Water Sports for the Disabled

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RYA SEAMANSHIP FOUNDATION

ADVISORY PANEL ON WATER SPORTS FOR THE
DISABLED,
THE SPORTS COUNCIL
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SPORTS COUNCIL ADVISORY PANEL ON WATER SPORTS FOR THE DISABLED

REALISING the growing interest in, and the potential of, water sports for disabled people, the Sports Council in 1973 set up an Advisory Panel comprising the governing bodies of sports involved, together with various organisations and individuals with expertise and experience. The aim of the panel is to promote water sports for disabled people in an appropriate and safe manner. In achieving this purpose the panel's objectives are:—

- To act as a clearing house for information and advice
- To co-ordinate action whenever possible
- To pool experience and ideas
- To initiate experiments and research on technical matters such as teaching methods and equipment modifications.

These functions are illustrated in 'Water Sports for the Disabled'.

The Panel has only recently begun to give deeper consideration to the mentally handicapped, about whom there is no reference in this handbook. We would welcome information and advice from people with experience in this field so that this large group of disabled people will not in future be neglected by the Panel.

The organisations represented on the Panel are:

Royal Yachting Association
British Canoe Union
British Water Ski Federation
Amateur Rowing Association
British Sub Aqua Club
National Anglers' Council
British Sports Association for the Disabled
Welsh Sports Association for the Disabled
Department of Education & Science,
Sports Council (Observers)

Individual Members:

Ken Roberts (Chairman)
Magda Bond
Norman Croucher
Arthur Edwards
Don Riddle
Don Robertson

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Dr. Noel O'Brien, John Buckingham, Mrs Kathleen Bell, Brian Barton, Bob Bond, Norman Croucher, Oliver Cock, Penny Chuter, Emlyn Davies, Tony Edge, Mr. I. Evans, Dr. Nick Flemming, Gordon Fairley, Mrs. Clare Hanmer, Don Robertson, Don Riddle, Dr. A. J. Swannell and Len Warren, together with other members of governing bodies who have generously given their advice.

We are also indebted to Magda Bond for so many hours spent in seeking out and collating the material, to Tony Fairchild of *The Daily Telegraph* who helped with the editing and presentation, and to Philip Boughen of Westminster Press for his help and advice.

I would like to add my personal thanks to Elizabeth Dendy of the Sports Council for her enthusiastic encouragement of all who were involved in writing this handbook, and for continually reminding us that integration in water sports is a practical proposition.

KEN ROBERTS

Photographic acknowledgements
We wish to thank the following for the photographs included in this publication:
Cowper & Co, Perth, Leicester Mercury, Bob Gleave (Spastics Society), David M Thomas, Scottish Committee for the Promotion of Angling for the Disabled, Alistair Black, Norman Croucher, Emlyn Davies, Nick Flemming, Ken Roberts, Clare Hanmer, David Parker, A Goldthorpe, Len Warren

Ashore or afloat, disabled people can enjoy the water and the sport it offers — with rod, as above, or dinghy (right). But it is important that the handicapped are given help to learn to enjoy fuller lives through watersport.

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Wheelchair-bound he may be, but angling has brought intense pleasure to this man.

Introduction

DISABLED people often wonder whether they could take part in some fresh activity, such as the various water sports which they have watched, although many may have special difficulties which at first appear to preclude them from such forms of recreation.

Not much thought has been given by the average enthusiast to the problems which might face those with disabilities — still less by the handicapped themselves — and the result has been that the disabled have not been given much encouragement to take part in water sports.

The time has come, however, to change these attitudes and to adopt more positive and constructive approaches to the exciting new dimension of aquatic activities for the disabled.

The aim of this handbook is to show that the disabled can take a much more active part in many water sports than hitherto realised and success is more than just a possibility if those who are interested tackle some of the activities that are suggested.

There is still a lot to learn, of course, and the experts who have contributed to the various sections all agree that the disabled, like everyone else, must start at the beginning.

This means that the accepted codes of safety in water sports should be carefully observed by the physically and visually handicapped — and their teachers — even if it may sometimes appear that the advice is over-cautious. Whether on the river bank or on the open sea, the rules must be observed and for those with certain disabilities there are a few additional rules which have to be heeded.

When it was shown, many years ago, how swimming could provide a freedom of movement so beneficial to those with limb and sight disabilities, thousands of handicapped people learned to enjoy a new form of relaxation through hydrotherapy, and hundreds became proficient swimmers.

Some of the water sports develop this latent ability even further because they enable free movement on the water, as well as in it, while the various forms of angling can encourage among the disabled an even greater appreciation of the environment.

In collecting the information contained in this handbook for the disabled who may wish to take up some new water sport — and their tutors — it was most encouraging to know that the governing bodies of the various sports are willing to offer expert knowledge to the handicapped to ensure that progress is made safely and in the right direction.

Only recently has it become apparent that many very capable yet physically and visually handicapped people in different parts of the country have been angling, canoeing, rowing and sailing with great success, and that they have acquired the skills which could be taught to others with similar disabilities.

In the field of water recreation, the horizons of the disabled are being continually extended — though the limitations imposed by individual disabilities have to be recognised. Some of these are merely inconvenient while others are apparently insurmountable, but barriers have always made people curious and they act as a challenge to the enterprising. This makes discovery more or less inevitable.

The greatest benefits to be derived from participation in water sports will be experienced by disabled youngsters. Boys and girls have already shown that, despite their handicaps, they often have the courage of lions; and they deserve all the encouragement they can be given to get them involved in outdoor recreation.

Many do not realise that they could share the unique experience of integration between able-bodied and handicapped people, and few other sports can offer the rare chance of equality which is possible in water sports.

The problems are being met and solved; now it must be ensured that disabled water sports beginners receive the best possible guidance when they get to the water's edge.

Ken Roberts
Chairman of the Sports Council Advisory Panel on Water Sports for the Disabled.

Foreword

"YOUTH AND THE SEA. Glamour and the sea! The good, strong sea, the salt, bitter sea, that could whisper to you and roar at you and knock your breath out of you . . . wasn't that the best time, that time when we were young at sea, young and had nothing; on the sea that gives nothing, except hard knocks — and sometimes a chance to feel your strength — that only — that you all regret?" Not my words but words that express most eloquently my feeling for the sea.

There are thousands of disabled people who have never had the opportunity to take to the water, either as a participant or as a spectator. Whatever your aspirations, this handbook gives a new dimension to water sports for the physically handicapped — and an abundance of expert advice and encouragement.

When, some 17 years ago, my left leg was amputated at the thigh as a result of a crash in the Monte Carlo Rally, my world of work, motor-racing, sailing, fishing, swimming, water ski-ing and, would you believe, dancing, was completely shattered — or so I thought.

Sitting in a hospital bed contemplating my position I decided that the only thing to do was to try and ignore the disability, and to sail my Dragon-type yacht became my first goal.

Attempting to board a launch to take me out to my boat in Cowes harbour proved to be a disastrous debut as I tripped on my crutches and took a header into the ample bosom of a large, middle-aged dragon (the other type) sitting in the launch. Surprise was mutual and suffocation was a real risk, but it was the first of a great many lessons I had to learn. Motor-racing, unfortunately, was out, but within weeks I was deriving immeasurable pleasure from many of the sports which I had enjoyed previously.

For the amputee taking up a water sport, one of the greatest fears, probably, is the risk of 'phantom limb' or nervous pain as a result of getting wet. I can only say that I have been half-drowned, experienced extreme hot and cold and even been lost at sea — soaked and starving, for four days in a Force 9 gale without having any discomfort in the amputation area — yet sitting in a draught at home has resulted in real problems.

I appreciate that there are many degrees of physical disability and often the first consideration for the participant in any sport is medical, but to those who can and are willing to try, there is a whole new horizon in the field of water sports, with hundreds of people always willing to help.

In the 1974 Cowes Week regatta, I borrowed a 42 ft. yacht from a friend and entered the Nab Tower Race — a distance of approximately 30 miles. With one exception, we were a disabled crew with only five legs out of a possible 14. Some of the crew had very little sailing experience and much of the equipment was quite new to them.

Nevertheless, we finished eighth out of 68 starters, and it has never been my pleasure, either before or since, to sail with a finer bunch of men.

Their reaction to competition and their ability to participate on equal terms with the able-bodied was a joy to see. This joy is there to be shared by many, many disabled people and I hope this handbook will open the door for you.

Arthur Slater
Ocean Racing skipper and a former member of Britain's Admiral's Cup team.

1. The First Essentials

THERE IS an element of danger in almost any activity one can think of, and everyone has the freedom to decide whether the enjoyment or pleasure derived from the activity is worth the risk involved.

The disabled, however, start from an 'at risk' position, so there is extra need to maintain acceptable standards of safety without denying them the freedom of choice or of putting other people at risk. These considerations have important medical implications and there are two immediate steps to be taken before a disabled person takes up a water sport.

First, to become confident and at home in cold water. Swimming in a warm pool presents entirely different conditions from sailing or canoeing in the sea, a lake or fast-flowing river where cold water can cause spasm and loss of circulation.

Secondly, to consult a general practitioner. There may be contra-indications for the chosen activity and secondary disabilities could prevent participation in a water sport.

MEDICAL CONSIDERATIONS—These notes have been prepared for the preliminary guidance of disabled people, helpers and instructors and they give a brief description of the more common disabilities with implications for water sports.

Anterior Poliomyelitis (Polio): This is a viral infection affecting the nerves supplying various muscle groups in the body. As a result, weak muscles are produced in the region affected. The degree of paralysis varies from an isolated weakness of a shoulder or foot to a widespread weakness of a whole limb. In addition to weak muscles, the individual may be troubled by deformity of the limb due to muscle wasting and tendon contractures.

Provided the arms are strong and the individual is able to swim for a short distance, however, polio need not be a deterrent to water sports. Severely affected limbs may have poor blood supply, and therefore chilblains and skin ulcers may occur more easily when the limb becomes wet and cold.

Special care should be taken, therefore, to protect severely affected limbs and they should be dried carefully after exposure. **Canoeing** has proved particularly popular with many people suffering from polio because the limb functions required may often be within their capabilities.

Cerebral Palsy: A condition resulting from damage to the brain before birth or at any time during childhood. It is sometimes accompanied by mental retardation, epilepsy and emotional disorders. There are three main types of cerebral palsy and they can be basically recognised under the following headings:

Athetoid: This is marked by a dis-coordinated involuntary movement.

Spastic: This is shown by muscle spasm and hyperreflexia, often with rigidity. The person may suffer from paralysis of the body down one side or of all four limbs to a greater or lesser degree.

Ataxic: This is shown by an inability to make rapid coordinated movement.

Participation in water sports for any particular individual obviously depends on the degree of disability, but particular attention should be paid to the presence of athetosis, as this could lead to sudden loss of balance in light craft.

Should a spastic individual inhale water, it may be difficult for him to expel it due to widespread muscle spasm. Some spastics find that the stiffness of their limbs is increased in cold water and by over-exertion; this could be brought on as a result of too much encouragement from an instructor.

Spina Bifida: A failure in spinal development before birth results in the spine being divided by a cleft in the lower back instead of fusing normally. There may be an associated failure of development of the spinal cord of varying degree resulting in weakness and wasting of the muscles of the legs and feet. As well as muscle wasting, other abnormalities such as club foot and a swollen head may occur.

These do not usually produce problems except that occasionally, to relieve the fluid retention in the head, a plastic valve is inserted below the skin at the side of the neck. Some individuals with spina bifida will also have paralysis of the nerve supply in the bladder and bowel with consequent incontinence.

In water sports where legs are needed, such as **rowing,** severe cases may experience difficulty. When a valve is in place, trauma to this area should be avoided. If **rowing** or **canoeing** are contemplated, care should be taken of the skin over the buttocks and lower limbs.

There is often an associated loss of skin feeling over these areas, and breaks in the skin leading to ulcers may occur without the individual being aware of it. Good protective clothing and meticulous care of the skin are important in affected individuals.

Spinal Cord Paralysis: A disease or trauma which damages the spinal cord at a certain level resulting in paralysis of the

muscles that are supplied below the level of the injury. The paralysis may be floppy (flaccid) or stiff (spastic) and affect either the lower limbs (paraplegic) or all four limbs (tetraplegic).

If both legs are paralysed and the arms are not affected, they may become strong due to constant use with crutches or wheelchair, and water sports such as **sailing** are certainly possible. There may be a lack of sensation in the legs associated with paralysis, and the same considerations of skin protection apply as for the individual with spina bifida. Incontinence may also be a difficulty. Sudden precipitation into cold water may lead to an increase in muscle spasm which could cause problems in an emergency.

Amputees: Amputations may be of legs or arms, at high or low level. The type of water sport contemplated will therefore depend on the individual type of amputation and the competence the person has with or without artificial limbs. There may be problems of balance if the patient has to swim unexpectedly and assistance should thus always be near at hand.

Hardware such as artificial limbs and braces could prove a problem in the water and may deteriorate if they get wet during the course of the sport. For the latter reason some amputees have worn old limbs. Anyone intending to **sail** regularly should consider enquiring at his limb centre about legs which are suitable for water sports.

Amputees who have lost limbs as a result of circulatory disorders should take particular care in water sports. The 'phantom limb' sensation, mentioned in the Foreword, may occur.

Multiple Sclerosis: In this disease of unknown origin, isolated plaques of degeneration occur throughout the nervous system of the body, producing a variety of symptoms and signs. Perhaps the most common and the one that may hinder the individual most, is paralysis below the waist. This paralysis may be spastic or flaccid and, as with spina bifida, incontinence may occur. There is also a loss of sensation and of balance.

A characteristic of the disease is a period of remission, often accompanied by euphoria. Some individuals may find it difficult to use their arms in the normal way. The hand sometimes trembles and is unable to carry out fine movements, which might produce problems in sailing. Occasionally the disease leads to blindness and enquiries about sight are relevent before allowing anyone with multiple sclerosis on the water by himself. It is essential to prevent undue fatigue.

Disabled but active: a device which enables the severely handicapped to enjoy the sport of angling.

Visual Handicap: The blind and partially sighted can have problems in water sports. Those with a detached retina must avoid knocks and strenuous activity, which may prevent participation. Provided visually handicapped people are always accompanied by a sighted person, many difficulties can be overcome. The visually handicapped often have an increased sensitivity to the environment and an extra ability to concentrate which accelerates learning.

Muscular Dystrophy: A progressive disease occurring mostly in boys, producing flaccidity and loss of muscle tone, ultimately affecting the muscles of respiration. Constant medical checks must be made and fatigue prevented. The flaccidity often makes the handling of people difficult and previous consultation with the person's general practitioner is essential.

Asthma: Asthmatics might contemplate water sports depending on the severity of the asthma, but they should always be accompanied in case of emergency.

Epilepsy: Epilepsy presents a problem; the individual may not have had a fit for some years and be well controlled on drugs. Should he or she be barred from taking part in water sports? Informed medical opinion suggests that it is better to be safe than sorry and that the potential hazard of an attack occuring in a small boat or in the water is a serious risk.

The policy of the British Sub Aqua Club is: "Epileptic attacks must, without treatment, be absent for the five years preceding the medical examination".

There are, of course, places where epileptics may **fish** in safety and this indicates that choice of activity is particularly important for participants in this category.

A working party of the Co-ordinating Committee on Swimming for the Disabled has considered epilepsy and swimming, together with a representative of the British Epilepsy Association. A leaflet is available.

The Deaf: Many deaf people take part in water sports and the main problems are possibility of giddiness and disturbance of posture.

This list of disabilities is by no means comprehensive, and if further details are required, reference can be made to other publications including the Textbook of Sport for the Disabled (Guttmann), Guidelines for teaching disabled people to swim (Trussell), and the Riding for the Disabled Handbook (Riding for the Disabled Association).

Careful assessment of the physical disability and commonsense will usually enable the individual and his instructor, after consultation with a doctor and/or therapist, to decide which particular water sport is possible. Detailed consideration of all the problems which may occur afloat will still not eliminate the emergency and, until he is extremely proficient, the handicapped person should never consider going out on the water unaccompanied.

Perhaps it is relevant to mention that the help to morale in taking up again a sport experienced before an accident, and the benefits of social contact, physical well-being, and mental stimulation and relaxation are advantages of which any doctor would approve.

MEDICAL CONSENT FORM—It is obviously very important for those responsible for disabled people to know the extent and implications of the more common disabilities so that they do not put a trainee into a potentially dangerous situation. If such a situation should arise, the organiser should know what to expect in an emergency. Some organisations require that a disabled applicant should complete a medical form to be signed by a doctor or medical authority. An example is given at the back of the handbook. The form can be adapted to suit the different physical requirements of each sport and gives the instructor and staff in charge valuable information.

2. Which Sport for You?

GUIDANCE FOR DISABLED PEOPLE

TWO MAIN FACTORS, what you can manage within reasonable limits and what you wish to do, will largely govern your choice of sport. You must take account of the medical factors and the swimming and drown-proofing dealt with in other sections of the handbook.

Water ski-ing is the only water sport which demands the ability to stand, but that is not to say that everyone who can stand can water ski, or that everyone who uses a wheelchair can take part in other activities. Many individuals will be too severely disabled to join in except as passengers or spectators.

Before you try a sport, you should talk to someone who understands what is involved, preferably an instructor or coach in the sport. (If you don't know anyone, write to the Advisory Panel). Explain that you simply want sufficient experience to find out if it is possible for you to take part.

Depending on your handicap, you may also need the advice and practical assistance of a physiotherapist or doctor.

The next stage might be to join a training course for disabled people or, if such a course is not available, find out from the instructor how you can best be introduced to the sport.

There is a difference between this trial run and actually learning to canoe or sail, for example, and you will soon know which sport is for you. It is not failure to learn in a safe situation that your balance is not good enough or that your arms are too weak. While finding out what you can do, you will discover also whether you wish to do it. This is most important.

Many disabled people feel that encouragement to take part in sport is sometimes excessive. To say that people OUGHT to join in is wrong, because this approach ignores the most fundamental appeal of water sports — pleasure.

Access and transport problems frequently crop up, though there is little need to go into this aspect here. Expense may also be a problem. There are obvious advantages in using the shared facilities and equipment of a club or training establishment and, like the obstacles of access and transport, financial barriers can be circumvented by the real enthusiast. You will find plenty of other enthusiasts willing to help you share their sport.

If you experience a rebuff, do not be put off. Some people feel that water sports are not suitable for the disabled, or for the majority of able-bodied people either! Some centres and clubs are not willing or able to take disabled people. However, there are increasing opportunities for those who are keen to take up and enjoy these activities.

The responsibility for choosing to do so and for accepting the risks involved lies largely with you; it is not fair for adults to expect others to assume complete responsibility for them in risk sports.

Many people will be willing to help in a variety of ways, but they will need your guidance on how to do this. For instance, if those helping to lift you into a boat appreciate the danger of knocking an insensitive limb, they will be far more careful and successful. Many people have not had direct contact with the disabled; they may be slightly apprehensive and need reassurance and help to overcome their fears.

Do not ignore your disability; be prepared to tell your helpers of the implications. Appreciate the importance of looking after yourself and of keeping fit. You may have to show a lot of initiative and determination in order to take up your chosen sport but, provided you really want to do so, the opportunity will be found.

ANGLING

ANGLING can be divided into three branches: Coarse Fishing, Game Fishing (salmon, sea trout, trout) and Sea Fishing, all of which can be enjoyed from either bank or shore or boat.

The techniques for each branch vary — as does the tackle required — but disabled anglers with the ability to hold a rod by some means or other can participate, provided that there is access to the water. The sport can be enjoyed purely for pleasure or competitively, in matches.

Coarse Fishing, usually the most leisurely form of angling, is especially suitable for the elderly, practised as it is on rivers, lakes, ponds. Tackle manipulation requirements are minimal, and casting, using the fixed-spool reel, is relatively easy for most disabled anglers.

Game Fishing, however, because of the special requirements for casting — whereby considerable effort may be required — could be more difficult for disabled anglers and the full use of one arm would be essential.

Boat fishing for trout is popular in Scotland and the Scottish Committee for the Promotion of Angling for the Disabled has purchased special seats for disabled anglers, manufactured by the Buccleuch Engineering Ltd., Queen Ann Drive, Newbridge Industrial Estate, Midlothian. The prototype seat has been designed by the company and tested. It may shortly be generally available.

Sea Fishing is sub-divided into three groups: beach, pier and boat. Beach fishing for wheelchair anglers presents obvious difficulties if there is no hard standing, but pier and boat fishing can be enjoyed from a sitting position. Beach and pier fishing call for some casting technique but boat fishing does not require any distance casting.

TACKLE: Considering the requirements, it would appear that Coarse and Sea Fishing offer the best opportunities. Tackle requirements are specialised and both branches usually involve the use of baits which need to be purchased fresh. Basic tackle includes rods, reels, lines and nets, with recurring items such as hooks, floats, shot, bait, etc.

The cost for tackle is now quite wide but an angler can be fitted out for between £12 and £20. Rod kits are available and can perhaps be made by the angler at home, giving to some an added attraction to the sport as well as reducing the cost.

Sea Fishing tackle can usually be hired from professional boatmen but Coarse Fishing tackle is not generally hired, although clubs with disabled persons may be able to assist.

PHYSICAL REQUIREMENTS: Having looked at the three types of angling, it is as well to look further and see what actual requirements this sport demands.

Ideally, the angler should have the use of his arms and be sighted, but these requirements are by no means essential. (We know that attempts have been made to produce artificial arms for severely handicapped anglers, but the N.A.C. has no information at present on their availability).

Those who are sighted and have some use of their arms can take part in the normal Angling courses provided throughout the country. In the case of the blind person, special courses can be arranged where there is a demand. Ideally, the ratio of instructor to pupil should be one to one.

MODIFICATIONS OF EQUIPMENT AND TECHNIQUE: Rods and reels are designed for particular purposes, and selection must be based on the particular type of angling one is going to do; and that may well be influenced by the individual's physical limitations. Advice should always be sought from the Instructor.

Several techniques used in angling will benefit differently handicapped persons; it will be up to the individual, through the instructor, to find that method which suits him best. For example, a blind angler might find that ledger fishing, using an audible bite indicator, might be the best method for him.

There is little need to adapt existing angling equipment and where alteration is required it will not alter the basic design or function. Anglers with the full use of their arms need no modification of equipment but anglers in wheelchairs may require special seats, if boat fishing, as developed in Scotland for game anglers. There is need for special equipment for anglers with restricted use of an arm.

SAFETY: Any angler using a boat must observe the normal safety requirements expected of a competent boatman; this would include use of suitable lifejackets (see section on Lifejackets and Buoyancy Aids); all persons should be either able to swim or to survive in the water by keeping afloat. Anglers with poor trunk balance need a seat with good arm rests; a safety belt can also be used.

A crane hoist is being designed to assist those confined to chairs to board small boats, while on some larger vessels the individual can wheel up the gangplank. In all cases of boarding any vessel, the boat must be securely moored.

The angler on shore must exercise caution when fishing from any position that does not provide some type of rail or fence as one might find on piers and in lock areas. The chairbound must remember that most surfaces, including grass, offer little or no grip when wet and they should avoid any position that slopes towards the water. A useful item to include in your fishing gear is a stop block for the rear wheels.

INSTRUCTION for the disabled is no different from that which is given to anyone else, but as the degree of disability increases, the number of students that an instructor can deal with decreases. It should also be borne in mind, when arranging classes indoors, that a great deal of space is

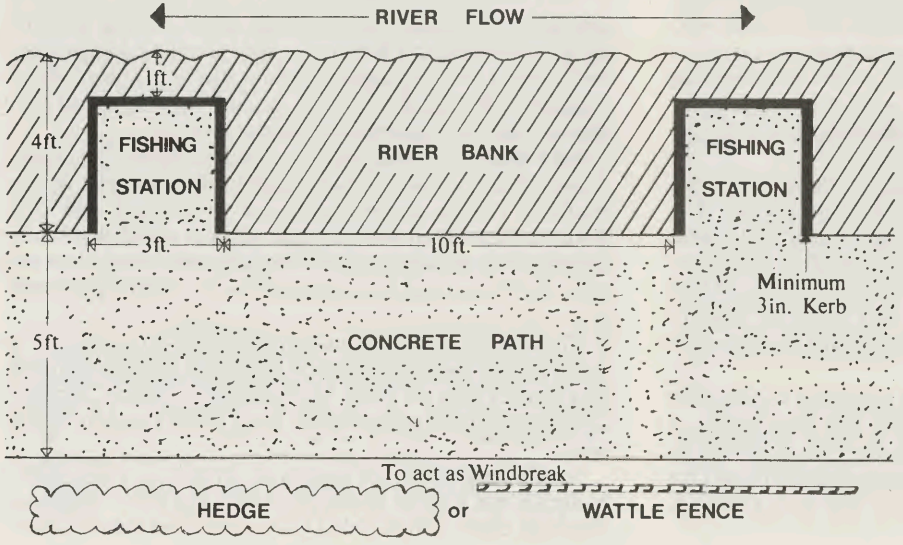
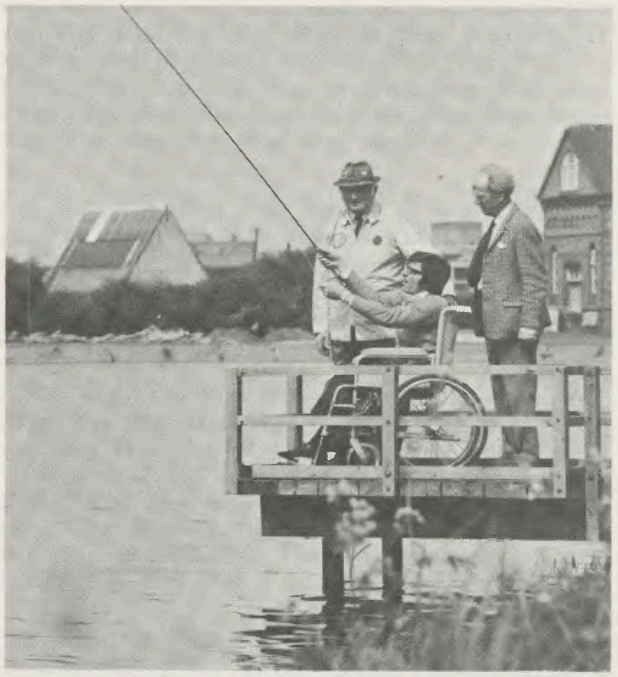


Diagram 1: Angling Stations for coarse fishing a river or lake. Example of the sort of lay-out that provides ideal facilities for disabled anglers.



Sturdy platform for disabled anglers and (right) special seats for boat fishing.

required for those in chairs, and the normal classroom may not be satisfactory.

Different disabilities can limit the range of angling methods in which some individuals can participate; once the basic instruction has been given it will be up to the instructor to find that method of angling best suited to a particular student.

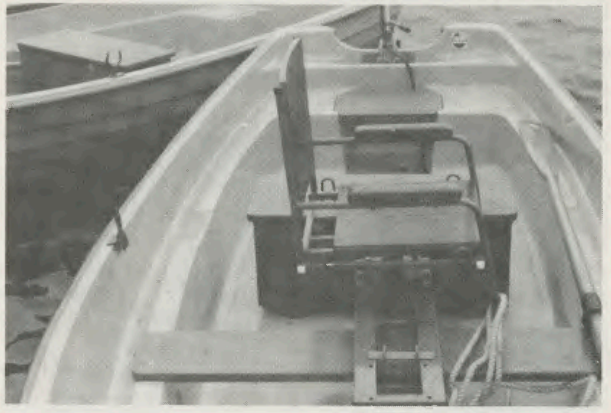
ANGLING FACILITIES FOR THE HANDICAPPED FISHERMAN: In providing facilities for the handicapped angler it is necessary to take into consideration certain requirements.

All disabled anglers require a flat surface from which to fish; it may be natural or artificial. Whatever it is, it should not slope towards the water.

For the handicapped angler confined to a chair, or the ambulatory disabled who use a stick or crutch in order to walk, a firm path and a fishing platform or station is required. It may be constructed of close-boarded timber, tarmac or concrete, the latter being more durable. (See Diagram 1).

These are the basic requirements. There are however other refinements which should be considered and ought to be included if circumstances permit. They are listed roughly in order of priority.

- The ground level should be as close to the water level as conditions permit.
- There should be no undercutting of the bank by erosion.
- Parking space for vehicles should be as close to the stations as is possible.
- Disabled anglers should not be segregated from other fishermen.
- It is an advantage if the flow is from right to left of the angler.



- Top soil removed from the path and fishing stations should be placed on the bank between each angling platform to raise the ground level.
- Toilets.
- A hedge or fence along the path to provide a wind break and cover.
- Some provision for the angler's family.

Different venues require different facilities and consultation should be sought in all instances.

The construction of only two or three platforms to cater for the needs of those who are chairbound would greatly assist that section of the angling fraternity who, until now, have been sadly neglected.

The National Anglers' Council is producing a comprehensive booklet on opportunities for Disabled Anglers, available from the N.A.C.

The Disabled Living Foundation is cooperating with the National Anglers' Council to produce a film "Angling for all".

CANOEING

CANOEING can be anything from paddling gently around a lake to sliding adventurously down a rapid river, or from sprinting in the Olympics to racing over long distances. And if you are good with your hands you can make your own.

As a recreation, as opposed to canoeing as a sport, there are many variations. You can go to sea, either running along the shore, or with a reliable compass, venture well out to sea.

If you are interested in natural history, then the canoe is an ideal way of studying marine or river life and the freedom and variety can make canoeing an enjoyable, peaceful and relaxing activity.

Sprinting with canoes is, of course, an Olympic competition and long distance racing of upwards of five miles is usually regarded as the cross-country form of the competition.

One advantage of a canoe is that it can be picked up and carried, or moved on top of a car, to another patch of water.

White water racing, or down-river racing, has world championships; this involves racing down a rapid river and also includes slalom, where a canoeist has to weave his way through 'gates' made of two poles slung over a rapid, progressing from gate to gate from start to finish. This is also a world championship event and has been an Olympic event.

Sailing canoeing has the oldest cup in the world for single-handed sailing vessels, the New York Cup, an international trophy for clubs which was first awarded in 1886. Canoe surfing is a very exciting form of competition; canoe polo is usually played in a swimming pool, using a special form of canoe.

CLUBS: Most of the organisation of competition is done through clubs. Dotted throughout the country, these clubs cater for a variety of canoeists, some of whom specialise. For instance, the Manchester Canoe club specialises in rapid river work and also organises European tours — some for those who want just a pleasant, easy run. If you establish where your nearest club is and contact them, you will find that most will welcome you.

PHYSICAL REQUIREMENTS: The first essential for every canoeist is to be able to swim. The other physical requirements are to be able to sit up, have a reasonable balance and be able to use both arms and hands. There is no need to have use of your legs; one world championship class slalom competitor had only one leg.

SUITABILITY: Many disabled people can take part in canoeing in one form or another. Those with polio have found it a very suitable sport and the same applies to some people with cerebral palsy who have normal use of their arms. One cannot give a general recommendation about paraplegics, but some with low and/or incomplete lesions do manage well.

Blind people often paddle in the front of a two seater canoe while those with limited vision may use a single seater and have somebody just ahead to lead the way. Deaf people enjoy the sport, but a sense of balance is necessary; because a canoe does tip easily, you must be able to keep it the right way up — at least most of the time!

People with any weakness of the back muscles soon become tired on a long trip. It is unwise, also, for people who wear metal calipers or artificial legs to use them while canoeing, since they will be a hindrance in the water. You can take them off and leave them on the bank if you are canoeing from one point.

If you are on a short river tour, then they can be put in waterproof bags and shoved below deck. In this way they

TIM WALSH, who is 18 and has been disabled since a baby — polio left him without the use of his left leg; his right leg is weak and he cannot walk without crutches and he has an 18 in. steel rod in his back after an operation to rectify a curve in his spine — is still a keen and active canoeist. He tells his story:

I cannot remember exactly when I got bitten by sea-kayaking, but I do remember imagining kayak camping before I ever held a paddle. The only modifications I have to my sea-kayak is a car seat belt — not the push button type — with which to strap across my thighs and hold myself securely to the seat. This enables me to roll as easily as anyone else.

As a sea kayakist I have crossed the English Channel, taken part in an expedition to the Farne Islands; taken part in an expedition to Anglesey in North Wales; led advanced sea trips on the East Coast, an area I have toured extensively.

In 1977 I am acting as assistant leader to an expedition to Pembrokeshire. I am vice-chairman of Basildon C.C.; Sea Canoeing captain of Southend C.C. I instruct canoeing and rolling regularly and am also a helmsman at Bradwell Sailing Centre.

I hold the British Canoe Union inland and sea proficiency certificates and am taking my senior instructor assessments in 1977.

I am convinced that with a little forethought, consideration and an optimistic attitude, almost all watersports for the disabled could be successfully integrated with little fuss.

are safe and easily to hand when wanted. (Suitability of cosmetic calipers for water sports has not yet been fully investigated by the Panel).

EQUIPMENT: There are two basic types of canoes: the Kayak is a decked-in vessel with a round cockpit in which you sit and you use a paddle with two blades, while the North American or Canadian Canoe has very little or no deck and you either sit or kneel in it using a paddle with a blade at only one end.

There are many variations on these two types and this is another reason for you to go to your nearest club and find out what suits you best. Especially where paralysis of the legs is involved, a roomy cockpit may be best. Some canoeists will prefer a more stable craft with a beam of 60 cm. or more.

The Caranoe, manufactured by Valley Canoe Products, has a large cockpit and great stability and has been found particularly suitable for some types of disability. P & H Fibreglass Products have made certain modifications to canoes for individual disabled people.

Many disabled people have discovered that they can use an ordinary canoe and paddle without any modification, while some others have found it necessary to be held into their canoe in some way. But it is essential to obtain some degree of proficiency before you strap yourself in, and to know how to release yourself quickly if you should capsize.

Some people find wet suits desirable because, as well as keeping you warm, they help to prevent bruising. In addition, the thick padding of a neoprene suit spreads the shock if you accidentally knock yourself.

Facilities for hiring canoes are not good, even when standard equipment is required, but you can usually borrow anything you may need in the first place from the club. A cheaper and more rewarding way of getting your canoe, as suggested, is to make it yourself. Local clubs often have facilities for this and do-it-yourself costs will be about half those for normal purchasing. All equipment is expensive these days, but £50 to £60 should just about cover the cost of the canoe, the paddle, the spray cover and the life jacket.

A spray cover is a sort of skirt which you secure round your waist and pull over the rim of the cockpit of the Kayak by means of elastic. This means that your legs will be kept warm and dry and it is highly desirable that you should be comfortable in your canoe.

Heavy pressure on certain parts of your anatomy can cause pressure sores and other injuries and, in any case, it is silly to be uncomfortable when there is no need. Sores may also be caused by scraping, especially in glass-fibre built canoes, so protective clothing may be advisable (see Clothing section).

Pool-side canoe training for amputees and those with multiple sclerosis and polio.

TECHNIQUES: The basic skills of canoeing are not difficult to learn, given reasonable balance and good arms and hands, though it is strongly recommended that you find someone qualified to teach you in the first place.

The basic skills are best taught in the highly controlled situation of a swimming pool, where it is warm and the instructor can stand in the water near you. Here you can also learn the Eskimo Roll which will enable you to rescue yourself and no longer be in a position to have to call on other people.

However, this is a skill which not everyone is able to

achieve and, if you are one of them, then there are other drills which will enable you to be rescued and to rescue your friends.

SAFETY: We have already mentioned the requirement to be able to swim. How far you can swim is not very relevant. Are you water confident? Do you mind being under water for a few moments when you capsize? These are the considerations that determine a safe canoeist.

Most people are nervous at first, but after a while they gain confidence and begin to realise what this aspect of water sport is all about. It is not dangerous when you understand it and this is why canoeing has such a good accident record.

You should always wear some form of life-jacket; many are available and there is one with a British Standard Kite mark which is fully approved for the sport. It has two stages of buoyancy; a lower stage, of about 6 kgms, which helps you to swim comfortably, and a higher, inflatable stage which enables you to rest comfortably if you are waiting for someone to come and rescue you.

You should never canoe alone; always have at least one other experienced person, in another canoe, near to hand so that you can help each other if the need arises.

COURSES: Although instructional courses, at various levels, are held all over the country, it is worth re-emphasizing that it is best to learn at a club. But if this is impossible you will find that many centres run suitable courses. The British Canoe Union runs courses through its area and local coaching organisers. The Sports Council organises courses at Plas y Brenin National Mountaineering Centre and, on a daily basis, at Bisham Abbey, Bucks.

The Scottish Sports Council and the Northern Ireland Sports Council also run courses. The BCU will advise you of your nearest club and give you a list of the courses being run in the United Kingdom.

In a nutshell, the sport of canoeing is not one which has to be adapted to any great extent to cater for people who are disabled. You should be able to use ordinary equipment without any major modifications and be able to play an active part in the sport like any other enthusiast.

ROWING

COMPETITIVE rowing is an endurance and muscular sport requiring a great deal of long distance training together with weight training and speed interval training. Rowing does not have to be competitive, or it can be so in a variety of ways; thus training will depend much upon the disability.

There are two distinct methods of propulsion — rowing, in which each person manipulates one oar, and sculling, in which each person uses two oars known as sculls. Both offer slightly different opportunities for disabled people.

There is also a small branch of the sport which still involves competition in fixed seats boats. This is known as skiffing and is localised in the Thames Valley. The use of fixed seats reduces the use of the legs and offers possibilities for people with disabilities of the lower limbs.

PHYSICAL REQUIREMENTS: The only minimum requirement should be allied to safety on water with regard to the participant. Different branches of the sport demand

A disabled oarsman on the Thames.

different abilities which are referred to in the following text.

But, being a water sport, stress should be laid upon the fact that the ability to cope in cold water should be a fundamental requirement and close supervision is essential.

The use of coxswains (steersman) in some classes of boat offers opportunities for yet more disabled people. The essential attributes of a cox are lightness (50 kgms for men and 40 kgms for women and all juniors) for racing purposes, mental altertness, good eyesight and judgement, physical stillness, and deftness in manipulating the rudder lines. Quite a few disabled coxes take part in the sport on equal terms with others.

Deaf people can row and compete on equal terms. Good teaching and visual demonstration is all that is required. Blind people can learn to row — their often highly developed sense of hearing, balance and touch are an asset. They can compete in regular regattas, as do Worcester College of the Blind in all coxed boat classes.

It is worth mentioning that the Coxswain of the USA VIII which won the Gold Medal at the World Rowing Championships in Lucerne in 1974 was severely handicapped. Leg amputees (below the knee) can row on a sliding seat quite successfully and at least one such person has competed in the pairs event at Henley. Those without legs can also take part using fixed seat boats; modifications would be required, but those are not beyond the bounds of possibility.

EQUIPMENT within the sport is varied from training and touring boats of a more stable nature to highly sensitive and light racing boats. Some racing is still done in fixed-seat boats in which the legs are less important that when using sliding seats. Some of these boats can be and are used by disabled people.

TECHNIQUES would vary tremendously depending upon the type of disability. The basic requirement will be the ability to put the blade into water and apply even a small amount of pressure. It should be noted that it is possible to propel a boat by pushing the oars away from the body as well as by pulling.

SAFETY: Again, measures will vary according to the disability, but they should be assessed in the following areas:

- type of disability;
- stability of boat — buoyancy — life lines — life jackets;
- type of water: still — tidal — inland — sea;
- instructor/teacher in every boat — in separate boat — in safety boat;
- number of pupils under the overall supervision of an instructor;
- problems of embarcation and disembarcation;
- code to cover all emergencies — resuscitation etc.

MIKE DOWNS, 25, of Rochdale, Lancs, is an accomplished oarsman though, medically he is a spastic. Only his legs are affected. Mike has a strong, well-developed upper body. His walking is somewhat cumbersome, but this does not prevent him from carrying boats. He does not have an oarsman's powerful legs — but he rows — in eights, in fours, and in single sculling craft.

Mike discovered rowing quite accidentally 2 or 3 years ago when he visited a contact at the Hollingworth Lake Rowing Club to borrow a book on car maintenance (he drives an Austin A40). He was so attracted to what he saw that some of the members invited him to come and have a try.

They put Mike up at the bow and told him to follow what they did. He was very frightened at first, then got used to it, and has even fallen in when making inevitable mistakes.

Mike does not use any modifications, believes that integrated activity is the only way to do it, and thinks that all disabled oarsmen should know how to swim, not necessarily being strong swimmers. Mike does not race yet because he says he has to train a lot more to reach the required standard. And it is the training he likes, along with the fellowship of being a member of a good club on equal terms with others.

Life-jackets and buoyancy aids are essential equipment for all water-sports enthusiasts — abled and disabled alike. In this illustration, DON RIDDLE, a polio victim, grasps the centre-board of a dinghy during capsize drill, an early lesson in sailing.

SAILING . . . offers competition and relaxation

MESSING about in boats as a leisure pursuit, for fun or as a serious sport, has increased enormously over the last two decades. The boating boom has been as explosive as the phrase suggests. The thrill and challenge of pitting your skill and knowledge against the elements, in all moods, cannot easily be surpassed. It is this challenge to mind and muscle which has persuaded ever increasing numbers of people to take up sailing. And, with proper supervision and safety precautions, sailing offers exciting opportunities of relaxation, pleasure and competition in many ways to a great number of disabled people.

Many disabled people already enjoy sailing at a high level. Arthur Slater, minus a leg, has for many years been one of Britain's most successful ocean racing skippers and, indeed, is a former "Yachtsman of the Year".

Ken Roberts, the Chairman of the Sports Council Advisory Panel on Water Sports for the Disabled, is an honorary member of the National Sailing Schools' Association and, although disabled and a wheelchair user, has qualified as a senior instructor of the Royal Yachting Association. He spends much of his free time teaching disabled people to sail.

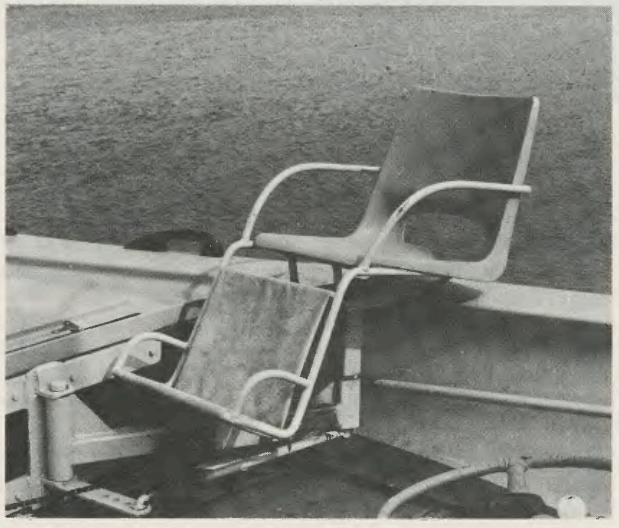
Then there is Dianne Tubb, now aged 20, who became a paraplegic as the result of a serious accident in 1970. "I can't remember how I got back into sailing after disablement", says Dianne. "It just seemed natural to take it up again." She goes on:

"I was at college in Weymouth and also decided to settle there as I soon realised that I could not be without a boat. I bought an old, patched GP14 for a mere £60 — including road trailer. Luckily, my father lives reasonably near and he does the necessary maintenance for me, although I could manage myself if I had the time. The boat is standard and I have no modifications apart from two cushions to prevent a sore bottom!

"Launching the boat is the main problem and so I usually take two crew members. When only one is available we ask the tourists to lend a muscle or two. They are only too willing to help and find the whole matter quite entertaining — except when they discover their new holiday shoes and trousers are sopping wet!

"Sailing to me offers freedom and fresh air. The fact that I am on a par with the next boat pushes the whole idea of being disabled into the background. It becomes unimportant. In any weather sailing is fun so long as you know what you are doing and your limitations. I would certainly not go out in a Force 6 with only one crew," she adds.

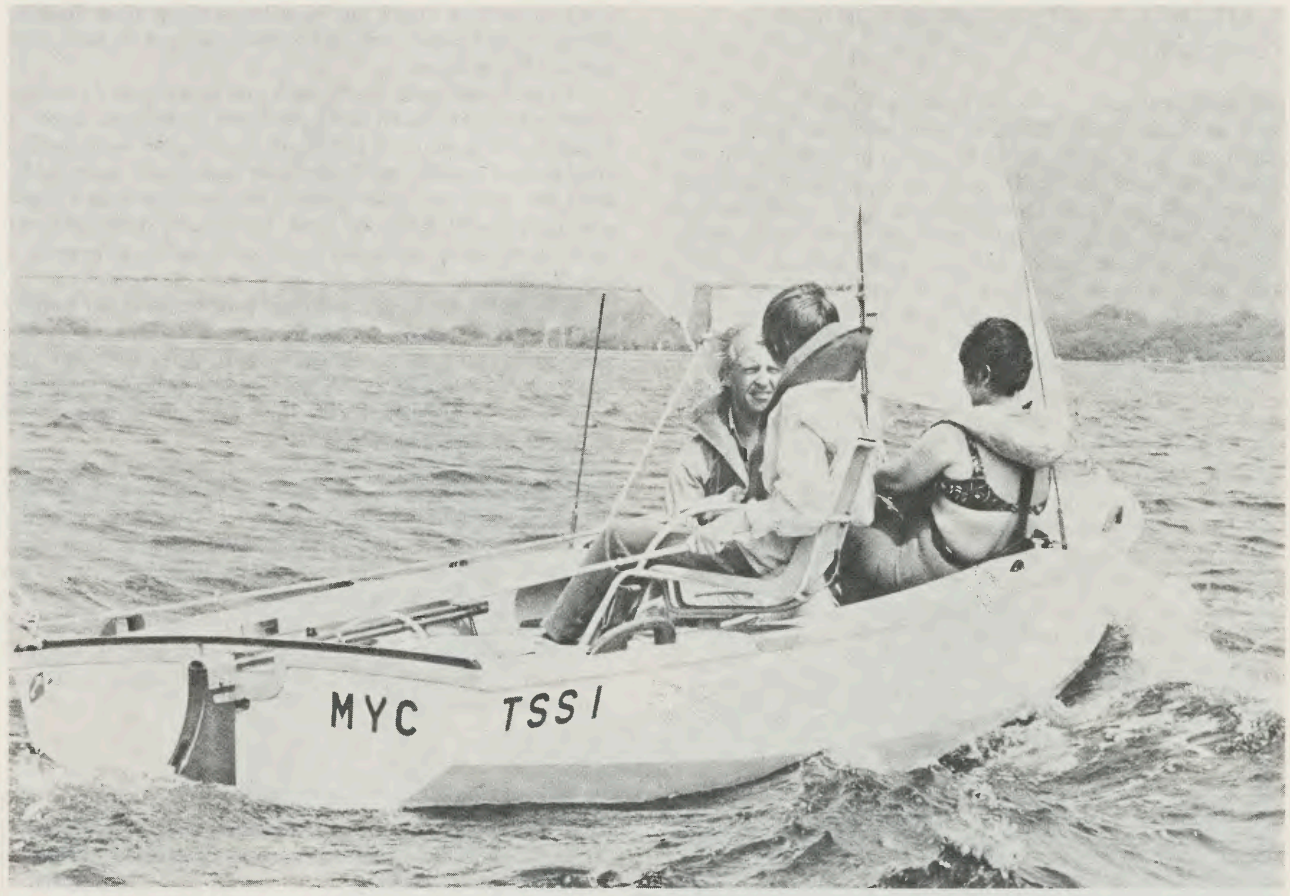
Arthur Slater, Ken Robert and Dianne Tubb are, of course, unique in their own ways. But each will tell you that disabled people can push back their own sailing horizons. And many others do.



EMLYN DAVIES, The Spastics Society's Regional Officer for Wales, who designed and helped construct the "Sailsafe Sailing Seat" — an invention which enables severely disabled people to steer and race sailing dinghies and which is illustrated opposite — writes about sailing for the handicapped.

Sailing is a pursuit which, providing you like it, grows on you; once you are bitten by the bug you are a prisoner for life and it will become a part of your life.

From a comfort point of view, a sailing dinghy is probably the wettest, coldest, most uncomfortable vehicle made, but this is all part of this unique activity. In view of this, it is important to wear proper clothing: such as a properly fitting wet-suit when sailing dinghies, and water and windproof clothing for larger boats.



Instructor and students, one of whom is using the Sail Safe Seat.

Enumerating the variety of craft available would take many pages to explain, but boats fall broadly into three classes: sailing dinghies, yachts, usually over 6 m., and powered by sail and engine, and motor cruisers, which are motor powered only.

The type of boat will obviously determine the type of sailing the participant will do, so it is commonsense to crew in a boat before buying one in order to ensure that you like sailing and also get wide experience in the form of sailing to be pursued.

Once the decision is made, the sky is the limit, depending only on the amount of money available. Many people start with small boats, then progress to bigger craft; but many remain with their original small boat.

The two major problems associated with the handicapped and sailing are of getting into the boat and, once in, of moving about the craft. This is necessary to keep it balanced and is especially important in sailing dinghies.

In the main, it is necessary to be able to move quickly when sailing small boats and the ability to use hands and arms is an obvious requirement. To what degree, is the question most frequently asked by disabled people interested in taking up sailing.

The ultimate for anyone, including disabled people, is actually to control or helm the boat — to be the one in command.

Already a great many handicapped people have tried sailing and many are continuing with great enjoyment. Mental aptitude and physical ability must be the criteria as to whether a disabled person can sail small boats. It is an unpalatable fact that if there is minimal or no arm control, then controlling or helming is impossible — as are crew duties. If a person so handicapped still wishes to sail however, he can be taken out by a competent crew so that the pleasure of being in a small boat is not unattainable.

The ability to swim, however limited, is vital; a swimmer is less likely to panic in the event of a capsize than a non-swimmer. It also follows that a recognised life-jacket or buoyancy aid should be worn at all times when afloat.

For those handicapped people who have arm control and co-ordination, sailing a fast dinghy can be the challenge and experience of a lifetime. Nor need the inability to move about the boat quickly be a big handicap; mechanical devices are available to enable them to move from one side to the other while helming.

Many more aids will become available, but it is essential in connection with sailing — an "at risk" sport — that all such devices enable the user to fall free in the event of a capsize. Under no circumstances should the person using the device be restrained or strapped in, potentially a highly dangerous situation.

In introducing handicapped people to sailing, the main aim should be to ensure that safety measures are observed.

For this reason, it might be better for the disabled beginner to attend one of the "Sailing for the Disabled" weeks so that his aptitude and physical ability can be assessed — and, indeed, for him to discover if he likes sailing. Having thus been introduced to sailing — being afloat each day for a week — the disabled sailor is in a much better position to approach his local club.

It is at club level that organisations such as The Sports Council, Royal Yachting Association, the Spastics Society and many other interested bodies can be of the greatest service to the handicapped. These organisations can pave the way to full club membership and, therefore, total integration.

For the clubs, it will mean an appreciation of the difficulties facing the disabled sailor *on land only*; afloat he is and can be as good as anyone. Help will be needed in getting the boat rigged and into the water, then getting the disabled sailor into the boat; the reverse when recovering the boat.

In small sailing dinghies it is important that a ratio of one handicapped person to one able-bodied crew is strictly applied. In larger dinghies, two disabled and two able-bodied is found to be a good combination.

It is not inconceivable that we shall soon see a number of handicapped people actually helming dinghies in races with able-bodied crews.

Not all sailing, of course, is in small boats; thousands go out in a variety of sailing cruisers. In such boats, the ability to move about quickly is less important; under normal circumstances, there is little chance of capsizing.

Boarding and landing present the biggest difficulties for handicapped people wanting to sail aboard cruisers; there are few marinas and therefore, with most craft on moorings, few opportunities for boarding via walk-ways. Dock walls and tenders can be major obstacles. A fairly large tender, enabling disabled people to be lifted straight into the cockpit of a cruiser, is probably the safest method of getting aboard.

While the disabled should generally keep clear of the foredeck while under sail, the accommodation aboard sailing cruisers seems to be quite convenient to them; everything is close at hand and has been designed so. But a good harness is essential so that the handicapped crew or helm are connected to the boat by a stout line at all times.

Since most coastal cruising is by the day, a wheelchair does not need to be carried, but for extended cruising, it should be of the type that can be folded into a small pack.

Apart from being able to helm sailing cruisers, there are many other duties which the handicapped sailor can do, including navigation and cooking. There is no reason why he should not become a useful member of a team.

The final point, as with all pursuits, is that while you can read many books there is no substitute for taking part. So read about it, then put that knowledge and yourself to the test; it will open up new horizons for you.

BOB BOND, the Royal Yachting Association's Training Manager, writes:—Ideally, instruction for disabled people is carried out on an individual basis within a club. However, a number of special courses have been arranged for the blind, and those with other handicaps, including those confined to wheelchairs. Information collected from such courses is available to help others.

Once again, the RYA favours a policy of integration as being most beneficial to the disabled person. Such a policy will ensure that those organising courses will normally have only one or two disabled persons on each course, and the bulk of the work of helping the disabled will thus be carried out by other course members.

Some excellent examples of integration have already occurred in Northern, Midland and Southern regions,

which shows that development along these lines is succeeding.

As already explained, sailing is defined as an 'at risk' sport — therefore, everyone must be able to look after himself in cold water wearing a life-jacket or buoyancy aid (see section on Life-Jackets and Buoyancy Aids). The minimum requirement, as already stressed, is the ability to sit up in a boat unaided, to have one good arm with which to pull ropes and operate other simple controls, and to be alert and have quick reactions.

Blind people have a particular aptitude for dinghy sailing, because of their increased perception and concentration. Deaf people also make successful sailors.

When special modifications have to be made to boats or equipment, they must allow the disabled person to fall away from the boat in the event of a capsize. These additional fittings (eg sliding seats, shortened tillers and extra grab handles) can assist trainees with certain handicaps to achieve better control. **In general, disabled trainees are encouraged to sail ordinary boats under ordinary conditions. Those who wear artificial limbs should remember that salt water and mild steel do not get on well together! So use an old one or find a way of keeping vulnerable parts protected.**

Finally, sailing need not be expensive. Many owners do not have regular crews and are happy to welcome fellow sailors in this role. But you will normally have to buy your own protective clothing and life-jackets — and to pay a club subscription. Sailing dinghies suitable for beginners cost a minimum of £200.

KEN ROBERTS, chairman of the Sports Council Advisory Panel on Water Sports for Disabled, explains to school teaches how to include disabled pupils in sailing.

You need not work in a special school to become involved in teaching disabled pupils to sail. By making enquiries in appropriate quarters, or even a direct approach to the school head or P.E. staff, you may discover that there is considerable interest in giving the pupils an opportunity to participate in water sports such as sailing or canoeing.

Frequently, school staff who have little knowledge of what is involved are hesitant to make the initial approach because of what may appear to be insurmountable difficulties. National School Sailing Association members can help to analyse these difficulties and show how they can be overcome, using their experience of course organisation and knowledge of local club facilities.

Groups of handicapped trainees are usually accompanied by teachers who are trained in the various aspects of coping with disability, and who act as the go-between in the relationship you need to establish with the children. It is important to consider the participation of individual disabled youngsters who may be lucky enough to attend ordinary schools, but who risk the chance of being left out of sailing activities enjoyed by their friends because no-one thought they could be any good at it.

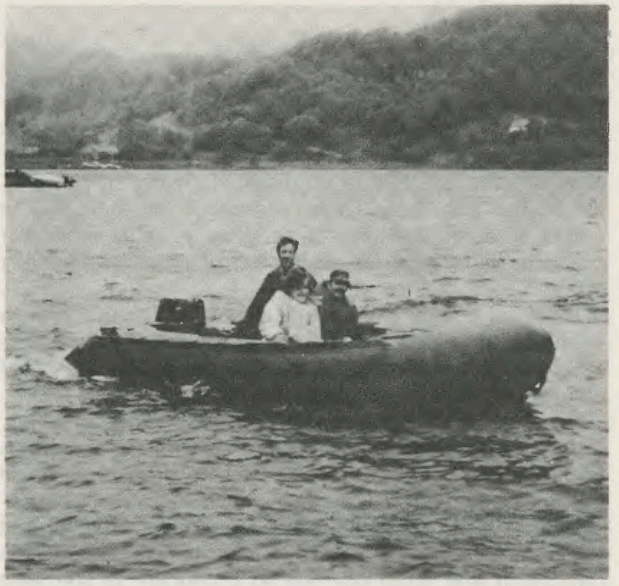
A more passive form of contact is to let it be known in sports clubs for the disabled, and among social workers that certain categories of disabled people can enjoy water sports in more or less the same way as anyone else. Four disabled children in South Wales have already obtained their RYA Elementary Certificates.

Training Methods: The only difference in the standard techniques will be to make allowance for the restricted mobility of some of the pupils, and possible reduction in stamina of others under certain conditions. You will want to know what movements the individual trainees are capable of carrying out, and what they should not be asked to attempt. Advice from their supervisors and a period of observation will soon reveal that there is little point in expecting a youngster in a wheelchair to hold the bow of a dinghy head to wind unless his wheelchair can be hooked on to something. Blind pupils, however, can safely be taught to handle a launching trolley entirely on their own. They are usually extremely competent in everything they do, and we have found that a combination of sighted wheelchair trainees with blind ambulatory colleagues is highly successful — to the extent that the instructor begins to feel that he or she is not needed.

Safety Precautions: We always insist that suitable trainees are selected for participation in water sports, but this does not mean that it will be done every time. For their own good, and for the reputation of the sport, (and for your own good as well) you should check again that your charges are confident in cold water, that an accidental capsize will not be harmful, and their clothing is adequate for the length of time you intend to be out on the water.

The life-jackets used must be suitable for the individual wearer; even though he or she may be wearing heavy calipers or leg irons. All should be able to swim, and those who cannot be persuaded to sail without their callipers

First step towards getting disabled people afloat in dinghies is to find help to get the wheelchair alongside and the would-be sailor aboard. It is vitally important that the wheelchair is thoroughly hosed down if it has been in salt water — because of corrosion.



Inflatables can give the disabled fun afloat and they are also universally used as rescue craft for dinghy racing or training.

should be asked whethey they have ever tried to swim with them on — the answer will invariably be that they have not.

When in doubt about a disabled pupil's ability to cope with an accident situation, or to accept a more prolonged training period than was intended, you should not hesitate to leave him behind in the experienced care of his supervisors or parents.

The trouble is that the latter are sometimes too trusting, believing that you have miraculous powers of making everything happen as it ought to do. The solution to this situation is to arrange a special outing with above average safety measures taken. It is expensive in time, personnel, and effort but more often than not it gives immense pleasure to the participants and satisfaction to the organisers.

Follow up: After an introductory course for disabled pupils the question is often asked 'Where do we go from here?' All too often the answer is nowhere, unless you or someone similar will volunteer to repeat the exercise.

One must, however, be practical about it all and compare the situation with what happens in any school, any education authority, and any club up and down the country.

Disabled people can expect no preferential treatment, so the same advice should be given as to anyone else — get the authorities to run courses, pay your money and apply to join a sailing club; buy a boat and get a competent person to accompany you on outings. Do the same as others do, and above all go 100 percent for integration. We do not want sailing clubs for the disabled because we want to be the same as everyone else.

SUB-AQUA

SINCE the 1940's it has been recognised that sports offer to disabled people a unique opportunity to improve their health, enjoy themselves, and achieve social participation and acceptance. And, after working for four years at exploring the possibilities for disabled diving, the policy of the British Sub Aqua Club is to encourage branches to accept disabled members for diving training wherever possible, entirely at the discretion of the branch diving officer.

Disabled people can be safe divers, and active branch members, provided that the proper medical precautions and checks are made first. There is no reason why a disabled diver should be a passenger in the branch.

In spite of the strict necessity for medical fitness in diving, it has long been apparent that a person with quite a serious injury — say, one leg amputated above the knee — could become quite a competent diver, other things being equal.

In view of the risk entailed in most of these activities, and the outdoor mobile nature which makes supervision difficult, it may seem perverse to encourage to take part people who have already suffered severe injury or disability at least once.

However, the risk element is no higher than with able-bodied people, since the essential art of learning these activities is to learn how to maintain the risk within acceptable limits by modifying the techniques and restricting the task attempted.

APPROACH TO SUB-AQUA: It is preferable that severely disabled people should receive *initial training* at special short courses supervised by doctors and physiotherapists.

At this point it should be made clear what is meant by a seriously disabled person, and what degree of self-sufficiency is aimed at in training. In the context of diving, the amputation of one leg is not serious, because many people can swim well with one leg. There are problems in walking about wearing the equipment, but they are not medical or physiological problems, nor peculiar to diving.

The absence of a hand or arm is more serious, since a diver frequently has to adjust his equipment while underwater. However, the problem is one which can be solved by careful supervision and instruction by a good diving instructor, who must judge the safety of the pupil. There is no special medical problem.

A special danger for paraplegics is that they do not know the position of their legs unless they look at them. This is quite difficult while wearing mask and scuba, and so there is risk that their feet or knees will collide with rocks, coral, or wreckage. If complete suit covering is worn there is little risk of abrasion or cuts, but in the absence of a suit, extreme care must be maintained.

Disabled divers should not dive with each other. After receiving initial training, the trainees should join an active diving club or diving school. Training in these organisations is usually carried out on a part-time basis over many weeks or a few months, and this is ideal for the disabled person.

By diving regularly with members of the club or school, the disabled diver will acquire a group of friends and fellow-divers who know his capabilities and limitations when diving at sea, and this will provide maximum safety.

Disabled divers should, as far as possible, complete all the established training exercises as laid down by the *Confederation Mondiale des Activités Subaquatiques,* and be granted the appropriate certificates. The CMAS standards of training should only be reduced or modified to allow for restricted depth and sea conditions, and in respect of life-saving, since the disabled diver can give very little assistance to others.

The disabled diver who acquires sufficient sea experience to become qualified should receive a certificate or log book endorsement stating clearly the limiting conditions within which he may dive safely. He should receive an annual medical check to ensure that it is safe to continue diving.

THE LEVEL OF COMPETENCE which should be achieved is as follows: The subject is passed as medically fit to dive so that his companions do not have to worry about him. He drives himself to the dive site, looks after his own diving equipment, but may need assistance getting into a boat, and getting his scuba gear fitted in the water.

Once dressed he can swim unaided, dive, adjust his equipment, perform all the normal safety exercises, swim in the company of a buddy diver, monitor the progress of the dive, control his ascent, and swim to the boat on the surface. At the boat he will probably require further assistance to remove his equipment and to get back on board.

In the event of becoming separated from the boat he could inflate his life-jacket and survive for many hours. This level of independence ensures a high degree of safety, and permits the disabled person to join in diving groups of able-bodied people, to enjoy underwater observation, photography, natural history, or underwater science and research.

The author of the section on Sub-aqua, a paraplegic, has left his aqualung on the bottom of the pool and is rising to the surface. Note stand-by safety diver.

The basic rules for sea diving by disabled people are:

- Obey all usual diving regulations and medical regulations concerning diving.
- Your safety factor is *always* lower than for an able-bodied diver.
- The dive begins when you leave home and ends when you get back home safely.
- **Never dive alone.**
- **Always dive with two able-bodied experienced divers close to you in the water;** that is within 5 m or visibility range whichever is the smaller. There must be at least one diver and a boatman in the cover boat.
- Always plan and survey your entry into and exit from the water with the people who will be helping you.
- Ensure that your diving companions know your limitations in terms of diving safety, and general medical care.
- You cannot use your hands to adjust your equipment or carry out work while you are swimming. Avoid situations which require both at once.
- Never dive in a current stronger than you can swim against for a long time.
- Avoid abrasions and cuts from reefs and rocks. Do not touch corals.
- Do not make dives requiring decompression stops.
- Never go under overhangs.
- Never go inside caves or wrecks.
- Never dive at night.
- Never dive in visibility less than 3 m. It is impossible for your companions to stay sufficiently close to you to give rapid help in these conditions.
- Never dive in waves of more than 2 m or in a strong wind.
- Plan all diving operations with multiple redundant safety measures and fail-safe procedures.

VALUE OF DIVING FOR DISABLED PEOPLE: It has long been recognised that swimming is an ideal sport for the disabled, since it enables them to discard all artificial aids to mobility and to obtain a maximum level of exercise enjoyably. While swimming gives the disabled free mobility in two dimensions, diving gives the third dimension. The disabled diver can swim, rise, or descend, roll and turn in any attitude, with no special equipment other than conventional diving gear.

* * *

Report of a scuba diving training course for severely disabled men with an assessment of physiological and rehabilitation factors — N. C. Flemming, U.K., Y. Melamed, Israel.

ABSTRACT: Six severely disabled men were selected for their swimming ability and physiological suitability for diving. Four paraplegics: T.4, T.6, T.12, and L.3, and two double leg amputees, one with both legs amputated above the knee, one with one above and one below.

The three high lesion paraplegics and the more severe double amputee were normally mobile only in wheelchairs. Medical history and present physical status is presented for all trainees. A daily report is given of a five-day acquaintance diving course during which the trainees completed all the normal scuba pool training schedule as required by the *Confederation Mondiale des Activités Subaquatiques* and the British Sub Aqua Club. The course concluded with trainees diving in the open sea.

It is concluded that self-contained diving training is an excellent rehabilitatory activity for disabled people with the following limitations: no paraplegic should dive in the sea with a lesion above T.5; no paraplegic whose injury was caused by bends should dive at all; no disabled diver should undertake decompression dives.

SNORKELLING can be enjoyed by a large number of disabled people if they are confident in cold water. Protection of the feet and knees against scraping may be necessary for those with paralysed legs.

WATER SKI-ING

WATER SKI-ING, although not a dangerous sport, is nevertheless physically demanding, and this does rule out the more severely disabled. A strong back and three out of the four limbs in sound condition are the basic physical requirements, although there is at least one water skier with only one arm and one leg. He was, however, an experienced water skier prior to his accident, but as with all sports for disabled people, it is really a matter of how keenly you want to do it that counts. In any event, consult your medical adviser before attempting to water-ski if you have any doubt.

It should also be emphasised at the start, that in referring to disabled people we do, in this case, most certainly include the blind — not only the physically disabled — for it seems that the largest group of disabled for which there is organised training in water ski-ing is, indeed, the blind.

PROBLEMS: The most common problem for all beginners, disabled and able-bodied alike, is getting water-borne and staying upright on your skis. This is especially so for the disabled beginner.

Disabled people are generally less fit and tire more easily and it is therefore vital that every effort should be made to get them up as quickly and easily as possible, avoiding repeated failures and falls, which are both exhausting and confidence sapping.

Inevitably there will be falls and anybody attempting the sport — like all other water sports — should be able to swim, be absolutely happy falling in the water and not worry about being left alone out on the water while skis are being recovered.

For this reason it is important for all water skiers to wear one of the approved life jackets or buoyancy aids; indeed, even more important for the disabled, not only to avoid getting over-tired but also to help keep the body upright and stable in the water for starting.

This is particularly applicable for one-legged skiers, for whom the life jacket should be of the type that comes high up around the shoulders and neck, thus compensating for the weight of the missing limb and preventing the skier turning turtle.

The questions of life-jackets, buoyancy aids and rubber wet suits become boringly repetitive for all beginners in water sports, but, for obvious reasons, they must be emphasised and re-emphasised.

Disabled beginners at water ski-ing tend, obviously, to spend more time in the water, and in cold water areas a rubber wet suit is invaluable for keeping warm and keeping muscles working. For amputees, suits can be adapted to fit snugly around the stump, keeping it warm and, in particular, giving full protection in the event of a fall.

Also being developed, although rather expensive, are a new type of dry suit which should enable any type of leg, not only P.T.B.'s, to be water-proofed.

The disabled person must also start water ski-ing under the best possible conditions, and a good, strong boat with an experienced driver is essential. The more powerful the boat the quicker the skier comes onto the plane, thus minimising the very tiring drag when starting.

Using the technique of one or two experienced skiers ski-ing alongside the beginner makes it even more essential to have a boat with a very strong pull. Good conditions apply equally to the water, which should be as calm as possible, especially for beginners, and not too cold.

TEACHING: Methods and aids which were originally developed to assist those beginners who had difficulty in learning water ski-ing, are even more essential in teaching the disabled person.

Lessons ashore, practice at putting on skis and generally getting used to the feel and balance of sitting in the water with skis, will often save a great deal of time, explanations and tiring frustration at the first attempt.

- **Instructor ski-ing alongside** (System A): This is the most usual method for teaching the disabled, who should use a wide pair of jumping skis, or similar, to give as large a water surface area as possible. Two tow lines are used, the instructor holding his tow handle with one hand, the other hand firmly gripping the upper arm of the pupil, who holds on to his own tow handle.

On the signal to start, the instructor steadies the pupil in the water and then literally heaves him out of the water into the ski-ing position.

The great advantage of this method is that the instructor can talk to and reassure the pupil all the time, teaching him as he goes along.

Once the pupil is steady he can relax his grip and allow the pupil to ski independently, while still giving him instruction.

This method allows a smooth and easy transition from complete reliance on the instructor to independent ski-ing.

When teaching an amputee, the instructor should ski on the side of the sound limb to avoid any risk of hurting the stump on the instructor's ski in a fall.

- **Instructor's skis straddling pupil** (System B): This is a variation of the previous method with the instructor's skis

on each side of the pupil's, arms under the pupil's armpits holding the tow handle under the pupil's.

This can be an effective method, especially with lighter and smaller pupils. However, it tends to cause a great deal of turbulence in the water and it does mean that the instructor has to continue ski-ing round in this position or let go and leave the pupil to go on alone, with the spare tow line and handle jumping about in the water. Quite often the pupil falls as well when the boat surges forward on the release of the instructor's weight.

There is a method, described in the *Water Skier* (GB) issue of May 1976, for the instructor disengaging and ski-ing alongside. This would appear to require considerable experience and there is no knowledge so far of this being used for disabled water skiers.

The straddle method could cause anxiety for an amputee about falling and hurting his stump, and the advisability of using this method must depend upon the nature of the disability.

• **Wide Tow-Bar** (System C): By using a wide tow-bar, of about 1·9 m, the pupil can have two instructors, one each side, lifting under the arms. This is an almost infallible method for getting a pupil up first time; not only are there two instructors to hold him steady, but the tow bar is also held steady. (See Diagram 2.)

It does, however, have the disadvantage of requiring two instructors on skis and the pupil cannot ski independently. It should, therefore, be considered only as a first stage in teaching.

One-legged but accomplished skier.

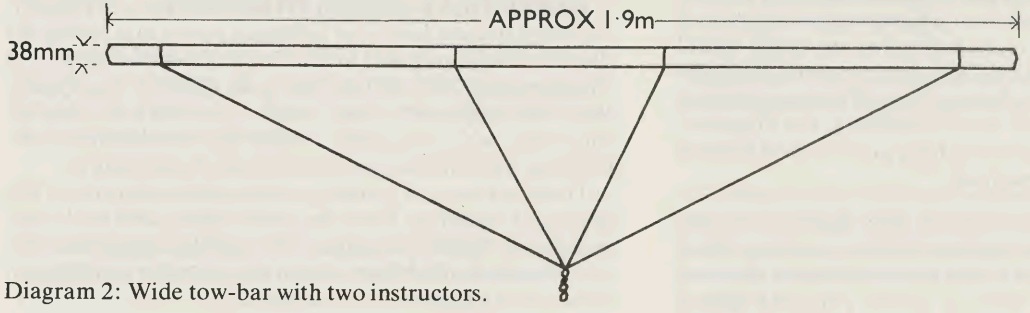


Diagram 2: Wide tow-bar with two instructors.

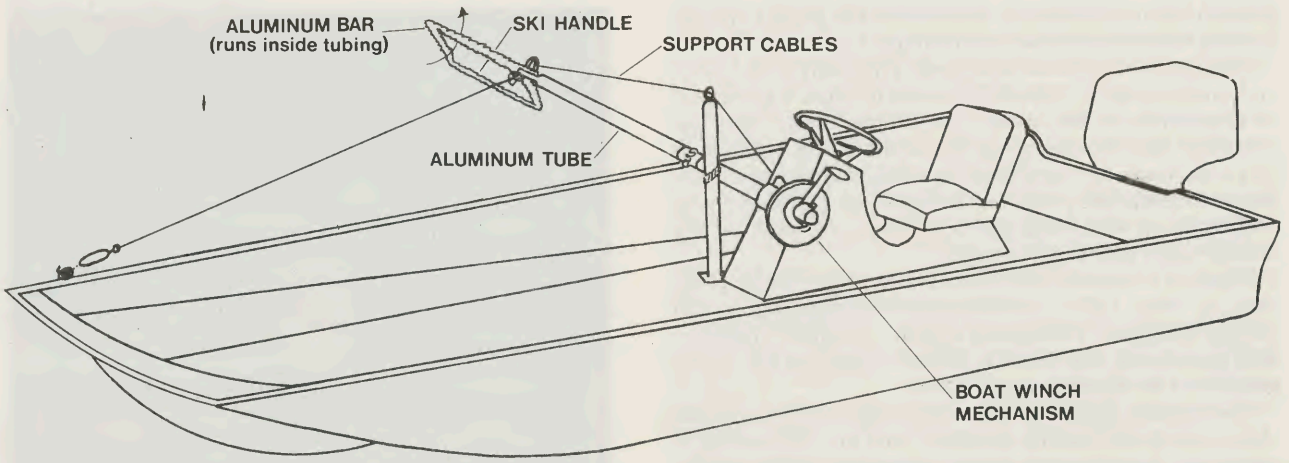


Diagram 3: The design of a ski-boom for training alongside the ski-boat.

• **Ski Boom** (System D): This method of teaching makes use of a special boom made secure by cables over the side of the boat. (See diagram 3).

The idea behind the boom is to have a comparitively stable bar to hold on to, thus steadying the skier. As the boat speed increases and the skier rises in the water, the boom is winched up until the skier is in a normal ski-ing position.

Apart from the confidence given by the boom, the boat driver/instructor is in close communication with the pupil and can give continuous instruction during the lesson.

A further extension of the boom idea is to equip the bar with a normal ski rope and handle, the rope being wound on a reel and gradually let out so that the skier drops slowly behind the boat, thus getting the feel of normal ski-ing.

The advantage of this method is the saving on manpower for teaching, but it is a more expensive aid which would normally have to be a permanent fixture of the boat and thus more suited to a ski school or special training camp. It would normally help with most disabilities, but amputees might find they did not get enough support for their balance as in the previous three methods.

• **Joining skis together** (System E): Apart from the above-knee amputee, or similar disability, starting off on one ski only, (mono ski, which is dealt with later) the usual skis for a beginner are either a combo pair or a pair of jumping-type skis.

In some instances the disability may cause difficulty in keeping the skis parallel both in the water and when ski-ing. The least restricting is joining the skis together, about 22–30 cms. apart, with a cord between the front of the skis. This prevents doing the splits with the tips of the skis, but otherwise does not restrict their movement.

A yet more restrictive method of keeping the skis parallel and rigid is to join them together at the front by means of a length of wood or metal.

This, in effect, converts the skis into a surf board with foot bindings and is absolutely invaluable for anyone having difficulty controlling his skis.

PARTICULAR DISABILITIES: Each person's disability brings its own particular problems and to that person his disability is unique and he has his own individual way of overcoming it. Anyone instructing the disabled must realise this, and appreciate that while one method may be successful with one pupil, it will not necessarily be so effective with another, even with the same disability.

There are also, of course, considerable variations in the degree of disability from the same cause, and each case requires individual attention. Nevertheless there are certain groups of disabilities which have similar problems in common to a greater or lesser degree.

• **The Blind:** This appears to be by far the largest group of disabled for which there are properly organised camps and training schemes, mainly in the United States and Canada.

All initial training methods explained earlier have been used with success. With an instructor alongside there is no problem of communication, both for training instructions and for keeping the pupil informed of water conditions, wash, turning, etc.

When the pupil can ski on his own at the end of the tow rope, instructions can be given by means of a loud hailer.

The capacity for progress towards more advanced ski-ing techniques will depend to a large extent on the degree of visual handicap.

• **The Deaf:** There is very little information available regarding instructions for water ski-ing by the deaf. Communication between the skier and the boat driver seems to be the main problem and in arranging suitable signals for initial training, the best way to start is by studying the methods recommended in the many books, magazines, on water ski-ing.

Having arranged a reliable sequence of basic signals, through the various examples of procedure that are illustrated, there should not then be any major obstacle to prevent the deaf pupils becoming as proficient water skiers as their able-bodied colleagues.*

• **Lower Limb Amputees:** These can be divided into two groups — those with below-knee amputations using a **PTB leg or similar, and those with above knee amputations, or below knee but not using the artificial leg for ski-ing.

Concerning the first group, the first four teaching methods are appropriate, while the joining together of the skis will help if difficulty is found controlling the ski on the artificial leg.

The artificial leg ski should be pushed 3 in.–6 in. ahead of the other ski to prevent the drag pulling the artificial leg backwards, a position from which it is very difficult to recover.

Greater manoeuvrability and better control can be obtained on a mono ski, avoiding the difficulty of controlling the ski attached to the artificial leg. The artificial leg should be in the rear binding.

Conversion from two skis to one can be done in the normal way by dropping off the ski from the artificial leg, and fitting the artificial foot into the rear binding. This can be very difficult, and it has been found easier to start in the water with the artificial leg already fixed in the rear binding. (Advice follows).

A deep-water or dock start with the artificial leg trailing behind almost always results in the artificial leg being wrenched off by the force of the water.

Another method is to ski on one ski without using the artificial leg. This is also described fully below. An easy way to get into the ski-ing position and yet avoid the strain of being pulled out of the water on one ski, is to start on two skis without the cuff on the PTB, — and then, once up, lift the stump out of the socket and drop off both the artificial leg *and* the ski together.

Having considered the below-the-knee amputees, we now turn to the second group which includes above knee amputations and below-the-knee amputees who do not use an artificial leg for water ski-ing.

This is by far the most challenging group, both for the pupil and the instructor. In effect, it means learning to mono-ski from the start with only one leg.

The teaching methods A to D can be used, but A and C are probably the best, starting with C and progressing to A.

Attention should be given to the type of ski used. A broad, square-backed type, similar to a jumping ski — 1·75–1·9 m. long according to weight — will give the largest planing area and best stability.

To keep the weight back, the binding should be fixed so that the ankle joint comes about one-third of the length of the ski from the rear end.

A deep slalom ski fin is essential and should be sited midway between the heel of the binding and the rear of the ski to give maximum control.

Either twin handles or single handle may be used, but in both cases the apex of the 'V' to the handle(s) should be at least ·9 m. (Twin handles make it easier to take up any slack in the rope when turning).

For deep water starts, the 'V' of the rope should be looped over the tip of the ski to steady the ski and the body in a straight line with the pull of the boat.

* *There is a special club for deaf people, the Bluebird Deaf Water Ski Club; Secretary: Mr. H. Wooldridge, 5 Priory Road, Sheringham, Norfolk NR26 8EN.*

** *Patella Tendon Bearing, where the stump takes the whole weight and only requires a cuff above the knee to hold it on. It can be water-proofed with a rubber sock like sheath, taped round the top with water-proof adhesive tape.*

The stump should be straight and thrust hard back to act as a rudder. The boat driver should gently idle through the water until the pupil gets his balance and position, and is tracking absolutely straight, then give full power until the skier is up.

Once the instructor has got his pupil up, the first objective is to get him to control the ski, in the meantime holding on hard until he can get his balance.

The stump should not be allowed to wave about, but kept tight to the good leg, either at the side or on the top. This gives a single point of balance and the muscles of the stump reinforce those of the good leg, lessening fatigue.

The arms should be bent (no straight arms here) and kept as low as possible, elbows close to the waist. The object is to get the level of pull as low as possible, with the thrust coming through the thighs.

Once balance and experience has been obtained in getting up, then the normal mono-ski can be used. Again, for better control, the foot binding and fin should be positioned as above.

Arm Amputees: With upper limb amputees, the main problem is the twisting effect as a result of the uneven pull on only one arm. The only reported method used for training is that using a wide tow-bar (C above).

To take the strain off the one arm, the instructors join hands under the seat of the pupil and lift, taking the weight at the moment the boat accelerates.

Where there is sufficient stump able to take a certain amount of pressure, then an additional handle can be added to the bar for balancing and taking the strain off the good arm (Diagram 4.). Equally, a toe-hold strap as used for trick ski-ing could be used.

• **Other Disabilities:** Although we have not covered all possible disabilities, any weakness, loss of control, paralysis or deformity should be equated with the above examples to get some idea of the best method for training. (E.g. paralysis of the foot might be equated with a below-knee amputation, using a PTB leg.)

MORE ADVANCED TECHNIQUES AND VARIATIONS: Once the disabled water skier has mastered the getting up and ski-ing on his own, he will then be in a position to decide whether to advance to the more specialist disciplines of slalom, figures and jumping.

The over-riding consideration will be the nature and degree of the disability. But, by this time the skier will have developed his own particular techniques and should have the necessary experience to decide what is attainable. Then it is a question of practice, as for any able-bodied skier.

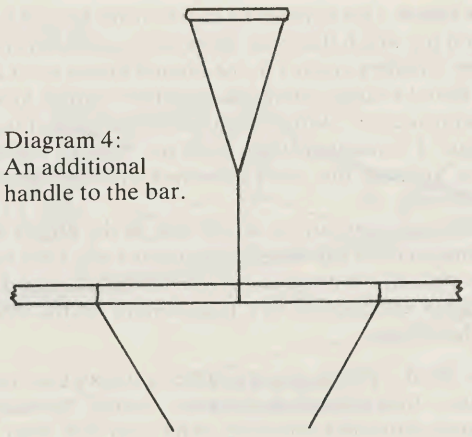


Diagram 4:
An additional handle to the bar.

There are several instances of those with one leg or a leg made useless through polio who slalom, while a Canadian with a below-knee war amputation, not only slaloms and trick skis, but manages to jump 15 m!

For the more adventurous, there is kiting and para-kiting, both of which have been successfully accomplished by below-knee amputees.

For those whose disabilities make it impossible to water ski, but would nevertheless like to enjoy a similar thrill, there are variations, such as surfing or aquaplaning behind a boat, which are less physically demanding.

Another is the sled, this being two skis joined together by a fixed frame to which is attached a seat. There are also various forms of motorised ski bobs on the market.

For further details and information, please write to The British Water Ski Federation, 70 Brompton Road, London, S.W.3.

Acknowledgements: Canadian Water ski Association, Mr. R. G. Barnes, British Water Ski Federation – D. Nations O.B.E., Water Skier (USA), A. Burrough C.B.E., National Camps for Blind Children (USA), R. Carson, Water Skier (G.B.), Ski Canada Nautique.

OTHER BOATING ACTIVITIES

APART FROM the main water sports, many disabled people, like their able-bodied friends, derive enormous pleasure from "messing about in boats". This includes a wide range of informal activities, some strenuous and others lazy!

Boating in the local park has been enjoyed by a large number of people of all ages.

Inflatable rubber boats, such as those used for rescue duties, are particularly suitable for some disabled people; they provide a minimal chance of abrasions and bruising and they are comfortable and offer the excitement of speed. (See illustration p. 17).

Here again, there is a need for a thoroughly competent driver and safety precautions; life-jackets must be worn.

Rubber craft, including air beds, can be extremely dangerous, particularly on moving water and disabled people must be particularly alert not to put themselves or other people at risk by using them carelessly.

Coracles have been used very successfully by some people with only one arm, and we would like to hear of others who have tried them.

★ ★ ★

MODEL SAILING BOATS: Radio-controlled model boat sailing combines the basic knowledge of sailing principles with the skill required to operate working models by remote control. It is a hobby which can provide all the excitement and thrills of competition and at the same time encourage relaxation at the waterside.

The risks involved in boat-handling are not part of model boat sailing, so even the most severely disabled person would be able to enjoy this hobby and compete on an equal basis with everyone else.

Models and radio equipment can be bought or built, and there are clubs and magazines to give advice to enthusiasts. Like model aero flying, model boat sailing appeals to young and old alike, and especially to those with active minds and a practical ability.

Model Yachting Association, 6 Rowner Close, Rowner, Gosport, Lancs.
General Secretary: R. G. Gardner.

CANAL CRUISING

FOR THOSE disabled people who are unable to handle small boats and water sports equipment, canal cruising could provide a delightful open-air activity. Canals belong to everyone and travelling the inland waterways in one of the many stable craft in use today is an excellent way of becoming involved in water recreation.

Such recreation is suitable not only for those who are lightly disabled and who can help the crew to work the locks, but also those who are totally immobile and who may even be transferred on board on stretchers for a few hours of relaxation afloat.

Of the numerous types of craft plying our waterways, the narrow boats provide facilities which are most suitable for disabled people. These traditional vessels are about 12 m. long and nearly 2·2 m. wide, being driven by powerful, low-noise engines underneath the stern deck. Most of the narrow boats in Britain are privately owned either by individuals or by syndicates, which means that arrangements must be made with the owners to take disabled people for trips.

At many inland waterways centres and marinas canal boats are available for hire, although the bookings are usually for at least a week and seasonal charges for these well equipped craft are of hotel proportions.

Organisations catering for disabled holidaymakers can, however, take advantage of group bookings and arrange either a series of day trips or a journey which involves spending several nights on board.

Adapting a canal cruising boat for handicapped users requires considerable internal refitting, but this has already been done by an enterprising narrow boat owner in the East Midlands. The central passage below decks in this 40 ft. narrow boat is wide enough to allow wheelchairs to move about the main cabin, and the two toilets, bunks, tables and galley are all accessible for wheelchair users.

This means that eight people, in addition to the crew, can enjoy canal trips even when the weather is wet. The boat, the Matilda, is available for parties to make four-hour trips on some of the finest waterways in the East Midlands, and in 1976, 400 severely disabled adults and children, pensioners and mentally handicapped people went aboard.

They enjoyed an experience which would not normally be possible for them, but although the atmosphere on board is casual and informal (complete with dog) life-jackets are worn by those on deck in case of sudden loss of balance.

The boat is made available free of charge and refreshments are provided at a moderate cost. Understandably,

The Matilda.

there is a waiting list for bookings on Matilda, but in 1977 a second narrow boat will be commissioned which will have an hydraulic lift in the cabin roof space. This will enable non-ambulant people to embark at quayside level, and it will provide access between upper and lower decks during journeys.

Application for bookings should be made to:
Mrs. P. C. Hanmer, C.H. Boats, Colston Bassett House, Colston Bassett, Notts. Telephone, Kinoulton 424.

Another example of canal cruising facilities being provided for disabled people is in mid-Wales, where the Montgomery Waterway Restoration Group have cleared a section of the Montgomery Canal.

The Prince of Wales' Committee and the Variety Club of Great Britain have co-operated to provide a new cruise service for the handicapped — especially handicapped children — on the Montgomery Waterway in a new, specially designed canal boat named Heulwen (Sunshine). These trips are available free of charge to hospitals, schools and organisations concerned with the handicapped.

The new boat can accommodate 11 handicapped children and up to six accompanying nurses or teachers. The Heulwen is moored at Buttington Wharf, near Welshpool. The wharf lies about 200 yards down a minor road off the main A483 Welshpool-Oswestry road, opposite the junction with the A458 Welshpool-Shrewsbury road.

At Buttington Wharf members of voluntary organisations, working on a rota, will meet parties of children and, if

necessary, help them to go aboard. This is not difficult, even with chair-bound children or stretcher cases.

Visiting parties are requested to provide their own picnic meals, which they may eat on board. The voluntary workers will be ready to serve hot or cold drinks as required, from the boat's well-equipped galley.

The boat normally makes two trips a day; one in the morning at about 11.00 a.m., one in the afternoon at about 2.00 p.m. Times can be arranged to suit the requirements of individual visiting parties. A trip lasts about 1½ hours.

The Heulwen has a full-time skipper and a crewman and, when moored, the vessel can be reached on Welshpool 3215.

Apply to: Mrs. Claud Millington, Honorary Booking Secretary for Sunshine Boat Heulwen, Green Acre, Salop Road, Welshpool, Powys. Tel: Welshpool 2563.

These highly successful examples of planning and adaptation to meet the special needs of the disabled give encouragement to a section of the community who have been in danger of being neglected as far as Water Recreation activities are concerned.

With sufficient helpers, disabled people can be taken on standard type boats, and they can join in the quiet appreciation of our inland waterways like everyone else. Adapted boats enable the ratio of helpers to handicapped to be very much reduced, so that more disabled people can be taken on each trip.

POWER BOATING

IT IS UNLIKELY that severely disabled people will be able to operate high-speed powerboats capable of speeds in excess of 20 knots — because of the physical battering one receives as a result of the motion of the boat.

However, it is known that there are paraplegics who drive tow-boats for water skiers, in calm conditions. Generally, the term 'powered boat' is more appropriate and relates to the lower powered boats used for a variety of water activities.

Assuming that a way has been found for getting the disabled aboard — possibly in a wheelchair or on to a specially designed seat — ease of operation of the controls is a prime consideration. Electric start motors, wheel or whipstaff steering and single lever controls help to facilitate this ease of handling.

It would be necessary to have an able-bodied person aboard to help with getting away and returning to the land and to cope with emergencies.

Sparkle

SPARKLE

SPARKLE is a catamaran built specifically to accommodate disabled people. She is 13·7 m. overall with a 4·9 m. beam and companionways wide enough to permit up to 10 wheelchairs to manoeuvre freely. Participation in sailing activities is encouraged.

Commissioned by the First Sea Lord in the summer of 1970, Sparkle was built and is maintained by SPARKS, the Sportsmens' Charity. Thousands of disabled children and adults have enjoyed trips on the Thames and from Poole, Chichester, and Newhaven. There is a full-time skipper and the boat is freely available to any handicapped person. For bookings apply to: The Central Council for the Disabled, 34 Eccleston Square, SW1V 1PE.

3. Swimming

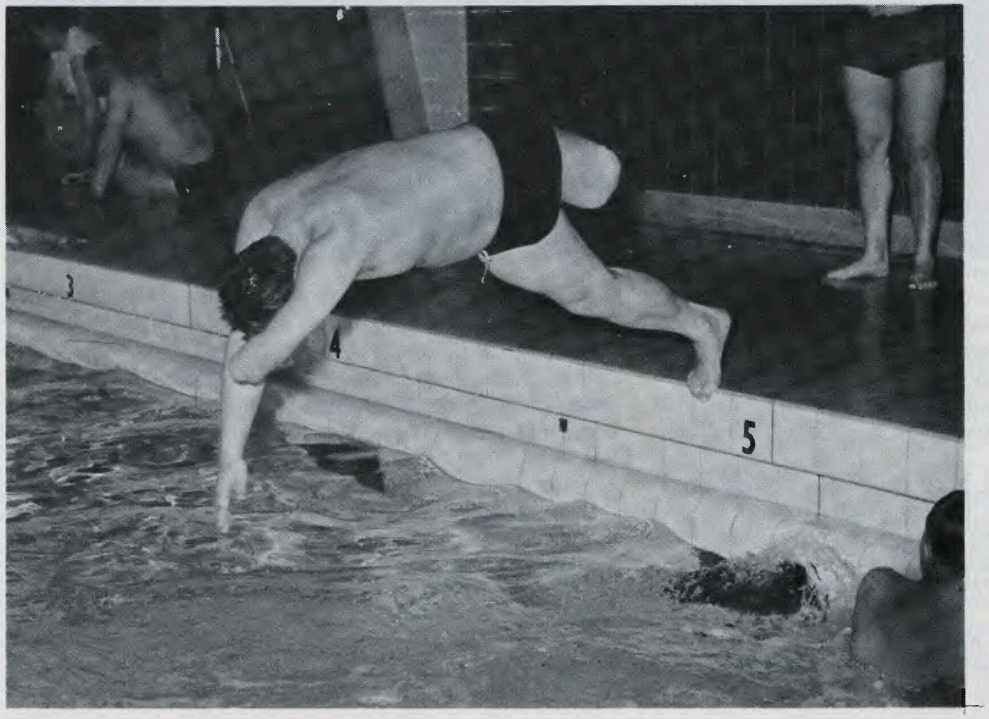
A COMMON DENOMINATOR FOR ALL WATER SPORTS

SWIMMING has certainly become one of the most popular water activities for disabled people. Apart from its contribution to improving physical fitness and the pleasure which swimming for its own sake can give, there are the mental, emotional and psychological benefits afforded by the mobility and freedom which a disabled person can feel when in the water. One must point out, however, that swimming in the safe controlled environment of a heated pool is not the same as swimming in cold water! A team of disabled people proved their ability by swimming the Channel several years ago.

Much successful work has already been done in this sport. The Co-ordinating Committee on Swimming for the Disabled can provide information and the Amateur Swimming Association employ a development officer for disabled people. Many publications are available on methods, for lifting and handling etc., including "Guidelines for Teaching the Disabled to Swim".

While Swimming is a sport in its own right, it has the added importance of being the 'common denominator' in all our other water sports. The ability to swim must therefore be an advantage, but by no means second comes the ability to be 'happy' in the water. Experts in Sailing and Canoeing have expressed the opinion that 'drown proofing' may be more relevant to some physically handicapped people than actual ability to swim. Well worth reading is *Drownproofing* A technique for Water Survival by Michael Bettsworth (Heinemann Educational Books).

Nevertheless, as with able-bodied persons, it is generally recommended that participants develop the ability to swim 50 metres.



The Co-Ordinating Committee on Swimming for the Disabled can provide information for those eager to learn to swim as a first step towards taking up another water sport. Two arms and two legs are not essential . . .

4. Hypothermia

HYPOTHERMIA, or what happens when the body temperature drops below normal, can occur quickly and quite frequently to people who are thrown into cold water. In simple terms, Hypothermia occurs when the body LOSES HEAT MORE QUICKLY than it can PRODUCE it. There is the added danger that the condition can develop in its initial stage without the 'victim' being aware of it.

Often, people taking part in watersports, build up a Cold Debt (e.g., a racing dinghy crew capsizes two or three times during the course of a race and each time the body will cool down a little further). It is imperative that people taking part in water sports are aware of the dangers of Hypothermia and learn to recognise the signs as early as possible (see diagram "Symptoms of Hypothermia"). (Diagram 5).

Treatment of serious Hypothermia is a matter for a doctor or hospital. The point that must be stressed here is the importance of being adequately protected when taking part in an activity which is likely to expose the participant to the danger of Hypothermia.

SYMPTOMS OF HYPOTHERMIA

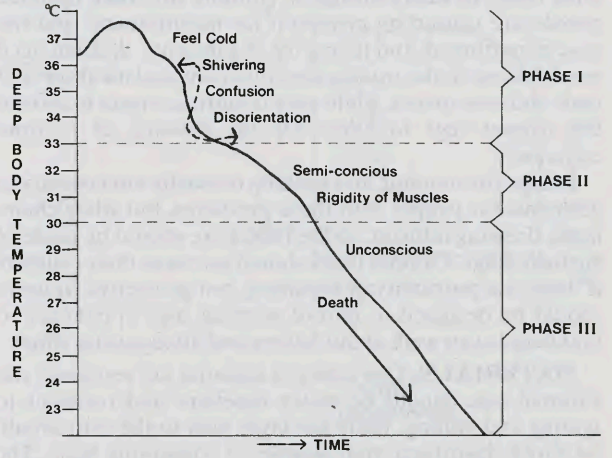


Diagram 5: No time scale is given as many factors are concerned. However Phase III can occur in 30 minutes in the sea off Britain even in summer.

The aim is to REDUCE HEAT LOSS. If you are immersed in cold water then normal clothing provides little insulation. The wearing of waterproofs will give some warmth in the water, but very little. The best garment, therefore, is the neoprene-type wet-suit.

5. Clothing ... ADEQUATE PROTECTION IS ESSENTIAL

WHATEVER SPORT is taken up by the disabled, suitable clothing will help to make the activity more enjoyable. Each sport may have special clothing requirements and each disability requires special consideration, but certain points will apply to all.

THE NEED FOR PROTECTION: Everyone experiences loss of body heat from all parts of the body, though some disabled people are unable to feel that their lower limbs are cold. Others will receive warning signals about this in the form of muscular spasm. This can also upset routine bladder control.

Uncontrolled limbs and insensitive skin areas, usually the lower half of the body, are liable to cuts, bruises and abrasions. There should be a layer of impact-absorbing, pressure resistant material between the skin and the surfaces likely to cause damage.

Although some of the corners and frequently used surfaces in special craft can be padded, it is usually more convenient for the user to be protected. Foot and ankle protection is also necessary, and it is recommended that the lower half of the body is protectively clothed at all times, even in fine weather. The disabled, who are susceptible to a particular local damage, such as ankle scuffing, should be encouraged to take extra precautions.

REQUIREMENTS OF GARMENTS: The chief problems likely to affect design of clothing for some disabled people are caused by provision for incontinence, and the ease of putting on and taking off of garments. Women need more fulness in the trouser seat to accommodate absorbent pads and over-pants, while men require a certain fulness in the trouser legs to allow for the wearing of a urine container.

Design for standing and walking is usually unnecessary in garments for people with these problems, but wheelchairs make dressing difficult, so the fullest use should be made of zip fastenings. Calliper users should not wear their callipers if there is a possibility of capsizing, but protective trousers should be designed to permit wearing such appliances so that people can walk about before and after getting afloat.

MATERIALS: Two types of material are required: the external one should be water repellent and resistant to tearing and pulling, while the layer next to the skin should be shock absorbent and capable of conserving heat. The materials should be combined into a dual purpose unit to save the wearer having to struggle into two garments.

Examples of these are 'Bukflex' or poly-urethane nylon over 'Neoprene' lined with nylon or towelling next to the skin. An alternative inner material is nylon fur, which is approximately one fifth of the cost of Neoprene. Users should be able to choose either.

The two materials should be fastened togther after the garment is made up, possibly with a combination of 'Velcro' and zips. The inner and outer can then be separated for washing. Bubble plastic cannot be recommended yet because it is not tough enough to withstand knocks and sudden pressure. The usual bright colours are available in Bukflex.

DESIGN: The most suitable design of protective clothing to be used in water sports for disabled people is the two-piece. Ordinary battle-dress type jackets with upward travelling front zips are the easiest to manage, while a flat opening pair of trousers with zips inside the legs and fork will be more easily put on and taken off. Heavy duty zips are recommended, sliding up to the waist from the legs.

The bootees should be like wet-suit socks, with a zip on the instep. The soles are unlikely to be used. Additional features which should be incorporated into the design of protective clothing are styled jackets for women, and also trousers with closer fitting legs where acceptable so that the two pieces have some feminine appeal.

It should be pointed out that, as this type of clothing is not yet manufactured, wearers will have to treat it as a 'do-it yourself' process.

MAKING THE CHOICE

HAVING considered the subject in general terms, the following more specific points may be of help in making the right choice.

Clothing worn for participation in water-based activities has three main functions — Warmth, Waterproofing, Protection.

If you have a physical disability, protection becomes particularly important. Small physical injuries can take time to heal and add to general discomfort.

- **Warmth:** It can be very chilly on the water — even on a warm summer's day. *Fur fabrics* are excellent insulators.
- **Waterproofing:** Very necessary — even if it is not raining, there is a good chance of spray making you wet. *Remember* — Dry is warm; Better to be damp with sweat than wet with rain.
- **Physical Injury:** *Fur fabrics* provide some protection, but if that is too expensive, a pair of "under-trousers" made from an old blanket will certainly help. (Blanket pieces can sometimes be bought cheaply in markets.)

The backs of people with certain disabilities often get extra knocks. It is a good idea to provide some sort of protection for this area. A glass-fibre 'slope' can be made to fit the back and if necessary strapped directly to it, or a piece of foam plastic can be covered in fabric and tied to the back and buttocks. This would give excellent anti-knock protection. Additional pieces could be used as leg shields or ankle protectors. A closed cell foam sold by the length by Pindisports of Holborn and other camping equipment suppliers, has also proved to be most suitable.

- **Protection of the extremities:** *HANDS* must be kept warm and supple. Gloves can be a problem. Recommended "Fire-ball" from Messrs Synchemicals Ltd., 45 Grange Walk, London, S.E.1. or Messrs Arco Ltd., Hull. *FEET* need special protection against injury and can cause great discomfort when cold. Socks made from fur-fabric covered in proofed nylon can be excellent.

NOTE: The Disabled Living Foundation can provide information on many aspects of clothing for disabled people.

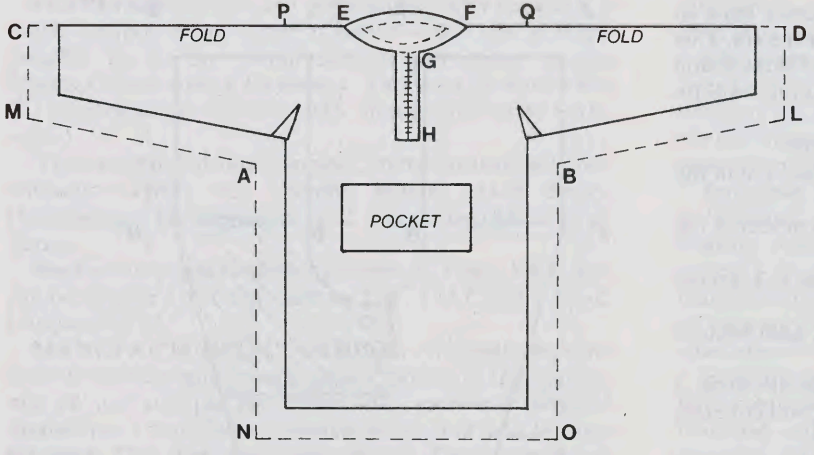
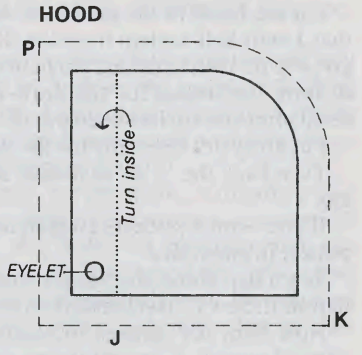
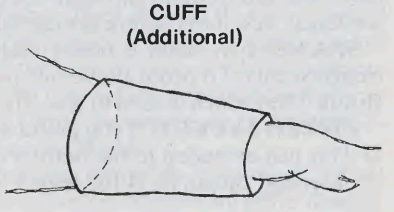
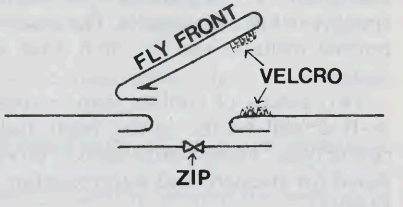


Diagram 6:





WRISTLET OF NEOPRENE



FLY FRONT

Cutting line

Sewing line

MAKING AN ANORAK

A pattern for making an anorak is given in Diagram 6.

Cut a full-size pattern using newspaper or other big sheets of paper. The anorak needs to be roomy to help ventilation and to allow extra woollens to be worn underneath. The sizes given are without seam allowance, so a good inch extra needs to be added where shown. The pattern always looks too big!

CUTTING OUT: If you have little experience of sewing make a trial garment using an old sheet or other old material. Remember to check that the pattern is lying on the correct side of your fabric.

SEWING: Use a big stitch with as little tension as possible. As the only difficult part is the hood, it is suggested you do this first.

With right sides together sew from P to K, so that when turned inside out you have the hood shape.

On main anorak piece cut the neck hole as shown and slit G–H for the zip. Turn this piece inside out.

Pin the hood in the neck hole starting at centre back so that J ends half-inch in from the slit (G–H) for the zip. This gives ½ in. turn in for the zip hem and the hood turns inside to form the tunnel for the draw-cord. This tunnel will be sewn after the zip has been put in.

Put an eyelet each side for the draw cord exits.

Turn back the ½ in. each side of slit G–H and put in the zip.

If you want a pocket sew it in now. Make a model of the pocket in paper first.

Sew a flap above the pocket, add Velcro tape to keep the flap shut. Sew L–B–O and M–A–N.

Now hem the sleeves to required length, also bottom edge of anorak. Garment is now complete.

If you think the anorak looks "wingey" under the arms, a dart back and front, as shown in the diagram, will cure this tendency. Sew darts before sewing side seams.

SEAMS: Any seam is better than a simple seam (e.g. french seam). To proof the seams put on Bostik No. 1 or Bostik 3206 which is used to glue diving wet suits.

ZIPPED JACKET: If you prefer a zipped jacket, the slit G–H is just extended to the bottom of the garment and an open-ended zip put in. A full length 'fly' is then necessary.

HIGH TROUSERS

WITHOUT a fly, trousers are very easy to make. The pattern is simply two halves with crutch and side seam only (Diagram 7) — a pattern is for high-waisted trousers, to roughly below the armpits. The trousers can be cut out like normal trousers and the high waist added later, if this is easier.

Two pieces of similar shape should be cut. The seam A–B–C will be the centre front and E–D–C will be the centre back. These seams need to be very strong, preferably taped for strength and waterproofing. Join sides J–K–L to G–H–I.

If you have dressing problems, a light-weight open-ended zip could be put down these seams (i.e. down each outside leg).

A strip of fabric, or loops sewn on at the waist, are suitable for a draw cord. A large hem around the top of the trousers provides a tunnel for a draw cord under the arms.

Two pieces the shape of the shaded area can be cut out and put in to provide a double seat.

The best pattern is an old pair of trousers that fit you, opened into two pieces as shown. Remember that waterproof trousers need to be on the large side as they will be worn over other trousers.

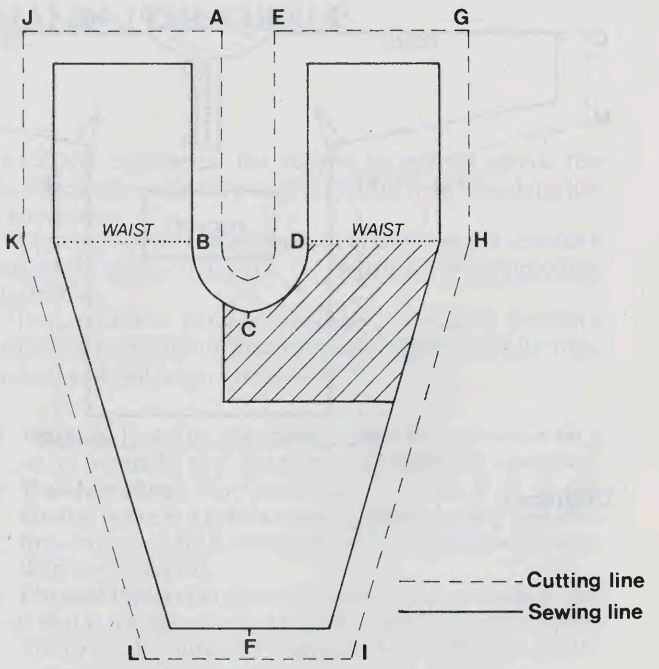


Diagram 7: Guide to making high trousers. C F: Inside leg. B C D: Waist front, under crutch to waist back. L-I: Size round trouser bottom (leg). A-B, D-E: Waist to armpit.

MATERIALS: Clothing worn by those taking part in water-sports needs to be windproof and waterproof. All modern waterproof fabrics will also be windproof, but tend to suffer from condensation. Do not use a fabric which is too thin as the proofing may soon wear away.

A 4oz/sq. yd. fabric is advised for wear and strength. This will normally have a layer of polyurethane (P.U.) on the inside to provide the waterproofing. A silicone spray will also usually have to be put on the outside to make the water run off easily. If thinner fabrics only are available, put two layers, especially over the shoulders and back.

SUPPLIERS: If you can get together with friends it is much cheaper to buy a roll of fabric — 100 yds. If this is possible go to the manufacturers: Carrington Special fabrics, Calder Works, Dewsbury, Yorkshire. Ask for a 4 oz PU proofed nylon. (Cost in 1976, about 85p a metre 1·6 m. wide.)

If you want to buy less than a roll, then two firms sell small amounts. These are: Penine Boats, Hard Knott, Holmbridge, Huddersfield, and Fernhurst, Haslemere, Surrey.

Markets are a good and cheaper source of zips. YKK Zips can be obtained through: Seftons Ltd., 134 Curtain Road, London, E.C.2.

MANUFACTURED CLOTHING: Although there are several manufactured waterproof clothes on the market, not all are suitable for those with particular physical disabilities. Try to find a reputable dealer and look through his stock. One firm, Osmonton Works, Osmonton Road, Derby, who manufacture waterproofs, quilted jackets and trousers etc, will deal with you as an individual. This will almost certainly be more expensive than a do-it-yourself garment, but will meet your requirements.

Should you have a special problem or want help in making clothing or getting supplies, etc., write to: D. G. Robertson, 8 The Woodland, Brightlingsea, Essex.

6. Lifejackets & Buoyancy Aids

THE WEARING of a lifejacket or buoyancy aid, as appropriate, should be a basic safety precaution for all who take part in water sports, able and disabled alike. But both serve different purposes and their definitions should be clearly understood.

Furthermore, it must be emphasised that buoyancy jackets should never be required to act as a proper B.S.I. lifejacket.

The term **Lifejacket** may only be applied to a device conforming to all the requirements of the B.S.I. Specification 3593 and bearing the BSI 'Kitemark'. Two types of lifejackets are available: (i) those totally reliant on gas/oral inflation with no inherent buoyancy; (ii) those containing a closed cell foam giving an inherent buoyancy of at least 6 kgms.

Lifejackets are designed to work fully inflated and will turn an inert body on to its back in the accepted floating position, in a specified time. Lifejackets must have a lifting becket, an easily adjusted neck strap, and a whistle. They were designed to operate in open water.

Buoyancy Aids, however, are garments, normally a vest or 'tabbard', designed to support the wearer in a vertical floating position. They are AIDS to flotation and not deemed to possess life-saving characteristics. Flotation material varies from kapok to closed-cell foam; distribution of buoyancy is not defined, hence each make has its own characteristics.

Flotation tests with physically handicapped volunteers have been carried out. The results of these tests were both revealing and inconclusive. They showed that very special care was needed in choosing a suitable flotation jacket which would support the wearer in a working position. Able-bodied persons can combat the designed characteristics of life-jackets — to turn the wearer on to his back — disabled persons may not be able to!

Legs which have become immobile because of spinal damage tended to sink — those affected by polio floated. This may not be a clinical fact but it was the case with four of the subjects on the tests. Many of the subjects slipped out of the jackets, especially the person with one arm.

Only one jacket, specifically designed for offshore powerboating with a built-in back support and crutch straps, remained securely on all subjects — but it was uncomfortable and became designated the 'straight-jacket'.

Several points must be considered carefully when choosing a buoyancy jacket:

- Can the person support himself in water without a jacket?
- Does the nature of the disability prevent the wearing of (a) a standard jacket, (b) a modified jacket?
- Carry out tests in a pool with all candidates to choose a suitable jacket.
- Modify it by adding (a) crutch straps to prevent it riding up over the head, (b) modifying the fastening devices to achieve a snug fit.
- Check that the modified jacket supports the wearer in a vertical position with the mouth at least 10 cms. above water. (N.B. It is assumed that expert help is at hand.)
- Consider the practicability of combining some form of body support into the jacket if the wearer has problems sitting in an upright position.

7. Insurance

THE PROBLEM of insurance is one that is common to all sportsmen. It is imperative that participants, be they pupils, organisers or helpers, are adequately covered by insurance.

Agencies organising courses which are open to, or specifically for, the physically disabled must accept full responsibility for arranging adequate insurance coverage. The decision of whether to participate in a sport, and the responsibility for that decision, rests entirely with the individual — able-bodied or disabled.

It should be strongly recommended that **no physically disabled person should consider involvement in water-based activities without first consulting his own doctor, and that medical approval be a condition of acceptance on all official courses.**

Insurance should not, however, be regarded as an umbrella covering every conceivable mishap, but as a means of covering against specifically defined risks — of which there are two types:

Being injured or killed (Personal Accident).
Being held legally liable for causing injury or death of another person or damage to his property (Third Party Liability).

INDIVIDUALS: Most people have some form of Personal Accident insurance cover. Some, depending on the nature of their employment, may also have Third Party Liability cover. If any physically disabled-would-be-sports-enthusiast is not so covered, he/she is strongly recommended to seek the advice of a reputable insurance broker and remedy the omission before going any further.

It is possible to obtain Amateur Sportsman's Insurance to cover Public Liability, Personal Accident, Sports Equipment and Personal Effects. Some companies extend this cover to disabled persons, with the exception of Personal Accident cover.

The best advice must be to consult an insurance broker and be advised by him — but do 'shop around', the first offer is not necessarily the best.

If, as a private individual, you invite a disabled person to take part in a sporting activity either under your voluntary guidance, in your craft, or both, make sure that both of you have adequate insurance cover to meet the needs of that situation.

ORGANISED COURSES: L.E.A.s, Local Authorities, Sports Associations, Governing Bodies, Voluntary or Statutory Organisations and Clubs, all carry Insurance to cover their usual business and activities and also their officials.

Where courses are organised specifically for or are open to disabled persons, Course Organisers are advised to check with their relevant 'authority' that the Insurance cover available extends to include this particular situation.

The Royal Yachting Association, the governing body for sailing in Britain, state in their Notes on Insurance: "There is no substitute for declaring to your insurers everything which you think is likely to happen and to make sure that the individual, the club or organisation have adequate insurance cover for every eventuality for which they might be deemed to have 'an insurable interest' and therefore some responsibility."

The Third Party Legal Liability section is perhaps the most important in any insurance policy.

As each situation requiring Insurance cover is likely to be different, the responsibility must lie with each individual to ascertain that adequate insurance cover is available in whatever capacity he/she is operating.

Governing bodies of each sport should be approached for information and guidance regarding insurance cover. In some cases they may be able to recommend insurance companies or brokers who may be approached directly by individuals or clubs.

8. Access and Facilities

WATER RECREATION AREAS

RIVER BANK footpaths, canal towpaths, reservoir viewing points, wild fowl sanctuaries, fish hatcheries and pleasure boat termini are some of the water-based countryside amenities which should be accessible to handicapped and non-handicapped persons alike.

Encouragement of disabled people to share these facilities will give greater meaning to our understanding of leisure and integration.

Fortunately, those who provide such facilities, particularly Local Authorities and private sports clubs, are beginning to recognise that many handicapped people have the potential ability to make use of recreation amenities.

Frequently the existing facilities are not suitable for those with restricted mobility, and adaptations are required to make these buildings accessible to all.

When planning new recreational complexes there is time to ensure that necessary access requirements are included at the planning stage. Consultations between commissioning authorities, architects and active representatives of the

disabled community will ensure that all water users will be able to use each of the facilities.

Transport also can be a real problem for disabled people, and assistance may be needed in organising this.

ACCESS TO GENERAL FACILITIES: Handicapped sportsmen may be able to walk with or without aids, or they may require partial or continuous use of a wheelchair in all places except when actually in the various water craft. Some of the places where access problems arise are listed, with suggestions for improvements. *It is desirable that there should be easy access between all these areas.*

- **Car Parks:** Public Transport is less commonly used by handicapped persons. Their adapted vehicles are usually taken as close as possible to the destination, especially when arriving unaccompanied and perhaps with equipment and protective clothing to carry.

  One or two car parking spaces adjacent to main buildings is the first priority, with access points as near as possible to the water. The surface should be hard, level and smooth and of a sufficient width to allow car doors to be fully opened (500 cm × 360 cm). A reserved notice is usual.
- **Spectator Stands:** Hinged seats will allow wheelchairs to remain without obstructing passage-way, preferably under cover. There should be step-free access through entrances and exits, and to toilet and refreshment facilities.
- **Picnic and Play Areas:** A hard, smooth-surfaced approach, wide enough for a wheelchair (e.g., 90 cm) is required. Some level place to sit should be provided and park seats slightly higher than usual, with arms, would help ambulant people.
- **Indoor Facilities:** There are five main areas to be considered, beginning with:

  The Entrance: The main requirements consist of a side ramp adjacent to front entrance steps of not more than 1 in 12 gradient, and not less than 160 cm. wide. The steps should have a handrail. Mats should be level with floor surface. Revolving doors are not recommended.

  Lifts: Public service lifts should be large enough to accommodate two wheelchairs, with lift controls within reach of seated persons.

  Toilets: Toilet rooms for disabled may be unisex and should be as recommended in the British Standard Code of Practice CP96 Part I 1967 (Access for Disabled to Buildings).

  Changing Rooms: Many disabled people are sensitive about appearing different when undressing with others and they would prefer the privacy of a side room where artificial limbs and orthopaedic aids can be left undisturbed.

  Because of their narrow doors and limited space, most cubicles in communal rooms are inaccessible to wheelchair users. A screened area 310 cm. × 250 cm. should be provided with coat hooks, mirror, wash basin and shower seat, all at a height convenient for people in wheelchairs.

  Social Areas: The refreshment area and bar, meeting rooms and offices should be easily accessible for people in wheelchairs.

REQUIREMENTS OF SPORTS: Getting in and out of canoes, dinghies, rowing boats and other water craft will always present some difficulty for handicapped people, but with help from other water users and by the provision of practical facilities for all to use, the problems can be reduced.

Angling: Bankside stations should be flat and as close to the water level as possible, with a strip of soft ground along the water's edge so that rod rests and bank sticks can be pushed into the ground. Several small stations separated by grassy areas are preferable to a long continuous strip. Background shelters about 3m from the edge are desirable. (For further details see section on Angling.)

Canoeing, Rowing and Sailing: Fixed jetties with no steps are better than floating pontoons. They should be not more than 45 cm. above the water level; not less than 150 cm. wide, and should have a ramped approach. Planks should be across the walk-way instead of running from end to end. One of the launching slipways should not exceed a gradient of 1 in 10 and should continue well below water level so that wheelchair users may get alongside their boats and canoes. In tidal water centres most disabled people will use the boat access routes.

Snorkelling and Water Ski-ing: No special provision is required other than access to the above facilities from car parks and changing rooms.

The fact that the existing facility (Centre or Club) does not have adequate built-in provision for the disabled user should not discourage Centres or Clubs from involving the disabled in their activities. Often a little imagination and effort will temporarily solve many of the difficulties.

SPECIAL EQUIPMENT: As a result of improvisation to overcome an immediate obstacle, ideas for particular aids have emerged. They include:

A purpose-built swivel chair for disabled anglers which enables them to fish from boats.

An elevated platform projecting over the water to enable disabled oarsmen to lower themselves into sculling craft.

A sliding or swinging-arm seat which can be fitted to sailing dinghies to help disabled helmsmen to move from one side of the boat to the other.

These are some of the aids which have already proved effective; many others are in embryo form in back rooms, workshops, craft rooms etc. Mechanical aids do not solve everyone's problems, but they do make it possible for some disabled persons to participate more fully in their chosen sport.

Details of Aids mentioned may be obtained from the Advisory Panel on Water Sports for the Disabled.

9. Getting Others to Help

THIS SECTION is aimed specifically at those who have decided to promote a water sport for disabled people, though many of the contacts suggested as being able to help speed progress may also be of assistance to the disabled person who is eager to take part in some water-borne activity.

There are many people and organisations willing to give help in a variety of ways, and the list that has been prepared will give some answers to questions that are raised when the promotion of a water sport is undertaken.

If there are further difficulties, contact the Advisory Panel on Water Sports, whose address is given with others at the back of this booklet, or contact the governing body of the sport concerned. Again, addresses are provided at the back of the book.

☐ **Providers of Facilities:** Local Authority Planning Departments and Recreation and Leisure Departments are the basic providers of facilities. An authority may own suitable water areas and run its own courses.

The Water Authority Amenities Officers are responsible for the recreational use of reservoirs.

Clubs in water sports often welcome disabled people, both as members and as spectators.

Outdoor centres run courses either specifically for the disabled, or they welcome a few disabled people on open courses.

Sports Council regional staff will know what facilities and opportunities are available in the area.

☐ **Contacting Disabled People:** Sometimes it is difficult to find disabled people. The Disabled Living Foundation have published a booklet, 'How to Contact Disabled People' This is available from the DLF.

Find out if there is a local disabled sports club or special disability club, (e.g., a club for blind people) in your area.

The Social Services Departments may be prepared to circularise information to all disabled people on their registers.

Voluntary organisations, such as the WRVS and Red Cross, have close contact with disabled people.

☐ **Technical Help on Medical Side:** Physiotherapists are often extremely helpful and enthusiastic in promoting sport for disabled people, as are remedial gymnasts. Occupational therapists are also becoming increasingly involved. Doctors may be prepared to guide their patients towards taking part in activities.

The staff of special schools and residential centres can also be counted on to give help. These people could play a vital role by coming on courses, advising on the suitability of activities and explaining the medical implications of disabilities.

☐ **Coaching and Instruction:** It is essential to employ instructors who are experienced and highly qualified; ask the local branch of the governing body. The regional office of the Sports Council will give you the address. Local PE teachers may also be prepared to help.

You may find that courses are being held in your area; canoe rolling and sub-aqua training often takes place in the local swimming pool. LEA Further Education programmes sometimes include sports for disabled people.

Some outdoor activity centres are now holding courses and may have knowledgeable instructors.

☐ **Transport:** This can be one of the most pertinent problems, but it can be overcome in nearly every case. Local sportsmen in clubs will often be prepared to take disabled friends to the club with them. Voluntary organisations, such as the Rotary, Round Table and Red Cross often provide this service, and local authority Social Services Departments are making this provision where finance permits. Sometimes, several local authorities get together to share this duty.

☐ **Financial Help:** Local Authority Social Services Departments are trying to provide the opportunities which the Chronically Sick and Disabled Persons Act asks of them, but money is, inevitably, short. Fund raising events

can help, and here again organisations such as Rotary, Round Table and Lions have proved extremely valuable.

☐ **Volunteers:** Helpers are needed for many task and the most appropriate and willing are generally fellow sports enthusiasts. Local school leavers, college students, members of the Armed Services and Police Cadets frequently offer their help in many ways.

☐ **Equipment:** So far as possible, ordinary equipment is used, but there are occasions when modifications are needed.

Some local education authorities hold classes in boat-building and disabled canoeists may like to build their own craft.

Commercial firms have shown interest in adapting boats for use by disabled people; the London Canoe conference and Dinghy exhibition, also those in other parts of the country, have stands which demonstrate the latest developments in the equipment.

10. Guidance for Course Organisers

☐ **The purpose of the course:** It must be clear whether it is an introductory course or for training instructors. Is it for young people at schools, adults in centres or individuals in the community? One isolated course may have limited value; is it possible to ensure that there is some follow up?

☐ **The time of year:** This is important. A course for disabled people should not be slotted in at an off-peak time (i.e., in the Winter). Summer months are advisable.

☐ **The centre** must be enthusiastic (some are not) about welcoming disabled people. Access and facilities should be considered before a decision is made. If it is possible have a group of disabled people at the same time as able-bodied, so that social integration can take place.

☐ **Early planning** is essential and there are several points to consider.

Who is coming? Decide whether to invite a group of people with their own staff. It is very helpful to have someone who knows the individuals and their medical needs — possibly a P.E. teacher or physiotherapist.

Consideration must be given to the availability of medical advice and the importance of medical forms giving full information of the requirements of each individual.

The question of insurance should be examined. (See appropriate section in this booklet).

☐ **Instruction:** Very experienced instructional staff are essential and the pupil/instructor ratio may well be higher than for able-bodied people. Extra helpers are also required and they should be briefed well in advance.

☐ **Facilities:** Check access very carefully, preferably by asking someone in a wheelchair to go over the building and the activity areas; include the accommodation, toilet and washing facilities and social areas.

The Centre, in consultation with people familiar with access problems, if necessary, should decide how many wheel-chair people can be accommodated.

Consider and examine the fire precautions and, if necessary, get the advice of a Fire Officer.

☐ **Equipment:** Consider which boats are to be used and get advice if necessary on modifications or types.

In many cases it may be appropriate to have available different types of life-jackets and buoyancy aids.

Wet suits are advised and plenty of warm clothing. (See chapter on clothing). Have blankets available at hand for people leaving the water.

☐ **The course itself:** If planning is careful, there should be few problems. A person who knows the course members can help to overcome any natural anxiety and apprehension which the Centre staff may feel when welcoming disabled people for the first time. A sense of humour can overcome many difficulties and disabled people will generally know what they need and when.

The programme should be flexible enough to cater for the varying physical abilities and stamina of members. Films can be incorporated at short notice, visits arranged and lectures given.

☐ **Follow-up:** This is one of the most important aspects of an introductory course. Where appropriate, tell students about the governing bodies of sport, where clubs are etc., so they may continue to participate in an integrated setting.

The Advisory Panel welcomes reports of courses so that information can be collected for future distribution.

The report of a pilot course in outdoor activities held at Plas y Brenin in June 1975 notes that "an attempt was made to strike the right balance between the two extremes of: (a) needlessly denying to the participants activities which were in fact within their capabilities and; (b) encouraging people to believe that they could manage activities which they could not do, hence resulting in disappointment when they came to try the activities."

11. Hopes for the Future

OPPORTUNITIES are increasing, the climate of opinion is changing, Local Authorities are beginning to recognise both their responsibilities and the demands of disabled people, but problems remain. These can be grouped under four headings, namely Facilities, Technical Knowledge, Instruction and Attitudes.

To consider **Facilities** first, there is now plenty of information available concerning the needs of disabled people, and implementation is imperative. Planners should include the whole community in their provision, and it has been suggested that consideration for disabled people might become one of the criteria when planning permission is granted.

Access needs to be provided to both new and old buildings and if advice is sought at drawing board stage, little extra expense is involved. The Technical Unit for Sport of the Sports Council would be willing to advise on these matters.

Regarding **Technical Knowledge,** however, there is still a gap in many aspects of our expertise. Some talented and imaginative instructors have devised visual, tactile and audio aids, models, tapes, charts etc. which they have found helpful in teaching their pupils.

It is hoped that at some future date, when designers, sponsors and forward-looking manufacturers have put their heads together, some of these aids will become available to all those giving instruction.

The possibility of establishing a simple code of signals, possibly based on those used by divers, which could be given and understood by all water users, has been put forward. The idea deserves consideration; it may be difficult to execute but it is not impossible. Everyone recognises and acknowledges the Highway Code.

Modifications to equipment have already been examined and there is much scope for development in this area.

Representatives of national bodies on the Advisory Panel envisage a time when, after sufficient information has been collated, practical teaching techniques with particular reference to the teaching of the disabled will be evolved and incorporated into the training of their instructors.

We need to know how problems of access have been overcome, what aids have been used and what experiments in techniques have proved successful. All this information could be collated and made available if it were sent to the Advisory Panel.

In connection with **Instruction,** there is still a need in some cases for special courses for disabled people and also for integrated courses in clubs and centres where more knowledge can be gained and more opportunities provided for those disabled people who wish to take up a sport.

If therapists and medical students could, in their training, be made aware of the value of sport both as rehabilitation and recreation, they could encourage their patients to take part and help them to find suitable methods of adapting to the requirements of the sport where necessary. The training of coaches and instructors in sport should include consideration of the needs of participants who have a disability.

Attitudes are changing, particularly among able-bodied people who are recognising the needs of disabled people and their right to take a full place in a society which includes sport. This needs extension. Disabled people should be prepared to take the initiative, to state their requirements and to accept positions of responsibility in the sporting scene. Integration of disabled people into society is the aim of us all.

When the time comes when clubs, without prejudice, welcome disabled people as participants, helpers or spectators, and their numbers are not known because they are fully integrated, then real progress will have been made.

APPENDIX 1

ADDRESSES

A. GOVERNING BODIES OF SPORT:
Amateur Swimming Association, Harold Fern House, Derby Square, Loughborough, Leics. (Mrs. S. Dobie, Development Officer for the disabled)
Amateur Rowing Association, 6 Lower Mall, London W6 9DJ
British Canoe Union, 70 Brompton Road, London SW3 1DJ
British Sub Aqua Club, 70 Brompton Road, SW3 1HA
British Water Ski Federation, 70 Brompton Road, SW3 1EG
National Anglers' Council, 5 Cowgate, Peterborough, PE1 1PJ
National School Sailing Association Chelstoke, Lymington Bottom Road, Meadstead, Alton, Hants.
Royal Yachting Association, Victoria Way, Woking, Surrey, GU21 1EQ

B. DISABLED SPORTS ORGANISATIONS:
British Sports Association for the Disabled, Stoke Mandeville Stadium, Harvey Road, Aylesbury, Bucks.
Welsh Sports Association for the Disabled, 2 Cathedral Road, Cardiff, CF1 9XR
Scottish Sports Association for the Disabled, Mr. R. Brickley, Fife Institute of Physical Recreational Education, Viewfield Road, Glenrothes.
Advisory Panel on Water Sports for the Disabled, 70 Brompton Road, SW3 1EX
British Association for Sporting and Recreational Activities for the Blind, Mrs. A. McKay, 43 Helmsdale Ave., Kirkton, Dundee, Tayside.
British Deaf Sports Council, Mr. J. Hudson, 140 Green Lane, Cookridge, Leeds, LS16 7SQ
Co-ordinating Committee on Swimming for the Disabled, c/o The Sports Council, 70 Brompton Road, SW3 1EX
International Sports Organisation for the Disabled, Stoke Mandeville Stadium, Harvey Road, Aylesbury, Bucks.

C. SPECIALIST DISABLED ORGANISATIONS:
British Limbless Ex-Servicemens Association, Frankland Moore House, 185/187 High Road, Chadwell Heath, Essex.
British Polio Fellowship, Ball Close, West End Road, Ruislip, Middx HA4 5LD
Central Council for the Disabled, 34 Eccleston Square, SW1V 1PE
Disabled Living Foundation, 346 Kensington High Street, W14
Royal National Institute for the Blind, 224 Gt. Portland Street, London WLN 6AA (Mr. C. J. Attrill, Sport and Recreation Officer)
Multiple Sclerosis Society, 4 Tachbrook Street, London SW1 1SJ
The Spastics Society, 12 Park Crescent, London W1

D. VOLUNTARY ORGANISATIONS:
British Red Cross Society, 9 Grosvenor Crescent, SW1
Duke of Edinburgh's Award, 5 Prince of Wales Terrace, W8
Girl Guides, 17-19 Buckingham Palace Road, London SW1
Physically Handicapped Abled Bodies Clubs, 42 Devonshire Street, W1N 1LN
Royal Life Saving Society, Desborough House, 14 Devonshire Street, London W1N 2AT
Scout Association, 25 Buckingham Palace Road, SW1
Women's Royal Voluntary Service, 17 Old Park Lane, W1Y 4AJ

E. SPORTS COUNCILS:
The Sports Council, 70 Brompton Road, SW3 1EX. Tel: 01-589 3411
English Regions:
Northern: (Northumberland, Cumbria, Durham, Cleveland, Tyne & Wear) County Court Buildings, Hallgarth Street, Durham, DH1 3BP. Tel: 0385 64278/9
North West: (Lancashire, Cheshire, Greater Manchester and Merseyside) Byrom House, Quay Street, Manchester 3. Tel: 061-834 0338
Yorkshire & Humberside: (W. Yorks, S. Yorks, Humberside, N. Yorks) 5 St. Pauls Street, Leeds LS1 2NQ. Tel: 0532 36443/4
East Midlands: (Lincs. Leics. Derbyshire, Northamptonshire, Notts) 26 Musters Road, West Bridgford, Nottingham, NG2 7PL. Tel: 0602 861325/6
Eastern: (Norfolk, Cambs, Suffolk, Bedfordshire, Herts, Essex) 26-28 Bromham Road, Bedford, MK40 2QD. Tel: 0234 44281
West Midlands: (West Midlands, Staffordshire, Salop, Warwicks, Hereford and Worcs) Crest House, 7 Highfield Road, Edgbaston, Birmingham B15 3EG. Tel: 021-454 3808

Southern: (Hampshire, Isle of Wight, Berkshire, Buckinghamshire, Oxfordshire) Watlington House, Watlington Street, Reading, Berkshire, RG1 4RJ. Tel: 0734 52342
London & South East: (Greater London, Surrey, Kent, West Sussex, East Sussex) 160 Great Portland Street, London W1N 5TB. Tel: 580 9092
South West: (Gloucestershire, Wiltshire, Dorset, Avon, Somerset, Devon & Cornwall) Ashlands House, Ashlands, Crewkerne, Somerset, TA18 7LQ. Tel: 0460 73491
Sports Council for Northern Ireland: 49 Malone Road, Belfast, BT9 6RZ. Tel: 0232 663154
Scottish Sports Council: 1 St. Colme Street, Edinburgh, EH3 6AA. Tel: 031 225 8411
Sports Council for Wales: National Sports Centre for Wales, Sophia Gardens, Cardiff, CF1 9SW. Tel: 0222 39751

APPENDIX 2

BIBLIOGRAPHY

GENERAL

Sport and physical recreation for the disabled (Disabled Living Foundation)
Outdoor pursuits for the disabled (DLF)
Safety in outdoor pursuits (Department of Education and Science)
Extension Activities Handbook (Scout Association)
Summary of the Chronically Sick and Disabled Persons Act (Central Council for the Disabled)

ACCESS AND FACILITIES

Designing for the Disabled, Goldsmith (RIBA)
Access for the Disabled to buildings, Part 1, General Recommendations, British Standard Code of Practice CP 96 1967
Short guide on access to Sports Centres and Swimming Baths (BSAD)

WATER SAFETY

On the water, in the water
The code for water safety
Life-jackets and personal buoyancy aids
Cold water can kill
— all available from ROSPA, Cannon House, The Priory, Queensway, Birmingham, B4 6BS
Drown-proofing, Bettsworth

INDIVIDUAL SPORTS

Angling
Angling for Disabled People — National Anglers' Council (in production).
Canoeing
BCU Booklets:
No 1 Choosing a canoe and its equipment
No 2 Canoe handling and management
No 7a Canoe building — soft skin moulded veneer
No 7b Canoe building — glass fibre
— all available from the British Canoe Union, 70 Brompton Road, London SW3
Sailing
RYA Publications:
Insurance in Yachting (G10/75)
Flags and Signals (C4/76)
Weather Forecasts. Stations, Times etc at home and abroad (G5/75)
Addresses of National Authorities: RYA affiliated clubs and classes (G13/76)
General sailing books listed in RYA Catalogue include:
The Sailing Manual — Bob Bond
Learn to Sail
Getting Afloat
When a body is immersed . . . (personal buoyancy equipment)
Waterwise — Gordon Fairley
Know the Game Sailing
Water Ski-ing
Know the Game — Water Skiing
Water Skiing — Athans and Ward (Collier MacMillan)

FILMS ON SPORT FOR DISABLED PEOPLE

Not Just a Spectator, Town and Country Productions, Cheyne Row, Chelsea
Water Free (swimming), Town and Country Productions, Cheyne Row, Chelsea
It's Ability that Counts, BSAD
Riding Towards Freedom, Riding for the Disabled Association
Angling for all (in preparation), Town and Country Productions, Cheyne Row, Chelsea

APPENDIX 3

A suggested form of medical summary is given below which should be adapted as appropriate. This should be completed by a medical adviser.

An initial paragraph, describing the nature of the course and stressing the fact that there will be expert instruction and supervision throughout, should accompany the form.

Section 1

a) Nature of disability .....
b) Any other relevant disability (e.g., epilepsy/diabetes) .....
.....
c) If so, how well is it controlled? .....
.....
d) What drugs are being used? .....
.....
e) Any known allergies/skin conditions? .....
.....
f) Are there likely to be any incontinence difficulties? .....
g) Has the applicant a particularly nervous temperament? .....
.....
h) Does the applicant require a special diet? If so, please give details .....
.....

Section 2

Please delete where appropriate:

a) The applicant is ambulant/partially ambulant/non ambulant
b) If non-ambulant is he/she able to propel his/her own wheelchair? .....
c) Degree of strength in legs:
   Right: Good/Poor/nil
   Left: Good/Poor/nil
d) Degree of control in legs:
   Right: Good/Poor/nil
   Left: Good/Poor/nil
e) Degree of strength in arms:
   Right: Good/Poor/nil
   Left: Good/Poor/nil
f) Degree of control of arms:
   Right: Good/Poor/nil
   Left: Good/Poor/nil
g) Are the back muscles strong/weak?
h) Is the applicant likely to have spasms?
i) If so will the spasms be increased in cold water?
j) Degree of balance and postural sensibility .....
.....
k) Has the applicant deficient sensation in any limb? If so, please state which limb(s) .....
l) Has the applicant good vision? If not, to what extent is it impaired .....

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ADDENDUM: p 35

8. ACCESS AND FACILITIES
Requirements of sports - SUB AQUA

ACCESS POINTS

The technique of entry varies with the type of location. Very broadly these are of three types: 1 - shelving beach of sand or gravel; 2 - steep wall of rock, concrete or stone, such as a jetty, or a wooden catwalk; 3 - a boat or ship. If the disabled person can walk, then the technique is very similar to that recommended in all competent diving manuals. If the disabled person cannot walk, the technique is modified to allow entry to the water, and to allow the diver to put on his diving equipment.

SHELVING BEACH

For a person on crutches walking across a beach may be very difficult. Equally, a wheelchair tends to sink in. However, in both cases the pupil can get close to the water with some assistance. Mask and fins should be washed in sea water and freed of sand. The pupil, if he cannot walk, can transfer from the chair to a sitting position on the beach, and then move on his hands through the swash zone into the water until it is 1-2 ft deep and he can almost float. Then put on the mask, and the fins if they are of use. If aqualung gear is being used, a friend should bring out the tanks and weightbelt, and help the diver to put them on. Then swim through the waves straight out into deep water, taking care not to scrape the knees on the bottom.

This technique obviously only works in a very calm sea. If the waves are more than 1-2ft high, a paraplegic will be rolled over and the skin abraded on the beach. In this case, one or two strong able-bodied friends should carry the diver through the breaking waves until he is floating in unbroken water. There the aqualung equipment can be put on safely, and the dive commence. The return to the beach must of course be very carefully supervised.

JETTY, DOCK OR CATWALK

Diving is often carried out in or near harbours, and entry may be from a steep wall with steps. The situation is very much like a swimming pool with high walls. For snorkelling the swimmer may be thrown into the water by two friends. This may sound brutal, and should not be done without warning softhearted tourists who may be around. However, if a wheelchair snorkeller puts on mask and snorkel while sitting in the chair, and is picked up by shoulders and ankles, he can be thrown quite safely into the water from a height of several feet. Remember to hold the mask so that it does not get knocked off.

If the dock is too high, friends will have to carry the swimmer down the steps. Once in the water, aqualung gear can be put on in the normal way. Maximum assistance is obviously needed to get back up again.

BOAT OR SHIP

From a rubber inflatable craft it is a simple matter for a disabled swimmer to roll over the side into the water. When returning to the boat, the diver removes all his gear in the water so that people on board can pull it back. Then they assist the diver on board.

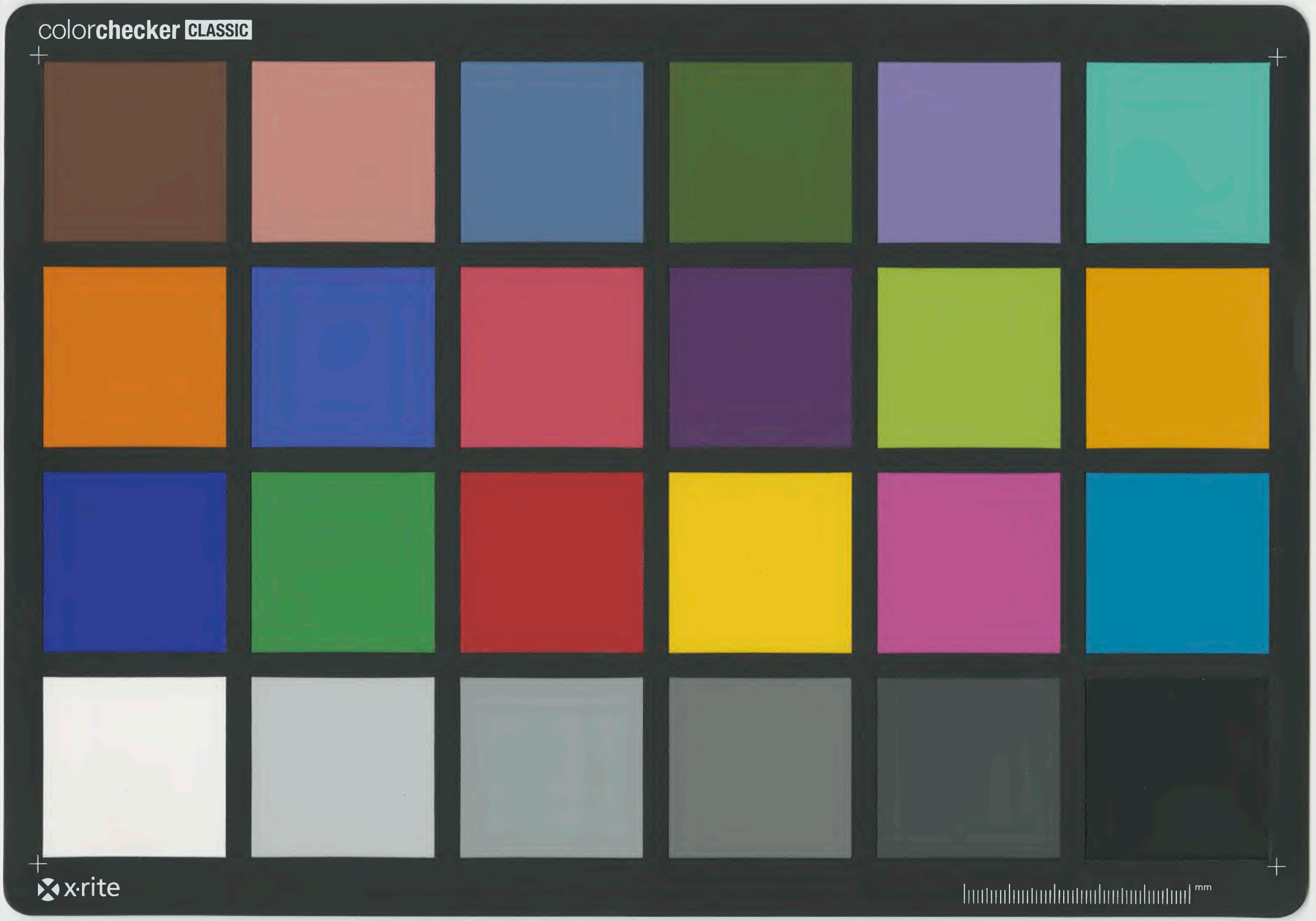
A motor launch with hard wooden, metal or fibre-glass edges is one of the trickiest problems for a paraplegic diver. With a vessel of 5-10 m there will probably be no ladder or davits, the vessel will tilt if a lot of people move to one side but the gunwhales will still be high enough to be very awkward. If there is no ladder, the gunwhale should be heavily padded with canvas, sacking or blankets, two men should lift the diver out (after he has taken his aqualung off in the water), and a swimmer should stay in the water, possibly between the disabled diver and the hull of the boat, to ensure that his thighs and legs are not scraped.

If there is a ladder, the disabled diver should hold firmly to the shoulders of a man in the water, who then walks up the ladder with him. Assistants should catch the disabled diver's legs and help them over the gunwhale.

It is unusual to dive direct from a large ship. The divers usually transfer to an inflatable or power launch. If you are diving from a yacht or ship with high sides, there will usually be a companionway. The situation is then very much as when diving from a dock wall. If the diver is strong enough, it may be simplest to climb down and up a rope, hanging from the davits, or to be winched up and down on a crane or on the davits.

NOTES

A competent disabled diver is safest when he is well away from boats and the shore. When he is near rocks, pilings of a jetty or the shore, his lack of full mobility becomes a hazard, especially in a rough sea. Entry to and exit from the water requires great care, and plenty of strong assistants. More assistance is needed at this point than when actually diving.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