

**Resolution A.693(17)**  
*Adopted on 6 November 1991*  
*(Agenda item 10)*

**CONDITIONS FOR THE APPROVAL OF SERVICING STATIONS  
FOR INFLATABLE LIFERAFTS**

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,

NOTING that regulation III/19.8.1 of the International Convention for the Safety of Life at Sea, 1974, as amended, requires that every inflatable liferaft shall be serviced at intervals not exceeding 12 months but that, where it appears proper and reasonable, the Administration may extend this period to 17 months and that inflatable liferafts shall be serviced at an approved servicing station which is competent to service them, maintains proper servicing facilities and uses only properly trained personnel,

NOTING ALSO resolutions A.273(VIII) and A.333(IX) concerning the survey of inflatable liferafts and a recommendation on the conditions for the approval of servicing stations for inflatable liferafts, respectively,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its fifty-ninth session,

1. ADOPTS the Recommendation on Conditions for the Approval of Servicing Stations for Inflatable Liferafts, set out in the annex to the present resolution;
2. INVITES Governments to inspect servicing stations for inflatable liferafts within their authority in accordance with the Recommendation set out in the annex to this resolution;
3. REVOKES resolutions A.273(VIII) and A.333(IX).

Annex

**RECOMMENDATION ON CONDITIONS FOR  
THE APPROVAL OF SERVICING STATIONS  
FOR INFLATABLE LIFERAFTS**

1 Administrations should ensure that the periodic survey of inflatable liferafts is performed at servicing stations that have demonstrated competence to service and repack rafts, maintain an adequate facility and use only properly trained personnel. In order to be approved, servicing stations should have demonstrated this capability for inflatable liferafts of each manufacturer whose liferafts they are competent to service and should comply with the following:

- .1 servicing of inflatable liferafts should be carried out in fully enclosed spaces only. There should be ample room for the number of inflatable liferafts expected to be serviced at any one time; the ceiling should be sufficiently high to allow the largest liferafts to be serviced to be turned over when inflated, or an equally efficient means to facilitate inspection of bottom seams should be provided;
- .2 the floor should be provided with a clean surface sufficiently smooth to ensure that no damage will occur to the liferaft fabric;
- .3 the servicing space should be well lit, provided that direct rays of sunlight do not enter the space;
- .4 the temperature and, when necessary, the relative humidity in the servicing space should be sufficiently controlled to ensure that servicing and repairs can be effectively carried out;
- .5 the servicing space should be efficiently ventilated, but be free from draughts;
- .6 separate areas or rooms should be provided for:
  - .6.1 liferafts awaiting servicing, repair or delivery;
  - .6.2 the repair of glass fibre containers and the painting of compressed gas cylinders;
  - .6.3 materials or spare parts;
  - .6.4 administrative purposes;
- .7 means should be provided in the liferaft storage space to ensure that liferafts in containers or valises are neither stored on top of each other in more than two tiers unless supported by shelving nor subjected to excessive loads;
- .8 spare and obsolete pyrotechnics should be stored in a separate, safe and secure magazine well away from the servicing and storage spaces;
- .9 sufficient tools should be available for the servicing of liferafts and release gear in accordance with the requirements of the manufacturer, including:
  - .9.1 suitable and accurate manometers or pressure gauges, thermometers and barometers which can be easily read;
  - .9.2 one or more air pumps for inflating and deflating liferafts, together with a means of cleaning and drying the air and including the necessary high-pressure hoses and adapters;
  - .9.3 a scale for weighing inflation gas cylinders with sufficient accuracy;
  - .9.4 sufficient gas for blowing through the inlet system of the liferafts;
- .10 procedures should be established to ensure that each gas cylinder is properly filled and gastight before fitting to a liferaft;
- .11 sufficient materials and accessories should be available for repairing liferafts, together with replacements of the emergency equipment to the satisfaction of the manufacturer;
- .12 when servicing davit-launched liferafts, adequate means should be provided for overload testing of such liferafts;
- .13 servicing and repair work should only be carried out by qualified persons who have been adequately trained and certificated by the liferaft manufacturer. The training procedure should ensure that servicing personnel are made aware of changes and new techniques;
- .14 arrangements should be made for the manufacturer to make available to the service station:
  - .14.1 changes to servicing manuals, servicing bulletins and instructions;
  - .14.2 proper materials and replacement parts;
  - .14.3 bulletins or instructions from the Administration;
  - .14.4 training for servicing technicians;
- .15 smoking should not be allowed in the servicing and packing areas.

2 After initial approval, Administrations should arrange for the frequent inspection of servicing stations to ensure that manufacturer support is up to date and effective and that the requirements of this Recommendation are complied with.

3 Administrations should ensure that information regarding servicing facilities for inflatable liferafts is made available to mariners.

### **Servicing of inflatable liferafts**

1 The following tests and procedures should be carried out, except where noted otherwise, at every servicing of an inflatable liferaft fitted as life-saving equipment.

2 Inflatable liferaft servicing should be carried out in accordance with the appropriate manufacturer's servicing manual. Necessary procedures should include, but not be limited to, the following:

- .1 inspection of the container for damage;
- .2 inspection of the folded liferaft and the interior of the container for signs of dampness;
- .3 a gas inflation (GI) test should be carried out at 5-year intervals, and when undertaking a gas inflation test, special attention should be paid to the effectiveness of the relief valves. After gas inflation has been initiated, sufficient time should be allowed to enable the pressure in the buoyancy tubes to become stabilized and the solid particles of CO<sub>2</sub> to evaporate. After this period the buoyancy tubes should, if necessary, be topped up with air, and the liferaft subjected to a pressure holding test over a period of not less than one hour during which the pressure drop will not exceed 5% of the working pressure;
- .4 each liferaft should be subjected to the necessary additional pressure (NAP) test as described in appendix 1, or any other similar test recommended by the manufacturer during the liferaft's first servicing and at yearly intervals after the tenth year of the liferaft's life unless earlier servicing is deemed necessary as a result of visual inspection. After allowing sufficient time for the liferaft to regain fabric tension at working pressure, the liferaft should be subjected to a pressure holding test over a period of not less than one hour during which the pressure drop will not exceed 5% of the working pressure;
- .5 when a NAP or GI test is not required, a working pressure (WP) test should be carried out (see appendix 2), by inflation of the liferaft with dry compressed air, after removing it from the container shell or valise and from its retaining straps if fitted, to at least the working pressure, or to the pressure required by the manufacturer's servicing manual if higher. The liferaft should be subjected to a pressure holding test over a period of not less than one hour during which the pressure drop will not exceed 5% of the working pressure;
- .6 while inflated, the liferaft should be subjected to a thorough inspection inside and out in accordance with the manufacturer's instructions;
- .7 the floor should be inflated, checked for broken reeds and tested in accordance with the manufacturer's instructions;
- .8 the seams between floor and buoyancy tube should be checked for slippage or edge lifting;
- .9 with the buoyancy tube supported at a suitable height above the service floor, a person weighing not less than 75 kg should walk/crawl around the perimeter of the floor for the entire circumference and the floor seams should be checked again. Manufacturers may substitute any other seam test which will determine the integrity of the floor seam until the next inspection is due. This test should be carried out at first servicing and at yearly intervals after the tenth year of the liferaft's life;
- .10 after deflation, arch roots should be checked in accordance with the manufacturer's instructions;

- .11 all items of equipment should be checked to ensure that they are in good condition and that dated items are suitable for use until the next due date of servicing;
- .12 davit-launched liferafts should be subjected to a 10% overload suspension test at every second servicing;
- .13 a check should be made to ensure that the liferaft and the atmosphere are dry when the liferaft is being repacked;
- .14 the required markings should be updated and checked;
- .15 a record of servicing should be maintained for at least 5 years after the date of service;
- .16 statistical records should be prepared on all liferafts serviced, indicating, in particular, defects found, repairs carried out and units condemned and withdrawn from service. Such statistics should be available to the Administration.

### **Responsibilities of manufacturers, Administrations and shipowners**

In order to ensure that the servicing of inflatable liferafts is effectively conducted to provide reliable survival craft in an emergency, manufacturers, Administrations and shipowners have parallel and overlapping responsibilities; these include, but are not limited to the following:

- .1 *Manufacturers* are responsible for:
  - .1.1 ensuring that their liferafts can be adequately serviced in accordance with this Recommendation or with any additional requirements necessary for that particular product and design;
  - .1.2 ensuring that each servicing station accredited by them for servicing and repair of their liferafts has qualified persons whom they have adequately trained and certificated to perform such work and who are aware of any changes or new techniques;
  - .1.3 keeping Administrations fully informed as to the list of servicing stations accredited by them and any changes thereto;
  - .1.4 making available to service stations:
    - changes to servicing manuals, servicing bulletins and instructions;
    - proper materials and replacement parts;
    - bulletins or instructions from the Administration;
  - .1.5 keeping Administrations fully informed of any shipping casualties known to them and involving their liferafts; and also of any failures of liferafts, other than failures during inspections which are known to them; and
  - .1.6 informing shipowners whenever possible of any deficiency or danger known to them and related to the use of their liferafts and taking whatever remedial measures they deem necessary;
- .2 *Administrations* are responsible for conducting periodic checks of servicing stations to determine compliance with this resolution and for checking quality assurance by spot checks or inspections that are deemed to be adequate to achieve compliance;
- .3 *Shipowners* are responsible for ensuring, as a minimum requirement, that all liferafts fitted as life-saving equipment are approved and are serviced at the appropriate intervals at an approved servicing station. Whenever practicable, a representative of the shipowner should be in attendance during service.

## Appendix 1

### Necessary additional pressure (NAP) test

- 1 Plug the pressure release valves.
- 2 Gradually raise the pressure to the lesser of 2.0 times the working pressure or that sufficient to impose a tensile load on the inflatable tube fabric of at least 20% of the minimum required tensile strength.
- 3 After 5 minutes, there should be no seam slippage, cracking, or other defects (resolution A.521(13), part 1, paragraph 5.18.4.1), or significant pressure drop. If cracking in the buoyancy tubes is audible, the liferaft should be condemned; if no cracking is heard, the pressure in all buoyancy chambers should be reduced simultaneously by removing the plugs from the pressure relief valves.
- 4 Liferaft manufacturers should include tables in their servicing manuals of exact NAP test pressures corresponding to their particular tube sizes and fabric tensile strength requirements, calculated according to the equation:

$$p(\text{kg/cm}^2) = \frac{2 \times \text{tensile strength (kg per 5 cm)}}{25 \times \text{diameter (cm)}}$$

## Appendix 2

### Frequency of necessary additional pressure (NAP) tests: working pressure (WP), gas inflation (GI) and floor seam strength (FS)

Servicing intervals	Annual floor seam and pressure test methods
End of first year	NAP test + FS
End of second year	WP test
End of third year	WP test
End of fourth year	WP test
End of fifth year	GI test
End of sixth year	WP test
End of seventh year	WP test
End of eighth year	WP test
End of ninth year	WP test
End of tenth year	GI test + FS
Eleventh to fourteenth year	NAP test + FS
Fifteenth year	GI test + NAP + FS
Sixteenth to nineteenth year	NAP test + FS
Twentieth year	GI test + NAP + FS
Twenty-first to twenty-fourth year	NAP test + FS
Twenty-fifth year, etc	GI test + NAP + FS

- NAP - Necessary additional pressure test (appendix 1)  
 WP - Working pressure (compressed air)  
 GI - Gas inflation (fitted gas)  
 FS - Floor seam