

CHAPTER 5

RESCUE BOATS

5.1 Rigid rescue boats

5.1.1 General

5.1.1.1 The statutory requirements are contained in Parts 1 and 7 of Schedule 2 of MSN 1676(M). A rigid rescue boat may be accepted as a lifeboat provided it also complies with the relevant requirements of Schedule 1. If a rescue boat is also one of the ships lifeboats, rapid recovery must be possible when loaded with its lifeboat equipment and the approved rescue boat complement or 6 persons whichever is the greater.

5.1.1.2 The Instructions relating to lifeboats in Chapter 3 and paragraphs 4.1.1 to 4.5.28 should be followed where appropriate for rigid rescue boats except where these paragraphs are varied or supplemented by the following paragraphs.

5.1.1.3 A prototype rigid rescue boat should be tested as required by Chapter 2, Part 1, Section 1 of Volume 2 - Testing of Life-Saving Appliances and the results of the tests submitted to the Nominated or Notified Body.

5.1.1.4 Rigid rescue boats built subsequently to the same design need not be subjected to prototype testing provided that the material and workmanship are satisfactory and the production and installation tests listed in Chapter 2, Part 1, Section 1 of Volume 2 are completed satisfactorily.

5.1.1.5 However if it is the express wish of the owner that a "Fast Rescue Boat" is to be used, then the boat must be of an approved type for Merchant Shipping use and the crew trained in the use of the craft on a continuous basis. (See Paragraph 5.6).

(i) Fast rescue boats should be capable of manoeuvring, for at least 4 hours, at a speed of at least 20 knots in calm water with a suitably qualified crew of at least 3 persons and at least 8 knots with the full complement of persons and equipment.

(ii) The fast rescue boat shall be self-righting or capable of being readily righted by its launching crew, this righting equipment is in accord with IMO Res. A656(16) paragraph 1.4. Whichever arrangement is adopted, this "righting" is to be demonstrated to the satisfaction of the Nominated or Notified Body.

(iii) If the fast rescue boat is not to be operated by a suitably qualified and trained crew, the operating speed in the light condition must be limited to 50% of the maximum designed speed of the craft or 15 knots whichever is the least.

(iv) A suitable warning notice indicating the operating speed restriction is to be placed adjacent to the steering position. This notice will be in line with the requirements at item 5.1.1.5 (iii).

5.1.2 Submissions

5.1.2.1 A formal application for consideration of each design of rigid rescue boat should be submitted to the Nominated or Notified Body for acceptance. This submission should include fully detailed plans and specifications for construction, buoyancy, seating, propulsion machinery, lifting arrangements and equipment.

5.1.2.2 On completion three sets of "as fitted" plans should be forwarded to the Nominated or Notified Body, two sets being retained for record purposes.

5.1.3 Foam buoyancy

Where rigid rescue boats are fitted with a fendering system moulded in polyethylene closed cell foam with a thick heavy polyurethane coating or similar construction, full details of these materials should be submitted to the Nominated or Notified Body for acceptance in addition to the requirements of paragraph 5.1.2.

5.1.4 Seating capacity

The minimum seating requirements are specified in paragraph 2.2.2, Part 7 of Schedule 2 of MSN 1676(M) i.e.:- at least five seated persons plus a person lying down.

5.1.5 Bow cover

This is required if the sheer forward is deficient and should extend at least 15% of the boat's length. The cover should be effectively connected to the main hull of the boat and may be of glass reinforced plastic or other equivalent material, which should be fire retardant or non-combustible. In the case of rigid inflated rescue boats or inflated rescue boats this may be of a heavy duty plastic cover.

5.1.6 Protective stowage cover

These boats should be kept covered at all times to protect them, particularly from funnel deposits such as sparks. As the position of these boats and their stowage arrangements will vary from ship to ship it is considered that each cover should be individually made. Ship owners and ship builders fitting one of these boats should be advised that the cover supported by a lightweight frame or wires to allow the

drainage of spray and rain-water should protect the whole of the boat. The cover may be of canvas, synthetic hatch tarpaulin material, accepted lifeboat exposure cover material, or other similar material, and should be arranged for quick release and removal in an emergency. The arrangements should be to the satisfaction of the surveyor.

5.2 Rescue boat propulsion

5.2.1 Inboard diesel engine

When the boat is fitted with an inboard diesel engine the requirements of MSN 1676(M) Schedule 2, Part 1, paragraph 4.1 apply and the tests listed under Chapter 1, Part X of Volume 2 - Testing of Life-Saving Appliances also apply with the exception of test prescribed by paragraph 6.2 - Engine under list and trim conditions. There is also a requirement for an operational test to be carried out under Chapter 2, Part 1, Section 1, paragraph 11 of Volume 2 - Testing of Life-Saving Appliances.

5.2.1.1 *Diesel fuel*

Sufficient fuel should be provided in fully loaded rescue boats for at least 4 hours running at 6 knots. In the case of high speed rescue boats, sufficient fuel should be provided to meet the increased consumption associated with the higher speeds involved.

5.2.2 Outboard petrol motor

When a petrol driven outboard motor is to be fitted the outboard motor should be of a type which has been approved by a Nominated or Notified Body as under paragraph 4.6.2. When the design of such a motor is seen to be satisfactory, prototype tests should be carried out as required by Chapter 2, Part V, Section 1 of Volume 2 - Testing of Life-Saving Appliances. The motor should be fitted with the usual controls for hand starting, stopping, regulating speed and going astern. It should be spray proof and as far as practicable waterproof. The motor exhaust should be below the water line. Primary hand starting should be either manual automatic rewind system or a pull cord round the top flywheel of the motor.

5.2.2.1 *Position of motor and fuel tanks*

Suitable arrangements should be made for stowing the motor and fuel tank ready for operation and protected from weather, but in a place which will not be inaccessible in case of a machinery space or accommodation space fire. If the motor and fuel tank are stowed in the boat they should be stowed in such a manner that damage to the motor, fuel tank and the boat will not occur when the boat is stowed on board ship.

5.2.2.2 *Petrol fuel*

The outboard petrol motor fuel capacity shall be the same as described for diesel engines in paragraph 5.2.1.1.

5.2.2.3 *Security of motor*

Suitable arrangements should be provided for securely attaching the engine and fuel tank to the boat and preventing damage to the fuel pipe.

5.2.2.4 *Non-portable motors*

Where owners desire to fit a motor larger than that necessary to achieve a speed of over 6 knots the reason for such a request should be ascertained. Where these are justified the arrangement should be accepted, provided that the motor is attached to the boat at all times, the boat is attached to its launching and recovery device when the ship is on a voyage, and the device is capable of launching and recovering the boat without undue effort.

5.2.2.5 *Fire extinguisher*

Provision should be made for stowing a portable fire extinguisher as part of the boats equipment. The extinguisher should be capable of discharging foam or other substance suitable for extinguishing oil fires, and should be of a type acceptable to the MCA and complying with the requirements of Regulation 44 of the Merchant Shipping (Fire Appliances: Large Ships) Regulations 1998 (SI 1998 No. 1012) or Regulation 35 of the Merchant Shipping (Fire Appliances: Small Ships) Regulations 1998 (SI 1998 No. 1011) except that the capacity need not exceed 4.5 litres of fluid or its equivalent. Where the extinguisher is of the foam type it should be of the dual seal (positive closure) type and should be stowed in the upright position.

5.2.2.6 *Stowage of petrol for outboard motors*

Where an outboard motor is fitted, a small quantity of spare petrol, about 100 litres, may be carried if it is stored in suitable containers in a specially constructed, well ventilated compartment situated in a safe place sited whenever possible on the open deck. Warning notices should clearly indicate the contents of the compartment and smoking should not be permitted in the vicinity. The warning notice may contain instructions to jettison the petrol containers overboard in case of shipboard fire in the vicinity of the store.

5.2.2.7 *Spare parts and tools*

A kit of spare parts and tools should be provided and should include the following as appropriate:

- One set of spark plugs
- Three propeller drive shear pins
- Three propeller nut split pins
- One starter rope
- One spark plug spanner
- One pair pliers
- An instruction manual

5.2.2.8 *Petrol fuel tank and pipe*

(i) Any petrol fuel tank should be specially protected against fire and explosion and separate from the engine. It must be of substantial construction of steel or other accepted material and the joints must not depend on solder for tightness. Provision should be made for sealing the air vent when the tank is not in use to prevent spillage of fuel. (Note: A steel tank constructed according to a recognised standard with rounded corners and edges is considered fire and explosion proof. Aluminium explo-foil is not accepted in steel tanks for explosion proofing.)

(ii) The fuel pipe may be of suitable non-metallic material and its end connections should be self-sealing. Provision should be made for shutting off the fuel at the engine. Completed fuel tanks and their connections should be capable of withstanding hydraulic pressure corresponding to a head of at least 4.5 metres above the top of the tank. The maker's Certificate of Conformity may be accepted in this respect.

5.2.2.9 *Instructions and controls*

Water resistant instructions for starting and operating the engine should be provided and mounted in a conspicuous place near the engine starting controls.

5.3 **Rescue boat fittings**

5.3.1 General

The requirements are listed in MSN 1676(M) Schedule 2, Part 1, paragraph 5.

5.3.2 Drain valves

Where access is not possible at arms length by an occupant other suitable means of closing the valve should be provided. Working instructions should be posted adjacent to the position indicator. The surveyor should be satisfied that the design and attachment to the main hull of the automatic drain valve is acceptable.

5.3.3 Rudder

5.3.3.1 Rudders should be of suitable form and strength for the size of the rescue boat. They may be constructed of laminated plywood conforming to BS 1088 and 4079 provided that the edges are suitably sealed. Rudders may also be constructed of glass reinforced plastic, steel or other suitable materials in which case full particulars should be submitted to the Nominated or Notified Body.

5.3.3.2 Where a nozzle rudder is fitted means shall be provided to protect the safety of persons in the water and to prevent the entry of debris into the propeller stream and cause fouling.

5.3.4 Steering gear

5.3.4.1 The basic requirements are to be in accordance with MSN 1676(M) paragraph 5.2 of Part 1 of Schedule 2. Details of the tiller and associated remote steering either by direct linkage, wire-operated lever system or by a hand operated hydraulic system connected to the helmsman's position should be submitted to the Nominated or Notified Body for approval. The surveyor should carry out manoeuvring tests ahead and astern to prove the adequacy of the system when the rescue boat is in the light condition and also in the loaded condition.

5.3.4.2 The surveyor should also be satisfied that in an emergency the steering gear can be easily disconnected or by-passed and the emergency tiller can be easily and quickly shipped such that control of the rescue boat may be regained.

5.3.5 Buoyant lifelines

A line must be becketed round the outside of the boat clear of the rudder and the propeller. It should be of 16 mm diameter manila or sisal rope or synthetic ropes, having full loops reaching within 76 mm of the load waterline.

5.3.6 Internal grablines

Internal grablines must be fitted around the inside perimeter of all rescue boats and should not be less than 8 mm diameter. If these line are less than 12 mm diameter they should be fitted with suitable handgrips. Lifelines described in paragraph 5.3.5 can also be used as internal grablines provided the loops are long enough to be brought inboard for this purpose.

5.3.7 Hand holds

This paragraph applies to rescue boats which are not self-righting. Hand holds shall be fitted on the underside of the boat port and starboard. They shall be of steel, aluminium alloy or equivalent material and the fastening of the hand holds to the main hull of the rescue boat should in no case penetrate the hull and should be designed to break off following an impact without damaging the boat. When prototype testing new rescue boats the surveyor should capsize the boat in order to be satisfied that the position of the hand holds are within reach of persons in the water.

5.3.8 Lockers

Although rescue boats do not carry food and water, a sufficient number of lockers should be provided to stow small items of equipment. The access covers should be as large as practicable and fitted with a weathertight closure. The closure should be hand operated and not require any special tools to open it.

5.3.9 Painter release

The surveyor should check that there is no danger from whiplash or recoil to the person operating the painter release while it is under load.

5.3.10 Fender

If rubber or other equivalent material fender is fitted it should be fastened all round the rescue boat at gunwale level.

5.3.11 Bailing

Where rescue boats are not automatically self bailing they should be provided with effective means of bailing. This is a particularly important item to consider when rescue boats fitted with outboard motors run astern.

5.4 Rigid inflated rescue boats - Type A (Boats where the inflated tube is a collar fitted around the hull)

5.4.1 General

5.4.1.1 The statutory requirements are contained in Parts 1, 7 and 8 of Schedule 2 of MSN 1676(M) as appropriate, these are in many respects similar to those of Part 1 with the exception of:

- (i) they cannot be used as one of the ships lifeboats; and
- (ii) buoyancy requirements differ.

5.4.1.2 The instructions relating to rigid rescue boats in paragraphs 5.1.1 to 5.3.11 should be followed, where appropriate, for rigid-inflated rescue boats - type A except where these paragraphs are varied or supplemented in the following paragraphs.

5.4.1.3 A prototype rigid inflated rescue boat - type A should be tested as required by Chapter 2, Part II, Section I of Volume 2 - Testing of Life-Saving Appliances and the results of the tests submitted to the Nominated or Notified Body.

5.4.1.4 Rigid inflated rescue boats type A built subsequently to the same design need not be subjected to prototype testing provided that the material and workmanship are satisfactory and the production and installation tests listed in Chapter 2, Part II, Section I of Volume 2 are completed satisfactorily.

5.4.2 Submissions

5.4.2.1 A formal application for consideration of each design of rigid inflated rescue boat should be submitted to the Nominated or Notified Body for acceptance. This submission should include fully detailed plans and specifications for construction, buoyancy, seating, lifting arrangements, methods of inflation, fabrics, mouldings adhesives and equipment, as appropriate to the boat type.

5.4.2.2 Due account of the engine should be taken at the design stage and the details and plans submitted should include details of:-

- (i) Maximum power and weight of engine for which the boat has been designed.
- (ii) Arrangements for securing engine, fuel tank and piping.
- (iii) Stowage of fire extinguisher.

5.4.2.3 On completion a set of "as fitted" plans should be forwarded to the Nominated or Notified Body for record purposes.

5.4.3 Buoyancy

The total amount of buoyancy to support the boat with all of its equipment on board when flooded and open to the sea may be made up of inherent buoyancy or inherent buoyant material plus the volume of the inflatable compartments on one side (excluding the forward compartment inflated). ADDITIONAL inherent buoyancy equal to 140 newtons of buoyancy force per person shall be provided for the number of persons the boat is permitted to accommodate. Expanded foam or other materials to be used for internal buoyancy should comply with paragraph 4.1.7.2.

5.4.4 Servicing

5.4.4.1 Rigid inflated rescue boats which form part of the ships' Life-Saving Appliances are normally required to be serviced annually, and every effort should be made to ensure that this is carried out. When, however, it is clearly impracticable to comply with this requirement, the servicing may be deferred for a period not exceeding 5 months. In such cases, masters or owners are requested to apply to the nearest Marine Office or the MCA Headquarters or in cases outside of the United Kingdom to the British Consulate or the British High Commission indicating their reason for seeking this deferment.

5.4.4.2 At every bi-annual servicing of a rigid inflated rescue boat a 10% overload static load test should be carried out with the rescue boat suspended from its lifting hook or bridle in accordance with the manufacturer's approved servicing instructions.

5.4.4.3 An "approved service station" is one which has been formally appointed by the manufacturer of an approved type of rigid inflated rescue boat and has been accepted by the Secretary of State. It has certificated personnel who have been trained to undertake servicing and repairs, and it carries genuine spares and is kept fully informed of the current servicing procedures by the approved manufacturer.

5.4.4.4 Detailed lists of names and addresses of the manufacturers of approved rigid inflated rescue boats and their currently appointed service stations located in the United Kingdom are given in the Appendices of Marine Guidance Note MGN 62 (M+F). Owners or masters wishing to obtain details of the service stations located overseas or to have confirmation of the continued acceptance of any station in the United Kingdom should make direct contact with the individual manufacturer. Manufacturers must provide the MCA with details of any changes to the approved service stations.

5.4.4.5 Shipowners and masters are respectfully reminded that it is an offence to carry a rigid inflated rescue boat, which is known to be defective, or which has not been serviced at the intervals prescribed by the Regulations.

5.5 Rigid inflated rescue boats - Type B (Boats where the inflated tube is an integral part of the hull)

5.5.1 General

5.5.1.1 The statutory requirements are identical to those of Type A contained in Parts 1, 7 and 8 of Schedule 2 of MSN 1676(M). The instructions contained in paragraphs 5.4.1 to 5.4.4 should be followed where appropriate. In a type 'A' rescue boat the main hull is normally laid up in such a manner that the rigid sides are continued above deck level with a suitable shape on which an inflatable collar can be fitted around the hull. In a type 'B' rescue boat the main

hull lay-up ends at deck level and the inflatable collar is attached to the deck thus becoming an integral part of the hull.

5.5.1.2 The above accounts for the difference in prototype testing type 'B' rescue boats as required by Chapter 2, Part IIA, Section 1 of Volume 2 - Testing of Life-Saving Appliances. This difference being the overload test described in paragraph 4 of Part IIA.

5.5.1.3 Noting that this test must be carried out, because of the more flexible nature of the deck it is essential when in the design stage of these rescue boats that due regard is given to the positions of the lifting eyes for bridle sling attachments. Where necessary solid blocks should be moulded in between deck and shell to allow for through eyebolts to be fitted. To avoid undue strain being placed on the deck intersection with the stem, the deck should be rounded and not finish in a sharp point at the fore end.

5.6 Fast Rescue Boats

5.6.1 General

5.6.1.1 The statutory requirements are contained in Part 10 of Schedule 2 of MSN 1676(M), these are in many respects similar to those of Parts 1, 8 and 9 of Schedule 2, as applicable.

5.6.1.2 The instructions relating to rigid rescue boats in paragraphs 5.1.1 to 5.3.11 and to rigid inflated rescue boats in paragraphs 5.4.1 to 5.5.3 should be followed where appropriate.

5.6.1.3 A prototype fast rescue boat should be tested as required by Chapter 2, Part IIB, Section 1 of Volume 2 - Testing of Life-Saving Appliances and the results of the tests submitted to the Nominated or Notified Body.

5.6.1.4 Fast rescue boats built subsequently to the same design need not be subjected to prototype testing provided that the material and workmanship are satisfactory and the production and installation tests listed in Chapter 2, Part IIB, Section 1 of Volume 2 are completed satisfactorily.

5.7 Inflated rescue boats

5.7.1 General

5.7.1.1 The statutory requirements are contained in Parts 1 and 2 of Schedule 3 of MSN 1676(M).

5.7.1.2 The instructions relating to rigid rescue boats in paragraphs 5.1.1 to 5.3.11 should be followed where appropriate for inflated rescue boats except where these paragraphs are varied or supplemented by the following paragraphs.

5.7.1.3 A prototype inflated rescue boat should be tested as required by Chapter 2, Part III, Section 1 of Volume 2 - Testing of Life-Saving Appliances and the results of the tests submitted to the Nominated or Notified Body.

5.7.1.4 Boats built subsequently to the same design need not be subjected to prototype testing provided that the material and workmanship are satisfactory and the production and installation tests listed in Chapter 2, Part III, Section 2 and 3 of Volume 2 are completed satisfactorily.

5.7.2 Floors and transom

The outer floor (or bottom) should be secured to the main buoyancy chamber at or about the level of the underside of the chamber. Special attention should be made to the attachment of the floor to the buoyancy chamber to ensure that the resulting joint is watertight and that the floor does not part from the buoyancy tube under loads and strains placed on it in service. Similar attention should be paid to the bonding in way of the transom. An inner floor (or bottom) should be provided to give an efficient working platform. Timber, if used, should be in accordance with Appendix C. Means should be provided for securing the inner floor to the boat and suitable protection provided, particularly at the edges of the floor, to prevent chafing or damage to the boat fabric. Suitable rowing stretchers or equivalent should be fitted to facilitate rowing. A floor combining the performance requirements of the outer and inner floors is acceptable as an alternative.

5.7.3 Righting arrangements

This boat when floating should be capable of being righted from the inverted position by not more than two persons. A sufficient number of handholds or strops in suitable positions should be provided for this purpose.

5.7.4 Oars

The length of blade of an oar should be at least one third of the length of the oar and the breadth at the extreme end not more than twice the diameter. Jointed oars are not acceptable.

5.7.5 Servicing

The instructions relating to inflated boats (non SOLAS) in paragraphs 6.5.1 to 6.5.5 should be followed where appropriate.