



**Notes for Guidance concerning
the implementation
of the EC Directives
on Personal
Protective Equipment**

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A resource for BCU Coaches....



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INTRODUCTION

These notes are intended to help those responsible for ensuring that the correct form of life jacket, buoyancy aid (PFD) or helmet is issued in accordance with the requirements of the EC Directive on Personal Protective Equipment PPE 89/686/EEC

The Directives cover any device or appliance designed to be worn or held by an individual for protection against one or more safety and health hazards in the execution of the user's activities. It requires that personal protective equipment must help preserve the health and help to ensure the safety of users, and must not harm other people, domestic animals or goods, when properly maintained and used for its intended purpose.

Thus, wherever it is necessary to protect a worker from the effect of any hazard, including cold, or from drowning, the equipment issued must conform to the EC Standard (CE) - provided one has been agreed.

Directive 89/656/EEC deals with the responsibilities of employers to provide, maintain etc PPE for use by their employees while at work. This is implemented in the UK by HSE's PPE at Work Regulations 1992

Directive 89/686/EEC deals with the responsibilities of manufacturers and importers for the design, manufacture, testing, certification etc of all new PPE whether for work or private use. This is implemented in the UK by the Department of Trade and Industry's PPE (EC Directive) Regulations 1992, though these regulations did not take effect until 1 July 1995.

Under the PPE at Work regulations, activity centres will be required to provide, free of charge, PPE for use by their employees where that PPE is needed to protect against a risk to health or safety; the regulations do not require PPE to be provided for non-employees such as customers. The activity centre will have responsibility for customers under the general duty of section 3 of the Health and Safety at Work etc Act 1974. If customers would need to wear PPE to ensure their health and safety in some activity, then the activity centre would need to check that the customer is wearing that PPE before the activity starts. However, the activity centre might not need to provide the PPE if (say) the customer provides it; and if the activity centre does provide the PPE it need not be provided free of charge.

The PPE at Work Regulations require the self-employed to provide their own PPE.

When the PPE (EC Directive) Regulations took effect on 1 July 1995, the employer was placed under a duty (by a linked provision in the PPE at Work Regulations) to only buy PPE which satisfies those Regulations.

Any existing PPE bought before that date can continue to be used, however, so long as it is properly maintained and effective.

Where buoyancy aids and lifejackets are concerned it was illegal after 1 July 1995, Helmets 1 Nov 1997 for a manufacturer or importer to offer for sale within the EC a device which does not conform to the agreed standard, although existing stocks held by retailers may continue to be sold until exhausted providing evidence is available that they were in stock on the applicable date.

THE BCU RECOMMENDATION

The British Canoe Union recommends the 50N buoyancy aid (PFD) for all canoeing purposes, except for competition and white water as follows:

It is recommended that buoyancy aids (PFD's) to BS EN 393 - 1994 50N be worn by novices for all canoeing activities, and for white water paddling at all levels, a minimum uplift of 70N is recommended

The BS/EN standards replaced the BCU/BACT and other standards from 1 July 1995. The BCU/BACT approved devices and others, manufactured before 1 July 1995 may continue to be used, however, for the duration of their 'reasonable life'.

NOTES:

1. This notice is a "canoeists" guide and a summary only. It is intended to compliment the relevant standards to which the technical reader should refer.
2. The BCU would like to draw the attention of stolon and wild water racing competitors to the ICF minimum requirement of 6kg/0f uplift Irrepective of body size applicable at all relevant ICF/BCU competitive events.
3. It should be noted that the old (now withdrawn) BCU/BCMA buoyancy aids standards called for a minimum uplift of 60N for relevant canoeing activity.

The enforcing Authorities are Trading Standards and/or the H.S.E. The BCU will consider making formal complaints to the enforcing bodies where evidence of abuse of CE regulations is brought to its attention.

WHY THE BCU RECOMMENDS BUOYANCY AIDS (PFD)

During 1980 the BCU conducted a survey of its 4,000-member Coaching Scheme (currently 10,000+) in order to determine whether or not lifejackets, as opposed to buoyancy aids (PFD'S), were necessary when introducing novices to the sport.

In the absence of any evidence to show that the wearing of a lifejacket to BS3595-1989 had been significant for the safety of novices under instruction, the BCU stated firmly that personal flotation devices were suitable at all times.

Surveys of the amount of instruction which is undertaken in Britain, plus the provision of training opportunities through education, leisure services, social services, activity holiday operators, national youth organisations, and clubs, indicates that up to 1½ million people 'have a go' at canoeing annually.

No record exists of a canoeist drowning on simple water because of the failure of a buoyancy aid (PFD).

In view of the body protection and insulation afforded by buoyancy aids, the freedom of movement which permits the better application of skills, and their proven track record, the BCU continues to assert that buoyancy aids (PFD) are the preferred, and better option, for canoeing.

THE STANDARDS FOR LIFEJACKETS AND BUOYANCY AIDS (PFD'S)

Four Life Jackets and one buoyancy aid (PFD) are at present defined within the Standard, namely: **BSEN**

BSEN399-1994 275N Lifejacket. 'These have a buoyancy of no less than 275N for the average adult and are intended for use offshore in extreme conditions or when heavy protective clothing is being used'.

275N Lifejackets are for those going 'deep sea' and who, if things go badly wrong, are at risk of being in the water for some time awaiting rescue.

BSEN396-1994 150N Lifejacket. 'These have a buoyancy of no less than 150N for the average adult and are intended for use offshore or when foul weather clothing is being used'.

150N Lifejackets are very close to the existing BS 3595 Lifejacket and are recommended for offshore sailors, and in other situations where the wearing of a full 275N Lifejacket would impede the undertaking of the activity. It provides a good measure of protection against drowning, even for an unconscious person, provided the full 150N of buoyancy is employed.

BSEN395-1995 100N Personal Flotation Device. '*These have a buoyancy of no less than 100N for the average adult and are intended for use in relatively sheltered waters'.

This 'buoyancy aid (PFD) with a collar' is of a buoyancy level and type favoured in Germany. Because it is designated as a lifejacket in some countries the colours are restricted to red and orange, and reflective tape must be included.

BSEN393-1994 50N Buoyancy Aid (PFD). 'These have a buoyancy of no less than 50N for the average adult and are intended for use in sheltered waters when help is close at hand and the user is a swimmer, in circumstances where more bulky or buoyant devices would impair the user's activity or actually endanger him'.

This is the type recommended for canoeing and kayaking

The 50N minimum buoyancy is intended for a person of over 70Kg body weight. The following scale applies:

| | | | | | | |
|-------------------------|-------|-------|-------|-------|---------|-----------|
| <i>Wearer's weight</i> | 30-40 | 40-50 | 50-60 | 60-70 | Over 70 | <i>Kg</i> |
| <i>Minimum buoyancy</i> | 35 | 40 | 40 | 45 | 50 | <i>N</i> |

Notes

A 'Newton' is a measurement of force, and can be determined by applying a measured load. The load, measured in kilogrammes, is multiplied by 9.9806 to determine the Newton force. Thus, a 50N buoyancy aid will support a lead weight of 5.5kg, which, when under water weighs 5.1kg.

The buoyancy requirements for each device are based on a 'sliding scale' dependent upon body weight. Below a body weight of 70kg lesser levels of buoyancy are permitted as shown, in accordance with the scale stated in

each Standard.

It should be noted that the BSEN Standards are a 'minimum' requirement. Provided the buoyancy aid (PFD) or life-jacket meets the performance criteria required, manufacturers are free to provide buoyancy in excess of that stated, and to bring in design features to enhance its suitability for particular occupations or sports. The Standard must be consulted in this respect, however, as there are limitations on additional features.

The standard allows for buoyancy to be provided by materials which are inherently buoyant, such as closed cell foams, Gas, or oral inflation, or certain combinations may be used but are not suitable for most forms of canoeing. The relevant Standard must be consulted, however, as there are strict requirements in terms of what is permitted, and the quality of materials which may be used.

The Standards are specific with regard to 'sizing', against a European norm, and manufacturers and users will need to pay much greater attention to this important element of design.

HELMETS

A Helmet standard BSEN1385-1998 is now applicable to relevant forms of canoeing. It is entitled "Helmets for Canoeing and White Water Sports". All helmets to this standard must carry the CE mark of compliance.

The BCU recommends that all non CE marked helmets are withdrawn from use at the end of their useful lives. The BCU recommends the immediate cessation of use of the non CE marked or approved "scullcap" type helmets as they offer little or no head protection.

The BCU is becoming increasingly concerned with the use of home made or non CE compliant "skull cap" helmets. Evidence is coming to light that they are inadequate for their purpose and the BCU is recommending that their use is discontinued forthwith.

The BCU points out that it is illegal to offer for sale, manufacture for sale within the EEC, or import into the EEC, any non CE compliant PPE.

The BCU will consider making formal complaints to the enforcing bodies where evidence of abuse of CE regulations is brought to its attention. The enforcing Authorities are Trading Standards and/or the H.S.E.

WET SUITS AND DRY SUITS

Standards are currently being forged for 'constant wear', 'immersion suits' and 'survival suits'. Currently wet suits and dry suits intended for 'sporting' use, whether or not in a work context appear to be exempt from the Standard. It is hoped that this state of affairs can be preserved.

WATERPROOFS

Waterproofs for domestic (private) use are outside the remit of the Directives. When issued to employees in the workplace, however, they must conform to a Standard. As they are 'of simple design' self certification is permitted by the

manufacturer.

THE TESTING OF BUOYANCY AIDS (PFD's)

The minimum stated buoyancy level should be available in the device for the duration of its 'reasonable life'. The length of time involved will obviously vary considerably according to a number of variable factors: ie frequency of use, conditions of use (eg environmental) and conditions of storage.

Surveys would indicate that an average life expectancy, where the buoyancy aid (PFD) has not been abused, is between 3-5 years - the shorter term applying to frequent multi-use, although this could, of course, be reduced, where poor conditions apply.

It is recommended that the buoyancy level is checked after the second year. This can be accomplished quite simply in the following manner:

With a complete PFD it is not possible to replicate a manufactures test (Manufacturers test FOAM ONLY in a temperature controlled environment). As an approximate and very simple guide....

Take a Cast Iron or Steel bar bell weight to the relevant amount of uplift. Tie the weight through the arm holes of the PFD leaving a long tail for you to hold on to. Squeeze out as much of the air as possible. Holding the tail or long piece of string in your hand throw the PFD and weight into fresh water. If it floats it is OK and if it sinks it wants throwing away. The following table will help you decode the manufacturers PFD label.

| | | | | | | | |
|-------------------|--------|--------|--------|--------|------------|------------|-----------|
| Bearers Kg weight | 30-40, | 40-50, | 50-60, | 60-70, | over 70kg, | over 70kg, | over 70kg |
| Minimum buoyancy | 35N | 40N | 40N | 45N | 50N | 60N | 70N |
| Bar Bell Weight | 3.5 kg | 4kg | 4kg | 4.5kg | 5kg | 6kg* | 6kg* |

*EN393 has a minimum uplift of 50N of buoyancy or 5.1kg. It can be said that all PFD's labelled with a bearers weight "over 70kg" irrespective of buoyancy content can only be tested to 50N or with a 5kg weight.

NOTE:

- In practice all PFD Foams degrade with age. Testing with a 5kg weight for a minimum 50N labelled PFD means that the 5kg weight is actually supporting 45N of buoyancy before sinking 10% less than the minimum amount on the label. If your PFD has shrunk by this 10% then it is not worth keeping.
- For intervals of 500 grams (0.5kg) you could either use small Bar Bell weights (several added together) or weigh the Bar Bell collars and use them.

It is pointed out that this is only a rough and ready guide. Trapped air, attachments metal or plastic can all affect the buoyancy of a BA. A visual/manual check of the stitching, zip (if fitted) and security fastenings should suffice for the general condition of the device.

Maintenance Record

For health and safety purposes it is advised that multi-use buoyancy aids are numbered, and a maintenance record maintained, to show date of purchase, dates of testing, and condition.