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Maritime navigation and radiocommunication equipment and systems – Bridge navigational watch alarm system (BNWAS)

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CONTENTS

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS)

FOREWORD

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International Standard IEC 62616 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

The text of this standard is based on the following documents:

FDIS	Report on voting
80/577/FDIS	80/588/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this document may be issued at a later date.

The contents of the corrigendum of July 2012 have been included in this copy.

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS)

1 Scope

This International Standard specifies the minimum performance requirements, technical characteristics and methods of testing, and required test results, for a bridge navigational watch alarm system (BNWAS) as required by Chapter V of the International Convention for the Safety of Life at Sea (SOLAS), as amended. It takes account of the general requirements given in IMO resolution A.694(17) and is associated with IEC 60945. When a requirement in this International Standard is different from IEC 60945, the requirement in this standard takes precedence.

This standard incorporates the parts of the performance standards included in IMO resolution MSC.128(75).

NOTE 1 All text of this standard, whose wording is identical to that of IMO resolution MSC.128(75), is printed in italics, and the resolution and associated performance standard paragraph numbers are indicated in brackets.

(128/A1) *The purpose of a bridge navigational watch alarm system (BNWAS) is to monitor bridge activity and detect operator disability which could lead to marine accidents. The system monitors the awareness of the Officer of the Watch (OOW) and automatically alerts the Master or another qualified OOW if for any reason the OOW becomes incapable of performing the OOW's duties. This purpose is achieved by a series of indications and alarms to alert first the OOW and, if he is not responding, then to alert the Master or another qualified OOW. Additionally, the BNWAS may provide the OOW with a means of calling for immediate assistance, if required. The BNWAS should be operational whenever* the ship is underway at sea (SOLAS V/19.2.2.3).

NOTE 2 BNWAS may not, in practice, be realised as a stand alone equipment. It may be integrated in other equipment such as radar, ECDIS, etc.

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.

IEC 60945, *Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results*

IEC 61162 (all parts), *Maritime navigation and radiocommunication equipment and systems – Digital interfaces*

IEC 61162-1, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners*

IEC 62288, *Maritime navigation and radiocommunication equipment and systems – Presentation of navigation-related information on shipborne navigational displays – General requirements – Methods of testing and required results*

IMO Resolution A.694(17), *General requirements for shipborne radio equipment forming part of the Global maritime distress and safety system and for electronic navigational aids*

IMO Resolution A.813(19), *General requirements for electromagnetic compatibility (EMC) for all electrical and electronic ship's equipment*

IMO Resolution A.830(19), *Code on alarms and indicators*

IMO Resolution MSC.128(75), *Recommendation on performance standards for a bridge navigational watch alarm system (BNWAS)*

IMO MSC/Circ.982, *Guidelines on Ergonomic Criteria for Bridge equipment and Layout*

3 Performance requirements

3.1 Functionality

3.1.1 Operational modes

(See 7.4.1)

(128/A4.1.1.1) *The BNWAS* shall *incorporate the following operational modes:*

- *Automatic (Automatically brought into operation whenever the ship's heading or track control system is activated and inhibited when this system is not activated)*
- *Manual ON (In operation constantly)*
- *Manual OFF (Does not operate under any circumstances)*

NOTE The Automatic mode is not suitable for use on a ship conforming with regulation SOLAS V/19.2.2.3 which requires the BWNAS to be in operation whenever the ship is underway at sea.

3.1.2 Operational sequence of indications and alarms

3.1.2.1 Dormant period

(See 7.4.2)

(128/A4.1.2.1) *Once operational, the alarm system* shall *remain dormant for a period of between 3 and 12 min (Td).* See Figure 1.

(128/A4.1.2.2) *At the end of this dormant period, the alarm system shall initiate a visual indication on the bridge.*

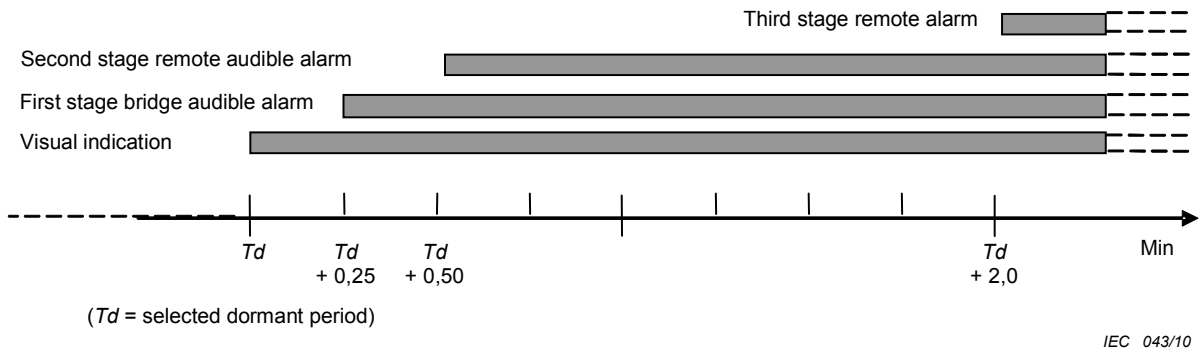

Figure 1 – Alarm sequence without acknowledgements

3.1.2.2 First stage bridge audible alarm

(See 7.4.3)

(128/A4.1.2.3) *If not reset, the BNWAS* shall *additionally sound a first stage audible alarm on the bridge 15 s after the visual indication is initiated.*

3.1.2.3 Second stage remote audible alarm

(See 7.4.3)

(128/A4.1.2.4) *If not reset, the BNWAS* shall *additionally sound a second stage remote audible alarm in the back-up officer's and/or Master's location 15 s after the first stage audible alarm is initiated.*

3.1.2.4 Third stage remote audible alarm

(See 7.4.3)

(128/A4.1.2.5) *If not reset, the BNWAS* shall *additionally sound a third stage remote audible alarm at the locations of further crew members capable of taking corrective actions 90 s after the second stage remote audible alarm is initiated.*

3.1.2.5 Alarm alternatives

(See 7.4.4)

(128/A4.1.2.6) *In vessels other than passenger vessels, the second or third stage remote audible alarms may sound in all the above locations at the same time. If the second stage audible alarm is sounded in this way, the third stage alarm may be omitted.*

(128/A4.1.2.7) *In larger vessels, the delay between the second and third stage alarms may be set to a longer value on installation, up to a maximum of 3 min, to allow sufficient time for the back-up officer and/or Master to reach the bridge.*

Installation set-up facilities shall be provided to inhibit the third stage alarm and to increase the delay between the second and third stage alarms to 3 min.

3.1.3 Reset function

3.1.3.1 Description of reset function

(See 7.4.5)

(128/A4.1.3.2) *The reset function* shall*, by a single operator action, cancel the visual indication and all audible alarms and initiate a further dormant period. If the reset function is activated before the end of the dormant period, the period* shall *be re-initiated to run for its full duration from the time of the reset.*

Single operator action is defined as activating a hard-key or soft-key including any necessary cursor movement.

3.1.3.2 Initiation of reset function

(See 7.4.6)

(128/A4.1.3.3) *To initiate the reset function, an input representing a single operator action by the OOW is required. This input may be generated by reset devices forming an integral part of the BNWAS or by external inputs from other equipment capable of registering physical activity and mental alertness of the OOW.*