trapseat

*http://www.hobiecat.com/sailing/models_hobie16.html*

The Hobie Trapseat (length 16' 7") is a two-hulled catamaran designed for speed and performance and is sailed by a two-person crew. The 'Trapseats' are bolted onto each side of the Hobie 16. People with severely limited mobility can sail a Trapseat Hobie 16 with ease and on equal terms to those without disabilities.

The sailing team consists of a skipper with a disability who steers the boat with the tiller while determining sailing tactics, and an able-bodied crew who mans the sheets of the main sail and jib. Special Olympics sailing programs often utilize the Hobie 16.


## Norlin Mark III 2.4mR

*http://www.us24meter.org*

The 2.4 Meter (length 13' 8") is a single-handed dinghy that is suitable for a wide range of physical abilities, from those with quadriplegia to fully able-bodied individuals. Sailed in everything from local to international regattas, the 2.4 Meter is known to be a fast, high performance, sometimes "wet" boat. All the control lines are led under the deck to a console directly in front of the skipper. The 2.4mR is ideal for use in adaptive sailing activities since the sailor does not need move about the boat. All controls are adjustable from a dashboard that is right in front of the sailor. Along with the easily accessed lines, the 2.4 Meter utilizes a hand tiller for steering ease, and/or foot pedal steering for those who prefer it. The boat is sailed without a spinnaker but uses a whisker-pole for setting the jib downwind.

The 2.4 Meter was selected to be the singlehanded class in the Paralympics in Sydney 2000, and has been used in every Paralympic Games since.

## Martin 16

*http://www.martin16.com*

The Martin 16 (Length 16' 0") is a keelboat that can be sailed by 1 or 2 crew. The Martin 16 design combines stability, maneuverability, control and lively performance. It attracts sailors from the ages of 10-and-under to 70+, from 40 kg to heavyweights, from novice to national champion. In addition, the boat is ideal for sailing schools and training clubs, while it is also accessible for seniors and persons with disabilities. Its weighted high lift keel makes it a very stable and safe boat, which can be easily trailer launched and rigged by one person. The Martin 16 philosophy is built on simplicity and versatility.

The Martin 16 has design features that make sailing accessible to all sailors with mobility impairments. Stability, adjustable seating and specialized control systems make it user friendly for sailors with any level of physical ability. The Martin 16 offers optional automated systems for steering (i.e. Manual or electronic Joystick; sip and puff), sail sheeting and bilge pumping. By incorporating the needs of high quadriplegic sailing, the Martin 16 is the most accessible one-design on the market, providing high quads with 'sip and puff' options, enabling them to race competitively. The stability of the keel makes it a very safe boat for people with severe disabilities. The adjustable seating also assists with its ability to adapt to sailors with various mobility impairments. The Martin 16 is a high performance boat that is also utilized in numerous regattas, very popular in Canada.

## Sonar

*http://www.sonar.org*

The Sonar (length 23') is a high performance keelboat that is exciting to race, but easy to handle by sailors of all ages, strengths and skill levels. It is a really good day sailor, spacious and comfortable to sit in all day long, is trailerable and easy to launch for wet or dry sailing. The Sonar is a safe, well behaved training boat that is used to help teach new sailors how to sail while having fun doing it!

This 23-foot day racer has a contoured sit-in, spacious cockpit and offers numerous possible configurations and adaptations for different disabilities for sailors from beginner to the Paralympic elite. The Sonar showcased disabled sailing at the 1996 Paralympic Games in Atlanta where the sport was a demonstration event using the Sonar with a crew of 3. The Sonar has been the equipment for the three person keelboat in every subsequent Paralympics. When being used in Paralympic configuration, The Sonar is sailed without a spinnaker. When running downwind a whisker pole is used to hold the jib out to windward for maximum exposed sail area.

## Challenger Trimaran

***www.sailchallengers.com***

The Challenger Trimaran (length 15') is a singlehanded vessel utilized by a variety of people with different abilities. The Challenger is a tried and tested sailing boat. It evolved from the original Rob McAlpine-Downey design into the modern exciting craft it is today. It is tough and reliable, suitable for many uses and is used for training, racing, and/or cruising. The Challenger is a very versatile boat used for adaptive sailing. It can be launched from any sailing location, beach or slipway making sailing possible for everyone everywhere. The class association permits sailors with disabilities to adapt their boat to their own preferences. In keeping with the spirit of one-design, modifications to seating and control line setup are nearly always allowed.

## Ideal 18

*http://www.shumwaymarine.com/ideal18*

The Ideal 18 is a state-of-the-art keelboat, easily raced or day sailed by one to two or more persons. Appealing to modern sailors, the new design is easy to maintain, simple to rig and sail, trailerable and good-looking. It's also maneuverable and fast. Seats, seat backs, cockpit floor and splash-rail are built into the deck mold. By using equipment and sail handling techniques tested and popularized during the past ten years, Ideal 18 performs well with "no muss, no fuss." The Ideal 18 can be fitted with special adaptations to suit each sailor's specific needs.

## Flying Scot

*http://flyingscot.com*

The Flying Scot is perfect for family trips, singlehanded fun, and an excellent racer. It is very stable and unsinkable and needs less than a foot of water. And it is a good investment. The Flying Scot Sailing Association also maintains the strict, one-design class rules that allow your Flying Scot to remain competitive year after year without expensive equipment changes. The wide beamed Flying Scot has been used in some adaptive sailing programs with simple adaptations to accommodate a wide range of disabilities.

# IX. ADDITIONAL RESOURCES

In the following section you'll find examples of forms that you can use in the development and implementation of your adaptive program as well as additional background information on some of the disabilities that your sailors may have.

Content in this section includes:

- Come and Try Day Sample Program Outline
- Local/National/International Information
- Working with Schools
- Volunteer Registration Form
- Participant Application Form
- Common Disabilities, Instructional Techniques and other Considerations

Additionally, here are a few links to organizations that have more resources

1. US Sailing Adaptive Sailing Webpage– http://adaptive.ussailing.org
2. International Association for Disabled Sailors - www.sailing.org/ifds.php
3. Sailability – www.sailability.org
4. ISAF - www.sailing.org
5. Blind Sailing Internationally - www.blindsailing.org/
6. Special Olympics- www.sosc.org/sailing.html
7. Gowrie Group- www.gowrie.com

## "Come and Try Day!"- Sample Program Outline

An effective way to get started holding events for people with disabilities is to organize a day when they can come try sailing. This day could be seen as simply an enjoyable, isolated experience; on the other hand, it could be the beginning of a whole new pastime – good reasons for careful planning and organization.

### *1. Planning*

Every effort should be made to ensure that the experience is pleasurable for everyone involved, from planners to volunteers to participants.

- At least one person with a disability should be on the planning committee.
- Members of the sailing club or organization should be involved.
- The date should be chosen so as to avoid conflicts with major club or area events.
- Planning should begin as early as possible and should include an action timetable.
- Extremes of weather should be avoided – including heat and cold.
- People should be persuaded to make their boats available; boats and equipment should be insured.
- Club/Site facilities should be inspected for accessibility and flexibility.
- If feasible, transportation to the venue should be provided.
- Meals, snacks as appropriate, and hydration should be available for sailors and helpers.
- A team of competent helpers should be developed and organized.
- An orientation session involving disability awareness and related issues, basic types of disability, safety and special techniques should be planned.
- Planning should include alternative activities if the weather is bad as well as activities for those waiting to sail.
- An emergency and safety plan should be developed and put into place.
- The person or persons responsible for decision making on the day, particularly in relation to safety and weather, should be identified and introduced to all.
- Arrangements should be made for those who do not have PFD's.

### *2. Come and Try Day Program*

- Welcome, brief introduction, and question/answer period
- 1-4 hours of open sailing – switching sailors as often as needed to give every attendee the opportunity to sail.
- Volunteer instructors/experienced sailors that have been checked out to assist will take turns skippering and giving initial instruction to the newcomers, in each vessel
- Participants while onboard can be taught the basics of sailing and given the opportunity to be at the helm or trim the sails.
- Thank you and closing with refreshments, or refreshments can be served throughout.

### *3. Alternative Activities if needed due to weather or to occupy those waiting their turn:*

- Displays
- Demonstrations - describing boats, hoists, simple adaptations
- Videos, etc.

### *4. Promotion*

- As many people with disabilities as possible should be contacted, through such sources as:
- Local organizations for adaptive/disabled sports and other activities
- Universities, colleges, and schools
- Local councils
- Community sailing programs

- Local rehabilitation centers
- Local Therapeutic Parks and Recreation Departments
- Special Olympic Chapters in your area

### 5. Publicity

- To promote adaptive sailing and report the activity, the following should be involved:
- Local newspapers
- Local television and radio
- Appropriate websites
- Disability newsletters
- Local councils – national governing body for sailing and/or disability sports.

### 6. Advance information

- Everyone involved – participants, helpers, and publicity outlets – should know:
- What to expect from the day, schedule, club/venue facilities, catering, etc.
- How to get to the venue
- What kind of clothing to wear, including spare clothes.
- What kind of expenses may occur during the day

### 7. Funding

Most "try it" days can be managed at minimal cost. However, local grocery stores and merchants may assist with donations of food, water and small memorabilia. In addition, local governments and companies may provide grants and sponsorships. They appreciate the publicity provided by promotion of the day. Participants may have to be charged, but it is best if you can offer this experience free of charge.

### 8. Boats

Almost any craft will do provided it is:

- Reasonably stable
- Designed with a large, uncluttered cockpit
- Sensible for sailing conditions at the venue

### 9. Volunteers

A team of well-briefed, competent and enthusiastic boat owners is essential for a successful day. They should all:

- Know clearly what is expected of them in terms of time and activity
- Know how best to help (see *Instructional Techniques*)
- Be competent at their allotted tasks, especially boat handling
- Be identified as helpers by name tags, T-shirts, hats, etc. (see *Staff, Volunteers & Participants*)

### 10. Venue facilities

Perfect, accessible facilities are not a requirement for a "Try It Day." Temporary ramps, rented portable handicapped accessible toilets, tents and signs create a successful environment. However, the following should be checked to assure that they are reasonably accessible for wheelchair users and for people with walking disabilities and visual impairment:

- Jetties, docks and beaches
- Toilets
- Changing rooms

- Refreshment and gathering areas
- Areas protected from sun and/inclement weather.
- Parking

### *11. Extra Equipment/Needs*

- Planning should include an adequate supply of:
- Buoyancy aids/life jackets (PFD's). These should be in a variety of types and sizes to accommodate all disabilities.
- Water/windproof clothing (unclaimed club property is a good source)
- Spare warm caps
- Long elastic straps with Velcro clasps for securing limbs, as needed
- Plenty of bottled water
- Sunscreen

### *12. Safety and First Aid*

People with disabilities are no more likely than anyone else to need medical attention. But given the extra people at the venue, care should be taken to check for adequate first aid and rescue facilities. An Emergency Action Plan is highly recommended.

Rescue Boats & qualified crew (two per rescue boat) – one rescue boat per five to ten boats should be provided. These boats can either be that of the hosting organization or borrowed from local boat owners. (Asking local boat owners to donate their time and boats is a great way to get the local community involved in the program.)

### *13. Insurance*

Obligations and requirements vary from country to country; however, organizers will usually have third party and public liability coverage. Extending existing club policies for the day should be considered; activities for people with disabilities should not affect the coverage offered under a standard club policy however, it's always a good idea to check with your agent first to be sure.

### *14. Follow Up Information*

People appreciate having an information sheet to take away with them. Details such as the following should be included:

- Contact names and phone numbers
- Places to sail
- Types of sailing available
- Kinds of boats being used
- Cost of sailing
- Future activities and events
- A brochure on your local sailing program/a brochure on the national organization for adaptive sailing.

**For you to follow up, you will want to:**

- Collect names, phone numbers, email and mailing addresses
- Ask for comments on the day's activities
- Follow up with phone calls, email reminders and newsletters of future activities.

### *15. Suggested Emergency Action Plan*

An Emergency Action Plan is designed to let everyone, from organizers and volunteers to participants, know what to do and where to go in case of an accident or emergency on land or water. At some events, participants are being provided with this plan as part of their registration package.

The plan should include such details as:

- Emergency contact numbers for people in charge of first aid and for any rescue unit
- Who calls for emergency help
- Where the medical kit is kept on site
- If an emergency unit is called, who will meet them and where
- What procedures are to be followed in caring for the victim
- What documentation is required to be completed and filed
- How insurance is to be advised of any incidents.

## Local / National / International Information

### *Getting Organized*

This section provides a summary and then a move forward from the ideas presented in the previous sections. Researching what already exists and finding additional sources of information provide support for any new project. Information is available about sailing opportunities for people with disabilities from:

- Community Sailing Programs
- National Sailing Authorities
- Paralympic Associations
- Adaptive/Disabled Sports Organizations

If the above are unable to assist, contacting and networking with a neighboring country may provide information about their experiences and activities. International conferences such as Yes-Europe and Yes-Asia, held in cooperation with the International Foundation for Disabled Sailing (IFDS) can provide useful and varied contacts with other countries. In addition, annual international and world sailing championships can be other points of contact for additional information about sailing for people with disabilities.

### *Local*

Experience has shown that the following work well in establishing new adaptive sailing programs:

- Identify one or two key people to take responsibility for a group of sailors with disabilities.
- Include at least one person with a disability on the steering committee.
- Enlist the support of the club/organization board.
- Keep all club members informed as the group develops.
- Share responsibility for publicity, fundraising, boat maintenance, etc.
- Recruit and train a team of reliable volunteers.
- Develop a policy of shared responsibility for boats.
- Attract sailors and volunteers through schools, service clubs, rehab facilities, etc.
- Consider transportation needs to and from isolated venues for those who do not drive.
- Develop a structured program for training and events both sailing and social.

It is not necessary to make the club or venue completely accessible before you determine whether you have the participation to sustain it. Once you establish a regular relationship between facility and participants, plans to provide more permanent accessible facilities can be organized, and may actually encourage financial support and be of long-range benefit to the club itself.

### *Regional*

Regional committees distribute information, raise awareness, and access regional resources. Sailors with a disability should be represented on all regional sailing committees, and the needs of sailors with disabilities should be addressed in all development plans.

### *National*

As national networks are established, it is important to consider reaching out to the following organizations:

1. **National sailing authority.** Representation for sailors with disabilities on boards and committees should be established.

2. **National disabled sports organizations**. Other sports often provide new sailors; they may have access to funding.
3. **National Paralympic Association.** This may provide funding for developmental or elite training along with a possible national Paralympic team.

### *National networking also provides opportunities for:*

1. Recreational sailing at a range of venues
    - Racing against sailors from other clubs, qualifying to represent a country internationally
    - Sharing "good practices"
    - National newsletters distributed either in print or electronically provide information; national seminars provide a forum for discussion.

## The International Foundation for Disabled Sailing (IFDS)

### *History*

The International Foundation for Disabled Sailing was formed out of the International Handicap Committee in 1992 and is responsible for promoting and supporting disabled sailing around the world. In 1993, during the International Yacht Racing Union (IYRU) Conference in Toronto, the inaugural meeting of the Disabled Sailing Committee was held. In 2000, the Disabled Sailing Committee of the International Sailing Federation (formerly IYRU) was dissolved, and IFDS, authorized by and working in partnership and cooperation with ISAF, became the governing body for sailing for people with physical disabilities, blindness, and learning disabilities. IFDS is affiliated with the International Paralympic Committee and works with other international disabled sports organizations such as the International Blind Sailing Association.

### *Objectives*

The International Foundation for Disabled Sailing (IFDS) aims to:

- Support the development and promotion of sailing for people with all kinds and degrees of disabilities worldwide
- Represent sailors with disabilities at the international level
- Gather and disseminate relevant information
- Provide for an international exchange of ideas through meetings, sailors' forums, and the online sailors' forum.
- Compile a database of contacts, recommended boats, adaptations, etc.
- Prepare promotional videos, publications, etc.
- Coordinate ISAF/IFDS sanctioned international racing
- Create contacts for recreational sailing around the world.

### *Structure*

The IFDS has an Executive Board consisting of a President, a Treasurer, and four to six other committee members, plus a non-voting member nominated by ISAF. Major committees include Technical, Medical, Development, Fund Raising, and Technical Advisers. Other committees have recently been organized; these include Sailors' Advisory Council, Coaches' Commission, Events and Scheduling, and Equipment Evaluation. The IFDS web pages at http://www.sailing.org/sailors/disabled/index.php contain fuller explanations and descriptions of committee terms and duties. Minutes of Board meetings are available online. The IFDS Bulletin is available to anyone interested in adaptive/disabled sailing.

IFDS currently has a broad base of country membership from around the world; Recognized National Authorities (RNA's) must have or should aim to have affiliation with their national sailing authorities and disabled sports associations. There is an Annual General Meeting, which provides the opportunity for member countries to make recommendations to the Executive Board.

The IFDS Secretariat has been housed within the ISAF secretariat in Southampton, GBR, since 2001.

### *Publications*

IFDS is responsible for producing and updating the following publications. They are all available online through the website.

- **Race Management Manual** - Provides rules and guidelines for international sailing events such as World Championships and Paralympic events, including adaptations. Revised and updated every four years.
- **Functional Classification System** - Provides rules and guidelines for quantifying anatomical and functional sailing ability. Revised and updated every four years.
- **Sailing Manual -**Provides ideas for beginning sailing programs and getting started into disabled sailing. Revised periodically.
- **IFDS Bulletin -** Provides current, relevant information about events, competition, conferences, etc. Published monthly or bi-monthly.

## Working with Schools

In developing your sailing program for people with disabilities, it may be helpful to partner with your local schools. Below is an outline of suggestions on how to maximize this type of partnership:

### *Develop partnerships with local schools*

- Offer venue & facilities to schools
- Maximize the use of club/watersports center facilities, particularly during Monday through Friday
- Partner sailing experience with teaching skills

### *Work with mainstream & special schools*

- Offer a sport suitable for students of all abilities
- Offers opportunities for inclusion

### *Contribute to risk assessment*

- Schools are obliged to conduct a risk assessment of the activity and to prepare safety strategies
- Sailing venue can provide:
    - Certified sailing instructors
    - Safety Plan

### *Develop a curriculum related program*

- To justify the use of time from the school day it will be necessary to prepare a curriculum based sailing program that can include:
    - Personal & social skills – co-operating in teams, raising self-esteem & confidence (which flows over into other areas of learning)
    - Physical activity
    - Environment – increased knowledge of weather, wind & water
    - Mathematics – calculating distances to venue, angles of courses, cost of travel, fuel for support boats etc.
    - Geography – weather, location of venue
    - Language – purposeful use of written & verbal language to record/report activity; giving & acting upon clear instructions
    - Science – how sails work, flotation, water cycle, hydration, and temperature control.

### *Prepare a reward/certification aspect of the program*

- Follow standard award programs.
- Modify certification to accommodate students with a variety of disabilities.
- Introduce small steps reward system.

## Volunteer Registration Form

**Program Location:** _____

Last Name: _____ First Name: _____

Date of Birth (MM/DD/YY): _____ Email_____

*Telephone*
(Home): _____ (Work): _____ (Mobile): _____

*Address*

_____
(Mailing Address)

_____
(City/State) (Zip Code)

Current Occupation: _____

Special skills and interests (i.e. Sailing, Powerboating, Diving, Administrative, etc.):

_____

Do you have a CPR certificate, or nursing, PT/paramedic experience? Circle one: Yes No

If yes, please specify_____

Previous Volunteer Experience: _____

_____

**For Emergency Purposes only-** Please indicate:

DO YOU HAVE A MEDICAL CONDITION?

(i.e. Diabetes, Epilepsy, Heart Condition?):

Please specify: _____

_____

Emergency Contact Person

Name: _____

Address: _____

_____

Home phone: _____

**VOLUNTEER AGREEMENT**

I agree to abide by all decisions/guidelines set by the **YOUR CENTER NAME** in regards to any **YOUR CENTER NAME** activity/event. I give my permission to the **YOUR CENTER NAME**/the managing partner of the **YOUR CENTER** Programs to do an official background check as part of policy.

Signature_____

Date: _____

## Participant Application Form

**Program Location:** _____

Last Name: _____ First Name: _____

Date of Birth (MM/DD/YY): _____ Email_____

*Telephone*
(Home): _____ (Work): _____ (Mobile): _____

*Address*

_____
(Mailing Address)

_____
(City/State) (Zip Code)

**Emergency Contact Information:**

Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

If you have a disability, the following questions are optional, however, they would assist the **YOUR CENTER NAME** to better serve you through the development and implementation of future programs.

Type of Disability: _____

_____

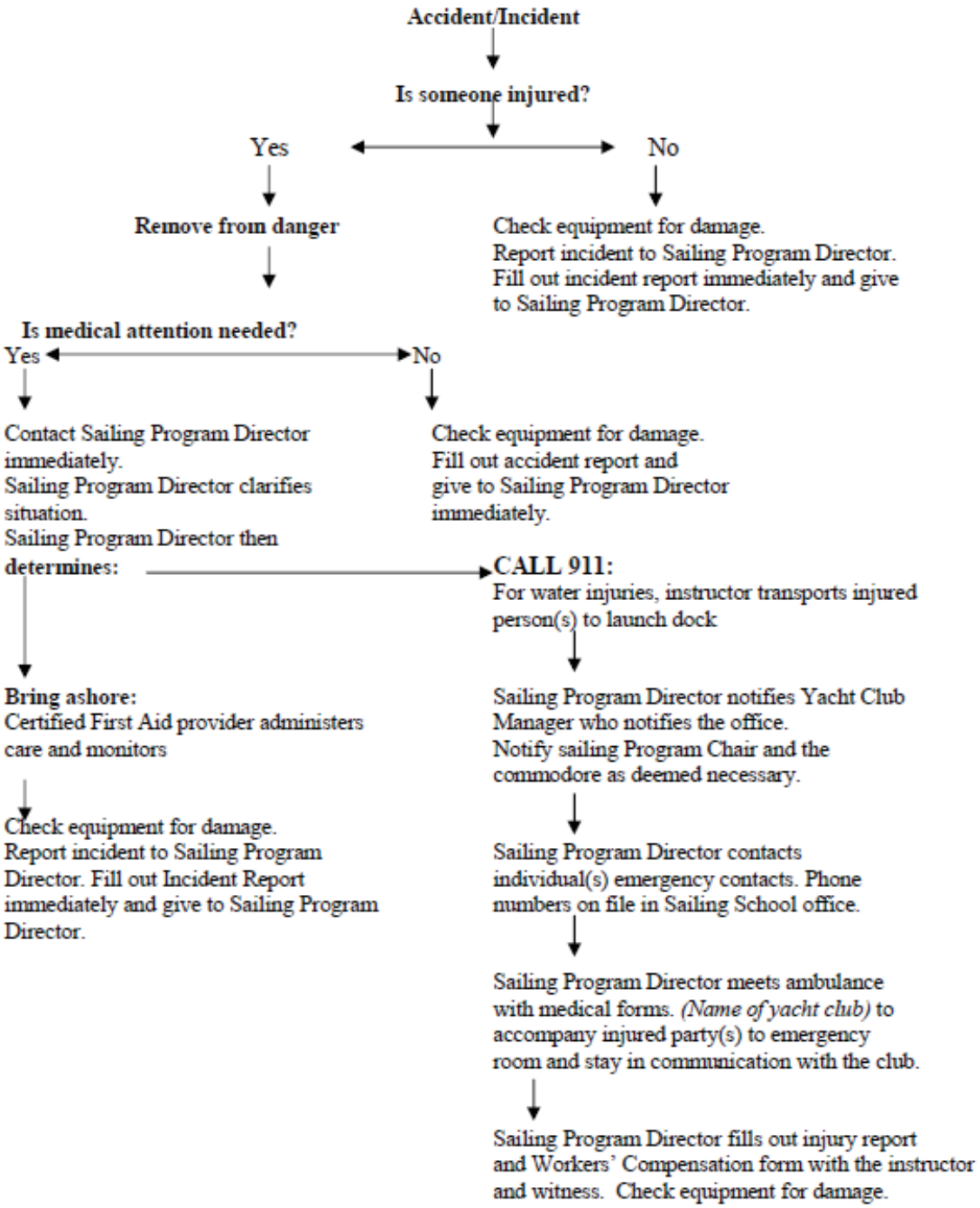
Do you require assistance? Yes____ No____
If so, in what areas do you require assistance? _____
Do you have a caretaker, member of your family or friend to help you? Yes____ No____
Do you have a wheelchair? Yes____ No____
Would you like to volunteer as well as participate? Yes ____No____

Have you ever sailed before? Yes ____ No ___

If yes, please give details _____

How did you hear about this program? _____

## Accident/ Incident Procedure Flow Chart *(reprinted with permission from Gowrie Group)*




The Burgee Program, Junior Sailing Safety Manual
Gowrie Group, 70 Essex Road, Westbrook CT, 06498 | 800.262.8911 | www.gowrie.com

## Emergency Procedure *(reprinted with permission from Gowrie Group)*

In the event of an emergency or incident, the *(person responsible for program)* will:

**1. GET HELP…**

FIRE: Get people and staff out of the area
Call **911**

INJURY: Provide immediate first aid
Call **911**
Disburse onlookers

INCIDENT:
*Robbery, obnoxious customer, collision (boat/car), trespasser, stolen property/boat*
Call **Police** at _____

*For less serious incidents (i.e. Coast Guard/Harbor Police stop, private boat unaccounted for, etc.)*
Contact **Marina supervisor** at _____

LOST RENTAL BOAT:

- Make sure all boats are accounted for at closing time.
- Search for boats before dark (all boats should be in sight one hour before closing) and take a VHF radio
- Have the office attendant monitor channel _____
- If boat cannot be found, call Harbor Police at _____

2. **THEN CALL…**
Manager _____
Assistant Manager _____
Office Supervisor _____

3. **The above will contact** or (if the Duty Manager is unable to reach one of the above supervisors) the *DUTY MANAGER* will report to:
Assistant Director _____
Director _____
Owner _____

4. **The Owner is to be notified** at _____ in the event of fire, serious injuries, and incidents requiring assistance from other law enforcement or emergency response agencies.

5. **Accidents, injuries, and incidents MUST be reported** in writing as soon as possible after their occurrence to the Marina Manager. Reports will be submitted no later than the day of the shift following the incident.

The Burgee Program, Junior Sailing Safety Manual
Gowrie Group, 70 Essex Road, Westbrook CT, 06498 | 800.262.8911 | www.gowrie.com

# Common Disabilities, Instructional Techniques & Other Considerations

Information in this section was provided by Jackie Kay of Sailability, Australia

## Types of Disabilities

- Acquired Brain Injury
- Amputations
- Asthma
- Blind & Vision Impaired
- Cerebral Palsy
- Deaf & Hearing Impaired
- Diabetes
- Heart Disease
- Intellectual Disability
- Multiple Sclerosis
- Paraplegia & Quadriplegia
- Spina Bifida

# Acquired Brain Injury

*What is an Acquired Brain Injury (ABI)?*
An acquired brain injury is a loss of brain function as a result of damage to the brain that occurs after birth. It refers to injuries to the brain caused by trauma such as from an external force, which may result in unconsciousness or a diminished or altered state of consciousness.

### *Causes*

The term Traumatic Brain Injury (TBI) refers to those injuries to the brain caused by an external force. This may result from:

- Motor Accidents
- Sporting Accidents
- Assault

Other conditions that may result in damage to the brain (ABI) include:

- Tumor
- Stroke
- Infection
- Substance Abuse
- Medical Mistake
- Accidents

The term Acquired Brain Injury (ABI) encompasses all injuries that occur to the brain after birth.

*How long does it last?*

The effects of ABI can be temporary or permanent. The period of rehabilitation and the outcome of brain injury will vary from person to person depending on the degree of damage that has occurred and the area or part of the brain affected. For this reason, some people who acquire a brain injury may incur multiple disabilities.

It should be stressed that people with ABI differ considerably from people with an intellectual disability. People with brain injuries usually retain their intellectual abilities but may have difficulty controlling, coordination and communicating their thoughts and actions.

### *Instructional Techniques*

An injury to the brain can result in partial or total impairments of cognitive, physical and/or sensory function. While recovery from physical conditions might indicate minimal impairment of an individual, there is often a change in the behavioral and emotional functioning as a person adapts to the changes in their life. For this reason, ABI is often referred to as the "hidden disability."

A person with an ABI usually retains their intellectual capacity after their injury; however, depending on the area of the brain that has been affected, there may be a problem in learning new skills because of the difficulty in processing information. Also, a person often has a problem in recognizing their own limitations due to lack of insight as a result of damage to the frontal lobes.

With regards to instruction the following guidelines are recommended:

- Always talk slowly and clearly – do not provide too much information in any one session.
- Break down task into components.
- Be prepared to repeat procedures in the following session.
- Use visual aids both during lessons and on the boat, if possible (i.e. use of picture cards and visual cues.)
- Ensure written material is in large type wherever possible (in font 14 plus, etc.) as people with ABI often have difficulty reading written material.
- Ensure that the participant keeps a diary for planning, including arranging sessions and race schedules.

### *Characteristics*

*Physical Sensory*

Physical considerations may include:

- An increased degree of spasticity
- Poor co-ordination and mobility
- Muscle weakness
- Susceptibility to fatigue

Often a person might experience a loss of sensory function, such as decrease in visual acuity.

*Cognitive*
Cognitive factors will vary for each individual but problems can occur with:

- Spatial orientation
- Motivation
- Judgment
- Memory loss
- Difficulty in transferring information

Each instructor will need to determine the amount of information that can be processed by a participant, including the capacity of short and long term memory.

*Other Considerations*
In some instances, people with ABI might often exhibit inappropriate social behavior. While this is minimal, it is an aspect of brain injury which people should be aware, to ensure minimum offense to others, especially considering the social aspect of boating.

*Medical Considerations*
Always attain a medical report or assessment of an individual including medication requirements and medical approval for participation in proposed activities.

Consult with individual, doctor and parent or caretaker to identify any issues, problem areas, medication, etc.

Epilepsy – people with ABI are more likely to develop epilepsy after their injury. For this reason, it is essential that instructors, caretakers, etc., have an awareness of epilepsy and knowledge of how to treat epileptic seizures.

### *Implications for Sailing*

- Balance can often be a problem – this should be taken into consideration, especially when on larger boats.
- Vision – Always check to see if there are any vision problems – people with ABI have problems with visual acuity.
- Depending on the degree of injury, it may be necessary to use modified equipment, i.e. electronic controls, etc.

*Fatigue*
A person with ABI is very susceptible to fatigue. Once a person is fatigued they are more susceptible to accidents, bouts of frustration, become easily stressed and therefore more likely to exhibit negative or inappropriate behavior.

- For this reason, the following guidelines should be implemented to facilitate an easier learning experience for both instructor and participant.
- Plan information or training session early in the day.
- Keep sessions short as concentration is often a problem and to minimize onset of fatigue.
- Ensure appropriate rest periods are programmed into training schedules.
- If racing, be prepared to change and distribute responsibilities within the crew.

*Frustration*

- A person with ABI will often not remember all the activities they could perform prior to their accident.
- Do not always presume that a person is capable of performing a task independently. It is often the case that the person will not be able to acknowledge initially that they are unable to perform certain tasks – the lack of insight is a common issue for people with ABI.
- Always provide encouragement and positive reinforcement at all times.

*Motivation*

People with ABI tend to exhibit a lack of motivation on many occasions. To address this issue, contact the person prior to the day, on the day, and as transportation is often an issue, arrange transportation with someone at set times to ensure the opportunity for participation.

### *Other Guidelines*

- Always consult with caretakers prior to beginning an activity. Apart from safety, this may eliminate situations where the trainee will be uncomfortable and become more stressed.
- An ABI is a hidden disability, sometimes; the disability is only apparent where there is an inability to cope in stressful situations.
- People with ABI wish to live independent and would like to be treated as an individual, be involved and integrated into the club or community whenever possible.

## People with Amputations

For our purposes, amputees will include people born with one or more limbs missing as well as people with acquired amputations. Amputations may be of a single limb, they may be double amputations or more. The position of the amputation is important. A person with an above the knee amputation will be more disabled than someone with a below the knee amputation.

### *Causes*

The causes of amputations may include accidents, i.e. car, farm, power tools, etc., poor circulation due to smoking, diabetes, cancer, infections, gangrene, etc. Drugs taken during pregnancy may lead to children being born without limbs.

### *Implications for Sailing*

- Equipment may need to be adapted to suit the person.
- The instructor should always be on the side of the sound limb.
- There may be difficulty with balance while sailing.

## Asthma

Asthma means “difficulty in breathing.” It is caused by the narrowing of the small breathing tubes in the lungs. This narrowing is due to the tightening of the muscle in the walls of the tubes; the swelling of their lining; and the increased production of mucus.

### *Causes*

The actual reason that asthma occurs is unknown, however, a great deal is known about things that can trigger an attack. Attacks may be brought on by many factors. No two people are alike and it can be very difficult to identify the actual cause of a particular attack. Below is a list of possible triggers for asthma attacks:

- Allergens, i.e. grass, pollens, house dust mites, pet fur, etc.
- Sudden changes in temperature
- Dry hot winds
- Some people may be sensitive to certain types of food, i.e. preservatives.

### *First Aid*

*Recognizing an Asthma Attack*

*Early signs of an attack*

- Breathing becomes more difficult and a wheezing sound develops.
- Breathing is rapid, sometimes with a grasp.
- Person becomes distressed, pale, and sweaty with a rapid pulse.

*What to do during an Acute Asthma Attack*

- During an attack the person needs quiet surroundings, clean air and treatment.
- Acute attacks need early treatment; the longer you wait the more difficult it is for medication to work.
- The person’s medications should be readily available with instructions as to the dose and the order they must be taken in. Generally inhaled beta-agonists are the fastest working.
- **If no medication is available seek medical attention immediately. In an emergency, pharmacist can supply medication.**
- During the attack, if the initial booster dose of medication is helping to control symptoms, continue medication every 4-6 hours.

### *Implications for Sailing*

- There is no reason why people with asthma should not be fully involved in sailing as long as they have their condition under control.
- If stimuli for attack are known to be climatic and the sailor and organizers are aware of the possibility of an attack in certain weather conditions then medication can be taken sensibly, participation can be complete.
- Organizers should be aware of medication and correct procedure during an attack and ensure the person has filled out an information sheet about their medications.
- Sailors, organizers & rescue boat assistants should be aware of a common signal given for “immediate assistance required.”

## Blindness & Vision Impairment

Blindness or vision impairment does not necessarily mean that the person cannot see anything. No more than 5% of "blind" people are completely unable to see. Most can see some light. A legally blind person is someone who cannot see, with visual aids, at 20 feet, what person with normal vision can see at 200 feet, or if the width or a person's vision is 20 degrees or less.

### *Causes*

There are many possible causes of vision impairment including: Diabetes, Cataracts, Glaucoma, Aging, Prenatal Infections, Eye malformations, Trauma – i.e. car accident, Infections, Tumors, Oxygen Treatment after Birth.

### *General Notes*

When in the company of a Vision Impaired person:

- If he/she wishes to sit, put his/her hand on the back of the chair.
- Let the VI person take your arm/shoulder. This allows him/her to walk one step behind you and judge, which way you are turning. When you come to a step, pause and say whether it is a step up or down.
- Approaching public transport or steps, place the VI person's hand on the handrail.
- Do not be afraid to offer assistance to a VI person who is traveling alone. It is then up to him/her to say whether or not he/she needs assistance.
- Direct questions for a VI person to him/her and not to his companion.
- Use his/her name at the beginning or at the end of a sentence. She/he will then know that you are speaking directly to him/her.
- Always leave a door open or closed, never ajar.
- If entertaining a VI person, ask him/her if he/she would like any of his/her food cut up.
- There is no need to tell him/her what type of food you are serving or where it is positioned on his/her own plate. He/she will ask all he/she needs to know. It is most important not to make a fuss.
- Hand him/her his/her drink, he/she can then place it where he/she can find it easily.

### *Communicating with a person with a Vision Impairment*

- Speak distinctly and directly towards the person.
- Don't speak louder than you normally do.
- Say something that announces your presence or intention to leave.
- Identify yourself when you approach a VI person and introduce any people with you.
- When speaking to a VI person, address him/her by name or touch so he/she knows you are talking to him/her.
- Speak naturally; don't worry about using words like "look" and "see".
- Be specific with directions, i.e. direct him/her to the left from his/her position instead of saying, "over there."
- Unobtrusively explain what is happening when in public.
- Talk to the person you are guiding and give directions to avoid difficulties.
- Never take a person's arm and put him/her in front of you. Hold your arm to your side so he/she can take it and walk ½ a pace behind you.

- Don't leave a VI person alone in the middle of a room. Make sure he/she has contact with something, i.e. a table.
- Don't completely fill glasses or cups.
- Discreetly tell a VI person if his/her clothes are dirty or untidy.
- Return objects to correct places so the VI person can find them easily.
- A half open door or any unusual object left where a VI person may walk can be very dangerous.
- Warn VI people to any possible dangers, i.e. wet floors.

### *Instructional Techniques*

- The instructor must be articulate and willing to give the fullest description of technique and correction of poor technique. Use key words to assist.
- Sometimes it may help if the person feels the instructor performing a particular movement or the instructor moves the person through the movement.
- Don't grab their arms unexpectedly. If you are going to touch the person tell them first where and what you are going to do.
- Constantly correct style manually - do NOT push or prod those being instructed.
- Demand an accepted technique irrespective of the disability - adaptation to techniques must be carefully evaluated to fall within an accepted limit – poor compromises inevitably lead to low standards of performance and injury.
- Familiarize the person with obstacles in the area (describe obstacles in their direct path or travel, let them feel the area and have time to "explore" the area.).
- Use other participants to assist with guidance and direction.
- A "buddy" system may be helpful.
- Give VI people constant feedback on the progress of an activity that may be naturally observed by people with vision.
- Acoustic signaling may be required in some activities to aid in direction/distance. Instructors should also develop cue/key words, i.e. communicating direction by referring to the hands of a clock.
- Develop a good level of spatial awareness.
- Work in a well-lit area. Shadows and dark areas may be dangerous and will reduce visibility.

### *Implications for Sailing*

- A VI should be aware of the location of the water, direction and location of facilities and have assistance until he/she becomes familiar with the area.
- Audible aids will assist the VI sailor with direction and distance of buoys and other craft and countdown for race starts.

# Cerebral Palsy

### *General Information*

Cerebral Palsy is the result of an injury to part of the brain before it has finished developing. It is non-progressive and it does not get worse. This injury affects parts of the brain that control and coordinate the muscles which move the body. Therefore, people with cerebral palsy have difficulties with movement and posture.

There are three main types of cerebral palsy:

1. **Spasticity –** These people find that when they try to move, certain muscles contract and go stiff. Then the muscles suddenly release. These people also have abnormal posture and poor hand functions with a certain amount of sensory loss.
2. **Athetosis –** People with athetosis have their movements hindered by lots of unintentional, uncontrollable extra movements. These actions tend to increase with excitement or nervousness. Atheotosis generally affects the whole body but one side may be more affected.
3. **Ataxia –** Usually people with ataxia have a degree of spasticity or athetosis as well. These people have difficulty in walking or moving steadily. They have trouble making controlled movements with their hands and feet so they appear clumsy and uncoordinated.

### *Difficulties associated with Cerebral Palsy*

Some people with cerebral palsy may also have an intellectual disability. However, it is important to realize that many people have normal or above normal intelligence, this is most likely with athetoids. Cerebral Palsy may also be associated with vision or hearing loss and epilepsy. People with Cerebral Palsy may not have perfect control over the muscles of their mouth and throat so that speaking and eating may be difficult. Some may have trouble controlling their facial expressions. The brain injury that causes cerebral palsy does not get worse as the person gets older. However, the effects of the cerebral palsy on the person will change over the years.

### *Causes*

There are many possible causes of cerebral palsy. The most significant aspect is that the damage occurs to the brain before it has fully developed. This may happen if the birth is premature, prolonged or difficult. Sometimes, the damage occurs in early childhood through brain infections (meningitis) or through actual brain injury of the sort that may be sustained in a car accident. Cerebral palsy is not inherited. It is extremely rare for there to be more than one case in a family.

### *Implications for Sailing*

- Many people with cerebral palsy will need lifting in and out of boats.
- Sailors with CP may tire easily.
- Poor circulation means they will get cold quickly and therefore may be susceptible to hypothermia. Sailors with CP should not be out on the water too long in cold weather and will need appropriate clothes.
- Sailors with CP often have difficulty with control of limbs and are prone to bumps and bruising. It is highly recommended that these sailors keep their feet covered at all times to avoid injury.

## Hearing Impairment

### *Classification*

Hearing loss is categorized by its severity:

*Mild Hearing Impairment*-Speech is normal; conversation is easy; has difficulty hearing distant noises.

*Moderate Hearing Loss*-Speech is impaired; has difficulty hearing normal conversation.

*Severe Hearing Loss*- Cannot participate in conversations although he/she may catch the occasional word; hearing aids are helpful.

**Profoundly Deaf**- Cannot use hearing to assist in communication; hearing aid may help but it is limited in its ability to permit normal speech.

### *Causes*

The cause of approximately 50% of hearing loss is unknown, however, common causes include:

- Ear infections
- Genetically inherited conditions
- Noise pollution
- Intra-uterine infections (during pregnancy) i.e. rubella
- Birth Trauma

### *Instructional Techniques*

**Points to Note:**

**Hearing aids** only amplify sounds they do not clarify them much. Background sounds also get amplified and this makes it difficult for the person to isolate sounds. So background noises should be kept to a minimum. Continuous loud sounds may cause headaches.

**Lip reading** – Try to be on the same level as the person you are speaking to as it is difficult to look up or down at a person and read their lips. Poor lighting also makes lip reading hard. The hearing impaired person's back should be towards the sun. Lengthy conversations should be kept to a minimum to avoid confusion. People who talk quickly, move their head, or smile when they speak may be difficult to lip read. Beards and mustaches can make lip reading difficult. Lip reading is tiring so the person may not be as good at understanding late at night.

When giving instructions in the presence of persons with hearing impairment the following points are important for effective communication:

- Be sure you have the person's attention so they can ascertain the whole message.
- See and be seen. Position yourself where you can be seen face on, at close range and in good light. The person needs to be able to lip read and see your facial expression.
- Hand gestures and facial expressions help make the meaning clear. However, keep hands away from the face.
- Avoid background noise.

- Speak naturally and clearly.
- Keep instructions short and simple – do not use unnecessary words or long sentences.
- Check that you have been understood.
- Rephrase the message if it is not understood.
- Encourage other members of the team to learn to communicate.
- Instructors should be precise and uncomplicated with signals. Aim to give all the necessary instruction before the activity has begun, using visual aids and demonstrations where possible.
- Use demonstration as the most important cue.
- Consider environmental conditions, i.e. wind and sun.
- During the activity, signs such as the wave of a flag, flick of lights, or tap on the shoulder may be required if the person is unable to hear a whistle.
- Use standard movements/body language, this hearing impaired people understand.
- Be patient.

*General Note:* If you have difficulty being understood either through lip reading or a hearing aid repeat what you have said in a different way – change the phrases you used. If there is still a problem, write it down. There is a danger of social isolation because of difficulty in participating in conversations so efforts must be made to include a hearing impaired person. A profoundly deaf person may be hesitant when speaking, as he is unable to hear his own voice to know if it is loud or soft.

### *Implications for Sailing*

It may be easier for a hearing impaired person to understand instructions and explanations if visual cues are used, i.e. maps, charts, labels on equipment, etc.

It is essential that visual signals between instructor and hearing impaired person be clearly understood.

## Diabetes

Diabetes is a disorder of the system that regulates the amount of sugar in the blood. Diabetics risk long-term complications due to high blood glucose. These complications may affect eyes, kidneys, nerves, and arteries, especially those supplying the heart, brain and legs. Often blindness and amputations are due to diabetes. Diabetes is an inherited disease. A person who has family history of the disorder has the tendency to develop it and carry it on to his/her off spring. There are two types of diabetes:

- **Insulin Dependent Diabetes**. This type is mostly in children or young adults, yet, is increasing in the number of adults, as well. These people produce little or no insulin. The treatment is daily insulin injections or insulin pump, diet and exercise.
- **Non-Insulin Dependent Diabetes**. This generally affects middle aged or elderly people. These diabetics are able to produce some insulin they do not need insulin injections. Diet alone or diet and tablets may be the treatment used.

### *Causes*

It is caused by a failure of the pancreas to produce a sufficient supply of the hormone, Insulin. Insulin allows the sugar to leave the blood and enter the body cells to fuel them. Without insulin, the sugar in the blood rises far beyond normal.

### *Diabetic Reactions*

There are two possible reactions from which diabetics may suffer; Insulin Reaction and Diabetic Coma:

1. *Insulin Reaction*
   This is the most common complication of diabetes and is due to a drop in blood sugar level.

*Cause of Insulin Reaction*: Delaying/missing meals; Insulin injected was more than needed dose; Unusual strenuous exercise; Emotional shock; Alcohol; Choice of injection site; i.e. changing from abdomen to leg; Injecting insulin into a muscle or blood vessel. This can increase the blood insulin level rapidly.

*Symptoms can include:* sweaty (cold & clammy), pale, trembling, headache, dizziness, dilated (widened) pupils, blurred vision intense hunger, unusual behavior, i.e. bad temper, poor co-ordination, staggering walk, convulsion, coma.

Symptoms depend on the severity of the reaction. The signs vary between people. A diabetic should know his warning symptoms.

2. *Diabetic Coma- Ketosis*

*Causes of Ketosis:* Omission of a dose of insulin; insufficient insulin in dose, infections, i.e. flu, gastric upset; neglect of diet; injury; severed injury; excessive alcohol consumption.

*Symptoms can include*: heavy urine glucose, ketones in the urine, thirst, frequent urination, hunger, fatigue, blurred vision, deep rapid breathing, vomiting, coma – if untreated, death.

### *Emergency Treatment*

- Give drinks sweetened with 2 full tablespoons of sugar and glucose.
- If dramatic recovery occurs it is an "Insulin Reaction" – give more sugar every 15 minutes for an hour.
- If it is "Ketosis," giving sugar will not harm them but you must SEEK URGENT MEDICAL ATTENTION if recovery isn't obvious.
- **If unconscious,** put the person in the coma position and SEEK MEDICATION ATTENTION IMMEDIATELY.

### *Diet*

It is important that diabetics are very conscious of their diet for a number of reasons. Diet can help to control the blood glucose level and diabetics need to maintain a desirable body weight.

Important points about diet:

- Meals and snacks should be eaten at approximately the same time every day.
- Meals must not be missed.
- Meals should be planned to provide an even food intake.
- Added sugars should be limited, alternative sugars are advised.

- Foods that contain a high amount of sugar should be avoided.
- Alcohol should be had in moderation. Alcohol is high in kilojoules and it may react adversely with some medications.

### *Implications for sailing*

- Unusual amounts of exercise or excitement may require the adjustment of treatment or an insulin reaction may occur.
- Sensory impairment reduces the diabetic's perception of pain; injuries may go unnoticed or be perceived as minor.
- People with diabetes are susceptible to infections and they tend to have poor healing capacities. Infections through cuts, blisters, etc. should be avoided. As their skin is so sensitive it may be advisable to wear foot covering. Circulatory restrictions should also be avoided. Tight wet suits may not be suitable.
- Sunburn can cause infections and it also affects blood sugar levels.
- Organizers should be aware that diabetics cannot miss or delay meals. Insulin needs to be kept in a cool place, preferably a refrigerator. Fast acting sugars, i.e. candies, orange juice should be readily available in case of an insulin reaction.

## Heart Disease

Generally, there is no reason why people with heart disease should not participate in sailing. In fact, being physically fit is thought to improve one's resistance to heart disease. The issue at hand is the work intensity and the ability of the individual to cope with the physical stress.

### *Heart Attack*

Sudden and complete oxygen shortage to the heart muscle causes tissue damage and if it is not relieved some of the heart muscle dies. This is a heart attack.

The warning signs:

- Squeezing, discomfort or pain in the center of the chest or behind the breastbone lasting more than 10-15 minutes.
- Pain spreading to the shoulders, neck or arms.

These may be accompanied by:

- Sweating, shortness of breath
- A sick feeling in the stomach

Far too many individuals die each year because they fail to recognize a heart attack. Modern medical treatments for heart attack can save lives and prevent serious heart damage. **Do not waste vital moments!**

- Dial 911
- Ask for an Ambulance
- Report a possible heart attack

- If an ambulance is not available, have someone drive the participant to the hospital.

Sudden pain and discomfort in the chest can be frightening. It is natural for all involved to "hope" it is something else – like indigestion, or a pulled chest muscle – and delay taking action. If it is a heart attack, every minute counts!

### *Stroke*

Stroke is an interruption of the blood supply to the brain. Symptoms depend on the part of the brain affected. They can include: headache, unconsciousness, weakness or numbness on one side of the body, impaired speech and partial loss of sight. Onset of symptoms is usually sudden.

### *Implications for Sailing*

- Sailor will become fatigued readily and requires frequent rest periods.
- If a person with a heart condition collapses, get medical help immediately.

## Intellectual Disability

### *What is Intellectual Disability?*

Intellectual Disability can be defined as a significantly reduced ability to understand new or complex information and learn new skills, reducing a person's ability to cope independently. It usually presents before adulthood and results in a lasting effect on development. But it may also result from disease or injury to the central nervous system at any stage of life.

Intellectual disability is present from birth or early childhood, or occurs during the developmental period (conception to 18 years). Special education, training and adequate support and medical treatment can help lessen its effects, but it is not curable. However, most people with intellectual disabilities are capable, with assistance, of learning about new situations and adapting to them. People with intellectual disabilities experience things that make us all human, but they learn and develop intellectually at a slower rate than average.

Three factors in combination determine whether or not a person has an intellectual disability.

1. Significantly below average intelligence
2. Shortcomings in everyday life skills
3. Disability appears in the developmental period.

### *Causes*

- Brain injury due to lack of oxygen at birth
- Brain injury during or after birth
- Disorders of metabolism, growth or nutrition
- Chromosome abnormalities
- Extreme pre-maturity
- Poor diet and inadequate health care
- Drug misuse during pregnancy (included excessive consumption of alcohol and smoking.)

### *Instructional Techniques*

An instructor needs to be aware of some common denominators among the population of people with an intellectual disability. Any one individual may not display all of the following characteristics, but rather, some of these to varying degrees:

- Inability to think in abstract terms.
- Lack of decision making ability
- Poor short term memory
- Learning difficulties and generally few literacy/innumeracy skills
- Poor coordination and mobility skills (often due to lack or appropriate opportunity.)
- Inconsistent concentration spans.

An instructor should recognize that:

- People with intellectual disabilities may range from borderline to profound in their impairment.
- A number of physical disabilities are often aligned with intellectual disabilities.
- Often where there is no accompanying physical disability, there is some delay in physical development. The sailor may take longer to master physical skills.
- Patience and understanding are needed.
- People with an intellectual disability like other people, express frustration and anger. Because they so often find it difficult to do this verbally, it often takes the physical form, i.e. clenched fists, foot stamping, withdrawal, tears, sitting down and refusing to get up. Their frustration need not be feared; rather, it should be recognized, accepted and channeled into appropriate actions.

Those involved with instructing sailors with an intellectual disability should consider the following points:

- Make all sessions fun and enjoyable.
- The level of expectation is crucial. Generally not enough is expected of people with intellectual disabilities both physically and socially.
- The greatest area of difficulty and frustration for both instructor and sailors is communication. Keep verbal instructions basic and brief. Be clear, precise, deliberate, sequential, and then reinforce your message.
- When demonstrating an activity, be clear and participate so the person has visual examples to model the performance on.
- Do not presume a nod or shake of the head means the person has understood your instruction. Seek understanding of the instruction from the person.
- People with an intellectual disability learn more by doing than looking and listening. When teaching new skills move the sailors through the desired motion.
- Be specific in praise and encouragement.
- Break down skills into small teaching components, ensuring each part is learned fully before progressing. Review and repeat skills, and drill in many different ways and situations. Then reinforce. Remember also that reinforcement should be spontaneous and immediate.
- Be prepared to teach basic skills. Many new sailors will not have had the opportunity to learn or understand these skills.

- Keep practice time on specific activities short to avoid loss of concentration and boredom. Be sure to vary your activities and drills.
- Do not assume that these sailors will automatically know the inherent etiquette of sailing. Etiquette should be taught and practiced regularly.
- Observe and talk with the person to become familiar with his/her individual physical and intellectual abilities.
- Activities and techniques can then be developed to provide challenges to meet individual needs.
- People with an intellectual disability may have little or no understanding of correct clothing.
- As with any instruction session, introduce new activities, early in practice sessions before the individual becomes tired and vary the tempo of training to reduce the fatigue factor. Also, motivate with appropriate devices, positive feedback, points, and individual recognition.
- Encourage the sailor to compete, above all against personal performances
- Instruction should emphasize patience, dynamic interaction, and prompt feedback that is both appropriate and validating.

### *Implications for Sailing*

- Many sailors with intellectual disabilities will be fully mobile. It is important to ascertain level of water safety skill they have and if necessary, the sailor may need to wear a life jacket while at the sailing venue.
- While sailing, a person with an intellectual disability may become fearful and react in an unexpected manner. These sailors should be monitored closely until their level of confidence is ascertained.
- On the other hand, a sailor with an intellectual disability may show no concern for his/her own personal safety or the safety of others. Again, initial close monitoring should be instigated.
- Positive actions should be continuously reinforced and celebrated. Negative behaviors should be addressed immediately with redirection and education.
- Be succinct and careful in their purpose when giving direction.
- Consistent crew and basic equipment should be maintained as much as possible for those individuals with an intellectual disability.

### *Additional **Operational Considerations***

*Learning Environment*

There must be a high level of program organization. This includes the facilities, all materials and presentations. The entire layout of the facility (inside and out) must be uncomplicated and clearly marked. The classrooms must be free of distractions, bright and clean, and with few shadows or dark spaces. In addition, materials should be designed to support ease of understanding, modular in content, with limited and precise wording, diagrams and pictures. Instructors should be outfitted in a uniform shirt (polo-T-shirt) that readily identifies them to program participants. The shirts should be bright in color and not contain complicated or wordy graphics. Presentations should also be modular, dynamic, clear and reinforcing in purpose and direction.

*Equipment*

All of the equipment used by these sailors needs to be basic in its design and maintained properly. This is especially important as it pertains to the boats, for which the set-up needs to be consistent with the standard class configurations. This leads to simplified operation and adjustment, based on clear direction and understanding.

## Multiple Sclerosis

Multiple Sclerosis, or MS, is a disease affecting the central nervous system in the brain and spinal cord. It is the most common chronic neurological condition among young adults. MS has no standard pattern of symptoms. The type and severity of its symptoms depend on the parts of the central nervous system affected. MS can present as either a remitting or a progressive course.

The remitting course is characterized by attacks or exacerbations of symptoms. In the beginning, the average interval between attacks is two years. However, it may vary and some people can experience long remissions (even up to 20 years), while others can experience more frequent bouts. At least two-thirds of the people with MS start off with the remitting course. Of those, about 60% develop through a slowly progressive course.

The progressive course, which is more common later in life, is characterized by the symptoms steadily becoming worse. In some cases, earlier bouts may have been too trivial to notice. In very rare cases, MS can present at any age as severely progressive course from the outset.

### *Symptoms*

Symptoms of MS vary greatly from person to person – from time to time in the same person. It should be noted that many people who have MS have an increase of symptoms during hot weather. Symptoms might include:

- Loss of coordination
- Extreme fatigue or unusual tired feeling
- Numbness or pins and needles
- Loss of bladder or bowel control
- Dragging of feet
- Eye trouble
- Speech difficulties
- Shaking of hands

### *Implications for Sailing*

- Because symptoms can vary so greatly it would be unwise to presume that each person with MS should be treated the same. Nevertheless, all safety precautions should be practiced. And as with all people with disabilities, ask them the best way to approach any situation.
- These sailors may be more prone to hypothermia and heat exhaustion.
- Reduced sensation in limbs may lead to injuries of the feet and therefore, it is advisable to have feet covered while sailing.

## Paraplegia & Quadriplegia

**Paraplegia** is defined as paralysis of the lower limbs and part or whole of the trunk – usually a result of an injury to the back.

**Quadriplegia** is paralysis of all four limbs and the trunk – usually a result of an injury to the neck.

### *Causes*

The major causes of spinal cord injuries are motor vehicle accidents, diving accidents, falls and football accidents. The majority of accident victims are young males aged 17 to 25 years. Human factors such as risk taking and other careless or dangerous behavior predominate in spinal accidents.

### *Classification*

Description of impairment using international sporting classifications according to level of injury:

*Quadriplegics*

- **CLASS 1A** – Weak hand and upper arm muscles.
- **CLASS 1B** – Arm and wrist muscles functioning but fingers unable to grasp.
- **CLASS 1C** – Arm and wrist muscles functioning, fingers able to grasp but inability to spread the fingers and close them.

*Paraplegics*

- **CLASS 2** – Impaired balance in sitting position
- **CLASS 3** – Good balance in sitting position
- **CLASS 4** – Thigh muscles not functioning
- **CLASS 5** – Thigh muscles functioning, but hip, knee and ankle muscles not functioning or not functioning optimally.
- **CLASS 6** – The same as in Class 5 but functioning to a greater degree.

### *Implications for Sailing*

- Depending on the level of disability, most people with quadriplegia and paraplegia will need assistance with lifting.
- Quadriplegics not accustom to physical exercise will tire easily.
- These sailors may be more prone to hypothermia and heat exhaustion.
- The paralyzed areas of the body are usually insensitive to heat, cold, or pain and will have reduced circulation. These areas need to be protected from hard surfaces by cushioning and other protective clothing. It is important for quadriplegics and paraplegics to have their feet protected at all times.
- The sailor may experience difficulty with balance while sitting in a boat, depending on the level of disability and may need additional support adapted for their use.

## Spina Bifida

The term Spina Bifida refers to a group of conditions in which there is failure of development of structures around the spinal cord. In the usual situation the lower part of the spine is involved. The severity of the condition varies considerably from person to person, with some being minimally affected and others having multiple, severe problems. The lower part of the spinal cord controls voluntary bladder and bowel function, and most people with Spina Bifida have problems in these areas. Usually with medical and surgical treatment, appropriate appliances and personal care these can be overcome, however occasional leakage of urine and feces does occur. There may also be associated renal tract damage and renal affections that cause periodic illness.

Spina Bifida is associated with an additional malformation at the base of the brain that causes obstruction to the circulation of fluids in the interconnected cavities that normally occur within the brain. This results in increased pressure and expansion of these cavities – or hydrocephalus.

In general the average IQ of people with Spina Bifida is below that of comparable groups – slightly more so for those with shunts. However the average IQ is within the normal range.

### *Causes*

The cause is partly genetic and partly environmental. Families with one child with Spina Bifida have an increased risk of having Spina Bifida in further children. There is an increased risk in the offspring of people with Spina Bifida. Smaller risks apply to close relatives. Other known facts such as social class, seasonal and geographical variations point to environmental factors. Many possibilities including vitamin deficiency have also been postulated but not proven. There is no evidence linking drugs taken during pregnancy with Spina Bifida.

### *Implications for Sailing*

Generally, the person's lower limbs are fragile and therefore more likely to fracture or suffer soft tissue damage. These areas need to be protected from hard surfaces by cushioning and other protective clothing. It is important for these sailors to have their feet protected at all times.

Care must be taken to not press or bump on the valve of the shunt that controls hydrocephalus. This valve is under the skin behind the ear – beware of booms!

If a urinary bag is worn, it should be emptied every 3-4 hours and before any physical activity.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