

Circular 84 / 2014

To: All Shipowners and Operators

Subject: Interim guidance on the auto function of bridge navigational watch alarm systems (BNWAS)

Date: 15 July 2014

Summary

The IMO has issued interim guidance (contained in circular MSC.1/Circ.1474 attached below) that the automatic operational mode on bridge navigational watch alarm systems (BNWAS), if available, should **not** be used. This is an **interim** measure pending a revision of the performance standards for BNWAS contained in IMO Resolution MSC.128 (75) attached below. The guidance follows concerns raised over the use of the automatic mode at a meeting of the IMO's NAV Sub-Committee and the resulting conclusion that the automatic mode is not usable on a ship compliant with the SOLAS Convention. **What to do now** Owners and operators should ensure that masters of ships fitted with a bridge navigational watch alarm system are aware of this information.

For further information or clarification please contact the Registrar of Ships, a Deputy Registrar or Fleet Manager at Maritime Cook Islands; alternatively you may contact Maritime Cook Islands Head Office at +682 23848 Phone, +682 23846 Fax, fleet@maritimecookislands.com

Please ensure this has been forwarded to interested parties.

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MSC.1/Circ.1474
23 May 2014

**GUIDANCE ON THE BRIDGE NAVIGATIONAL WATCH
ALARM SYSTEM (BNWAS) AUTO FUNCTION**

1 The Maritime Safety Committee, at its ninety-third session (14 to 23 May 2014), with a view to providing more specific guidance on the automatic function specified in resolution MSC.128(75) – *Performance standards for a bridge navigational watch alarm system (BNWAS)*, approved the guidance, prepared by the Sub-Committee on Safety of Navigation at its fifty-ninth session (2 to 6 September 2013), as set out in the annex.

2 Member Governments are invited to use the guidance as an *interim* measure until such time as the performance standards can be reviewed and revised and, furthermore, bring this guidance to the attention of all parties concerned.

ANNEX

GUIDANCE ON THE BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS) AUTO FUNCTION

1 SOLAS regulation V/19.2.2.3 requires the provision of a Bridge Navigational Watch Alarm System (BNWAS), which shall be in operation whenever the ship is under way at sea, whilst SOLAS regulation V/18 requires BNWAS to conform to appropriate performance standards not inferior to those adopted by the Organization (i.e. resolution MSC.128(75)).

2 Resolution MSC.128(75) – *Performance standards for a bridge navigational watch alarm system (BNWAS)*, section 4.1.1.1 states that "*the BNWAS should incorporate the following operational modes:*

- Automatic (Automatically brought into operation whenever the ships 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)".

3 At the fifty-fifth session of the NAV Sub-Committee, concerns were raised with respect to the use of the Automatic mode and NAV 55 concluded that the Automatic mode of the performance standard was therefore not usable on a ship compliant with the SOLAS Convention. It was considered that it would not be possible to change the performance standards before the date at which the carriage requirements came into force (1 July 2011). In order to conform with the performance standards, therefore, equipment would include the Automatic mode, despite that this operational mode should not be used on ships which are subject to the SOLAS Convention.

4 From the operational point of view, automatic interface with activation of the ship's heading or track control system (HCS/TCS) is a superfluous function because SOLAS regulation V/19.2.2.3 requires the BNWAS to be in operation whenever the ship is under way at sea. This creates an inconsistency between SOLAS regulation V/19.2.2.3 and the "Automatic mode" provisions in the performance standard. In addition, from the technical point of view, it is noted that this issue is also addressed in the "note" to section 3.1.1 of IEC 62616:2010 – Maritime navigation and radiocommunication equipment and systems – Bridge navigational watch alarm system (BNWAS), which states:

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

5 Accordingly, as an *interim* measure and pending a revision of the *Performance standards for a bridge navigational watch alarm system (BNWAS)* – (resolution MSC.128(75)), the automatic operational mode, if it is available, should not be used.

ANNEX 11

**RESOLUTION MSC.128(75)
(adopted on 20 May 2002)****PERFORMANCE STANDARDS FOR A BRIDGE NAVIGATIONAL
WATCH ALARM SYSTEM (BNWAS)**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article (28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.886(21), by which the Assembly resolved that the function of adopting performance standards and technical specifications, as well as amendments thereto shall be performed by the Maritime Safety Committee and/or the Marine Environment Protection Committee, as appropriate, on behalf of the Organization,

RECOGNIZING that, many operational bridge-related marine accidents could be averted if an effective and operational bridge navigational watch alarm system (BNWAS) was fitted to vessels,

RECOGNIZING FURTHER that, by the use of a Bridge Navigational Watch Alarm System (BNWAS) warnings will be given in case of the incapacity of the watchkeeping officer due to accident, sickness or in the event of a security breach, e.g. piracy and/or hijacking,

NOTING that the installation of such equipment is a relatively low-cost and an effective means of avoiding operational navigational accidents,

RECOGNIZING the need to prepare appropriate performance standards for BNWASs,

HAVING CONSIDERED the recommendation on the performance standards for BNWASs made by the Sub-Committee on Safety of Navigation at its forty-seventh session,

1. ADOPTS the Recommendation on Performance Standards for a Bridge Navigational Watch Alarm System, set out in the Annex to the present resolution;
2. RECOMMENDS Governments to ensure that BNWASs installed on or after 1 July 2003, conform to performance standards not inferior to those specified in the Annex to the present resolution.

ANNEX

**RECOMMENDATION ON PERFORMANCE STANDARDS FOR
A BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS)****1 SCOPE**

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's heading or track control system is engaged, unless inhibited by the Master.

2 REFERENCES

- IMO resolution A.830(19) Code on alarms and indicators
- IMO MSC/Circ.982 Guidelines on Ergonomic Criteria for Bridge Equipment and Layout
- IMO resolution A.694(17) General Requirements¹ for shipborne radio equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for Electronic Navigational Aids

3 DEFINITIONS

Bridge – Wheelhouse and bridge wings

4 OPERATIONAL REQUIREMENTS**4.1 Functionality****4.1.1 Operational modes**

4.1.1.1 The BNWAS should 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)

¹ IEC Publication 60945

4.1.2 Operational sequence of indications and alarms

4.1.2.1 Once operational, the alarm system should remain dormant for a period of between 3 and 12 min (Td).

4.1.2.2 At the end of this dormant period, the alarm system should initiate a visual indication on the bridge.

4.1.2.3 If not reset, the BNWAS should additionally sound a first stage audible alarm on the bridge 15 s after the visual indication is initiated.

4.1.2.4 If not reset, the BNWAS should 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.

4.1.2.5 If not reset, the BNWAS should 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.

4.1.2.6 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.

4.1.2.7 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.

4.1.3 Reset function

4.1.3.1 It should not be possible to initiate the reset function or cancel any audible alarm from any device, equipment or system not physically located in areas of the bridge providing proper look out.

4.1.3.2 The reset function should, 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 should be re-initiated to run for its full duration from the time of the reset.

4.1.3.3 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.

4.1.3.4 A continuous activation of any reset device should not prolong the dormant period or cause a suppression of the sequence of indications and alarms.

4.1.4 Emergency call facility

Means may be provided on the bridge to immediately activate the second, and subsequently third, stage remote audible alarms by means of an "Emergency Call" push button or similar.

4.2 Accuracy

The alarm system should be capable of achieving the timings stated in section 4.1.2 with an accuracy of 5% or 5 s, whichever is less, under all environmental conditions.

4.3 Security

The means of selecting the Operational Mode and the duration of the Dormant Period (Td) should be security protected so that access to these controls should be restricted to the Master only.

4.4 Malfunctions, alarms and indications

4.4.1 Malfunction

If a malfunction of, or power supply failure to, the BNWAS is detected, this should be indicated. Means shall be provided to allow the repeat of this indication on a central alarm panel if fitted.

5 ERGONOMIC CRITERIA

5.1 Operational controls

5.1.1 A protected means of selecting the operational mode of the BNWAS.

5.1.2 A protected means of selecting the duration of the dormant period of the BNWAS.

5.1.3 A means of activating the "Emergency Call" function if this facility is incorporated within the BNWAS.

5.1.4 Reset facilities

Means of activating the reset function should only be available in positions on the bridge giving proper look out and preferably adjacent to visual indications. Means of activating the reset function should be easily accessible from the conning position, the workstation for navigating and manoeuvring, the workstation for monitoring and the bridge wings.

5.2 Presentation of information

5.2.1 Operational mode

The operational mode of the equipment should be indicated to the OOW.

5.2.2 Visual indications

The visual indication initiated at the end of the dormant period should take the form of a flashing indication. Flashing indications should be visible from all operational positions on the bridge where the OOW may reasonably be expected to be stationed. The colour of the indication(s) should be chosen so as not to impair night vision and dimming facilities (although not to extinction) should be incorporated.

5.2.3 First stage bridge audible alarm

The first stage audible alarm which sounds on the bridge at the end of the visual indication period should have its own characteristic tone or modulation intended to alert, but not to startle, the OOW. This alarm should be audible from all operational positions on the bridge where the OOW may reasonably be expected to be stationed. This function may be engineered using one or more sounding devices. Tone/modulation characteristics and volume level should be selectable during commissioning of the system.

5.2.4 Second and third stage remote audible alarm

The remote audible alarm which sounds in the locations of the Master, officers and further crew members capable of taking corrective action at the end of the bridge audible alarm period should be easily identifiable by its sound and should indicate urgency. The volume of this alarm should be sufficient for it to be heard throughout the locations above and to wake sleeping persons.²

6 DESIGN AND INSTALLATION

6.1 General

The equipment should comply with IMO resolutions A.694(17), A.813(19), their associated international standards³ and MSC/Circ.982 regarding Guidelines for Ergonomic Criteria for Bridge Equipment and Layout.

6.2 Specific requirements

6.2.1 System physical integrity

All items of equipment forming part of the BNWAS should be tamper-proof so that no member of the crew may interfere with the system's operation.

6.2.2 Reset devices

Reset devices should be designed and installed so as to minimise the possibility of their operation by any means other than activation by the OOW. Reset devices should all be of a uniform design and should be illuminated for identification at night.

² IMO Resolution A.830(19)

³ IEC Publication 60945

6.2.3 Alternative reset arrangements may be incorporated to initiate the reset function from other equipment on the bridge capable of registering operator actions in positions giving proper look out.

6.3 Power supply

The BNWAS should be powered from the ship's main power supply. The malfunction indication, and all elements of the Emergency Call facility, if incorporated, should be powered from a battery maintained supply.

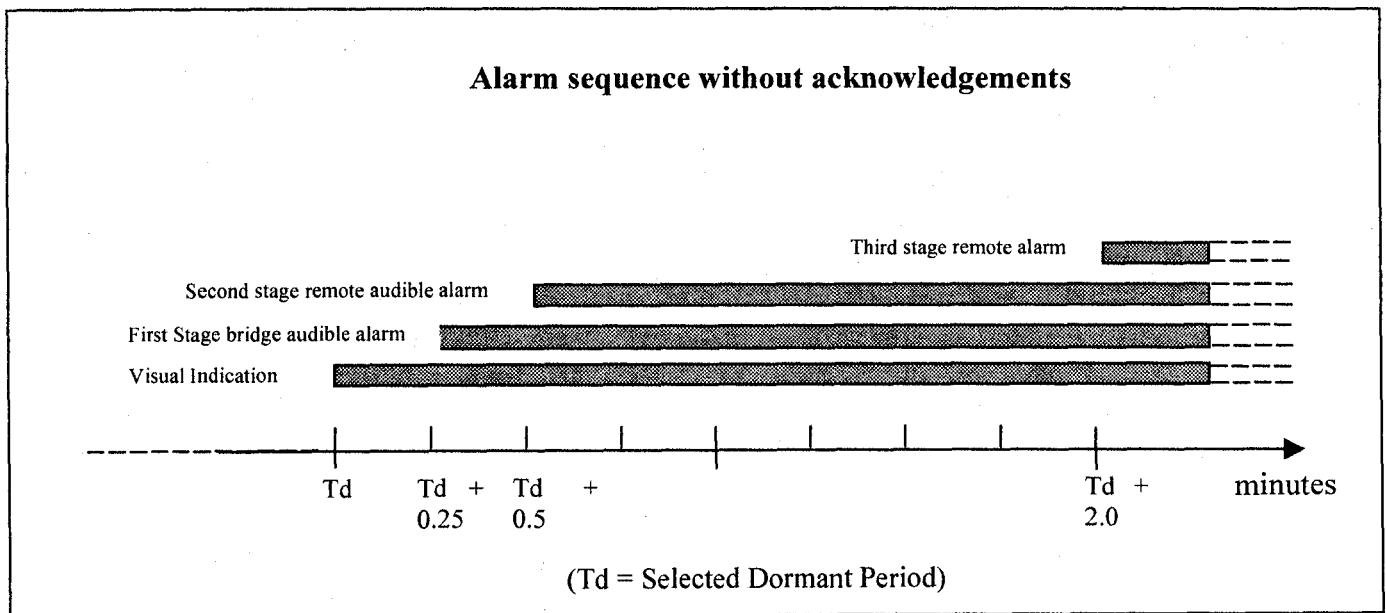
7 INTERFACING

7.1 Inputs

Inputs should be available for additional reset devices or for connection to bridge equipment capable of generating a reset signal by contacts, equivalent circuits or serial data.⁴

7.2 Outputs

Output(s) should be available for connection of additional bridge visual indications and audible alarms and remote audible alarms.



⁴ IEC Publication 61162