



INTERNATIONAL NAVIGATION ASSOCIATION

DISABILITY ACCESS GUIDELINES FOR RECREATIONAL BOATING FACILITIES

Final Report of Working Group 14
of the
RECREATIONAL NAVIGATION COMMISSION

INTERNATIONAL NAVIGATION
ASSOCIATION



ASSOCIATION INTERNATIONALE
DE NAVIGATION

2004





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The objective of this report is to provide information and recommendations on good practice. Conformity is not obligatory and engineering judgement should be used in its application, especially in special circumstances. This report should be seen as an expert guidance and state of the art on this particular subject. PIANC disclaims all responsibility in case this report should be presented as an official standard.

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ISBN 2-87223-147-1

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SUMMARY

The purpose of this report is to present guidance, from a global perspective, for reasonable and cost-effective access to recreational boating facilities by persons with disabilities. Statistics show that 1 in 4 people throughout the world have some type of disability. Those with disabilities, on the other hand, have greater barriers to overcome and may be precluded from boating activities regardless of their desire to participate. In many cases, laws and regulations were developed with landside activities in mind and have caused problems when inappropriately applied to boating facilities. Making such facilities more accessible is desirable and has resulted in increased participation by persons with disabilities in recreational boating.

The primary function of a recreational boating facility is to provide berthing and/or launching of a variety of recreational boats, including sail, power, and paddle types. Berths and moorings can serve long- or short-term needs; launch sites can use ramps, hoists, or simple “carry-down.” Ancillary activities may be found at boating facilities as well, including auto parking, toilet facilities, showers, food stores and services, boat sales, fuel sales, boat stores and storage, clubs and other recreational pursuits. When considering access improvements at a boating facility, it is desirable to provide an unobstructed path of travel for the full range of activities.

This guidance document is provided from the perspective of those with disabilities. While the overall goal is to provide disability access on a cost-effective basis, the methods used to reach the goal can vary around the world. The design suggestions emphasize the architectural approach that can usually be accommodated in new facilities with sufficient area for implementation, but may be problematic on sites with limited area when combined with large changes in elevation, and especially so with existing fully developed facilities. For these difficult sites, the designer is challenged to find an appropriate solution that meets the goal for disability access. Solutions are not necessarily highly technical or costly, but do need to be well thought out.

The “access for all” concept can create design conflicts of its own. An improvement for one type of impairment may not improve access for all users. Until ideal solutions can be found for these access conflicts, reasonable compromises are desirable. Sometimes it is judged too difficult to improve access for wheelchair users, and then other access improvements are assumed to be infeasible as well, or simply overlooked.

Ultimately, the goal is to make boating more accessible for all, which requires properly outfitted watercraft and support programs. In particular, this report includes information on these resources for persons with disabilities.



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DISABILITY ACCESS GUIDELINES FOR RECREATIONAL BOATING FACILITIES

PIANC WORKING GROUP 14 RecCom

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1. INTRODUCTION

1.1 PURPOSE

The purpose of this report is to present guidance, from a global perspective, for reasonable and cost-effective access to recreational boating facilities by persons with disabilities. The Recreational Navigation Commission (RecCom) prepared the Terms of Reference presented in the Appendix for a Working Group to study the matter because many countries now have laws requiring access improvements for persons with disabilities. In many cases these laws were developed with landside activities in mind and have caused problems when inappropriately applied to boating facilities. Making such facilities more accessible is desirable and has resulted in increased participation by persons with disabilities in recreational boating, as operators of their own vessels, or as passengers enjoying an outing with family and friends.



Pic. 1: Many people have some kind of disability

Statistics show that 1 in 4 people throughout the world have some type of disability. With an increase in age comes an increase in the rate of disability; among the elderly 1 in 3 people are considered disabled. As longevity increases, the percentage of people with disabilities is likely to increase. Although only a small percentage of the world's population engages in recreational boating, most people have the choice whether or not to go boating; those with disabilities, on the other hand, have greater barriers to overcome and may be precluded from boating activities regardless of their desire to participate.

In addition to the social benefits derived from greater inclusion of persons with disabilities in leisure activities

such as recreational boating, there are potential monetary rewards. Improved access can translate into greater patronage of recreational boating facilities and businesses, not just by persons with disabilities, but by boaters with carts or supplies to carry, the elderly in general, pregnant women, persons with infants, and persons with temporary injury, all of whom would benefit. While there are many good reasons for making access improvements to accommodate persons with disabilities, many designers and owners now recognize that good design for persons with disabilities makes sense for all people.

The primary function of a recreational boating facility is to provide berthing and/or launching of a variety of recreational boats, including sail, power, and paddle types. Berths and moorings can serve long- or short-term needs; launch sites can use ramps, hoists, or simple "carry-down." Ancillary activities may be found at boating facilities as well, including auto parking, toilet facilities, showers, food stores and services, boat sales, fuel sales, boat stores and storage, clubs, and other recreational pursuits (fishing, picnicking, swimming, etc.). When considering access improvements at a boating facility, it is desirable to provide a path of travel for the full range of activities.

There are persons with disabilities who are leaders in raising awareness of the need for access improvements, and they have been instrumental in making steady progress toward greater inclusion. It is desirable for persons with disabilities and their organizations to be involved with facility operators, planners, designers, and constructors in pooling their knowledge and experience so that access improvements can be made that allow greater participation and safer boating for all.

Many boating facilities were constructed long before awareness of the needs of persons with disabilities arose, and their operators have limited resources and physical space with which to make access improvements. Nonetheless, as improvements are made to an older facility, there may be opportunities to improve access for persons with disabilities with minimal cost and disruption. Some access improvements are simple and inexpensive to make. Many may aid persons with disabilities who are not in wheelchairs. Sometimes it is judged too difficult to improve access for wheelchair users, and then assumed that access improvements for persons with other forms of disability are not feasible either, or are simply not considered.

1.2 DISABILITY NEEDS

Persons with disabilities view their particular concerns over access to recreational boating facilities across a broad spectrum. This report focuses on a guidance approach to overcoming the more substantive physical barriers to boating activities. The following paragraphs describe



Wheelchair Type	Overall length (mm)	Overall Width (mm)	Weight w/Occupant and Attendant (kg)
Manual	1,092	635	
Electric	1,500	740	270
Scooter	1,100	700	

various forms of disability-related functional impairments, and associated physical barriers.

A boater with a mobility impairment who uses a wheelchair (RYA Sailability, 1998):

- Has difficulty turning and negotiating steep slopes
 - Cannot see behind
 - Is at a low height (eye level)
 - Has reduced stretch of arms to the front
 - Often has difficulty transferring from wheelchair to other seats
- Wheelchairs come in many sizes and types. Some are manually operated, but increasingly people are using outdoor electric wheelchairs and scooters. While there is not a standard wheelchair, the majority currently falls within the limits as presented in the table on top of this page.

A boater who uses crutches or other walking aid:

- Probably has poor balance
- Has no free hand to grab for support or carry items
- Cannot open swing/spring doors
- Often cannot travel as far as a person in a wheelchair
- Has restricted field of vision
- Cannot break fall with arms if balance is lost
- Needs a roughened surface to have good footing

A boater with a hearing impairment:

- May have difficulty being understood when speaking
- Needs good light on the face of the speaker to lip read
- May not hear announcements
- Needs visual warning signs
- May rely on sign language
- Cannot use a normal phone

A boater with a vision impairment:

- Needs to hear instructions
- Needs warning for dangers others can see
- Needs clear, contrasting colors
- Uses feet to feel for changes in surface
- Cannot read signs, instructions, or labels

1.3 APPROACH TO DISABILITY ACCESS

Many countries have evolved their own perspective on the issues addressed in this report, and boating facilities in the various parts of the world have unique conditions related to their location; hence, access solutions that work at one location may not be reasonable or cost effective at another. For example, water level fluctuations on the coast due principally to tides are typically less than 15 meters; however, for regulated lakes and reservoirs even greater

fluctuations up to 40 meters are possible in extreme cases. Furthermore, climatic conditions that influence the type and extent of recreational boating activities can vary greatly, from tropic to arctic.

There are also cultural views that must be considered. Some countries favor an approach that involves eliminating physical barriers, while others favor providing assistance, and some favor a combination of both approaches. Notwithstanding the range of cultural perspectives and site-specific conditions, a common theme is emerging to provide, where feasible, reasonable access for persons with disabilities. To the extent that there are laws or regulations in a country that prescribe requirements for access improvements, the interpretation of reasonable access must be consistent with the governing code.

The “access for all” concept can create design conflicts of its own. An improvement for one type of impairment may not improve access for all users. An example is a gangway, with a desired shallow slope to accommodate wheelchair users, but with a longer path of travel to attain the required rise, which may be objectionable to some users who depend on walking aids. Until ideal solutions can be found for these access conflicts, reasonable compromises and approaches are desirable.

Every area of a boating facility need not be accessible for persons with disabilities. It is desirable that reasonable accommodations be implemented. For instance, if a facility

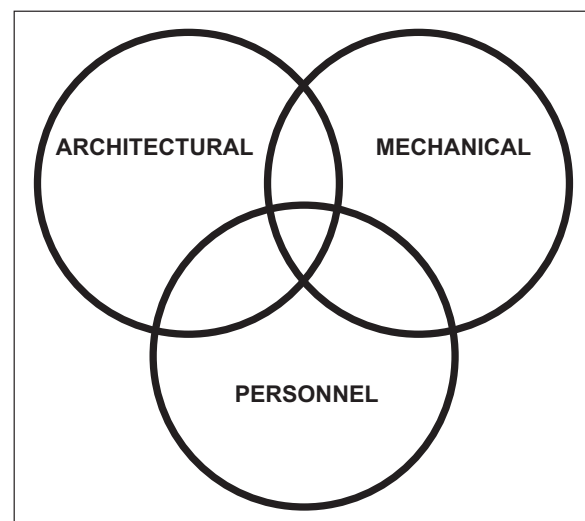


Fig. 1: Approach to disability access

has multiple docks, piers, or jetties, each would not have to be accessible, but it is desirable that at least one offer reasonable access for boaters with disabilities, and that other activities have a reasonable path of travel facilitating movement from one to another.

As an aid to understanding the information in this report, a glossary of terms as used in the report follows the references.

1.4 FORMS OF DISABILITY ACCESS

The fundamental objective for Disability Access is a Path of Travel or accessible route, described as a safe, continuous, and unobstructed path connecting the activities at a facility upon which a person with disabilities may travel. This could be accomplished by one or a combination of the following approaches as illustrated in Figure 1 on the previous page.

- Architectural (or Structural) – Facilities can be designed and constructed in a manner that satisfies the objective to create a safe, continuous, and unobstructed path for persons with disabilities. Examples of architectural measures include appropriate path dimensions, ramp slopes, path surfacing, railings, and signage, to name just a few.
- Mechanical (Device Assistance) – Mechanical devices such as elevators, inclined chair lifts, or similar transporters have been used to overcome barriers due to changes in elevation. In many cases the devices may be operated by the disabled user. Such devices can provide access only to the extent that they remain operational. In the event of a device failure, a person with disabilities could become stranded. Emergency power or a redundant form of access, which could include personnel assistance, can overcome this limitation.

- Personnel Assistance – Family, friends, and facility operators can provide assistance to overcome barriers, including moving individuals up and down stairs or steep ramps. Personnel may require special training to obtain the necessary knowledge and strength so that assistance is provided with assurance of safety and sensitivity to the feelings of the person with disabilities.

1.5 UPDATING EXISTING FACILITIES

The problems associated with retrofit of older facilities are especially acute in those facilities with limited land and water area as well as limited financial resources. An important first step for making access improvements at an existing facility is to undertake a review of the facility function and determine how it could be made more accessible. Such a review seeks to identify barriers for persons with disabilities. Potential solutions can then be developed and prioritized, culminating in the selection of the most reasonable and cost effective solutions. As repairs, maintenance, or improvements are implemented for existing facilities, it is desirable to consider access improvements. Refer to Section 5 for a discussion of the review process.

1.6 IMPORTANCE OF MAINTENANCE

Even well-designed and constructed access improvements can fail for lack of maintenance. Certain aspects of routine maintenance take on special significance when considering accessibility, such as removing accumulations of debris, gravel, or unwanted vegetation, as well as fixing broken pavement and replacing loose deck boards, all of which can obstruct paths of travel. Accessibility sign maintenance is also important to provide persons with disabilities with essential information.

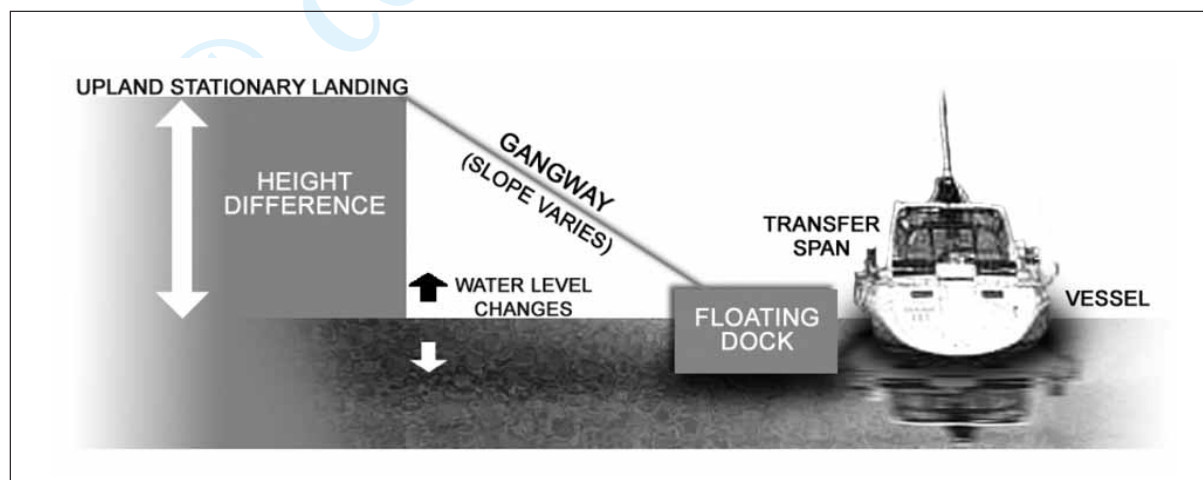


Fig. 2: Access problem from land to vessel



1.7 WATERSIDE VS. LANDSIDE ACCESS

Boating facility access improvements can be divided into two broad categories: waterside and landside. Although they share a common approach to disability access, they can involve differing technical solutions because of differing requirements for construction over land and over water.

- *Landside* – Activities at boating facilities are typically treated (by countries with landside regulations) in the same manner with regards to disability access as other upland (non-boating) recreational facilities. In some cases, a path of travel can provide direct access to the boating activity; for example, where boats moor alongside a fixed (non-floating) pier, quay, or bulkhead.



Pic. 2: Obstruction in the path of travel

- *Waterside* – Activities are often supported on a floating structure that is subject to motions driven by fluctuations

in water level, such as tides, waves, surges, freshets, etc. The dynamic nature of the water environment imposes additional design, cost, and operational constraints on the access solutions. This category includes the gangway used to connect the stable landside path of travel to the dynamic waterside path of travel. It is desirable that special attention be given to the gangway, as this often presents the most difficult access problem at a boating facility. Over water activities can also be supported on a non-floating structure, in which case they are typically treated as if they were on land with respect to disability access. It is desirable for waterside access to address the following special topics as illustrated in Figure 2.



Pic. 3: Ramps in Darling Harbour, Sydney

- Changeable height difference
- Stability of floating docks
- Safety on the Dock
- Responsibility for transfer to and from the vessel

2. DESIGNING FOR DISABILITY ACCESS

2.1 GUIDELINES FOR FACILITY PLANNING

It is desirable to consider the following guidelines when planning for Disability Access in both the Landside and Waterside portions of a Boating Facility:

- Short and easy to follow routes between activities
- Fewest possible changes in level
- Adequate route width and surface
- Adequate route and activity signage
- Easy to use facilities and equipment

2.2 PRINCIPLE DESIGN CONSIDERATIONS



Pic. 4: Ramps in Jack London Marina, Oakland

This guidance document is provided from the perspective of those with disabilities. While the overall goal is to provide disability access on a cost-effective basis, the methods used to reach the goal can vary around the world. From a facility operator's viewpoint, additional consideration must also be given to issues such as requirements of law, environmental protection, and economic resources. The following design suggestions emphasize the architectural approach that can usually be accommodated in new facilities with sufficient area for implementation, but may be problematic on sites with limited area when combined with large changes in elevation, and especially so with existing fully developed facilities. For these difficult sites, the designer is challenged to find an appropriate solution that meets the goal for disability access, which may include the use of mechanical devices or personnel assistance as local customs or regulations may allow.



Pic. 5: Ramp in Fish Harbour, San Francisco

A. Changes in Path of Travel Elevations

On upland areas, if steps are used at changes in path of travel elevations, an accessible route using a ramp (or series of ramps) may be desirable; alternatively, either a mechanical device (lift) or personnel assistance may be considered.

Regarding ramps for the upland and gangways for transition to floating docks, there is a tradeoff between length and slope; the greater the change of elevation, the more challenging the solution becomes. If the slope is flatter, then the required length is greater. A series of individual ramps, each of acceptable slope and length, separated by level landings (switches) that allow persons with disabilities to rest, is one design solution where large changes in elevation occur. It is desirable to consider level landings for turning or resting at the top and bottom of a ramp as well, and to consider warning strips for persons with impaired vision at changes in elevation in combination with a hazard such as occurs at traffic crosswalk curb ramps. Special consideration for the transition between the upland and the floating docks is provided in Section 2.2B.

With regard to slope (gradient) and length, see Figure 3 for guidance on ease of use by persons with disabilities.

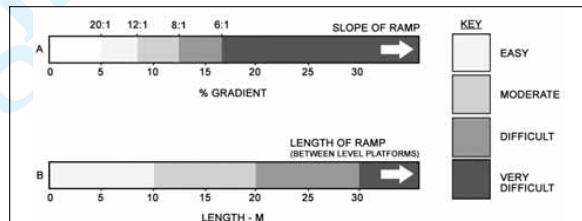


Fig. 3: Length and slope of ramps

B. Changes in Elevation at the Transition Between Land and Water

Gangways are used to transition between a fixed landing on shore and a landing on a floating structure and provide a special challenge due to changing water levels. Gangways are usually hinged or attached at one end and have a variable slope depending on changes in the water elevation. They are not ramps, which have a fixed slope. Changes in the gangway slope can be due to tides, drawdown in reservoirs and lakes, or freshets on streams and rivers.

As the range in water elevations increases, the gangway slope or length usually increases as well. Though desirable to provide a lesser slope, this requires a greater length, which results in increased cost and requires additional space to function properly. The



additional space required may not be available at existing facilities, or may necessitate the loss of berths or moorings. It is desirable to consider these factors when reviewing alternatives for gangway slope and length. Each alternative will have its particular spatial requirements, costs, and logistical considerations. In the United States, the federal government rule for accessible gangways allows a maximum slope of 1:12 (Ver:Hor) until a maximum gangway length of 24,4m is attained, at which point the slope can increase but the length of the gangway can remain at 24,4m.

When considering gangway options, a single long gangway may be more desirable than a series of short gangways; additionally, mechanical devices (incline lifts) have been successfully used in some cases. Where a large change in elevation is combined with a long path of travel, it is desirable to consider the use of level landings at the top and bottom of the gangway with transition plates to avoid steps or gaps between the ends of the gangway and the landings.

It is desirable that the site specific decision making process consider all options, including mechanical devices or providing personnel assistance if the gangway slope becomes too steep for unassisted use. Examples of various gangway solutions are presented in Appendix A.

C. Path of Travel Width

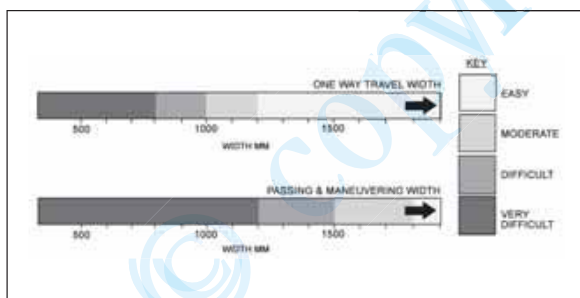


Fig. 4: Width of a pathway

It is desirable that paths of travel be sufficiently wide for use by persons in wheelchairs or those using other mobility aids. In order to permit simultaneous travel in opposite directions, as well as resting, the width may be increased or resting areas provided at regular intervals. Such areas are especially desirable where changes in direction occur to provide room for maneuvering.

With regard to path of travel width for one-way travel, and for passing and maneuvering, see Figure 4 for guidance on ease of use by persons with disabilities.

D. Path of Travel Cross-Slope

It is desirable that the cross-slope of a path of travel be minimized while allowing a slight slope for drainage. In the case of floating structures, it is also desirable for the path of travel to be stable such that its cross-slope remains within acceptable limits for the reasonably expected live loads and changes in live load position, even when subject to winds, waves, or currents that cause unwanted float motions.

With regard to path of travel cross-slope, see Figure 5 for guidance on ease of use by persons with disabilities. Increases in cross-slope when combined with increases in running slope can significantly magnify the difficulty for persons with disabilities.

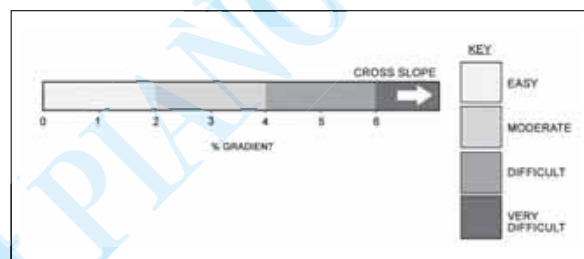


Fig. 5: Pathway cross slope

E. Path of Travel Surface

It is desirable that the surfacing material provides a slip-resistant and firm, unyielding surface. Suitable materials can include concrete, compacted earth or crushed stone, and timber, aluminum, or composite decking. It is desirable that care be taken to select materials that remain slip-resistant and firm under all weather conditions. Compacted earth and granular materials may only be suitable for dry conditions if not properly installed. It is also desirable to avoid too much texture for slip resistance, which could create rolling friction that interferes with wheelchair mobility. It is desirable that special care be taken for ramps and gangways to provide slip resistance, especially if subject to wet and/or freezing conditions.

Slippery conditions can also be created by spillage; areas prone to spillage, such as around fish cleaning and wash-down stations, deserve special design treatment and regular care for removing the spillage.

It is desirable that the path of travel be free of abrupt changes in level or gaps, which can be a tripping hazard or an obstruction to wheelchairs. With regard to changes in level and gaps, see Figure 6 for guidance on ease of use by persons with disabilities. At boating facilities, changes in level and gaps may be found where a gangway

attaches to an abutment, where it lands on the floating dock, between floating dock sections, between deck planks, and where path of travel construction joints or material changes occur. Understanding the characteristics of various decking materials is essential; wood expands and contracts in response to climatic changes and over time tends to shrink. Concrete tends to crack and spall, particularly at joints. Plastics tend to expand and contract considerably with temperature changes, all of which can contribute to the formation of abrupt changes in level and gaps.



Fig. 6: Pathway change in level or gaps

F. Railings

Railings provide support and guidance for stair, ramp, and gangway users, and are not to be confused with guardrails, which serve to protect users from the danger posed by the presence of a large drop-off or other hazard. In some cases, such as gangways, both guardrails and hand, toe, and mid rails are desirable. It also may be desirable to place a guardrail at the bottom landing of a gangway opposite the gangway toe if there is a concern that a person coming down the gangway in a wheelchair could overshoot the edge of the dock. The following describes guidelines for hand, toe, and mid rails, since the use of guardrails is considered by many a separate safety concern.

Where railings are considered, it is desirable that they be provided on both sides of the stair, ramp, or gangway, because some persons with disabilities favor one side or the other for support. With regard to the height of a handrail above the walking surface, see Figure 7 for guidance. There are other considerations, including the shape and space of the handrail from an adjacent support wall or post to allow a firm grip on the rail. A round or oval cross-section between 40 mm and 60 mm diameter is preferred, with a clear space about 50 mm from the wall or post.

Toe rails may be used on gangways and some ramps to prevent wheels or walking aids from slipping off the edge, and to guide the visually impaired who rely on canes. Where toe rails are provided, it is desirable that

the center of the rail above the walking surface be no greater than 100 mm, with a gap between the toe rail and walking surface to allow for drainage.

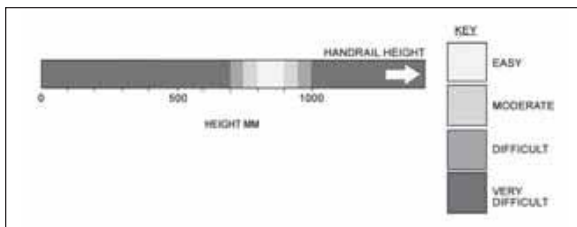


Fig. 7: Handrail height

Mid rails may be used as a safety precaution for children, or movement of carts, and by persons in wheelchairs to aid in negotiating ramps and gangways. It is desirable that the midrail be at a reasonable height above the walking surface for use by those in wheelchairs and of such shape and size to allow a firm grip.

G. Edge Protection



Pic. 6: Edge protection



It is desirable to consider edge protection at places where there is a concern about falling into the water or the presence of a hazardous drop-off. This may be accomplished with a railing or raised curb if constructed properly to form a suitable barrier. In the case of fixed or floating docks for mooring of boats, a railing or curb creates a conflict with boat access. Railings, including curb rails and curbs, can interfere with boat access for persons with disabilities, as well as the able-bodied, who prefer a clear edge to transfer themselves between the dock and boat. Where such railings or curbs are used, it is desirable that clear openings be provided at regular intervals with a width sufficient for use by persons with mobility aids.

In some dock situations, it is desirable to consider a contrasting color/texture warning strip as opposed to a railing or curb to indicate the location of the dock edge. Likewise, warning strips may be employed along the path of travel to indicate where a facility function change occurs, such as the entry at the transition between land and water, alerting users to a potential danger.

H. Transferring Between Dock and Boat



Pic. 7: Hoisting device



Pic. 8: Ready for hoisting on-board



Pic. 9: Hoist for transfer between dock and boat

Ultimately, a person with disabilities will want to transfer between the dock and boat. Due to the numerous approaches and personal preferences, it is desirable to leave the responsibility for the transfer to and from the boat to the boater, as opposed to the facility. Where

feasible, facilities may assist by allowing the placement of transfer devices within the facility on a safe and prudent basis.



Pic. 10: Physical lifting

Devices are available to facilitate the transfer of a person with disabilities to and from boats, some of which can be mounted on the dock, imposing additional requirements on the dock design, while others are carried on-board the boat.

The transfer aids used by individual boaters are largely a matter of the boater's personal preference. Due to the wide range in characteristics of both docks and boats, there are many ways to solve this problem. Some of the currently available methods of transferring a person with mobility impairment between a dock and boat include the following:

- For Large Craft – For craft that can accommodate a wheelchair on board, the person may be transferred while remaining in his/her wheelchair and is typically rolled on-board. This can be achieved by:

- Gangways wide enough for use by a person in a wheelchair (along with an attendant person), or for a person who uses a walking aid. It is desirable that the gangway be equipped with railings on both sides, and have a non-slip surface. Ramps on the dock are sometimes used in combination with gangways to increase the dock level and ease the use of a gangway. Some situations may warrant a special wheelchair (i.e., narrower than most, similar to airlines) with straps and an attendant.



Pic. 11: Simple provision to roll a wheelchair on-board

- Physical Lifting (see below).
- For Small Craft – For craft that cannot accommodate a wheelchair on-board, the person may be transferred into the boat, leaving the wheelchair or walking aid on the dock.
- Hoists are used by persons with disabilities in many areas of their lives. At a docking facility, a specialized hoist attachment may need to be installed at the dock edge. Hoisting systems that have been passed to international standards are available.



Pic. 12: Inclined lift for wheelchair transfer

- Transfer Boxes are readily made by fitting storage boxes with a hinged panel and a seat across which a person with disabilities may slide to the deck of a boat moored alongside. This method is typically used by paraplegics to board small sailing keelboats.
- Physical Lifting is the most common method, but is not the ideal solution for either the person with disabilities or the person doing the lifting. While experienced persons to perform the lifting are generally available around a docking facility, it is not advisable to lift a heavy person in a wheelchair (especially an electric wheelchair) because of the potential for injury to both the person being lifted and the lifters.

I. Ramps for Boat Launching

Boating facilities that have a launch ramp generally use the same ramp for both launching and accessing boats in the water, which presents a conflict for designers. Practical launching considerations dictate a steeper slope (and greater length as well) than suggested in Figure 3

for accessibility; furthermore, the ramp surface is often heavily textured to provide better traction on the relatively steep ramp. All of these factors contribute to diminished accessibility for persons in wheelchairs. The solution in this case has usually been to allow the launching function to govern the ramp design. Provision of a separate boat access ramp has not been found cost-effective, nor is it consistent with the manner in which most persons with disabilities would use such a launching facility. Personnel assistance, both for launching and access, is generally accepted in this case.

2.3 ACCESS TO ACTIVITIES NOT ON A FLOATING STRUCTURE

Boating facilities include many activities besides berthing and launching that enter into facility design. Since most of these other activities are not supported on floating structures, it is assumed that their design, including path of travel and access considerations, will follow local custom for similar recreational activities in a landside setting. These activities may include:



Pic. 13: Access to restrooms



- Car Parking
- Access Trails
- Restrooms/Toilet Facilities
- Showers
- Laundries
- Stores and Commercial services
- Clubs and Restaurants
- Other Recreational Pursuits

Specific facility designs should be made after consulting current applicable regulations, from the locality as well as the province, state, and/or country.



Pic. 14: Operation of toilet

3. PROVIDING ACCESS SIGNS AND PUBLICITY

3.1 ACCESS SIGNS

When a person with a disability attends an unfamiliar venue, especially a docking facility or sailing club, answers to questions such as the following would be of assistance in planning an outing:

- Is disabled parking available?
- Are the toilets accessible?
- Is the restaurant/bar accessible?
- Are the gangways and docks accessible?
- Is it possible to board the boat?

The most recognizable pictogram is the International Symbol of Accessibility, or ISA, often known as the wheelchair symbol, established and accepted by Rehabilitation International, New York. In several countries, the use of the ISA is protected by law. The symbol may not be applied unless certain requirements are met. The requirements are formulated and the examination is performed by the national organization of persons with disabilities.

Although many people with disabilities do not use wheelchairs, the symbol represents the general concept of disability, and the use of the symbol at an entrance to a facility is supposed to indicate that there is disability access. Worldwide, there are two recognized levels of accessibility:

- *Fully accessible*; i.e., facilities meet (national) standards and are fully accessible to a person in a wheelchair;
- *Assistance required*; i.e., while facilities may have been designed with disability in mind, they do not meet required standards (for instance, the slope is too steep, or the doorstep is too high), and assistance may be required.

In the first case, the ISA can be applied. In the second case, a new pictogram may be used, showing the ISA wheelchair being pushed by another person. In combination with pictograms recommended by PIANC in the report *Pictograms for Pleasure Navigation*, March 1996, it is possible to give answers to questions like the ones mentioned above.

Pictograms are a special kind of symbol. These symbols are a visual shorthand. It is desirable that they:

- Be easy to recognize (it is desirable that they be simple)
- Have one clear meaning for each symbol
- Be understandable in every culture and linguistic region (it is desirable to minimize the use of text)

A good pictogram does not attempt to be realistic. Part of the style of pictograms is defined by the International Organization for Standardization (ISO) in the International Standard ISO 7001, 1990, Public Information Symbols.

As it is desirable that the pictogram symbol contrasts with its background, a white symbol may be used on a dark background and a black symbol on a light background. It is further desirable that they be made of non-glare materials, located in areas easily observed when entering a venue, and placed with the lower edge not below 0,90m and the upper edge not more than 1,7m above the path of travel to ensure



recognition by wheelchair users with a low viewing position. If text is used, it is desirable that the height of the letters on the sign consider the reading distance; for example, 20 cm is appropriate for a reading distance of about 20m.

With regard to access signs, it is desirable to consider two approaches: all information concerning the facility together on one display at the entrance as illustrated in Figure 8, or activity specific signs at the entrance to the specific activity as illustrated in Figure 9. The large pictogram indicates “accessible” or “assistance needed,” while the sub-signs refer to the specific activity. In case only one activity has to be indicated, the ISA symbol can be imposed on the particular pictogram.

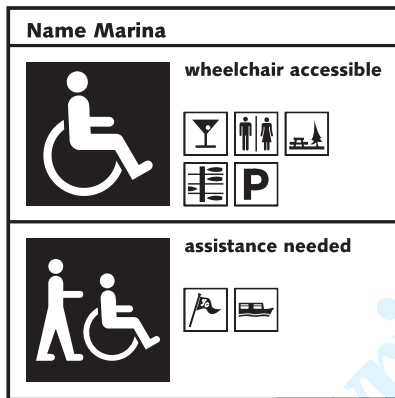


Fig. 8: Example of One Large Display.
Bar, toilets, picnic site, parking, and piers are accessible.
Assistance needed for yacht club hire-boats.



Fig. 9: Example of Two Separate Signs With Sub-Signs.
Hotel, restaurant, and toilets are accessible. Assistance
needed for access to piers and hire-boats.

3.2 PUBLICITY

Some boating facility owners/managers are hesitant to invest in provisions to improve accessibility. This is the “chicken and the egg” question: if the facilities are not accessible, there will be no users, and because there are no users, it seems that there is no need for investments. Such owners/managers may wish to keep in mind that persons with disabilities generally bring friends and relatives to assist them, and in this way investments in accessibility for disabled people can also attract other visitors. Therefore, it is desirable that provisions to enhance accessibility be advertised to the world of disabled boaters, and the following provide some examples:



Pic. 15: Clear signage

- Newsletters and magazines of national boating and sailing associations
- Internet websites and e-newsletters
- Industry magazines and journals
- Water sports almanacs and maps
- Direct mail to potentially interested persons and parties
- Signs and displays at the facility

In general, those people who benefit most from certain services or facilities are the ones who may develop initiatives. In this case, the organizations of persons with disabilities may help educate the boating industry to make accessibility improvements and take initiatives for publicity. A list of relevant organizations can be found in Appendix B-1. A description of particular sailing programs for persons with disabilities can be found in Appendix B-2.



Pic. 16: Car parking for disabled visitors

4. EXISTING ACCESS LAWS AND REGULATIONS

4.1 OVERVIEW

Many countries responded to the PIANC WG 14 survey (2001) to determine whether or not they have general legislation that enforces equal circumstances or particular requirements for accommodating persons with disabilities. Only one country has specific regulations for recreational boating facilities that reflect their unique situation, while some other countries have general legislation that is being interpreted and applied to boating facilities. About 2/3 of the responding countries had no specific regulations in effect at the time of the survey to address the special needs of disabled boaters.

In most cases there is general legislation to cover mandatory requirements regarding car park space, access to buildings, and function in many types of facilities. In some cases there are special regulations or instructions for passenger vessel and ferry facilities.

Where the general legislation has been interpreted for recreational boating facilities, additional specific regulations may be desirable to obtain an unambiguous understanding of the requirements. However, regulations are not always necessary to develop access to recreational areas for persons with disabilities, as there are examples of accessible venues where the incentive to improve access came out of private interests.

In Table 1, a summary of the laws and regulations that are in effect for disability access by country is presented.



Country	General Legislation For Accessibility By Persons With Disabilities	Specific Legislations or Regulation For Recreational Boating Facilities	Guidelines/Checklists Regarding Recreational Boating Access	Hallmark for Accessibility at Boating Facilities
USA	Americans With Disabilities Act (ADA) (1990)	Recreational Boating Facilities Guidelines (Access Board, 2002)		
Great Britain	Disability Discrimination Act (DDA) (1995)	Interpretation of the DDA (specifications are in proposal since 1999)	British Waterways Corporate policy and guidance documents Foundation Entry Level Scheme and the RYA guidelines	Listed in RYAS: "Where go sailing"; Permission to fly RYAS pennant
Australia	NSW Disability Services Act (1993) Federal Disability Discrimination Act (1992)	Interpretation of the general legislation	Several guidelines and checklists (1993-1997)	
Japan	Transportation Accessibility Law	None has been planned	Technical guidelines for barrier-free facilities in ports	
Germany	"Building Act" (Landesbauordnungen)			
France	Loi n 91-663 Several regulations for facilities with disabled access (buildings, transport, and public areas)		"Une Voirie pour tous" arrêté du 31 aout 1999 (application decree for the general law 1991) "circulaire du 23 juin 2000" (circular letter with recommendations)	"Association des Paralysés de France"
South Africa	Integrated National Disability Strategy White Paper 1997	None		
Czech Republic	"Building Act" (1994) (act No 50/1976 Coll)	Interpretation of the "Building Act" (Transportation)		
Netherlands	"Bouwbesluit" (Building Act) (1992) "Wet Gelijke Behandeling" (law for equal rights) 2003	None	"Geboden Vaargang" (Navigational obligations) (1991) "Handboek voor toegankelijkheid"	
Italy	Art 23 legge n. 104/92 Law gives general obligation to remove obstacles to sport, touristic, and recreational activities. Special instructions for facilities for passenger vessels and ferries.	None		
Iceland	Regarding car park access and easy access to buildings	None		

Table 1: Overview of laws and regulations





4.2 SPECIFIC CASES

Additional Comments are provided in Appendix C.

USA

General Legislation: Americans With Disabilities Act (ADA) 1990. This act requires the U.S. Access Board (formerly the Architectural and Transportation Barriers Compliance Board) to establish minimum accessibility guidelines. Some states have adopted their own rules based on the federal guidelines.

Specific Legislation: The U.S. Access Board issued its rulemaking on September 3, 2002 for recreational boating facilities. The rulemaking covers new facilities and improvements to existing facilities and addresses such issues as gangways, boat slips, accessible routes and related issues.

Great Britain

General Legislation: Disability Discrimination Act (DDA) 1995. This act has implications for all service providers. The act works against discrimination. From October 1999 the act will be introduced for legislation. Part III reads “A service goods or facilities provider should not refuse to provide a service... or withhold reasonable adjustment on the grounds of disability.”

Specific Legislation: The act requires providers to ensure that disabled people have new rights in the areas of employment, access to goods and facilities, and in the buying or renting of land and property.

Guidelines: In many respects, British Waterways is ahead of the legislation and embodied the access issues in corporate policy and guidance, namely: The *Environmental Code of Practice* and the three volumes of *Design Manual, Waterway Access for All* (WAFA) (Policy and Design Guidance); *On Shore Facilities for Sailors* (an RYA Design Guide of Facilities for Disabled Users).

Australia

General Legislation: NSW Disability Services Act 1993; Federal Disability Discrimination Act 1992.

Specific Legislation: Access has been recognized as a priority on a Federal and State level. Legislation has been implemented to address this issue.

Guidelines: *The Australian Standards of Mobility and Access (1993)*; *ACROD, PEAC—Checklists for Building Access for People With Disabilities 1995* (not standardized); *Access Checklist for People with Disabilities (1997)* (the access checklist is a collection of Australian standards for “design for access and mobility”).

Japan

Guidelines: Technical guidelines for barrier free facilities in ports.

Germany

General Legislation: Federal regulation: “Landesbauordnungen” (comparable to building act in other countries). A recent survey (2002) shows that 94 of the 2104 marinas (minimum 3 berths) in Germany have “accessible” sanitary facilities.

France

General Legislation: Loi n 91-663: Several regulations for facilities with disabled access (buildings, transport, and public areas).

Guidelines: “*Une Voirie pour tous*”; A circular in which interpretations and applications of the general law are clearly illustrated and supplied with additional recommendations. Sources of the circular are: “arrêté du 31 aout 1999” and “circulaire du 23 juin 2000.”

Hallmark: Hallmark of “Association des Paralysés de France”

Czech Republic

General Legislation: “Building act” (act No 50/1976 Coll). Products and building construction should comply with the conditions stipulated by the notice of the Ministry of Economy (174/1994 Cioll). This notice determines universal technical requirements that enable using the buildings by persons with limited mobility and orientation capability.

Specific Legislation: Interpreted from the above general “building act”





The Netherlands

General Legislation: *Bouwbesluit 1992* (Building Act); *Wet gelijke behandeling 2003* (a law which enforces equal rights in general).

Guidelines: *Geboden vaargang* (standards, guidelines, conditions, and facilities in relation to the accessibility of a marina facility); *Handboek voor toegankelijkheid*.

Iceland

General Legislation: Legislation regarding car park space set-aside and easy access to buildings.

Italy

General Legislation: Art. 23 legge n. 104/92: gives general obligation to remove obstacles to sport, touristic, and recreational activities. Special instructions for facilities for passenger vessels and ferries.

South Africa

General Legislation: South African Integrated National Disability Strategy address, amongst others, barrier-free access and transport.

5. REVIEWING ACCESSIBILITY

5.1 FUNCTIONS OF A REVIEW

Accessibility may be evaluated by means of an access review. The aim of the review is to inform people of what is currently being done, note areas that need to be addressed in the future, and suggest possible ways of achieving accessibility. A review performed in this manner also helps inform a designer on what may need to be done to a facility already built or under design to obtain the goal of reasonable access for persons with disabilities. An access review is most helpful when it addresses access criteria that are mandated or legislated as applicable to the facility. The review may also address elements that are not mandated, but would help to improve access.

Two types of reviews are generally recognized: internal and external. An internal review is usually undertaken by someone within the facility or organization, while an external review is performed by a person from outside the facility. People considered appropriate to perform a review of this nature include architects, engineers, occupational therapists, building inspectors, and other access professionals.

5.2 ELEMENTS OF A REVIEW

Compliance with applicable legislation, building codes, and environmental plans is one way to measure accessibility. Another way is to review the access goals of the facility and see what has been accomplished in attaining them; what could be accomplished by relatively simple means as part of ongoing maintenance and repair; and what could be accomplished as part of the capital improvement plan for the facility.

Noteworthy are the elements not normally covered in a review, but which can prevent facility access from even beginning. It is desirable that they be considered when reviewing access:

- Attitude of both the user with the disability and the facility management regarding access to the facility.
- Transport to and from the facility, as it can be a potential barrier to accessibility, since not all people can drive themselves to the facility.
- Economic incentives for access improvement in recognition of the potential for enabling a larger percentage of the public to use the facility.
- Benefits of access improvements to all persons.

5.3 USE OF A CHECKLIST

A checklist is a form that would allow a person to conduct a simplified review of accessibility using key words and yes/no answers, with room for comments. The checklist may be augmented by taking appropriate measurements and referencing appropriate building codes or local/state/national standards for the type of facility. The format and contents of a checklist may vary depending on the specific requirements for the type of facility. A generic list of items to be considered for a boating facility can be found in Appendix D.

6. CONCLUSIONS

1. The desire to make recreational boating facilities accessible for persons with disabilities is recognized in many countries. It is also being recognized that disability access is good practice because it improves accessibility for all persons.



2. Laws have been passed in many countries that require disability access, and the resulting rules have been applied to recreational boating facilities. On the landside, these rules appear appropriate; however, on the waterside, due to the dynamic marine environment, these rules have caused some problems.
3. PIANC WG 14 has investigated these problems and is proposing a global guidance for reasonable and cost-effective solutions that consider the wide range of cultural perspectives and site conditions encountered.
4. Solutions are not necessarily highly technical or costly, but do need to be well thought out. Retrofit solutions for existing facilities tend to be more complex due to greater physical and financial constraints.
5. Every area of a boating facility need not be accessible for persons with disabilities. For instance, if a facility has multiple docks, not every dock need be accessible, but it is desirable that at least one offers reasonable access for boaters with disabilities. It is also desirable that other activities at the facility have a path of travel providing reasonable access for movement from the accessible dock to the other activities. Furthermore, while desirable to make a facility accessible so that a person with disabilities would not require assistance, site specific features, logistics, and local custom may make the assistance approach a reasonable solution.
6. The “access for all” concept can create design conflicts of its own. An improvement for one type of impairment may not improve access for all users. Until ideal solutions can be found for these access conflicts, reasonable compromises are desirable.
7. Some access improvements are simple and inexpensive to make. Sometimes it is judged too difficult to improve access for wheelchair users, and then other access improvements are assumed to be infeasible as well, or simply overlooked.
8. Ultimately, the goal is to make boating more accessible for all, which requires properly outfitted watercraft and support programs. In particular, the WG report includes information on these resources for persons with disabilities.

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Australia

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European Union

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France

Ministère de l'Équipement des Transports et du Logement, CERTU; *Une voirie pour tous* - relatifs à l'accessibilité de la voirie aux personnes handicapées; décembre 2000

Ministère de Logement; Direction de l'habitat et de la construction; *L'accessibilité des établissements recevant du public*; octobre 1995

Great Britain

ISAF/IFDS: *Sailing Manual*, 1996
[copy: www.ifds.org/technical]

IMO: *Recommendations of the design and operation of passenger ships to respond to elderly and disabled persons' needs* (MSC/Circ 735), 1996

RYA Sailability (Hedde, Ralph & Scott:); *On-shore facilities for sailors*, 1998
(copy: info@ryasailability.org)

British Waterways; *Waterway Access for all* - Policy and design guide; 1999

Japan

Ministry of Transport, Ports and Harbour Bureau, Plan of modified pontoon for disabled boaters at port of Mikawa

PIANC

International Navigation Association, *Pictograms for Pleasure Navigation*, 1996

International Navigation Association, *RecCom Survey of Disability Access at Boating Facilities* (unpublished), 2001

The Netherlands

Gehandicaptenraad: *Wenkenblad toegankelijkheid van jachthavens en aanlegplaatsen* (*Suggestions concerning accessibility of recreational marinas and moorings*), 1991 (only available in Dutch)



Stichting watersport met gehandicapten: *Geboden vaargang*, Normen, richtlijnen, voorwaarden en voorzieningen ten aanzien van toegankelijkheid van watersportfaciliteiten voor gehandicapten (Standards, guidelines, conditions, and facilities in relation to the accessibility of marina facilities), 1991

(only available in Dutch; ISBN 90-6076-342-4)

Handboek voor toegankelijkheid

Ministerie van Verkeer en Waterstaat & Landelijk Bureau voor Toegankelijkheid; *Busstations; bruikbaar voor iedereen*; ('Accessibility of busstops'; Design guidelines); 2000

(copy: infolbt@sdg-lbt.demon.nl; code: B172)

Ministerie van Verkeer en Waterstaat & Landelijk Bureau voor Toegankelijkheid; *Reisinformatie; bruikbaar voor iedereen*; ('Accessible travel information'; suggestions and guidelines concerning travel information); 2000

(copy: infolbt@sdg-lbt.demon.nl; code: B174)

USA

States Organization for Building Access (SOBA): *Guidelines for the design of barrier-free recreational boating and fishing facilities*, 1992

Architectural and Transportation Barriers Compliance Board; *Americans with Disabilities Act Accessibility Guidelines; Recreation Facilities*, 2002

[copy: www.access-board.gov/rules/recnprm.htm]

Websites

English language

Summary of final accessibility guidelines for recreation facilities

www.access-board.gov/recreation/summary.htm

Americans with Disabilities Act Accessibility Guidelines; recreation facilities

www.access-board.gov/recreation/recnprm.htm

The Center for universal design

www.design.ncsu.edu/8120/cud/proj_services/projects/nidrr_access.htm

DSC: Disability Statistics Centre

<http://Dsc.ucsf.edu>

NIDRR: National Institute on Disability and Rehabilitation Research

www.ed.gov/offices/osers/nidrr/

People with Disabilities – National Survey of Recreation and the Environment

www.indiana.edu/~nca/research/nsre.htm

Access Dinghy – Sailing for everyone !

www.accessdinghy.org

Dutch language

www.handicap.nl: Informatie en advies voor mensen met een handicap

www.handicap.nl

Chronisch zieken en gehandicapten raad

www.cg-raad.nl

Japanese language

Ministry of transport - Japan

www.mlit.go.jp/sogoseisaku/barrier/kaisetu1.html



GLOSSARY

- Berth (Mooring) - A delineated area of water surface, which adjoins a fixed or floating dock for the purpose of accessing or storing a boat.
- Cross Slope - The slope lateral to the direction of travel.
- Dock (or Pier or Jetty) - The primary walkway structure over the water used to access a boat slip; may be fixed (as on piles or fill) or floating.
- Gangway (or Brow) - The walkway structure with variable slope to accommodate changes in water level used to provide a path between a fixed landing and a floating dock.
- Landing - A level platform at the top or bottom of a flight of stairs, a ramp or a gangway.
- Path of Travel (or Accessible Route) - A safe, continuous and unobstructed path, roadway, or accessway connecting various activities within a facility.
- Railing - A structure made of rails and upright members that is used as a safety barrier (guardrail), for support (handrail), for guidance (toe rail or curb rail).
- Ramp - A walkway with a running slope greater than 1:20 (Ver:Hor).
- Running Slope (or gradient) - The slope parallel to the direction of travel.
- Transition Plate - The relatively short walkway structure at the top or bottom of a gangway used to provide a smooth transition between the gangway slope and the landing or dock.

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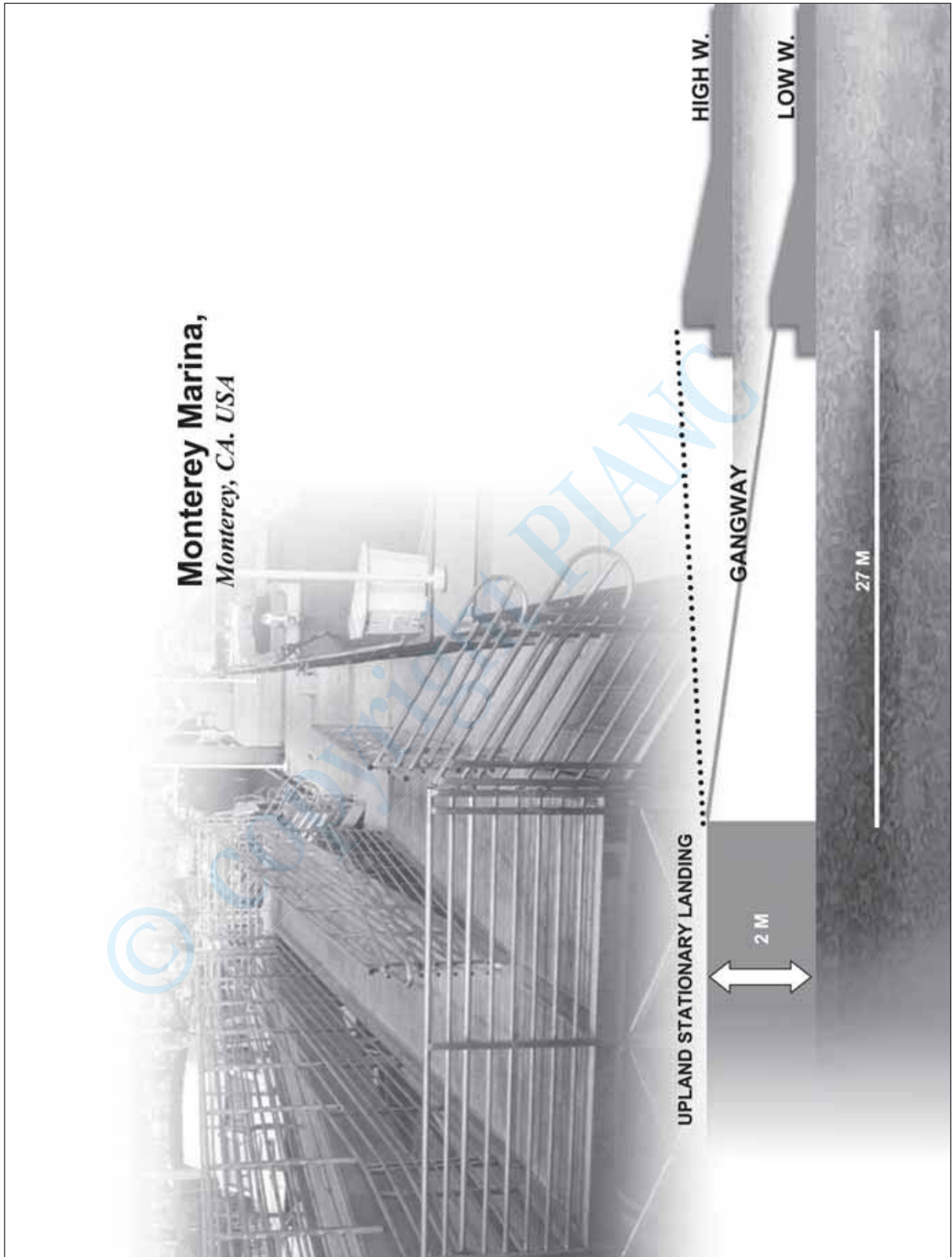


Fig. A1: Gangway solution 1





APPENDIX A

EXAMPLES OF ACCESSIBLE GANGWAY DESIGN SOLUTIONS

At facilities where the height difference necessary to accommodate the range of water level fluctuation required to operate the floating docks results in either excessively steep gangway slopes or lengthy structures, several solutions have been developed to meet the accessibility goal.

Solution 1 consists of a single long gangway that can satisfy the height difference requirement, though exceeding the desirable slope at certain times. Practical considerations of gangway structure length and cost constrain this solution. Assistance may be necessary (or considered desirable) at certain times. This solution is often the most cost effective. For guidance, see Figure A1.

In order to reduce the gangway steepness during low water levels, it may be desirable to elevate the lower landing and provide a “fixed” ramp on the floating dock to move from the landing to the float deck. In some cases, the gangways may actually slope upwards during high water levels as shown in the figure.

Solution 2 consists of a series of gangways that individually satisfy the desirable slope and length between landings, which are supported on pontoons that float at water levels for which the individual gangway slopes are less than the

maximum desired, and that rest on firm structural supports when the water level falls below the level for maximum slope. Each gangway landing “grounds out” in succession as the water level drops.

This solution is similar to the landside solution in which a long ramp is divided into a number of shorter ramps separated by level landings. Both linear and switchback plans are possible, depending on site constraints.

Potential problems with the solution include pounding of the pontoons on the structural supports due to wave action; accumulations of debris or ice that interfere with operation; and walkway stability when floating due to eccentric loading or wave action. This solution is also relatively costly. For guidance, see Figure A2.

Solution 3 consists of an incline lift that is specially designed so that the carriage remains level regardless of the gangway slope. It is desirable that the lift be automatic so that it may be operated by a person with disabilities without assistance. Potential problems with this solution are the high maintenance typically associated with complex electro-mechanical devices subject to a marine environment, and the risk of power failure that would render the lift non-operative. This solution is intermediate in cost. For guidance, see Figure A3.



Fig. A2: Gangway solution 2





APPENDIX B

B-1 Addresses of Relevant Organizations

Member countries of the International Federation of Disabled Sailors:

Argentina

Comité Paralimpico Argentino
Ramsay 2250
Buenos Aires 1428
Tel. +54 114 784 9497
Fax. +54 114 783 5034
Contact: Hector Ramirez
Contact: Matias Paillot
E-mail: rpaillot@xlnet.com.ar

Armenia

Armenian Association for the Disabled
P.O. Box 59
16 Tsitsernakaberd Roadway
Yerevan 375010
Tel. +374 1 56 07 07
Fax. +374 1 56 08 17
Contact: Hakob Abrahamyan
E-mail: pyunic@arminco.com

Australia

Australian Yachting Federation
Locked Bag 806
Milsons Point, NSW 2061
Tel. +61 2 9922 5930
Fax. +61 2 9923 2883
Contact: Phil Vardy
E-mail: Phil.Vardy@aol.com

Canada

Canadian Yachting Association
Disabled Sailing
53 Yonge Street
Ontario K7M 6G4
Contact: Kathy Campbell
E-mail: kcampbel@interchange.ubc.ca

Denmark

Danish Sailing Association
Idraettens Hus, DK-2605 Brøndby
Tel. +45 43 455555
Fax. +45 43 450363
Contact: Vagn Holm
E-mail: faurbyholm@vip.cybercity.dk

Estonia

Estonian Paralympic Association
Gonsiori Str. 29

Tallinn EE 10147
Tel. +372 2 771 546
Fax. +372 2 451 720
Contact: Allan Kiil
E-mail: kiil@online.ee

Finland

Finnish Association of Sports for the Disabled
Kumpulantie 1A
00520 Helsinki
Tel. +358 9 6131 9212
Fax. +358 9 146 2404
Contact: Raimo Aromaa
E-mail: raimo.aromaa@suomi24.fi

France

Fédération Française de Voile
55 Avenue Kleber, 75784 Paris
Tel. +33 1 44 05 81 00
Fax. +33 1 47 04 90 12
Contact: Bernard Bonneau
E-mail: bernard.bonneau@ffv.fr

Germany

Deutscher Behinderten-Sportverband e.V.
National Paralympic Committee Germany
Friedrich-Alfred-Strasse 10
47055 Duisburg
Tel. +49 203 7174171
Fax. +49 203 7174178
Contact: Frank-Thomas Hartleb, Director of Sports
E-mail: hartleb@dbn-npc.de
Contact: Dietmar Budwill
E-mail: Budwill.DBS@t-online.de

Ireland

Irish Sailing Association
3 Park Road, Dun Laoghaire, Co. Dublin.
Tel. +353 1 280 0239
Fax. +353 1 2807558
Contact: Paddy Boyd
E-mail: paddy@sailing.ie

Israel

Israel Sports Association for the Disabled
10 Shitrit St
Tel-Aviv 64982
Tel. +972 3 649 3132
Fax. +972 3 649 3134
E-mail: isad1@barak-online.net
Contact: Micky Ayalon
E-mail: Ayalon_r@netvision.net.il

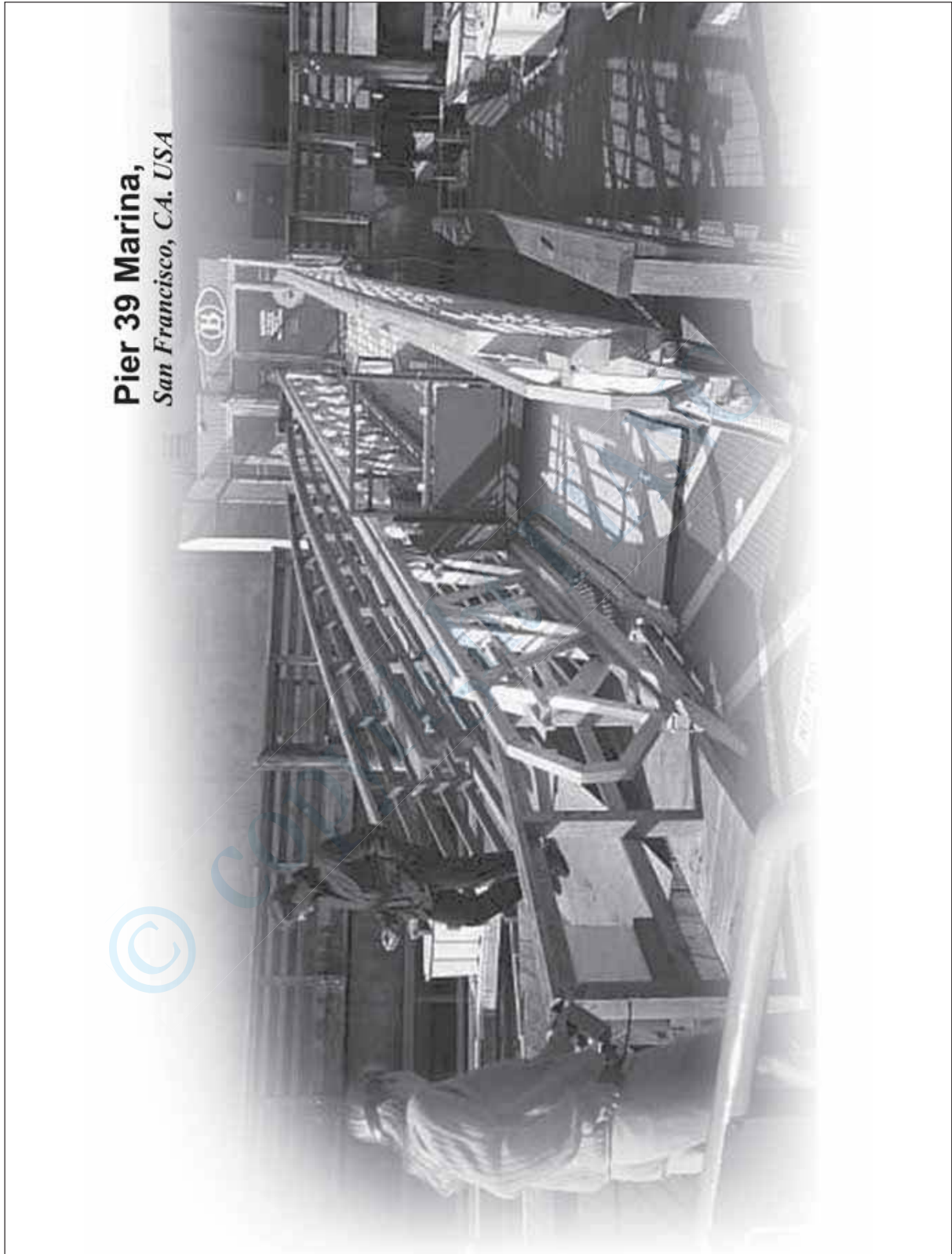


Fig. A3: Gangway solution 3





Italy

Federazione Italiana Sport Disabili
Stadio Olimpico
Curva Nord
00185 Roma
Tel. +39 0 6 3685 7096
Fax. +39 0 6 3685 7778
<http://www.fisd.it>
Contact: Giuseppe Fusco
E-mail: giuseppe.fusco@tiscalinet.it

Japan

Yacht Aid Japan
2F Yamazaki Building
7-3-6 Aoto, Katsushika-ku, Tokyo 125-0062
Tel. +81 3 3690 8633
Fax. +81 3 3690 8733
Contact: Masaru Ohtsuka
E-mail: kfruta@amy.hi-ho.ne.jp

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NEBAS
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Fax. +31 30 659 7373
Contact: Rian Smit
E-mail: r.smit@nebas.nl
Contact: Phieneker van Donselaar
E-mail: Joop.van.donselaar@icu.nl

New Zealand

Yachting New Zealand
P. O. Box 33 789
Takapuna
North Shore City
Auckland
Tel. +64 9 488 9325
Fax. +64 9 488 9326
Contact: Simon Wickham; CEO
Email: simon@yachtingnz.org.nz
website: www.yachtingnz.org.nz

Norway

Norwegian Sailing Federation
Hauger Skolevei 1, 1351 Rud Oslo
Tel. +47 67 154 600
Fax. +47 67 138 456
Contact: Morten Johnsen
E-mail: morten.johnsen@online.no

Poland

Polski Związek Żeglarski
Chocimska 14 Street
00791 Warsaw
Tel. +48 22 848 0483
Fax: +48 22 848 0482

Contact: Ewa Nazarowska
E-mail: enazar@polbox.com

Singapore

Singapore Sports Council for the Disabled
Unit 27
National Stadium Room 1
15 Stadium Road
Singapore 397718
Tel. +65 342 3501
Fax. +65 342 0961
Contact: Frankie Thanapal Sinniah
E-mail: sscd@pacific.net.sg

South Africa

South African Sailing
PO Box 479, Green Point, 8051
Tel. +27 21 439 1147
Fax. +27 21 434 0203
Contact: Anthony Steward
E-mail: ant@sasailing.co.za
Contact: Russell Vollmer
E-mail: rvollmer@iafrica.com

Spain

Federación Española de Deportes de Minusválidos Físicos
Ferraz 16
28008 Madrid
Tel. +34 91 547 1718
Fax. + 34 91 541 9961
Contact: Miguel Ángel García, Director Técnico
E-mail: fedmf@fedmf.com
Website: www.fedmf.com

Sweden

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Box 136, 133 22 Saltsjöbaden
Tel. +46 8 717 39 59
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E-mail: asa@skotahem.com

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Fax. +41 22 362 1468
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E-mail: Michel.Darbre@span.ch

United Kingdom

Royal Yachting Association
RYA House
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Fax. +44 23 8062 9924



Contact: Clive Clifford
E-mail: clive.clifford@ryasailability.org

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US Sailing
PO Box 1260, 15 Maritime Drive
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Access Dinghy Foundation

2/7 Bungaleen Court
Dandenong Vic 3175, Australia
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Blind Sailing International (BSI)

770 Centre Street
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Fax. +1 617 969 6204
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E-mail: art5425@aol.com
Web-site: www.blindsailing.org

International Paralympic Committee (IPC)

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Portuguese Adapted Sailing Association – Sailability Portugal

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Sailability RYA

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Sailability Japan

408 30-8 Motoyoyogicyo
Shibuyaku, Tokyo 151-0062, Japan
Contact: Nobi Nishii
Email: nobinis@juno.ocn.ne.jp

Sailors with Special Needs Committee & Sailability USA

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Special Olympics

Special Olympics UK



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E-mail: Paulsouk@aol.com
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E-mail: Karenouk@aol.com

Sports Council for the Disabled NSW
P.O. Box 1135
Sydney Markets NSW 2129, Australia
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Fax. 61 2 9746 3224
Contact: Ken Grinham
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B-2 Sailing Programs for Persons with Disabilities

There are many groups throughout the world who 'take disabled people for a ride' on a larger boat. This is fantastic in itself, but there is nothing so empowering as enabling a person with severe disabilities to sail solo in a fleet with other disabled and able-bodied sailors. People with disabilities and other disadvantaged people generally don't want to be sidelined into special programs; they want to participate alongside everyone else with family and friends. Boats for these groups of people need to be affordable, easy to sail and above all safe.

An example of a small dinghy specifically designed to be sailed by persons with mobility problems is the Access Dinghy. Special design features of these boats allow people whatever their ability to sail solo in total safety with little or no tuition, nearly regardless of the conditions. Access Dinghy unique design features include:

1. Roller reefing system, enabling the sailor to adjust the size of the sail to suit various conditions while under way.
2. Ballasted centreboard, ensuring the dinghy is difficult to capsize.
3. Hull design - innovative concave hull shape promotes additional stability.
4. Sailed by an individual seated low down in the boat instead of leaning over the side to gain stability.
5. The servo assist joystick which operates the electric winches (if fitted) opens up sailing to people with very profound disabilities, as this joystick can be controlled by hand, foot, chin, or any moving body part.

Another example is a small trimaran, the Challenger Mk II A, which is a one design, fast, stable boat for both able-bodied and disabled crew. There are two versions: one for single handed and the other for two crew. The mast is unstayed and has a roller reefing option. The hull is double skinned with built-in buoyancy and has outstanding stability. All controls lead to the cockpit and a joystick option is available.

A range of ancillary equipment has been developed to support these boats and enable sailing on almost any protected body of water in the world. The equipment allows for transferring sailors, transporting keels to trailering it all between venues.

In several countries there is an organization called Sailability. Sailability originated in the UK in 1986 and is the RYA's disabled sailing program. In many other countries there are branches of Sailability now. These branches are local community sailing groups that either operate alongside an existing sailing club, or in some cases they are the only sailing opportunities in country locations. The branches invite and encourage non-sailors, the financially disadvantaged, those with disabilities into the sport and often become an integral part of community activity. The branches are managed and operated by volunteers and this enables sailors to sail within the community organization without the expense of purchasing their own boat; to have knowledgeable support people available to give assistance and advice.

Websites:

www.accessdinghy.org
www.sailability.org



Pic. 17: Access dinghy



APPENDIX C

National Standards of Various Countries

(Edited by the ICTA, Stockholm, Sweden, 1974)

- Dimensions: meters (conversion rate: 1 inch = 0.025 m; 1 foot = 0.33 m)
- Dimensions for toilets and elevators: width x depth

ITEM	1	2	3	4	5	6	7	8
Country	Pavement Width ¹	Corridor Width	Effective Door Width	Toilet Dimensions	Elevator Dimensions Elevator Door Width	Parking Space Width	Ramp Inclination	Height of Switches, etc.
Belgium	-	2.00	0.86; 0.90	1.80 x 2.10	1.20 x 1.50 0.86; 0.90	3.30; 3.60	1:20	-
Canada	Ca 1.65	-	0.81	Ca 1.80 x 2.80	-	Ca 4.00	1:12	-
Denmark ²	1.30 (1.40)	1.30	0.83	2.20 x 1.80	1.10 x 1.20 0.83	3.50	1:12	0.90 – 1.20
Germany	1.20	1.40	0.85	1.80 x 2.00 2.20 x 2.00	1.10 x 1.40 0.80 x 0.85	3.50	1:12 (1:14)	1.05
Finland ²	1.30	1.30 (1.50)	0.80; 0.90	-	-	3.40	1:12 (1:14)	0.90 – 1.20
France	1.50	1.20 1.50 1.60	0.80	2.10 x 2.17	0.80 x 1.30 1.20 x 1.50 0.80	3.30	1:20	1.00 – 1.40
UK	-	1.22	0.785	1.37 x 1.75 1.52 x 1.675	1.345 x 1.125 1.07 x 1.455 1.75 x 1.09 0.835; 0.91	-	1:12	0.91; 1.07; 1.37
Ireland	1.22	1.22	0.785	1.52 x 1.75	1.07 x 1.455 0.835	-	1:12	1.07
Israel	-	1.50	0.80	1.40 x 1.75 2.40 x 1.30	1.07 x 1.46 0.84	3.00	1:10 1:12	1.30
Italy	1.50	1.50	0.85; 0.90	1.80 x 1.80	1.70 x 1.50 0.90	3.00	1:12	0.90
Netherlands	1.30	1.10	0.85; 0.90	1.55 x 2.25 1.90 x 1.90 2.25 x 2.25	1.10 x 1.40 0.80	3.50; 3.60	1:12 1:20	1.00
New Zealand	1.22	1.22	0.785	1.52 x 1.75 1.37 x 1.83	1.37 x 1.83	3.05	1:12	1.14
Poland ³	1.50	-	0.85; 0.90	1.55 – 2.25 1.90 x 1.90 2.25 x 2.25	1.10 x 1.50 0.90	3.60	1:8 ⁴	0.90
Sweden ²	1.30	1.30	0.75; 0.80	2.10 x 1.40 1.70 x 1.70 2.20 x 1.70	1.10 x 1.40 0.80	3.60	1:12	0.90 – 1.20
Switzerland	-	-	0.80	1.50 x 1.50	1.10 x 1.40 0.80	3.50	1:17	0.90
USA ⁵	1.22	1.05	0.80	1.65 x 2.00	1.65 x 1.65	3.80	1:12	1.20

¹ Width of 1.20 m or more to allow the rotation of a wheelchair and a width of 1.50 m or more to allow two wheelchairs to move side by side.

² The figures for Items 1, 2, 7 and 8 are based on the proposal made by the Scandinavian Committee for Building Norms.

³ The figures for Items 3 and 4 are based on the Netherlands Standards.

⁴ Requires a helper's assistance.

⁵ The figure for Item 2 is based on the Building Law of the State of North Carolina while the figure for Item 8 is based on the Building Law of the City of South Bend.



APPENDIX D

Boating Facility Accessibility Checklist

Parking:

- Are there accessible parking spaces?
- Are they level?
- Do they have hard surfaces?
- Are they wide enough?

Access Path:

- Is there a hard surface path from parking to all buildings and function areas?
- Are there Obstructions in the Path such as:
 - Steps?
 - Gaps?
 - Worn areas?
 - Are there slopes?
 - Is the slope reasonable or very steep?
 - Are there handrails?
 - Can the slope be reduced?

Building entrances:

- Are there steps?
- Can ramps or lifts be installed?
- Are doorways wide enough?

Building interiors:

- Are the floors worn?
- Do they have trip hazards?
- Are they slippery?

Multi-story buildings:

- Are there elevators/lifts/ramps?

Berthing areas:

- Are there fixed piers?
 - Wide gaps between boards?
 - Worn areas?

- Wide enough to pass?
- Are there floating docks?
 - Wide gaps between boards?
 - Steps?
 - Worn areas?
 - Wide enough to pass?
 - Relatively stable?
- Are there gangways?
 - Transition plates at top?
 - Transition plates at bottom?
 - Surface slip-resistant?
 - Decking relatively rigid?
 - Handrails?
 - Handrails relatively sturdy?
 - Handrails easily gripped?

Restrooms/Toilet Facilities:

- Are they near and easy to get to from boats?
- Are they near and easy to get to from other facilities?
- Are there steps?
- Can ramps be installed?
- Is there a wide stall for wheelchairs?
- Are fixtures at an easy height for use?
- Are switches and faucets easily used?
- Are they available for women?
- Are they available for men?
- Are they unisex?
- Are the floors:
 - Worn?
 - Have trip hazards?
 - Slippery?



APPENDIX E

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APPENDIX F

Terms of Reference

Working Group No. 14

“Access to Sport and Recreation Boating for Persons with Disabilities”

(Revised 3 Feb 02)

Background:

Persons with physical and sensory impairments are being attracted to sport and recreation boating in increasing numbers. Furthermore, the aging population of boaters will increasingly exhibit some impairments even as they continue to want to enjoy boating. Recent laws in many countries require that public facilities be made accessible to persons with disabilities. These laws are being applied to boating facilities as well, which may be an important factor in this trend. Many designers and owners now recognize that good design for disabled persons is good for all people.

The requirements for accessibility can vary between countries, and the interpretation of good design can vary as well. Given the increasing mobility for persons with disabilities, there is a need to foster an appropriate approach so that these persons can reasonably expect accommodation

when they undertake international travel, or as a minimum, have an understanding of the conditions that they may encounter while underway.

This Working Group will investigate the following:

1. Survey members of PIANC to determine which countries have regulations that govern access for persons with disabilities to recreational boating, and compare requirements.
2. Identify types of disabilities and problems facing disabled persons engaged in recreational boating.
3. Review design guidelines for accessible boating facility design and present:
 - a. Landside support facilities;
 - b. Overwater facilities, and;
 - c. An accessible path between them;
 - d. Possible approaches to transfer between the dock and the boat.
4. Make recommendations for good design practices that result from concern over personal safety, convenience and dignity for persons with disabilities.
5. Identify examples, including cost information, showing good practice in accessible boating facility design.