

SUB-COMMITTEE ON SAFETY OF
NAVIGATION
59th session
Agenda item 20

NAV 59/WP.1
5 September 2013
Original: ENGLISH

DISCLAIMER

As at its date of issue, this document, in whole or in part, is subject to consideration by the IMO organ to which it has been submitted. Accordingly, its contents are subject to approval and amendment of a substantive and drafting nature, which may be agreed after that date.

DRAFT REPORT TO THE MARITIME SAFETY COMMITTEE

1 GENERAL

1.1 The Sub-Committee on Safety of Navigation held its fifty-ninth session from 2 to 6 September 2013 under the Chairmanship of Mr. J.M. Sollosi (United States). The Vice-Chairman, Mr. K. Billiar (Ukraine), was also present.

1.2 The session was attended by delegations and observers from Member Governments, international organizations and non-governmental organizations in consultative status as listed in document NAV 59/INF.1.

Secretary-General's opening address

1.3 The Secretary-General welcomed participants and delivered his opening address, the full text of which can be downloaded from the IMO website at the following link: <http://docs.imo.org/Meetings/Media.aspx>.

1.4 The delegation of the Russian Federation noted with appreciation the remarks made by the Secretary-General relating to his recent voyage through the Northern Sea Route to observe the hazards of navigating in the Arctic Ocean.

1.5 The delegation of the Philippines thanked the Secretary-General for his condolences and message of sympathy for the lives lost in the recent Philippines ferry tragedy.



Chairman's remarks

1.6 In responding, the Chairman thanked the Secretary-General for his words of guidance and encouragement and assured the Secretary-General that his advice and requests would be given every consideration in the deliberations of the Sub-Committee and its working groups.

Expression of condolence

1.7 The Sub-Committee noted with great sadness, the passing away of Dr. C.P. Srivastava, Secretary-General Emeritus, KCMG, and, as a mark of respect, observed a minute of silence.

Adoption of the agenda and related matters

1.8 The Sub-Committee adopted the agenda (NAV 59/1), and agreed, in general, that the work of the Sub-Committee should be guided by the annotations to the provisional agenda and timetable (NAV 59/1/1, as amended). The agenda, as adopted, with the list of documents considered under each agenda item, is set out in document [NAV 59/INF...].

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the decisions and comments pertaining to its work made by MEPC 64, C 109, MSC 91, COMSAR 17, FSI 21, DE 57, STW 44, MEPC 65 and MSC 92 (NAV 59/2, NAV 59/2/1 and NAV 59/2/2) including C 110 and took them into account in its deliberations under the relevant agenda items.

3 ROUTEING OF SHIPS, SHIP REPORTING AND RELATED MATTERS

3.1 The Chairman recalled that NAV 51 had agreed that a preliminary assessment of ships' routeing proposals would be made by the Chairman in consultation with the Secretariat and the Chairman of the Ships' Routeing Working Group and disseminated as a working paper. Such a preliminary assessment would follow the general criteria in MSC/Circ.1060 and MSC.1/Circ.1060/Add.1 and would not address the technical aspects of the proposals. Accordingly, he had, in cooperation with the Secretariat and the Chairman of the working group, prepared document NAV 59/WP.2 outlining a preliminary assessment of the ships' routeing and ship reporting proposals. It was noted that no submissions on ship reporting systems had been received. In general, the proposals were in conformity with the criteria outlined in MSC/Circ.1060 and MSC.1/Circ.1060/Add.1.

New traffic separation schemes (TSSs)

Establishment of new traffic separation schemes "On the Pacific coast of Panama"

3.2 The Sub-Committee briefly considered a proposal by Panama (NAV 59/3) for establishing three new traffic separation schemes on the Pacific coast of Panama together with related inshore traffic zones.

3.3 The delegation of Denmark, whilst supporting the proposal, in general, expressed concern regarding the proposed maximum speed limit of 10 knots during the four months (August – November) for the Gulf of Panama section of the proposed traffic separation scheme.

3.4 In this context, the Secretariat clarified that in Section "F" of the IMO Publication on Ships' Routeing, under the Rules for vessels navigating through the Straits of Malacca and Singapore, Rule 7 specified for VLCCs and deep-draught vessels navigating in the Straits of Malacca and Singapore, shall, as far as it is safe and practicable, proceed at a speed of not more than 12 knots over the ground in certain stretches of the IMO-adopted traffic separation scheme and deep-water route.

Establishment of new traffic separation schemes "At the approaches to Puerto Cristóbal"

3.5 The Sub-Committee briefly considered a proposal by Panama (NAV 59/3/1) for establishing a new traffic separation scheme at the approaches to Puerto Cristóbal, on the Caribbean Sea, opposite the northern approach to the Panama Canal, together with a precautionary area and two inshore traffic zones.

Amendments to existing Traffic Separation Schemes (TSSs)

Amendment to the existing Traffic Separation Scheme "Off Ushant"

3.6 The Sub-Committee briefly considered a proposal by France (NAV 59/3/4) for amendments to the existing traffic separation scheme "Off Ushant".

Routeing measures other than Traffic Separation Schemes (TSSs)**Establishment of a new recommendatory two-way route in the Great Barrier Reef and Torres Strait**

3.7 The Sub-Committee briefly considered a proposal by Australia (NAV 59/3/2) for establishing a new recommendatory two-way route in the Great Barrier Reef and Torres Strait.

3.8 The delegation of Singapore supported, in principle, the recommendatory two-way route as set out in the proposal by Australia (NAV 59/3/2), and noted that the proposal respected the authority of the Organization in approving routeing measures that have an impact on safety of navigation outside the territorial waters of Member States and straits used for international navigation.

Revocation of an existing Area To Be Avoided and an existing Mandatory No Anchoring Area at El Paso Deep-water port in the Gulf of Mexico

3.9 The Sub-Committee briefly considered a proposal by the United States (NAV 59/3/3) for the revocation of an existing Area To Be Avoided and an existing mandatory No Anchoring Area at El Paso Energy Bridge Deep-water port in the Gulf of Mexico, which were implemented on 1 July 2005. The Deep-water port has been decommissioned and its associated apparatus had been removed. The existing Area To Be Avoided and the existing mandatory No Anchoring Area were therefore no longer needed to protect the Deep-water port.

Growing traffic through the environmentally sensitive waters of Papua New Guinea

3.10 The Sub-Committee noted with interest and appreciation the useful information provided by Australia and Papua New Guinea (NAV 59/INF.3) on growing ship traffic through the environmentally sensitive waters of Papua New Guinea and highlighting the increasing risks to maritime safety due to the increased traffic.

Review of adopted mandatory ship reporting systems

3.11 The Chairman recalled once again that at previous sessions, his predecessor had subsequently taken the initiative as Chairman to bring to the attention of Members the need for carrying out an evaluation of adopted mandatory ship reporting systems and had appealed to Members to undertake this exercise.

3.12 The Chairman suggested that Member Governments should review the various ship reporting systems adopted by the Organization, at an early date to ensure that they are all up to date.

Guidance on amendments to existing IMO adopted ships' routeing systems

3.13 The Chairman invited the Sub-Committee's attention to paragraph 3.17 of the *General Provisions on Ships' Routeing* (resolution A.572(14)), as amended, that states: "A routeing system, when adopted by IMO, shall not be amended or suspended before consultation with an agreement by IMO unless local conditions or the urgency of the case require that earlier action be taken." The intention of this requirement was to ensure consistency and predictability in routeing measures and the charting of such measures, particularly with regard to TSSs.

3.14 The Chairman urged Member Governments to abide by this requirement and inform the Organization of any planned changes to an IMO-adopted routeing measure, so that the formal procedures for amendments were followed in line with the *General Provisions on Ships' Routeing*.

Establishing the Ships' Routeing Working Group

3.15 After a preliminary discussion, as reported in paragraphs 3.1 to 3.9 above, the Sub-Committee re-established the Ships' Routeing Working Group and instructed it, taking into account any decisions of, and comments and proposals made in Plenary as well as relevant decisions of other IMO bodies (agenda item 2), for consideration and approval by Plenary to:

- .1 consider all documents submitted under agenda item 3 (except information document NAV 59/INF.3) regarding routeing of ships and related matters and prepare routeing measures, as appropriate including recommendations for consideration and approval by Plenary.

Report of the Ships' Routeing Working Group

[3.16 Having received and considered the Ships' Routeing Working Group's report (NAV 59/WP.6), the Sub-Committee approved it in general and, in particular (with reference to paragraphs [...] to [...] and annexes 1 to [...]), took action as summarized in the ensuing paragraphs.]

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

4 APPLICATION OF THE SATELLITE NAVIGATION SYSTEM "BEIDOU" IN THE MARITIME FIELD

4.1 The Sub-Committee recalled that MSC 91 had agreed to include in the 2012-2013 biennial agenda of the NAV Sub-Committee and provisional agenda for NAV 59, an output on "Application of the satellite navigation system 'BeiDou' in the maritime field", with a target completion year of 2014.

4.2 The Sub-Committee considered document NAV 59/4 (China) containing the text of draft performance standards for shipborne "BeiDou" Satellite Navigation System (BDS) receiver equipment, developed by taking into account the shipborne GPS, GLONASS and GALILEO receiver performance standards and the maritime requirements, specified in resolutions A.1046(27) and A.915(22). BDS was independently developed and operated by China and was designed to provide all-weather and all-time positioning, velocity and timing services for global users with high accuracy and reliability. BDS came into official service with full operational capability covering most parts of the Asia-Pacific region at the end of 2012, and would be completely established and provide global service by 2020.

4.3 The Sub-Committee also considered document NAV 59/4/1(China) providing a brief introduction to BeiDou Satellite Navigation System for a preliminary assessment of BDS by the Sub-Committee and to enable it to provide comments with regard to the information and data needed for a full evaluation of BDS, as a future component of the World-Wide Radionavigation System (WWRNS).

4.4 There was general agreement by the Sub-Committee that the annex to document NAV 59/4 should be used as the basic document to further develop the proposed draft performance standards for shipborne "BeiDou" BDS receiver equipment, and the Sub-Committee agreed to refer documents NAV 59/4 and NAV 59/4/1, to the Technical Working Group for further development/finalization with a view to approval by the Plenary.

Establishing the Technical Working Group

4.5 Having also considered agenda items 5 and 10, the Sub-Committee re-established the Technical Working Group and instructed it to consider all relevant documents submitted

under agenda items 4, 5 and 10 and, taking into account any decisions of, and comments and proposals made in Plenary, undertake the following tasks:

- .1 consider document NAV 59/4, annex 1, in particular, ad finalize the draft performance standards for shipborne "BeiDou" BDS receiver equipment for adoption by MSC 93 in May 2014 (agenda item 4);
- .2 consider document NAV 59/4/1, for a preliminary assessment of BDS and provide comments with regard to the information and data needed for a full evaluation of BDS, as a future component of the World-Wide Radionavigation System (WWRNS) (agenda item 4);
- .3 consider document NAV 59/5, paragraphs 2 to 7 and annex, and prepare a draft liaison statement back to ITU WP 5B on the proposed amendments to Recommendation ITU-R M.1371-4 (agenda item 5);
- .4 consider document NAV 59/5, paragraphs 12 to 18, with respect to regulatory provisions and spectrum allocations to enable possible new Automatic Identification System (AIS) technology applications and possible new applications to improve maritime radiocommunication in accordance with resolution 360 (WRC-12) and prepare guidance for the IMO/ITU Experts Group meeting in October 2013, as appropriate (agenda item 5);
- .5 consider document NAV 59/5, paragraphs 19 to 22, with respect to the preparation of WRC-15, Agenda item 1.1 and review the outcome of the meeting of ITU-R JTG 4-5-6-7, held in July 2013, and consider the need to send a liaison statement to ITU-R responding to the latest development in the Task Group for consideration by the next meeting of JTG 4-5-6-7, planned to be held in October 2013 (agenda item 5); and
- .6 consider document NAV 58/10 and prepare the draft text of a revised Assembly resolution on *Guidelines for the onboard operational use of shipborne Automatic Identification systems (AIS)* (resolution A.917(22), as amended)) (agenda item 10).

Report of the Technical Working Group

[4.6 Having received and considered the Technical Working Group's report (NAV 59/WP.7), the Sub-Committee (with reference to paragraphs [...] to [...] and annexes...) took action as summarized in the ensuing paragraphs.]

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

5 ITU MATTERS, INCLUDING RADIOCOMMUNICATIONS ITU-R STUDY GROUP MATTERS

5.1 The Sub-Committee noted that MSC 90 had extended the target completion date of this agenda item to 2013.

General

5.2 The Sub-Committee noted the information provided by the Secretariat (NAV 59/5) on the outcome of the meeting of ITU-R Working Party 5B held from 20 to 31 May 2013.

Revision of Recommendation ITU-R M.1371-4

5.3 The Sub-Committee noted that NAV 58 had sent a liaison statement to Working Party 5B (NAV 58/14, annex 5), commenting on the draft revision of Recommendation ITU-R M.1371-4 and requesting the Working Party to liaise the updated version of the recommendation for consideration by the Sub-Committee at this session. Working Party 5B, having updated the draft revision of the recommendation at its May meeting this year, sent a liaison statement to the attention of the Sub-Committee, (NAV 59/5, annex), inviting the Sub-Committee to consider proposed amendments and send a liaison statement back to Working Party 5B for consideration at its upcoming meeting in November this year with a view to approval by Study Group 5.

5.4 The delegation of Australia expressed the view that Recommendation ITU-R M.1371-4 had been fully developed, subject to some minor corrections of an editorial nature and was ready for implementation.

5.5 In light of the foregoing, the Sub-Committee referred the liaison statement on the proposed revision of Recommendation ITU-R M.1371-4 to the Technical Working Group for detailed consideration and the preparation of a liaison statement to Working Party 5B.

Development of a Working document towards a preliminary draft new recommendation on Characteristics of a digital system in the maritime HF band

5.6 The Sub-Committee noted (NAV 59/5, paragraph 8) that Working Party 5B had developed a Working document towards a preliminary draft new recommendation on characteristics of a digital system, named Navigational Data for broadcasting maritime safety and security-related information from shore-to-ship in the maritime HF band.

Development of a draft new report on Man Overboard Systems and AIS for distress communications

5.7 The Sub-Committee further noted (NAV 59/5, paragraphs 9 and 10) that Working Party 5B had developed the draft new report on maritime survivor locating systems and devices (Man Overboard Systems) including a first draft of a report on AIS for distress communications.

5.8 The delegation of China expressed view that with respect to Man Overboard Systems it might be necessary to develop relevant performance standards.

5.9 With regard to the first draft of a new report on the use of AIS for distress communications, the delegations of Sweden and Denmark expressed the view that distress alerting was more appropriately addressed within the context of the review of the GMDSS. In this context, the ICS observer cautioned against expanding the use of AIS within GMDSS as it could result in a new equipment carriage requirement.

WRC-15, Agenda item 1.16

5.10 The Sub-Committee recalled that NAV 58 had reviewed the proposed initiatives on applications using AIS technology and had provided comments on the Draft CPM text in a liaison statement to Working 5B (NAV 58/14, paragraphs 5.16 to 5.18, annex 6). The Working Party (NAV 59/5, paragraphs 14 to 17) was considering several issues related to this agenda item.

5.11 Accordingly, the Sub-Committee had been invited to consider the developments with respect to regulatory provisions and spectrum allocations to enable possible new Automatic

Identification System (AIS) technology applications and possible new applications to improve maritime radiocommunication in accordance with resolution 360 (WRC-12).

5.12 In the light of foregoing, the Sub-Committee referred the matter to the Technical Working Group to prepare guidance for the IMO/ITU Experts Group meeting in October 2013, as appropriate.

WRC-15, Agenda item 1.1

5.13 The Sub-Committee also recalled that in relation to World Radiocommunication Conference 2015, Agenda item 1.1, Working Party 5B had noted the liaison statement sent by COMSAR 17 to ITU-R expressing IMO's concerns in relation to the wide range of frequency bands identified by ITU-R for future assessment of the suitability for International Mobile Telecommunications (IMT) (COMSAR 17/17, annex 5). In preparation for World Radiocommunication Conference 2015, a special Joint Task Group (JTG 4-5-6-7) had been established to co-ordinate studies on this matter and this Joint Task Group was currently studying all frequency bands for the possible sharing with IMT. COMSAR 17 had noted that there was special interest in the frequency band in which maritime (S-band) radars operated and particular concerns had been expressed in the liaison statement on the possibility of harmful interference to the operation of these radars when the frequency band would be shared with IMT applications in future.

5.14 The Sub-Committee was of the view that it was necessary to review the outcome of this meeting of the Joint Task Group and consider the need to send a new liaison statement to ITU-R responding to the latest development in the Joint Task Group for consideration by the next meeting of this Group, planned to be held in October 2013. Accordingly, the Sub-Committee referred the matter to the Technical Working Group to prepare a liaison statement to ITU-R for the JTG 4-5-6-7 meeting planned for October 2013.

WRC-15, Agenda item 1.12

5.15 The Sub-Committee noted (NAV 59/5, paragraphs 23 and 24) that Working Party 5B had prepared a preliminary draft revision and further progressed the work on the revision of recommendation ITU-R M.1796-1, providing Characteristics of and protection criteria for terrestrial radars operating in the radio determination service in the frequency band 8 500-10 680 MHz (the so called X-band radars), to update the characteristics and add further systems and details of antennas.

Report of the Technical Working Group

[5.16 Having received and considered the Technical Working Group's report (NAV 59/WP.7), the Sub-Committee (with reference to paragraphs [...] to [...] and annexes...) took action as summarized in the ensuing paragraphs.]

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

6 DEVELOPMENT OF AN E-NAVIGATION STRATEGY IMPLEMENTATION PLAN

6.1 The Sub-Committee recalled that NAV 55, NAV 56, NAV 57 and NAV 58 respectively had established a working group including a correspondence group to work intersessionally to progress the issue.

6.2 The Sub-Committee also recalled the outcome of MSC 90 (MSC 90/28, paragraphs 10.9 to 10.11).

6.3 The Sub-Committee further recalled the outcome of NAV 58 (NAV 58/14, paragraphs 6.40 to 6.42).

6.4 The Sub-Committee noted that MSC 91 had noted the progress in the development of an e-navigation strategy implementation plan and the re-establishment of a correspondence group to progress the work intersessionally.

6.5 The Sub-Committee also noted that COMSAR 17 had expressed general appreciation for the work carried out by the Correspondence Group on e-navigation, in particular with respect to the ongoing preparation of the final list of e-navigation solutions, the identification of risk control options and the feasibility evaluation process, including the cost-benefit analysis. COMSAR 17 had also noted the comments and observations of the working group related to e-navigation and requested the Correspondence Group on e-navigation to take them into account for the preparation of the final list of potential e-navigation solutions to be submitted to NAV 59, as well as during the cost-benefit and risk-analysis process.

6.6 The Sub-Committee further noted that STW 44 had noted the ongoing processes of Risk and Cost/Benefit Analyses for e-navigation and agreed that HEAP would benefit from a general review to ensure that it was fit for wider use.

6.7 The Chairman recalled that;

- .1 the Secretary-General's opening remarks underlining the finalization of the prioritized five potential main solutions; Risk and Cost-Benefit Analysis with the five prioritized main solutions and the seven corresponding Risk Control Options (RCOs), further development of the Strategy Implementation Plan (SIP). Other parallel developments should concentrate on *Guidelines for usability evaluation of navigational equipment*; Integrated Position, Navigation and Timing System, Software quality assurance and the overarching Human Centred Design framework but without delaying the finalization of the SIP; and
- .2 it was important to remain focused on the agreed work programme and to not become distracted by tangential matters such as new technology. It was imperative that the Sub-Committee should now focus attention primarily on finalizing the prioritized five potential main solutions; Risk and Cost-Benefit Analysis with the five prioritized main solutions and the seven corresponding RCOs, further develop the draft Strategy Implementation Plan (SIP) and keep to the revised joint plan of work approved by MSC 90.

6.8 The Sub-Committee considered the report of the correspondence group (CG) on e-navigation (NAV 59/6) outlining the prioritized five potential main solutions based on the preliminary list of potential e-navigation solutions; the finalized Risk and Cost-Benefit Analysis with the five prioritized main solutions and the seven corresponding RCOs, the preliminary list of Maritime Service Portfolios, the need for resilient PNT for the implementation of e-navigation, the inclusion of Software Quality Assurance, including a software updating regime, within the overarching Human Centred Design framework including a draft Strategy Implementation Plan (SIP).

6.9 There was general support for the report of the correspondence group. Delegations were of the view that the Strategy Implementation Plan (SIP) needed to be flexible in order to accommodate future developments and also take into account the role of other international

organizations. In addition, with respect to an identified user need for resilient PNT for the implementation of e-navigation, it would be necessary to develop generic requirements before a technical solution. Some delegations were of the view that the preliminary guidelines for test beds and Human Centered Design should be merged.

6.10 The Sub-Committee agreed that the report of the CG should be used as the basic document for further work during this session and instructed the e-navigation Working Group, to undertake a thorough review of the document before the Sub-Committee could take the requested relevant actions.

6.11 The Sub-Committee noted that the Chairman in cooperation with the Chairman of the e-navigation Correspondence Group and the Secretariat had prepared a working paper (NAV 59/WP.3) to assist the e-navigation Working Group further develop the draft Strategy Implementation Plan (SIP) (NAV 59/6, annex 6).

6.12 Australia (NAV 59/6/1) provided information on the results of a study conducted during an e-navigation usability workshop, held in Australia during March 2013, the results of which indicate that designers should place the most emphasis on "*Suitability of task*" design usability principle. This particular principle (within the context of Human-Centred Design) required the task be fitted to the human, rather than the human having to adapt to the task.

6.13 Australia (NAV 59/6/5), whilst supporting the report of the correspondence group offered suggestions for the development of the IMO e-navigation Strategy Implementation Plan (SIP). Australia was of the view that SIP should articulate the changes that would be needed to the relevant IMO rule-making processes.

6.14 The Sub-Committee referred documents NAV 59/6/1 and NAV 59/6/5 (Australia) to the e-navigation Working Group for consideration and advice.

6.15 The Sub-Committee considered documents NAV 59/6/2 and NAV 59/6/3 (Republic of Korea) proposing the development of draft software-quality assurance guidelines for e-navigation as part of the development of an e-navigation strategy implementation plan and outlining the need to extend the concept of "goals" in setting up test tasks for usability evaluations of navigational equipment for e-navigation.

6.16 Whilst there was support for the Republic of Korea proposals, some delegations, noting that situational awareness was a human role, expressed concern regarding technical solutions for enhancing situational awareness on the bridge.

6.17 After some discussion, the Sub-Committee referred documents NAV 59/6/2 and NAV 59/6/3 (Republic of Korea) to the e-navigation Working Group for consideration and advice.

6.18 IHO (NAV 59/6/4) provided comments on the section of the report of the e-navigation Correspondence Group (NAV 59/6) addressing the development of the concept of Maritime Service Portfolios and recommending to merge proposed MSP 12 and 13 and the hydrographic component of MSP 16 into a single MSP called "Hydrographic services" and to delete MSP 5 (MSI service) and assign the functionalities of MSP 5 as the "update" component of the basic services concerned (for example: include the provision of navigational warnings and chart correction data in MSP "Hydrographic services").

6.19 The Sub-Committee referred document NAV 59/6/4 (IHO) to the e-navigation Working Group for consideration and advice.

6.20 ICS and BIMCO (NAV 59/6/6) provided comments on the report of the e-navigation Correspondence Group (NAV 59/6) and proposed a review of the Formal Safety Assessment (FSA) and the identified Risk Control Options. They also proposed that the e-navigation Strategy Implementation Plan should include alternative analysis in addition to the FSA, and that the Sub-Committee should reconsider and review the concept of Maritime Service Portfolios.

6.21 In the ensuing discussions, the Sub-Committee did not agree with the proposal of ICS and BIMCO that:

- .1 the FSA and RCO costs in annex 1 to NAV 59/6 should be peer-reviewed, considered further with additional organizations and companies consulted who had access to accurate figures; and
- .2 the FSA Expert Group conduct a comprehensive review of the FSA with particular attention to the costs used, the calculated risks, the validity of data and the assumptions used.

6.22 In light of the foregoing, the Sub-Committee referred document NAV 59/6/6 (ICS and BIMCO), except paragraphs 22.2 and 22.3, to the e-navigation Working Group for consideration and advice.

6.23 The Republic of Korea (NAV 59/6/7) provided comments on the report of the e-navigation Correspondence Group (NAV 59/6) and proposed the addition of realistic examples of implemented solutions in the Strategy Implementation Plan for e-navigation with respect to solution 2 and RCO 4 (NAV 59/6, annex 6).

6.24 The Sub-Committee referred document NAV 59/6/7 (Republic of Korea) to the e-navigation Working Group for consideration and advice.

6.25 The Sub-Committee noted with appreciation the information provided by Poland (NAV 59/INF.2) on a research project in the field of e-navigation about a decision support system in collision situations including the achieved research results.

6.26 The Sub-Committee noted with appreciation the information provided by IHO (NAV 59/INF.6) on the development of S-100 – the IHO Universal Hydrographic Data Model – and associated Product Specifications, in relation to the development of an e-navigation strategy implementation plan.

6.27 The Sub-Committee noted with appreciation the information provided by Sweden (NAV 59/INF.8) on the MONALISA project, which was aimed at making a solid contribution to an efficient, safe and environmentally-friendly maritime transport. This was obtained through the development, demonstration and dissemination of innovative sea traffic management services to the shipping industry, which might serve as a foundation for possible future international use.

Establishing the e-navigation Working Group

6.28 After a preliminary discussion, as reported in paragraphs 6.8 to 6.27, the Sub-Committee re-established the e-navigation Working Group and instructed it to consider the relevant documents submitted under agenda item 6 – in particular, NAV 59/6 (Norway), NAV 59/6/1(Australia), NAV 59/6/2, NAV 59/6/3 and NAV 59/6/7 (Republic of Korea), NAV 59/6/4 (IHO), NAV 59/6/5 (Australia), and NAV 59/6/6 (ICS and BIMCO) (except paragraphs 22.2 and 22.3), including the outcome of NAV 58, COMSAR 17, STW 44, and

taking into account any decisions of, and comments and proposals made in Plenary, undertake the following tasks:

- .1 review the report of the correspondence group, taking into account documents NAV 59/6/1, NAV 59/6/2, NAV 59/6/3, NAV 59/6/4, NAV 59/6/5, NAV 59/6/6 (except paragraphs 22.2 and 22.3) and NAV 59/6/7 including document NAV 59/WP.3 and provide comments and recommendations with respect to the actions requested in paragraphs 84.1 to 84.10 of document NAV 59/6;
- .2 consider documents NAV 59/6/1, NAV 59/6/3 and, specifically, ISO standard 9421-110 with respect to the draft *Guidelines on Human Centred Design (HCD) for navigational equipment and systems*, and provide comments and recommendations, as appropriate;
- .3 consider document NAV 59/6/2 (Republic of Korea) with respect to the need to take into account the link between Human Centred Design (HCD) and Software Quality Assurance (SQA) as part of the ongoing work, and provide comments and recommendations, as appropriate; and
- .4 review and revise the terms of reference for a correspondence group to progress work intersessionally for reporting to HTW 1 and NCSR 1, based on the revised joint plan of work approved by MSC 90.

Report of the e-navigation working group

[6.29 Having received and considered the e-navigation working group's report (NAV 59/WP.8), the Sub-Committee (with reference to paragraphs [...] to [...] and annexes 1 to [...]) took action as summarized in the ensuing paragraphs.]

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

7 DEVELOPMENT OF POLICY AND NEW SYMBOLS FOR AIS AIDS TO NAVIGATION

7.1 The Sub-Committee recalled that:

- .1 MSC 86 had agreed to include, in the work programme of the NAV Sub-Committee, a high-priority item on "New symbols for AIS aids to navigation", with a target completion date of 2013;
- .2 NAV 56 had agreed that it was premature to establish a correspondence group on AIS AtoN symbology, as it was first imperative to have a policy in place before any major work was undertaken on this issue; and
- .3 MSC 88 had agreed to expand the output to include performance standards, guidance and policy on their use and, in view of the expansion, renamed the output "Development of policy and new symbols for AIS Aids to Navigation".

7.2 The Sub-Committee further recalled that NAV 57 had established a Correspondence Group (CG) to develop a first draft of a policy for AIS Aids to Navigation and submit its report for review by NAV 58.

7.3 The Sub-Committee also recalled that NAV 58 had agreed with:

- .1 the revised draft text of the policy on use of Aids to Navigation;
- .2 the opinion of the drafting group that further liaison was necessary to ensure standards developed by other international organizations, i.e. IHO, IEC and IALA align with this developing policy for AIS AtoN; and
- .3 the opinion of the drafting group that AIS Application Specific Message (ASM) should be further considered in conjunction with developments of AIS AtoN policy in the future.

7.4 The Sub-Committee finally recalled that NAV 58 had re-established the Correspondence Group (CG) on Development of policy and new symbols for AIS Aids to Navigation, under the coordination of Japan and instructed it to consider documents NAV 58/7 and NAV 58/WP.7, including comments made in plenary and any other relevant

information to further review from an editorial point of view and finalize a revised draft of a policy for AIS Aids to Navigation, develop symbols for AIS AtoN, taking into account the symbols contained in SN/Circ.243 and other relevant guidelines, standards and publications and submit a report for consideration and review by NAV 59.

7.5 The Sub-Committee considered the report of the CG (NAV 59/7), which contained the finalized draft IMO policy on use of AIS Aids to Navigation (annex 1) and new improved symbols for AIS AtoN (annex 2) for review and endorsement by the Sub-Committee prior to submission to the Committee for approval, as appropriate.

7.6 Whilst there was support, in general, for the report of the correspondence group, the delegation of Norway expressed concerns that AIS, which originally was developed as an anti-collision measure would become less effective, if overloaded with AIS Aids to navigation information. They believed the original intent of AIS as a collision avoidance tool should remain as its main function and this should be highlighted in the policy document. In their opinion if a virtual AtoN was to be "deployed" permanently then such a feature would have to be symbolized on both paper charts and Electronic Navigational Charts. This could be a potential source for confusion by mariners when the chart contained symbols for objects that not all vessels would be able to detect, and that might differ from the chart symbol and position when transmitted ashore. They were also concerned about the proposal to use AIS AtoN as a way of promulgating Maritime Safety Information as the link between AtoN and MSI could be misunderstood.

7.7 The IHO observer informed that the IHO had issued S-52 Chart Presentation Bulletin 10 on Portrayal of virtual AIS aids to navigation, which provided guidance on the correct encoding and portrayal of Virtual AIS Aids to Navigation.

Establishing the Drafting Group on Development of policy and new symbols for AIS aids to navigation

7.8 After a preliminary discussion, as reported in paragraphs 7.5 to 7.7 above, the Sub-Committee established a drafting group and instructed it, in accordance with its decisions of, and comments and proposals made in plenary, to consider document NAV 59/7 (Japan) and review the finalized draft IMO policy on use of AIS Aids to Navigation (annex 1) and new improved symbols for AIS AtoN (annex 2) and prepare final revised texts for endorsement by the Sub-Committee prior to submission to the Committee for approval.

Report of the Drafting Group

7.9 Having received and considered the Drafting Group's report (NAV 59/WP.9), the Sub-Committee, in particular (with reference to paragraphs 3.1 to 3.2 and annexes 1 and 2.), took action as summarized in the ensuing paragraphs.

7.10 The Sub-Committee approved the report, in general, and endorsed:

- .1 the draft MSC circular on the Policy on use of AIS Aids to navigation as set out in annex [...];
- .2 the draft SN Circular on *Amended Guidelines for the presentation of navigational-related symbols, terms and abbreviations* as set out in annex [...]; and
- .3 invited the Committee to approve them.

8 REVIEW OF GENERAL CARGO SHIP SAFETY

8.1 The Sub-Committee recalled that MSC 90 (MSC 90/28, paragraph 25.20) had included in the 2012-2013 biennial agenda of the NAV Sub-Committee and in the provisional agenda for NAV 59 an item on "Review of general cargo ship safety" with a target completion year of 2013, instructing the Sub-Committee to consider the relevant risk control options listed in annex 4 to document MSC 90/WP.7.

8.2 The Sub-Committee noted (NAV 59/8) that it had been instructed to consider the following Risk Control Options (RCOs):

- .1 RCO 27 (Anchoring watch alarm integrated in ECDIS; no additional costs if ECDIS is already integrated on bridge);
- .2 RCO 32 (Combine watch alarm with autopilot): and
- .3 RCO 2 (ECDIS with AIS and RADAR, only for new buildings are matters of navigation).

8.3 The Sub-Committee also noted that according to the FSA study carried out by IACS (MSC 88/INF.6), regarding steps 3 and 4 (Risk Control Options and Cost-Benefit

Assessment, respectively), the following Risk Control Options (RCOs) were found to be cost-effective on the basis of GCAF (Gross Cost of Averting a Fatality), with a GCAF value below the threshold value of US\$3 million:

- .1 RCO 27 (Anchoring watch alarm integrated in ECDIS; no additional costs if ECDIS is already integrated on bridge) – Even if the risk reduction for crew is relatively small, this RCO is cost-effective because no or only minimal costs would be observed if ECDIS is already installed on a ship.
- .2 RCO 32 (Combine watch alarm with autopilot) – This RCO leads to relatively small installation costs. The NCAF (Net Cost of Averting a Fatality) value is negative and hence this RCO is evaluated to be beneficial.
- .3 RCO 2 (ECDIS with AIS and RADAR, only for new buildings) – This Risk Control Option (RCO) was found to be cost-effective on the basis of a positive NCAF (Net Cost of Averting a Fatality – consideration of benefit): From the perspective of NCAF, this RCO is cost-effective with a value below US\$3 million: the NCAF value is less than 1/10 of the threshold.

8.4 Having considered the RCOs in question, the Sub-Committee was of the view that with respect to:

- .1 RCO 27 (Anchoring watch alarm integrated in ECDIS; no additional costs if ECDIS is already integrated on bridge) – This was commonly integrated on ECDIS systems. For a mandatory requirement, the performance standards would have to be amended, which would entail a submission from a Member Government of a new unplanned output for consideration by the Committee;
- .2 RCO 32 (Combine watch alarm with autopilot) – The BNWAS has been already introduced in recent amendments to SOLAS regulation V/19 and that the BNWAS has a facility of control from the auto-pilot; and
- .3 RCO 2 (ECDIS with AIS and RADAR, only for new buildings) – This had been already addressed by the recent amendments to SOLAS regulation V/19.

- 8.5 In light of the foregoing, the Sub-Committee agreed that no further action was necessary and requested the Committee to delete this unplanned output from the biennial agenda.

9 REVISION OF THE INFORMATION CONTAINED IN THE EXISTING ANNEXES TO THE RECOMMENDATION ON THE USE OF ADEQUATELY QUALIFIED DEEP-SEA PILOTS IN THE NORTH SEA, ENGLISH CHANNEL AND SKAGERRAK (RESOLUTION A.486(XII))

9.1 The Sub-Committee recalled that MSC 90 having considered documents MSC 90/25/2 (Austria et al.) and MSC 90/25/21 (Liberia, Marshall Islands, Singapore, ICS and CLIA) had agreed to exclude the proposal for a new annex from the scope of the work and include in the 2012-2013 biennial agenda of the NAV Sub-Committee, an unplanned output on "Revision of the information contained in the existing annexes to the Recommendation on the use of adequately qualified deep sea pilots in the North Sea, English Channel and Skagerrak (resolution A.486(XII))", with a target completion year of 2013. Furthermore, noting that NAV 59 was scheduled to take place after MSC 92 but before A 28, MSC 90 had authorized the NAV Sub-Committee to submit the revised Assembly resolution directly to A 28.

9.2 The Sub-Committee agreed that the resolutions should not include a list of Competent Authorities as it would be practically impossible to keep the list updated.

9.3 The Sub-Committee noted that under agenda item 14, there was an identical draft Assembly resolution on Revision of the information contained in the existing annexes to the *Recommendation on the use of adequately qualified deep-sea pilots in the Baltic* (resolution A.480(XII)).

Establishing the Drafting Group on the use of adequately qualified deep-sea Pilots

9.4 Having also considered agenda item 14, the Sub-Committee established the Drafting Group on the use of adequately qualified Deep-sea Pilots and instructed it taking into account documents MSC 90/25/2 and NAV 59/14, and decisions of, and comments and proposals made in Plenary, to prepare final revised texts of the following draft Assembly resolutions for endorsement by the Sub-Committee prior to submission to A 28 for adoption:

- .1 *Recommendation on the use of adequately qualified deep-sea pilots in the North sea, English Channel and Skagerrak* (resolution A.486(XII)); and

- .2 *Recommendation on the use of adequately qualified deep-sea pilots in the Baltic* (resolution A.480(XII)).

9.5 The Sub-Committee approved the report, in general, and endorsed the draft Assembly resolution on *Recommendation on the use of adequately qualified deep-sea pilots in the North Sea, English Channel and Skagerrak* (resolution A...(28)), as set out in annex [...]; for forwarding to A 28 for adoption.

10 REVISION OF THE GUIDELINES FOR THE ONBOARD OPERATIONAL USE OF SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEMS (AIS)

10.1 The Sub-Committee recalled that MSC 90 had agreed to include in the 2012-2013 biennial agenda of the NAV Sub-Committee an unplanned output on "Revision of the Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)", with a target completion year of 2014, in association with the COMSAR Sub-Committee as and when requested by the NAV Sub-Committee.

10.2 China (NAV 59/10) proposed an amendment to the *Guidelines for the onboard operational use of shipborne Automatic Identification Systems (AIS)* (resolution A.917(22), as amended), in order to update the Guidelines.

10.3 The Sub-Committee supported, in principle to update the Guidelines to include AIS-SART. Some delegations recognized that although the Guidelines were nearly ten years old, suggested that it might be better to wait until Recommendation ITU-R M.1371-4 had been finalized. Some delegations were of the view that the updating of the Guidelines should be restricted to operational use. Others were of the view that the proposed changes to the technical table relating to ship's data content were not in conformity with the existing performance standards.

10.4 Furthermore, the Sub-Committee agreed that the annex to document NAV 59/10 should be used as the basic document by the Technical Working Group to review the proposed amendments to the *Guidelines for the onboard operational use of shipborne Automatic Identification Systems (AIS)* (resolution A.917(22), as amended) and referred document NAV 59/10 to the Technical Working Group for a detailed consideration.

Report of the Technical Working Group

[10.5 Having received and considered the Technical Working Group's report (NAV 59/WP.7), the Sub-Committee (with reference to paragraphs [...] to [...] and annexes [...]) took action as summarized in the ensuing paragraphs.]

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

11 CONSOLIDATION OF ECDIS-RELATED IMO CIRCULARS

11.1 The Sub-Committee recalled that MSC 90 had agreed to include in the 2012-2013 biennial agenda of the NAV Sub-Committee, an unplanned output on "Consolidation of ECDIS-related IMO circulars", with a target completion year of 2014.

11.2 Australia et al. (NAV 59/11) proposed the consolidation of all ECDIS-related information contained in several IMO circulars into a single MSC circular.

11.3 Several delegations and a few industry observers spoke on the issue and supported, in principle, the need to consolidate all ECDIS-related information contained in several IMO circulars, as a single IMO circular. This was based on the perceived need to have all guidance related to ECDIS issues as a single circular, which could be easily kept up-to-date without duplication.

11.4 A majority of the delegations that spoke on the issue were of the view that the draft MSC circular in its present form needed to be reviewed carefully to ensure that the aforementioned objectives were achieved.

11.5 After considerable discussion, the Sub-Committee recognized that due to time constraints, it was not possible at this session to consolidate the existing circulars into one consolidated circular, which would also indicate revocation of already existing circulars.

11.6 The Chairman in his summing up, and recognizing that the target completion date of this unplanned output was 2014, requested members to reconsider the issue so that the task could be completed at the first session of the newly merged Sub-Committee on Navigation, Communications Search and Rescue (NCSR 1).

12 CONSIDERATION OF ECDIS MATTERS RELATED TO THE IMPLEMENTATION OF THE CARRIAGE REQUIREMENTS IN SOLAS REGULATIONS V/19.2.10 AND V/19.2.11

12.1 The Sub-Committee recalled that MSC 91 had agreed to include in the 2012-2013 biennial agenda of the NAV Sub-Committee and provisional agenda for NAV 59, an output on "Consideration of ECDIS matters related to the implementation of the carriage requirements in SOLAS regulations V/19.2.10 and V/19.2.11", with a target a completion year of 2014.

12.2 BIMCO and Denmark (NAV 59/12) provided the outcome of a survey conducted to obtain information on the implementation of use of ECDIS and, in particular, operating anomalies. In general, most ECDIS systems appeared to function without anomalies.

12.3 IHO (NAV 59/12/1) provided information reports on the action taken by IHO since NAV 58 to monitor and address ECDIS issues related to the implementation of the carriage requirements in SOLAS regulations V/19.2.10 and V/19.2.11 and stated that no major new issue had been identified since NAV 58. Nonetheless, the IHO Secretariat would continue to monitor the evolution of ECDIS and the associated standards, actively pursuing ways to resolve any future issues whenever they arose, whilst continuing to report progress to Member States, the relevant IMO bodies and to the wider maritime community. Furthermore, progress in resolving the outstanding issues with ECDIS operating anomalies was well underway with the active involvement of all key stakeholders

12.4 The delegation of China informed the Sub-Committee that in response to the request of NAV 58 on proposals to address any operating anomalies of ECDIS, China had conducted a survey on ECDIS issues on board Chinese ships to collect information and data on any operating anomalies of ECDIS, data update and maintenance, software update as well as ECDIS training. The survey had sent out a total number of 620 paper questionnaires, among which 36.6 per cent of participating ships have never encountered ECDIS software anomalies. With respect of the result of survey on ECDIS training, most of the ECDIS users who experienced software anomalies recognized the importance of ECDIS training. 88.2 per cent of ECDIS users recognized the importance of training on ECDIS use and problem-solving. In addition, the survey also showed that ECDIS users were very concerned about the user-friendliness of the operating interface of the ECDIS system.

12.5 The Sub-Committee noted the information contained in documents NAV 59/12 and NAV 59/12/1 along with the oral information provided by China.

Proposal for modernization of ECDIS for VHF radiocommunication

12.6 Ukraine (NAV 59/12/2) proposed the modernization of ECDIS for operation with VHF DSC. Ukraine was of the view that if an integration of VHF DSC and ECDIS was implemented, it would provide an essential simplification for an active address radiocommunication and reliable vessels identification in relation to current navigating conditions.

12.7 Several delegations including industry observers spoke on the issue. There was in general support for the proposal; however, several delegations and observers voiced their concern on using VHF communications as collision avoidance tool and felt that this was inherently risky. They were of the firm opinion that proper observance of the COLREGs was the most appropriate option for collision avoidance. Views were also expressed that this proposal could form a part of the future review of GMDSS and development of e-navigation.

12.8 The Sub-Committee was of the view that the proposal merited a thorough technical review prior to integration within existing navigational systems and invited Ukraine to make a proposal to the Maritime Safety Committee for an unplanned output for consideration by the newly merged Sub-Committee on Navigation, Communications and Search and Rescue (NCSR).

13 DEVELOPMENT OF EXPLANATORY FOOTNOTES TO SOLAS REGULATIONS V/15, V/18, V/19 AND V/27

13.1 The Sub-Committee recalled that at MSC 89, IHO (MSC 89/24/2) had reported on some operating anomalies identified with some ECDIS units. Other IMO Member States supported by the ICS and IFSMA, had also commented on this issue and proposed measures that ought to be taken (MSC 89/24/3). At MSC 90, IHO (MSC 90/10/1) reported on shortcomings with some ECDIS units being used at sea, particularly in older systems, which had become apparent through the analysis of results of ships' testing of the IHO-produced ECDIS and Electronic Navigational Chart (ENC) Data Presentation and Performance Check dataset.

13.2 The Sub-Committee also recalled that MSC 90 had agreed to include in the 2012-2013 biennial agenda of the NAV Sub-Committee, an unplanned output on "Development of explanatory footnotes to SOLAS regulations V/15, V/18, V/19 and V/27", with a target completion year of 2014, instructing the Sub-Committee to include the output in the provisional agenda for NAV 59.

13.3 Australia et al. (NAV 59/13) proposed a footnote be added to SOLAS regulation V/27 to clarify the requirements for nautical charts and nautical publications as they relate to Electronic Chart Display and Information Systems (ECDIS).

13.4 ICS and CLIA (NAV 59/13/1) provided comments on the footnote proposed in document NAV 59/13 to clarify SOLAS regulation V/27 and highlighted the practical difficulties that might arise from the footnote. Accordingly, they suggested that an annex be developed to SN.1/Circ.266/Rev.1, which would facilitate the development of a framework and process to formalize the development of new ECDIS display standards and also ensure that standards were only developed when necessary and that a suitable time was allowed for the update of ships' ECDIS after the release of a new standard. In addition, it was proposed that further detailed consideration of the "User Validation data set" proposed in paragraph 7.6 of document MSC 89/24/3 was undertaken to ensure implementation of any new standard could be verified and understood by the mariner and port State control.

13.5 Whilst a number of delegations supported, in principle, the inclusion of the proposed footnote, the delegation of Norway, supported by others, expressed the view that the proposed footnote was in conflict with the requirements of existing SOLAS regulation V/18.4, which states "...that ECDIS shall conform to the relevant performance standards not inferior to those adopted by the Organization in effect on the date of installation.....". In addition, a number of delegations shared the concerns expressed by ICS and CLIA regarding the practical difficulties and unintended consequences that might arise from the footnote.

13.6 The delegation of the United Kingdom stated that the footnote could be worded in such a way that it would only refer to the display and not the ECDIS operating system. The intent was to ensure that the display reflected the latest charts. However, the Sub-Committee was of the opinion that this would not solve the issue under consideration.

13.7 After some discussions, the Sub-Committee could not agree as to whether the proposed footnote could be the solution or whether there was a need to amend SOLAS regulation V/18.4 or to revise SN.1/Circ.266 in order to outline circumstances for when a software update would be required.

13.8 The Chairman in his summing up, and recognizing that the target completion date of this unplanned output was 2014, requested members to reconsider the issue and submit

relevant proposals for consideration by the first session of the newly merged Sub-Committee on Navigation, Communications Search and Rescue (NCSR 1).

14 REVISION OF THE INFORMATION CONTAINED IN THE EXISTING ANNEXES TO THE RECOMMENDATION ON THE USE OF ADEQUATELY QUALIFIED DEEP-SEA PILOTS IN THE BALTIC (RESOLUTION A.480(XII))

14.1 The Sub-Committee recalled that MSC 90 having considered document MSC 90/25/15 (Denmark et al.) had agreed to exclude the proposal for a new annex from the scope of the work and included, in the 2012-2013 biennial agenda of the NAV Sub-Committee, an unplanned output on "Revision of the information contained in the existing annexes to the Recommendation on the use of adequately qualified deep-sea pilots in the Baltic (resolution A.480(XII)), with a target completion year of 2013, instructed the Sub-Committee to include the output in the provisional agenda for NAV 59. Noting that NAV 59 was scheduled to take place after MSC 92 but before A 28, MSC 90 authorized the NAV Sub-Committee to submit the revised Assembly resolution directly to A 28.

14.2 Denmark et al. (NAV 59/14) proposed a draft text of a revised Assembly resolution on *Recommendation on the use of adequately qualified deep-sea pilots in the Baltic* (resolution A.480(XII)).

14.3 The Sub-Committee noted that under agenda item 9, there was an identical draft Assembly resolution on Revision of the information contained in the existing annexes to the *Recommendation on the use of adequately qualified deep-sea pilots in the North Sea, English Channel and Skagerrak* (resolution A.486(XII)).

14.4 The Sub-Committee agreed to forward document NAV 59/14 to the Drafting Group on the use of adequately qualified Deep-sea Pilots for review and finalization.

Report of the Drafting Group

14.5 Having received and considered the drafting group's report (NAV 59/WP.10), the Sub-Committee, in particular (with reference to paragraph 3.2 and annex 2), took action as summarized in the ensuing paragraph.

14.6 The Sub-Committee approved the report, in general, and endorsed the draft Assembly resolution on *Recommendation on the use of adequately qualified deep-sea pilots in the Baltic sea* (resolution A....(28)), as set out in annex [...] for forwarding to A 28 for adoption.

15 CASUALTY ANALYSIS

15.1 The Sub-Committee recalled that MSC 78 (MSC 78/26, paragraph 24.8) had decided that the item on "Casualty analysis" should remain on the work programme of the sub-committees.

15.2 The Sub-Committee further noted that in the context of discussion of the working arrangements of the sub-committees, for consideration of casualty reports by sub-committees, MSC 92 had considered the current practice of the casualty review process, whereby the FSI Sub-Committee, following the advice of its Casualty Analysis Working Group, referred casualty reports to other IMO bodies for consideration under the continuous output on "Casualty analysis", noting that this no longer meets the SMART output structure introduced by the Council in recent years. Following discussion, MSC 92 had agreed to change the procedure for the review of casualty reports by sub-committees as follows:

- .1 the III Sub-Committee will only refer casualty reports directly to other sub-committees for consideration if an identifiable current output addressing the matter in question is on the agenda of such sub-committees;
- .2 in cases where sub-committees had no related outputs on their agendas, casualty reports will only be referred to them after consideration by the Committee and establishment of a relevant dedicated output; and
- .3 as a consequence, the output on "Casualty analysis" will be deleted from the biennial agendas of the (HTW, NCSR, PPR, SDC and SSE) Sub-Committees, except III.

15.3 Accordingly, in view of the decisions of MSC 92, the Sub-Committee agreed to delete the output on "Casualty analysis" from the biennial agenda of the combined NCSR Sub-Committee.

16 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS

16.1 The Sub-Committee recalled that in order to expedite consideration of IACS unified interpretations, MSC 78 had agreed to retain, on a continuous basis, the item on "Consideration of IACS unified interpretations" in the work programmes of the BLG, DE, FP,

FSI, NAV and SLF Sub-Committees and to include it in the agenda for their next respective sessions.

16.2 The Sub-Committee recalled that it had considered proposals for IACS Unified Interpretations at its fifty-second, fifty-third, fifty-fifth, fifty-seventh and fifty-eighth sessions. These were subsequently approved as MSC.1/Circ.1224 on Unified interpretations of SOLAS chapter V, MSC.1/Circ.1260 on Unified Interpretations of COLREG, MSC.1/Circ.1350 on Unified Interpretations of SOLAS regulation V/22.1.6 relating to navigation bridge visibility, MSC.1/Circ.1427 on Unified Interpretations of COLREG 1972 and MSC.1/Circ.1350/Rev.1 on Unified Interpretations of SOLAS regulation V/22.1.6 relating to navigation bridge visibility during MSC 82, MSC 84, MSC 87, MSC 90 and MSC 91, respectively.

MSC.1/Circ.1260 – Unified Interpretation of COLREG 1972, as amended

16.3 IACS (NAV 59/16 and Corr.1) submitted a copy of the latest version of IACS UI COLREG 1 providing a Unified Interpretation to COLREG 1972 annex I, section 9(b). IACS Members would uniformly implement this latest version of UI COLREG 1 from 1 July 2013, unless otherwise instructed by the Administration on whose behalf they are authorized to act as a Recognized Organization.

16.4 The Sub-Committee agreed to accept the proposed IACS UI with a minor amendment to paragraph 2 with the deletion of the words "by Societies".

16.5 The Sub-Committee further agreed to revise MSC.1/Circ.1260 and instructed the Secretariat to prepare a draft revised MSC.1/Circ.1260 for consideration of the Sub-Committee with a view to approval by MSC 93.

On receipt of the draft MSC circulars

16.6 The Sub-Committee having considered document NAV 59/WP.4 endorsed the draft revised MSC.1/Circ.1260 and invited the Committee to approve it.

Draft MSC circular on Unified Interpretation of SOLAS regulation V/23 (Pilot Transfer Arrangements), as amended by resolution MSC.308(88)

16.7 IACS submitted (NAV 59/16/1) a copy of IACS UI SC 257 on pilot transfer arrangements that provided a unified interpretation relevant to SOLAS regulation V/23, which would be uniformly implemented by IACS Members on ships contracted for construction on

or after 1 July 2013, unless otherwise instructed by the Administration on whose behalf they are authorized to act as a Recognized Organization.

16.8 A significant number of delegations spoke on the issue. Some were of the opinion that the IACS UI SC 257 on pilot transfer arrangements was in direct conflict with existing SOLAS regulation V/23. Others were of the view that the prescribed adverse list of 15 degrees was an exceptional circumstance and should not be considered when determining if an accommodation ladder was required in conjunction with the pilot ladder.

16.9 The Sub-Committee:

- .1 noted that the length of the pilot boarding ladder should be calculated inclusive of the consideration of an adverse list of 15 degrees; and
- .2 reiterated that when considering pilot transfer arrangements at any distance more than 9 metres above the surface of the water under any circumstances, a combination pilot boarding arrangement would be required, in accordance with existing SOLAS regulation V/23.3.3.2.

16.10 Accordingly, the Sub-Committee decided not to accept the proposed UI on pilot transfer arrangements and requested IACS to re-consider their proposal.

Matters related to ECDIS – Clarification on how to complete items 2.1 and 2.2 of part 3 of Form E, including part 5 of Forms P and C

16.11 IACS (NAV 59/16/2) sought clarification from the Sub-Committee on how to complete items 2.1 and 2.2 of part 3 of the Form E in order to document the flexibility in using either paper charts or ECDIS as the means of navigation. The same applied to items 2.1 and 2.2 of part 5 of Forms P and C. In their opinion, the flexibility in using either paper charts or ECDIS as the means of navigation, as mentioned in paragraph 3 above, did not appear to be afforded by Form E (and, equally, for Form P and Form C) in the event a shipowner requested that the Form E document that both ECDIS and nautical charts were used as the means to navigate. In this case, nautical charts were not limited to use as a back-up for the ECDIS.

16.12 Some delegations were of the view that the ship management is responsible to determine as what type of charts would be used on the ship as the primary means of navigation.

16.13 The delegation of the Marshall Islands stated that SOLAS regulation V/27 requires nautical charts for the intended voyage without specifying the form of that chart, i.e. paper or ENC. The Marshall Islands felt that it was properly the decision of ship management to determine what form of chart will be used onboard their ships. This should be clearly stated in their Safety Management System and it should be possible on the Form E as well as Forms P and C to record this.

16.14 The Sub-Committee accepted the offer of IACS, and invited IACS to develop an IACS UI for consideration by the new amalgamated Sub-Committee (NCSR 1) in June/July 2014, taking into account the comments made with respect to ship management responsibilities.

Draft MSC circular on Unified Interpretation of performance standards for Voyage Data Recorders (VDRs) (resolution MSC.333(90))

16.15 IACS (NAV 59/16/3) submitted a copy of IACS UI SC261, providing an interpretation relevant to the Performance Standards for Voyage Data Recorders (VDRs) (resolution MSC.333(90)). IACS Members will uniformly implement UI SC 261 from 1 July 2014, unless otherwise instructed by the Administration on whose behalf they are authorized to act as a Recognized Organization.

16.16 Denmark supported by some other delegations were of the view that they could not support the proposal by IACS, as it would be in opposition to their known procedures and instead the actual installation date when the equipment was placed on board should be used in all cases. This procedure would be the most simplified approach.

16.17 Accordingly, the Sub-Committee decided not to accept the proposed UI on performance standards for Voyage Data Recorders (VDRs) (resolution MSC.333(90)).

17 BIENNIAL AGENDA AND PROVISIONAL AGENDA FOR NAV 60

17.1 The Sub-Committee noted that that MSC 92 had approved the names and terms of reference (MSC 92/26, annex 40), for the subsidiary bodies of the MSC and MEPC, as appropriate, which would replace the existing subsidiary bodies starting from the 2014-2015 biennium. NAV and COMSAR were amalgamated as the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR);

17.2 The Sub-Committee also noted that MSC 92 had approved the biennial agendas for 2014-2015 and the provisional agendas for the respective first sessions of the restructured sub-committees, (MSC 92/26, annexes 41 and 42), respectively. With regard to the work methods of the restructured sub-committees, MSC 92 had endorsed the views that:

- .1 matters already under consideration in the existing sub-committees should be considered with priority by the restructured sub-committees, in order that ongoing work could be completed before work on new outputs commences; and
- .2 new outputs should only be included in the provisional agendas of sub-committees if a corresponding number of existing outputs had been completed.

In this connection, MSC 92 had invited Member Governments to carefully consider the necessity of proposing new unplanned outputs and, in any case, provide full justifications for any urgent matters during the transition period (considered to be the 2014-2015 biennium) from the old sub-committee structure to the new one.

17.3 The Sub-Committee further noted that MSC 92 had also endorsed the proposal for full five-day sessions with interpretation for the first session only of the NCSR Sub-Committee, to enable it to cope with their heavy agendas.

17.4 The Sub-Committee noted that the 110th session of the Council, took the following decisions which have a bearing on the work of the Sub-Committee. In particular, with regard to document C 110/3/1, reporting on the outcome of the consideration by the MSC and MEPC of the implications and practicability of the Secretary-General's proposals for the restructuring of the sub-committees, the Council had noted:

- .1 the Committees' agreement to a reduction of the total number of sub-committees from nine to seven, with potential savings of four meeting-weeks per biennium; and
- .2 the names and terms of reference of the seven sub-committees and their biennial agendas for the 2014-2015 biennium.

C 110 had also approved the Committees' proposal for full five-day sessions, with interpretation for the first session of the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR).

Biennial and post-biennial agendas including provisional agenda for NAV 60

17.5 Taking into account the progress made during this session, the Sub-Committee prepared its draft revised biennial agenda for the 2014-2015 biennium in SMART terms, including items on the Committee's post-biennial agenda under the purview of the restructured NCSR Sub-Committee (NAV 59/WP.5), based on the revised biennial agenda approved by MSC 92, as set out in annexes [...] and [...], respectively, for approval by MSC 93.

17.6 The Sub-Committee noted that there would be no provisional agenda for NAV 60 and instead, given in annex [...] is the provisional agenda for the restructured NCSR Sub-Committee (NCSR 1).

Arrangements for NCSR 1

17.7 It was anticipated that working and drafting groups on the following subjects might be established at NCSR 1:

- .1 Ships' Routeing;
- .2 Search and Rescue; and
- .3 Technical matters.]

Status of planned outputs for the 2012-2013 biennium

17.8 The Sub-Committee prepared the report on the status of planned outputs of the *High-level Action Plan of the Organization and priorities for the 2012-2013 biennium* relevant to the Sub-Committee, as set out in annex [...] and invited the Committee to note the status.

Date of the first session of NCSR

17.9 The Sub-Committee noted that the first session of the amalgamated Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) had been tentatively scheduled to be held from [30 June to 4 July 2014] at IMO Headquarters.]

18 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2014

[18.1 The Chairman informed the Sub-Committee that in light of the NAV and COMSAR Sub-Committees being amalgamated as the Sub-Committee on Navigation, Communications, and Search and Rescue (NCSR), there will be no election at this session. The Chairman and Vice-Chairman for NCSR Sub-Committee will be elected at the opening of NCSR 1, which is tentatively scheduled to be held from 30 June to 4 July 2014.]

[18.2 The Chairman further took this opportunity to convey his appreciation to the Vice-Chairman and the Members for their cooperation and courtesy extended to him during his tenure as Chairman.]

19 ANY OTHER BUSINESS

Progress on standards development by the IEC

19.1 The Sub-Committee having considered document NAV 59/19 (IEC) noted that a revision was being prepared to 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 test results*. IEC 62288 incorporates the recommendations on performance standards for the presentation of navigation-related information on shipborne navigational displays given in resolution MSC.191(79). It also incorporates the guidelines for the presentation of navigation-related symbols, given in SN.1/Circ.243. In the course of the revision, Technical Committee 80 had developed some new and revised symbols for use with Search and Rescue and some further new symbols describing AIS Application-Specific Messages functions as given in SN.1/Circ.289.

19.2 The delegation of Denmark, with respect to item 2.11 (NAV 59/19, annex) where the AIS-SART symbol had been addressed, was of the view that an AIS-SART is considered a locating device, not a distress alerting device. The presentation of an AIS-SART should accordingly not use a functionality of flashing red, which is reserved for an ALARM requiring immediate action, unless otherwise decided by this Organization. Denmark was of the view that care should be taken to prevent additional undue alarms being raised to the mariner. Further, the symbols proposed for Maritime Safety Information or Area Notice seems to be a risk of cluttering display systems, with multiple textboxes overlaying an area. Finally, Denmark found it questionable whether all the proposed symbols were relevant. To prevent information overload on a navigation display, it should be carefully considered what is

relevant to present. For instance, whether a symbol for an AIS Base station was relevant for the navigator in the context of a navigation display. Denmark also announced their intention to provide input on these concerns to the IEC work process and requested the IEC to clarify further on the intention of the use of the presented symbols.

19.3 The IEC observer stated that Denmark's concerns would be conveyed to IEC TC 80 and the proposed symbols were not yet accepted. IEC would seek the Sub-Committee's advice and not bypass the IMO procedures.

The IMO/IALA Award for Zero Accident Campaign

19.4 The Sub-Committee noted that during the twelfth International Symposium on Vessel Traffic Services (10 to 14 September 2012), in Istanbul, Turkey, the Secretary-General of the IMO had taken the initiative of proposing a plan of action to promote a Zero Accident campaign. This initiative was well received and supported by the VTS Symposium. As a follow up to this initiative, a meeting of Group of Experts (Group) from IALA, IHO, IMO, IAPH and IMPA was organized at the IMO Headquarters on 28 January 2013. In his opening remarks, the Secretary-General gave an overview of his view on his vision related to the Zero Accident campaign. He recognized that this was a very difficult task, but nonetheless through collective efforts of all concerned progress can be made over a longer time period of time. Based on the opening remarks of the Secretary-General, the January 2013 meeting agreed that:

- .1 Zero Accident campaign was very broad-based and in order to have meaningful progress it would be better to take this in stages;
- .2 at this stage, it would be appropriate to consider the sea areas under VTS operations;
- .3 in order to launch the campaign, an IMO/IALA award for each VTS in Europe, North America and the Caribbean; South and Central America; Oceania; Asia Pacific; South and West Asia; North and West Africa and East and South Africa region based on the criteria developed and agreed by the Group;
- .4 IMO Secretariat will develop the terms of reference and criteria (similar to those relating to the Bravery Awards) for consideration and review by the IALA VTS Committee with a view to finalization by the Group;

- .5 after the finalization of the ToRs and criteria by the Group, IALA VTS experts would review the VTS included in the Worldwide VTS Guide and provide the Group with their findings; and
- .6 on receipt of the evaluation by the VTS experts, the Group would scrutinize the list and make its recommendation to IMO and IALA.

19.5 Accordingly, the Chairman of IMO's Sub-Committee on Safety of Navigation in cooperation with the Secretary-General of IALA and relevant input from the IMO Secretariat prepared an outline plan, which detailed the composition of the Panel of Experts, terms of reference of a Panel of Experts including the draft criteria for evaluation to assist the experts. This plan was presented to the IALA VTS Committee on 15 March 2013 with a request to provide its comments, as appropriate, with regard to the following:

- .1 composition of the Panel of Experts;
- .2 terms of reference of the Panel of Experts; and
- .3 criteria for evaluation to assist the experts.

The views of IALA, as approved by the IALA Council, had been incorporated into this relevant document.

19.6 The delegation of IALA stated that the Secretary-Generals' initiative of the "Zero Accident campaign" had been extremely well received at the recent IALA VTS Symposium held in Istanbul, Turkey. The campaign had the very important objective of raising awareness to navigation safety worldwide and the significant contribution that it could make to reduce maritime incidents. The benefits of "international recognition", by the IMO to initiatives like this, could not be underestimated. IALA was confident that the implementation of this campaign would improve the safety of navigation. Furthermore, the Panel of Experts operating under the competent chairmanship of this Sub-Committee's Chairman was well placed to highlight the important role that the campaign could play in reducing incidents. Accordingly, IALA strongly supported this initiative and was willing to support it in any way that it can.

Industry recommendations for ECDIS familiarization

19.7 The Sub-Committee noted with appreciation the information provided by The Nautical Institute (NAV 59/INF.4) on industry recommendations for ECDIS familiarization training.

Protection of Cable ships and repair operations for international submarine cables

19.8 The Sub-Committee noted with appreciation the information provided by the United States (NAV 59/INF.5) on the provisions of the International Convention for protection of submarine cables (Cable Convention) and the safety distances for vessels from cable ships and cable repair buoys during repair operations and, in particular, the responsibility to abide by the Cable Convention, especially articles 5 and 6, respectively.

Status of Galileo and plans for adoption into the WWRNS

19.9 The Sub-Committee noted with appreciation the information provided by EC (NAV 59/INF.7) on details of the status of the Galileo Global Navigation Satellite System, outlining its technical capabilities and how they align to IMO's objectives including an outline of the plan to submit Galileo to the next Maritime Safety Committee meeting (MSC 93) requesting a new output to consider its acceptance into the WWRNS.

The proactive use of Voyage Data Recorder (VDR) information

19.10 The Sub-Committee noted with appreciation the information provided by OCIMF (NAV 59/INF.9) emphasizing the technical improvements made by Voyage Data Recorders (VDRs) and proposing to increase the data recording to 90 days in order to use it on a routine basis for different purposes. OCIMF was of the view that the installation of Voyage Data Recorders provided the facility for ship operators to take proactive measures to improve operational safety by analysing reported data to identify undesirable events or occurrences and best practices worthy of replication.

Development of a mandatory Code for ships operating in Polar waters

19.11 The Sub-Committee noted that with respect to Nautical charts for polar areas, DE 57 having noted that the NAV 58 had already considered chapter 9 (Navigation) of the draft Polar Code agreed to bring the matter to the attention of the Sub-Committee and the Committee for consideration and action, as appropriate.

19.12 The Sub-Committee also noted that MSC 92 having noted a statement by IHO (MSC 92/26, paragraphs 13.23 to 13.24), had stressed the utmost importance of adequate charting, not only for the polar regions, but also for all other areas and, recognizing that a collective effort was necessary to improve the situation, encouraged Member States to collect relevant information, especially for remote areas, and instructed the NAV Sub-Committee to also take these comments into account at the present session.

19.13 The delegation of the IHO stated that the Polar Regions impose additional navigational demands beyond those normally encountered. Furthermore, noting that some 95 per cent of the Polar Regions were unsurveyed and appropriate scale chart coverage was inadequate for coastal navigation, mariners should navigate with extreme caution and keep, wherever possible, to recognised shipping corridors. Even in these shipping corridors extra vigilance should be exercised as unsurveyed and uncharted shoals may exist in these areas or in close proximity. Reliance should not be placed on the charted depths.

The IHO did not view these shortcomings as charting issues, paper or ENC/ECDIS, but much more fundamental in the lack of primary hydrographic data and information available to support safe navigation.

It was the IHO's position that long-term preventive measures in the form of comprehensive high quality hydrographic surveys should be the objective. The IHO urged the coastal and Antarctic Treaty States to fulfil their SOLAS obligations and prioritize the undertaking of primary systematic hydrographic surveys to provide safe navigable water for all ships operating in the Polar Regions.

Accordingly, as a short term measure, the current status of surveys should be reflected in the Polar Code as proposed in document DE 57/11/24 and urged the Sub-Committee to endorse its proposal and to invite the Intersessional Working Group on the Polar Code to incorporate this proposal when reviewing the draft at the upcoming meeting.

19.14 The delegation of the Russian Federation stated that they were paying great attention to the Northern sea Route, particularly, with respect to Aids to Navigation, hydrographic surveys and cartography. It was planned that the hydrographic survey area would be increased two-fold and presently eight survey vessels were engaged in survey work in the area of the Northern Sea Route.

19.15 The delegation of Norway agreed with the views expressed by the IHO and suggested that the information contained in document DE 57/11/24 could be added in the preamble to the Polar Code.

19.16 The delegation of Denmark informed the Sub-Committee about the status of charting in Greenland and outlined that efforts were underway for the production of relevant ENCs and paper charts.

19.17 The observer from ICS welcomed the response of all concerned and stated that the matter was one of serious safety.

19.18 The Chairman, in his summing up, recognized the enormity of the situation and the scope of the solution. He further stated that there was a need to prioritize areas most in need of surveys.

19.19 The Sub-Committee agreed that the outcome of this consideration be passed on to the DE Intersessional Working Group scheduled for the first week of October 2103 and the information in document DE 57/11/24 be included in the preamble to the Polar Code.

Bridge Navigational Watch Alarm System (BNWAS) auto-function

19.20 The Sub-Committee recalled that MSC 92 had considered document MSC 92/20/1 (Marshall Islands, et al.), seeking its view on the need for the automatic function as specified in resolution MSC.128(75) – *Performance Standards for a Bridge Navigational Watch Alarm System* (BNWAS). Having recalled the views of NAV 55 that the automatic mode of the performance standard was not usable on a ship compliant with the SOLAS Convention and, in particular, with the requirements of SOLAS regulation V/19.2.2.3, MSC 92 had instructed NAV 59 to further consider document MSC 92/20/1 under its agenda item "Any other business" and develop necessary guidance on the issue and, in addition, advise MSC 93 on the way forward.

19.21 The Sub-Committee was of the view that in the first instance, it would be appropriate to consider developing guidance for Members and industry and instructed the Secretariat to prepare a draft MSC circular for consideration of the Sub-Committee with a view to approval by MSC 93.

19.22 The delegation of Sweden stated that it was aware of the problem with the compatibility of SOLAS regulation V/19.2.2.3 and the performance standard in resolution MSC.128(75) regarding the Automatic mode of the BNWAS. NAV 55 had concluded that the automatic mode of the performance standard was not usable on a ship compliant with the SOLAS Convention. However, by looking at this issue from an operational perspective, Sweden could see merit in the Automatic mode, which would reduce the work load and burden of the seafarer due to the fact that the BNWAS would always be in operation when the ship's heading or track control system was activated compared to the BNWAS needing to be turned ON/OFF manually when the ship left or arrived in port. This manual action might intentionally or

unintentionally be forgotten on some occasions. Sweden saw a higher risk of fatigue, lack of attention and other risk factors that the BNWAS could prevent from occurring. Hence, it was important to look at this issue from the seafarer's eyes and a way forward might be to amend the performance standards to include that the automatic mode shall be considered and interpreted that the BNWAS was in operation to fulfil SOLAS regulation V/19.2.2.3.

On receipt of the draft MSC circular

19.23 The Sub-Committee endorsed a draft MSC circular on Guidance on the Bridge Navigational Watch Alarm System (BNWAS) Auto Function (NAV 59/WP.4, annex 2) and invited the Committee to approve it, which could then be developed as an IACS Unified Interpretation at a later stage.

Status of the GEF/IBRD/IMO Regional Marine Electronic Highway (MEH) Demonstration Project

19.24 Following the formal hand-over of the MEH Data Centre by IMO Secretary-General to the Director General of DGST held in Batam, Indonesia on 3 August 2012, the Project held its 6th and final Project Steering Committee Meeting in Singapore in November 2012. The PSC Meeting reaffirmed the commitments of the littoral States of Indonesia, Malaysia and Singapore to establish the MEH for the Straits of Malacca and Singapore (SOMS) under the auspices of the TTEG/CM. The Project was formally closed on 31 December 2012 and all project assets were turned over to DGST. The World Bank gave a four months grace period for closure of administrative and financial matters from January to April 2013.

In the case of the Indonesian grant, DGST was able to establish the AIS base station and tidal stations in four sites (Iyu Kecil, Tanjung Medang and Nongsapuri). The DGPS and the ocean sensor were returned to dealers for recalibration and expected to be installed in Duma and Philip Channel, respectively, early next year. Cost for installation of the two equipments will be borne by Indonesia. The Indonesia grant was formally closed on 15 May 2013. To ensure the continuous operation of the MEH in case of downtime of the Batam Data Centre, Malaysia and Singapore have established their respective back-up systems to capture online real-time transmission of data from remote stations (tides and currents) and can be accessed through the internet: www.mehsoms.com (Batam); www.mehsoms.marine.gov.my (Marine Department Malaysia) and www.mehsom-sq.com (MPA Singapore).

Expressions of appreciation

[more text to follow]

20 ACTION REQUESTED OF THE COMMITTEE

[more text to follow]
