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Ships and marine technology — Shipboard plans for fire protection, life-saving appliances and means of escape

Navires et technologie maritime — Plans de sécurité à bord du navire, des moyens de lutte contre l'incendie, des engins de sauvetage et des moyens d'évacuation

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 17631 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 1, *Lifesaving and fire protection*. It is intended to supplement International Maritime Organization (IMO) requirements and recommendations for arrangement of shipboard plans used on commercial vessels complying with the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended.

Annex A forms a normative part of this International Standard. Annex B is for information only.

Introduction

This International Standard has been developed taking into account the existing IMO guidance on the subject as listed in the bibliography. The symbols in annex A generally conform to the corresponding symbols given in IMO Resolutions A.654(16) ([3] in the bibliography) and A.760(18) ([7] in the bibliography) but, as far as the symbols for fire plans are concerned, it was deemed necessary to carry out the following changes.

a) The colour code given in ISO 14726-1 and ISO 14726-2 ([11] and [12] in the bibliography) has been adopted in order to render more evident the various types of systems/content of equipment present on board and for which the same symbol is used. This reduces the number of symbols referring to similar systems or equipment and, consequently, avoids cluttering of the plans.

b) With the aim of rendering them more comprehensible to people on board and to shoreside fire-fighting personnel, who might be called to operate onboard, a small number of symbols (e.g. the one referring to fire hydrant and hose) contained in IMO Resolution A.654(16) have been modified in order to harmonize them with ISO 6309 ([10] in the bibliography).

Ships and marine technology — Shipboard plans for fire protection, life-saving appliances and means of escape

1 Scope

This International Standard specifies the content, type, design, layout and usage of shipboard plans for fire-protection appliances, structural fire protection, life-saving appliances and arrangements, and means of escape. It also specifies graphical symbols and illustrations used in such plans.

2 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

2.1
booklet
compilation of shipboard plans

2.2
competent authority
Administration whose flag the ship is entitled to fly, or an organization authorized by an Administration, to perform functions required by this International Standard

2.3
fire locker
locker containing fire-fighter outfits, portable fire-fighting equipment and relevant spare parts

2.4
fire plan
plan, plans, or booklets containing information on fire-protection appliances and structural fire protection, as specified in SOLAS 74 (as amended), Chapter II-2

NOTE Fire plan has the meaning of “fire control plan” as mentioned in SOLAS 74 [as amended through IMO Resolution MSC.99(73)], regulation II-2/15.2.4, [1] in the bibliography.

2.5
fire-protection appliances
fixed fire-fighting systems and portable equipment to be used or activated in case of fire, as specified in SOLAS 74 (as amended), Chapter II-2

2.6
graphical symbol
visually perceptible figure which is used for the purpose of transmitting information independent of the medium of language

2.7
illustration
use of line drawings for the depiction of a vessel’s general arrangement

2.8
life-saving appliances
systems or appliances serving the purpose of saving the life of any person, in an emergency at sea as addressed by SOLAS 74 (as amended), Chapter III

2.9
means of escape
primary and secondary routes by which, in an emergency, a person can move away from a hazard

2.10
primary escape route
the preferred means of escape, complying with SOLAS 74 [as amended through IMO Resolution MSC.99(73)], regulation II-2/13.3.2.4.1

2.11
safety locker
locker containing safety-related equipment other than fire-fighting outfits, portable fire-fighting equipment and relevant spare parts

2.12
secondary escape route
alternate means of escape for use in cases where the primary escape route is not available

2.13
structural fire protection
passive fire protection, including details of the ventilation systems and fire detection and alarm systems

3 Preparation of plans

3.1 General

3.1.1 The number and types of plans to be carried on board a particular ship shall meet the requirements of the competent authority.

3.1.2 No illustration in any plan shall be made to a scale smaller than 1:200 with minimum line point size of 4,5 for main vertical zone divisions, 2,25 for A and B class divisions, and 0,75 for other lines. Large plans may be subdivided for clarity.

3.1.3 Fire-protection appliances and structural fire protection should be placed in separate plans. Main vertical zones, if any, shall be marked and identified in both fire-protection appliances and structural fire-protection plans. However, depending on the quantity of information to be taken into account for presentation, more than one particular plan may be combined or consolidated, under the judgement of the competent authority, provided that the combined or consolidated plans are properly legible. In addition, consideration may be given to drawing up separate fire plans for machinery spaces and deck areas.

3.1.4 A legend of symbols and explanations shall be a constituent part of any plan and contain a list of the graphical symbols used in the plan, together with the appropriate explanations, and may include, in some instances, additional special information such as the type of extinguishing media used in the fixed fire-extinguishing system(s). As a rule, the legend shall be inserted in the appropriate drawing. It shall indicate, next to each symbol, the number of each particular item of fire-protection equipment and arrangements provided. For clarity, preferably only one font type shall be used for text in plans developed in accordance with this International Standard. The minimum letter point size shall be 12. The legend should preferably be placed at the right-hand side of the plan.

3.1.5 The information required shall be shown deck by deck; names of internal spaces and cabin numbering shall also be shown.

3.1.6 The graphical symbols shown in normative annex A shall be used when developing the plans referred to in this International Standard. The colours shall be in accordance with annex A. A summary of all symbols included in annex A is given in Table 1. The graphical symbols used in plans and booklets shall be of suitable size to ensure that they remain understandable and shall not be smaller than 6 mm by 6 mm. Generally symbols shall not be framed. All symbols shall be positioned on plans in a manner to clearly indicate the appropriate position on the vessel but, to avoid clutter, symbols may be placed outside the plan with a dot and line to indicate the actual position. In the latter case, the line shall have a point size greater than the minimum line point size adopted for the general arrangement plan.

3.1.7 Fire plans, including those consolidated in the form of a booklet, shall contain the following additional particulars:

a) ship's construction date as defined in SOLAS 74, as amended ([1] in the bibliography), and application of the SOLAS Conventions and amendments;

b) original method (e.g., for passenger ships, I, II, or III as defined in SOLAS 48 and SOLAS 60, with or without sprinkler, or, for cargo ships, IC, IIC, or IIIC as defined in SOLAS 74, as amended);

c) which additional fire-safety measures, if any, were applied; and

d) dates and descriptions of any modifications to the ship which altered its fire safety.

3.1.8 For passenger ships, for modifications carried out before 1 October 1994, if the dates and descriptions of such modifications are not available, at least the fire safety construction method currently used in the ship shall be stated. Where more than one method or a combination of methods is used in different locations of the ship, this shall be specified.

3.1.9 Texts in plans and booklets shall be in the language or languages required by the competent authority. Where more than one language is used on plans, these separate languages shall be indicated with different font types.

The languages used should take into account the requirements of the IMO ISM Code with regard to the working languages of the ship.

3.2 Fire-protection appliances plan

3.2.1 The plan shall show the arrangement and location of the fire-protection appliances in annex A, symbols A.2.1 to A.2.44, together with means of access to compartments, decks, etc. Where spaces or deck areas are protected by fixed fire-extinguishing systems, the amount of fire-extinguishing medium, except water, shall be indicated in the plan.

3.2.2 The contents of each fire locker shall be indicated in the legend. The items contained in a fire locker need not be indicated on the plan.

3.3 Structural fire-protection plan

The plan shall show the arrangement and location of the structural fire-protection details in normative annex A, symbols A.1.1 to A.1.18.

3.4 Means of escape plan

The plan shall show each means of escape and access within the ship and identify assembly and embarkation stations. Primary and secondary escape routes, as applicable, shall be identified by arrows as indicated in annex A, symbols A.3.1 and A.3.2.

NOTE For means of escape on passenger ships, reference may be made to IMO resolution A.757(18) ([6] in the bibliography).

3.5 Life-saving appliances plan

3.5.1 The plan shall show the arrangement and location of the items in normative annex A, symbols A.4.1 to A.4.29. In addition, the plan shall indicate the quantity of each particular item of life-saving appliances and arrangements provided, and the capacity of each assembly station. The number and capacity of survival craft at each stowage position shall be indicated in the legend, or at the bottom of the appropriate symbol.

3.5.2 The content of each safety locker shall be indicated in the legend. The items in a safety locker need not be indicated on the plan.

3.5.3 Where lifejackets are installed in cabins, this shall be clearly indicated on the plan.

3.5.4 Where embarkation stations are not in direct proximity to survival craft, their location(s) shall be clearly indicated on the plan.

3.6 Examples of plans

Illustrative examples of plans developed in accordance with this International Standard are contained in informative annex B.

4 Documentation requirements

4.1 Accessibility of plans on board ship

The plans drawn up in accordance with the provisions of 3.2 to 3.5, which may also take the form of a combined or consolidated plan as referred to in 3.1.3, shall be kept readily available for the information of the ship's officers. In addition, as a minimum, the fire plan shall be permanently displayed for ready consultation at, or near, the navigating bridge and the officers' mess or recreational area.

4.2 Distribution of booklets

If the fire plan is in the form of a booklet, this shall be provided to each officer with defined duties for fire emergencies.

4.3 Computer-based systems

Computer-based systems shall comply, as a minimum, with the substantive contents of this International Standard. However, computer-based systems may not replace the plans referred to in this International Standard.

4.4 Updating requirements

Plans and booklets shall be kept up to date. Alterations shall be recorded on the plans or, the case of a booklet, contained on a separate page for revisions.

4.5 Accessibility of fire plans for shoreside fire-fighting personnel

4.5.1 In addition to the permanently displayed fire plan specified in 4.1, in all vessels, a duplicate set of the fire plan or of the booklet containing such a plan shall be permanently stored in a prominently marked weathertight enclosure outside the deckhouse for the assistance of shoreside fire-fighting personnel.

4.5.2 In oil tankers, chemical tankers, and gas carriers, the fire plans shall not be located on exterior boundaries of superstructures which face cargo tanks or on the surfaces within 3 m from them along the side.

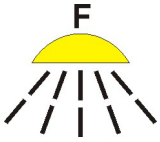
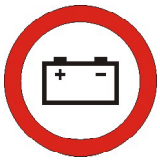
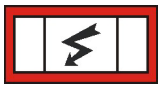
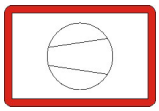
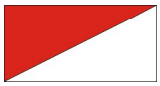
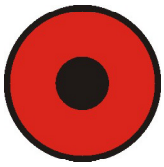
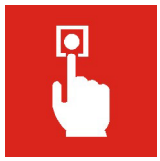
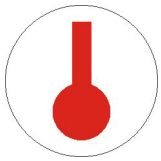
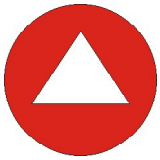
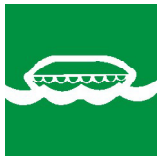
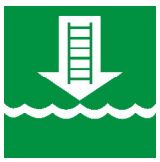
4.5.3 The enclosure shall be capable of being easily opened and be located in a well-illuminated position, if possible from an emergency source. In addition, the fire plan shall be properly protected against the marine environment.

NOTE For the marking of the enclosure on board, reference may be made to IMO MSC/Circular 451 ([2] in the bibliography).

Table 1 — Summary of graphical symbols for use in plans

A.1.1	A.1.2	A.1.3	A.1.4	A.1.5	A.1.6
A.1.7	A.1.8	A.1.9	A.1.10	A.1.11	A.1.12
A.1.13	A.1.14	A.1.15	A.1.16	A.1.17	A.1.18
A.2.1	A.2.2	A.2.3	A.2.4	A.2.5	A.2.6
A.2.7	A.2.8	A.2.9	A.2.10	A.2.11	A.2.12
A.2.13	A.2.14	A.2.15	A.2.16	A.2.17	A.2.18
A.2.19	A.2.20	A.2.21	A.2.22	A.2.23	A.2.24
A.2.25	A.2.26	A.2.27	A.2.28	A.2.29	A.2.30

Table 1 (*continued*)

A.2.31 	A.2.32 	A.2.33 	A.2.34 	A.2.35 	A.2.36 
A.2.37 	A.2.38 	A.2.39 	A.2.40 	A.2.41 	A.2.42 
A.2.43 	A.2.44 	A.3.1 	A.3.2 	A.4.1 	A.4.2 
A.4.3 	A.4.4 	A.4.5 	A.4.6 	A.4.7 	A.4.8 
A.4.9 	A.4.10 	A.4.11 	A.4.12 	A.4.13 	A.4.14 
A.4.15 	A.4.16 	A.4.17 	A.4.18 	A.4.19 	A.4.20 
A.4.21 	A.4.22 	A.4.23 	A.4.24 	A.4.25 	A.4.26 
A.4.27 	A.4.28 	A.4.29