IMO NAV 55 Report

The 55th session of IMO Sub-Committee on Safety of Navigation held on 27 – 31 July 2009

5th August

Hot topics

- New Guidelines for bridge equipment and systems, their arrangements and integration, and performance standards for alert management concluded (Section 2)
- Revised performance standards for VDR and S-VDR – to be further discussed (Section 3)
- Annual testing of AIS – amendments to SOLAS chapter V (Section 5)
- Guidelines on the layout and ergonomic design of safety centres on passenger ships – to be further discussed at the next session (Section 7)
- Bridge visibility – draft amendment to the SOLAS - to be further discussed at the next session (Section 8)
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1. Introduction

The 55th session of the IMO Sub-Committee on Safety of Navigation was held from 27th July to 31th July, 2009 in London, the United Kingdom. The outcome relevant to the work of Lloyd’s Register is summarised below. Due attention is to be made to “Implication” and “Application”.

2. Development of guidelines for IBS, including performance standards for bridge alert management (Agenda Item 4)

The Sub-Committee concluded the development of guidelines for IBS (Integrated Bridge System) and the performance standards for Bridge Alert Management.

(Draft SN Circular on Guidelines for bridge equipment and systems, their arrangement and integration (BES))

Originally the NAV Sub-Committee was tasked to revise guidelines for INS (Integrated Navigation System) and IBS (Integrated Bridge System). Revised performance standards for INS and guidance on the application of SOLAS V/15 to INS, IBS and bridge design were finalised at NAV53. However, while considering IBS, it was agreed that due to the broader application of the guidelines, the title should be revised as “Guidelines for bridge equipment and systems, their arrangement and integration”.

The Guidelines aim to support the design of bridge equipment and systems, their arrangement and integration for safe and effective operation of the vessels under the control of the bridge team and pilot, applying SN.1/Circ. 265 - Guidelines on the application of SOLAS regulation V/15 to INS, IBS and bridge design. The Guidelines are presented as an umbrella document for bridge design and layout addressing issues not covered or not completely covered within other IMO instruments, giving guidance on applicable IMO instruments related to the issues addressed within the Guidelines.

This SN Circular is aimed to be provided as footnotes under SOLAS regulations V/15 and V/19.

Implications: The Guidelines largely replace the performance standard for IBS (MSC.64(67)), taking into account the recent development of the technology. Designers and builders are invited to pay due attention to these Guidelines when addressing the aim of SOLAS regulation V/15 - Principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures.

Application: not specified.

(Draft performance standards for Bridge Alert Management (BAM))

The purpose of the bridge alert management (BAM) is to enhance the handling, distribution and presentation of alerts on the bridge to enable the bridge team to devote full attention to the sea operation of the ship and to immediately identify any abnormal situation requiring action to maintain safe operation of the ship.

Implication: This will require manufacturers of all equipment and systems that are used on, or report data to, the bridge to design information and displays according to the
requirements of the performance standard. The performance standard does not encourage a consistent approach to alarm management across the ship because it does not take account of recognised practice in the design of alarm management.

**Application:** To bridge equipment installed on or after 1 July 2014.

**(Voice alert messages)**

The Sub-Committee, while agreeing that there is a need for developing consistent and harmonized use of voice alert messages, recognized a new work programme is required to discuss the issue further. It was noted that voice and sound are used for information exchange in the bridge and there was potential for confusion with other sounds/commands. Note that applications of voice alert messages are not usual in multi-user/team contexts.

**(Consideration of the needs of modern High-Speed Craft (HSC) in relation to the development of IBS guidelines)**

The Sub-Committee, noting the HSC Code has not been fully updated taking into account the update made to the SOLAS Convention, developed an MSC Circular to invite Administrations to allow HSCs to be equipped with navigational equipment and systems that take advantage of the latest technological developments permitted by regulations relating to SOLAS Chapter V, e.g., standards for integrated navigation systems and alert management, provided that the equipment is of an equivalent or higher standard to the requirements of chapter 13 of the 2000 HSC Code.

3. **Amendments to the Performance standards for VDR (Voyage Data Recorder) and S-VDR (Agenda Item 6)**

The Sub-Committee considered amendments to the performance standards for VDR and S-VDR taking into account the documents submitted to the past sessions of the Maritime Safety Committee proposing:

- need for the improvement of audio record;
- connection to second radar, second VHF and CCTV;
- Floating capsule.

At this session, further proposals on
- manual retrieve of the data;
- extended recording period for new VDRs;
- input of heel angle;
- connection with ECDIS
were submitted.

The draft revised standard will be further considered at the next session of the Sub-Committee.
4. Development of procedures for updating shipborne navigation and communication equipment (Agenda Item 7)

The Sub-Committed developed draft guidance on procedures for updating shipborne navigation and communication equipment requiring provision of means to replace software or install updates to software in systems onboard ships.

The draft guidelines will be further reviewed by the COMSAR Sub-Committee and the next session of the Sub-Committee.

If revisions become more frequent manufacturers may have to re-consider the design of equipment and/or systems to facilitate updates.

5. Measures to minimize incorrect data transmissions AIS equipment (Agenda Item 10)

The Sub-Committee considered measures to minimize incorrect data transmissions by AIS equipment, in addition to the measures taken as MSC.1/Circ. 1252 – Guidelines on annual testing of the Automatic Identification System (AIS), and amendments to the Survey Guidelines under the HSSC (A.997 (25).

(Draft new SOLAS Regulation V/18-9)

The Sub-Committee, having considered documents submitted and opinions expressed, developed draft amendments to the SOLAS regulation as follows:

The automatic identification system (AIS), shall be subjected to an annual test. The test shall be conducted by an approved surveyor or an approved testing or servicing facility. The test shall verify the correct programming of the ship static information, correct data exchange with connected sensors as well as verifying the radio performance by radio frequency measurement and on-air test using e.g., a Vessel Traffic Service (VTS). A copy of the test report shall be retained onboard the ship.

Implications: So far as Safety Equipment Survey is carried out in conjunction with Safety Radio Survey, this may not induce any practical problem, however, the way to verify actual data in the transmission may require careful consideration.

Application: To ships required to carry AIS onboard (all passenger ships regardless of tonnage and cargo ships (non-passenger ships) of 300 gt (engaged on international voyages), 500 gt (engaged on non-international voyages) or over)

6. Development of an e-navigation strategy implementation plan (Agenda Item 11)

It is clear that the torrent of new technology going onto ships bridges is not going to stop. The risk of ‘drowning in data and starved of information’ is more likely to increase than decrease. E-navigation aims to harmonize information provision and need (end-to-end). This process of harmonization is necessarily user-centred. Critical to a user-centred approach is consideration of the (ever-changing) context of use, embracing technical and physical and management considerations.
“E-navigation” is defined as the harmonized collection, integration, exchange, presentation and analysis of marine information on board and ashore by electronic means to enhance berth-to-berth navigation and related services for safety and security at sea and protection of the marine environment.

“e-navigation” is intended to meet present and future user needs through harmonization of marine navigation systems and supporting shore services.

There is a concept beyond e-navigation that addresses the facilitation of marine trade through information exchange this is called “e-maritime”. In order to achieve any kind of progress in e-navigation any proposal or discussion of issues beyond the scope of e-navigation should be deferred/referred to e-maritime NOT treated as an extension of the scope of e-navigation (which is quite large enough).

MSC 85 adopted
   - Strategy for the development and implementation of e-navigation; and
   - Framework for the implementation process for the e-navigation strategy

Accordingly, the Sub-Committee, at this session, reviewed surveys on the user need concerning e-navigation submitted to the Sub-Committee.

The Sub-Committee also reviewed documents submitted to the Committee and other Sub-Committees as well.

A range of work was submitted for consideration including user needs studies, declarations of interest and technical topics. It is clear that there are many perspectives on the topic and a need for a harmonisation of these viewpoints in order that progress is understood in a coherent manner.

The matter, including development of detailed shore-based user need, will be further considered at the next session through the consideration at the Intersessional Correspondence Group. The correspondence group is tasked with continuing to develop the user needs (including off-ship users), to simultaneously start to develop the logical design (architecture and functions) and to assess cost benefits. Communications issues are also to be addressed.

(Satellite detection of AIS-Data)

A member State expressed a need for legal instrument to govern commercial entities that distribute AIS Data through satellites that have been launched for that particular purpose.

However, Sub-Committee agreed that the Sub-Committee is not a forum for discussing such policy and legal issues, and agreed to wait for instructions from the Committee.

7. Guidelines on the layout and ergonomic design of safety centres on passenger ships (Agenda Item 12)

In relation to the new SOLAS regulation II-1/23 requiring a safety centre onboard a passenger ship, which will enter into force on 1 July 2009, the Sub-Committee has been tasked to develop the guidelines on the layout and ergonomic design of the safety centre, while the FP Sub-Committee is developing functional details of the centre.
The Committee noted that only one document that contained information on sample arrangement was submitted to this session, and agreed to defer the further discussion until next session.

8. **Review of vague expressions in SOLAS regulation V/22 (Agenda Item 13)**

The Sub-Committee reviewed vague expressions used in SOLAS regulation V/22.

While the original discussion started from on deck containers place above the line of sight, other elements was included in the discussions.

The Committee, at this session, discussed two proposed approaches, the prescriptive approach, i.e., to refine SOLAS regulation V/22 to remove ambiguities, and the goal based approach, i.e, providing a master with a tool, which enables him to verify the compliance with the requirements based on predefined loading plans, pre-calculated loading conditions, calculations with an approved computerized dynamic loading programme or other approved methods.

However, there was no clear conclusion at this session. The matter will be further discussed at the next session.

The issue of bridge wing length was discussed under agenda item 17 in conjunction with the IACS Unified Interpretation.

9. **Revision of the Guidance on the application of AIS binary messages (Agenda Item 14)**

The AIS was originally developed as a means for positive identification and tracking of vessels. This was accomplished by transmitting and receiving static, dynamic, and voyage-related data about ships as well as short safety-related messages. In addition, AIS is beneficial to the safety of navigation and protection of the marine environment by monitoring the maritime traffic and by providing various basic services. In particular, AIS may be used binary messages for transmission of Application-Specific Messages as a means for certain type of limited communications. Various types of messages were developed for specific application.

At NAV 49, guidance on the application of AIS Binary Messages was issued in SN/Circ.236 (28 May 2004). SN/Circ.236 contains interim guidelines for the presentation and display of AIS target information. However, it deals with the graphical presentation and display of AIS target data in standalone or integrated navigational systems. This includes the AIS Minimum Keyboard Display (MKD), radar, ECDIS and Integrated Navigation System (INS) equipment. At present, there is no requirement for ships to have any equipment capable of interpreting, processing or displaying the information on content of AIS binary messages. However, AIS binary messages are being displayed on existing shipborne equipment including radar, ECDIS and INS.

The Sub-Committee at this session prepared two SN Circulars for the approval of the Committee.
(Draft SN Circular on Guidance on the use of AIS Application-Specific Messages)

This document provides an overview of the purpose and scope of Application-Specific Message (a type of Binary Message) and provides guidance on their use.

(Draft SN Circular on Guidance for the presentation and display of AIS Application Specific Messages information)

This document contains the revised set of guidance for presentation after evaluating the use of Application-Specific message in trial period defined in SN/Circ. 236.

Implications: While use of binary message is not mandatory under SOLAS or related performance standard, the above change may affect operational requirements at shipboard side.

Application: No specified - voluntary.

10. Improved safety of pilot transfer arrangements (Agenda Item 15)

The Sub-Committee considered improved safety of pilot transfer arrangements, taking into account the decisions at the previous session of the Sub-Committee and the DE Sub-Committee, using the text prepared by the Correspondence Group on its bases.

During the initial discussion at the Plenary, the Committee noted that there are contradiction concerning the location of the ladder identified between
- MSC.1/Circ.1331 - guidelines for “the means of embarkation and disembarkation” as required by SOLAS regulation II-1/3-9; and
- “Pilot transfer arrangements” required by SOLAS regulation V/22.

While the former requires “should be sited clear of the working area and should not be placed where cargo or other suspended loads may pass overhead” (suggesting aft part of the ship), the latter require “within the parallel body length of the ship and, as far as is practicable, within the mid-ship half length of the ship”.

There were other issues raised, which was addressed by the Drafting Group.

The Committee, following the discussion at the Drafting Group, developed the following for approval by the Committee.

(Draft amendments to SOLAS regulation V/23)

The revised SOLAS regulation V/23 will prohibit the use of the mechanical hoist. There is a number of changes made to the requirements to enhance safety of pilot transfer.

(Draft amendment to resolution A.889 (21))

The resolution was revised in accordance with the amendments made to the SOLAS regulation V/23.

(Proposed amendments to MSC.1/Circ.1331)
The NAV Sub-Committee proposed the following amendments to the section 3.1 of the circular. The intent was not to allow single accommodation ladder to meet both requirements under SOLAS regulations II-1/3-9 and V/19.

“3.1 Location

Excerpt when an accommodation ladder is used in conjunction with the pilot ladder to meet the requirements of regulation V/23.3.3.2, as far as practicable, the means of embarkation and disembarkation should, as far as practical, be sited clear of the working area and should not be placed where carto or other suspended loads may pass overhead.”

**Implications:** Shipbuilders and manufacturers are to take into account the new requirements for the new installation. Although NAV Sub-Committee failed to clearly state the intent in document, it is considered, according to the opinions expressed during the session, using one single ladder for both purpose of means of embarkation and disembarkation at port (SOLAS regulation II-1/3-9) and pilot transfer (SOLAS regulation V/23) will be no longer possible.

**Application:** To new pilot transfer arrangements installed on or after the entry into force date. However, prohibition of use of mechanical hoist will apply to all ships, including existing ships.

### 11. Consideration of IACS unified interpretations (Agenda Item 17)

IACS submitted a Unified Interpretation on the bridge length, which was considered in conjunction with agenda item 13.

**(Draft MSC Circular on Unified Interpretation of SOLAS Chapter V)**

The basic intention of SOLAS regulation V/22.1.6 was for a navigating officer to be able to see the ship’s side from the bridge wing so as to facilitate the ability of ship to:

- Be safety manoeuvred alongside other ship/objectives;
- Launch and recover lifeboat; and
- Safely receives pilot boarding, store and bunker, etc.

In this regard, MSC/Circ. 982 recommended that bridge wings should be provided out to the maximum beam of the ship. However, for particular type of ships, such as tug/tow boats, OSVs, rescue ships, work-ships (e.g., floating crane vessel), etc offer unique problems in complying with the stringent recommendation in MSC/Circ. 982 because of their special functions and characteristics in operation which frequently required such ships to manoeuvre to other ships/objectives. For such operation, if the bridge wings extended to the ship’s maximum beam or even near to it, this would result, and had resulted, in collisions of the bridge wings with other ships/objects.

Using the IACS text as a basis of the work, the Sub-Committee prepared the following interpretation as follows:

“For particular types of ships such as tug/tow boat, offshore supply vessel (OSV), rescue ship, work ship (e.g., floating crane vessel), etc, in meeting the requirements of SOLAS regulation V/22.1.6, the bridge wings should at least extend to a location from which the sea surface, at the lowest seagoing draught and at a transverse distance of 1,500 mm from the maximum beam throughout the ship’s length, is visible. If the ship type is converted, this interpretation is no longer applied.”
The IACS interpretation also provides an interpretation that is applicable to all ships in general:

“The requirements of SOLAS regulation V/22.1.6 are accomplished when:

.1 A view from the bridge wing plus a distance corresponding to a reasonable and safe distance of a seafarer leaning over the side of the ship bridge wing, when need not be more than 400mm, to the location vertically right under the maximum beam of the ship at the lowest seagoing draft is not obscured: or

.2 The sea surface at the lowest seagoing draught and with a transverse distance of 500 mm and more from the maximum beam throughout the ship’s length is visible from the side of the bridge wing.”

The Sub-Committee agreed to invite the Committee to approve the text as an MSC Circular.

Implications: The circular provides clearer understanding of the requirements to the industry. As a result of the above interpretation, bridge wing length is not required to be the full length of ship’s beam.

Application: Ships required to comply with SOLAS regulation V/22 (ships not less than 55 m in length). The date of the application is to be decided.

(Other interpretation regarding bridge visibility)

The Sub-Committee will consider the use of a remote camera upon receiving a submission from IACS at the next session.

12. Any other business (Agenda Item 20)

(Performance standard of Bridge Navigation Watch Alarm System BNWAS)

The proposal from the UK and Denmark to separate physical movement from mental alertness and to allow detected presence of a person on the bridge as an acceptable trigger for inhibiting the watch alarm was accepted. At the same time the group further decided that the "automatic" model of operation of the BNWAS (linking it to operation of track control) was not needed under SOLAS.

This effectively revises/countermands the performance standard on BNWAS (MSC.128 (75)).

The Sub-Committee did not specifically mention any possible change to the performance standard but simply invited member governments to note this information.

(Daylight signalling lamp)

The Sub-Committee as a response to the request from the STW Sub-Committee reviewed the carriage requirements of the equipment currently given in SOLAS regulation V/19.2.2.2 as the STW Sub-Committee is considering possible reduction of the
training on the Morse Code. However, the Sub-Committee, agreeing that the minimum recognition capability for the Morse Code is still required for such signals to be used in navigational aids, such as Racon, or buoys agreed to maintain the carriage requirements of the daylight signalling lamps.

**SOS Signal given in the Collision Regulation**

In conjunction with the above discussion on the removal of the Morse Code training, the need for the revision of Annex VI of COLREG and Appendix I of the International Code of Signals regarding distress signal SOS sent by a daylight signalling lamp was also considered by the Sub-Committee. In the same reason given in the above paragraph, the Sub-Committee agreed to maintain the SOS – distress signals given in the Collision Regulation.

**Review of the resolution on the same manning**

The Sub-Committee, agreed to provide minor changes to the text of draft amendments to resolution A.890 (21) prepared by the STW Sub-Committee. The Sub-Committee agreed to discuss the issue at the next session under the proper agenda item for substantial discussion on this item.

**Radar shadow display**

The Committee noted that while resolution A. 997 (25) - Survey Guidelines under the Harmonized System of Survey and Certification - requires verification of display of the shadow sector of the ship’s radar, there are no such display requirements in SOLAS. The Sub-Committee considered whether amendments to the SOLAS is required to make the display of such shadow area mandatory and solve inconsistencies of the two instruments. However, the Sub-Committee agreed that such good seamanship practice is not required to be given as SOLAS regulation.

13. **Next session of the Sub-Committee**

The 56th Session of the Sub-Committee is scheduled from 26th to 30th July 2010.

14. **Summary of the decision (list of the finalized instruments)**

Among items introduced in this report, considerations on the following items were completed at NAV 55. These texts will be forwarded to MSC 86 (May 2010) for appropriate action.

**Draft Amendments to the SOLAS Convention**

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**Draft Assembly Resolution**

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**Draft amendments to A.889 (21) – Recommendation on Pilot Transfer Arrangement**

| MSC 87 | A27 | TBD | 10 |

**Draft MSC Resolution**

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**Draft MSC Circulars**

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<td>Draft MSC Circular on Unified Interpretation of SOLAS Chapter V</td>
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