
**Ships and marine technology — Ship's
bridge layout and associated
equipment — Requirements and
guidelines for centralized and integrated
bridge functions**

*Navires et technologie maritime — Aménagement de la passerelle d'un
navire et disposition de ses équipements annexes — Exigences
supplémentaires et directives pour les fonctions centralisées et
intégrées de la passerelle*



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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 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14612 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 5, *Ships' bridge layout*.

Introduction

It has become common for maritime officers and crew to move between shipping companies and flag states, to serve on a wide range of ships. Pilots, too, increasingly guide a wide variety of ships and equipment. This International Standard therefore gives requirements and guidelines aimed at ensuring safe navigation by standardizing the bridge system and environment so that watchkeepers are provided with a consistent pattern of equipment layout regardless of the ship type or navigational system fitted on the bridge of a particular vessel.

This International Standard has the same structure as that of ISO 8468. Its requirements concentrate on centralizing and integrating key bridge functions, taking into account human factors, ergonomics and advances in technology, and are additional to the requirements specified in ISO 8468.

Functional requirements are outlined in general terms in order to prescribe the basic functionality, providing the OOW — at each defined workstation — with the best possible overview of internally presented data, easy and ergonomic operation of instruments, necessary performance and reliability in instruments and power supplies, and adequate environmental conditions on the bridge.

All information to the OOW made available from instruments, alarm systems and communication equipment has to be suited for the purpose, and presented in accordance with ergonomic principles. Too much information is stressing and may cause confusion. Too little information may reduce safety.

Information as well as control systems have to provide the needed and correct performance suited to the particular workstation and procedures. Safety aspects related to crew, cargo, ship and the environment need to be addressed in detail.

Guidelines and figures give examples, ideal and/or alternative solutions, when such are well defined. Guiding references and comments are added where applicable.

Annex B includes principle solutions of bridge layouts. It should be noted that no specific layout presents the sole solution for proper bridge fulfilling the requirements laid down in this International Standard. This International Standard is parametric, and different types of ships and operations have different optimum designs, even though basic safety requirements are equal.

This International Standard is related to the IMO Resolution on ergonomic criteria for bridge equipment and the general requirements in SOLAS, Chapter V. Based on SOLAS, Chapter IX (ISM-Code), dealing with casualties attributed to the human element, this International Standard — when conformed with — should reduce such casualties.

Ships and marine technology — Ship's bridge layout and associated equipment — Requirements and guidelines for centralized and integrated bridge functions

1 Scope

This International Standard specifies technical requirements for the enhanced functionality of ship's bridge layout and design, with the key navigational functions centralized and integrated, for the purpose of securing safe and efficient operation of the ship, berth-to-berth, regardless of the watchkeeping arrangement in place at a particular time. The requirements are generally additional to those given in ISO 8468.

Where there are physical limitations in applying this International Standard, i.e. to small ships or ships of unusual design, the general principles still apply and can be implemented as far as practicable. It is applicable to seagoing ships where bridge duty is regularly maintained.

NOTE While complying with its requirements, users of this International Standard need also to ensure compliance with such statutory requirements, rules and regulations as may be applicable to the individual ship concerned.

2 Normative references

The following referenced documents are indispensable for the application 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 8468:1990, *Ship's bridge layout and associated equipment — Requirements and guidelines*

HSC Code 2000, *International Code of Safety for High-Speed Craft*

International Convention for the Safety of Life at Sea (SOLAS)

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms, definitions and abbreviated terms apply.

3.1

abnormal [operating] condition

condition created when internal technical system failures require operation of back-up systems on the bridge or occur under an irregular operating condition, or when the OOW becomes unfit to perform his duties and has not yet been replaced by another qualified officer

3.2

additional bridge function

function performed on the bridge, but not related to a primary bridge function

EXAMPLE Extended communication function, monitoring and control of ballasting and cargo operations, monitoring and control of machinery, monitoring and control of domestic systems, ship management.