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Ships and marine technology — Servicing of inflatable life-saving appliances —

Part 5: Inflated rescue boats

Navires et technologie maritime — Entretien des dispositifs de sauvetage gonflables —

Partie 5: Bateaux de sauvetage gonflables

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 1, *Maritime safety*.

A list of all parts in the ISO 18079 series can be found on the ISO website.

Introduction

The IMO International Convention on the Safety of Life at Sea of 1974 (SOLAS 74) Chapter III Regulation 20.8 sets requirements for the annual servicing and inspection of inflatable life rafts, inflatable lifejackets, marine evacuation systems, and maintenance and repair of inflated rescue boats on ships. This regulation refers to the IMO Recommendation on the conditions for the approval of servicing stations for inflatable life rafts Assembly resolution A.761(18).

However, this resolution only provides specific standards for the servicing, maintenance and repair of inflatable life rafts and remains silent for other types of inflatable or inflated life-saving appliances mentioned by SOLAS Chapter III Regulation 20.8 and consequently, the application of this statutory requirement could vary widely in practice.

The ISO 18079 series addresses those areas in which the IMO recommendation is silent, in order to facilitate consistent implementation by maritime Administrations. It is intended for use as a companion to the IMO recommendation and also to encompass all other relevant life-saving appliances covered by the ISO 18079 series and not necessarily regulated by IMO instruments.

The IMO Recommendation on the conditions for the approval of servicing stations for inflatable life rafts Assembly resolution A.761(18) specifies obligations and responsibilities for Administrations, manufacturers and ship owners. While the ISO 18079 series covers the requirements of this resolution, it has been rearranged and reformulated in order to enable a single entity, i.e. a servicing station, to attain certification in accordance with the ISO 18079 series. This does not mean that the specified obligations and responsibilities are lifted, delegated or otherwise transferred by authority from those parties to the single entity being certified.

This document addresses the maintenance and repair of inflated rescue boats and it is intended for use as a companion to the IMO resolution.

Ships and marine technology — Servicing of inflatable life-saving appliances —

Part 5: Inflated rescue boats

1 Scope

This document, in conjunction with ISO 18079-1, provides provisions for servicing stations servicing inflated rescue boats referred to in SOLAS III/20.8. This document is applicable to non-SOLAS inflated rescue boats, as appropriate.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 18079-1, *Ships and marine technology — Part 1: Servicing of inflatable life-saving appliances*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 18079-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Inspection

4.1 General

Inspection and servicing of inflated rescue boats shall be carried out in accordance with the requirements of ISO 18079-1 and the appropriate manufacturer's servicing manual. The tests and procedures shall include, but not be limited to, the following.

4.2 Visual inspection

4.2.1 General

At first, the following items shall be checked visually under the inflated condition with appropriate internal pressure of the air chambers.

4.2.2 Air chamber and cordage

There shall be no signs of damage to air chambers such as deterioration, splitting, cutting, peeling, or rubbing of rubber coated fabric air chambers. There shall be no signs of damage to cordage, such as deterioration, cutting, or rubbing of a lifeline, a tow line and a painter.

4.2.3 Valves, valve mounting and cordage mountings

There shall be no abnormality in valves, valve mountings and cordage mountings, no peeling of mountings on air chambers and no cutting of mountings.

4.2.4 Bonded parts

There shall be no signs of deterioration such as wrinkles, slippage and peeling on any bonded parts on air chambers.

4.2.5 Inflation valves and pressure relief valves

There shall be no signs of damage such as deterioration or corrosion of inflation valves and pressure relief valves on air chambers.

4.2.6 Retro-reflective materials

There shall be no signs of peeling and deterioration of retro-reflective materials.

4.2.7 Rigid floor

There shall be no damages on the rigid floor such as cracking, wear and deformation.

4.2.8 Self-righting device

There shall be no damages on self-righting devices. There shall be no water inside of rigid type of self-righting devices.

4.2.9 Marking

Required markings shall be clearly visible.

4.2.10 Fender/skate arrangements

There shall be no damages on fender/skate arrangements such as cracking, wear or deformation.

4.2.11 External boundaries of void spaces

Void spaces shall be subjected to visual inspection as far as practicable and there shall be no damages on external boundaries of the void spaces such as cracking, wear or deformation.

4.3 Air chamber

4.3.1 Working pressure (WP) test

A working pressure (WP) test shall be carried out by inflation of air chambers with dry air compressed to at least the working pressure or the pressure required by the manufacturers' servicing manual, if higher. The air chambers shall 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 after correction based on temperature during the test.

To inspect the leakage of partitions inside the air chamber, respective compartments of the air chambers shall be alternately inflated and tested.

4.3.2 Necessary additional pressure (NAP) test

Each air chamber shall be subjected to the necessary additional pressure (NAP) test annually, after the tenth year after manufacture of the inflated rescue boat life in accordance with the following procedure.

a) Inflate all air chambers using dry compressed air at least equal to working pressure or to the pressure required by the manufacturer's servicing manual, if higher.

b) Plug the pressure relief valves.

c) Gradually raise the pressure to the lesser of 2,0 times the working pressure or that sufficient to impose a tensile load on the air chamber fabric of at least 20 % of the minimum required tensile strength, i.e. NAP test pressure.

   Inflated rescue boat manufacturers shall include tables in their servicing manuals of exact NAP test pressures corresponding to their particular inflated rescue boat types and/or air chamber sizes and fabric tensile strength requirements, calculated according to Formula (1):

$$p\left(\mathrm{N/m^2}\right) = \frac{\text{tensile strength}\left(\mathrm{N/m}\right)}{5 \cdot \text{radius}\ \left(\mathrm{m}\right)} \tag{1}$$

d) After 5 min, check that there is no seam slippage, cracking, other defects, or significant pressure drop. If a cracking sound is heard from the air chamber, the inflated rescue boat shall be condemned; if no cracking sound is heard, the pressure in all air chambers shall be reduced simultaneously by removing the plugs from the pressure relief valves.

e) The service provider shall record the accurate test pressures.

4.3.3 Overload suspension test for main air chambers

The overload suspension test shall be carried out at 5 years and 10 years after date of manufacture and thereafter annually, in accordance with the following procedure.

a) Inflate all air chambers other than the automatically inflatable chambers for self-righting device to working pressure.

b) Load the inflated rescue boat with 1,1 times the mass of the full component of persons and equipment for which it is to be approved.

c) Suspend the inflated rescue boat for 5 min with all pressure relief valves operative.

d) Check that there are no abnormalities, such as slippage and peeling.

e) Check that there are no abnormalities, such as slippage and peeling, after being placed on the floor and removing the load.

4.4 Pressure relief valve

The activation and closing pressure of each pressure relief valve shall be measured. The measured pressure shall be within the specified pressure ranges. Leakage of air after closing of each pressure relief valve shall be checked. Any leakage is unacceptable.

4.5 Equipment

All items of equipment shall be checked to ensure that they are in good condition and that dated items are replaced at the time of servicing in cases where the expiry date falls before the next service date of the inflated rescue boat.

4.6 Engines and propulsion system

Engines and propulsion system shall be checked in accordance with the manufacturer's servicing manual, which shall include, as a minimum, the following items:

a) sparking plug condition;

b) throttle system condition;

c) starter system condition;

d) clutch system condition;

e) propeller and propeller shaft condition;

f) engine operation;

g) fuel system condition;

h) cooling system condition;

i) gear oil and fuel condition;

j) oil tank and fuel tank condition;

k) servicing tools condition.

4.7 Manoeuvring system

The operation of the rudder and gear shifting to forward, neutral and backward shall be checked.

4.8 Power supply system and electrical equipment

Power supply system and electrical equipment shall be checked in accordance with the established procedure. The following items shall be checked:

a) battery charge condition;

b) connection of circuits to electrical equipment such as a searchlight, a canopy light and an engine starter;

c) activation of a search light, a canopy light and an engine starter.

4.9 Automatically self-bailing system

Operation of a fitted automatically self-bailing system shall be checked in accordance with the manufacturer's requirements.

5 Maintenance

Servicing stations for inflated rescue boats of specified types shall carry out the maintenance in accordance with the manufacturer's manual. If a defect is found during inspection, servicing stations shall follow the instruction of the manufacturer to correct the defect.

6 Documentation

6.1 Overview

Records of servicing shall be prepared and maintained for at least 5 years after the date of service. The records shall include, but not be limited to, the information listed in 6.2, 6.3, 6.4, 6.5 and 6.6.

6.2 General information

a) Identification of servicing station and certified technician.

b) Name and IMO number of ship.

c) Flag state of ship.

d) Inflated rescue boat serial number.

e) Date of manufacture.

f) Type and capacity of inflated rescue boat.

g) Approval.

h) Date when last serviced.

i) Name and place of servicing station where it was last serviced.

6.3 Information about inflated rescue boat condition when received

If a non-conformity has to be raised, information about the findings and name of the previous servicing station shall be submitted to the manufacturer without delay.

6.4 Test documentation to be recorded

a) Result of working pressure test (WP test).

b) Result of necessary additional pressure test (NAP test).

c) Result of overload suspension test.

6.5 Condemnation documentation for inflated rescue boats

When condemning an inflated rescue boat, the following information shall be recorded and submitted to the manufacturer:

a) manufacturer, type, capacity and serial number of inflated rescue boat;

b) ship owner;

c) name and IMO number of ship;

d) flag state of ship;

e) type of ship hosting the inflated rescue boat;

f) cause of condemnation.

Annex A shows an example of a condemnation form.

6.6 Control objects to be included in the inspection schedule

The inspection schedule, which can be acquired from the manufacturer, shall address, but not necessarily be limited to hull, buoyancy tube fabric, keel, floor, release gear, suspension straps, inflation valves, relief valves, transom, self-bailers, lifelines, engine, towing lines, towing rings and parches, reflective tape, marking, boarding ladder, radar reflector and required equipment.

7 Deficiency records

Records shall be prepared on serviced inflated rescue boats, recording where the required servicing frequency is violated, defects found, repairs carried out and units condemned and withdrawn from service. Such records shall be submitted without undue delay to the manufacturer and subsequently made available to the Administration as and when required. Annex A shows an example of a condemnation form.