

# CHAPTER 13

## BUOYANT APPARATUS

### 13.1 General

13.1.1 The statutory requirements for buoyant apparatus are contained in Schedule 12 of MSN 1676(M) and Schedule 6 of MSN 1677(M).

13.1.2 Where buoyant apparatus has been built, tested and approved as complying with the requirements of the 1980 Regulations, it will continue to be accepted for use on existing ships which are subject to the 1999 Regulations provided that the stowage position of the buoyant apparatus is between 6 to 18 metres per Schedule 6 of MSN 1677(M) above the waterline in the lightest seagoing condition of these ships.

### 13.2 Conditions of acceptance

13.2.1 Before new types of buoyant apparatus can be accepted as complying with the statutory requirements, detailed drawings and full particulars should be submitted to the Nominated Body together with the results of the tests for flotation, stability and strength, and such other tests as may be deemed necessary.

13.2.2 The makers of a new type of buoyant apparatus which is found to be acceptable in the light of these Instructions will be granted a Certificate of Inspection and Tests in respect of such apparatus. For this purpose, manufacturers will be required to submit two proof copies of the specification of the apparatus, illustrated by drawings or photographs.

### 13.3 Construction

Where the buoyant apparatus is mainly constructed of wood the framework should be of suitable hardwood well connected at the corners, but the wood casing or sparring may be of suitable softwood. The method securing the corners should be such as to avoid fastenings into end grain timber. The interior of the apparatus should be well ventilated. There should be no projections from the apparatus which would prevent it from sliding easily over a ship's rail during launching.

### 13.4 Buoyancy

13.4.1 Where air cases forming the buoyancy are to be manufactured in metal, details are to be submitted to the Nominated Body for approval. Such air cases should be of copper, muntz metal or other durable material and not more than 1220 mm in length. If they are more than 760 mm in length or breadth they should be efficiently stiffened by divisions or stays. The air cases should not be pierced for

the attachment of wood divisions or stays. They should be protected from damage by properly fitted wood casing or sparring, and be secured against movement within the casing, and be insulated from contact with metal structure or fittings.

13.4.2 Where it is proposed to construct buoyant apparatus of materials other than wood, full details should be submitted to the Nominated Body for acceptance and approval before construction is commenced.

13.4.3 Expanded foam or other materials are acceptable for internal buoyancy provided that they comply with the requirements of Chapter 1, Part 1, paragraph 3 of Volume 2 - Testing of Life-Saving Appliances and have been accepted by the MCA, Nominated or Notified Body. From these tests it can be seen that buoyancy material is not necessarily self-extinguishing when exposed to flame. Non self-extinguishing material should only be used in buoyant apparatus where it is completely covered by a self-extinguishing material such as a GRP laminate which has been moulded and tested as described in paragraph 4.5.8 of these Instructions. Non self-extinguishing material should not be used in any buoyant apparatus which is of sparred construction as such arrangements would not prevent sparks or lighted matches from dropping on to the material.

13.4.4 Additionally, protection of the buoyancy material against abrasion and other mechanical damage should be considered with regard to the type and construction of the buoyant apparatus, and the type of buoyancy material being used.

13.4.5 Particulars of any other buoyancy materials which may be suggested should be submitted to the Nominated Body for acceptance and approval.

## **13.5 Number of persons**

The number of persons which buoyant apparatus is deemed fit to support must be calculated in accordance with Schedule 12, paragraph 2.5 of MSN 1676(M).

## **13.6 Survey of buoyant apparatus under construction**

13.6.1 Surveyors should be satisfied in all respects about the material, workmanship and finish of buoyant apparatus and make as many inspections during construction as are necessary for a proper survey. Where a buoyant apparatus is one of a series modelled on a prototype buoyant apparatus approved by the Nominated Body, then reliance will be placed on the manufacturer's own inspection and quality assurance control and inspection by the Nominated Body will be limited to spot checks and random inspections to ensure that manufacturing methods and quality remain acceptable.

13.6.2 In cases where the quality control organisation of a manufacturer has been accepted by the Ministry of Defence to Defence Standard 05-21 or to an equivalent standard, the Nominated Body may delegate quality control procedures to the manufacturer following due consideration and verification of any proposed procedures.

13.6.3 Where quality control has been delegated to the manufacturer the manufacturer will prepare his own certificate.

13.6.4 When the buoyant apparatus is retained in stock after the issue of the Builders Certificate measures should be taken by the manufacturers or owners to keep the buoyant apparatus in good condition. Surveyors when visiting manufacturers' works should call attention to this matter and act as appropriate if they see any buoyant apparatus that appears to have been in stock for a long time.

### **13.7 Stability**

13.7.1 It is important for buoyant apparatus to have sufficient stability in any position in which it is capable of floating. When reporting the result of a stability test carried out in accordance with the requirements of paragraph 2.2 of Schedule 12 of MSN 1676(M) the surveyor should state the freeboards, and the corresponding angles to which the apparatus inclined when loaded.

13.7.2 The standard of minimum stability prescribed has been adopted with due regard to the difficulty of stowing apparatus of considerable breadth in small vessels without unduly encumbering the deck space. It is recommended that in ships where there is sufficient deck space, buoyant apparatus should be of a type having a margin of stability in excess of the minimum requirements prescribed.

### **13.8 Marking**

13.8.1 When a surveyor has satisfied himself that a new unit of buoyant apparatus is acceptable he must require it to be marked in accordance with paragraph 4 of Schedule 12 of MSN 1676(M). The marking should be on a side or end of the apparatus exposed to the view of passengers. The figures denoting the number of passengers must be clearly marked and should be permanently cut or branded into the woodwork of the apparatus.

13.8.2 In the case of buoyant apparatus constructed of accepted plastic material, it will not be possible to adopt the usual method of 'cutting in' or 'branding' on the apparatus. An acceptable method of marking is that adopted for glass-reinforced plastic lifeboats, i.e. - the required particulars are engraved in or stamped on plates of metal or plastic, which are secured to the apparatus by means of rivets, bolts with end clenched, or screws with the slots removed by filing. Alternatively the metal or plastic plates should be secured by means of epoxy adhesives and coated with translucent epoxy resin after fitting, or by any other equally effective method.

## 13.9 Painting

The materials forming the framing and sparring of all wooden buoyant apparatus should receive two good coats of paint of suitable composition inside and outside. Alternatively the inside may be coated with a preservative and the outside varnished.

## 13.10 Grablines

Grablines should be fitted as required in paragraph 3 of Schedule 12 of MSN 1676(M) and should be of manila or sisal rope of good quality, or synthetic rope complying with the BS EN standards, see Appendix O. Surveyors should note that the property of grip is critical, and where it is proposed to provide synthetic rope care should be taken to ensure that suitable rope is used. See Appendix O - Polypropylene cordage for Life-Saving Appliances.

## 13.11 Painters

13.11.1 A painter must be secured to the buoyant apparatus. This should be fitted in such a way as to enable the apparatus to be lowered from the deck to the water. The sizes of the rope should be as follows:

Weight of buoyant apparatus	Size of rope
140 kg and over	20 mm diameter
Less than 140 kg	16 mm diameter

13.11.2 Painters should be of manila or sisal rope of good quality, or synthetic rope complying with the BS EN standards, see Appendix O. Surveyors should note that the property of grip is essential and where it is proposed to provide synthetic rope care should be taken to ensure that suitable rope is used. The length of buoyant apparatus painters should be at least equal to the height of the stowage position above the light waterline plus 5 metres.

## 13.12 Stowage

For stowage of buoyant apparatus see paragraph 18.3.10.

## 13.13 Buoyant apparatus on Class V(A) passenger ships when transiting long tunnels in Category A waters

13.13.1 For the above classes of passenger ships there is a requirement for carrying 100% buoyant apparatus when transiting long tunnels in Category A waters. This can take the form of lifebuoys.

13.13.2 For these ships, there is the additional requirement to carry the lifebuoys as specified in Regulation 7(2)(c) of the 1999 Regulations with the appropriate fittings where applicable.

13.13.3 When the operation of a passenger ship through a canal tunnel is envisaged, the owner should seek prior approval from the local Regional Manager. The degree of Life-Saving Appliances required to be carried will depend on:-

13.13.3.1 location and length of tunnel, and

13.13.3.2 whether the tunnel has a towpath.

#### **13.14 Buoyant apparatus on Class V(B) and Class V(C) passenger ships**

13.14.1 For the above classes of passenger ships where buoyant apparatus is required to be carried this may comprise of lifebuoys up to a maximum of 60% of the buoyant apparatus requirement, i.e. regulations 7(3)(a) and 7(4)(a) of the 1999 Regulations refer.

13.14.2 In this respect it is considered that where the buoyant apparatus requirement is equal to or less than 12 persons, it is therefore considered impractical under the above 60% option to fit lifebuoys. For these cases for new and existing ships, it will be acceptable to fit lifebuoys for the full buoyant apparatus requirement. This being treated as an equivalence under regulation 23(1) of the 1999 Regulations.

13.14.3 It should be noted that the above lifebuoys are in addition to those required by regulations 7(3)(d)(ii)(aa) and 7(4)(d)(ii)(aa) of the 1999 Regulations.