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REPORT TO THE MARITIME SAFETY COMMITTEE

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1 GENERAL

1.1 The Sub-Committee on Safety of Navigation held its fifty-fifth session from 27 to 31 July 2009 at the Headquarters of the Organization, under the chairmanship of Mr. J. M. Sollosi (United States). The Vice-Chairman, Mr. Raja Datuk Malik (Malaysia), was also present.

1.2 The session was attended by representatives of the following countries:

ANGOLA	LIBERIA
ANTIGUA AND BARBUDA	LIBYAN ARAB JAMAHIRIYA
ARGENTINA	MALAYSIA
AUSTRALIA	MALTA
BAHAMAS	MARSHALL ISLANDS
BELGIUM	MEXICO
BOLIVIA	MOROCCO
BRAZIL	NETHERLANDS
CANADA	NEW ZEALAND
CHILE	NIGERIA
CHINA	NORWAY
COLOMBIA	PANAMA
COOK ISLANDS	PAPUA NEW GUINEA
CUBA	PERU
CYPRUS	PHILIPPINES
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	POLAND
DENMARK	PORTUGAL
DOMINICAN REPUBLIC	REPUBLIC OF KOREA
ECUADOR	RUSSIAN FEDERATION
EGYPT	SAUDI ARABIA
FINLAND	SENEGAL
FRANCE	SOUTH AFRICA
GERMANY	SPAIN
GHANA	SWEDEN
GREECE	SYRIAN ARAB REPUBLIC
INDONESIA	TURKEY
IRAN (ISLAMIC REPUBLIC OF)	TUVALU
IRAQ	UKRAINE
IRELAND	UNITED KINGDOM
ITALY	UNITED STATES
JAPAN	URUGUAY
KUWAIT	VENEZUELA (BOLIVARIAN REPUBLIC OF)

and of the following Associate Member of IMO:

HONG KONG, CHINA

1.3 The session was attended by representatives from the following United Nations and specialized agency:

WORLD METEOROLOGICAL ORGANIZATION (WMO)

1.4 The following intergovernmental and non-governmental organizations were also represented:

INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
EUROPEAN COMMISSION (EC)
MARITIME ORGANIZATION FOR WEST AND CENTRAL AFRICA (MOWCA)
PORT MANAGEMENT ASSOCIATION OF EASTERN AND SOUTHERN AFRICA
(PMAESA)
INTERNATIONAL MOBILE SATELLITE ORGANIZATION (IMSO)
INTERNATIONAL WHALING COMMISSION (IWC)
INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
INTERNATIONAL SHIPPING FEDERATION (ISF)
INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
INTERNATIONAL UNION OF MARINE INSURANCE (IUMI)
INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF)
INTERNATIONAL ASSOCIATION OF MARINE AIDS TO NAVIGATION AND
LIGHTHOUSE AUTHORITIES (IALA)
INTERNATIONAL RADIO-MARITIME COMMITTEE (CIRM)
BIMCO
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)
OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)
INTERNATIONAL MARITIME PILOTS' ASSOCIATION (IMPA)
INTERNATIONAL ASSOCIATION OF INSTITUTES OF NAVIGATION (IAIN)
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATIONS (IFSMA)
INTERNATIONAL ASSOCIATION OF INDEPENDENT TANKERS OWNERS
(INTERTANKO)
INTERNATIONAL MARITIME RESCUE FEDERATION (IMRF)
GREENPEACE INTERNATIONAL
CRUISE LINES INTERNATIONAL ASSOCIATION (CLIA)
INTERNATIONAL ASSOCIATION OF DRY CARGO SHIPOWNERS
(INTERCARGO)
THE INSTITUTE OF MARINE ENGINEERING, SCIENCE AND TECHNOLOGY
(IMarEST)
INTERNATIONAL SAILING FEDERATION (ISAF)
THE INTERNATIONAL MARINE CONTRACTORS ASSOCIATION (IMCA)
WORLD NUCLEAR TRANSPORT INSTITUTE (WNTI)
INTERNATIONAL HARBOUR MASTERS' ASSOCIATION (IHMA)
THE NAUTICAL INSTITUTE

Opening address of the Secretary-General

1.5 The Secretary-General welcomed the participants and delivered his opening address, the full text of which is reproduced in document NAV 55/INF.14.

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted, in general, decisions and comments pertaining to its work made by MSC 85, COMSAR 13, STW 40, FP 53, DE 52, FSI 17 and MSC 86 (NAV 55/2, NAV 55/2/1 and NAV 55/2/2) and considered them under the appropriate agenda items.

Outcome of MSC 86

Application of the Committee's Guidelines

Guidelines on the application of the Strategic Plan and the High-level Action Plan

2.2 The Sub-Committee noted that:

- .1 MSC 86 had recalled that MSC 85 had agreed that the sub-committees should focus their deliberations on the technical or operational aspects of the work assigned. Furthermore, the Committee had agreed that the Chairmen's meeting should consider amending the Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies (MSC-MEPC.1/Circ.2) to address the issue to avoid repetition of similar cases in future and to encourage submitters of new work programme items to submit relevant information and data to support their proposals at the sub-committee level (MSC 85/26, paragraph 23.40);
- .2 MSC 86 had discussed the draft amendments, set out in annex 3 to document MSC 86/WP.11, and remained evenly divided between the option to keep the text of the two new paragraphs 2.12.1 and 2.12.2, as proposed, and the option to introduce a certain degree of flexibility allowing, in certain cases, discussion on the need for the work programme item, and a more stringent guidance on the provision of information by proponent(s) to facilitate the technical work of the subsidiary body;
- .3 the following guiding principles had been highlighted in the course of the discussion to serve as the basis for further consideration of the matter:
 - .1 the consideration of the need and compelling need for new work programme items remained entirely with the Committees and should not be reopened by sub-committees, as such;
 - .2 the Committees would filter the proposals and decide on the inclusion of new items in the work programme and agenda of the sub-committees, without pre-deciding on the outcome of the technical or operational consideration, which might bring the sub-committees to recommend that the work cannot be completed;
 - .3 sub-committees should carry out the work on substance and should not deviate from the instructions received from Committees; and
 - .4 as much information as possible should be gathered by the proponent(s) when putting forward proposals for new work programme items but it should not be assumed that sufficient information was always available at the time of the proposals; and
- .4 following the above discussion, MSC 86 had agreed to revisit the matter at its next session and invited interested Member Governments to consider how the text of the draft amendments could be improved to address the above views.

STATUS OF PLANNED OUTPUTS FOR THE 2008-2009 BIENNIUM AND PROPOSALS FOR THE HIGH-LEVEL ACTION PLAN OF THE ORGANIZATION AND PRIORITIES FOR PLANNED OUTPUTS OF THE COMMITTEES FOR THE 2010-2011 BIENNIUM

2.3 The Sub-Committee further noted that:

- .1 MSC 86 had recalled that, in the context of the requests of the Assembly made in resolution A.989(25) on Strategic Plan for the Organization (for the six-year period 2008 to 2013) and resolution A.990(25) on High-level Action Plan of the Organization and priorities for the 2008–2009 biennium, MSC 84 had instructed the Secretariat to submit the information concerning review of progress made in implementing the High-level Action Plan and priorities for the 2008-2009 biennium and prepare proposals for the High-level Action Plan for the 2010-2011 biennium, as may be updated following the outcome of MSC 86, for submission to C 102;
- .2 having considered document MSC 86/23/5 (Secretariat) on the status of the Committees' planned outputs for the 2008-2009 biennium, in the context of the outputs listed in resolution A.990(25), and recommendations made by the Chairmen's meeting (MSC 86/WP.11), MSC 86 had endorsed the status of the MSC planned outputs for the current biennium, which included updates by the Chairman and the Secretariat as authorized by the Committee, taking into account the outcome of MSC 86, for submission to C 102; and
- .3 MSC 86, having considered document MSC 86/23/16 (Secretariat), proposing modifications to the planned output of the Committees for the 2010-2011 biennium, which took into account the progress made by the sub-committees during the current biennium and the recommendations made by the Chairmen's meeting (MSC 86/WP.11), had endorsed the proposals for the High-level Action Plan of the Organization and priorities for the 2010-2011 biennium, which included updates by the Chairman and the Secretariat as authorized by the Committee, taking into account the outcome of MSC 86, for submission to C 102, and requested the Secretariat to submit any changes to the annexed proposals emanating from NAV 55 and DSC 14 to CWGSP 9 or C/ES.25, as appropriate.

3 ROUTEING OF SHIPS, SHIP REPORTING AND RELATED MATTERS

General

3.1 The Chairman recalled that NAV 51 supported a proposal of the previous Chairman, recommending that for future sessions of the Sub-Committee, a preliminary assessment of proposals would be made by the Chairman in consultation with the Secretariat and the Chairman of the Ships' Routeing Working Group. 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 proposal. The results of the assessment would then be made available to the Sub-Committee by means of a working paper.

3.2 The Chairman informed the Sub-Committee that accordingly, he had, in cooperation with the Secretariat, prepared document NAV 55/WP.1 outlining a preliminary assessment of the ships' routeing and ship reporting proposals. 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)

New Traffic Separation Scheme “In the approaches to Lagos”

3.3 The Sub-Committee briefly considered a proposal by Nigeria (NAV 55/3/1) for the establishment of a new traffic separation scheme “In the approaches to Lagos”.

New Traffic Separation Scheme “In the Bonny Channel and its approaches”

3.4 The Sub-Committee briefly considered a proposal by Nigeria (NAV 55/3/2) for the establishment of a new traffic separation scheme (TSS) “In the Bonny Channel and its approaches”.

New Traffic Separation Schemes at “Adlergrund” and “Slupska Bank” in the southern part of the Baltic Sea

3.5 The Sub-Committee briefly considered a joint proposal by Germany, Poland and Denmark (NAV 55/3/3) for the establishment of new traffic separation schemes at “Adlergrund” and “Slupska Bank” in the southern part of the Baltic Sea.

New Traffic Separation Schemes surrounding Gotland Island

3.6 The Sub-Committee briefly considered a proposal by Sweden (NAV 55/3/4) for the establishment of three new traffic separation schemes surrounding Gotland Island in the Baltic Sea.

New Traffic Separation Scheme in the Black Sea in the area of south western coast of the Crimea

3.7 The Sub-Committee briefly considered a proposal by Ukraine (NAV 55/3/7) to establish a mandatory new traffic separation scheme in the area of south-western coast of the Crimea in the Black Sea in order to separate traffic flows heading to and from the north-western part of the Black Sea (Odessa Bay), the Crimea, Kerch Strait and Caucasian sea coast. The proposed routing system was situated exclusively within Ukraine’s territorial waters.

3.8 The Sub-Committee noted that presently there was only one IMO adopted mandatory routing system, namely “Mandatory route for tankers from North Hinder to the German Bight and vice versa”. In addition, there were a further five mandatory no anchoring areas in different territorial waters of the world.

Amendments to existing Traffic Separation Schemes (TSSs)

Amendments to the existing Traffic Separation Schemes “Off Cape Roca” and “Off Cape S. Vicente”

3.9 The Sub-Committee briefly considered a proposal by Portugal (NAV 55/3/8) to amend the existing traffic separation schemes “Off Cape Roca” and “Off Cape S. Vicente”.

Amendments to the existing Traffic Separation Schemes “Off Porkkala Lighthouse”, “Off Kalbådagrund Lighthouse” and “Off Hankoniemi Peninsula” in the Gulf of Finland

3.10 The Sub-Committee briefly considered a proposal by Estonia, Finland and the Russian Federation (NAV 55/3/11) to amend the existing traffic separation schemes “Off Porkkala Lighthouse”, “Off Kalbådagrund Lighthouse” and “Off Hankoniemi Peninsula” in the Gulf of Finland intended to enhance maritime safety, safety of navigation and protection of the environment.

Routeing measures other than Traffic Separation Schemes (TSSs)

Establishment of a new two-way route “In the Bonny Channel and its approaches”

3.11 The Sub-Committee briefly considered a proposal by Nigeria (NAV 55/3/2) for the establishment of a new two-way route “In the Bonny Channel and its approaches”.

Establishment of a new two-way route in the waters north of Gotland Island

3.12 The Sub-Committee briefly considered a proposal by Sweden (NAV 55/3/4) to establish a new two-way route north of Gotland Island in the Baltic Sea.

Establishment of an Area To Be Avoided (ATBA) and two Mandatory No Anchoring Areas in the western North Atlantic Ocean, off the coast of the United States

3.13 The Sub-Committee briefly considered a proposal by the United States (NAV 55/3/5) to establish an Area To Be Avoided (ATBA) and two mandatory No Anchoring Areas for the purposes of safety, security and vessel traffic management in the vicinity of the Neptune Deepwater Port to be located in the western North Atlantic Ocean off the coast of the United States.

Deep-water route including associated routeing measures leading to the new Jazan Economic City Port (JEC Port) in the southern Red Sea

3.14 The Sub-Committee briefly considered a proposal by Saudi Arabia (NAV 55/3) for the establishment of a Deep-water route to the new Jazan Economic City Port (JEC Port) in the Southern Red Sea, including associated traffic separation schemes and an associated precautionary area within the proposed Deep-water route.

3.15 The representative of the United Kingdom Hydrographic Office, acting in his capacity as the Saudi Arabian representative and also as the expert who had assisted Saudi Arabia in developing this proposal, informed the Sub-Committee that a revised proposal had been developed and sought the Sub-Committee’s approval to introduce the same.

3.16 The Sub-Committee agreed with the request to introduce the revised proposal in the Ships’ Routeing Working Group.

Amendments to the existing Deep-water route leading to IJmuiden

3.17 The Sub-Committee briefly considered a proposal by the Netherlands (NAV 55/3/10) to amend the existing deep-water route leading to IJmuiden.

Mandatory ship reporting systems

Amendments to the existing mandatory ship reporting system “In the Strait of Gibraltar” (GIBREP)

3.18 The Sub-Committee briefly considered a joint proposal by Spain and Morocco (NAV 55/3/6) to amend the existing mandatory ship reporting system (GIBREP) in the area of the traffic separation scheme “In the Strait of Gibraltar”, as a consequence of the establishment and future entry into operation of the new Morocco Vessel Traffic Services (VTS) in the area.

3.19 The delegation of the United Kingdom stated that it considered the GIBREP system to be a good example of a ship reporting system. It had been in operation since 1996 and had the full support of the United Kingdom. Strengthening a VTS in support of any mandatory reporting system and traffic separation scheme monitoring anywhere could only serve to improve navigational safety and, again, the United Kingdom supported this. However, there were some principles which guided and directed the establishment of new schemes and the modification of existing traffic management schemes. These included the valuable guidelines given in MSC/Circ.1060, as amended. Document NAV 55/3/6 (Spain and Morocco) accurately reflected the detailed and integrated arrangements between France and the United Kingdom over the establishment of the CALDOVREP system, which were quoted as an example, and had been the result of extensive consultations between the Governments concerned.

As to the proposal under consideration, the United Kingdom considered that there had been no effective cooperation between the jurisdictions of Governments having a common interest in this area of which the United Kingdom was one. Therefore, the United Kingdom felt strongly that the proposal needed further work and consultation before being considered by the Ships’ Routeing Working Group. The United Kingdom, therefore, respectfully requested Spain and Morocco to withdraw their document and allow the United Kingdom to cooperate with them in developing a revised, fully collaborative proposal for presentation to the next session of the Sub-Committee.

3.20 The delegation of Spain stated that it would like to clarify an apparent inconsistency in the intervention by the United Kingdom. The delegation of the United Kingdom had declared that it was satisfied with the reporting system in the Strait of Gibraltar, which worked very well, but, having interests in the area and according to MSC/Circ.1060, the system should be improved and the document should be withdrawn. Spain was of the view that if the system worked well there was, therefore, no need to change it. Spain was concerned about the interest shown on this occasion because the Traffic Separation Scheme “In the Strait of Gibraltar” had been amended three times in the past and the United Kingdom had not declared any interest in the area. The NAV Sub-Committee was purely a technical body and, according to document NAV 55/WP.1, the joint proposal by Spain and Morocco was technically sound. The United Kingdom had had seven weeks to submit to this Sub-Committee a document to comment on this proposal but had not done so. Spain did not think it was reasonable that the United Kingdom had done so at this stage in plenary. For these reasons, Spain requested that this document be referred to the Ships’ Routeing Working Group for its review and approval.

3.21 The delegation of Morocco, following the intervention made by the delegation of the United Kingdom, noted that Morocco and Spain, by their proposal, were giving full effect to the decision taken by the Maritime Safety Committee (MSC 67/22/Add.1, annex 13) which provided that the mandatory ship reporting system should be amended when the Tangier VTS was operational, as had been clearly explained by Spain. The proposed amendment would allow Morocco to fulfil its obligations as a coastal State in accordance with international maritime law.

Morocco further noted that this proposal did not affect the existing traffic separation scheme in the Strait of Gibraltar, nor the meridian limits for submitting mandatory ship reports, nor did it require any additional reporting. The proposal was aimed at drawing the attention of masters of ships proceeding from the Atlantic to the Mediterranean Sea to report to Tangiers VTS instead of Tarifa VTS as they had done since 1997, thus avoiding a double report.

Amendments to the existing mandatory ship reporting system (WETREP) in the Western European Particularly Sensitive Sea Area

3.22 The Sub-Committee briefly considered a proposal by Portugal (NAV 55/3/9) to amend the existing mandatory ship reporting system (WETREP) in the Western European Particularly Sensitive Sea Area, which included amendments to the details of the facilities to whom the reports had to be submitted.

Review of adopted mandatory ship reporting systems

3.23 The Chairman recalled that, at NAV 52, NAV 53 and NAV 54, his predecessor had taken the initiative as Chairman to bring to the attention of Members the need for carrying out an evaluation of existing mandatory ship reporting systems as specified in resolution MSC.43(64) – Guidelines and criteria for ship reporting systems, as amended by resolutions MSC.111(73) and MSC.189(79) relating to ship reporting systems. In addition, SOLAS regulation V/11.11 stated that the Organization shall ensure that adopted ship reporting systems are reviewed under the guidelines and criteria developed by the Organization. Furthermore, section 4.4 of resolution MSC.43(64) stated that the Organization should provide a forum for the review and re-evaluation of systems, as necessary, taking into account the pertinent comments, reports and observations of the systems.

3.24 The Chairman further recalled that, at NAV 54, the ships' routing working group had discussed the issue of the increasing number of mandatory ship reporting systems and whether AIS and/or LRIT could be used to satisfy the reporting requirements in such systems. In considering the way forward on this issue, NAV 54 had agreed that any review should be done in the context of SOLAS regulation V/11. It was at that stage premature for the Sub-Committee to undertake a full-scale review of all mandatory reporting systems as AIS and LRIT were still under development. Moreover, it was noted that there might be a way to tailor the further developments of AIS and LRIT to meet ship reporting requirements. The Sub-Committee also agreed that Member Governments should, when they were considering the submission of a new reporting system, review any existing system to determine whether such system could be amended to take into account technological developments. Furthermore, NAV 54 had noted that paragraph 4.4 of the Guidelines and Criteria of Ship Reporting Systems provided for the review of existing ship reporting systems and that any Member Government could bring any concerns regarding a particular system to the attention of the Organization.

3.25 The Chairman noted that, since the past three years, no submissions had been received by the Sub-Committee and suggested once again that Members should undertake a review and re-evaluation of existing mandatory ship reporting systems based on the operational experience gained and take action, as appropriate.

Information for a Formal Safety Assessment (FSA) study undertaken by the United Kingdom and France into reducing risk in the English Channel/La Manche Traffic Separation Schemes (TSSs)

3.26 The Sub-Committee noted with interest the information provided by France and the United Kingdom (NAV 55/INF.10) on a Formal Safety Assessment (FSA) study undertaken by them into reducing risk in the English Channel/La Manche Traffic Separation Schemes (TSSs). The United Kingdom's Maritime and Coastguard Agency (MCA) in conjunction with the French Ministère de l'écologie, de l'énergie, du développement durable et de l'aménagement du territoire (MEEDDAT) were about to consider the results of an FSA study into reducing risk in the English Channel/La Manche Traffic Separation Schemes (TSS). At the Anglo-French Safety of Navigation Group (AFSONG) meeting held in May 2008, both the United Kingdom and France had raised concern that excessive speed by vessels in the Dover Strait/Pas-de-Calais TSS might be a contributing factor to accidents, near misses and groundings in the world's busiest shipping lane. It was intended that both the United Kingdom and France would discuss the final FSA study report at the next AFSONG meeting and agree what Risk Control Options (RCOs) might be used and how they might be implemented. Details of the FSA study would be made available to NAV 56.

Piracy and armed robbery against ships in waters off the coast of Somalia

Recommended routes for ships transiting the Gulf of Aden

3.27 As proposed by the Secretary-General, the Sub-Committee considered the document (NAV 55/3/12) reporting on the establishment of an Internationally Recommended Transit Corridor (IRTC) therein and proposing the issuance of an SN circular recommending its use by mariners transiting the area; and the development of a corresponding draft Assembly resolution with a view to submission to A 26 for adoption.

3.28 There was overwhelming and unanimous support by both Member Governments and industry organizations for the proposal submitted by the Secretary-General. The Sub-Committee commended him for his proactive approach in submitting this proposal, being only one of the many actions undertaken by him in his untiring attempt to combat piracy and armed robbery against ships, which was timely in view of the approaching end of the monsoon season in the region and the anticipated increase in piracy attacks as a result. There was, therefore, a sense of urgency in the need for providing information expeditiously to mariners on the proposed measures to help combating piracy and armed robbery against ships in waters off the coast of Somalia.

3.29 The invited expert from EU OHQ/ATALANTA gave a presentation on the IRTC established by the navies in the Gulf of Aden and, in particular, provided details on the rationale behind this activity. In addition, details on reporting requirements and operational aspects of ships participating in the system were explained.

3.30 Accordingly, the Sub-Committee agreed to refer document NAV 55/3/12 to the Ships' Routeing Working Group for consideration and development of a draft SN circular on the IRTC, to be revised or updated, as necessary; as well as a draft Assembly resolution recommending the use of the IRTC with a view to submission to C/ES.25 for approval and transfer to the twenty-sixth session of the Assembly for adoption.

Establishing the Ships' Routeing Working Group

3.31 After a preliminary discussion, as reported in paragraphs 3.1 to 3.30 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 (item 2), to:

- .1 consider all documents submitted under agenda item 3 regarding routeing of ships and related matters and prepare routeing and reporting measures, as appropriate, and recommendations for consideration and approval by Plenary;
- .2 consider the relevant parts (Nos. 13, 18, 22, 32, 92, 104, 110, 121, 122, 125, 130, 131, 132, 133, 145, 146, 147, 150 and 166) of the annex to document NAV 55/20 (United Kingdom), containing the recommendations and comments of the existing NAV related codes, recommendations and guidelines of non-mandatory instruments and prepare recommendations for consideration and approval by Plenary;
- .3 consider document NAV 55/20/1 (Islamic Republic of Iran), suggesting review of the Ships Position Reporting Format in respect of ships reporting position by VHF despite the availability of the same information through AIS so as to avoid duplication of the information and prepare recommendations for consideration and approval by Plenary;
- .4 take into account the role of the human element guidance as updated at MSC 75 (MSC 75/24, paragraph 15.7) including the Human Element Analysing Process (HEAP) given in MSC/Circ.878-MEPC/Circ.346 in all aspects of the items considered; and
- .5 submit a report to Plenary on Thursday, 30 July 2009 for consideration at Plenary.

Report of the Ships' Routeing Working Group

3.32 Having received and considered the Working Group's report (NAV 55/WP.2), the Sub-Committee approved it in general and, in particular (with reference to paragraphs 3.1 to 10.4 and annexes 1 to 13), took action as summarized hereunder.

New Traffic Separation Scheme "In the approaches to Lagos"

3.33 While the Sub-Committee agreed in principle on the establishment of a new TSS "In the approaches to Lagos", the delegations of the United Kingdom and the United States expressed their concerns on the accuracy of the position data provided, the unavailability of survey data, the uncertainty over the completion date of the VTS centre and the rehabilitation of other aids to navigation, all of which was in progress. The Sub-Committee therefore recommended that Nigeria liaise with the United Kingdom Hydrographic Office and submit a revised proposal for consideration at the Sub-Committee's next meeting when further information would be available.

New Traffic Separation Scheme "In the Bonny Channel and its approaches"

3.34 The Sub-Committee agreed in principle on the establishment of a new TSS, but referred to an earlier decision taken with concerns on a perceived inaccuracy of the geodetic data provided by Nigeria, the unavailability of survey data, the non-completion of dredging of a small

stretch of the Bonny river opposite the NLNG terminal, and the uncertainty over the completion date of the VTS centre, all of which was in progress.

3.35 The Sub-Committee therefore recommended that Nigeria liaise with the United Kingdom Hydrographic Office, review their proposal and submit a revised submission at the Sub-Committee's next meeting when further information would be available.

New Traffic Separation Schemes at “Adlergrund” and “Słupska Bank” in the southern part of the Baltic Sea

3.36 The Sub-Committee approved the proposed new Traffic Separation Scheme at “Adlergrund” and “Słupska Bank” as set out in annex 1, which the Committee is invited to adopt.

New Traffic Separation Schemes surrounding Gotland Island

3.37 The Sub-Committee approved the proposed three new traffic separation schemes surrounding Gotland Island including changing the name of the existing TSS “Off Gotland Island” to “North Hoburgs bank” as set out in annex 1, which the Committee is invited to adopt.

New Traffic Separation Scheme in the Black Sea in the area of south-western coast of the Crimea

3.38 The Sub-Committee recalled that for the time being only one mandatory IMO-adopted Traffic Separation Scheme for certain types of ships existed. The Sub-Committee noted the working group's view that there was no compelling need to establish another mandatory Traffic Separation Scheme as proposed by the delegation of the Ukraine. For this reason the majority of delegates supported the establishment of a new Traffic Separation Scheme in order to increase the safety of navigation in the area concerned as long as such a scheme was non-mandatory.

3.39 The Sub-Committee approved the proposed new Traffic Separation Scheme in the Black Sea in the area of the south-western coast of the Crimea as a non-mandatory TSS as set out in annex 1, which the Committee is invited to adopt.

Amendments to existing Traffic Separation Schemes (TSSs)

Amendments to the existing Traffic Separation Schemes “Off Cape Roca” and “Off Cape S. Vicente”

3.40 The Sub-Committee approved the proposed amended Traffic Separation Schemes “Off Cape Roca” and “Off Cape S. Vicente” as set out in annex 1, which the Committee is invited to adopt.

Amendments to the existing Traffic Separation Schemes “Off Kalbådagrund Lighthouse”, “Off Porkkala Lighthouse” and “Off Hankoniemi Peninsula” in the Gulf of Finland

3.41 The Sub-Committee approved the proposed amended Traffic Separation Schemes “Off Kalbådagrund Lighthouse”, “Off Porkkala Lighthouse” and “Off Hankoniemi Peninsula” as set out in annex 1, which the Committee is invited to adopt.

Routeing measures other than Traffic Separation Schemes (TSSs)

Establishment of a new two-way route “In the Bonny Channel and its approaches”

3.42 The Sub-Committee agreed, in principle, on the establishment of a two-way route, but referred to an earlier decision taken on a perceived inaccuracy of the geodetic data provided by Nigeria, the non-completion of dredging and widening of the Bonny Channel to 460 metres, and the uncertainty over the completion date of the VTS centre, all of which was in progress; the Sub-Committee commended to the delegation of Nigeria to review their proposal and submit a revised submission at the Sub-Committee’s next meeting.

Establishment of a new two-way route “Salvorev” in the waters north of Gotland Island

3.43 The Sub-Committee approved the proposed establishment of a new two-way route in the waters north of Gotland island, the two-way route “Salvorev”, as set out in annex 2, which the Committee is invited to adopt.

Establishment of an Area to Be Avoided (ATBA) and two Mandatory No Anchoring Areas in the western North Atlantic Ocean, off the coast of the United States

3.44 The Sub-Committee approved the proposed establishment of an Area To Be Avoided (ATBA) and two Mandatory No Anchoring Areas in the vicinity of the proposed “Neptune Deepwater Port” in the western North Atlantic Ocean, off the coast of the United States, with some corrections to the description, as set out in annex 2, which the Committee is invited to adopt.

Deep-water route including associated routeing measures leading to the new Jazan Economic City Port (JEC Port) in the southern Red Sea

3.45 The Sub-Committee was satisfied with the changes made to the deep-water route including associated routeing measures consisting of a traffic separation scheme, two Areas To Be Avoided and a precautionary area leading to the new Jazan Economic City Port (JEC Port) with some corrections, as set out in annex 2, and approved the proposed routeing system, which the Committee is invited to adopt.

Amendments to the existing Deep-water route leading to IJmuiden

3.46 The Sub-Committee approved the proposed amendments to the existing Deep-water route leading to IJmuiden with corrections to the description, as set out in annex 2, which the Committee is invited to adopt.

Implementation of new and amended Traffic Separation Schemes and other routeing measures

3.47 The new TSSs and amendments to the existing TSSs and other routeing measures mentioned in above paragraphs 3.36 to 3.39, 3.40 and 3.41 to 3.46, except 3.45 will be implemented at a date not less than six months after adoption by the Committee. Saudi Arabia requested the effective date of implementation of the deep-water route including associated routeing measures leading to the new Jazan Economic City Port to be 1 January 2011.

Mandatory ship reporting systems

Amendments to the existing mandatory ship reporting system “In the Strait of Gibraltar” (GIBREP)

3.48 The Sub-Committee approved the proposed amendments to the existing mandatory ship reporting system “In the Strait of Gibraltar” (GIBREP), as set out in annex 3, which the Committee is invited to adopt.

Amendments to the existing mandatory ship reporting system (WETREP) in the Western European Particularly Sensitive Sea Area

3.49 The Sub-Committee approved the proposed amendments to the existing mandatory ship reporting system (WETREP) in the Western European Particularly Sensitive Sea Area, as set out in annex 4, which the Committee is invited to adopt.

Implementation of amendments to the existing Mandatory Ship Reporting Systems

3.50 The amendments to the existing mandatory ship reporting system mentioned in above paragraphs 3.48 and 3.49 will be implemented at a date, not less than six months after adoption by the Committee.

Piracy and armed robbery against ships in waters off the coast of Somalia

Recommended routes for ships transiting the Gulf of Aden

3.51 The Sub-Committee welcomed the Internationally Recommended Transit Corridor (IRTC) for use by ships transiting that area and proposed only minor amendments to the draft SN circular and the draft Assembly resolution which include, *inter alia*, addition of the website reference of MSC-HOA (Maritime Security Centre – Horn of Africa).

3.52 The Sub-Committee approved SN.1/Circ.281 on Information on internationally recommended transit corridor (IRTC) for ships transiting the Gulf of Aden and instructed the Secretariat to circulate the proposed SN circular expeditiously to all concerned and invited the Committee to endorse this action.

3.53 The Sub-Committee also agreed to the proposed draft Assembly resolution on the Internationally recommended transit corridor (IRTC) for ships transiting the Gulf of Aden, as set out in annex 5, and requested the Secretary-General to submit it to C/ES.25 for approval and submission to A 26 for adoption.

Development of ships’ routeing and ship reporting proposals

3.54 The delegations of Denmark and Sweden stated that whilst the majority of the ships’ routeing and ship reporting proposals had been drafted well, there were others which needed some improvement. Both delegations, once again, requested Member Governments to take into account the General Provisions on Ships’ Routeing (resolution A.572(14), as amended) including the guidance in MSC/Circ.1060 and MSC.1/Circ.1060/Add.1 when developing ships’ routeing and ship reporting proposals.

4 DEVELOPMENT OF GUIDELINES FOR IBS, INCLUDING PERFORMANCE STANDARDS FOR BRIDGE ALERT MANAGEMENT

4.1 The Sub-Committee recalled that MSC 82, noting that the Sub-Committee was developing revised INS and IBS performance standards to allow for a comprehensive application of SOLAS regulation V/15, had instructed NAV 53 to take ergonomic criteria, as set out in MSC-MEPC.7/Circ.3, into consideration when discussing this issue. Furthermore, the Committee had invited Member Governments and international organizations with human element expertise to participate in the deliberations at NAV 53 to ensure that the human element and, in particular, ergonomics were taken into account when reviewing the application of SOLAS regulations V/15 and V/23.

4.2 The Sub-Committee also recalled that DE 51 had considered documents DE 51/6 and DE 51/2/2 (Secretariat), reporting on the outcome of NAV 53, DSC 12 and FP 52 and noted that NAV 53 did not have any comments on the proposed revision but noted that the work by the DE Sub-Committee was related to the work of the NAV Sub-Committee's IBS Correspondence Group and that ongoing liaison was required and consequently NAV 53 had instructed the IBS Correspondence Group to continue liaising with the DE Sub-Committee to ensure consistent treatment of alerts, including alarms and indicators. Secondly, DE 51 had noted document DE 51/6/1 (Germany), informing it on the progress made by the NAV Correspondence Group on Integrated Bridge Systems (IBS) with regard to the development of a bridge alert management as part of the guidelines for IBS, and invited the group to continue participating in the work of the Sub-Committee on the revision of the Code on Alarms and Indicators. DE 51 had postponed final consideration of the draft revised Code to DE 52 and requested IACS to finalize the draft revised Code on Alarms and Indicators and submit it to DE 52.

4.3 The Sub-Committee noted that DE 52 had considered the German document (DE 52/4/1) concerning the harmonization of the draft performance standards with the draft Code on Alarms and Indicators with regard to issues like definition of priorities, presentation of alerts and handling of the states of alerts. DE 52 had agreed to a draft Assembly resolution on Adoption of the Code on Alerts and Indicators, 2009, and to insert a definition for the term "signal" in the draft revised Code, defining it as an audible indication, forming a counterpart to the existing definition of "indicator" as a visual indication.

4.4 The Sub-Committee briefly discussed the report by Germany (NAV 55/4) summarizing the work and recommendations of the Correspondence Group on IBS regarding the development of guidelines for bridge equipment and systems, their arrangement and integration and the development of performance standards for Bridge Alert Management.

4.5 The Sub-Committee noted:

- .1 the suggestion in paragraph 9 to replace the existing performance standards for IBS (resolution MSC.64(67), annex 1) with the draft guidelines for bridge equipment and systems, their arrangement and integration and to update the footnote in SOLAS chapter V, regulation 15 and regulation 19, to the new draft guidelines;
- .2 the information provided in paragraph 14 on the recommendation to consider the development of appropriate instruments for ensuring the application of the general requirements of modules A and C of the draft performance standards for Bridge Alert Management to all equipment on the bridge presenting alerts; and

- .3 the proposal to develop guidelines (SN/Circ.) for the presentation of voice alert messages as discussed in paragraph 15; and the information provided in paragraph 16 regarding the need to consider operational and technical issues for the presentation of voice alerts.

4.6 The Sub-Committee agreed to refer document NAV 55/4 to the Technical Working Group, to be established, for detailed consideration and finalization of:

- .1 proposed draft guidelines for bridge equipment and systems, their arrangement and integration; and
- .2 proposed draft performance standards for Bridge Alert Management.

4.7 The Sub-Committee briefly considered document NAV 55/4/1 (Australia) providing comments on issues related to the building of High-Speed Craft (HSC) and, in particular, the design and fabrication of bridge navigation systems. Australia had recommended that the most effective and expedient solution to this would be to develop a draft safety of navigation circular bringing the issues to the attention of all concerned.

4.8 The Sub-Committee supported the development of a draft MSC circular on High-Speed Craft (HSC) compliance with the provisions of SOLAS regulations V/18 to V/20 and agreed to refer document NAV 55/4/1 to the Technical Working Group, to be established, for finalizing a draft MSC circular.

4.9 The Sub-Committee also briefly considered document NAV 55/4/2 (United Kingdom) providing general comments on the report of the Correspondence Group. The United Kingdom was of the opinion that the report of the Correspondence Group's had highlighted several other key areas that were outside the Correspondence Group's remit and spread over the responsibility of several other sub-committees, who might need to be involved. A goal-based, holistic, ship-wide approach was required, possibly involving risk assessment as the first step. Accordingly, the United Kingdom had recommended that a review of the work completed by the CG and its impact on other work being carried out by sub-committees was needed.

4.10 The delegation of Germany stated that the correspondence group on INS/IBS had continued to liaise with the Sub-Committee on Design and Equipment (DE) to ensure consistent treatment of alerts including alarms and indicators. Furthermore, the correspondence group had liaised with IACS to develop a revised Draft of the Code of Alarms and Indicators. Comments were provided for a harmonized treatment of alerts on board and for the harmonization of the revised code with the bridge alert management performance standards. The revised Code had been discussed at DE 52 and approved by MSC 86 for adoption.

The delegation of Germany further stated that the Code of Alarms and Indicators was an independent IMO instrument and did not depend on other standards, and, vice versa, the performance standards for bridge alert management did not depend on the Code but were harmonized with it. The performance standards could be applied for all types of bridges but should be made applicable first to new ships. A phased-in introduction similar to that for ECDIS could be considered.

4.11 The Secretariat explained that as consideration of the key areas identified by the United Kingdom in document NAV 55/4/2 had been referred to several other sub-committees, the NAV Sub-Committee was unable to allocate these tasks to them, as this was the remit of the

Maritime Safety Committee. Accordingly, it was suggested that the United Kingdom might wish to put forward a new work programme item for consideration by the Committee.

4.12 The Sub-Committee noted with interest the information provided by the Republic of Korea (NAV 55/INF.3) on the results of a research project on the Integrated Ship Bridge Alarm System, which were expected to contribute to the discussion on the Bridge Alarm Management which was one of the major modules of the Integrated Bridge System (IBS).

4.13 The Sub-Committee noted with interest the information provided by Japan (NAV 55/INF.5) on their experiences of developing industrial standards for voice alarm/control system, based on Japanese Industrial Standards (JIS F 0062) as reference, as contributing to the discussions on this issue. Japan recognized the necessity of considering other relevant items in designing and standardizing a voice alarm system, in addition to the “phrases” for the voice alarm system.

4.14 The Sub-Committee agreed to refer documents NAV 55/4, NAV 55/4/1, NAV 55/4/2, NAV 55/INF.3 and NAV 55/INF.5 to the Technical Working Group to be established under agenda items 4, 6, 7, 8, 10, 20A and 20C.

Establishing the Technical Working Group

4.15 Having also considered agenda items 6, 7, 8, 10, 20A and 20C which were deemed to be within the remit of the Technical Working Group, the Sub-Committee re-established the Technical Working Group and instructed it to consider all relevant documents submitted under these agenda items and, taking into account any decisions of, and comments and proposals made in Plenary, undertake the following tasks:

- .1 consider documents NAV 55/4 and NAV 55/INF.3 and, taking into account the framework for the consideration of ergonomics and the working environment in order to reduce the incidents of personal injuries and human errors (MSC-MEPC.7/Circ.3):
 - .1 finalize the draft SN circular on Guidelines for bridge equipment and systems, their arrangement and integration (NAV 55/4, annex 1) (agenda item 4); and
 - .2 finalize the proposed draft performance standards for Bridge Alert Management (NAV 55/4, annex 2) (agenda item 4);
- .2 consider documents NAV 55/4 and NAV 55/INF.5 and provide comments and guidance on the proposal to develop guidelines (SN/Circ.) for the presentation of voice alert messages, the need to consider operational and technical issues for the presentation of voice alerts and also, if considered necessary, a justifiable and compelling need for developing the associated Guidelines for voice alert messages (NAV 55/4, paragraphs 15, 16 and 17) (agenda item 4);
- .3 consider document NAV 55/4/1 and finalize a draft MSC circular on High-Speed Craft (HSC) compliance with the provisions of SOLAS regulations V/18 to V/20 (NAV 55/4/1, paragraph 13 and annex) (agenda item 4);

- .4 consider documents NAV 55/6, NAV 55/6/1, NAV 55/6/2 and NAV 55/INF.12, taking into account the proposals contained in documents MSC 83/25/4, MSC 83/25/8, MSC 83/25/9, MSC 83/25/18 and MSC 84/22/18, and:
 - .1 prepare draft text of revised performance standards for VDR (resolution A.861(20)) using the annex of document NAV 55/6/1 as the basic document; and
 - .2 consider the proposed amendment to SOLAS regulation V/20 and provide comments, as appropriate (agenda item 6);
- .5 consider document NAV 55/7 and prepare a draft MSC circular on Guidance on procedures for updating shipborne navigation and communication equipment for review/comments by COMSAR 14, final review by NAV 56, and approval by MSC 88 (agenda item 7);
- .6 prepare, as appropriate, recommendations, opinions and liaison statements to appropriate ITU bodies in relation to documents NAV 55/8, NAV 55/8/6, NAV 55/8/5, NAV 55/10/1, NAV 55/8/1, NAV 55/8/2, NAV 55/8/3 and NAV 55/8/4 (agenda items 8 and 10);
- .7 consider documents MSC 83/15/3, NAV 55/10 and MSC.1/Circ.1252 with respect to the proposed amendment to SOLAS regulation V/18 including the linkages between the annual radio inspection of AIS and the renewal or endorsement of a safety equipment certificate and provide recommendations and comments, as appropriate (agenda item 10);
- .8 consider the annex of document NAV 55/20 (Nos. 7, 9, 11, 12, 14, 17, 19, 21, 23, 24, 25, 31, 34, 37, 41, 44, 45, 48, 49, 52, 53, 67, 68, 69, 70, 82, 91, 94, 95, 98, 100, 111, 123, 124, 126, 127, 134, 135, 136, 138, 140, 144 and 162) (agenda item 20A);
- .9 consider document NAV 55/20/2 with respect to the reset function of the BNWAS and advice, as appropriate (agenda item 20C);
- .10 take into account the role of the human element guidance as updated at MSC 75 (MSC 75/24, paragraph 15.7) including the Human Element Analysing Process (HEAP) given in MSC/Circ.878-MEPC/Circ.346 in all aspects of the items considered; and
- .11 submit a report to Plenary on Thursday, 30 July 2009 for consideration at Plenary.

Report of the Technical Working Group

4.16 Having received and considered the Technical Working Group's report (NAV 55/WP.4), the Sub-Committee (with reference to paragraphs 3.1 to 3.13 and annexes 1 to 3) took action as summarized hereunder.

Draft SN/Circular on Guidelines for bridge equipment and systems, their arrangement and integration

4.17 The Sub-Committee considered document NAV 55/4, annex 1, containing the draft guidelines for bridge equipment and systems, their arrangement and integration. The Sub-Committee noted that the guidelines aim to support the design of bridge equipment and systems, their arrangement and integration for safe and effective operation of the vessel under the control of the bridge team and pilot, applying SN.1/Circ.265. The Sub-Committee further noted that the guidelines could be seen 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.

4.18 The Sub-Committee agreed that these guidelines superseded the existing performance standards for IBS (resolution MSC.64(67), annex 1). The Sub-Committee further agreed that the footnote in SOLAS chapter V, regulation 15 and regulation 19, should be updated, providing reference to the new guidelines for bridge equipment and systems, their arrangement and integration, and instructed the Secretariat accordingly.

4.19 The Sub-Committee noted the views of the United Kingdom that there were aspects of resolution MSC.64(67), annex 1, which were not fully covered in the current proposals and, as such, they believed that the resolution should be superseded only to the extent to which these proposals applied.

4.20 The Sub-Committee finalized the draft SN/Circular on Guidelines for bridge equipment and systems, their arrangement and integration, as set out at annex 6, for approval by the Committee.

Draft performance standards for Bridge Alert Management

4.21 The Sub-Committee considered document NAV 55/4, annex 2, containing draft performance standards for Bridge Alert Management, taking into account document NAV 55/INF.3 (Republic of Korea) containing information on the result of a research project on the Integrated Ship Bridge Alarm System. It was noted that the Republic of Korea would continue studying the issue and would provide additional information to a future meeting of the Sub-Committee.

4.22 The Sub-Committee noted that the purpose of the alert management specified in the draft performance standards was to enhance the handling, distribution and presentation of alerts on the bridge to enable the bridge team to devote full attention to the safe operation of the ship and to immediately identify any abnormal situation requiring action to maintain the safe operation of the ship. It was considered that in order to harmonize the presentation of priority, states, classification, handling, and distribution of alerts on the bridge the general requirements of modules A and C should be made applicable for relevant equipment on the bridge presenting alerts.

4.23 The Sub-Committee finalized the draft MSC resolution on performance standards for Bridge Alert Management, as set out at annex 7, for adoption by the Committee.

Voice alert messages

4.24 The Sub-Committee noted that the Correspondence Group on IBS had considered, in the framework of the development of performance standards for Bridge Alert Management, the issue of unambiguous standard phrases for voice alerts as requested by the Sub-Committee (NAV 55/4, paragraphs 15 to 17). The Sub-Committee also noted document NAV 55/INF.5 (Japan) providing information on Japanese experiences of developing industrial standards for voice alarm/control systems and providing Japanese Industrial Standards (JIS F 0062). It was noted that more work would be needed to standardize voice alarm/control systems.

4.25 The Sub-Committee concurred in general with the view of the Correspondence Group that guidelines for voice alert messages, comparable to SN/Circ.243 (Guidelines for the presentation of navigation-related symbols, terms and abbreviations), should be developed to promote a consistent and harmonized use of voice alert messages. The Sub-Committee further agreed that there would be a need to consider in addition operational and technical issues for the presentation of voice alerts, as for example presentation on the various systems, bridge environment, varying number of operators on the bridge, priority against existing audible devices and combination with the visual and audible alert presentation.

4.26 The Sub-Committee noted that this issue would require the need for a new work programme item and that extension of the existing work programme item was not appropriate. Therefore, the Sub-Committee invited Members who wished to develop the associated guidelines, to submit a proposal for a new work programme item for consideration by the Committee. The Sub-Committee noted the view of the Bahamas that they did not agree that there was a compelling need for a new work programme item in this regard and that it should not be a high priority for the Organization.

Draft MSC circular on High-Speed Craft (HSC)

4.27 The Sub-Committee further developed and finalized the draft MSC circular on High-Speed Craft (HSC) Compliance with the provisions of SOLAS regulations V/18 to V/20, as set out at annex 8, for approval by the Committee.

4.28 The Committee was invited to delete the item “Development of Guidelines for IBS, including performance standards for bridge alert management” from the Sub-Committee’s work programme, as the work on this item had been completed (paragraph 18.5.1.1.1).

5 GUIDELINES FOR CONSIDERATION OF REQUESTS FOR SAFETY ZONES LARGER THAN 500 METRES AROUND ARTIFICIAL ISLANDS, INSTALLATIONS AND STRUCTURES IN THE EEZ

5.1 The Sub-Committee recalled that NAV 53 had considered a proposal by Brazil (NAV 53/3) supplemented by a study carried out by DNV and PETROBRAS (NAV 53/INF.2), which aimed at designating an Area to be Avoided in waters off the Brazilian south-east coast, in the Campos Basin region, in order to reduce the risk of collision in an area with a high concentration of oil rigs, production systems and FPSOs. The second part of the proposal was to extend the safety zones around the units which constituted this oil production system, taking into consideration the peculiarities of each one of them, with a view to avoiding environmental damage caused by any collision of a vessel. There was general support for the proposal by Brazil, but some delegations were concerned by the extension of the designated safety zones to more than 500 metres, taking into consideration that there were no established procedures and guidelines in order to determine any proposed extension. It was proposed that the Sub-Committee should develop uniform procedures, and guidelines by which safety zone

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proposals should be considered. Otherwise, the Sub-Committee would be considering proposals for safety zones greater than 500 metres on an *ad hoc* basis without guidelines, standards or objective measures by which to make a judgement. The development of uniform procedures would ensure that safety of navigation was taken consistently into account. Proposals should be judged on an objective basis so that the size of any adopted safety zone was no larger than the minimum necessary to achieve safety of navigation.

5.2 The Sub-Committee also recalled that NAV 53 had subsequently approved the proposed new Area to be Avoided “Off the Brazilian south-east coast, in the Campos Basin region” and observed that the majority of the Ships’ Routeing Working Group had recommended that the Sub-Committee should invite the Committee to establish as a high-priority work item on the development of guidelines, principles and standards for the evaluation of the extension of safety zones larger than 500 metres, which according to UNCLOS Article 60(5) “shall not exceed a distance of 500 metres around them, measured from each point of their outer edge, except ... as recommended by the competent international organization”, which is understood to mean the Organization. The Chairman invited interested Parties to submit appropriate submissions on the matter to the Committee.

5.3 The Sub-Committee further recalled that MSC 84 had subsequently considered document MSC 84/22/4 (Brazil and United States), proposing to develop comprehensive guidelines for the consideration of requests for safety zones around artificial islands, installations and structures larger than 500 metres in Exclusive Economic Zones and providing an example of such guidelines, and agreed to include a corresponding high-priority item in the work programme of the Sub-Committee, with two sessions needed to complete the item. In this regard, MSC 84 had noted the views of several delegations that other issues (e.g., safety zones around offshore wind farms, notification areas, etc.) should be considered under this new work item and instructed the Sub-Committee to take these views into account.

5.4 The Chairman informed the Sub-Committee that at this session no proposals had been received although this was a high-priority work item on the Sub-Committee’s work programme. He further suggested that consideration of this item be deferred to NAV 56.

5.5 The delegation of the United Kingdom, noting that this was a high-priority item, proposed that the Sub-Committee should proceed on this issue without delay and should therefore establish a correspondence group to work intersessionally and report to NAV 56.

5.6 There was considerable support for the proposal by the United Kingdom. Accordingly, the Sub-Committee agreed to the establishment of the correspondence group under the coordination of the United Kingdom* to undertake the following tasks:

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- .1 review resolutions A.671(16) and A.572(14), as amended including document MSC 84/22/4 (Brazil and United States) and develop relevant guidelines for recommending Safety Zones larger than 500 metres around artificial islands, installations and structures in the Exclusive Economic Zone (EEZ) including multiple structure installations, taking into account the General Provisions on Ships' Routeing, which provide a useful and valuable framework;
- .2 address means for ensuring the safety of navigation and of the artificial island, installations, or structures from collisions or allisions of passing vessels, while at the same time assuring a reasonable relationship of the proposed safety zone to the nature and function of the artificial island, installation or structure, and while remaining fully consistent with the rights and duties of other States in the EEZ in accordance with international law as referenced in Article 58 of UNCLOS; and
- .3 provide advice and recommendations for consideration by NAV 56.

5.7 Members were invited to submit relevant proposals for consideration at NAV 56.

6 AMENDMENTS TO THE PERFORMANCE STANDARDS FOR VDR AND S-VDR

6.1 The Sub-Committee recalled that MSC 83 had considered:

- .1 document MSC 83/25/4 (Germany) stating that evaluation of data retrieved from existing VDR installations had shown that in many cases the audio recordings were of bad quality and sensor signals were not recorded because the sensor failure had not been recognized during operation. This had in certain cases made it impossible to use the stored data for the intended purpose. It was therefore essential to amend the performance standards in order to allow a VDR to fulfil its intended purpose;
- .2 documents MSC 83/25/8 and MSC 83/25/9 (Egypt), in which Egypt had proposed that a second radar, second VHF and CCTV cameras needed to be connected to the VDR; there was a need to modify VDR capsule release from its base to facilitate difficulty of VDR capsule retrieval on recovery operation by ROV. Secondly, the use of a mobile hard disk to ease information retention in cases of abandon ship could save retrieval operation costs,

and agreed to include, in the work programme of the Sub-Committee, a high-priority item on "Amendments to the Performance standards for VDR and S-VDR", with two sessions needed to complete the item, and referred the aforementioned documents to the Sub-Committee for detailed consideration.

6.2 The Sub-Committee further noted that MSC 84 had also agreed to expand the existing work programme item to consider the proposal contained in document MSC 84/22/18 (Egypt), and increased the number of sessions needed to complete this work item to three sessions.

6.3 The Sub-Committee further considered document MSC 84/22/18 (Egypt) proposing that consideration should be given for the need to attach a floating capsule to the fixed one so as to minimize the search time and risks and reduce search and retrieval costs for the capsule.

6.4 The Sub-Committee noted that, in document MSC 83/25/18, India had supported Egypt's proposal to modify VDR capsule release from its base and to provide an easy means to obtain information (hard disk). To retrieve the data from a sunken ship was not always feasible, therefore, it was essential to incorporate an additional storage medium externally on the below deck unit of VDR and S-VDR on the bridge. The storage medium should be compatible with standard interfaces such as Ethernet, USB, Fire Wire, or equivalent and should be enclosed in a floatable watertight casing of bright colour with retro-reflective tape and carrying straps. The pull-free data device should be so designed that the person on board when abandoning ship had only to pull the additional storage medium device and strap it round the neck.

6.5 The Sub-Committee considered document NAV 55/6 (Republic of Korea) suggesting that there was a need to amend the Performance Standards for VDR and S-VDR so as not to lose the stored information over the period before and after a subsequent incident, and proposing an amendment to the Performance Standards, which enabled copies to be made of that information through a saving process. In addition, the Republic of Korea was of the opinion that some mandatory procedures should be established to perform the saving process on board ship and further proposed an associated amendment to SOLAS regulation V/20.

6.6 The Sub-Committee also considered document NAV 55/6/1 (Germany and the United Kingdom) suggesting that there was a need to amend the Performance Standards to cover data availability and quality issues to better enable the data to be used in the way intended by the Organization, namely for the investigation of accidents and incidents. These amendments were required to ensure that the pertinent data items available now as a result of advanced technologies were recorded and available to investigators in the most cost-effective manner following an accident or incident. The proposed amendments were not intended to be retrospective, and since according to SOLAS regulation V/20.2 the Performance Standard for S-VDRs (resolution MSC.163(78)) would not apply after 1 July 2010, no changes were proposed to the performance standards for S-VDRs.

6.7 The Sub-Committee further considered document NAV 55/6/2 (United States) proposing the addition of ship's heel angle to the list of required data items to be recorded by voyage data recorders.

6.8 There was a general discussion on the proposed amendments to the performance standards for Voyage Data Recorders. Delegations had concerns regarding following issues:

- .1 extension of the time for which data are retained;
- .2 post-incident retrieval: fixed versus float-free arrangements; and
- .3 the final recording medium.

Secondly, with respect to the proposal by the Republic of Korea for an amendment to SOLAS regulation V/20 to assist in casualty investigation, some delegations were of the view that a technical solution would be preferable, rather than putting a mandatory requirement on the master, as there was no guarantee against human error.

6.9 The Sub-Committee concurred that only the existing performance standards for VDRs (resolution A.861(20)) need to be amended as the proposed amendments are not intended to be retrospective. Secondly, since the Performance Standard for S-VDRs (resolution MSC.163(78)) would not apply after 1 July 2010, it was not necessary that any changes should be made to that

standard. The delegation of the United Kingdom clarified that the amended performance standards would only apply to new ships.

6.10 The Sub-Committee further agreed that the annex to document NAV 55/6/1 should be used as the basic document by the Technical Working Group to develop the revised performance standards.

6.11 The Sub-Committee noted the information provided by the European Commission (NAV 55/INF.12) on the results of the research project, the European Maritime Data Management (EMDM) on amendments to existing VDR standards.

6.12 The Sub-Committee agreed to refer documents NAV 55/6, NAV 55/6/1, NAV 55/6/2, NAV 55/INF.12, MSC 83/25/4, MSC 83/25/8, MSC 83/25/9, MSC 83/25/18 and MSC 84/22/18 to the Technical Working Group to be established under agenda items 4, 6, 7, 8, 10, 20A (sub-item on Codes, Recommendations, Guidelines of non-mandatory instruments) and 20C (operation of BNWAS) for developing the revised performance standards for VDRs.

Report of the Technical Working Group

6.13 Having received and considered the Technical Working Group's report (NAV 55/WP.4), the Sub-Committee (with reference to paragraphs 4.1 to 4.6 and annex 4) took action as summarized hereunder.

6.14 The Sub-Committee noted that the issues raised in documents MSC 83/25/4 (Germany), MSC 83/25/8 (Egypt), MSC 83/25/9 (Egypt), MSC 83/25/18 (India), MSC 84/22/18 (Egypt) and document NAV 55/INF.12 had been taken into account by Germany and the United Kingdom in their proposals set out in the annex to document NAV 55/6/1.

6.15 In considering document NAV 55/6/2, the Sub-Committee noted that the issue of concern for the United States was satisfactorily dealt with in the annex to document NAV 55/6/1.

6.16 The Sub-Committee observed that the Group had further considered document NAV 55/6 and noted that the Republic of Korea was of the view that, to assist in casualty investigation, mandatory procedures should be established to perform the saving process on board the ship after an accident had taken place through a proposed amendment to SOLAS regulation V/20. Some delegations were of the view that a technical solution would be preferable rather than putting a mandatory requirement on the master as proposed by the Republic of Korea. However, it was considered that, whilst new installations could include a technical solution for existing VDRs, the proposed amendment to SOLAS could be of assistance. However, some delegations expressed the view that in practice it might be very difficult for a master to attend to a VDR whilst handling the distress situation. The Sub-Committee noted that the Group was not able to agree on a recommendation to Plenary at this session and decided to request Member Governments to submit relevant proposals to NAV 56.

6.17 The Sub-Committee prepared draft text of revised performance standards for voyage data recorders (VDRs) (resolution A.861(20)) on the basis of the annex to document NAV 55/6/1, taking into account the proposal contained in document NAV 55/6. In preparing the draft text of revised performance standards, it was considered that:

- .1 justification, for instance by a cost/benefit analysis, was needed for the proposal to fit a float-free type capsule in addition to a fixed protected capsule (paragraph 5.1.3.1);

- .2 there was a need for a better description for the word “tampering” in paragraph 5.1.5.3;
- .3 testing requirements were inappropriate in a performance standard as suggested in paragraph 5.2.4;
- .4 with regard to the proposed changes for paragraph 5.3.3, possibly a longer period of time than 24 hours should be considered;
- .5 there will be a need for a standard for interconnection with ECDIS (paragraph 5.4.8);
- .6 information should be provided on the availability on electronic inclinometers (paragraph 5.4.18);
- .7 there will be a need for standards for interconnection with electronic log-books, etc. (paragraph 5.4.19); and

the Sub-Committee invited interested parties to submit additional information and/or proposals to the next session of the Sub-Committee on the above-mentioned issues.

6.18 The draft text of revised performance standards for voyage data recorders (VDRs) (resolution A.861(20)) is set out in annex 4 to document NAV 55/WP.4, as amended, for further consideration by NAV 56.

7 DEVELOPMENT OF PROCEDURES FOR UPDATING SHIPBORNE NAVIGATION AND COMMUNICATION EQUIPMENT

7.1 The Sub-Committee recalled that MSC 83 had considered document MSC 83/25/7 (Australia and the United Kingdom), proposing to develop, in view of the increasing complexity of processor-based electronic systems, formal procedures to address firmware, operating systems and software updates for shipborne navigation and communication systems and equipment, and agreed to include, in the work programmes of the NAV and COMSAR Sub-Committees, a high-priority item on “Development of procedures for updating shipborne navigation and communication equipment”, with two sessions needed to complete the item, and assigned the Sub-Committee as a coordinator.

7.2 The Sub-Committee also recalled that, at COMSAR 12, Australia and the United Kingdom had submitted an information document (COMSAR 12/INF.10) regarding the development of formal procedures addressing software upgrades for communications and navigation systems.

7.3 The Sub-Committee considered document NAV 55/7 (CIRM) providing comments on the consideration given in document MSC 83/25/7 and suggesting that SN.1/Circ.266, providing guidance on the maintenance of ECDIS software, was appropriate to be used as a model in general for updating shipborne navigation and communication equipment and address firmware, operating systems and software updates for shipborne navigation and communication equipment.

7.4 The Sub-Committee agreed to refer document NAV 55/7 to the Technical Working Group to be established under agenda items 4, 6, 7, 8, 10 and 20 (sub-items on Codes, Recommendations, Guidelines of non-mandatory instruments and reset function of the BNWAS), for developing a draft MSC circular on Guidance for updating shipborne navigation and

communication equipment for review/comments by COMSAR 14, final review by NAV 56 and approval by MSC 88.

Report of the Technical Working Group

7.5 Having received and considered the Technical Working Group's report (NAV 55/WP.4), the Sub-Committee (with reference to paragraph 5.1 and annex 5), took action as summarized hereunder.

7.6 The Sub-Committee endorsed the draft MSC circular on Guidance on procedures for updating shipborne navigation and communication equipment, as set out at annex 9, for review/comments by COMSAR 14 and a final review by NAV 56 prior to approval by MSC 88.

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

8.1 The Sub-Committee recalled that MSC 82 had extended the target completion date of this agenda item to 2009.

Outcome of the fifth meeting of the Joint IMO/ITU Experts Group on Maritime radiocommunication matters

8.2 The Sub-Committee noted the information provided in document NAV 55/INF.13 (Secretariat) on the outcome of the fifth meeting of the Joint IMO/ITU Experts Group on Maritime radiocommunication matters, which took place from 23 to 25 June 2009, and in particular:

- .1 the annex of the document containing a draft liaison statement to ITU on the outcome of deliberations regarding satellite detection of AIS in the Committee; and
- .2 on the further development of the draft IMO position on relevant WRC-11 agenda items.

Satellite detection of AIS

8.3 The Sub-Committee recalled that NAV 54 had considered documents NAV 54/9/1, NAV 54/INF.2 and NAV 54/INF.10 (Secretariat) relating to the issue of improved satellite detection of AIS. NAV 54 was of the opinion that it was premature to further address the issue of satellite detection of AIS and agreed to:

- .1 bring the matter to the attention of the Committee with the aim of getting a clear policy direction; and
- .2 send an interim liaison statement to ITU explaining that further discussion in IMO was needed before any guidance on this issue could be given; the liaison statement should be sent as soon as possible in order to inform ITU-R WP5B in time for its next meeting to be held in October 2008.

The Committee was invited to take a clear decision on whether it was supporting the issue of satellite detection of AIS.

8.4 The Sub-Committee noted that MSC 85 had considered document MSC 85/11/1 (Secretariat) and noted also that several Member States were conducting research and development efforts to determine the feasibility of using AIS receiving capability on low earth orbit (LEO) satellites and high altitude, long endurance (HALE) airships or balloons. The reasons brought forward for satellite detection of AIS were, *inter alia*:

- .1 observation of maritime activity;
- .2 detection, monitoring and surveillance of global maritime shipping;
- .3 ship tracking and other navigational activities;
- .4 satellite-based oil spill detection services;
- .5 fisheries monitoring; and
- .6 provision of vessel information critical to maritime safety and security.

8.5 The Sub-Committee noted further that, in considering whether to support the issue of satellite detection of AIS, MSC 85 had noted that:

- .1 in principle, everyone who would be able to receive these signals could use the information collected, also for commercial activities;
- .2 there might be a need to subsequently specify modifications to the shipborne AIS Class A equipment; and
- .3 there was a need for separate frequencies for satellite detection of AIS, which should be selected within the available VHF frequency band for the maritime service and the frequencies under consideration were the frequencies adjacent to the GMDSS distress Channel 16.

Several delegations (Sweden, the United States, France, China, Greece and ICS (observer)) spoke on the issue and MSC 85 had decided to postpone discussion of the issue to its next session and invited interested delegations to submit relevant proposals to MSC 86 for consideration under the agenda item on "Any other business".

8.6 The Sub-Committee also noted that MSC 86 (MSC 86/26, paragraphs 25.4 to 25.9) had considered the issue on the basis of document MSC 86/25/1 (France) and that the Chairman, in summing up the debate, had outlined the following points:

- .1 considerable concerns had been raised, which should be conveyed to the relevant bodies in ITU, to be taken into account in their further studies, namely:
 - .1.1 the relation with the implementation of the LRIT system;
 - .1.2 integrity and confidentiality issues;
 - .1.3 security issues;
 - .1.4 collection and dissemination of data;

- .1.5 technical issues, such as the risk of interference to critical existing maritime radiocommunication services and the need for changes to the current AIS Class A equipment; and
 - .1.6 global policy issues, including the view that all countries should benefit from the development and implementation of this system;
 - .2 there was general support for the continuation of studies under the framework of ITU; and
 - .3 IMO should not make any commitment at this stage, awaiting the outcome of studies.
- 8.7 The Sub-Committee noted that MSC 86 had further recognized that:
- .1 being part of a WRC agenda item, the studies on satellite detection of AIS were covered under the work programme of the COMSAR Sub-Committee;
 - .2 e-navigation was already an item on the work programme of the NAV and COMSAR Sub-Committees;
 - .3 the NAV Sub-Committee was the competent body for AIS, and ITU matters were already on its work programme; and
 - .4 therefore no new work programme item was necessary to study the satellite detection of AIS as it was already covered by the respective work programme items of both Sub-Committees.
- 8.8 The Sub-Committee further noted that it was expected to send a liaison statement to ITU, informing them of the outcome of deliberations on this matter by the Committee.
- 8.9 The Sub-Committee noted that, in November 2008, a liaison statement on this matter was received from ITU and that further discussions on this issue took place at the last meeting of ITU WP 5B in May this year.
- 8.10 The Sub-Committee considered documents NAV 55/8 and NAV 55/8/6 (Secretariat) containing a liaison statement from the meeting of ITU-R Working Party 5B which took place from 29 October to 7 November 2008, to IMO (COMSAR and NAV) and IALA concerning improved satellite detection of AIS and information on the further development of the Preliminary draft new report ITU-R M. [SAT-AIS] on Improved satellite detection of AIS at ITU WP5B's meeting from 19 to 28 May 2009.
- 8.11 The Sub-Committee agreed to refer documents NAV 55/8 and NAV 55/8/6 to the Technical Working Group established under agenda item 4, for detailed consideration and the development of a liaison statement on this matter to ITU, taking into account the annex of document NAV 55/INF.13.

Other AIS issues

Impact of resolution MEPC.118(52) upon existing AIS shipboard installations

8.12 The Sub-Committee recalled that NAV 53 had noted document NAV 53/9 (Secretariat) containing a revised version of Recommendation ITU-R M.1371-2, which had been adopted by ITU-R Study Group 8.

8.13 The Sub-Committee recalled further that, on the need for possible modification of hardware of all AIS units following the entry into force of the 2004 amendments to MARPOL Annex II on 1 January 2007, NAV 54, considering that the number of categories to be reported was the same (4), had agreed that it would be sufficient to revise the reference documents, annex 2 of SN/Circ.227 and ITU-R Recommendation M.1371-3, to reflect the new classification letters corresponding to the digits, without any change to the hardware.

8.14 The Sub-Committee recalled also that NAV 54 had finalized a draft liaison statement to ITU, IEC and IALA (NAV 54/25, annex 10), informing them of the change to hazard or pollutant categories and inviting them to note this in any future revision of their documentation.

8.15 The Sub-Committee considered document NAV 55/8/5 (Secretariat) containing the liaison statement from WP 5B to IALA, IMO, CIRM and IEC TC 80, concerning a revision of Recommendation ITU-R M.1371-3.

8.16 The Sub-Committee also noted that IALA had submitted a document (NAV 55/10/1) under agenda item 10 on AIS issues relating to the underlying causes of incorrect AIS transmissions, which would be referred to the Technical Working Group for consideration under this sub-agenda item (paragraph 10.12 refers).

8.17 The Sub-Committee agreed to refer document NAV 55/8/5 to the Technical Working Group, to be established under agenda item 4, for detailed consideration.

Status of the current VHF frequencies in use for AIS

8.18 The Sub-Committee considered document NAV 55/8/1 (Secretariat) containing a liaison statement to ITU prepared by COMSAR 13 concerning the non-status of the two existing AIS frequencies used for Safety of Navigation, requesting ITU to evaluate the appropriate designation of the two AIS frequencies within the ITU Radio Regulations, as instructed, which had been forwarded to ITU on 4 February 2009. WP 5B in May 2009 had considered the above liaison statement sent by COMSAR 13 and was of the view that the chance of getting an exclusive allocation in the Table of allocations was very slim, since the frequencies were in several countries in use for other (land mobile) purposes. It was further considered that a footnote in Appendix 18 would be a possibility, but might be difficult to agree upon at a WRC, for the same reasons as mentioned above. WP 5B had further noted that AIS-SART was listed in Appendix 15, which only listed frequencies for distress and safety communications for the GMDSS and that only the AIS-SART function of AIS was part of the GMDSS. Initial consideration of the issues indicated that the advice to IMO would most likely be that, should IMO wish to consider adding further functions of AIS into the GMDSS, it would be possible to modify the annotations on the use of the frequencies AIS1 and AIS2 given in Appendix 15 at some future WRC. The procedure for this involved agreement of an agenda item at the preceding Conference, for instance an agenda item at WRC-16 would be agreed at WRC-11.

8.19 The Sub-Committee noted that MSC 86, having endorsed this action of COMSAR 13, instructed NAV 55 to consider issues related to the status of the current AIS frequencies and advise COMSAR 14 accordingly.

8.20 The Sub-Committee agreed to refer document NAV 55/8/1 to the Technical Working Group, to be established under agenda item 4, for detailed consideration.

Future spectrum requirements with respect to e-navigation and spectrum requirements within future maritime systems

8.21 The Sub-Committee considered document NAV 55/8/2 (Secretariat) concerning the issue of future spectrum requirement with respect to e-navigation and providing an overview of the discussions that took place at COMSAR 13. With respect to e-navigation, COMSAR 13 had agreed to request the Sub-Committee to consider this issue of future spectrum requirement and invited the Committee to instruct NAV 55 accordingly and advise COMSAR 14. MSC 86 had endorsed this request and the Sub-Committee recalled that it had requested its e-navigation working group to consider this matter (paragraphs 11.4 and 11.6 refer).

8.22 The Sub-Committee considered document NAV 55/8/3 (IALA) suggesting studies on appropriate provisions within the Radio Regulations by ITU-R WP 5B and within the framework of the preparation of the WRC-11, and taking into account current and future e-navigation requirements for maritime navigation and communication systems.

8.23 The Sub-Committee considered document NAV 55/8/4 (Secretariat) providing details on the WP 5B consideration of the liaison statement by IALA, concerning the need to study future digital communication systems in conjunction with WRC-11 Agenda item 1.10 and preparation of a liaison statement back to IALA and IMO.

8.24 The Sub-Committee agreed to refer documents NAV 55/8/2, NAV 55/8/3 and NAV 55/8/4 to the Technical Working Group, to be established under agenda item 4, for detailed consideration.

Report of the Technical Working Group

8.25 Having received and considered the Technical Working Group's report (NAV 55/WP.4), the Sub-Committee (with reference to paragraphs 6.1 to 6.8 and annex 6) took action as summarized hereunder.

Satellite detection of AIS

8.26 The Sub-Committee noted the Preliminary draft new report ITU-R M. [SAT-AIS] on Improved satellite detection of AIS and approved the draft liaison statement on this matter to ITU-R as set out at annex 10 and instructed the Secretariat to convey it to ITU-R and invited the Committee to endorse this action.

Other AIS issues

Preliminary draft revision of Recommendation ITU-R M.1371-3

8.27 The Sub-Committee noted the liaison statement from Working Party 5B on the preliminary draft revision of Recommendation ITU-R M.1371-3 to IALA, IMO, CIRM and IEC TC 80.

Status of the current VHF frequencies in use for AIS

8.28 The Sub-Committee agreed with the statement from COMSAR that the safety functions of AIS should be recognized by the ITU in the Radio Regulations which currently limit the safety functions only to the AIS-SART. However, the Sub-Committee noted that the initial consideration by ITU-R had concluded that any regulatory change to the status of the AIS frequencies would be very difficult to achieve. The Sub-Committee instructed the Secretariat to inform COMSAR 14 on the outcome of the discussion on this matter.

Future spectrum requirements with respect to e-navigation and spectrum requirements within future maritime systems

8.29 The Sub-Committee noted that, with respect to e-navigation, COMSAR 13 had agreed to request the Sub-Committee to consider this issue of future spectrum requirement in the light of the development of the draft IMO position on WRC-11, agenda item 1.10.

8.30 The Sub-Committee noted document NAV 55/8/3 (IALA) concerning IALA's proposal to ITU, suggesting studies on appropriate provisions within the Radio Regulations by ITU-R WP 5B regarding current and future e-navigation requirements for maritime navigation and communication systems. The Sub-Committee further noted that ITU-R WP 5B had considered a liaison statement of IALA, concerning the need to study future digital communication systems in conjunction with WRC-11 Agenda item 1.10, which provided basically identical information as submitted for consideration in document NAV 55/8/3. WP 5B had prepared a liaison statement back to IALA and IMO, as annexed to document NAV 55/8/4 (Secretariat).

8.31 The Sub-Committee agreed that:

- .1 e-navigation would require a stable broadband VHF, HF and satellite data communications system;
- .2 maritime frequency spectrum should not be given up;
- .3 e-navigation would probably require additional frequency allocation which would be communicated to COMSAR in due course for onward transmission to ITU; and
- .4 ITU should be informed accordingly.

8.32 The Sub-Committee further agreed that the points mentioned in the paragraph above would be sufficient at this stage to forward to COMSAR 14. However, the Sub-Committee noted that ITU would require a proposal for an agenda item for the next WRC, to be submitted to WRC-11. It was further noted that the next WRC was expected to be held in 2016 and that proposals could only be submitted by Member States. In order to advise Member States in time on IMO's position on a required agenda item for WRC 2016, IMO should define this at COMSAR 15 (first quarter 2011) at the latest (COMSAR 14/4, annex 6 refers).

8.33 The Sub-Committee instructed the Secretariat to inform COMSAR 14 on the outcome of the discussion on this matter.

8.34 The Sub-Committee agreed that there was a need of extension of the work programme items "ITU matters" and "Radiocommunication ITU-R Study Group matters" to 2011 and that justification was given by the expected ongoing liaison with ITU on AIS issues. Accordingly,

the Sub-Committee invited the Committee to extend the target completion date for these items to 2011 (paragraphs 18.5.2.1.1 and 18.5.2.1.2 refer).

9 CODE OF CONDUCT DURING DEMONSTRATIONS/CAMPAIGNS AGAINST SHIPS ON HIGH SEAS

9.1 The Sub-Committee recalled that following consideration of document MSC 82/21/8 in which Japan, being concerned with serious accidents, including collisions of ships, when non-State activist groups protesting against certain maritime activities had conducted direct actions against ships proposed to establish a code of conduct for demonstrators/campaigners, which would provide a recommendatory set of guidelines for demonstrators and related authorities to ensure and promote safety of crew, maintain the order of maritime navigation and preserve the right and opportunity for a peaceful demonstration, MSC 82 had agreed to include, in the NAV and FSI Sub-Committees' work programmes, a high-priority item on "Code of conduct during demonstrations/campaigns against ships on high seas", with two sessions needed to complete the item, and assigned the NAV Sub-Committee as a coordinator.

9.2 The Sub-Committee also recalled that NAV 54 had a significant debate on the issue and subsequently agreed to the provisional draft MSC resolution on Assuring safety during demonstrations, protests, or confrontations on the high seas, as work in progress, and invited the FSI Sub-Committee to consider the text for advice, with the aim of finalization of the text of the draft MSC resolution at NAV 55.

9.3 The Sub-Committee noted that FSI 17, being advised that NAV 54 had instead developed and agreed to the above provisional draft MSC resolution as work in progress and had invited the FSI Sub-Committee to consider the text for advice, with the aim of finalization of the text at NAV 55, agreed to the draft MSC resolution as presented in document FSI 17/16, which had been backed by MSC 86.

9.4 The Sub-Committee considered document NAV 55/9 (Greenpeace International) providing comments on the provisional draft MSC resolution in particular, proposing the inclusion of explicit references to specific international human rights instruments relevant to legitimate and peaceful forms of protest.

9.5 The Sub-Committee noted that there had been no intervention at FSI 17 or MSC 86 on this issue by Greenpeace International. However, now Greenpeace International wished to amend the third preambular paragraph, so as to make an explicit reference to the 1948 Universal Declaration of Human Rights and the 1966 International Covenants on Human Rights.

9.6 There was overwhelming support in the Sub-Committee to forward the draft MSC resolution on Assuring safety during demonstrations, protests, or confrontations on the high seas, as prepared by NAV 54 and endorsed by FSI 17 without any change.

9.7 The International Whaling Commission (IWC) observer noted that, from an IWC perspective, the matter arose as a result of the legal (although within and outside the IWC very controversial) activity of special permit lethal research programmes. In particular, it related to the special permit whaling of Japan in the Southern Ocean. All members of the IWC, despite their often very strong disagreements over the special permit whaling, supported the right to legitimate and peaceful protest. However, they were equally all extremely concerned at the dangerous confrontations between Japanese vessels and a vessel of the Sea Shepherd Conservation Society over recent years. These activities represented not only a severe threat against human life and property, particularly given the limited search and rescue capability in

such remote areas, but also could have serious environmental consequences. As a result the IWC passed by consensus formal resolutions condemning such dangerous protests in 2006 and 2007 as well as agreeing a unanimous statement in 2008, calling on the Sea Shepherd Conservation Society to refrain from dangerous actions jeopardizing safety at sea and also calling on all vessels and crews involved to exercise restraint. Despite this, such activities continued and, at IWC's recently completed Annual Meeting in Madeira, the Commission reaffirmed its previous position and asked that these serious concerns of their 86 member Governments be brought to the attention of IMO as the United Nations body responsible for safety of navigation.

9.8 The delegation of Japan commented in relation to the concerns of all IWC members about dangerous activities taken by the Sea Shepherd Conservation Society against Japanese whale research vessels. Dangerous activities by the Sea Shepherd Conservation Society had been repeated despite calls by IWC members asking them to refrain from conducting these activities, which were in Japan's opinion similar to acts of piracy. As was explained by the IWC representative, serious concerns had been raised by all IWC Contracting Governments, irrespective of their positions on whaling, and it was agreed to ask IMO for close cooperation, with a view to securing safety at sea during research. Japan believed that IMO members should take into account the concerns and wishes shown by IWC members, and show willingness to cooperate with IWC for securing the safety of seafarers and vessels engaged in legitimate activities. With this in mind, whilst Japan had no intention to block the approval of the draft MSC resolution here at the current session, Japan announced its intention to propose a slight modification at MSC 87 taking into account the very serious concerns shown by IWC members.

9.9 The delegation of Australia noted that the Secretary of the International Whaling Commission had sent a letter to the Secretary-General of the Organization on the matter currently before the Sub-Committee and on the subject of safety at sea. Australia pointed out that IWC Contracting Governments had not been consulted in the drafting of this letter. Australia had some concerns with this letter, in particular, the letter noted Japan's ongoing programmes in both the Southern Ocean and North Pacific involving the killing of whales, stating that "this type of research was legal but it was controversial". Australia was concerned that such a statement was made purportedly on behalf of the Commission and that it clearly inferred that the whaling conducted by Japan was lawful under the Convention. Many IWC members, including Australia, had expressed the view that the whaling undertaken by Japan, far from being "lawful", was in fact contrary to Japan's obligations under the ICRW and therefore unlawful.

9.10 In addition, the Sub-Committee noted that during C 102 (29 June to 3 July 2009), whilst undertaking a review of non-governmental organizations (NGOs) in consultative status with IMO, and following an intervention by the United Kingdom in connection with an incident involving Greenpeace activists who boarded a coal carrier ship off the Kingsnorth power station in Kent earlier this year, one delegation had recalled that the NAV Sub-Committee was currently examining a draft resolution concerning demonstrations on the high seas and suggested that the scope of the resolution be extended so that it applied to demonstrations, not only on high seas, but also within territorial waters or ports. This would send a strong message to all NGOs that safety of life and property at sea must be respected.

9.11 The Sub-Committee considered the matter and was of the view that there was no need for the draft MSC resolution to be extended to territorial waters or ports, since there were other appropriate national instruments in place.

9.12 Accordingly, the Sub-Committee agreed the final text of the draft MSC resolution on Assuring safety during demonstrations, protests, or confrontations on the high seas, as set out in annex 11, for submission to MSC 87 for adoption.

9.13 The Committee was consequently invited to delete the item “Code of conduct during demonstrations/campaigns against ships on high seas” from the Sub-Committee’s work programme, as the work on this item had been completed.

10 MEASURES TO MINIMIZE INCORRECT DATA TRANSMISSIONS BY AIS EQUIPMENT

10.1 The Sub-Committee recalled that MSC 82, following consideration of document MSC 82/21/10 (Egypt) proposing to develop a scheme to minimize incorrect transmissions by the ship’s AIS equipment, had agreed to include a corresponding high-priority item in the Sub-Committee’s work programme, with two sessions needed to complete the item, in cooperation with the FSI (with regard to port State control-related matters) and COMSAR Sub-Committees, as necessary. Member Governments and international organizations were invited to provide the pertinent information to the sub-committees concerned.

10.2 The Sub-Committee recalled also that NAV 54 had considered document MSC 82/21/10 (Egypt) suggesting a method to ensure that messages sent by AIS equipment from ships were more accurate. The IALA observer reminded the Sub-Committee that IALA had submitted document NAV 53/INF.10 relating to AIS incorrect transmissions. The IALA observer also recalled in this context recently adopted MSC.1/Circ.1252 on Guidelines on annual testing of the Automatic Identification System (AIS) aimed at minimizing incorrect data transmissions by AIS equipment.

10.3 The Sub-Committee recalled further that NAV 54, noting that no other substantial proposals had been submitted on this issue for consideration, agreed to defer further consideration to NAV 55, inviting members to submit suitable proposals for consideration.

10.4 The Sub-Committee observed that MSC 85 had noted that FSI 16 could not support the proposal to amend SOLAS regulation V/18 to introduce provisions dealing with the annual testing of the AIS. Having considered the inspection mechanism of AIS equipment, as developed by the FSI Sub-Committee through the Guidelines on annual testing of AIS (MSC.1/Circ.1252) and the draft revised Survey Guidelines under the HSSC which contained the testing of AIS, in a manner consistent with the inspection of other electronic equipment carried on board ships, MSC 85 had subsequently agreed that a complementary review of the issue of annual testing of AIS might be relevant in the specific context of incorrect AIS data transmissions and instructed NAV 55 to consider the matter under this agenda item, taking into account the information contained in document MSC 83/15/3, for reporting to MSC 87.

10.5 The Sub-Committee considered document MSC 83/15/3 (Republic of Korea) commenting on the draft Revised Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), as agreed by FSI 15 and for approval by MSC 83, concerning the need for requirements under SOLAS for the inspection and survey of the Automatic Identification System (AIS) and proposing a draft amendment to SOLAS regulation V/18 for the annual testing of the AIS.

10.6 The Sub-Committee also considered document NAV 55/10 (Norway) proposing a mandatory initial and annual testing of AIS and that installation survey and testing and annual surveys of the AIS equipment were made mandatory through SOLAS and/or the Harmonized System of Survey and Certification, 2007 (resolution A.997(25)). Norway was of the view that the survey should be performed by a qualified radio surveyor together with the annual radio inspection. In addition, a safety equipment certificate should not be renewed or endorsed, unless an AIS report, issued by a radio surveyor, was available and valid in accordance with circular

MSC.1/Circ.1252 and the safety equipment certificate surveyor had carried out a functioning test against a VTS or a ship.

10.7 The ICS observer stated that whilst Norway's concern was justified, the compromise solution reached at FSI 16 should not be disregarded. AIS static data faults could be detected by a radio surveyor. The ICS observer further noted that AIS voyage related and dynamic information could be tested for accuracy by shipboard personnel and verified by VTS personnel, thus eliminating the need for a certified test. Therefore, ICS was not in favour of the Norwegian proposal.

10.8 The majority of the delegations who spoke on the issue were in favour of supporting the Norwegian proposal for mandatory initial and annual testing of AIS equipment, whilst a small minority were in favour of the ICS position.

10.9 The IACS observer cautioned against linking the results of the AIS survey with the issuance of the safety equipment certificate.

10.10 The Sub-Committee agreed to refer documents NAV 55/10 and MSC.1/Circ.1252 to the Technical Working Group established under agenda items 4, 6, 7, 8, 10, 20A (Codes and recommendations) and 20C (Reset function of the BNWAS).

10.11 The Sub-Committee further considered document NAV 55/10/1 (IALA) proposing amendments to the technical clarification of ITU Recommendation ITU-R M.1371-1, Edition 1.5 and agreed to refer it to the Technical Working Group established under agenda items 4, 6, 7, 8, 10, 20A and 20C for review and appropriate recommendations for consideration by Plenary.

Report of the Technical Working Group

10.12 Having received and considered the Technical Working Group's report (NAV 55/WP.4), the Sub-Committee (with reference to paragraphs 7.1 to 7.3 and annex 7) took action as summarized hereunder.

Proposed amendment to SOLAS regulation V/18

10.13 The Sub-Committee endorsed the draft resolution on proposed amendments to the 1974 SOLAS Convention, as amended, proposing a new regulation 18.9 to be added after the existing regulation 18.8, as set out at annex 12, with a view to approval by MSC 87 and adoption by MSC 88.

10.14 With respect to the linkages between the annual radio inspection of AIS and the renewal or endorsement of a safety equipment certificate, the Sub-Committee agreed that by not mentioning the expression "radio inspection" in the proposed new regulation 18.9, the requirement would be more general and less confusing. The Sub-Committee also noted that several Members already had national requirements for annual inspection of AIS equipment, which in practice had not led to any difficulties.

Navigation Status parameter of AIS Messages 1 to 3

10.15 The Sub-Committee noted concerns expressed by several delegations with regard to the descriptions proposed. It was also noted that there were differences in the terminology and philosophy used in ITU-R Recommendation 1371-3 and the COLREGs. IALA was invited to

take the comments made by the Sub-Committee into account when preparing their submission to ITU on this issue.

10.16 The Committee was invited to delete the item “Measures to minimize incorrect data transmissions by AIS equipment” from the Sub-Committee’s work programme, as the work on this item had been completed (paragraph 18.5.1.1.3).

11 DEVELOPMENT OF AN E-NAVIGATION STRATEGY IMPLEMENTATION PLAN

11.1 The Sub-Committee noted that MSC 85 had approved the Strategy for the development and implementation of e-navigation (the Strategy) and noted that it had been finalized in cooperation with the COMSAR Sub-Committee over a period of two years (2006 to 2008) and was sufficiently developed and detailed for implementation. Relevant input had also been provided by the industry and other relevant organizations, e.g., IALA and IHO.

11.2 The Sub-Committee also noted that MSC 85 had subsequently also approved the Framework along with a time frame for the implementation process for the Strategy, along with a time frame and requested other international organizations to participate in the implementation of e-navigation.

11.3 The Sub-Committee further noted that MSC 85 had also endorsed the Sub-Committee’s decision that the Chairmen along with the Secretaries of the COMSAR, NAV and STW Sub-Committees should jointly develop a coordinated approach to implement the proposed e-navigation strategy.

11.4 The Sub-Committee further noted that COMSAR 13 had endorsed the view of IHO (COMSAR 13/4/2/Rev.1) that there might be a requirement for additional spectrum to be allocated for broadcasting of more than changes to port security levels in major ports and coastal waters and agreed that the band 495-505 kHz could be of interest to IMO for this purpose. With respect to e-navigation, COMSAR 13 had agreed to request the NAV Sub-Committee to consider this issue of future spectrum requirement and invited the Committee to instruct the Sub-Committee accordingly and advise COMSAR 14.

11.5 The Sub-Committee further noted that MSC 86, having considered document MSC 86/23/4 (Secretariat) proposing a joint plan of work for the COMSAR, NAV and STW Sub-Committees for the period 2009-2012 for the implementation of the Strategy, had agreed to remove the square brackets around the IHO participation in the column “External outputs” of the annex to the above document, and approved the joint plan for NAV 55 to set in motion the coordinated and planned development of an e-navigation strategy implementation plan, in cooperation with the COMSAR and STW Sub-Committees. In addition, the Committee had noted with appreciation the information provided by the IHO and IALA observers regarding their ongoing work to support the implementation of the Strategy and that IALA would be submitting reports to the respective sessions of the COMSAR and NAV Sub-Committees on the matter.

11.6 The Sub-Committee observed that MSC 86 had subsequently instructed NAV 55 to:

- .1 consider future spectrum requirement with respect to e-navigation and advise COMSAR 14 accordingly; and

- .2 taking into account the user needs and current work on e-navigation, provide advice on the correct generic term to replace the terms “Decca” and “Loran” to STW 41.

11.7 The Sub-Committee also recalled the Secretary-General’s opening remarks underlining the need to commence work and give due diligence on the development of an e-navigation strategy implementation plan.

11.8 The Sub-Committee noted with interest the information provided by IHO (NAV 55/11), in line with the Sub-Committee request to IHO, at its fifty-fourth session, on the progress made in world-wide ENC coverage based on available data as of 27 April 2009.

11.9 The ICS observer thanked IHO for the information provided and, referring to ICS’s definition of “sufficient ENC availability” which was very similar to the IHO definition, being concerned there would be sufficient ENC coverage world-wide to support mandatory carriage of ECDIS, requested IHO to provide by NAV 57 information to that end.

11.10 The IHO observer stated that IHO would be providing information on the status of worldwide ENC coverage to NAV 56 and NAV 57.

11.11 The Sub-Committee considered document NAV 55/11/1 (IALA) providing a progress report on IALA’s e-navigation work. In addition, IALA also informed the Sub-Committee that the organization was working on four aspects of e-navigation within defined parameters. These included user needs, architecture shoreside (2009), initial Gap-analysis (shoreside) 2010 and full 2011 and cost benefit analysis (shoreside 2011).

11.12 The Sub-Committee agreed to refer document NAV 55/11/1 to the e-navigation Working Group for consideration and advice.

11.13 The Sub-Committee considered document NAV 55/11/2 (France) providing proposals for a policy of (satellite detected) AIS data use. The purpose was to define a legal frame to ensure controlled use of AIS data.

11.14 In this context the Sub-Committee noted that MSC 86 had considered a document by France (MSC 86/25/1) and discussed the matter in Plenary and its outcome was detailed in document NAV 55/2/2, annex 1, which had already been addressed under agenda item 8 – ITU matters including radiocommunications ITU-R Study Group matters (see paragraph 8.6).

11.15 The delegation of the United States stated that the document raised many serious policy and legal concerns involved in what was known as “satellite reception of AIS”, which had eventually to be solved. While conceptually the United States might eventually be able to support some of France’s statements, it raised procedural concerns, insofar as it proposed that the NAV Sub-Committee should request the Committee to establish an *ad hoc* working group on AIS satellite detected data use, which would draw proposals for a policy of AIS data use and its legal framework. Noting that NAV was a technical body which might act only on the matters referred to it by its parent Committee, the United States viewed France’s suggestion as a new work programme item. The Sub-Committee could not request its parent Committee to establish a new work programme item. As NAV 53 had confirmed (NAV 53/26, paragraph 3.56), only SOLAS Contracting Governments could propose new work items for the Committee to approve in accordance with the relevant Guidelines. Furthermore, the United States felt that any discussion of the policy and legal issues raised by France, while there were serious issues that unquestionably should be dealt with before the Organization was ready to establish a policy on

satellite detection of AIS, were fundamentally within the province of the Committee to discuss and decide, and not this Sub-Committee.

The United States was also concerned with the suggestion that “only maritime authorities should have the use of raw satellite data and the authority to pick up the signals in their countries”. Perhaps it was not the function of this document to define the term “maritime authorities” in the context of this statement, but left undefined, and in stating that only such authorities might have access, it presented serious legal and policy issues that were beyond the remit and the expertise of this Sub-Committee, as it was a technical body with particular expertise in navigation issues, not the legal and policy issues France had raised.

11.16 The delegation of Greece reserved, in principle, the position on the issue of satellite detected AIS, since it believed that the necessity of this system had not yet been established sufficiently compared to the LRIT system which was already being set up globally. The satellite detected AIS technology seemed to be competitive, rather than supplemental, to the LRIT system. Furthermore, Greece pointed out the danger of uncontrolled receipt and use of AIS information. In this respect, the Greek delegation was not objecting to a further elaboration of the technological potentials of satellite AIS detection, but believed that the Sub-Committee should not be bound by any decision for implementation of this system, until any interrelation with respect to the LRIT system was well documented and analysed and all legal aspects related to the dissemination and use of the information had been resolved.

11.17 The IALA observer recalled that AIS detection by satellite was a fact today, and it worked well within the present configuration of AIS. IALA also expressed the opinion that LRIT and AIS satellite were complementary for the years to come and explained the need for national Authorities to have access to the AIS information, outside their A1 area, without depending only on commercial interests. This was the reason why IALA had launched a demonstration project (“IALA-NET”) to test a global system of exchange of AIS information between national authorities.

11.18 The Sub-Committee considered document NAV 55/11/3 complemented by information in document NAV 55/INF.9 (Germany), providing the results of a worldwide survey conducted by Germany to determine detailed e-navigation user needs. The questionnaire used for the survey was developed based on the high-level user needs specified in document NAV 54/25. The survey focused primarily on onboard user needs.

11.19 The Sub-Committee considered document NAV 55/11/4 (United Kingdom) illustrating an approach to developing and mapping e-navigation user needs, taking MSI as an example. Developing e-navigation user requirements was a highly complex exercise that required the commitment of resources and the involvement of key stakeholders. A systematic approach needed to be taken for this activity, boundaries had to be set, and a formalized “mapping technique” to track information flows, terminology and responsibilities was highly desirable. The improved application of MSI on board vessels had been clearly identified as a user need by mariners, and work on this issue under the agenda of e-navigation should continue.

11.20 The Sub-Committee agreed to refer documents NAV 55/11/3 and NAV 55/11/4 to the e-navigation Working Group for consideration and advice.

11.21 The Sub-Committee noted with interest the information provided by CIRM (NAV 55/INF.4) on the reasons behind setting up a new working group and how it intended to support IMO in the development of e-navigation.

11.22 The Sub-Committee noted with interest the information provided by IFSMA (NAV 55/INF.8) on their work done together with the Nautical Institute over the last three years working with mariners to educate them as to the concept of e-navigation, and then to listen and understand their needs, desires and concerns. The research had indicated that most mariners were initially generally unaware of the term “e-navigation” and fewer still knew anything about the developments within this IMO work programme. The document summarized the most common responses from mariners as to how current systems could be made better and what future improvements would be beneficial. Due to the *ad hoc* method of capturing these user needs, and the wide diversity of mariners and ship types, no prioritization of these needs should be assumed.

11.23 The Sub-Committee agreed to refer documents NAV 55/INF.8 and NAV 55/INF.9 to the e-navigation Working Group for consideration and advice.

Establishing e-navigation Working Group

11.24 After preliminary discussion, as reported in paragraphs 11.1 to 11.20 above, the Sub-Committee re-established the e-navigation Working Group and instructed it to consider the relevant documents submitted under agenda item 11, namely NAV 55/11/1 (IALA), NAV 55/11/3 (Germany), NAV 55/11/4 (United Kingdom), NAV 55/INF.8 (IFSMA) and NAV 55/INF.9 (Germany), including documents NAV 53/13, MSC 85/26, annexes 20 and 21, MSC 86/23/4 plus the outcome of COMSAR 13 and STW 40 including relevant outcome of MSC 86 and taking into account any decisions of, and comments and proposals made in Plenary, undertake the following tasks:

- .1 consider documents NAV 55/11/1, NAV 55/11/3, NAV 55/11/4, NAV 55/INF.8 and NAV 55/INF.9 and finalize the more detailed user needs;
- .2 consider document COMSAR 13/14 (paragraphs 4.60 to 4.64) and provide comments and recommendations regarding future spectrum requirement with respect to e-navigation;
- .3 consider document STW 40/14 (paragraph 7.11.8) and provide advice on the correct generic term to replace the terms “Decca” and “Loran”;
- .4 consider documents NAV 53/13 (paragraphs 12 to 16) and MSC 85/26 (annex 20, paragraph 9.7.2 and annex 21, paragraph 5) and develop the initial identification/outline of the system architecture;
- .5 consider document MSC 85/26 (annex 20, paragraph 9.7.3 and annex 21, paragraph 6) and undertake an initial gap analysis;
- .6 consider document MSC 85/26 (annex 21, paragraph 7) and develop/recommend an appropriate methodology for carrying out cost-benefit and risk analyses;
- .7 develop the terms of reference for a correspondence group to progress work intersessionally based on the joint plan of work approved by MSC 86 and report to COMSAR 14 and NAV 56;

- .8 take into account the role of the human element guidance as updated at MSC 75 (MSC 75/24, paragraph 15.7) including the Human Element Analysing Process (HEAP) given in MSC/Circ.878-MEPC/Circ.346 in all aspects of the items considered; and
- .9 submit a report to Plenary on Thursday, 30 July 2009 for consideration at Plenary.

Report of the E-Navigation Working Group

11.25 Having received and considered the e-navigation Working Group's report (NAV 55/WP.5), the Sub-Committee (with reference to paragraphs 3.1 to 10.1, and annexes 1 and 2) took action as summarized hereunder.

USER NEEDS

11.26 The Sub-Committee noted that the group had agreed that:

- .1 there should be harmonization between the shipboard and shore-based systems and procedures;
- .2 there should be coordination of inputs into the e-navigation development from shipboard and shore-based users, and other relevant bodies;
- .3 while the shipboard user needs had been identified to a more detailed level, the shore-based user needs required to be further developed; and
- .4 there was a need for an effective ship-shore interoperability,

and that, to facilitate the development of shoreside user needs, it was important that there should be a national coordination process between all relevant authorities/organizations which could identify all data providers and data users for a single window concept.

11.27 With regard to shore-based user needs, the Sub-Committee noted that the group had recognized that the development of user needs was a complex exercise and that the method to develop user needs based on functions as proposed by the United Kingdom (NAV 55/11/4) could be effectively used. Furthermore, the group had agreed that user needs were of paramount importance and the driving force for the e-navigation concept and that it was necessary to verify and update the user requirements, as and when necessary during the implementation process of the Organization's e-navigation strategy.

11.28 The Sub-Committee noted that the group had agreed:

- .1 that information contained in documents NAV 55/11/3, NAV 55/INF.8 and NAV 55/INF.9 could form the basis for the preliminary shipboard user needs;
- .2 to review the preliminary detailed shipboard user needs, as developed by NAV 55 and update them as appropriate, and to consider priorities;
- .3 to develop detailed shore-based user needs, taking into account input provided by IALA and other relevant organizations, and to consider priorities; and
- .4 to identify functions and services to support the shipboard and shore-based user needs in a harmonized and holistic manner,

and invited IALA to provide the input and contributions of the various IALA Committees to the IMO Secretariat and the correspondence group.

11.29 The Sub-Committee also noted that the group had recognized that the results of relevant maritime projects, e.g., MarNIS and MEH, should be taken into account during the further development of the user needs. In this context, the European Commission observer had agreed to provide the correspondence group with the outcome of the EU/MarNIS project relating to Maritime Information Management which could be used as a background document for the development of shore-based user needs and architecture.

11.30 In light of the foregoing, the Sub-Committee:

- .1 noted the preliminary detailed shipboard user needs, as set out in annex 1 of document NAV 55/WP.5;
- .2 agreed that the correspondence group established at the current session (paragraph 11.38 refers) should further progress the work intersessionally to:
 - .1 review the preliminary detailed shipboard user needs, as developed by NAV 55, and update them as appropriate, and to consider priorities;
 - .2 develop detailed shore-based user needs, taking into account input provided by IALA, IHO and other relevant organizations and to consider priorities; and
 - .3 identify functions and services to support the shipboard and shore-based user needs in a harmonized and holistic manner; and
- .3 agreed that it would be necessary to verify and update the user needs, as and when necessary during the implementation process of the Organization's e-navigation strategy.

FUTURE SPECTRUM REQUIREMENT WITH RESPECT TO E-NAVIGATION

11.31 The Sub-Committee noted that the group had recalled that the Strategy for the development and implementation of e-navigation approved by MSC 85 provided for specific high-level needs for robust communication and data and system integrity. Although the details of these requirements had yet to be defined, it was anticipated that these requirements would be applied to VHF, HF and satellite technologies, as well as onboard networks capable of effectively integrating onboard e-navigation systems. Hence, there was a need for resiliency and integrity of such capacities. Furthermore, the work of COMSAR, ITU working party 5B, and the IEC TC 80 and its continuous work on onboard digital interface networks to develop such communication capabilities was relevant.

11.32 In light of the foregoing, the Sub-Committee noted that the group had agreed that:

- .1 e-navigation would require a stable broadband VHF, HF and satellite data communications system;
- .2 maritime frequency spectrum should not be given up;

- .3 e-navigation would probably require additional frequency allocation which would be communicated to COMSAR 14 in due course for onward transmission to ITU; and
- .4 ITU should be informed accordingly,

and had advised the Technical working group of its deliberations and discussions on this matter, with a view to providing consolidated advice to the Plenary.

CORRECT GENERIC TERM TO REPLACE THE TERMS “DECCA” AND “LORAN”

11.33 The Sub-Committee agreed that in light of rapid advancement of technology, it would be appropriate to use a more generic term and that the term “terrestrial electronic position fixing systems” should replace the terms “Decca” and “Loran” and instructed the Secretariat to inform STW 41 and the STW Intersessional Working Group accordingly.

INITIAL IDENTIFICATION/OUTLINE OF THE SYSTEM ARCHITECTURE

11.34 The Sub-Committee noted that the group had given preliminary consideration to initial identification/outline of the system architecture, taking into account information contained in documents NAV 53/13 (paragraphs 12 to 16) and MSC 85/26 (annex 20, paragraph 9.7.2 and annex 21, paragraph 5) and noted that there were no submissions to this session on this issue. Accordingly, the group had agreed that this work should be progressed further intersessionally by the correspondence group, taking into account the components identified at NAV 54, namely the hardware, data, information, communications technology and software needed to meet the user needs and should be based on a modular and scalable concept. Furthermore, the system hardware and software should be backward compatible based on open architectures to allow scalability of functions according to the needs of different users and to cater to continued development and enhancement. When new systems were introduced that could not be made compatible, a suitable transitional period should be provided for, during which existing systems could continue to be in use. The group had also noted that development of system architecture had taken place in the interim period within IALA. Accordingly, the Sub-Committee invited IALA to provide the results of these developments to the correspondence group.

INITIAL GAP ANALYSIS

11.35 The Sub-Committee noted that the group had reviewed the preliminary gap analysis, as set out in annex 3 of document NAV 53/13 and noted that it could be a source of information for the correspondence group in preparing its more complete gap analysis, which included areas of business practices and holistic liability issues. To this end, the group had further noted that this preliminary gap analysis had been undertaken before the e-navigation strategy had been completed, and to some extent had been based on assumptions. Furthermore, the Sub-Committee, noting that in certain areas further development had taken place during the interim period within IHO and IALA, invited IALA and IHO to provide inputs to the correspondence group.

11.36 Finally, the group had agreed that the work should be progressed further intersessionally by the correspondence group in a holistic manner, taking into account the components agreed at MSC 85 and that the preliminary gap analysis, as set out in document NAV 53/13, annex 3 could be used as a background document for the proposed gap analysis.

COST-BENEFIT AND RISK ANALYSES

11.37 The Sub-Committee recalled that MSC 85 (MSC 85/26, annex 21, paragraph 7) had agreed that cost-benefit and risk analysis should be an integral part of the development of e-navigation and should be used to identify strategic decisions and support decision-making on where and when certain functions need to be enabled. However, as there were no submissions to this session on this issue, the Sub-Committee agreed that this work should be progressed intersessionally by the correspondence group.

TERMS OF REFERENCE OF A CORRESPONDENCE GROUP

11.38 In order to maintain the proposed time schedule approved by MSC 86, the Sub-Committee established a correspondence group to progress the work intersessionally under the coordination of Norway* with the terms of reference as set out in annex 2 of document NAV 55/WP.5.

Regional marine electronic highway in the East Asian seas

11.39 Recalling that at previous sessions, the Secretariat had updated the Sub-Committee on the key elements and expected outputs of the new project for the Development of a Regional Marine Electronic Highway (MEH) in the East Asian Seas including the progress made, the Sub-Committee noted that the MEH Demonstration Project was on its third year of implementation. Under the GEF/IBRD-funded project a hydrographic survey of a portion of the Traffic Separation Scheme (TSS) in the Straits of Malacca and Singapore covering approximately 621.3 square kilometres (14.38% of the total TSS area) would be carried out. Mobilization of survey equipment was currently underway following the signing of the survey contract between IMO and a private contractor on 27 May 2009, whilst the implementation of other activities such as the development of the Project website, the Environment Marine Information Overlays (E-MIOs) and the baseline information survey would take place after the survey.

12 GUIDELINES ON THE LAYOUT AND ERGONOMIC DESIGN OF SAFETY CENTRES ON PASSENGER SHIPS

12.1 The Sub-Committee recalled that MSC 81 had reviewed the report of the Working Group on Passenger Ship Safety (MSC 81/WP.6) and agreed with the group's recommendation that the NAV Sub-Committee should be instructed to develop guidelines on the layout and ergonomic design of safety centres (or modify MSC/Circ.982), bearing in mind that draft SOLAS regulation II-2/23.4 specified that the layout and ergonomic design should take into account the guidelines developed by the Organization.

12.2 The Sub-Committee also recalled that, at MSC 82 (MSC 82/24, paragraph 3.104.1), the expanded Committee adopted unanimously by resolution MSC.216(82) amendments to chapter II-2, Construction – Fire Protection, Fire Detection and Fire Extinction, for entry into force on 1 July 2010.

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12.3 The Sub-Committee further recalled that NAV 53 had considered regulations II-2/3 and II-2/23 relating to safety centres on passenger ships in the context of the development of Guidelines on the layout and ergonomic design of safety centres on passenger ships. The CLIA observer had advised that some of their members were designing new ships based on the concept of the safety centre and further indicated that they would submit a document on the issue for consideration by NAV 54.

12.4 NAV 54 noted that FP 52 had established a correspondence group, under the coordination of CLIA, and instructed it to prepare a draft unified interpretation for consideration by FP 53. The Sub-Committee also noted that the CLIA observer was not present and therefore unable to provide additional information at this time. NAV 54 had therefore postponed further consideration to NAV 55, inviting Members to submit suitable proposals. Accordingly, the Committee was invited to extend the target completion date of this agenda item to 2009, which was agreed to.

12.5 The Sub-Committee also noted that FP 53 had considered the report of the correspondence group (FP 53/8) and, having approved it in general, had:

- .1 concurred that the functionality of the safety centre systems in accordance with SOLAS regulation II-2/23.6 should remain, under all circumstances, in order to efficiently manage any envisaged emergency situation from the safety centre without distracting the navigation bridge team;
- .2 noted the draft onboard functional safety centre requirements;
- .3 noted the group's discussion concerning the concept and meaning of the term "continuously manned" and the functional requirements for manning a safety centre;
- .4 noted the proposed interpretations of "continuously manned safety centre";
- .5 noted the diagrams provided to indicate which arrangements of the safety centre may or may not be considered to be part of the bridge;
- .6 concurred with the group's views that regulations other than those referred to in the terms of reference should be reviewed for inclusion of various functions within the safety centre either as a requirement or as a recommended practice, and agreed to consider this matter at FP 54;
- .7 noted the discussion regarding the use of Information Technology Systems (computers) in providing the required system functionality in the safety centre and in other locations and concurred that such systems would be useful; and
- .8 noted that the correspondence group had considered that the work on this item was not complete and that the annexes to the report of the group were in draft form only.

12.6 The Sub-Committee further noted that FP 53 had established the Drafting Group on Clarification of SOLAS chapter II-2 regarding the Interrelation between Central Control Station and Safety Centre, and on receiving its report (FP 53/WP.7) had:

- .1 noted that the group, on the basis of document FP 53/8, had made further progress on the preparation of draft clarifications of SOLAS chapter II-2 requirements regarding interrelation between central control stations and safety centres, which are set out in annex 1 to document FP 53/WP.7;
- .2 having noted the opinion of the group that the correspondence group to be established should be informed of the outcome of the work currently carried out by the NAV Sub-Committee under its work item on “Development of guidelines for IBS, including performance systems for bridge alert management”, agreed to request the Secretariat to keep the Sub-Committee informed accordingly;
- .3 having considered the above issues and recognizing the necessity to make progress on this item, instructed the correspondence group, to further consider annex 1 to document FP 53/WP.7, together with the comments contained in document FP 53/8, and prepare the final draft clarification for the consideration of FP 54.

12.7 The Sub-Committee considered document NAV 55/12 (CLIA) providing information regarding aspects related to the construction and layout of Safety Centres and making reference to MSC/Circ.982 on *Guidelines on Ergonomic Criteria for Bridge Equipment and Layout* and SN.1/Circ.265 on *Guidelines on the Application of SOLAS regulation V/15 to INS, IBS and Bridge Design*. CLIA was of the view that the concepts and guidance outlined in the aforementioned circulars provided excellent guidance, in general, and, in particular, as applied in the context of the Safety Centre, and might be applicable to its relevant equipment, function, layout and procedures.

12.8 The Sub-Committee agreed that since no other substantial documents had been submitted on this issue to this session and the input from the FP Sub-Committee would only be available after FP 54 (April 2010), the matter should be postponed for further consideration at NAV 56, inviting Members to submit suitable proposals.

12.9 Accordingly, the Committee was invited to extend the target completion date of this agenda item to 2010.

13 REVIEW OF VAGUE EXPRESSIONS IN SOLAS REGULATION V/22

13.1 The Sub-Committee recalled that MSC 82 had considered a proposal by Germany (MSC 82/21/11) to develop, in view of some cases of stowage of containers above the line of visibility, a clarification of SOLAS regulation V/22 (Navigation bridge visibility) or revision of the regulation, to ensure safe navigation and to avoid ship detentions, and agreed to include, in the Sub-Committee’s work programme, a high-priority item on “Review of vague expressions in SOLAS regulation V/22”, with two sessions needed to complete the item.

13.2 The Sub-Committee also recalled that, at its fifty-fourth session, it had considered the above document MSC 82/21/11 (Germany) together with document NAV 54/17 (Denmark and Singapore), proposing an amendment of SOLAS regulation V/22, which enabled ships to verify compliance with SOLAS V/22, when loading deck cargo. There was a brief general discussion on the issue. Delegations who spoke were, in general, supportive of the idea of an amendment to SOLAS regulation V/22. However, concerns were raised as to the scope of application to different types of ships, applicability to existing ships, the potential need for new equipment, and the need for flexibility in the application of the proposed draft amendment. The Sub-Committee agreed that it was premature to take any decision at that time and that more detailed consideration

was necessary prior to finalization. Member Governments were invited to submit suitable proposals, taking into account the above concerns raised in Plenary, for further consideration at NAV 55.

13.3 The Sub-Committee further recalled that MSC 82 had noted a view that rather than developing amendments to the SOLAS Convention, guidance on the implementation of regulation V/22 might be prepared and agreed that it should be left to the Sub-Committee to decide on the course of action to be taken when addressing the issue.

13.4 The Sub-Committee considered document NAV 55/13 (China) proposing an amendment to paragraph 5.1.1.1.8 (view of the ship's side) of MSC/Circ.982 enabling ships to verify compliance with SOLAS regulation V/22.1.6. As it was not reasonable or practical to require ships like OSVs, salvage vessels and tugs to extend their bridge wings to the same breadth of the maximum beam of the ships, China proposed to revise that paragraph to make it clear that the bridge wings of these ships do not need to be provided out to the maximum beam of the ship.

13.5 The Sub-Committee was of the view that there was no need to revise MSC/Circ.982, since the proposed IACS Unified Interpretation to clarify the requirements relating to navigation bridge visibility of ship's side, as prescribed in SOLAS regulation V/22.1.6, submitted to the present session (NAV 55/17), was more appropriate.

13.6 The delegation of China acknowledged that it had taken note of the IACS proposal, as outlined in document NAV 55/17.

13.7 The Sub-Committee considered document NAV 55/13/1 (Norway) proposing a series of amendments to SOLAS regulation V/22, namely subparagraphs 22.1.2, 22.1.7, 22.1.8 and 22.1.9.4 in order to clarify the intent of the regulation and ensure uniform understanding of the requirements.

13.8 Some delegations spoke on the issue to voice concerns with respect to the proposed amendments. These concerns related to SOLAS regulation V/22.1.2 – Blind Sectors with respect to the “designated” conning position; SOLAS regulation V/22.1.7 – Height of lower edge of bridge front windows with respect to minimum lower height; meaning of the term “clear view”; conflicts with the calculation of angles of visibility under the dynamic conditions of pitch and roll, and applicability to existing ships.

13.9 The IACS observer was of the opinion that the proposed SOLAS regulation V/22.1.2 extended the blind sector, whilst SOLAS regulation V/22.1.8 contradicted the provisions of SOLAS regulation V/22.1.1.

13.10 The Sub-Committee noted the concerns raised with respect to this issue and noted the difficulty in reconciling these issues.

13.11 The Sub-Committee also considered document NAV 55/13/2 (Denmark) proposing an amendment to SOLAS regulation V/22.5 enabling ships to verify compliance with SOLAS regulation V/22 when loading deck cargo.

13.12 The Sub-Committee was of the view that the Danish proposal would apply more to containership visibility.

13.13 Some delegations were of the opinion that the Norwegian and Danish proposals could be merged as one consolidated proposal. Other delegations, including industry observers, were of the view that the Danish proposal could be used as the basic text to develop a consolidated text for consideration at the next session.

13.14 Accordingly, the Sub-Committee was of the view that it was premature to take any decision at present and agreed to invite the Committee to extend the target completion date of this agenda item to 2010, since more time was needed to take a technically sound decision on the matter.

13.15 Members were invited to submit consolidated proposals for consideration at NAV 56.

14 REVISION OF THE GUIDANCE ON THE APPLICATION OF AIS BINARY MESSAGES

14.1 The Sub-Committee recalled that MSC 82, following consideration of document MSC 82/21/13 (Sweden) proposing to review the Guidance on the application of AIS binary messages (SN/Circ.236) on the basis of operational needs and experience gained and taking into account existing technical limitations, to facilitate an effective and appropriate use of AIS binary messages and protect the main function of AIS, had agreed to include, in the Sub-Committee's work programme, a high-priority item on "Revision of the Guidance on the application of AIS binary messages", with two sessions needed to complete the item.

14.2 The Sub-Committee also recalled that NAV 53 had noted the information provided by Germany and Sweden (NAV 53/INF.11), describing the technical limitations for the use of AIS binary messages and presenting the results of a study of the existing usage of the AIS VHF Data Link including further work needed to develop guidelines for the use of AIS binary messages.

14.3 The Sub-Committee further recalled that NAV 54 had considered documents NAV 54/18 (Japan) proposing the modification of a Trial set of binary messages, adopted at NAV 49 and the addition of new binary messages and NAV 54/18/2 (Japan) proposing the inclusion of new messages for Collision Avoidance. NAV 54 had also considered document NAV 54/18/1 (Sweden) providing reasoning for a revision of SN/Circ.236 and the setting up of a Correspondence Group for that purpose. Sweden was of the view that the new document should include an updated list of recommended AIS binary messages and guidance for their application as well as guidance for the application of regionally/nationally developed AIS binary messages.

14.4 The Sub-Committee noted that there was unanimous support for the proposals of Sweden and Japan. The delegation of Germany, supported by others, was of the view that the revision should include the graphical presentation of AIS binary messages on a reliable basis. Consequently, NAV 54 had agreed to establish an intersessional Correspondence Group under the coordination of Sweden to make progress on the issue and report to NAV 55.

14.5 The Sub-Committee considered document NAV 55/14 (Sweden) summarizing the work and recommendations of the Correspondence Group regarding the development of a new SN circular on "Guidance on the Use of AIS Application Specific Messages" revoking existing SN/Circ.236 at a future date.

14.6 The Sub-Committee, with respect to paragraphs 17.1 to 17.5 of document NAV 55/14, took action as follows:

- .1 agreed to develop a new SN circular on “Guidance on the Use of AIS Application Specific Messages” and recommended that SN/Circ.236 be revoked at some future date;
- .2 agreed to develop and maintain an AIS binary International Application (IA) Catalogue to allow future amendments and introduction of new messages on a regular basis;
- .3 agreed to include, in the IA Catalogue, examples of how AIS binary message information was being portrayed;
- .4 noted the need for further discussions on the Navigational Intention Exchange Support System (NIESS) concept as proposed by Japan; and
- .5 noted the need for continuing work on the development of international binary message applications.

14.7 The Sub-Committee noted the views of the Correspondence Group (NAV 55/14, paragraph 7) that the use of AIS application specific messages (transferred as binary messages) was still an area under development and that many participants in the Correspondence Group had expressed an interest in keeping the issue of the application of AIS binary messages as an open work item for the NAV Sub-Committee so as to facilitate continued development. It was envisaged that additional or amended AIS application specific messages, using the binary message functionality of AIS, would be an important part of the development of services related to the e-navigation concept.

14.8 The Sub-Committee was of the opinion that with respect to the views of the Correspondence Group to keep this agenda item as a continuous item on the Sub-Committee’s work programme, as per section 2.19.3 of the Committee’s Guidelines on the organization and method of work (MSC-MEPC.1/Circ.2), an appropriate justification had to be provided for consideration by the Committee.

14.9 The Sub-Committee noted that the Guidelines discouraged subsidiary bodies from proposing continuous and umbrella items for inclusion in their work programmes and agendas; where this was not possible, the subsidiary body concerned should provide an appropriate justification for the Committee’s consideration.

14.10 The Sub-Committee considered document NAV 55/14/1 (United States) summarizing activities related to the evaluation of AIS trial messages and also suggested additional areas, which it would like to see further developed, especially in the context of the e-navigation strategy and concept of operations.

14.11 The delegation of the United States stated that development and use of AIS binary messages would contribute much to e-navigation and was therefore in favour of extension of the target completion date of this agenda item.

14.12 The Sub-Committee considered document NAV 55/14/2 (Denmark, Estonia, Finland, Latvia, Lithuania, Poland and Sweden) proposing the inclusion of five AIS binary messages developed as a common effort of the Baltic countries as described in detail in the Correspondence Group report. The proposed messages were intended to replace the present Fairway closed, Dangerous cargo indication and Extended ship static and voyage-related data AIS binary messages described in SN/Circ.236. The proposed amendments would improve the preparedness of the authorities in case of an accident and result in reduced workload on ship bridges by minimizing the need for VHF communication including improvement in maritime safety and protection of the marine environment.

14.13 The delegation of the Russian Federation expressed its appreciation for the work carried out by the correspondence group and supported the proposals outlined in document NAV 55/14 including the work carried out by Denmark, Estonia, Finland, Latvia, Lithuania, Poland and Sweden (NAV 55/14/2). The Russian Federation also informed the Sub-Committee about their experience in the use of AIS base stations for transmitting Differential GNSS corrections for both GLONASS and GPS satellite navigation systems.

14.14 The Sub-Committee was evenly divided on the issue of extending the target completion date of this agenda item. However, the Sub-Committee agreed not to pursue the option of seeking an extension, recognizing that, if and when the topic would need to be developed further, members could always propose a new item thereon to the Committee for inclusion in the Sub-Committee's work programme.

The Baltic AIS trial (AISBALTIC) project

14.15 The Sub-Committee noted with interest the information provided by Finland (NAV 55/INF.11) on the current use of AIS and potential developments for the future based on experience gained from the Baltic AIS trial (AISBALTIC) project.

Establishing AIS Binary Messages Drafting Group

14.16 After preliminary discussion, as reported in paragraphs 14.1 to 14.14 above, the Sub-Committee established a Drafting Group on AIS binary messages and instructed it, taking into account any decisions of, and comments and proposals made in Plenary, to consider the relevant documents submitted under agenda item 14, namely NAV 55/14, NAV 55/14/1 and NAV 55/14/2 and undertake the following tasks:

- .1 prepare a draft SN circular on Guidance on the use of AIS application specific messages;
- .2 prepare a draft SN circular on Guidance for the presentation and display of AIS binary messages information;
- .3 develop a draft format of an AIS binary International Application (IA) Catalogue to allow future amendments and introduction of new messages on a regular basis;
- .4 take into account the role of the human element guidance as updated at MSC 75 (MSC 75/24, paragraph 15.7) including the Human Element Analysing Process (HEAP) given in MSC/Circ.878-MEPC/Circ.346 in all aspects of the items considered; and

- .5 submit a report to Plenary on Thursday, 30 July 2009 for consideration at Plenary.

Report of the Drafting Group

14.17 Having received and considered the Drafting Group's report (NAV 55/WP.6), the Sub-Committee (with reference to paragraphs 3 to 5 and annexes 1, 2 and 3) took action as summarized hereunder.

Draft SN/Circular on Guidance on the use of AIS Application-Specific Messages

14.18 The Sub-Committee recommended the following Application-Specific Messages for international use:

- .1 Meteorological and hydrographic data;
- .2 Dangerous Cargo Indication;
- .3 Tidal window;
- .4 Extended Ship Static and Voyage Related Data;
- .5 Number of persons on board;
- .6 VTS-generated/Synthetic Targets;
- .7 Clearance time to enter port;
- .8 Marine traffic signal;
- .9 Berthing data;
- .10 Weather report from ship;
- .11 Area Notice;
- .12 Environmental;
- .13 Route information;
- .14 Text description; and
- .15 System-related Messages (described in annex 5 to Recommendation ITU-R M.1371-3):
 - .1 Interrogation for a specific IFM (FI = 2);
 - .2 Capability interrogation (FI = 3);
 - .3 Capability reply (FI = 4); and
 - .4 Application acknowledgement (FI = 5).

14.19 The Sub-Committee noted that the Drafting Group had reviewed the data format of each application-specific message and introduced some corrections and additional editorial clarifications. However, due to time constraints, some improvements were not completely considered.

14.20 The Sub-Committee noted that additional clarifications, improvements and editorial changes were required for the proper finalization of the draft SN/Circular on Guidance on the use of AIS Application-Specific Messages. These improvements and clarifications included:

- .1 harmonization of Weather Reports parameters with WMO Data fields;
- .2 inclusion of additional descriptors in table 11.10 (Notice Description);
- .3 development of tables defining ship deficiencies and additional characteristics; and
- .4 information on invalid and default values.

14.21 The Sub-Committee instructed the Secretariat to consolidate further clarifications to be submitted by interested delegations after the current session and to finalize the revised draft SN/Circular on Guidance on the use of AIS Application-Specific Messages for the consideration and approval of the Maritime Safety Committee, at its eighty-seventh session.

14.22 The Sub-Committee noted that the new draft SN/Circular on Guidance on the use of AIS application-specific messages, as set out in annex 13, would revoke SN/Circ.236 as from 1 January 2013.

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

14.23 The Sub-Committee endorsed the draft SN/Circular on Guidance for the presentation and display of AIS Application-Specific Messages information, as set out in annex 14, for approval by the Committee.

Draft format of an AIS International Application (IA) Catalogue

14.24 The Sub-Committee considered the recommended procedure and the draft submission form for the AIS International Application (IA) Catalogue, as set out in annex 15, agreed that the draft submission form could serve as the basis for an AIS International Application (IA) Catalogue and invited the Committee to endorse it.

14.25 The Committee was invited to consequently delete the item "Revision of the guidance on the application of AIS Binary Messages" from the Sub-Committee's work programme, as the work on this item had been completed.

15 IMPROVED SAFETY OF PILOT TRANSFER ARRANGEMENTS

15.1 The Sub-Committee recalled that MSC 82 had considered document MSC 82/21/17 in which Brazil, the United States and IMPA, being concerned over continued pilots' loss of life or serious injury suffered by pilots in the course of transferring to ships, proposed that amendments to SOLAS regulation V/23 and resolution A.889(21) on Pilot transfer arrangements should be developed to improve the safety of pilot transfer operation using ladders and agreed to include, in the work programmes of the NAV and DE Sub-Committees, a high-priority item on "Improved safety of pilot transfer arrangements", with two sessions needed to complete the item and assigned the Sub-Committee as a coordinator.

15.2 The Sub-Committee also recalled that NAV 54 had considered the above document and agreed to the establishment of a Correspondence Group under the coordination of the United States to develop draft texts and a final report for consideration and review by NAV 55 as well as a comprehensive interim report to DE 52 to progress the matter.

15.3 The Sub-Committee noted that DE 52 had considered the interim report of the Correspondence Group (DE 52/20/1) and provided comments with regard to the proposed amendments to SOLAS regulation V/23 and the proposed amendments to resolution A.889(21). DE 52 had also agreed to forward the comments to the NAV Correspondence Group, for consideration and to NAV 55 for action, as appropriate.

15.4 The Sub-Committee also noted that MSC 86, when discussing the draft Guidelines for construction, installation, maintenance and inspection/survey of accommodation ladders and gangways, had noted concerns expressed by the IACS observer and agreed to delete the second sentence of paragraph 3.3 of the Guidelines; and that NAV 55 should consider paragraph 3.1 of the Guidelines in the context of its work on pilot transfer arrangements. Subsequently, MSC 86 approved MSC.1/Circ.1331 on the above Guidelines.

15.5 The Sub-Committee considered document NAV 55/15 (United States), report of the Correspondence Group on the outcome of the intersessional discussions on the issue, which included the comments and recommendations of DE 52.

15.6 There was general support for the report of the Correspondence Group. The delegation of the Bahamas voiced concern regarding the load testing requirement for pilot ladders as outlined in paragraph 2.3 of annex 1 of document NAV 55/14, relating to amendments to SOLAS regulation V/23. The delegation of Finland was of the opinion that the exclusion of mechanical hoists should not affect other mechanical means, bearing in mind relevant ice-breaker operations.

15.7 The Sub-Committee also considered document NAV 55/15/1 (Dominica) introduced by the observer from IMPA supporting the recommendations of the Correspondence Group, in particular the proposed draft amendments to SOLAS regulation V/23 and resolution A.889(21).

15.8 The Sub-Committee, in order to improve the suitability and readiness of pilot ladders, agreed to invite the Committee to:

- .1 recommend that each Administration review all pilot ladder designs they had approved and determine whether they were meeting the requirements of SOLAS chapter V;
- .2 request IMPA to provide detailed information to the DE and NAV Sub-Committees relative to specific ladders their members were asked to “climb” that were not up to the SOLAS standard. IMPA should be encouraged to ask their member organizations to provide the above information to port State control officials in the ports where they provide pilotage services;
- .3 request shipowner organizations (IMO NGOs) to encourage their members to review the pilot ladders on their ships with a view to determining if they were meeting the requirements of SOLAS chapter V; and
- .4 instruct the FSI Sub-Committee to take appropriate action in encouraging port State control organizations to formally include pilot ladders as part of the safety equipment that their port State control officers would be examining in the course of a port State inspection.

15.9 The Sub-Committee further considered document NAV 55/15/2 (Panama) proposing modifications to the text of the report (NAV 55/15, annexes 1 and 2) of the Correspondence Group in relation to existing requirements of the Panama Canal regarding Pilot Transfer Arrangements.

15.10 The delegation of Norway voiced its concern regarding the maximum angle of slope for the sloping ladder when used in conjunction with the pilot ladder in vessels with large draft ranges, which could result in an angle of slope as low as 25°.

15.11 The delegation of Panama informed the Sub-Committee that the issue had been discussed and resolved in consultation with the Chairman of the Correspondence Group.

15.12 The INTERTANKO observer referred to the issue raised by IACS at MSC 86 with respect to paragraph 3.1 (location) of MSC.1/Circ.1331 on Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation. INTERTANKO was of the view that this was in conflict with paragraph 3.3.1.2 of the proposed draft text of regulation V/23. Accordingly, INTERTANKO requested the Sub-Committee to instruct the Drafting Group to also consider this issue and suggest suitable text for review by the Sub-Committee. There was general support for the suggestion by INTERTANKO.

Establishing the Drafting Group

15.13 After preliminary discussion, as reported in paragraphs 15.1 to 15.12 above, the Sub-Committee established a Drafting Group on Pilot transfer arrangements 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 (item 2), to undertake the following tasks:

- .1 consider all documents submitted under agenda item 15 (NAV 55/15, NAV 55/15/1 and NAV 55/15/2) on improved safety of pilot transfer arrangements including paragraph 3.1 of MSC.1/Circ.1331 and using the annexes to document NAV 55/15 as the basic document, finalize draft texts of the proposed amendments to SOLAS regulation V/23 and resolution A.889(21), as appropriate, and recommendations for consideration and approval by Plenary;
- .2 take into account the role of the human element guidance as updated at MSC 75 (MSC 75/24, paragraph 15.7) including the Human Element Analysing Process (HEAP) given in MSC/Circ.878-MEPC/Circ.346 in all aspects of the items considered; and
- .3 submit a report to Plenary on Thursday, 30 July 2009 for consideration at Plenary.

Report of the Drafting Group

15.14 Having received and considered the Drafting Group's report (NAV 55/WP.7), the Sub-Committee (with reference to paragraphs 3.1 to 4.1 and annexes 1 and 2) took action as summarized hereunder.

REVIEW OF SOLAS REGULATION V/23 AND RESOLUTION A.889(21)

15.15 The Sub-Committee endorsed the draft revised text of the proposed amendments to SOLAS regulation V/23 relating to pilot transfer arrangements with a view to approval by MSC 87 and adoption by MSC 88, as set out in annex 16.

15.16 The Sub-Committee endorsed the draft revised text of the proposed amendments to resolution A.889(21) relating to recommendation on pilot transfer arrangements with a view to approval by the Committee and submission to A 27 for adoption, as set out in annex 17.

15.17 The delegation of the Cook Islands enquired whether it was possible to expedite implementation of amendments that address such an important issue as pilot transfer arrangements.

15.18 The Secretariat explained that for the approval and adoption of amendments to a Convention text certain legal procedures had to be followed. However, the Secretariat would investigate the feasibility of issuing an MSC circular recommending early application.

REVIEW OF MSC.1/CIRC.1331 – GUIDELINES FOR CONSTRUCTION, INSTALLATION, MAINTENANCE AND INSPECTION/SURVEY OF MEANS OF EMBARKATION AND DISEMBARKATION

15.19 Based on the intervention of INTERTANKO concerning means of embarkation and disembarkation, the Sub-Committee was of the view that consequential amendments to paragraph 3.1 of MSC.1/Circ.1331 on Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation were necessary, and agreed to the following text:

“3.1 Location

Except 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 practicable, be sited clear of the working area and should not be placed where cargo or other suspended loads may pass overhead.”

15.20 The Sub-Committee endorsed the proposed amended text of paragraph 3.1 of MSC.1/Circ.1331 on Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation, and forwarded it to the Committee for consideration and appropriate action.

15.21 The Committee was invited to consequently delete the item “Improved safety of pilot transfer arrangements” from the Sub-Committee’s work programme, as the work on this item had been completed.

16 CASUALTY ANALYSIS

16.1 The Sub-Committee recalled that MSC 78 had decided that the item on “Casualty analysis” should remain on the work programme of the sub-committees.

16.2 The Sub-Committee noted that, at this session, no documents had been submitted for consideration or referred to it by either the FSI Sub-Committee or any other technical body of the Organization for review, and consequently agreed to defer further consideration of the item to NAV 56.

17 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS

17.1 The Sub-Committee recalled that, in order to expedite consideration of IACS unified interpretations being submitted to the Committee on a continuous basis, MSC 78 had decided that IACS should submit them directly and, as appropriate, to the sub-committees concerned. To this effect, 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 respective sessions.

17.2 The Sub-Committee recalled further that NAV 52 and NAV 53 had considered proposals for IACS Unified Interpretations, which were subsequently approved as MSC.1/Circ.1224 on Unified interpretations of SOLAS chapter V and MSC.1/Circ.1260 on Unified Interpretations of COLREG by MSC 82 and MSC 84, respectively.

17.3 The Sub-Committee recalled also that IACS had intended to submit a document to NAV 54 but had missed the deadline. However, the IACS observer had informed the Sub-Committee that IACS would submit relevant IACS Unified Interpretation proposals to NAV 55.

Clarification for the application of SOLAS regulation V/22.1.6

17.4 The Sub-Committee considered document NAV 55/17 (IACS) on the issue of providing clarification on the meaning of the requirement “*The ship’s side shall be visible from the bridge wing*” contained in SOLAS regulation V/22.1.6, with a view to achieving a common understanding in the implementation of this regulation. 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 the ship to:

- .1 be safely manoeuvred alongside other ships/objects;
- .2 launch and recover lifeboats; and
- .3 safely receive pilot boarding, stores 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, particular types of ships, such as tug/tow boats, Offshore Supply Vessels (OSVs), rescue ships, workshops (e.g., floating crane vessels), etc., offered 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 close to other ships/objects. In such operations, 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.

17.5 The Sub-Committee concurred with the view of IACS and agreed to the draft MSC circular on Unified Interpretations of SOLAS regulation V/22.1.6 relating to navigation bridge visibility, as set out in annex 18, for submission to MSC 87 for approval.

17.6 The Sub-Committee recalled further that NAV 50 had considered on a preliminary basis the proposal by IACS (MSC 78/22/1, annex 7) regarding the IACS unified interpretation SC 139 relating to bridge visibility and invited Members to submit comments and detailed proposals on the matter. NAV 51 noted that no document had been submitted by IACS, which advised that it would submit relevant UIs to NAV 52. IACS subsequently had submitted two documents to NAV 52, on different issues, however they did not re-submit SC 139 to either NAV 53 or NAV 54.

17.7 The IACS observer further informed the Sub-Committee that they would submit any further relevant IACS Unified Interpretation proposals, including SC 139, to NAV 56.

18 WORK PROGRAMME AND AGENDA FOR NAV 56

18.1 The Sub-Committee recalled that MSC 78 had agreed that a decision to include a new item in a sub-committee's work programme did not mean that the Committee agreed with the technical aspects of the proposal; and that detailed consideration of the technical aspects of the proposal and the development of appropriate requirements and recommendations should be left to the sub-committee concerned.

18.2 The Sub-Committee noted that MSC 84 had agreed to expand the existing work programme item on "Amendments to the Performance standards for VDR and S-VDR" to consider the proposal contained in document MSC 84/22/18 (Egypt), and increased the number of sessions needed to complete this work item to three sessions.

18.3 The Sub-Committee also noted that MSC 85 had agreed to include, in the Sub-Committee's work programme, a high-priority item on "Development of an e-navigation strategy implementation plan", with four sessions needed to complete the item.

18.4 The Sub-Committee further noted that MSC 86 had agreed to include, in the Sub-Committee's work programme, high-priority items on:

- .1 "Review of the principles for establishing the safe manning levels of ships including mandatory requirements for determining safe manning", with a target completion date of 2010, in cooperation with the STW Sub-Committee as coordinator;
- .2 "Amendments to the 1966 LL Convention and the 1988 LL Protocol", with a target completion date of 2011, assigning the SLF Sub-Committee as coordinator, and instructed NAV 55 to include the item in the provisional agenda for NAV 56;
- .3 "New symbols for AIS aids to navigation", with a target completion date of 2013, and instructed NAV 55 to include the item in the provisional agenda for NAV 56; and
- .4 "Amendments to the World-wide radionavigation system", with a target completion date of 2011 and instructed NAV 55 to include the item in the provisional agenda for NAV 56.

18.5 Taking into account the progress made at the current session, the decisions of MSC 85 and MSC 86 and the provisions of the agenda management procedure, the Sub-Committee prepared a proposed revised work programme and a manageable provisional agenda for NAV 56 (NAV 55/WP.3), as amended, based on those approved by MSC 86 (NAV 55/2/2, annexes 2 and 3), as set out in annex 19, for consideration and approval by the Committee. While reviewing the work programme, the Sub-Committee invited the Committee to:

- .1 delete the following work programme items, as work on them had been completed:
 - .1.1 item H.2 Development of Guidelines for IBS, including 2009 performance standards for bridge alert management

.1.2	item H.5	Code of conduct during demonstrations/ campaigns against ships on high seas	2009
.1.3	item H.6	Measures to minimize incorrect data transmissions by AIS equipment	2009
.1.4	item H.8	Revision of the Guidance on the application of AIS binary messages	2009
.1.5	item H.9	Improved safety of pilot transfer arrangements	2009
.2	extend the target completion date of the following work programme items:		
.1.1	item H.1	ITU matters	2011
.1.2	item H.1.1	Radiocommunication ITU-R Study Group matters	2011
.1.3	item H.4	Guidelines on the layout and ergonomic design of safety centres on passenger ships	2010
.1.4	item H.7	Review of vague expressions in SOLAS regulation V/22	2010

Arrangements for the next session

18.6 The Sub-Committee anticipated that Working Groups on the following subjects might be established at NAV 56:

- .1 Ships' Routing;
- .2 Technical matters; and
- .3 e-navigation.

High-level Action Plan of the Organization: Status of planned outputs for the 2008-2009 biennium and proposals for the High-level Action Plan of the Organization and priorities for the 2010-2011 biennium

18.7 The Sub-Committee recalled that, under agenda item 2 – Decisions of other IMO Bodies, the Secretariat had provided information on action of the High-level Action Plan of the Organization.

18.8 The Sub-Committee also recalled that, in the context of the requests of the Assembly made in resolution A.989(25) on Strategic Plan for the Organization (for the six-year period 2008 to 2013) and resolution A.990(25) on High-level Action Plan of the Organization and priorities for the 2008-2009 biennium, MSC 84 had instructed the Secretariat to submit the information concerning review of progress made in implementing the High-level Action Plan and priorities for the 2008-2009 biennium and prepare proposals for the High-level Action Plan for the 2010-2011 biennium, as may be updated following the outcome of MSC 86, for submission to C 102.

18.9 The Sub-Committee further recalled that MSC 86, having considered document MSC 86/23/5 (Secretariat) on the status of the Committees' outputs for the 2008-2009 biennium, in the context of the outputs listed in resolution A.990(25), and recommendations made by the Chairmen's meeting (MSC 86/WP.11), had endorsed the status of the MSC planned outputs for the current biennium, set out in document MSC 86/26, annex 26, which included updates by the Chairman and the Secretariat, as authorized by the Committee, taking into account the outcome of MSC 86, for submission to C 102.

18.10 The Sub-Committee noted that the Committee, having considered document MSC 86/23/16 (Secretariat), proposing modifications to the planned output of the Committees for the 2010-2011 biennium, which took into account the progress made by the sub-committees during the current biennium, and the recommendations made by the Chairmen's meeting (MSC 86/WP.11), endorsed the proposals for the High-level Action Plan of the Organization and priorities for the 2010-2011 biennium, set out in document MSC 86/26, annex 27, which included updates by the Chairman and the Secretariat, as authorized by the Committee, taking into account the outcome of MSC 86, for submission to C 102, and requested the Secretariat to submit any changes to the annexed proposals emanating from NAV 55 and DSC 14 to CWGSP 9 or C/ES.25, as appropriate.

18.11 The Sub-Committee also noted the information on the status of planned outputs of the High-level Action Plan of the Organization and priorities for the 2008-2009 biennium and the 2010-2011 biennium relevant to the Sub-Committee, as set out in annex 20, for submission to MSC 87 for consideration and action, as appropriate.

Date of the next session

18.12 The Sub-Committee noted also that the fifty-sixth session of the Sub-Committee had been tentatively scheduled to be held from 26 to 30 July 2010 at IMO Headquarters.

19 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2010

19.1 In accordance with Rule 16 of the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mr. J. M. Sollosi (United States), as the Chairman and Mr. Raja Datuk Malik (Malaysia), as the Vice-Chairman for 2010 respectively.

20 ANY OTHER BUSINESS

Codes, recommendations, guidelines of non-mandatory instruments

20.1 The Sub-Committee recalled that NAV 54 had:

- .1 considered document NAV 54/24 (Secretariat), containing at annex the list of codes, recommendations, guidelines and other non-mandatory instruments under the purview of the NAV Sub-Committee, which the Sub-Committee had been requested to review by MSC 83;
- .2 in view of the length of the list attached to document NAV 54/24, containing 169 non-mandatory instruments, agreed to approve the list attached to document NAV 54/24 as being the list of relevant documents;

- .3 agreed that there was not sufficient time to review carefully the complete list of non-mandatory instruments under the purview of the Sub-Committee during that session and that there was a need for experts to take a detailed look at these documents and to examine the need to revise or delete some of the documents; and
- .4 decided to establish a Correspondence Group to review the list intersessionally.

20.2 The Sub-Committee briefly considered document NAV 55/20 (United Kingdom), containing the recommendations and comments of the Correspondence Group with regard to the existing NAV related codes, recommendations and guidelines of non-mandatory instruments. The Sub-Committee decided to refer the document for detailed consideration by the Technical Working Group relating to performance standard issues and by the Ships' Routeing Working Group relating to operational issues.

Terms of reference for the Technical and Ships' Routeing Working Groups

20.3 The Sub-Committee instructed the Technical Working Group, taking into account decisions of, and comments and proposals made in Plenary to consider in detail Nos. 7, 9, 11, 12, 14, 17, 19, 21, 23, 24, 25, 31, 34, 37, 41, 44, 45, 48, 49, 52, 53, 67, 68, 69, 70, 82, 91, 94, 95, 98, 100, 111, 123, 124, 126, 127, 134, 135, 136, 138, 140, 144 and 162 of document NAV 55/20, and Nos. 13, 18, 22, 32, 92, 104, 110, 121, 122, 125, 130, 131, 132, 133, 145, 146, 147, 150 and 166 of document NAV 55/20, to the Ships' Routeing Working Group, and prepare comments and recommendations.

Report of the Technical and Ships' Routeing Working Groups

20.4 In considering the relevant parts of the Technical and Ships' Routeing Working Groups report (NAV 55/WP.4, paragraph 8.1 and NAV 55/WP.2, paragraphs 9.2 and 9.3 and annex 12), the Sub-Committee took action as indicated in the ensuing paragraphs.

20.5 The Sub-Committee identified the following issues:

- .1 No.37 – resolution A.708(17) – Navigation bridge visibility and functions – it was noted that not all the issues contained in this resolution were transferred to SOLAS chapter V and that the resolution should therefore be retained;
- .2 No.68 – MSC.64(67), annex 1 – Recommendations on new and amended performance standards for integrated bridge systems (IBS) – it was noted that this recommendation would become obsolete after the adoption of the Guidelines for bridge equipment and systems, their arrangement and integration (paragraphs 3.2 to 3.4 and annex 1 refer);
- .3 No.91 – MSC/Circ.563 – Unification of ARPA symbols – it was noted that after the approval by MSC 85 last year, an Add.1 to SN/Circ.243 was issued;
- .4 No.111 – MSC/Circ.1061 – Guidance for the operational use of Integrated Bridge Systems (IBS) – it was noted that this circular was no longer under review and that the text “Currently under review” could be deleted;

- .5 No.122 – SN/Circ.62 – Recommendations for the marking of offshore fixed structures – it was noted that the reference to the IALA document for the marking of offshore structures was IALA O-134;
- .6 No.163 – A.706(17) – World-wide navigation warning service, as amended – it was noted that MSC/Circ.685, MSC/Circ.750 and MSC/Circ.957 were superseded by MSC.1/Circ.1288; and
- .7 it was further noted that resolution A.705(17) on Recommendations on the promulgation of MSI was amended by MSC/Circ.1287.

20.6 The Sub-Committee instructed the Secretariat to take appropriate action with regard to the existing NAV-related codes, recommendations and guidelines of non-mandatory instruments.

Revision of Ships Position Reporting Format

20.7 The Sub-Committee noted that, at NAV 53, the delegation of Iran (Islamic Republic of) had raised a concern in respect of ships reporting position by VHF despite the availability of the same information through AIS in the Ships' Routeing Working Group which was supported by some delegations. However, some delegations at the same Working Group supported the idea of position reporting by VHF despite the availability of the same and even more information through AIS, for the reason that it was the best way for the VTS operator to ensure actual presence of the OOW on the bridge and to prevent that the bridge was left unattended in a high risk area. NAV 53 had requested all Member Governments to consider and revise, as necessary, their mandatory ship reporting systems, so as to avoid duplication of information and reduce the items in the reporting format to those which were not available through AIS and other sources.

20.8 The Sub-Committee considered document NAV 55/20/1 (Islamic Republic of Iran) and was evenly divided on the issue. Recognizing that there was merit in the proposal with regard to reducing the voice reporting burden on watchkeepers including simplification of the reporting format, the Sub-Committee noted there was a need to seek a balance between voice and automated reporting.

20.9 Accordingly, the Sub-Committee decided to refer document NAV 55/20/1 to the Ships Routeing Working Group and instructed it, taking into account decisions of, and comments and proposals made in Plenary, to provide comments/recommendations.

Report of the Ships' Routeing Working Group

20.10 In considering the relevant part of the Ships' Routeing Working Group's report (NAV 55/WP.2, paragraphs 9.4 to 9.12), the Sub-Committee took action as indicated in the ensuing paragraphs.

20.11 The Sub-Committee welcomed the effort made by the Islamic Republic of Iran to promote the use of AIS as a useful tool of providing information required by international reporting schemes. The Sub-Committee further acknowledged that double reporting should be avoided where possible and that correct AIS information help to reduce uncertainty and misinterpretation when conveying safety-relevant information in ship-to-shore communication.

20.12 However, the Sub-Committee agreed that the proposal from the Islamic Republic of Iran, despite support from some Member States, was ahead of its time. A majority felt it was premature to be implemented at this stage as there were still a number of erroneous AIS information being transmitted by a considerable number of ships.

20.13 The Sub-Committee concluded that AIS data for the time being have a complementary character and useful to cross-check information provided by ships. Thus the Sub-Committee could not agree on the proposal at this session and considered that the revision of the ship's position reporting format and procedures may be possible after implementing the e-navigation strategy and its future applications.

Operation of the Bridge Navigational Watch Alarm System

20.14 The Sub-Committee recalled that the Performance standards for Bridge Navigational Watch Alarm System (BNWAS) were adopted by MSC 75 and that MSC 86 had recently adopted carriage requirements for BNWAS, which shall enter into force on 1 January 2011.

20.15 The Sub-Committee briefly considered document NAV 55/20/2 (United Kingdom and Denmark) relating to the operation of the Bridge Navigational Watch Alarm System (BNWAS) including its reset function and was of the view that the proposal was viable.

20.16 The Sub-Committee decided to refer the document for detailed consideration by the Technical Working Group with respect to the reset function of the BNWAS.

Report of the Technical Working Group

20.17 In considering the relevant part of the Technical Working Group's report (NAV 55/WP.4, paragraphs 8.2 and 8.3), the Sub-Committee took action as indicated in the ensuing paragraphs.

20.18 The Sub-Committee concurred with the view of Denmark and the United Kingdom that three methods for the reset function were described in the performance standards for BNWAS given in resolution MSC.128(75), as follows:

- .1 by a single operator action from a device forming an integral part of the BNWAS, for example a manually operated button or a touch screen; or
- .2 by external inputs from other equipment registering physical activity, for example sensors preferably detecting the presence and movements of a human body or floor pressure pads detecting movement of a human; or
- .3 by external inputs from other equipment registering mental alertness of the OOW, for example speech recognition sensors or changes in the operation of the manual controls of bridge equipment.

20.19 The Sub-Committee further noted that the performance standards for BNWAS define three operational modes:

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

but SOLAS regulation V/19.2.2.3 required that the BNWAS was operational whenever the ship was underway at sea. The Automatic mode of the performance standard was therefore not usable on a ship compliant with the SOLAS Convention. It was considered that it would not be possible to change the performance standards before the date at which the carriage requirements comes into force (1 July 2011). In order to conform with the performance standards, therefore, equipment would include the Automatic mode, despite that this operational mode should not be used on ships which are subject to the SOLAS Convention.

20.20 Member Governments were invited to note this information.

Review of SOLAS regulation V/19.2.2.2 relating to the carriage of a daylight signalling lamp

20.21 The Sub-Committee noted that STW 40 had approved the report of the *ad hoc* intersessional meeting of the STW Working Group on the comprehensive review of the STCW Convention and Code (STW 40/7/3) in general and, in particular, invited the Committee to instruct NAV 55 to review SOLAS regulation V/19.2.2.2 relating to the carriage of a daylight signalling lamp and provide its advice to STW 41. MSC 86 had instructed NAV 55 accordingly.

20.22 The Sub-Committee also noted that SOLAS regulation V/19.2.2.2 relating to the carriage of a daylight signalling lamp, as drafted, read as follows:

“2.2 All ships of 150 gross tonnage and upwards and passenger ships irrespective of size shall, in addition to the requirements of paragraph 2.1, be fitted with:

- .2 a daylight signalling lamp, or other means, to communicate by light during day and night using an energy source of electrical power not solely dependent upon the ship's power supply.”

20.23 The Sub-Committee was of the view that SOLAS regulation V/19.2.2.2 should be retained without change along with the current training requirements in the STCW Convention and Code. The Secretariat was instructed to convey the outcome to STW 41.

Review of Annex IV of COLREGs and appendix 1 of the International Code of Signals prescribing the distress signal SOS to be sent by a signalling lamp

20.24 The Sub-Committee noted that STW 40 had approved the report of the *ad hoc* intersessional meeting of the STW Working Group on the comprehensive review of the STCW Convention and Code (STW 40/7/3) in general and, in particular, invited the Committee to instruct NAV 55 to review Annex IV of COLREGs and Appendix 1 of the International Code of Signals prescribing the distress signal SOS to be sent by a signalling lamp with a view to deleting the training requirements relating to visual signalling by Morse Code in the STCW Convention and provide its advice to STW 41. MSC 86 had instructed NAV 55 accordingly.

20.25 The Sub-Committee also noted that Annex IV of COLREGs was also reproduced as Appendix 1 of the International Code of Signals relates to Distress signals, which used or exhibited together or separately, indicate distress and need of assistance.

20.26 The Sub-Committee further noted that amendments to Annex IV of the COLREGs were adopted by A 25 by resolution A.1004(25) and these would enter into force on 1 December 2009. Secondly, there was still a requirement in Annex IV of COLREGs relating to Distress signals that one of the signals consists of the group ...---... (SOS) in the Morse Code by any signalling

method. Hence, it would be necessary to maintain the training requirements relating to visual signalling by Morse Code.

20.27 The Sub-Committee was of the view that it was important that mariners acquired and retained a working knowledge in recognition of Morse Code characters including single-letter signals of the International Code of Signals; however, proficiency in the transmission/reception of Morse Code needed not to be demonstrated. The Secretariat was instructed to convey this outcome to STW 41.

Review on a preliminary basis of draft revised Assembly resolution on Principles of Safe Manning (resolution A.890(21))

20.28 The Sub-Committee noted that, at STW 40, the relevant Working Group had noted that the draft revised text of resolution A.890(21), as amended, should also be reviewed by the NAV Sub-Committee from the operational aspect. Accordingly, STW 40 invited the Committee to:

- .1 instruct NAV 55 to review, on a preliminary basis, the preliminary draft revised Assembly resolution on Principles of Safe Manning (resolution A.890(21), as amended); and
- .2 include the work programme item “Review of the principles for establishing the safe manning levels of ships including mandatory requirements for determining safe manning” on the work programme of the Sub-Committee and on the provisional agenda for NAV 56.

20.29 The Sub-Committee, noting that MSC 86 had instructed it accordingly, also noted that this sub-item would be on the provisional agenda for NAV 56 and at this session it was the intention to review the preliminary draft revised Assembly resolution from the operational aspect in Plenary and subsequently in detail at NAV 56 by a Drafting Group.

20.30 The Sub-Committee was of the opinion that the preliminary draft revised Assembly resolution on Principles of Safe Manning (resolution A.890(21), as amended) appeared to be well drafted. However, with respect to the Appendix and Annex 5, the Sub-Committee agreed to the following amendments:

- .1 “APPENDIX Issued under the provisions of regulation V/14(~~b~~) 2.”
- .2 “Annex 5, section 1.2, Submission needs to take into account the requirements of Annexes 2 and 3 in the context of the management of the safety, security and protection of the marine environment functions of a ship.”
- .3 “Annex 5, section 2.2, Having evaluated and approved the proposal the Administration should issue a safe manning document including special requirements and conditions [supported by a minimum safe manning assessment].”

20.31 The Secretariat was instructed to convey this outcome to the STW Sub-Committee and also to include this work programme item in the provisional agenda for NAV 56.

Review of SOLAS regulation V/19 relating to display of radar shadow sectors on the bridge

20.32 The Sub-Committee recalled that DE 52 had noted document DE 52/20/8 (France), concerning discrepancies in the provisions of the Survey guidelines under the harmonized system of survey and certification, 2007 and SOLAS chapter V concerning the display of radar shadow sectors on the bridge. Noting that the issue concerned a navigational matter and as such did not fall under its remit, DE 52 had referred the document to the NAV Sub-Committee for consideration.

20.33 The Sub-Committee considered document DE 52/20/8 (France). France was of the view that resolution A.997(25) required an Administration to confirm that radar shadow sectors are displayed in the bridge. Resolution A.997(25) supported this requirement by a reference to SOLAS regulation V/19. SOLAS regulation V/19 contained no provision relating to radar shadow sectors. France's intention was to make these two texts consistent.

20.34 The Sub-Committee noted that, in resolution A.997(25), reference to a table of residual deviations for the magnetic compass and a diagram of the radar installation's shadow sectors was given in the following places:

- .1 Guidelines for surveys for the Cargo Ship Safety Equipment Certificate (Initial surveys)
Section 1.1.5.8
- .2 Guidelines for surveys for the Cargo Ship Safety Equipment Certificate (Annual surveys)
Section 1.2.1.25
- .3 Guidelines for surveys for the Passenger Ship Certificate (Initial surveys)
Section 5.1.3.10
- .4 Guidelines for surveys for the Passenger Ship Certificate (Renewal surveys)
Section 5.2.1.29

20.35 The Sub-Committee also noted that it was normal practice for all Administrations to issue Guidance notes meant primarily for the guidance of surveyors inspecting navigational equipment installations required to be carried under SOLAS regulation V/19. These notes also indicated to owners, masters and crews, shipbuilders and installation companies the requirements which certain vessels should meet in order to comply with the "Regulations".

20.36 The Sub-Committee further noted that all ships were required to carry a table of residual deviations for the magnetic compass and a diagram of the radar installation's shadow sectors. SOLAS regulation V/19, as presently drafted, contained no provision relating to displaying on the bridge a table of residual deviations for the magnetic compass or a diagram of radar shadow sectors. It was common good seamanship that this was being done on all ships and hence there was no specific need for an amendment to SOLAS regulation V/19 or if it was indeed deemed to be necessary then there would also be a need to ensure that there was a corresponding provision in SOLAS regulation V/19 for displaying a table of residual deviations for the magnetic compass.

20.37 The Sub-Committee was of the view that there was no need to amend SOLAS regulation V/19 for displaying radar shadow sectors.

World-Wide Radionavigation System

20.38 The Sub-Committee noted with interest the information provided by the Secretariat (NAV 55/INF.2) concerning the world-wide radionavigation system. In July 2008, there had been an exchange of communications between the Commandant of the United States Coast Guard, Admiral Thad W. Allen and the Secretary-General, with regard to the Standard Positioning Service (SPS) of the Global Positioning System (GPS) of the World-Wide Radionavigation System. The United States Government planned to take all necessary measures for the foreseeable future to maintain the integrity, reliability and availability of the GPS SPS and expected to provide at least six years' notice prior to any termination of GPS operations or elimination of the GPS SPS.

20.39 The ICS observer requested the United States delegation to clarify a recent report of the General Accountability Office (GAO) concerning reduced capacity of the GPS constellation in 2011.

20.40 The delegation of the United States stated that there had been a number of inaccurate press reports concerning the health of the GPS constellation after publication of a recent GAO report of 30 April 2009, which stated concerns regarding insufficient satellites in the pipeline to sustain the constellation. GPS remained a very solid programme with the largest number of healthy satellites and the best overall constellation performance ever seen. The United States continued to have extremely high confidence that the GPS constellation would remain healthy for the foreseeable future. The constellation was undergoing active modernization, and the United States planned to invest US\$6B in the GPS system over the next five years, including launching two new satellites within the next year to fortify the 30 currently operating and in orbit. In addition to those 30, there were another three residual satellites that could be reactivated in 10 days to two weeks. Only 21 operating satellites out of 24 orbiting spheres were needed to provide optimal positioning accuracy and met the performance standard advertised by the United States Government. So there were currently a considerable number of "on orbit spare" satellites. The next generation of satellites, GPS III, was currently in development and on schedule for a first launch in 2014. Although a few satellites were past their design lives, the United States Government had historically very successfully managed the GPS system by keeping older satellites usable well past (at more than twice) their design lives, and would continue to do so. The United States recognized that GPS was a ubiquitous global utility the entire world depended on more and more with each passing day. It was a precious global asset that would not be allowed to fail, and in fact was not in any danger of failing whatsoever. The United States foresaw no loss of service in the future, near or far.

Precautions in the use of navigational charts in Greenland waters

20.41 The Sub-Committee noted with interest the information provided by Denmark (NAV 55/INF.6) regarding precautions in the use of navigational charts in Greenland waters in terms of inaccuracies in paper charts due to incorrect positioning of the coastline, geographical datum and hydrographic surveys. This included information regarding the use of electronic navigational charts (ENC) in Greenland's coastal waters.

AIS-based Aids to Navigation (AIS AtoN)

20.42 The Sub-Committee noted with interest the information provided by Denmark (NAV 55/INF.7) regarding a Danish study on experiences gathered from AIS AtoN trials. The intention was to summarize the most important experiences gained and issues raised, also with reference to a proposed new work programme item (MSC 86/23/7) for the Sub-Committee to develop new symbols for AIS AtoN. Tools such as virtual or synthetic AIS AtoN, the symbology in SN/Circ.243, a diamond with crosshair symbol, were evaluated together with AIS safety-related text message services.

20.43 The delegations of Sweden and Australia including the observers from IALA and IHO complimented Denmark on the study undertaken with respect to AIS AtoN trials. The observer from IALA informed the Sub-Committee that IALA was organizing a workshop on the matter in January 2010 and its outcome would be reported to NAV 56.

Electronic Navigational Charts (ENCs) for the Cook Islands

20.44 The delegation of the Cook Islands informed the Sub-Committee that its Government had been advised that Electronic Navigational Charts (ENCs) for the south Pacific region were being prepared and would be available prior to the implementation of the mandatory carriage requirements for ECDIS. The Cook Islands wished to put on record their appreciation to IHO and the United Kingdom and the French Hydrographic Services.

Expressions of appreciation

20.45 The Sub-Committee further expressed appreciation to the following delegates who had recently relinquished their duties, retired or were transferred to other duties or were about to, for their invaluable contribution to its work and wished them a long and happy retirement or, as the case might be, every success in their new duties:

- Rear-Admiral André-Yves Legroux (France) (on retirement);
- Mr. Efthimios Liberopoulos (Greece) (on return home);
- Mr. Ko Koiso (Japan) (on return home);
- Miss Liliana Fernández (Panama) (on completing tour of duty);
- Mr. Ki-tack Lim (Republic of Korea) (on return home);
- Mr. Steve Godsiff (United Kingdom) (on retirement); and
- Mr. Richard Leslie (IACS) (on retirement).

21 ACTION REQUESTED OF THE COMMITTEE

21.1 The Committee, at its eighty-seventh session, is invited to:

- .1 in accordance with resolution A.858(20), adopt:
 - .1 the proposed new traffic separation scheme at “Adlergrund” and “Ślupska Bank” (paragraph 3.36 and annex 1);
 - .2 the proposed three new traffic separation schemes surrounding Gotland Island including changing the name of the existing traffic separation scheme “Off Gotland Island” to “North Hoburgs bank” (paragraph 3.37 and annex 1);

- .3 the proposed new traffic separation scheme and associated routing measures “In the area of the south-western coast of the Crimea” (paragraphs 3.38 and 3.39 and annex 1);
 - .4 the proposed amendments to the existing traffic separation scheme “Off Cape Roca” and “Off Cape S. Vicente” (paragraph 3.40 and annex 1);
 - .5 the proposed amended traffic separation schemes “Off Kalbådagrund Lighthouse”, “Off Porkkala Lighthouse” and “Off Hankoniemi Peninsula” (paragraph 3.41 and annex 1);
 - .6 the proposed new two-way route “Salvorev” in the waters north of Gotland Island (paragraph 3.43 and annex 2);
 - .7 the proposed new Area To Be Avoided and two new mandatory No Anchoring Areas in the vicinity of the proposed “Neptune deepwater port” in the western North Atlantic Ocean, off the coast of the United States (paragraph 3.44 and annex 2);
 - .8 the proposed new deep-water route including associated routing measures consisting of a traffic separation scheme, two Areas To Be Avoided and a precautionary area leading to the new Jazan Economic City Port (JEC Port) (paragraph 3.45 and annex 2);
 - .9 the proposed amendments to the existing deep-water route leading to IJmuiden (paragraph 3.46 and annex 2);
 - .10 the proposed amendments to the existing mandatory ship reporting system “In the Strait of Gibraltar” (GIBREP) (paragraph 3.48 and annex 3); and
 - .11 the proposed amendments to the existing mandatory ship reporting system (WETREP) in the Western European Particularly Sensitive Sea Area (paragraph 3.49 and annex 4);
- .2 endorse the action of the Sub-Committee in approving SN.1/Circ.281 on Information on internationally recommended transit corridor (IRTC) for ships transiting the Gulf of Aden and instructing the Secretariat to circulate it expeditiously (paragraph 3.52);
 - .3 note the action of the Sub-Committee in endorsing the draft Assembly resolution on Information on internationally recommended transit corridor (IRTC) for ships transiting the Gulf of Aden and requesting the Secretary-General to convey it to C/ES.25 for approval and submission to A 26 for adoption (paragraph 3.53 and annex 5);
 - .4 approve the draft SN circular on Guidelines for bridge equipment and systems, their arrangement and integration (paragraph 4.20 and annex 6);
 - .5 adopt the draft MSC resolution on performance standards for Bridge Alert Management (paragraph 4.23 and annex 7);

- .6 approve the draft MSC circular on High-Speed Craft (HSC) Compliance with the provisions of SOLAS regulations V/18 to 20 (paragraph 4.27 and annex 8);
- .7 approve the draft MSC circular on guidance on procedures for updating shipborne navigation and communication equipment (paragraph 7.6 and annex 9);
- .8 endorse the action by the Sub-Committee in sending a liaison statement to ITU-R WP 5B, concerning Improved satellite detection of AIS (paragraph 8.26 and annex 10);
- .9 adopt the draft MSC resolution on Assuring safety during demonstrations, protests or confrontations on the high seas (paragraph 9.12 and annex 11);
- .10 approve the draft amendments to SOLAS regulation V/18 to reflect annual testing of the AIS equipment, with a view to adoption at its eighty-eighth session (paragraph 10.13 and annex 12);
- .11 note the progress in the development of an e-navigation strategy implementation plan and the establishment of a Correspondence Group to progress the work intersessionally (paragraphs 11.26 to 11.38);
- .12 approve the draft SN circular on Guidance on the use of AIS Application-Specific Messages and note that consequently SN/Circ.236 would be revoked as from 1 January 2013 (paragraphs 14.21 and 14.22 and annex 13);
- .13 approve the draft SN circular on Guidance for the presentation and display of AIS Application-Specific Messages information (paragraph 14.23 and annex 14);
- .14 endorse the Sub-Committee's view that the draft submission form for the AIS International Application (IA) Catalogue could serve as the basis for an IA Catalogue (paragraph 14.24 and annex 15);
- .15 approve the draft revised text of the proposed amendments to SOLAS regulation V/23 relating to pilot transfer arrangements, with a view to adoption at its eighty-eighth session (paragraph 15.15 and annex 16);
- .16 approve the draft revised text of the proposed amendments to resolution A.889(21) relating to recommendation on pilot transfer arrangements with a view to submission to A 27 for adoption (paragraph 15.16 and annex 17);
- .17 consider the proposed amended text of paragraph 3.1 of MSC.1/Circ.1331 on Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation and decide, as appropriate (paragraphs 15.19 and 15.20);
- .18 approve the draft MSC circular on Unified Interpretations of SOLAS regulation V/22.1.6 relating to navigation bridge visibility (paragraph 17.5 and annex 18);
- .19 endorse the action of the Sub-Committee in instructing the Secretariat to take appropriate action with regard to the existing NAV related codes, recommendations and guidelines of non-mandatory instruments (paragraph 20.6);

- .20 note the view of the Sub-Committee that SOLAS regulation V/19.2.2.2 should be retained without change along with the current training requirements in the STCW Convention and Code; and endorse the action of the Sub-Committee in instructing the Secretariat to inform STW 41 accordingly (paragraph 20.23);
- .21 note the view of the Sub-Committee that it was important that mariners acquired and retained a working knowledge in recognition of Morse Code characters including single-letter signals of the International Code of Signals, however, that there was no need to demonstrate proficiency in the transmission/reception of Morse Code; and endorse the action of the Sub-Committee in instructing the Secretariat to inform STW 41 accordingly (paragraph 20.27); and
- .22 approve the report in general.

21.2 In reviewing the work programme of the Sub-Committee, the Committee is invited to consider the revised work programme suggested by the Sub-Committee (annex 20) in general and, in particular, to:

- .1 delete “Development of Guidelines for IBS, including performance standards for bridge alert management”, as the task has been completed (paragraph 4.28);
- .2 delete “Code of conduct during demonstrations/campaigns against ships on high seas”, as the task has been completed (paragraph 9.13);
- .3 delete “Measures to minimize incorrect data transmissions by AIS equipment”, as the task has been completed (paragraph 10.16);
- .4 delete “Revision of the Guidance on the application of AIS Binary Messages”, as the task has been completed (paragraph 14.25);
- .5 delete “Improved safety of pilot transfer arrangements”, as the task has been completed (paragraph 15.21); and
- .6 extend the target completion date of the following work programme item, namely:
 - .1 “ITU matters and Radiocommunication ITU-R Study Group matters” with a target completion date of 2011 (paragraph 8.34);
 - .2 “Guidelines on the layout and ergonomic design of safety centres on passenger ships” with a target completion date of 2010 (paragraph 12.9); and
 - .3 “Review of vague expressions in SOLAS regulation V/22” with a target completion date of 2010 (paragraph 13.14).

21.3 The Committee is also invited to approve the proposed agenda for the Sub-Committee’s fifty-sixth session (annex 19), which has been developed using the agenda management procedure and to endorse the report on the status of the Sub-Committee’s planned outputs in the High-level Action Plan of the Organization and priorities for the 2008-2009 and 2010-2011 bienniums (paragraph 18.11 and annex 20).

ANNEX 1

NEW AND AMENDED TRAFFIC SEPARATION SCHEMES

“ADLERGRUND”

(Reference chart: German Chart No.40 (INT 1201) published by the German Federal Maritime and Hydrographic Agency (BSH) (7th Edition, 2006).)

Note: This chart is based on World Geodetic System 1984 Datum (WGS 84).

Description of the traffic separation scheme

The traffic separation scheme consists of:

- two traffic lanes 2.0 miles wide;
 - one intermediate traffic separation zone 0.5 miles wide.
- (a) A separation zone, half a mile wide, centred upon the following geographical positions:
- | | | |
|-----|--------------|---------------|
| (1) | 54° 38'.00 N | 014° 15'.50 E |
| (2) | 54° 36'.50 N | 014° 24'.00 E |
| (3) | 54° 37'.00 N | 014° 30'.00 E |
- (b) A traffic lane for eastbound traffic between the separation zone and a line connecting the following geographical positions:
- | | | |
|-----|--------------|---------------|
| (4) | 54° 36'.00 N | 014° 14'.50 E |
| (5) | 54° 34'.50 N | 014° 24'.00 E |
| (6) | 54° 35'.00 N | 014° 30'.50 E |
- (c) A traffic lane for westbound traffic between the separation zone and a line connecting the following geographical positions:
- | | | |
|-----|--------------|---------------|
| (7) | 54° 40'.00 N | 014° 16'.50 E |
| (8) | 54° 38'.50 N | 014° 24'.30 E |
| (9) | 54° 39'.00 N | 014° 29'.50 E |

“SLUPSKA BANK”

(Reference chart: Polish Chart No.252 (INT 1219) published by the Hydrographic Office of the Polish Navy (BHMW) (Edition 12/2004).)

Note: This chart is based on World Geodetic System 1984 Datum (WGS 84).

Description of the traffic separation scheme

The traffic separation scheme consists of:

- two traffic lanes 1.75 miles wide in two parts;
- one intermediate traffic separation zone 0.5 miles wide in two parts;
- one inshore traffic zone associated with the eastern part of TSS.

West part:

(a) A separation zone bounded by a line connecting the following geographical positions:

(1)	54° 47'.93 N	016° 29'.41 E
(2)	54° 47'.43 N	016° 29'.53 E
(3)	54° 48'.80 N	016° 45'.90 E
(4)	54° 49'.28 N	016° 45'.78 E

(b) A traffic lane for eastbound traffic between the separation zone and a line connecting the following geographical positions:

(5)	54° 45'.70 N	016° 29'.97 E
(6)	54° 47'.06 N	016° 46'.32 E

(c) A traffic lane for westbound traffic between the separation zone and a line connecting the following geographical positions:

(7)	54° 51'.01 N	016° 45'.35 E
(8)	54° 49'.66 N	016° 28'.97 E

East part:

(d) A separation zone bounded by a line connecting the following geographical positions:

(9)	54° 50'.74 N	016° 56'.58 E
(10)	54° 50'.26 N	016° 56'.79 E
(11)	54° 53'.72 N	017° 21'.59 E
(12)	54° 54'.21 N	017° 21'.39 E

(e) A traffic lane for eastbound traffic between the separation zone and a line connecting the following geographical positions:

(13)	54° 48'.56 N	016° 57'.51 E
(14)	54° 52'.02 N	017° 22'.29 E

(f) A traffic lane for westbound traffic between the separation zone and a line connecting the following geographical positions:

(15)	54° 55'.91 N	017° 20'.68 E
(16)	54° 52'.44 N	016° 55'.86 E

(g) Inshore traffic zone:

The area between the southern boundary of the eastern part of the traffic separation scheme and the Polish coast, which lies between a line drawn from position (13) above in a direction of 158° to the coast and a line drawn from position (14) above in a direction of 135° to the coast, is designated an inshore traffic zone.

“WEST KLINTEHAMN”

(Reference chart: Swedish chart number SE72 edition 19/3-2008 in WGS 84.)

Description of the traffic separation scheme

(a) A traffic separation zone is established upon the following geographical positions:

- | | | | | | |
|----|--------------|---------------|----|--------------|---------------|
| 1) | 57° 28'.00 N | 017° 45'.67 E | 2) | 57° 27'.09 N | 017° 44'.75 E |
| 3) | 57° 26'.10 N | 017° 43'.97 E | 4) | 57° 26'.49 N | 017° 42'.26 E |
| 5) | 57° 27'.49 N | 017° 43'.06 E | 6) | 57° 28'.49 N | 017° 44'.05 E |

(b) A traffic lane for the northbound traffic is established between the traffic separation zone and a traffic separation line connecting the following geographical positions:

- | | | | | | |
|----|--------------|---------------|----|--------------|---------------|
| 7) | 57° 26'.55 N | 017° 50'.52 E | 8) | 57° 25'.87 N | 017° 49'.82 E |
| 9) | 57° 24'.95 N | 017° 49'.09 E | | | |

(c) A traffic lane for the southbound traffic is established between the traffic separation zone and a line connecting the following geographical positions:

- | | | | | | |
|-----|--------------|---------------|-----|--------------|---------------|
| 10) | 57° 29'.93 N | 017° 39'.18 E | 11) | 57° 28'.71 N | 017° 37'.98 E |
| 12) | 57° 27'.63 N | 017° 37'.13 E | | | |

(d) The limits of an inshore traffic zone along the Gotland Island coastline lies between the following positions:

- | | | | | | |
|-----|--------------|---------------|-----|--------------|---------------|
| 7) | 57° 26'.55 N | 017° 50'.52 E | 8) | 57° 25'.87 N | 017° 49'.82 E |
| 9) | 57° 24'.95 N | 017° 49'.09 E | 13) | 57° 26'.46 N | 018° 07'.15 E |
| 14) | 57° 20'.07 N | 018° 10'.49 E | | | |

“SOUTH MIDSJÖBANKARNA” AND “SOUTH HOBURGS BANK”

(Reference chart: Swedish chart number SE7 edition 5/6-2008 in WGS 84.)

Description of the traffic separation schemes

“South Midsjöbankarna”

(g) A traffic separation zone is established upon the following geographical positions:

- | | | | | | |
|-----|--------------|---------------|-----|--------------|---------------|
| 19) | 55° 56'.16 N | 017° 32'.41 E | 20) | 55° 57'.45 N | 017° 41'.68 E |
| 21) | 55° 56'.68 N | 017° 42'.13 E | 22) | 55° 55'.38 N | 017° 32'.71 E |

(h) A traffic lane for the southbound traffic is established between the traffic separation zone and a line connecting the following geographical positions:

- | | | | | | |
|-----|--------------|---------------|-----|--------------|---------------|
| 23) | 55° 59'.07 N | 017° 31'.27 E | 24) | 56° 00'.30 N | 017° 40'.04 E |
|-----|--------------|---------------|-----|--------------|---------------|

- (i) A traffic lane for the northbound traffic is established between the traffic separation zone and a line connecting the following geographical positions:

25) 55° 52'.47 N 017° 33'.85 E 26) 55° 53'.85 N 017° 43'.75 E

“South Hoburgs bank”

- (j) A traffic separation zone is established upon the following geographical positions:

27) 56° 17'.57 N 018° 39'.09 E 28) 56° 20'.23 N 018° 46'.82 E
29) 56° 24'.58 N 018° 51'.02 E 30) 56° 24'.20 N 018° 52'.31 E
31) 56° 19'.64 N 018° 47'.81 E 32) 56° 16'.89 N 018° 39'.88 E

- (k) A traffic lane for the southbound traffic is established between the traffic separation zone and a line connecting the following geographical positions:

33) 56° 20'.23 N 018° 36'.02 E 35) 56° 26'.04 N 018° 46'.14 E
34) 56° 22'.64 N 018° 42'.82 E

- (l) A traffic lane for the northbound traffic is established between the traffic separation zone and a line connecting the following geographical positions:

36) 56° 14'.21 N 018° 42'.96 E 38) 56° 22'.74 N 018° 57'.19 E
37) 56° 17'.23 N 018° 51'.80 E

“IN THE AREA OF SOUTH-WESTERN COAST OF THE CRIMEA”

(Reference Chart: State Hydrographic Service of Ukraine No.3301 (published 03/2009)).

Note: This chart is based on World Geodetic System 1984 Datum (WGS 84)

Description of the traffic separation scheme

The traffic separation scheme consists of two parts:

Part one, Traffic Separation Scheme No.9 “Sevastopol Harbour Approach”; and

Part two, Traffic Separation Scheme No.3 “From Cape Khersones to Cape Aitodor”.

Note: All geographical positions are referred to WGS 84 datum.

Part one, TSS No.9 “Sevastopol Harbour Approach”

Scheme consists of five elements.

Element I (Western) for entering (leaving) the roundabout area which includes two traffic lanes and a traffic separation zone limited by lines connecting the following geographical positions:

- | | | |
|----|--------------|---------------|
| 1) | 44° 40'.44 N | 033° 08'.91 E |
| 2) | 44° 39'.79 N | 033° 13'.31 E |
| 3) | 44° 38'.59 N | 033° 13'.31 E |
| 4) | 44° 38'.84 N | 033° 08'.91 E |

The outer limit of the traffic lane for entering the roundabout area passes through the following geographical positions:

- | | | |
|----|---------------|----------------|
| 5) | 44° 38'.04 N, | 033° 08'.91 E; |
| 6) | 44° 37'.79 N | 033° 13'.31 E |

The established direction of the traffic flow – 094.5°.

The outer limit of the traffic lane for leaving the roundabout area passes through the following geographical positions:

- | | | |
|----|--------------|---------------|
| 7) | 44° 40'.44 N | 033° 13'.31 E |
| 8) | 44° 41'.09 N | 033° 08'.91 E |

The established direction of the traffic flow – 281°.

Element II (Northern) for entering (leaving) the roundabout area includes two traffic lanes and a traffic separation zone limited by lines connecting the following geographical positions:

- | | | |
|------|--------------|---------------|
| 9) | 44° 43'.34 N | 033° 14'.71 E |
| 10) | 44° 40'.29 N | 033° 16'.71 E |
| 10a) | 44° 40'.11 N | 033° 15'.87 E |
| 11) | 44° 40'.19 N | 033° 15'.21 E |
| 12) | 44° 40'.89 N | 033° 14'.71 E |

The outer limit of the traffic lane for entering the roundabout area passes through the following geographical positions:

- | | | |
|-----|--------------|---------------|
| 13) | 44° 43'.34 N | 033° 13'.31 E |
| 7) | 44° 40'.44 N | 033° 13'.31 E |

The established direction of the traffic flow – 180°.

The outer limit of the traffic lane for leaving the roundabout area passes through the following geographical positions:

- | | | |
|-----|--------------|---------------|
| 14) | 44° 40'.11 N | 033° 17'.83 E |
| 15) | 44° 43'.34 N | 033° 15'.73 E |

The established direction of the traffic flow – 335°.

Element III (Southern) for entering (leaving) the roundabout area includes two traffic lanes and a traffic separation zone limited by lines connecting the following geographical positions:

- | | | |
|-----|--------------|---------------|
| 16) | 44° 37'.55 N | 033° 15'.41 E |
| 17) | 44° 37'.28 N | 033° 16'.81 E |
| 18) | 44° 30'.73 N | 033° 13'.29 E |
| 19) | 44° 31'.64 N | 033° 12'.19 E |

The outer limit of the traffic lane for entering the roundabout area passes through the following geographical positions:

- | | | |
|-----|--------------|---------------|
| 20) | 44° 30'.09 N | 033° 14'.06 E |
| 21) | 44° 37'.59 N | 033° 18'.13 E |

The established direction of the traffic flow – 021°.

The outer limit of the traffic lane for leaving the roundabout area passes through the following geographical positions:

- | | | |
|-----|--------------|---------------|
| 6) | 44° 37'.79 N | 033° 13'.31 E |
| 22) | 44° 32'.84 N | 033° 10'.63 E |

The established direction of the traffic flow – 201°.

Element IV (roundabout area) includes the roundabout zone of the Traffic Separation Zone with radius of 5 cables which centre is situated in the geographical position 44° 38'.8 N 033° 16'.9 E and a circular traffic lane 1.0 mile wide.

The established direction of the traffic flow – counter-clockwise around the roundabout zone.

Element V (Eastern) includes four traffic lanes, two traffic separation zones and Traffic Separation Line.

Traffic separation zones are limited by lines connecting the following geographical positions:

- | | | | | | | | |
|---|-----|--------------|---------------|----|-----|--------------|---------------|
| A | 24) | 44° 38'.26 N | 033° 18'.88 E | B. | 28) | 44° 37'.97 N | 033° 23'.91 E |
| | 25) | 44° 38'.99 N | 033° 18'.96 E | | 29) | 44° 38'.29 N | 033° 23'.91 E |
| | 26) | 44° 38'.69 N | 033° 21'.41 E | | 30) | 44° 37'.99 N | 033° 25'.91 E |
| | 27) | 44° 38'.12 N | 033° 21'.41 E | | 31) | 44° 37'.89 N | 033° 25'.91 E |

The outer limit of the traffic lane for entering Sevastopol's'ka Bay passes through the following geographical positions:

- | | | |
|-----|--------------|---------------|
| 32) | 44° 37'.79 N | 033° 18'.44 E |
| 33) | 44° 37'.29 N | 033° 27'.71 E |

The established direction of the traffic flow – 094.5° (Inkermans'kyi leading line).

The outer limit of the traffic lane for leaving Sevastopol's'ka Bay passes through the following geographical positions:

- 34) 44° 38'.47 N 033° 27'.71 E
- 35) 44° 39'.72 N 033° 18'.52 E

The established direction of the traffic flow – 280.9° (Kostiantynivs'kyi leading line).

Traffic separation line passes through the following geographical positions:

- 36) 44° 38'.52 N 033° 22'.91 E
- 37) 44° 38'.04 N 033° 22'.91 E

Traffic lanes from both sides of the traffic separation line are limited by traffic separation zones.

The established directions of the traffic flow: 0° (eastward from the traffic separation line) and 180° (westward from the traffic separation line).

Notes:

- 1 *In the centre of the roundabout zone of the Traffic Separation Scheme (44° 38'.8 N 033° 16'.9 E) a special light buoy is positioned, light-yellow, flashing, 5s 5M. (Y Fl 5s 5M).*
- 2 *Going out on Kostiantynivs'kyi leading lights should be started:*
 - *for all vessels: from geographical position 44° 37'.44 N 033° 29'.61 E (crossing Inkermans'kyi and Lukul's'kyi leading lines);*
 - *for vessels with actual draught over 10 m: from geographical position 44° 37'.49 N 033° 28'.56 E.*
- 3 *Between traffic separation zones of Part V of Traffic Separation Scheme vessels following to/from Kozacha, Komysheva and Kruhla Bays and also vessels using anchorage point No.386 and degaussing range near Khersones Cape may enter/leave the Scheme and cross Part V of the Scheme.*
- 4 *Between meridians 33° 26'.0 E and 033° 28'.4 E vessels following to/from Striletz'ka Bay and also vessels using anchorage points No.384 and No.386 and degaussing ranges northward from Kruhla Bay may enter/leave the Scheme and cross Part V of the Scheme.*

Part two, TSS No.3 “From Cape Khersones to Cape Aitodor”

Scheme consists of two elements.

Element I (North-Western) includes two traffic lanes and two traffic separation zones limited by lines connecting the following geographical positions:

A. 38)	44° 30'.62 N	033° 11'.64 E	B. 42)	44° 29'.12 N	033° 13'.52 E
39)	44° 29'.73 N	033° 12'.75 E	43)	44° 17'.99 N	033° 27'.21 E
40)	44° 28'.72 N	033° 12'.21 E	44)	44° 17'.99 N	033° 25'.46 E
41)	44° 29'.61 N	033° 11'.08 E	45)	44° 28'.09 N	033° 12'.99 E

North-eastern border of the traffic lane is limited by the traffic separation zones and by the line, passing through the following geographical positions:

46)	44° 17'.99 N	033° 29'.11 E
20)	44° 30'.09 N	033° 14'.06 E

The established direction of the traffic flow – 318°.

South-Western limit of the traffic lane consists of three parts and passes through the following geographical positions:

A. 47)	44° 28'.59 N	033° 10'.55 E	C. 51)	44° 16'.99 N	033° 24'.91 E
48)	44° 27'.74 N	033° 11'.63 E	52)	44° 15'.99 N	033° 26'.21 E
B. 49)	44° 27'.09 N	033° 12'.46 E			
50)	44° 17'.99 N	033° 23'.71 E			

The established direction of the traffic flow – 138°.

Element II (Eastern) includes two traffic lanes, traffic separation line and three traffic separation zones, limited by lines connecting the following geographical positions:

A. 53)	44° 16'.99 N	033° 26'.71 E	C. 61)	44° 16'.99 N	034° 06'.81 E
54)	44° 16'.99 N	033° 28'.51 E	62)	44° 16'.99 N	034° 14'.91 E
55)	44° 15'.99 N	033° 29'.81 E	63)	44° 15'.99 N	034° 14'.91 E
56)	44° 15'.99 N	033° 28'.01 E	64)	44° 15'.99 N	034° 06'.31 E
B. 57)	44° 16'.99 N	033° 30'.31 E			
58)	44° 16'.99 N	034° 03'.61 E			
59)	44° 15'.99 N	034° 03'.11 E			
60)	44° 15'.99 N	033° 31'.61 E			

Northern border of the traffic lane is limited by lines passing through the following geographical positions:

A. 65)	44° 17'.99 N	034° 14'.91 E	B. 67)	44° 17'.99 N	034° 04'.11 E
66)	44° 17'.99 N	034° 07'.31 E	46)	44° 17'.99 N	033° 29'.11 E

The established direction of the traffic flow – 270°.

Southern border of the traffic lane is limited by lines passing through the following geographical positions:

- | | | | | | |
|--------|--------------|---------------|--------|--------------|---------------|
| A. 68) | 44° 14'.99 N | 033° 29'.31 E | C. 72) | 44° 14'.99 N | 034° 05'.81 E |
| 69) | 44° 14'.99 N | 033° 31'.11 E | 73) | 44° 14'.99 N | 034° 14'.91 E |
| B. 70) | 44° 14'.99 N | 033° 32'.91 E | | | |
| 71) | 44° 14'.99 N | 034° 02'.61 E | | | |

The established direction of the traffic flow – 090°.

Traffic separation line passes through the following geographical positions:

- | | | |
|-----|--------------|---------------|
| 74) | 44° 16'.99 N | 034° 05'.21 E |
| 75) | 44° 15'.99 N | 034° 04'.71 E |

Traffic lanes from both sides of the traffic separation line are limited by the traffic separation zones.

The established directions of the traffic flow: 20° (eastward from the traffic separation line) and 200° (westward from the traffic separation line).

Notes:

- 1 *Traffic lanes along the traffic separation line are used by vessels following from south to the port of Yalta and in the opposite direction.*
- 2 *While proceeding from TSS No.3 to the port of Yalta and in the opposite direction it is necessary to follow the recommended track No.8.*

AMENDED TRAFFIC SEPARATION SCHEME “OFF CAPE ROCA”

(Reference chart: Portuguese Hydrographic Office 21101 (INT 1081), 4th impression, April 2002)

Note: All positions are given in World Geodetic System 1984 Datum (WGS 84)

Description of the amended traffic separation scheme

(a) A separation zone bounded by lines connecting the following geographical positions:

- | | | | | | |
|-----|--------------|---------------|-----|--------------|---------------|
| (1) | 38° 39'.17 N | 009° 43'.12 W | (3) | 38° 51'.91 N | 009° 49'.48 W |
| | | | (4) | 38° 43'.20 N | 009° 49'.48 W |
| (2) | 38° 51'.91 N | 009° 44'.43 W | (5) | 38° 38'.27 N | 009° 48'.02 W |

(b) A northbound traffic lane between the separation zone described in (a) and a separation zone by lines connecting the following geographical positions, for ships not carrying dangerous or pollutant cargoes in bulk:

- | | | | | | |
|-----|--------------|---------------|------|--------------|---------------|
| (6) | 38° 37'.56 N | 009° 51'.86 W | (9) | 38° 51'.91 N | 009° 54'.88 W |
| (7) | 38° 42'.85 N | 009° 53'.43 W | (10) | 38° 42'.71 N | 009° 54'.88 W |
| (8) | 38° 51'.91 N | 009° 53'.43 W | (11) | 38° 37'.30 N | 009° 53'.28 W |

- (c) A northbound traffic lane between the separation zone described in (b) and a central separation zone bounded by lines connecting the following geographical positions, for ships carrying dangerous or pollutant cargoes in bulk (*see note*):

(12) 38° 36'.55 N 009° 57'.37 W	(15) 38° 51'.91 N 010° 04'.33 W
(13) 38° 42'.31 N 009° 59'.08 W	(16) 38° 41'.83 N 010° 04'.33 W
(14) 38° 51'.91 N 009° 59'.08 W	(17) 38° 35'.61 N 010° 02'.49 W

- (d) A southbound traffic lane between the separation zone described in (c) and a separation zone bounded by lines connecting the following geographical positions, for ships not carrying dangerous or pollutant cargoes in bulk:

(18) 38° 34'.88 N 010° 06'.43 W	(21) 38° 51'.91 N 010° 09'.83 W
(19) 38° 41'.45 N 010° 08'.38 W	(22) 38° 41'.32 N 010° 09'.83 W
(20) 38° 51'.91 N 010° 08'.38 W	(23) 38° 34'.62 N 010° 07'.84 W

- (e) A southbound traffic lane between the separation zone described in (d) and a line connecting the following geographical positions, for ships carrying dangerous or pollutant cargoes in bulk (*see note*):

(24) 38° 33'.92 N 010° 11'.69 W	(26) 38° 51'.91 N 010° 13'.78 W
(25) 38° 40'.96 N 010° 13'.77 W	

- (f) A two-way traffic route 2 miles wide established between the separation zone described in (a) and a separation zone bounded by the lines connecting the following geographical positions, for ships sailing between ports situated between Cape Finisterre and Punta del Perro and southbound ships bound to the port of Lisbon or northbound ships leaving the port of Lisbon, except for ships carrying oils listed in Appendix I of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78) and ships carrying in bulk the substances listed in categories A and B in appendices I and II of Annex II of that same Convention:

(27) 38° 39'.63 N 009° 40'.63 W	(29) 38° 51'.91 N 009° 41'.23 W
(28) 38° 51'.91 N 009° 41'.87 W	(30) 38° 39'.74 N 009° 39'.99 W

- (g) The area between the separation zone described in paragraph (f) and the Portuguese coast, bounded on the north by the parallel of 38° 51'.91 N and on the south by the line connecting point with position 38° 39'.74 N, 009° 39'.99 W and Cape Raso lighthouse (38° 42'.56 N, 009° 29'.14 W), is designated as an inshore traffic zone.

Note: Dangerous cargoes in bulk refers to the IMDG Code and Annexes I and II of MARPOL.

AMENDED TRAFFIC SEPARATION SCHEME “OFF CAPE S. VICENTE”

(Reference chart: Portuguese Hydrographic Office 21101 (INT 1081), 4th impression, April 2002)

Note: All positions are given in World Geodetic System 1984 Datum (WGS 84)

Description of the amended traffic separation scheme

(a) A separation zone bounded by lines connecting the following geographical positions:

- | | |
|--------------------------------|--------------------------------|
| (1) 36° 47'.73 N 008° 58'.09 W | (5) 37° 01'.06 N 009° 19'.56 W |
| (2) 36° 49'.36 N 009° 05'.96 W | (6) 36° 53'.79 N 009° 17'.46 W |
| (3) 36° 55'.58 N 009° 13'.12 W | (7) 36° 45'.98 N 009° 08'.40 W |
| (4) 37° 01'.94 N 009° 14'.78 W | (8) 36° 43'.96 N 008° 59'.40 W |

(b) A northbound traffic lane between the separation zone described in (a) and a separation zone by lines connecting the following geographical positions, for ships not carrying dangerous or pollutant cargoes in bulk:

- | | |
|---------------------------------|---------------------------------|
| (9) 36° 40'.89 N 009° 00'.47 W | (13) 37° 00'.08 N 009° 24'.82 W |
| (10) 36° 43'.16 N 009° 10'.53 W | (14) 36° 51'.68 N 009° 22'.40 W |
| (11) 36° 52'.25 N 009° 21'.07 W | (15) 36° 42'.13 N 009° 11'.32 W |
| (12) 37° 00'.34 N 009° 23'.41 W | (16) 36° 39'.77 N 009° 00'.86 W |

(c) A northbound traffic lane between the separation zone described in (b) and a central separation zone bounded by lines connecting the following geographical positions, for ships carrying dangerous or pollutant cargoes in bulk (*see note*):

- | | |
|---------------------------------|---------------------------------|
| (17) 36° 36'.49 N 009° 02'.00 W | (21) 36° 58'.35 N 009° 34'.07 W |
| (18) 36° 39'.11 N 009° 13'.60 W | (22) 36° 47'.98 N 009° 31'.07 W |
| (19) 36° 50'.04 N 009° 26'.26 W | (23) 36° 35'.34 N 009° 16'.44 W |
| (20) 36° 59'.31 N 009° 28'.94 W | (24) 36° 32'.40 N 009° 03'.41 W |

(d) A southbound traffic lane between the separation zone described in (c) and a separation zone bounded by lines connecting the following geographical positions, for ships not carrying dangerous or pollutant cargoes in bulk:

- | | |
|---------------------------------|---------------------------------|
| (25) 36° 29'.28 N 009° 04'.49 W | (29) 36° 57'.36 N 009° 39'.40 W |
| (26) 36° 32'.47 N 009° 18'.61 W | (30) 36° 45'.83 N 009° 36'.07 W |
| (27) 36° 46'.40 N 009° 34'.74 W | (31) 36° 31'.42 N 009° 19'.40 W |
| (28) 36° 57'.62 N 009° 37'.98 W | (32) 36° 28'.14 N 009° 04'.88 W |

(e) A southbound traffic lane between the separation zone described in (d) and a line connecting the following geographical positions, for ships carrying dangerous or pollutant cargoes in bulk (*see note*):

- | | |
|---------------------------------|---------------------------------|
| (33) 36° 25'.07 N 009° 05'.95 W | (35) 36° 44'.29 N 009° 39'.67 W |
| (34) 36° 28'.60 N 009° 21'.53 W | (36) 36° 56'.64 N 009° 43'.24 W |

- (f) A one-way traffic route 2 miles wide established between the separation zone described in (a) and a separation zone bounded by the lines connecting the following geographical positions, for southbound ships sailing between ports situated between Cape Finisterre and Punta del Perro and southbound ships bound to the port of Portimão, except for ships carrying oils listed in appendix I of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the protocol of 1978 (MARPOL 73/78) and ships carrying in bulk the substances listed in categories A and B in appendices I and II of Annex II of that same Convention:

(37)	36° 49'.65 N	008° 57'.43 W	(41)	37° 02'.50 N	009° 11'.72 W
(38)	36° 51'.05 N	009° 04'.68 W	(42)	36° 56'.74 N	009° 10'.36 W
(39)	36° 56'.51 N	009° 10'.91 W	(43)	36° 51'.51 N	009° 04'.34 W
(40)	37° 02'.39 N	009° 12'.34 W	(44)	36° 50'.14 N	008° 57'.25 W

- (g) The area between the separation zone described in paragraph (f) and the Portuguese coast, bounded on the north by the line connecting point with position 37° 02'.50 N 009° 11'.72 W and Cape S. Vicente lighthouse (37° 01'.37 N 008° 59'.79 W) and on the east by the line connecting point with position 36° 50'.14 N 008° 57'.25 W and Ponta de Sagres lighthouse (36° 59'.67 N 008° 56'.95 W), is designated as an inshore traffic zone.

Note: Dangerous cargoes in bulk refers to the IMDG Code and Annexes I and II of MARPOL.

AMENDMENTS TO THE EXISTING TRAFFIC SEPARATION SCHEME “OFF PORKKALA LIGHTHOUSE”

(Reference Chart: Estonian charts number 300 (Edition 2006-15-12) and 302 (Edition 2004-24-11); Finnish charts number 952 (Edition 2008-11-10) and 953 (2008-06-10), and Russian chart number 23068 (Edition 2001))

Note: Finnish and Estonian charts are based on World Geodetic System 1984 Datum (WGS 84); Russian chart is based on Geodetic datum of the year 1942 (Pulkovo). For obtaining position in WGS datum such position should be moved 0.13' westward.

Description of the amended traffic separation scheme

Note: All positions are referred to WGS 84 datum

- (a) A separation zone, 0.7 nautical miles wide, is bounded by lines connecting the following geographical positions:

(1)	59° 43'.51 N	024° 18'.16 E
(2)	59° 44'.08 N	024° 21'.96 E
(3)	59° 44'.94 N	024° 29'.64 E
(4)	59° 45'.47 N	024° 27'.97 E
(5)	59° 44'.76 N	024° 21'.61 E
(6)	59° 44'.19 N	024° 17'.77 E

(b) A separation zone is bounded by lines connecting the following geographical positions:

(7)	59° 47'.33 N	024° 35'.39 E
(8)	59° 45'.74 N	024° 21'.11 E
(9)	59° 45'.54 N	024° 21'.21 E
(10)	59° 46'.48 N	024° 29'.65 E
(11)	59° 45'.34 N	024° 33'.21 E
(12)	59° 45'.67 N	024° 36'.13 E

(c) A separation zone, 1.7 nautical miles wide, is bounded by lines connecting the following geographical positions:

(20)	59° 49'.14 N	025° 07'.23 E
(21)	59° 49'.58 N	025° 11'.12 E
(22)	59° 51'.24 N	025° 10'.39 E
(23)	59° 50'.80 N	025° 06'.50 E

(d) A traffic lane for eastbound traffic, 2.0 nautical miles wide, is bounded a line connecting the following geographical positions:

(1)	59° 43'.51 N	024° 18'.16 E
(2)	59° 44'.08 N	024° 21'.96 E
(3)	59° 44'.94 N	024° 29'.64 E
(15)	59° 42'.98 N	024° 30'.50 E
(14)	59 °42'.13 N	024° 22'.96 E
(13)	59° 41'.58 N	024° 19'.29 E

(e) A traffic lane for westbound traffic, 1.0 nautical mile wide, is bounded by a line connecting the following geographical positions:

(3)	59° 44'.94 N	024° 29'.64 E
(4)	59° 45'.47 N	024° 27'.97 E
(5)	59° 44'.76 N	024° 21'.61 E
(6)	59° 44'.19 N	024° 17'.77 E
(9)	59° 45'.54 N	024° 21'.21 E
(10)	59° 46'.48 N	024° 29'.65 E
(11)	59° 45'.34 N	024° 33'.21 E

(f) A traffic lane for westbound traffic, 2.0 nautical miles wide, is bounded by lines connecting the following geographical positions:

(7)	59° 47'.33 N	024° 35'.39 E
(8)	59° 45'.74 N	024° 21'.11 E
(19)	59° 47'.08 N	024° 16'.07 E
(18)	59° 47'.68 N	024° 20'.11 E
(17)	59° 49'.29 N	024° 34'.53 E

- (g) A traffic lane for eastbound traffic, 2.0 nautical miles wide, is bounded by lines connecting the following geographical positions:

(20)	59° 49'.14 N	025° 07'.23 E
(21)	59° 49'.58 N	025° 11'.12 E
(25)	59° 47'.62 N	025° 11'.99 E
(24)	59° 47'.18 N	025° 08'.10 E

- (h) A traffic lane for westbound traffic, 2.0 nautical miles wide, is bounded by lines connecting the following geographical positions:

(22)	59° 51'.24 N	025° 10'.39 E
(23)	59° 50'.80 N	025° 06'.50 E
(27)	59° 52'.76 N	025° 05'.64 E
(26)	59° 53'.19 N	025° 09'.53 E

- (i) An amended precautionary area with recommended direction of traffic flow is established connecting the following geographical positions:

(15)	59° 42'.98 N	024° 30'.50 E
(16)	59° 43'.70 N	024° 36'.99 E
(24)	59° 47'.18 N	025° 08'.10 E
(20)	59° 49'.14 N	025° 07'.23 E
(23)	59° 50'.80 N	025° 06'.50 E
(27)	59° 52'.76 N	025° 05'.64 E
(17)	59° 49'.29 N	024° 34'.53 E
(7)	59° 47'.33 N	024° 35'.39 E
(12)	59° 45'.67 N	024° 36'.13 E
(11)	59° 45'.34 N	024° 33'.21 E
(3)	59° 44'.94 N	024° 29'.64 E

AMENDMENTS TO THE EXISTING TRAFFIC SEPARATION SCHEME “OFF KALBÅDAGRUND LIGHTHOUSE”

(Reference Chart: Estonian charts number 300 (Edition 2006-15-12) and 302 (Edition 2004-24-11); Finnish charts number 952 (Edition 2008-11-10) and 953 (2008-06-10), and Russian chart number 23069 (Edition 2005))

Note: Finnish and Estonian charts are based on World Geodetic System 1984 Datum (WGS 84); Russian chart is based on Geodetic datum of the year 1942 (Pulkovo). For obtaining position in WGS datum such position should be moved 0.13' westward.

Description of the amended traffic separation scheme

Note: All positions are referred to WGS 84 datum

(a) A separation zone is bounded by lines connecting the following geographical positions:

(28)	59° 52′.35 N	025° 40′.06 E
(29)	59° 52′.84 N	025° 46′.03 E
(30)	59° 53′.81 N	025° 51′.77 E
(31)	59° 54′.75 N	025° 51′.14 E
(32)	59° 53′.81 N	025° 45′.55 E
(33)	59° 53′.34 N	025° 39′.73 E

(b) A traffic lane for eastbound traffic, 2.0 nautical miles wide, is established between the separation zone described in paragraph (a) above and a line connecting the following geographical positions:

(34)	59° 50′.37 N	025° 40′.70 E
(35)	59° 50′.89 N	025° 46′.99 E
(36)	59° 51′.91 N	025° 53′.04 E

(c) A traffic lane for westbound traffic, 2.0 nautical miles wide, is established between the separation zone described in paragraph (a) above and a line connecting the following geographical positions:

(37)	59° 56′.65 N	025° 49′.88 E
(38)	59° 55′.76 N	025° 44′.59 E
(39)	59° 55′.31 N	025° 39′.09 E

AMENDED TRAFFIC SEPARATION SCHEME “OFF HANKONIEMI PENINSULA”

(Reference Chart: Estonian chart number 302 (Edition 2004-24-11); Finnish charts number 952 (Edition 2008-11-10) and 953 (2008-06-10), and Russian chart number 23067 (Edition 2001).)

Note: Finnish and Estonian charts are based on World Geodetic System 1984 Datum (WGS 84); Russian chart is based on Geodetic datum of the year 1942 (Pulkovo). For obtaining position in WGS datum such position should be moved 0.13' westward.

Description of the amended traffic separation scheme

Note: All positions are referred to WGS 84 datum

(a) A new precautionary area adjacent to the traffic separation scheme is established connecting the following geographical positions:

(40)	59° 41′.41 N	023° 32′.98 E
(41)	59° 34′.24 N	023° 37′.70 E
(42)	59° 25′.31 N	022° 48′.07 E
(43)	59° 34′.71 N	022° 41′.52 E
(44)	59° 39′.31 N	023° 21′.16 E

ANNEX 2

ROUTEING MEASURES OTHER THAN TRAFFIC SEPARATION SCHEMES

ESTABLISHMENT OF A NEW TWO-WAY ROUTE NORTH OF THE GOTLAND ISLAND, “SALVOREV”

(Reference chart: Swedish chart number SE731 edition 11/3-2008 in WGS 84.)

Description of the new two-way route north of the Gotland Island**“Salvorev”**

A recommended two-way route is established within the following geographical positions:

(a) Northern limit:

15) 57° 57'.70 N 018° 27'.61 E 16) 58° 08'.70 N 019° 18'.25 E

(b) Southern limit:

17) 57° 53'.97 N 018° 25'.44 E 18) 58° 05'.92 N 019° 20'.36 E

ESTABLISHMENT OF A NEW AREA TO BE AVOIDED AND TWO NEW MANDATORY NO ANCHORING AREAS IN THE VICINITY OF THE PROPOSED NEPTUNE DEEPWATER PORT IN THE WESTERN NORTH ATLANTIC OCEAN

((Reference chart: United States 13009, 2007 edition; 13200, 2008 edition; 13260, 2007 edition; 13267, 2007 edition.)

Note: These charts are based on North American 1983 Datum which is equivalent to WGS 1984 datum.)

Description of an Area To Be Avoided and mandatory no anchoring areas**Area To Be Avoided**

An area of approximately 3.97 nautical square miles contained within an oval of radius 1,250 metres vectored from the two centre positions for Neptune Buoys “A” and “B”, respectively, an Area To Be Avoided for all ships except authorized ships is established in the area bounded as follows:

Starting at	(1) 42° 27'.44 N 070° 35'.22 W
A rhumb line to	(2) 42° 29'.31 N 070° 35'.59 W
Then an arc with a 1250 m radius centred at	(3) 42° 29'.21 N 070° 36'.50 W
To a Point	(4) 42° 29'.11 N 070° 37'.40 W
Then a rhumb line to	(5) 42° 27'.25 N 070° 37'.03 W
Then an arc with a 1250 m radius centred at	(6) 42° 27'.34 N 070° 36'.12 W
Then to point	(1) 42° 27'.44 N 070° 35'.22 W

Mandatory no anchoring areas

Two areas contained within a circle of radius 1,000 metres centred upon the following geographical positions are designated as no anchoring areas for all ships:

Northern STL Buoy – 42°29'.23 N 070°36'.50 W

Southern STL Buoy – 42°27'.35 N 070°36'.01 W

JEC PORT DEEP-WATER ROUTE

(Reference chart: British Admiralty Chart No.15, Ed. 2, 22 June 2000, based on WGS 84)

Description of the deep-water Route and associated routing measures

Description of the deep-water Route

(a) A deep-water route is established bounded by a line connecting the following positions:

(2)	17° 01'.52 N	041° 21'.63 E	(12)	17° 15'.18 N	042° 11'.80 E
(3)	17° 07'.24 N	041° 24'.67 E	(13)	17° 10'.50 N	042° 13'.44 E
(4)	17° 13'.45 N	041° 34'.19 E	(14)	17° 04'.00 N	042° 07'.50 E
(5)	17° 17'.30 N	041° 43'.11 E	(15)	17° 05'.55 N	042° 03'.97 E
(6)	17° 16'.34 N	041° 43'.83 E	(16)	17° 19'.25 N	041° 43'.99 E
(7)	17° 02'.35 N	042° 02'.07 E	(17)	17° 14'.60 N	041° 33'.23 E
(8)	17° 00'.50 N	042° 07'.93 E	(18)	17° 09'.45 N	041° 23'.59 E
(9)	17° 03'.34 N	042° 08'.88 E	(19)	17° 02'.48 N	041° 19'.90 E
(10)	17° 10'.50 N	042° 15'.44 E		Thence back to the point of origin (2)	
(11)	17° 15'.27 N	042° 14'.28 E			

Description of associated routing measures

Description of the traffic separation scheme

(b) A separation zone is bounded by the lines connecting the following geographical positions:

(21)	16° 56'.48 N	041° 17'.16 E	(24)	17° 02'.20 N	041° 20'.489 E
(22)	16° 56'.13 N	041° 17'.70 E		Thence back to the point of origin (21)	
(23)	17° 01'.87 N	041° 20'.98 E			

(c) A traffic lane for northbound traffic is established between the separation zone (b) and a line connecting the following geographical positions:

(1)	16° 55'.72 N	041° 18'.42 E	(2)	17° 01'.52 N	041° 21'.63 E
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(d) A traffic lane for southbound traffic is established between the area to be avoided (e) and a line connecting the following geographical positions:

(19)	17° 02'.48 N	041° 19'.90 E	(20)	16° 56'.74 N	041° 16'.59 E
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Description of the Areas To Be Avoided

- (e) An Area to be Avoided, 650 m in radius, is centred upon the following geographical position:

(25)	17° 08'.34 N	041° 24'.34 E
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- (f) An Area To Be Avoided, 650 m in radius, is centred upon the following geographical position:

(26)	17° 10'.38 N	041° 53'.96 E
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Description of the Precautionary Area

- (g) A Precautionary Area is established bounded by a line connecting the following positions:

(7)	17° 02'.35 N	042° 02'.07 E	(14)	17° 04'.00 N	042° 07'.50 E
(8)	17° 00'.50 N	042° 07'.93 E	(15)	17° 05'.55 N	042° 03'.97 E
(9)	17° 03'.34 N	042° 08'.88 E		Thence back to the point of origin (7)	

Note: The controlling depth for the deep-water route has been set at 27 metres.

AMENDED “DEEP-WATER ROUTE LEADING TO IJMUIDEN”

(Reference Chart: Netherlands 1631 (INT 1418), Edition 2, dated 20 July 2006)

Note: This chart is based on World Geodetic System 1984 (WGS 84)

Description of the amended deep-water route

The Deep-water route consists of a deep-water channel (IJ-geul) and a deep-water approach area (IJ-geul approach area):

Deep-water channel (IJ-geul)

- (a) The specific deep-water channel is bounded by a line connecting the following geographical positions:

(1)	52° 28'.10 N	004° 32'.02 E
(2)	52° 30'.38 N	004° 11'.84 E
(3)	52° 30'.26 N	003° 54'.91 E
(8)	52° 29'.94 N	003° 54'.91 E
(9)	52° 30'.06 N	004° 12'.49 E
(10)	52° 27'.86 N	004° 31'.95 E

Deep-water approach area (IJ-geul approach area)

(b) The deep-water approach area is bounded by a line connecting the following geographical positions:

(3)	52° 30'.26 N	003° 54'.91 E
(4)	52° 31'.40 N	003° 54'.91 E
(5)	52° 31'.73 N	003° 48'.41 E
(6)	52° 27'.38 N	003° 41'.25 E
(7)	52° 28'.54 N	003° 54'.91 E
(8)	52° 29'.94 N	003° 54'.91 E

Amendments to the Notes:

1 Amend existing note 1 (Least water depths) to read as follows:

.1 Least water depths

Limiting depths in the route should be ascertained by reference to the latest large-scale navigational charts of the area, noting that the charted depths are checked and maintained by frequent surveys and dredging.

2 Delete existing note 2 (Electronic navigational aids).

3 Add the following new note 2:

.2 Admission policy for the "Deep-water channel leading to IJmuiden":

- .1* Maximum allowed draught for entering IJmuiden is 17.80 m;
- .2* Vessels with a draught of more than 14.10 m and up to the maximum allowed draught of 17.80 m are provided with a mandatory tidal window;
- .3* Channel bound vessels must, if necessary, make use of the deep-water anchorage on the southwestern side of the deep-water approach area;
- .4* Channel bound vessels must wait for pilotage in the deep-water approach area (IJ-geul Approach Area) west of the IJM-buoy; and
- .5* If due to unforeseen circumstances the transit of the deep-water channel must be broken off, channel bound vessels must reverse course and proceed to the deep-water approach area by way of the deep-water channel, preferably by making use of the emergency turning basin approximately 5 nm west of port entrance.

4 Amend existing note 3 (*Traffic Centre IJmuiden*) to read as follows:

.3 *Traffic Centre IJmuiden*

Traffic Centre IJmuiden can be reached on VHF channel 07. Traffic Centre IJmuiden will provide tidal windows for vessels with a draught of more than 14.10 m.

5 Add the following note 4:

.4 The deep-water anchorage is bounded by a line connecting the following geographical positions:

(11)	52° 27'.57 N	003° 43'.53 E
(12)	52° 26'.38 N	003° 43'.80 E
(13)	52° 26'.81 N	003° 48'.89 E
(14)	52° 28'.00 N	003° 48'.62 E

ANNEX 3

DRAFT RESOLUTION MSC....(87)

**ADOPTION OF AMENDMENTS TO THE EXISTING MANDATORY
SHIP REPORTING SYSTEM “IN THE STRAIT OF GIBRALTAR” “(GIBREP)”**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO regulation V/11 of the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention), in relation to the adoption of ship reporting systems by the Organization,

RECALLING FURTHER resolution A.858(20) resolving that the function of adopting ship reporting systems shall be performed by the Committee on behalf of the Organization,

TAKING INTO ACCOUNT the guidelines and criteria for ship reporting systems adopted by resolution MSC.43(64), as amended by resolutions MSC.111(73) and MSC.189(79),

[TAKING FURTHER INTO ACCOUNT that, in addition, to the existing operational Tarifa Vessel Traffic Services (VTS) , the newly established Tangier Vessel Traffic Services (VTS) had also become operational with effect from [..... 2010]],

HAVING CONSIDERED the recommendations of the Sub-Committee on Safety of Navigation at its [fifty-fifth] session,

1. ADOPTS, in accordance with SOLAS regulation V/11, the amendments to the existing mandatory ship reporting system “In the Strait of Gibraltar” (GIBREP), as given at Annex;
2. DECIDES that the said amendments to the existing mandatory ship reporting system “In the Strait of Gibraltar” (GIBREP) will enter into force at [0000] hours UTC on [1 December 2010]; and
3. REQUESTS the Secretary-General to bring this resolution and its Annex to the attention of the Member Governments and SOLAS Contracting Governments to the 1974 SOLAS Convention.

ANNEX

**DESCRIPTION OF THE AMENDED MANDATORY SHIP REPORTING
SYSTEM FOR THE STRAIT OF GIBRALTAR**

1 Categories of ships required to participate in the system

Ships of the following general categories are required to participate in the reporting system:

- .1 all ships of 300 gross tonnage and over;
- .2 all ships, regardless of gross tonnage, carrying hazardous and or potentially polluting cargo, as defined in paragraph 1.4 of resolution MSC.43(64);
- .3 ships engaged in towing or pushing another vessel regardless of gross tonnage;
- .4 any category of vessel less than 300 gross tonnage which is using the appropriate traffic lane or separation zone in order to engage in fishing; and
- .5 any category of ships less than 300 gross tonnage which is using the appropriate traffic separation zone in an emergency in order to avoid immediate danger.

Exemption

Recognizing that regular cross-Strait ferries including passenger high-speed craft generally operate according to published schedules, special reporting arrangements can be made on a ship-by-ship basis, subject to the approval of both TARIFA TRAFFIC and TANGIER TRAFFIC.

2 Geographical coverage of the system and the number and edition of the reference chart used for the delineation of the system

- .1 The reporting system will cover the area (appendix) between longitudes 005° 58'.00 W and 005° 15'.00 W. This area includes the amended traffic separation scheme "In the Strait of Gibraltar" (IMO circular COLREG.2/Circ.58).
- .2 The reference charts which include all the area of coverage for the system are Spanish Hydrographic Office 105, French marine hydro graphic and oceanographic service (SHOM) No.7042 (INT 3150), and British Admiralty chart No.142.

3 Format, content of report, times and geographical positions for submitting reports, authority to whom reports should be sent, available services

The ship report short title "GIBREP" shall be made to the ship reporting centres located at TARIFA and TANGIER. Report should be made using VHF voice transmissions.

3.1 Format

The information requested from ships shall be provided in the standard reporting format, given in paragraph 2 of the appendix to IMO resolution A.851(20).

A ship may elect, for reasons of commercial confidentiality, to communicate that section of the GIBREP ENTRY report which provides information on cargo (line P) by no-verbal means prior to entering the system.

3.2 Content

The report from a ship to the VTS should contain only information which is essential to achieve the objectives of the system:

- A – Name of the ship, call sign, IMO identification number;
- B – Date and time of event;
- C or D – Position in latitude and longitude or true bearing and distance from a clearly identified landmark;
- E – True course;
- F – Speed in knots;
- G – Port of departure;
- I – Port of destination and expected time of arrival;
- P – Cargo and quantity and if dangerous goods are on board IMO classes and quantities;
- Q or R – Defect, damage and/or deficiencies affecting the structure, cargo or equipment of the ship or any other circumstances affecting normal navigation, in accordance with the provisions of relevant IMO Conventions;
- T – Address for provision of information concerning a cargo of dangerous goods;
- W – Total number of persons on board;
- X – Miscellaneous:
 - Estimated quantity of bunker fuel and characteristics for ships carrying over 5,000 tonnes bunker fuel;
 - Navigation conditions.

Note: On receipt of a position message, operators of the VTS will establish the relation between the ship's position and the information supplied by the facilities available to them. The information on heading and speed will facilitate the VTS operator's task of identifying a ship within a group.

3.3 Geographical position for submitting report

Westbound traffic should report to TARIFA TRAFFIC on the Spanish coast when crossing the meridian 005°15'.00 W (appendix).

Eastbound traffic should report to TANGIER TRAFFIC on the Moroccan coast when crossing the meridian 005° 58'.00 W (appendix).

Reports to the nearer of the two shore stations should be made on departure from the limits of a port or anchorage within the coverage area, except vessels departing from Tangier-Med ports and its anchorage areas which should report to TANGIER TRAFFIC (appendix).

Further reports should be made to the relevant shore station whenever there is a change of navigational circumstances, particularly in relation to items Q and R of the reporting format detailed in section 3.2.

3.4 Authority

The shore-based authorities are:

- .1 The Maritime Rescue Co-ordination Centre, MRCC TARIFA (Call sign: TARIFA TRAFFIC) under the authority of the Spanish Government Search and Rescue and Maritime safety Division. The Division, administered by the Ministry of Development, is entrusted, among other responsibilities, with providing services relating to maritime search and rescue, vessel traffic services and assistance, and prevention and control of pollution of the marine environment; and
- .2 The Centre de Surveillance du Trafic Maritime de Tanger (CSTM Tanger, Call sign: TANGIER TRAFFIC) is under the authority of the Moroccan Merchant Marine Directorate. The Directorate, administered by the Ministry of Equipment and Transports, is entrusted, among other responsibilities, in cooperation with governmental bodies with providing services related to maritime search and rescue (SAR), vessel traffic services and assistance and prevention and control of pollution of the marine environment.

3.5 Services offered

Both TARIFA and TANGIER Centres monitor navigation in the TSS in the Strait of Gibraltar using radar and AIS.

Each of them provides regular information about weather and navigational condition, this information is broadcast at and on the following times and frequencies:

Station	Frequency	Broadcasting hours (U.T.C)
Tarifa (Call sign: TARIFA TRAFFIC)	VHF Ch 10	00h15; 04h15; 08h15; 12h15; 16h15; 20h15
Tangier (Call sign: TANGIER TRAFFIC)	VHF Ch 69	02h15; 06h15; 10h15; 14h15; 18h15; 22h15

Information broadcasts will be preceded by an announcement on VHF Ch 16 and broadcasts from both stations will end with a reminder about the time of the next broadcast and the VHF frequency on which it will be made.

When deemed necessary, navigational hazards, brought to the knowledge of any centre, could be broadcast at any time.

4 Information to be provided to participating ships and procedures to be followed

In addition to the general information stated above, TARIFA TRAFFIC and TANGIER TRAFFIC could provide a particular vessel with information regarding her position, course, speed and/or the identification of the traffic in her vicinity provided that it has been brought to the knowledge of the Centre. The ship should request this additional information.

5 Radiocommunication equipment required for the system, frequencies on which report should be transmitted and information to be reported

The radiocommunication equipment required for the system is that defined in the GMDSS for sea areas A1 and A2:

- .1 The ships reports can be made by voice on VHF radio using:
 - .1 Channel 10 for reporting to TARIFA TRAFFIC, with the channel 67 as a supplementary option; and
 - .2 Channel 69 for reporting to TANGIER TRAFFIC, with the channel 68 as a supplementary option.
- .2 In special circumstances, the hectometric wave band may also be used for the interchange of information between the ship and the VTS;
- .3 Information of commercial confidentiality may be transmitted by non-verbal means. Details are as follows:

TARIFA TRAFFIC
Fax: + 34 956 68 06 06
E-mail: tarifa@sasemar.es
Inmarsat telex: 422423126

TANGIER TRAFFIC
Fax: + 212 539 93 45 71
E-mail: tangiervts@dmm.gov.ma
Inmarsat telex: 424241310
- .4 The language used for reports in the system will be English, using the IMO Standard Marine Communication Phrases (SMCPs) where necessary or Spanish, French or Arabic, if appropriate.
- .5 Communications associated with reporting in accordance with the requirements of this system will be free of charge.

6 Rules and regulations in force in the area of the system

- .1 The International Regulations for Preventing Collisions at Sea (COLREG) 1972 (as amended) are applicable throughout the area of coverage of the system; and
- .2 The amended TSS "In the Strait of Gibraltar" has been approved by IMO and therefore rule 10 of the COLREGs applies.

7 Shore-based facilities to support operation of the system

7.1 Tarifa Traffic

Tarifa Traffic has radar, communication equipments in different bands and frequencies, VHF direction finding, AIS and DSC located in local and in remote sites to enable an appropriate coverage of the area.

Traffic surveillance is provided by a tracking system in which the AIS and VHF direction finding are integrated. Vessel tracks are continuously recorded and can be plotted on paper.

Besides, the Tarifa Traffic Centre is equipped with data processing and retrieval systems, and normal communications such as telephone, fax and e-mail terminals.

A continuous listening watch is kept on VHF Channel 16 and on the working channels.

7.2 Tangier Traffic

TANGIER VTS is an integrated system using facilities such as radars, communication equipments in different bands and frequencies, VHF direction finding, AIS and DSC located either in local site at Ras Parot and in remote site at Ras Ciros in order to enable an appropriate coverage of the area.

TANGIER TRAFFIC system allows the simultaneous monitoring of 1,000 tracks, which can be recorded and saved. Advanced functions include alarms signalling risk scenarios, the identification of tracks infringing COLREG rules, particularly rule 10, and the monitoring of ships at anchor. All situations can be recorded, archived and replayed either on screen or in the form of printout.

A continuous listening watch is kept on VHF Channel 16 and on the working channels.

8 Alternative communication in case of failure of the shore-based communication facilities

- .1 The system is designed to avoid, as far as possible, any irretrievable breakdown of equipment which would hinder the functioning of the services normally provided;

- .2 The most important items of equipment and power sources are duplicated and the facilities are provided with emergency generating sets as well as with UPS units. A maintenance team, on call 24 hours a day, stands ready to repair to the extent possible any breakdowns which may occur; and
- .3 If operations are jeopardized at either TARIFA TRAFFIC or TANGIER TRAFFIC, then the other centre will try to provide the service.

9 Measures to be taken if a ship fails to comply with the requirements of the system

The primary objective of the system is to facilitate the exchange of information between the ship and the shore and so support safe navigation and the protection of the marine environment. All means will be used to encourage and promote the full participation of ships required to submit reports under SOLAS regulation V/11. If reports are not submitted and the offending ship can be positively identified, then information will be passed to the relevant flag State Authorities for investigation and possible prosecution in accordance with national legislation. Information will also be made available to Port State Control Officers.

ANNEX 4

DRAFT RESOLUTION MSC.[...](87)

**ADOPTION OF AMENDMENTS TO THE EXISTING MANDATORY SHIP
REPORTING SYSTEM IN THE WESTERN EUROPEAN
PARTICULARLY SENSITIVE SEA AREA**

THE MARITIME SAFETY COMMITTEE,

RECALLING article 28(b) of the Convention related to the creation of the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO regulation V/11 of the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention), in relation to the adoption of ship reporting systems by the Organization,

RECALLING FURTHER resolution A.858(20), which authorizes the Committee to perform the function of adopting ship-reporting systems on behalf of the Organization,

TAKING INTO ACCOUNT the Guidelines and criteria for ship-reporting systems, adopted by resolution MSC.43(64), as amended by resolutions MSC.111(73) and MSC.189(79),

HAVING CONSIDERED the recommendations of the Sub-Committee on Safety of Navigation at its fifty-fifth session,

HAVING ALSO NOTED that the Marine Environment Protection Committee, at its fifty-second session, endorsed the recommendations of the Sub-Committee on Safety of Navigation at its fiftieth session and designated the Western European Waters as a Particularly Sensitive Sea Area (PSSA) by resolution MEPC.121(52),

1. ADOPTS, in accordance with SOLAS regulation V/11, the amendments to the existing ship-reporting system in the Western European Particularly Sensitive Sea Area as described in the Annex to this resolution;
2. DECIDES that the amendments to this mandatory ship-reporting system will enter into force at [0000] hours UTC on [..... 2005];
3. REQUESTS the Secretary-General to bring this resolution and its Annex to the attention of Contracting Governments to the SOLAS Convention and to members of the Organization who are not parties to the Convention.

ANNEX

AMENDMENTS TO RESOLUTION MSC.190(79)

Annex 1 of resolution MSC.190(79):

In paragraph 6.2.5, under **Mandatory Ship Reporting Systems**, insert:

- “Off the coast of Portugal”

In paragraph 6.2.6, under **Coastal Vessel Traffic Services (VTS)**, insert:

- Coast of Portugal VTS

Annex 1 of resolution MSC.190(79), Appendix 1 – Vessel Traffic Services, RCC, coast radio stations or other facilities to whom the reports must be submitted

Under **PORTUGAL**, entire content to be replaced by the following:

PORTUGAL

ROCA CONTROL 38° 41'.508 N 009° 17'.915 W

Tel: +351 214464838
Fax: +351 214464839
E-mail: oper.vts@imarpor.pt
VHF: 22 & 79
MMSI: 002633030

ANNEX 5

DRAFT ASSEMBLY RESOLUTION

**THE INTERNATIONALLY RECOMMENDED TRANSIT CORRIDOR (IRTC)
FOR SHIPS TRANSITING THE GULF OF ADEN**

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

ALSO RECALLING article 100 of the United Nations Convention on the Law of the Sea (UNCLOS), which requires all States to cooperate to the fullest possible extent in the repression of piracy on the high seas or in any other place outside the jurisdiction of any State,

RECALLING FURTHER article 105 of UNCLOS which, *inter alia*, provides that, on the high seas or in any other place outside the jurisdiction of any State, every State may seize a pirate ship or aircraft, or a ship or aircraft taken by piracy and under the control of pirates and arrest the persons and seize the property on board,

BEARING IN MIND article 110 of UNCLOS which, *inter alia*, enables warships, military aircraft, or other duly authorized ships or aircraft clearly marked and identifiable as being on government service to board any ship, other than a ship entitled to complete immunity in accordance with article 95 and article 96 of UNCLOS, when there are reasonable grounds for suspecting that the ship is, *inter alia*, engaged in piracy,

ALSO BEARING IN MIND that the United Nations Security Council had adopted, under chapter VII of the Charter of the United Nations a number of related resolutions namely resolution S/Res/1816(2008) on “Acts of piracy and armed robbery against vessels in territorial waters and the high seas off the coast of Somalia”, resolution S/Res/1838(2008) on “Acts of piracy and armed robbery against vessels in territorial waters and the high seas off the coast of Somalia”, resolution S/Res/1846(2008) on “Repression of acts of piracy and armed robbery at sea off the coast of Somalia” and resolution S/Res/1851(2008) on “Fight against piracy and armed robbery at sea off the coast of Somalia”,

REAFFIRMING resolution A.545(13) on “Measures to prevent acts of piracy and armed robbery against ships”, adopted on 17 November 1983; resolution A.683(17) on “Prevention and suppression of acts of piracy and armed robbery against ships”, adopted on 6 November 1991; resolution A.738(18) on “Measures to prevent and suppress piracy and armed robbery against ships”, adopted on 4 November 1993 and resolution A.1002(25) on “Piracy and armed robbery against ships in waters off the coast of Somalia”, adopted on 29 November 2007,

RECALLING that the Assembly, at its twenty-fifth session, through operative paragraph 4 of resolution A.1002(25) has, *inter alia*, strongly urged Governments to promptly:

- .1 issue, to ships entitled to fly their flag, as necessary, specific advice and guidance on any appropriate additional precautionary measures ships may need to put in

place when sailing in waters off the coast of Somalia to protect themselves from attack, which may include, *inter alia*, areas to be avoided;

- .2 issue, to ships entitled to fly their flag, as necessary, advice and guidance on any measures or actions they may need to take when they are under attack, or threat of attack, whilst sailing in waters off the coast of Somalia;
- .3 encourage ships entitled to fly their flag to implement expeditiously, for the ship's protection and for the protection of other ships in the vicinity, any measure or advice the nearby coastal States or any other State or competent authority may have provided,

CONSIDERING that the Maritime Safety Committee, at its eighty-sixth session, has approved:

- MSC.1/Circ.1332 on Piracy and armed robbery against ships in waters off the coast of Somalia;
- MSC.1/Circ.1333 on Recommendations to Governments for preventing and suppressing piracy and armed robbery against ships; and
- MSC.1/Circ.1334 on Guidance to shipowners, companies, ship operators, shipmasters and crews on preventing and suppressing acts of piracy and armed robbery against ships,

containing recommendations to Governments and guidance to shipowners and ship operators, shipmasters and crews on preventing and suppressing acts of piracy and armed robbery against ships,

NOTING ALSO, with great concern, the increasing number of incidents of piracy and armed robbery against ships occurring in waters off the coast of Somalia, some of which have reportedly taken place more than 500 nautical miles from the nearest land,

MINDFUL OF the grave danger to life and the serious risks to navigational safety and the environment to which such incidents may give rise,

HAVING CONSIDERED the actions taken by the navies in the establishment of an Internationally Recommended Transit Corridor (IRTC) in the Gulf of Aden and the promulgation of SN.1/Circ.281 thereon by the Sub-Committee on Safety of Navigation at its fifty-fifth session, recommending the use by all ships transiting the Gulf of Aden of the IRTC as it may be amended from time to time by the military authorities,

1. RECOMMENDS Governments to urge ships entitled to fly their flag to use the Internationally Recommended Transit Corridor (IRTC) in the Gulf of Aden and to obtain and follow the most current information on the IRTC; report to the appropriate contact point, as stipulated in SN.1/Circ.281; and to conduct their passage through the IRTC in groups based on planned transit speeds, so as to ensure that ships benefit from avoiding high profile piracy areas at the most dangerous times whilst allowing minimum coordination of military and other assets in the region and making ships benefit from enhanced mutual protection;

2. RECOMMENDS ALSO Governments to increase their efforts to prevent and suppress, within the provisions of international law, acts of piracy and armed robbery against ships irrespective of where such acts occur and, in particular, to cooperate with other Governments and international organizations in the interests of the rule of law, safety of life at sea and environmental protection, in relation to acts occurring or likely to occur in the waters off the coast of Somalia and in the Gulf of Aden;

3. REQUESTS the Maritime Safety Committee and the Sub-Committee on Safety of Navigation to take any action deemed necessary and appropriate to enhance navigational safety through the Gulf of Aden consistent with ongoing international counter-piracy efforts in the region, keeping the maritime community informed of any relevant developments.

ANNEX 6

DRAFT SN CIRCULAR

**GUIDELINES FOR BRIDGE EQUIPMENT AND SYSTEMS,
THEIR ARRANGEMENT AND INTEGRATION (BES)**

1 The Sub-Committee on Safety of Navigation (NAV), at its fifty-fifth session (27 to 31 July 2009), agreed on Guidelines for bridge equipment and systems, their arrangement and integration (BES).

2 The Maritime Safety Committee, at its [eighty-seventh session (12 to 21 May 2010)], in considering that these guidelines should replace the existing performance standards for IBS (resolution MSC.64(67), Annex 1), approved the circulation of the attached Guidelines for bridge equipment and systems, their arrangement and integration (BES).

3 This Circular supersedes resolution MSC.64(67), Annex 1 on the Recommendation on performance standards for integrated bridge systems (IBS).

4 Member Governments are invited to bring the information to the attention of all parties concerned.

ANNEX

**GUIDELINES FOR BRIDGE EQUIPMENT AND SYSTEMS,
THEIR ARRANGEMENT AND INTEGRATION (BES)**

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GUIDELINES FOR BRIDGE EQUIPMENT AND SYSTEMS, THEIR ARRANGEMENT AND INTEGRATION (BES)

1 Purpose

1.1 These guidelines aim to support the design and configuration of bridge equipment and systems, their arrangement and integration for safe and effective operation of the vessel under the control of the bridge team and pilot.

1.2 These guidelines aim to allow for a task oriented presentation and integration of information on ship bridges.

1.3 These guidelines aim to assist with the management of the workload of the bridge team; enhance the safe operation of the ship; and implementing measures intended to reduce human errors.

1.4 These guidelines aim to be a guiding umbrella instrument for bridge equipment and systems, their arrangement and integration.

1.5 These guidelines support the application of SOLAS regulation V/15.

2 Scope

2.1 These guidelines provide:

2.1.1 General design principles for bridge design and arrangement

2.1.2 A methodology for the integration and arrangement of equipment and systems into an integrated bridge.

2.1.3 Definition of major bridge tasks and configuration of workstations

2.2 The design recommendations aim to ensure that the bridge is simple to be operated by a trained user. Guidance for the provision of onboard familiarization material is provided, as it is a requirement of the ISM Code that personnel working on assignments related to safety and the protection of the environment need to be given proper familiarization with their duties.

2.3 These guidelines are recommended for manufacturers, installers, yards, suppliers and ship surveyors with regard to bridge equipment and systems, their arrangement and integration.

2.4 These guidelines intend to support the design of ship bridges for ships mandated by the SOLAS Convention.

3 References

Resolution MSC.191(79)	Performance standards for the presentation of navigation-related information on shipborne navigational displays
Resolution MSC.252(83)	Revised performance standards for Integrated Navigation Systems (INS)
MSC/Circ.982	Guidelines on ergonomic criteria for bridge equipment and layout

SN/Circ.243	Guidelines for the presentation of navigation-related symbols, terms and abbreviations
SN.1/Circ.265	Guidelines on the application of SOLAS regulation V/15 to INS, IBS and bridge design
SN.1/Circ.274	Guidelines for application of the modular concept to performance standards
SOLAS regulation IX/3 SOLAS 1974, as amended	Safety management requirements The International Convention for Safety of Life at Sea, 1974, as amended
Resolution A.997(25)	Survey guidelines under the Harmonized System of Survey and Certification, 2007 (HSSC)

4 Definitions

For the purpose of these guidelines, the definitions in Appendix 1 apply.

Module A – Configuration of workstations

5 General

5.1 To support a modular and task oriented bridge design the assignment of the main tasks to the workstations are described generically in paragraph 6.

5.2 If an INS is provided the INS may cover parts of the recommended tasks.

5.3 Other workstations specific to the ship type or design are to comply with these functional requirements of these guidelines, as applicable.

5.4 The description of workstations are given in the guidelines on ergonomic criteria for bridge equipment and layout¹.

5.5 The recommended equipment for the workstations is listed in the guidelines on ergonomic criteria for bridge equipment and layout¹.

6 Allocation and grouping of tasks of dedicated workstations

6.1 Workstation for navigating and manoeuvring:

6.1.1 Tasks to be supported by the workstation for navigating and manoeuvring:

- Collision avoidance (traffic surveillance)
- Route monitoring (grounding avoidance):
 - Ship's position
 - Water depth
 - Chart information

¹ MSC/Circ.982.

- Monitoring of:
 - Heading
 - Ship's speed
 - Ship's rate of turn
 - Rudder angle/thrust direction
 - Main propulsion, RPM, pitch/thrust
 - Wind speed and direction
 - Time
- Internal and external communication as necessary for the defined task
- Monitoring and handling of alerts that are presented on the bridge
- Manoeuvring including:
 - Automatic steering control and operation, including non-follow up (NFU) override control
 - Manual steering control and operation
 - Steering mode selection
 - Thrusters control and operation
 - Propulsion control and operation
- Operation of navigation lights, sound and light signals
- Audible surveillance – reception of sound signals
- Operation of window wipers, washing, heating
- Operation of search lights
- Acknowledgment of Bridge Navigational Watch Alarm Systems (BNWAS)

6.1.2 The following navigational tasks specified in the INS performance standards should be supported at the workstation for navigating and manoeuvring, if provided:

- collision avoidance (traffic surveillance)
- route monitoring (grounding avoidance)
- alert management
- navigation control data
- status and data display

6.1.3 Operation and monitoring of Centralized Alert Management HMI (CAM-HMI)*, if provided.

* As specified within the bridge alert management performance standards.

6.2 Workstation for monitoring:

6.2.1 Tasks to be supported by the workstation for monitoring:

- Collision avoidance (traffic surveillance)
- Route monitoring (grounding avoidance):
 - Ship's position
 - Water depth
 - Chart information
- Monitoring of:
 - Heading
 - Ship's speed
 - Ship's rate of turn
 - Rudder angle/thrust direction
 - Main propulsion, RPM, pitch/thrust
 - Wind speed and direction
 - Time
- Internal and external communication as necessary for the defined task
- Monitoring and handling of alerts that are presented on the bridge
- Operation of sound signals
- Operation of window wipers, washing, heating
- Acknowledgment of BNWAS

6.2.2 The following navigational tasks specified in the INS performance standards should be supported at the workstation for monitoring, if provided:

- collision avoidance
- route monitoring
- alert management
- navigation control data
- status and data display

6.2.3 Operation and monitoring of CAM-HMI^{*}, if provided.

* As specified within the bridge alert management performance standards.

6.3 Workstation for manual steering (Helmsman's workstation):

6.3.1 Tasks to be supported by the workstation for manual steering:

- Manual steering with compass heading and visual marks:
 - Control and operation of steering device for manual steering
 - monitoring of: gyro and magnetic compass heading, pre-set heading, rudder angle, rate of turn
- Communication with bridge wings

6.4 Workstation for docking (bridge wing):

6.4.1 Tasks to be supported by the workstation for docking:

- Operation for docking, pilot and safety manoeuvres including:
 - Steering control and operation
 - Propulsion control and operation
 - Thrusters control and operation
- Monitoring of:
 - Heading
 - Ship's speed including longitudinal and transversal components
 - Ship's rate of turn
 - Rudder angle/thrust direction
 - Main propulsion, RPM, pitch/thrust
 - Wind speed and direction
- Internal communication with wheelhouse (workstations for navigating and manoeuvring, monitoring, manual steering) and manoeuvring stations
- External communication as necessary for the defined task, e.g., with tugs/pilot boats
- Operation of Morse lamp and searchlight
- Acknowledgment of BNWAS

6.5 Workstation for planning and documentation:

6.5.1 Tasks to be supported by the workstation for planning and documentation:

- Voyage planning
- Documentation, recording, administration including:
 - Navigational administration, e.g., update of charts and nautical publications
 - Electronic protocol and documentation of voyage with HMI, e.g., ship's log-book
 - Ship's reporting (regulation 28 of SOLAS chapter V, 2002, as amended)

6.5.2 The following navigational tasks specified in the INS performance standards should be supported at the workstation for planning and documentation (if provided):

- route planning

6.6 Workstation for safety:

6.6.1 Tasks to be supported by the workstation for safety:

- Safety operations:
 - Fire detection
 - Operation of safety related power operated doors/openings
 - Monitoring of status indications for shell doors/openings
 - Emergency stop for ventilation system and dampers, air conditioning
 - Operation of fire extinguishing systems
 - Operation general alarm/public address system
- Stability operations:
 - Ballast water management
 - Bilge control system
 - Anti-heeling
 - Stabilizer
 - Flooding valves
- Security operations including:
 - Observation with close circuit TV
 - Control of deck lights
- Internal and external communication as necessary for the defined task

6.7 Workstation for communication:

6.7.1 Tasks to be supported by the workstation for communication:

- Internal communication
- External communication:
 - Distress and safety communications

7 Requirements for allocation of tasks and functions

7.1 Allocation of tasks to workstations

7.1.1 The allocation of the functionality for the bridge tasks to the workstations should support the assigned tasks for the workstation, and should be sufficiently simple to support team working

and awareness of operator roles. If task stations are provided, the selection of the dedicated functionality should be possible by a simple operator action.

7.1.2 Additional functionality provided at the specified workstations should not interfere with the functionality listed in paragraph 6 of these guidelines.

7.2 Integration of functionality, operational controls and information

7.2.1 Interrelated functionality, operational controls and information should be grouped task oriented on the workstations.

7.2.2 Interrelated functions, operational controls and information of one task should be arranged in functional groups.

Module B – Arrangement and design – human machine interface

8 Bridge design

8.1 Every ship should at all times maintain a proper lookout by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

Therefore the requirements of MSC/Circ.982 should apply.

8.2 The field of vision should not impair the performance to maintain a proper lookout by sight of the OOW at least at the following workstations: workstation for navigating and manoeuvring, workstation for monitoring, workstation for manual steering (helmsman's workstation).

8.3 The field of vision from these workstations should be such as to enable observation of all objects which may affect the safe conning of the ship.

8.4 The field of vision from all workstations should be in accordance with regulation 22 of SOLAS chapter V, 2002, as amended, and MSC/Circ.982.

8.5 It should be possible to maintain lookout and general surveillance of the ship at the workstation for navigating and manoeuvring.

8.6 External sound signals from ships and fog signals that are audible on the open deck should also be audible inside the wheelhouse; a sound reception system should be provided to reproduce such signals inside the wheelhouse, if it is enclosed.

9 Layout and physical arrangement of workstations

9.1 For the layout and physical arrangement of workstations on the bridge the requirements of MSC/Circ.982 and relevant guidance on application of SOLAS regulation V/15, adopted by the Organization, should be taken into account.

9.2 Sufficient and solidly built hand grab rails should be provided on all consoles at any workstation and as far as practicable within grab distance.

10 Design of bridge equipment

10.1 System design

10.1.1 For the design and layout of human machine interfaces (HMI), MSC/Circ.982 and relevant guidance on application of SOLAS regulation V/15 adopted by the Organization² should be taken into account.

10.1.2 The design and implementation of the systems and equipment should ensure that it is simple to operate by a trained user.

10.1.3 The design of the systems and equipment should facilitate the tasks to be performed by the bridge team and pilot in navigating the ship safely under all operational conditions.

10.1.4 The configuration of the systems and equipment and presentation of information at workstations should permit observation or monitoring by the bridge team and pilot under all operating conditions.

10.1.5 The operation of the systems and equipment should be designed to avoid distraction from the task of safe navigation.

10.1.6 Integrated graphical and alphanumeric display and control functions should adopt a consistent human machine interface (HMI) philosophy and implementation.

10.1.7 A central dimming functionality should be provided to adjust the illumination of task stations, displays, controls and panel labels with one control function for the bridge and/or equipment integrated in a console. Exclusions are permitted for equipment which do not provide a digital interface. Individual dimming of the task stations, displays, functional groups of controls and panel labels should also be possible. Guidance on dimming is also provided in MSC/Circ.982.

10.2 Operation of equipment – data input

10.2.1 The operation of equipment should conform to the general principles of MSC/Circ.982.

10.2.2 The bridge should be so designed that the requested manual inputs are consistent throughout the systems and equipment as far as practicable and can be easily executed.

10.2.3 The systems and equipment should be designed that the basic functions can be easily operated.

10.2.4 Complex or error-prone interaction with the systems and equipment should be avoided.

10.2.5 Checks in the dialogue and in the input handling should be provided to prevent erroneous data or control inputs (e.g., plausibility checks).

10.2.6 For manual inputs that may cause unintended results, the systems and equipment should request confirmation before acceptance.

² SN.1/Circ.265.

10.3 Presentation of information

10.3.1 The information on the bridge should be presented according to the general principles of resolution MSC.191(79) and MSC/Circ.982.

10.3.2 Mode and status awareness

10.3.2.1 The operational mode in use should be clearly indicated to the bridge team and pilot.

10.3.2.2 If the mode in use is not the normal mode to fully perform the functions, this should be clearly indicated.

Example of modes other than the normal mode are:

- degraded condition modes, in which the systems cannot fully perform all functions
- “service modes”
- simulation mode
- training (familiarization) mode

10.3.2.3 If the system is in a degraded condition this should be sufficiently clear that the bridge team and pilot can understand the nature of the failure and its consequences.

10.3.2.4 The systems should indicate the operational status of automated functions and integrated components, systems and/or subsystems.

Module C – Fault tolerance

11 Back-up and redundancies

11.1 Adequate back-up arrangements should be provided to ensure safe operation in case of a failure.

11.2 In case of failure of one part or function, including network failure, it should be possible to operate each other individual part or function separately, except for those functions directly dependent on the defective part; at least the requirements specified for individual equipment adopted by the Organization should be met, as far as applicable.

11.3 The back-up arrangement should enable a safe takeover and ensure that a failure does not result in an unintentional and/or critical system status.

11.4 The failure of a single task station should not result in the loss of a function mandated by the carriage requirements of SOLAS.

11.5 In case of a breakdown of one task station, at least one task station should be able to take over the tasks.

12 System failures and fallback arrangements

12.1 The systems should have the capability of allowing the operator to decline or override the automated ship control functions at any time or intervene part way through a process by means of a simple operator action.

12.2 An integrated system should have the capability to re-establish the functional consistency after an interface failure.

12.3 Software requirements should be in compliance with resolution A.694(17) and in accordance with specifications at least equivalent to those acceptable to the Organization³.

Module D – Interfacing

13 Interfacing, data transfer

13.1 To support a modular bridge design standardized interfaces should be implemented for sensor/source and operational/functional modules. Guidance on requirements for standardized interfaces is listed in resolution MSC.252(83).

13.2 The communication should allow the implementation of the tasks/functions listed in these guidelines.

13.3 The communication should be based on standardized communication protocol as far as applicable. Sensor/source and operational/functional modules may use alternative internal concepts.

13.4 This communication should be in compliance within the following requirements as far as practicable:

- .1 self-alignment of interface parameters;
- .2 automatic re-synchronization after disconnection or power failure;
- .3 unique identification of data source which includes at least cluster, function, additionally time where necessary;
- .4 provision of consistent data related to time and other relevant aspects, e.g., reference points; and
- .5 ensure the consistency of data transmission.

14 Power supply

14.1 The power supply requirements applying to parts of an integrated system as a result of the requirements specified for the individual equipment by the Organization should remain applicable.

³ IEC 60945.

14.2 Mandatory equipment and functions/equipment necessary for the safe navigation should be supplied at least:

- .1 from both the main and the emergency source of electrical power with automated changeover through a local distribution board with provision to preclude inadvertent shutdown; and
- .2 from a transitional source of electrical power for a duration of not less than 45 s.

Module E – System configuration and integration

15 Modular concept

The design of an integrated system should be modular with operational/functional and sensor/source modules. The modules are defined in the guidelines for the application of the modular concept to performance standards (SN.1/Circ.274).

16 Integration

16.1 The integration of functions of individual equipment into an integrated system should not degrade the performance below the requirements specified for the individual equipment by the Organization.

16.2 Integrated systems and integrations combining on a functional level at least two tasks specified in resolution MSC.252(83) or one task and track control should conform regarding the integration of information to the relevant requirements of Module A of resolution MSC.252(83).

16.3 For integrated systems or integrations that do not meet the definition of an INS according to resolution MSC.252(83), the principles of the INS performance standards should be applied as appropriate to the functions being integrated.

Module F – System and equipment documentation

17 Manuals

17.1 Operating manuals should be provided which include as far as applicable:

- functional description
- the redundancy and back-up concept and the availability of functions
- default modes and limits
- a description of alerts and related failures and their effects on the system
- guidance for the adjustment of the limits for alerts
- details of each data convention and common references: attitude axis, rotation, reference location of Consistent Common Reference Point (CCRP)
- for automatic control functions (e.g., for heading, track or speed) details of override and/or bypassing.

17.2 Installation manuals should be provided to allow the systems to be installed so that they can meet all requirements adopted by the Organization.

17.3 The installation manuals should include:

- information of systems, sensor/sources, components, interconnections, automatic control functions and interfaces
- the details of the power supply arrangements
- recommendations on the physical layout of equipment and necessary space for maintenance.

18 Information regarding system configuration for surveyor

18.1 Manufacturer or system integrator should declare the following information relating to the system configuration, if applicable:

- basic system configuration
- interconnecting block diagram (Hardware) showing all connected sensors including power supply.

Further information is provided in resolution A.997(25).

18.2 Failure analysis, at functional level, should be documented as far as practicable. The failure analysis should verify that the systems are designed on “fail-to-safe” principle and that a failure of one part of an integrated system should not affect the functionality of other parts, except for those functions directly dependent on the defective part.

19 Guidance to equipment manufactures for the provision of onboard familiarization material

19.1 Material enabling onboard familiarization training should be provided. The onboard familiarization material should explain all configuration, functions, limitations, controls, displays, alerts and indications. Guidance for equipment manufactures for the provision of onboard familiarization material is listed in appendix 2 of resolution MSC.252(83) for INS.

Appendix 1 – Definitions

Cluster	Group of functions on a high level, e.g., navigation, automation.
Degraded condition	Reduction in system functionality resulting from failure.
Failure analysis	The logical, systematic examination of an item, including its diagrams or formulas, to identify and analyse the probability, causes and consequences of potential and real failures.
Human machine interface (HMI)	The part of a system an operator interacts with. The interface is the aggregate of means by which the users interact with a machine, device, and system. The interface provides means for input, allowing the users to control the system and output, allowing the system to inform the users.
Integrated navigation system	An INS is a composite navigation system which performs at least the following tasks: collision avoidance, route monitoring thus providing “added value” for the operator to plan, monitor and safely navigate the progress of the vessel. The INS allows meeting the respective parts of SOLAS regulation V/19 and supports the proper application of SOLAS regulation V/15.
Integration	Combining of data, functions and/or operations to accomplish a high-level aim.
Interfacing	Communication between equipment and between equipment and humans.
Multifunction display	A single visual display unit that can present, either simultaneously or through a series of selectable pages, information from more than a single function of an INS.
Mode awareness	The perception of the mariner regarding the currently active Modes of Control, Operation and Display of the INS including its subsystems, as supported by the presentations and indications at an INS display or workstation.
One equipment concept	The equipment which is recognized as one type of equipment by integrating the function of mandatory equipment of SOLAS of a plural number.
Operational/functional module	The module specifies the operational and functional capabilities of systems and equipment.
Sensor/source module	The module specifies the sensor/source performance of systems and equipment.

Simple operator action

A procedure achieved by no more than two hard-key or soft-key actions, excluding any necessary cursor movements, or voice actuation using programmed codes.

Single operator action

A procedure achieved by no more than one hard-key or soft-key action, excluding any necessary cursor movements, or voice actuation using programmed codes.

Situation awareness

Situation awareness is the mariner's perception of the navigational and technical information provided, the comprehension of their meaning and the projection of their status in the near future, as required for timely reaction to the situation. Situation awareness includes mode awareness.

Task

Work to be performed by bridge team and pilot.

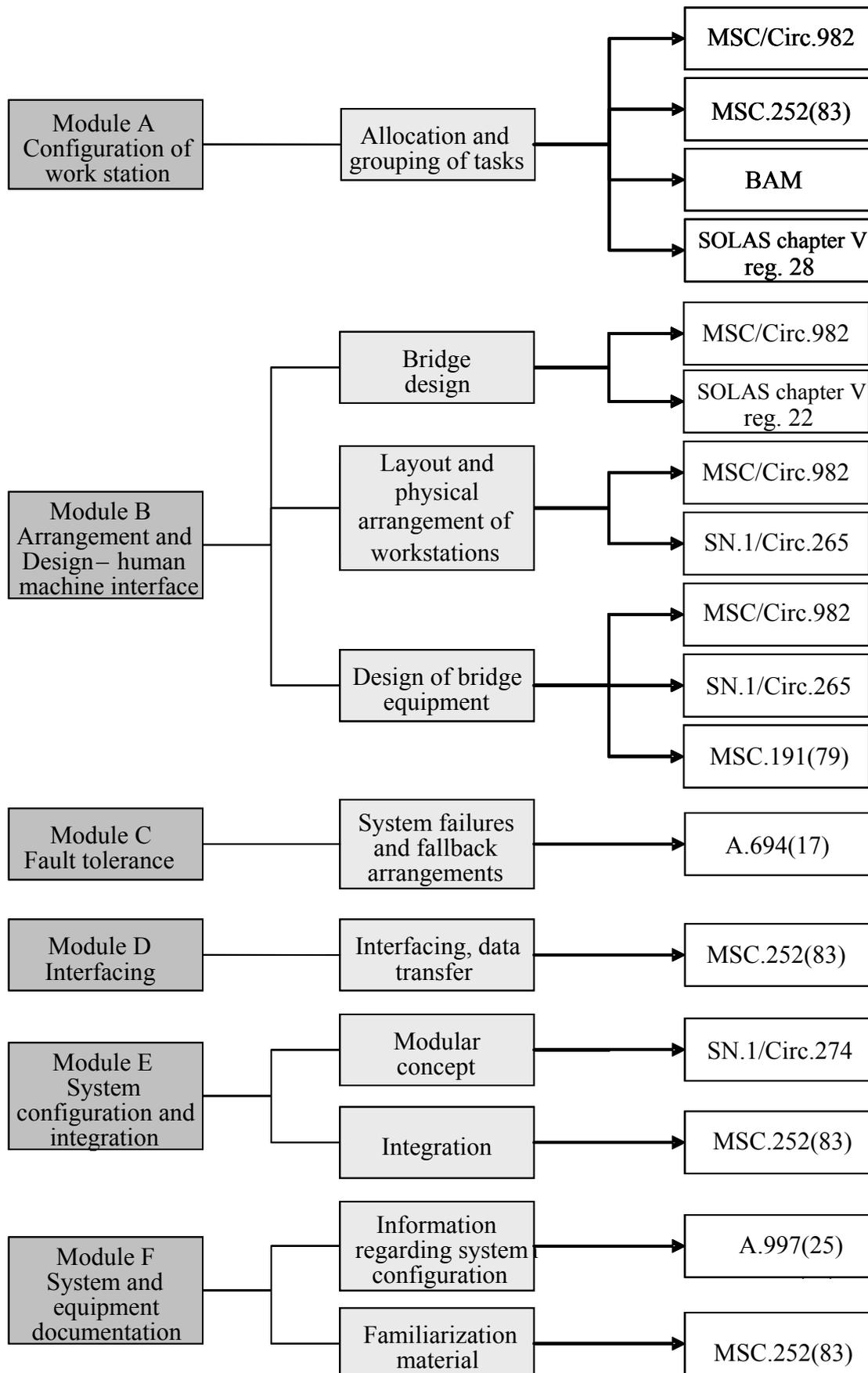
Task station

Multifunction display with dedicated controls providing the possibility to display and operate multiple tasks. A task station is part of a workstation.

Workstation

The combination of all job-related items, including the console with all devices, equipment and the furniture, to fulfil certain tasks. Workstations for the Bridge are specified in MSC/Circ.982.

Appendix 2 – Guidance for applicable instruments which are specifically addressed within these guidelines



ANNEX 7

DRAFT RESOLUTION MSC.[...](87)

ADOPTION OF PERFORMANCE STANDARDS FOR
BRIDGE ALERT MANAGEMENT

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO resolution A.886(21) on Procedure for the adoption of, and amendments to, performance standards and technical specifications, by which the Assembly resolved that the function of adoption performance standards and technical specifications, as well as amendments thereto, shall be performed by the Maritime Safety Committee,

RECOGNIZING the need to prepare performance standards harmonizing the priority, classification, handling, distribution and presentation of alerts, to enable the bridge team to devote full attention to the safe operation of the ship and to immediately identify any alert situation requiring action to maintain the safe operation of the ship,

RECOGNIZING ALSO that a central alert management human machine interface (CAM-HMI) for presenting alerts as individual alerts or as aggregated alerts supports the bridge team in the immediate identification of any abnormal situation, of the source and reason for the abnormal situation and support the bridge team in its decisions for the necessary actions to be taken,

NOTING that further guidance on the presentation of alerts is provided in the code on alerts and indicators which is intended to provide general design guidance and to promote uniformity of type, location and priority for alerts and indicators,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Safety of Navigation at its fifty-fifth session, and the Maritime Safety Committee at its [eighty-seventh] session,

1. ADOPTS the Recommendation on Performance Standards for Bridge Alert Management set out in the Annex to the present resolution;
2. RECOMMENDS:
 - .1 Governments to encourage the use of Bridge Alert Management on the ships flying their flags.
 - .2 That central alert management (CAM) and central alert management human machine interface (CAM-HMI), if installed on the bridge on or after [1 July 2014], conform to the performance standards not inferior to those set out in Annex to the present resolution.

- .3 Governments to encourage that the general requirements of modules A and C of the performance standards set out in Annex to the present resolution are applicable to relevant equipment on the bridge presenting alerts on or after [1 July 2014].

ANNEX

PERFORMANCE STANDARDS FOR BRIDGE ALERT MANAGEMENT

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- 2 Scope
- 3 Application
- 4 Definitions

Module A – Presentation and handling of alerts on the bridge

- 5 General
- 6 Priorities – Classification
- 7 States of alerts
- 8 Presentation of alerts on the bridge

Module B – Central alert management (CAM) functionality

- 9 Central alert management human machine interface (CAM-HMI)
- 10 Functional aspects of CAM
- 11 Back-up and redundancies
- 12 System failures and fallback arrangements

Module C – Interfacing

- 13 Interfacing

Module D – System and equipment documentation

- 14 Manuals
- 15 Information regarding system configuration
- 16 Failure analysis
- 17 Guidance to equipment manufactures for the provision of onboard familiarization material

1 Purpose

1.1 The purpose of the bridge alert management (BAM) is to enhance the handling, distribution and presentation of alerts, applying SN.1/Circ.265 (guidelines on the application of SOLAS regulation V/15 to INS, IBS and bridge design).

1.2 The BAM harmonizes the priority, classification, handling, distribution and presentation of alerts, to enable the bridge team to devote full attention to the safe operation of the ship and to immediately identify any alert situation requiring action to maintain the safe operation of the ship.

1.3 A central alert management human machine interface (CAM-HMI) for presenting alerts as individual alerts or as aggregated alerts supports the bridge team in the immediate identification of any abnormal situation, of the source and reason for the abnormal situation and support the bridge team in its decisions for the necessary actions to be taken.

1.4 The BAM architecture and the acknowledgement/silencing concept specified avoid unnecessary distraction of the bridge team by redundant and superfluous audible and visual alarm announcements. It reduces the cognitive load on the operator by minimizing the information presented to which is necessary to assess the situation.

Further guidance on the presentation of alerts is provided in the code on alerts and indicators which is intended to provide general design guidance and to promote uniformity of type, location and priority for alerts and indicators.

2 Scope

2.1 To enhance the safety of operation these performance standards provide requirements for the harmonized presentation and treatment of alerts on the bridge and specify a central alert management (CAM).

3 Application

3.1 Module A describes the general concept of the BAM and the presentation of alerts on the bridge equipment.

3.2 Modules B and D contain requirements for the CAM and the CAM-HMI.

3.3 Module C describes the interface requirements for BAM.

3.4 In addition to the general requirements set out in resolution A.694(17)¹, as amended and the presentation requirements set out in resolution MSC.191(79), CAM should meet the requirements of these performance standards and follow the relevant guidelines on ergonomic principles adopted by the Organization.

3.5 If an INS is installed on the bridge it should be assured that the functionality of module C of the INS PS is included in one CAM system.

¹ Refer to publication IEC 60945.

3.6 In case of conflict with alert requirements of existing performance standards, the performance standards as set out in this resolution will take precedence.

3.7 These performance standards should apply for all alerts presented on and transferred to the bridge.

4 Definitions

For the purpose of these performance standards, the definitions in Appendix 1 apply.

Module A – Presentation and handling of alerts on the bridge

5 General

5.1 The BAM should provide:

- the means used to draw the attention of the bridge team to the existence of alert situations,
- the means to enable the bridge team to identify and address that condition,
- the means for the bridge team and pilot to assess the urgency of different alert situations in cases where more than one alert situation has to be handled,
- the means to enable the bridge team to handle alert announcements, and
- the means to manage all alert-related states in a distributed system structure in a consistent manner.

5.2 If practicable, there should be not more than one alert for one situation that requires attention.

5.3 As alerts can be displayed at several locations, the presentation of the alert on the bridge equipment should be consistent as far as practicable with respect to how alerts are displayed, silenced and acknowledged. The states of alerts should be consistent on the bridge.

5.4 It should be possible to provide the CAM-HMI at least on the workstation for navigating and manoeuvring, and if provided at the workstation for monitoring.

5.5 If an INS is installed on the bridge the functionality of the INS alert management HMI and the CAM-HMI should be integrated.

6 Priorities – Classification

6.1 Priorities of alerts

6.1.1 The BAM should distinguish between the four priorities listed:

- Emergency alarms
- Alarms
- Warnings
- Cautions

6.1.2 Alerts additional to the alerts required by the Organization should be assigned to a priority level using the criteria for classification.

6.2 Criteria for classification of alerts

6.2.1 Criteria for emergency alarms:

- alarms which indicate that immediate danger to human life or to the ship and its machinery exists and that immediate action must be taken
- emergency alarms are specified in the revised Code on Alerts and Indicators, [resolution A...(26)].

6.2.2 Criteria for classification of alarms:

- conditions requiring immediate attention and action by the bridge team to avoid any kind of hazardous situation and to maintain the safe operation of the ship
- or escalation required as alarm from not acknowledged warning.

6.2.3 Criteria for classification of warnings:

- conditions or situations which require immediate attention for precautionary reasons, to make the bridge team aware of conditions which are not immediately hazardous, but may become so.

6.2.4 Criteria for classification of cautions:

- awareness of a condition which still requires attention out of the ordinary consideration of the situation or of given information.

6.3 Categories of alerts

Alerts should be separated for the alert handling into three categories of alerts:

6.3.1 Category A alerts

6.3.1.1 Category A alerts are specified as alerts where information at a task station directly assigned to the function generating the alert is necessary, as decision support for the evaluation of the alert-related condition, e.g.:

- danger of collision
- danger of grounding

Where category A alerts can not be acknowledged at a HMI this fact should be clearly indicated to the user.

6.3.2 Category B alerts

6.3.2.1 Category B alerts are specified as alerts where no additional information for decision support is necessary besides the information which can be presented at the CAM-HMI.

6.3.3 Category C alerts

6.3.3.1 Category C alerts are specified as alerts that cannot be acknowledged on the bridge but for which information is required about the status and treatment of the alerts, e.g., certain alerts from the engine.

7 State of alerts

7.1 General

7.1.1 The presentation of alarms and warnings is defined in the performance standards for presentation of navigation-related information on shipborne navigational displays (MSC.191(79)).

7.1.2 The state of an alert should be consistently distributed and presented for the BAM and all associated displays.

7.2 Emergency alarms

The handling of emergency alarms is specified in the revised Code on Alerts and Indicators, [resolution A....(26)].

7.3 Alarms

7.3.1 The BAM should distinguish between different alarm states:

- unacknowledged alarm
- acknowledged alarm

7.3.2 When an alarm condition is detected, it should be indicated as unacknowledged alarm:

- (a) initiate an audible signal, accompanied by the visual alarm announcement;
- (b) provide a message of sufficient detail to enable the bridge team to identify and address the alarm condition;
- (c) may be accompanied by speech output presented at least in English using harmonized alert voice messages according to the regulations of the Organization.

7.3.3 An unacknowledged alarm should be clearly distinguishable from those existing and already acknowledged. Unacknowledged alarms should be indicated flashing and by an audible signal.

7.3.4 The characteristics of the audible alarm signal, whether used singly or in combination with speech, should be such that there is no possibility of mistaking it for the audible signal used for a warning.

7.3.5 Means may be provided at an HMI to temporarily silence audible alarm signals, if the alert identification is provided at the HMI. If an alarm, which can be acknowledged on the bridge (categories A and B), is not acknowledged within 30 s the audible signal should start again or as specified in the equipment performance standards.

7.3.6 It should be possible to temporarily silence category C alarms. The alarm should be retriggered after a specified period of time consistent with the Code on alerts and indicators when the alarm is not acknowledged at the specified workplace (e.g., engine-room).

7.3.7 The visual indication for an unacknowledged alarm should continue until the alarm is acknowledged, unless specified otherwise in the equipment performance standards, e.g., for CPA/TCPA alerts where the visual signal can be ceased when the alarm condition is rectified.

7.3.8 The audible indication, if not temporarily silenced, for an unacknowledged alarm should continue until the alarm is acknowledged or the alarm condition is rectified. The audible signal of an unacknowledged alarm should be ceased when the alarm condition is rectified.

7.3.9 An acknowledged alarm should be indicated by a steady visual indication.

7.3.10 The visual signal for an acknowledged alarm should continue until the alarm condition is rectified.

7.4 Warnings

7.4.1 The BAM should distinguish between different warning states:

- unacknowledged warning
- acknowledged warning.

7.4.2 When a warning condition is detected, it should be indicated as unacknowledged warning:

- (a) initiate a momentarily audible signal, accompanied by the visual warning announcement;
- (b) provide a message of sufficient detail to enable the bridge team to identify and address the warning condition;
- (c) may be accompanied by speech output presented at least in English, using harmonized alert voice messages according to the regulations of the Organization.

7.4.3 An unacknowledged warning should be clearly distinguishable from those existing and already acknowledged. Unacknowledged warnings should be indicated flashing and by an audible signal.

7.4.4 The characteristics of the momentarily audible warning signal, whether used singly or in combination with speech, should be such that there is no possibility of mistaking it for the audible signal used for an alarm.

7.4.5 The visualization for an unacknowledged warning should continue until the warning is acknowledged, unless specified otherwise in the equipment performance standards where the visual indication can be ceased when the alarm condition is rectified.

7.4.6 An acknowledged warning should be indicated by a steady visual indication.

7.4.7 The visual indication for an acknowledged warning should continue until the warning condition is rectified.

7.5 Cautions

7.5.1 A caution should be indicated by a steady visual indication. No acknowledgement should be necessary for a caution.

7.5.2 A caution should be automatically removed after the condition is rectified.

7.5.3 A message should be provided of sufficient detail to enable the bridge team to identify and address the caution condition.

7.6 Alert escalation

7.6.1 The alert escalation should be compliant with the alert escalation requirements of the individual performance standards.

7.6.2 An unacknowledged warning should be:

- repeated as a warning after a limited time period not exceeding 5 min, or
- changed to alarm priority after a limited time period not exceeding 5 min, or
- changed to alarm priority after a user selectable time not more than 5 min, if provided, or
- changed to alarm priority, as required by specific requirements for the individual equipment and system.

8 Presentation of alerts on the bridge

8.1 The alert messages should be completed with aids for decision-making, as far as practicable.

8.2 Audible annunciation of Category A should only occur at the task station, system or sensor directly assigned to the function generating the alert.

8.3 The audible annunciation of Category B and C alerts should be duplicated at the CAM-HMI.

Module B – Central alert management functionality

9 Central alert management human machine interface (CAM-HMI)

- 9.1 All alerts should be displayed on the CAM-HMI either as individual alerts or as aggregated alerts.
- 9.2 The CAM-HMI should offer the possibility to display aggregated alerts.
- 9.3 The CAM-HMI should provide the means to announce and indicate alerts to draw the attention of the bridge team.
- 9.4 The CAM-HMI should have the capability to duplicate the audible alert annunciation of the individual equipment and displays installed on the bridge for category B and C alerts.
- 9.5 The CAM-HMI should allow for easy identification of alerts, and the enabling of immediate identification of the alert releasing function or sensor/source.
- 9.6 The CAM-HMI should be designed that alert messages of the different priorities are clearly distinguishable from each other.
- 9.7 The alert messages should be completed with aids for decision-making, as far as practicable. An explanation or justification of an alert should be available on request.
- 9.8 The CAM-HMI should enable an immediate acknowledgement of individual alarms and warnings by a single operator action for category B alerts.
- 9.9 It should only be possible to acknowledge alarms and warnings individually.
- 9.10 It should be possible to temporarily silence all audible alert signals with a single operator action at the CAM-HMI.
- 9.11 The CAM-HMI should be able to display at least 20 recent alerts at the same time.
- 9.12 If the CAM-HMI is such that it can not display all alerts simultaneously requiring the bridge team's attention, then there should be a clear and unambiguous indication that there are additional alerts requiring attention.
- 9.13 It should be possible to display the additional alerts by a single operator action.
- 9.14 It should be possible to return to the display containing the highest priority alerts by a single operator action.
- 9.15 When information other than the list of active alerts (e.g., the alert history list, configurations) is presented, then it should still be possible to see the appearance of new alerts.
- 9.16 As default the alerts should be presented grouped in order of priority. Within the priorities the alerts should be displayed in the order in which they occur (sequence). Additionally alerts may be presented in functional groups.

9.17 Aggregated alerts

9.17.1 Aggregated alerts may be provided.

9.17.2 As the handling of aggregated alerts requires more user operations and time to obtain the necessary information alerts required by the Organization for presentation on the bridge should only be aggregated to combine multiple individual alerts of the same kind to provide one alert at the CAM-HMI for which individual presentation is anyway necessary at alert releasing task station or system.

9.17.3 Alerts presented on the bridge which are not required by the Organization may be aggregated for presentation on the CAM-HMI, according to the requirements in these performance standards.

9.17.4 Only alerts of the same priority should be combined in one aggregated alert.

9.17.5 It should not be possible to acknowledge aggregated alerts unless otherwise specified by the Organization.

9.17.6 It should be possible to temporarily silence aggregated alerts.

9.17.7 Individual alerts should not trigger more than one aggregated alert.

9.17.8 Each additional new individual alert has to retrigger the aggregated alert.

9.17.9 If required by the Organization to be displayed as individual alert, alerts should not be aggregated.

9.18 Alert history list

9.18.1 An operator accessible alert history list should be provided by the CAM-HMI.

9.18.2 When an alert is no longer active the message should be kept with its entire content in an alert history list, with the date and time the alert was raised, acknowledged and rectified.

9.18.3 The messages of the alert history list should be displayed in chronological order.

9.18.4 Access to the alert history list and return to the active alert display should be possible by a simple operator action.

9.18.5 The system should provide a clear and unambiguous indication when the alert history list is being accessed and displayed.

9.18.6 The CAM-HMI should support the search and identification of alerts in the alert history list.

9.18.7 For the purpose of onboard “trouble shooting” it should be possible to keep the content of the alert history list at least for 24 h.

9.18.8 If an INS is installed, the functionality of INS may be extended to include the alert history functionality.

10 Functional aspects of CAM

10.1 The CAM should handle alert information for presentation on the CAM-HMI, including priority, state.

10.2 Alert information, including priority, state should be distributed to appropriate functions and equipment carrying out further processing or presentation (e.g., CAM-HMI).

10.3 The presentation of the alert on the bridge equipment should be consistent as far as practicable with respect to how alerts are displayed. Before presentation of an alert on any HMI it should be checked wherever possible, whether the functions and equipment may have the ability to evaluate and process the alert with additional knowledge, regarding its presentation, priority, and state. If this functionality is provided the CAM should support this further processing. The presentation of an alert should take place after the result of the processing could have been taken into consideration. For INS the requirements are specified in paragraph 21 of resolution MSC.252(83).

10.4 Only one CAM should be active on the bridge at any one time, but it is allowed to display and operate the information on multiple CAM-HMIs. The CAM functions may be centralized or partly centralized in subsystems and interconnected via a standardized alert-related communication.

11 Back-up and redundancies

11.1 The system configuration should allow one of the two possibilities for the layout of the back-up and redundancy functionality for the CAM, CAM-HMI:

- .1 in case of a failure of the CAM-HMI it should be ensured that the connected systems present their alerts individually (a system failure of the CAM-HMI functionality should not lead to the loss of the alert announcement functionality);
- .2 or if functionality from systems and equipment is transferred to the CAM and CAM-HMI a back-up should be provided. The back-up arrangement should enable a safe takeover of CAM functionality and ensure that a CAM failure does not result in a critical situation. The power supply of the back-up arrangement solution should be resistant against single failures.

11.2 In case of a breakdown of one task station, at least one other task station should be able to take over the CAM-HMI task.

12 System failures and fallback arrangements

12.1 System failures should be alerted according to these performance standards.

12.2 Loss of system communication between the CAM and connected systems should be indicated as a warning at the CAM-HMI. The alerts from the systems where the communication is lost should be removed from the list of active alerts on the CAM-HMI. After reactivation of the communication all active alerts should be displayed again.

12.3 A system failure of the CAM or the loss of system communication between the CAM and the connected systems should not lead to the loss of the alert announcement functionality of the individual functions.

Module C – Interfacing

13 Interfacing

13.1 Interfacing requirements for alert-related communication

13.1.1 The communication protocol should allow the implementation of the functions described in these standards.

13.1.2 The alert-related communication should follow a standardized concept to provide the following functions and operations:

- .1 unique identification of an alert divided into cluster, function, alert code, time,
- .2 distribution of alerts with its priority, state and text information,
- .3 distribution of acknowledgement, silencing and other commands for alerts from different locations, including operator input and results of system processing,
- .4 transmission of aggregated alerts with relevant information (e.g., number of alerts aggregated),
- .5 proper reconnection after disconnection or power down at any time and in any alert condition with a result of a consistent alert presentation within recovery time,
- .6 standardized communication should be used. Individual subsystems may use an alternative internal concept.

13.2 Connection to the ship's power supply

13.2.1 The CAM should be supplied from both the main and the emergency source of electrical power with automated changeover through a local distribution board with provision to preclude inadvertent shutdown.

13.2.2 After an electrical power failure the system should restart automatically when the power is restored.

Module D – System and equipment documentation

14 Manuals

14.1 Operating manuals should include:

- an overall description of the CAM functionality
- a description of the redundancy concept
- a description of possible failures and their effects on the system (e.g., by using part of the failure analysis).

14.2 The installation manuals should include adequate information to allow the installation of an alert management so that it can meet all requirements adopted by the Organization.

14.3 The installation manuals should include the following:

- interconnection diagrams and interfacing details for connected systems and sensors
- instructions for the installation and connection of facilities including the BNWAS
- the details of the power supply arrangements.

15 Information regarding system configuration for surveyor

15.1 Manufacturer or system integrator of CAM should declare the following information relating to the system configuration, if applicable:

- basic system configuration
- data flow schematic diagram and its interpretation
- back-up and redundancy arrangement.

16 Failure analysis

A failure analysis, at functional level, should be performed and documented for the CAM. The failure analysis should verify that a failure of the CAM should not affect the functionality of the connected systems and sensors including their alert announcement functionality.

17 Guidance to equipment manufactures for the provision of onboard familiarization material

Material enabling onboard familiarization training should be provided for the CAM. The onboard familiarization material should explain configurations, functions, limitations, controls, displays, alerts and indications. Furthermore, the onboard familiarization material should explain the results of operational actions as acknowledgement, silencing for the CAM-HMI and the connected systems. Guidance and recommendations to the equipment manufacturers for the provision of onboard familiarization material are given in appendix 2.

Appendix 1 – Definitions

Aggregated alert	Alert indicating the existence of multiple individual alerts.
Aggregation	Combination of individual alerts to provide one alert (one alert represents plenty of individual alerts).
Alarm	An alarm is a high-priority alert. Condition requiring immediate attention and action by the bridge team, to maintain the safe navigation of the ship.
Alert	Alerts are announcing abnormal situations and conditions requiring attention. Alerts are divided in four priorities: emergency alarms, alarms, warnings and cautions. An alert provides information about a defined state change in connection with information about how to announce this event in a defined way to the system and the operator.
Alert announcements	Visual and acoustical presentation of alerts.
Alert history list	Accessible list of past alerts.
Alert management	Concept for the harmonized regulation of the monitoring, handling, distribution and presentation of alerts on the bridge.
Bridge Alert Management (BAM)	Overall concept for management, handling and harmonized presentation of alerts on the bridge.
Central Alert Management (CAM)	Functionality for the management of the presentation of alerts on the CAM-HMI, the communication of alert states between CAM-HMI and navigational systems and sensors. The functions may be centralized or partly centralized in subsystems and interconnected via a standardized alert-related communication.
Category A alerts	Alerts for which graphical information at the task station directly assigned to the function generating the alert is necessary, as decision support for the evaluation of the alert-related condition.
Category B alerts	Alerts where no additional information for decision support is necessary besides the information which can be presented at the CAM-HMI.
Category C alerts	Alerts that cannot be acknowledged on the bridge but for which information is required about the status and treatment of the alert.
Caution	Lowest priority of an alert. Awareness of a condition which does not warrant an alarm or warning condition, but still requires attention out of the ordinary consideration of the situation or of given information.

Central alert management HMI (CAM-HMI)	Human machine interface for presentation and handling of alerts on the bridge.
Cluster	Group of functions on a high level, e.g., navigation, automation.
Emergency alarm	Highest priority of an alert. Alarms which indicate immediate danger to human life or to the ship and its machinery exists and require immediate action.
Failure analysis	The logical, systematic examination of an item, including its diagrams or formulas, to identify and analyse the probability, causes and consequences of potential and real failures.
Grouping	Arrangement of alerts in terms of their function or priority.
Human machine interface (HMI)	The part of a system an operator interacts with. The interface is the aggregate of means by which the users interact with a machine, device, and system (the system). The interface provides means for input, allowing the users to control the system and output, allowing the system to inform the users.
Individual alerts	Alerts announcing one abnormal situation and condition requiring attention.
Multifunction display	A single visual display unit that can present, either simultaneously or through a series of selectable pages, information from more than a single function.
Simple operator action	A procedure achieved by no more than two hard-key or soft-key actions, excluding any necessary cursor movements, or voice actuation using programmed codes.
Single operator action	A procedure achieved by no more than one hard-key or soft-key action, excluding any necessary cursor movements, or voice actuation using programmed codes.
Task station	Multifunction display with dedicated controls providing the possibility to display and operate any tasks. A task station is part of a workstation.
Warning	Condition requiring immediate attention, but no immediate action by the bridge team. Warnings are presented for precautionary reasons to make the bridge team aware of changed conditions which are not immediately hazardous, but may become so if no action is taken.

Appendix 2 – Guidance to equipment manufacturers for the provision of onboard familiarization material

1 General

1.1 It is a requirement of the International Safety Management Code (ISM) that personnel working on assignments related to safety and the protection of the environment need to be given proper familiarization with their duties.

1.2 To assist with this process it is required that the equipment manufacturer or system integrator provides suitable training material that may be used by the ship operator as a basis for onboard familiarization of users.

1.3 The intention of the familiarization material is that it should give a rapid means of understanding the configuration of the bridge alert management, the presentation of alerts on the CAM-HMI and its method of operation.

1.4 The material should be organized such that it represents the actual equipment and configuration that is fitted to the ship.

2 Onboard familiarization

2.1 The aim of familiarization training is to explain the functionality of the CAM and the CAM-HMI.

2.2 It should allow an OOW to become rapidly acquainted with the installed system.

2.3 Emphasis should be given on producing effective familiarization training that can be completed in the shortest possible time.

2.4 For a typical system it may be expected that it will take no longer than 30 minutes for an OOW to undertake familiarization. This time does not include the time taken to become familiar with major interconnected functionality, such as radar and ECDIS.

2.5 Familiarization can take a number of forms. The following are illustrative examples but other effective methods of training are acceptable:

- computer-based training on the vessel. Such training may also be appropriate to be used remotely (e.g., on a notebook computer of a new user, prior to joining the ship)
- a training mode on the fitted systems
- a training video (on tape, disk or solid state memory), supported by a self-training manual
- a stand-alone self-training manual.

2.6 The topics that need to be covered are listed in section 3 below.

2.7 The familiarization material does not replace the User Instruction Manual. Appropriate references can be made to it from within the material. This may be beneficial when describing more detailed operations or to reference large diagrams.

2.8 For lesser used, non-critical functions it is only necessary to reference the relevant section in the User Instruction Manual, rather than them having to be included in their entirety in the familiarization material. Ideally, material is provided for such functions but with instructions to enable the user to skip these sections, as appropriate, until a more convenient opportunity.

3 Familiarization training framework

3.1 General description

3.1.1 This should start with a system overview and a top-level functionality description.

3.1.2 A description should be given of a BAM configuration, including CAM-HMI and possible connected equipment. This description should be supported by a block diagram.

3.1.3 The general philosophy of presentation of alerts and user actions (e.g., acknowledgement, silencing) for the BAM should be explained, including a description of the CAM-HMI.

3.1.6 The back-up and redundancy concept for CAM, CAM-HMI should be explained.

3.2 Detailed operation

3.2.1 The functionality of the CAM-HMI should be described.

3.2.2 Where appropriate, the following should be included:

- description of functions
- description of menu structure and displayed information
- description of operator controls
- description how to configure the user-modifiable presentation preferences.
The method to rapidly revert to defaults configurations.

3.2.3 Instructions on setting basic display controls such as brightness, contrast, colour and day/night colour schemes should be given.

ANNEX 8

DRAFT MSC CIRCULAR

**HIGH-SPEED CRAFT (HSC) COMPLIANCE WITH THE PROVISIONS OF
SOLAS REGULATIONS V/18 TO V/20 AND CHAPTER 13 OF
THE 2000 HIGH-SPEED CRAFT CODE**

1 The Maritime Safety Committee (MSC), at its [eighty-seventh session (12 to 21 May 2010)], approved the declaration of High-Speed Craft (HSC) Compliance with the provisions of SOLAS regulations V/18 to V/20 and chapter 13 of the 2000 High-Speed Craft Code, as prepared by the Sub-Committee on Safety of Navigation (NAV) at its fifty-fifth session (27 to 31 July 2009).

2 Member Governments are invited to bring the information to the attention of all parties concerned.

ANNEX

**HIGH-SPEED CRAFT (HSC) COMPLIANCE WITH THE PROVISIONS OF
SOLAS REGULATIONS V/18 TO V/20 AND CHAPTER 13 OF
THE 2000 HIGH-SPEED CRAFT CODE**

Due to the timing of the review and updating of IMO documentation, regulation requirements under the safe navigation provisions of the 2000 High-Speed Craft (HSC) Code are not keeping pace with technology. In practice this can be exacerbated by the time required for amendments to Class rules and those needing to follow changes in IMO documentation.

An unintended consequence of this situation is that the building of new HSC must continue to involve the duplication of equipment and the installation of large analogue individual indicators into small cockpit style bridge arrangements when the technology, including redundancy arrangements, would allow for integrated digital information to be displayed in a more user friendly, space efficient and ergonomic manner.

To overcome the difficulties mentioned above, High-Speed Craft may be equipped with navigation 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, to the satisfaction of the Administration.

ANNEX 9**DRAFT MSC CIRCULAR****GUIDANCE ON PROCEDURES FOR UPDATING SHIPBORNE NAVIGATION
AND COMMUNICATION EQUIPMENT****Background**

1 As navigation and radiocommunication equipment becomes increasingly software dependent, updates to application software to meet changes in IMO and ITU regulatory requirements are needed. This applies in the case of retrospective changes to regulations which apply to all relevant ships.

2 Means should be provided to replace software or install updates to software in systems aboard ships.

3 Manufacturers should provide customers with timely access, for example by website, to a list showing the relevant regulations currently in effect for the equipment, equipment software versions, compliance status and regulatory approvals for the listed configurations/versions.

4 Adequate navigation and radiocommunication equipment software maintenance arrangements should be implemented by shipowners and be supported by equipment manufacturers. Equipment should provide the means to display, on demand, the current applicable software versions.

Procedures

5 Member Governments should promulgate information to all affected parties in relation to IMO and ITU regulatory changes that have the potential to affect maritime navigation and radiocommunication equipment.

6 Equipment manufacturers should provide timely access to information pertaining to maritime navigation and radiocommunication equipment application software, for the relevant changes, originating from IMO and ITU regulations. This may necessitate changes in operating systems, firmware and hardware to fulfil Type Approval and to meet the changed requirements.

7 Shipowners should ensure that the vessel's equipment is up to date with the latest requirements.

8 In addition to the above, in the case of ECDIS refer to SN.1/Circ.266.

ANNEX 10**LIAISON STATEMENT TO ITU-R WP 5B****SATELLITE DETECTION OF AIS**

IMO would like to inform ITU-R of its consideration of the issue of satellite detection of AIS.

IMO recalls the liaison statement (Document 5B/87) sent by the Sub-Committee on Safety of Navigation, at its fifty-fourth session (30 June to 4 July 2008) (NAV 54), informing ITU-R that NAV 54 had requested MSC 85, which would meet from 26 November to 5 December 2008, to consider the issue of satellite detection of AIS and to provide clear guidance on this matter.

The Maritime Safety Committee (MSC) discussed the matter of satellite detection of AIS at its eighty-fifth and eighty-sixth meetings. MSC 86 (27 May to 5 June 2009) outlined the following points:

- .1 considerable concerns had been raised, which should be conveyed to relevant bodies in ITU, to be taken into account in their further studies, namely:
 - .1 the relationship with the implementation of the long-range identification and tracking of ships (LRIT) system;
 - .2 integrity and confidentiality issues;
 - .3 security issues;
 - .4 collection and dissemination of data;
 - .5 technical issues, such as the risk of interference to critical existing maritime radiocommunication services and the need for changes to the current AIS Class A equipment; and
 - .6 global policy issues, including the view that all countries should benefit from the development and implementation of this system;
- .2 there was general support for the continuation of studies under the framework of ITU; and
- .3 IMO should not make any commitment at this stage, awaiting the outcome of studies.

NAV 55 (27 to 31 July 2009) noted annex 6 to document 5B/296, containing the latest version of the Preliminary draft new report ITU-R M. [SAT-AIS] on Improved satellite detection of AIS. NAV 55 further noted the relevant revisions reflected in the Working document towards a preliminary draft revision of Recommendation ITU-R M.1371-3 (annex 1 to document 5B/296) and the liaison statement on this issue to IALA, IMO, CIRM and IEC TC 80 (annex 36 to document 5B/296).

The NAV Sub-Committee will keep the subject of improved satellite detection of AIS under consideration, awaiting the outcome of ITU-R technical studies.

Working Party 5B is requested to note the information provided.

ANNEX 11

DRAFT RESOLUTION MSC.[...](87)

ASSURING SAFETY DURING DEMONSTRATIONS, PROTESTS OR
CONFRONTATIONS ON THE HIGH SEAS

THE MARITIME SAFETY COMMITTEE,

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

CONSIDERING THAT the safety of vessels¹, crew, and other persons on board such vessels on the high seas is of paramount importance to the Organization and its Member States and has long been the common interest of nations worldwide,

AFFIRMING the rights and obligations relating to legitimate and peaceful forms of demonstration, protest or confrontation and noting that there are international instruments that may be relevant to these rights and obligations,

BEARING IN MIND that the Organization does not condone any actions that intentionally imperil human life, the marine environment or property,

SERIOUSLY CONCERNED that demonstrations, protests or confrontations involving vessels on the high seas may affect or compromise the safety and security of such vessels and may lead to incidents that cause a risk to human life, the marine environment or property,

RECOGNIZING the need to cooperate, as appropriate, in accordance with relevant rules of international law and respective domestic laws and regulations, to ensure that actions that intentionally imperil human life, the marine environment or property are adequately addressed,

RECALLING FURTHER that the Organization has adopted important instruments directed at the safety and security of vessels, crew, and other persons on those vessels including in particular the Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREG), as amended, which sets uniform rules and principles for avoiding collisions at sea; the International Convention for the Safety of Life at Sea, 1974 (SOLAS) as amended, in particular chapter V pertaining to safety of navigation and chapter XI/2 pertaining to special measures to enhance maritime safety and security; the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation, 1988 and its Protocol for the Suppression of Unlawful Acts against Fixed Platforms Located on The Continental Shelf (the SUA Convention and its 1988 Protocol), relating to international cooperation for the prevention of unlawful acts against the safety of maritime navigation and platforms, and actions against alleged offenders; and the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended, which has provisions pertaining to watchkeeping arrangements,

¹ The term “vessel” used in this resolution is meant to be interpreted in the broadest manner possible and includes definitions in applicable IMO instruments of “ship” and “vessel”.

RECALLING ALSO the relevant provisions of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and of customary international law of the sea related to activities of vessels on the high seas,

HAVING CONSIDERED, at its [eighty-seventh] session, the recommendations of the Sub-Committee on Safety of Navigation and the Sub-Committee on Flag State Implementation,

1. RECALLS AND REAFFIRMS the importance of safety of vessels, crew, and other persons on board such vessels;
2. CONDEMNS any actions that intentionally imperil human life, the marine environment, or property during demonstrations, protests or confrontations on the high seas;
3. CALLS UPON Governments to urge:
 - .1 persons and entities under their jurisdiction to refrain from actions that intentionally imperil human life, the marine environment, or property during demonstrations, protests or confrontations on the high seas;
 - .2 all vessels entitled to fly their flag to comply with the applicable instruments adopted by this Organization directed at safety of navigation, security and safety of life at sea;
 - .3 all vessels, during demonstrations, protests or confrontations on the high seas, to comply with COLREG and SOLAS by taking all steps to avoid collisions and safeguard navigation, security and safety of life at sea; and
 - .4 all vessels, during demonstrations, protests, or confrontations on the high seas, to conduct their radio communications in accordance with the International Telecommunication Union Radio Regulations;
4. ALSO CALLS UPON Governments to take such measures as may be necessary to establish jurisdiction over any offences set forth in the SUA Convention and its 1988 Protocol;
5. FURTHER CALLS UPON Governments, consistent with international law and their domestic laws and regulations, to conduct inquiries into every marine casualty or incident of navigation on the high seas that imperils safety of vessels, crew or other persons on board such vessels that involve a vessel entitled to fly their flag;
6. ENCOURAGES Governments, consistent with international law and their domestic laws and regulations, to cooperate as appropriate to ensure that actions that intentionally imperil human life, the marine environment or property on the high seas are adequately addressed; and
7. REQUESTS Governments to bring this resolution to the attention of all entities concerned, in particular those that might be involved during demonstrations, protests or confrontations on the high seas.

ANNEX 12**DRAFT AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR
THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED****CHAPTER V****SAFETY OF NAVIGATION****Part A***General*

- 1 The following new regulation 18.9 is added after the existing regulation 18.8:

Regulation 18.9

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 on board the ship.

ANNEX 13
DRAFT SN CIRCULAR
GUIDANCE ON THE USE OF AIS APPLICATION-SPECIFIC MESSAGES

(Please see NAV 55/21/Add.1)

ANNEX 14**DRAFT SN CIRCULAR****GUIDANCE FOR THE PRESENTATION AND DISPLAY OF
AIS APPLICATION-SPECIFIC MESSAGES INFORMATION**

1 The Maritime Safety Committee, at its seventy-eighth session (12 to 21 May 2004), approved SN/Circ.236 on Guidance on the application of AIS binary messages as prepared by the Sub-Committee on Safety of Navigation at its forty-ninth session (30 June to 4 July 2003).

2 The Sub-Committee on Safety of Navigation, at its forty-ninth session, selected seven (7) Application-Specific Messages as shown in annex 2 to SN/Circ.236 to be used as a trial set of messages for a period of four years with no change. It was noted that four additional system-related messages were identified in Recommendation ITU-R M.1371 for the operation of the system.

3 The Sub-Committee on Safety of Navigation (NAV), at its fifty-fifth session (27 to 31 July 2009), after evaluating the use of Application-Specific Messages in the trial period defined in SN/Circ.236, agreed on Guidance for the presentation and display of AIS Application-Specific Messages information.

4 The Maritime Safety Committee, at its [eighty-seventh session (12 to 21 May 2010)], concurred with the Sub-Committee's views and approved the Guidance for the presentation and display of AIS Application-Specific Messages information, as set out at annex.

5 Member Governments are invited to bring the annexed Guidance to the attention of all concerned.

ANNEX

PRESENTATION AND DISPLAY OF AIS APPLICATION-SPECIFIC MESSAGES INFORMATION

Introduction

At present, there is no specific guidance or standards related to the presentation and display of AIS Application-Specific Messages information on shipborne equipment or systems. While the Minimum Keyboard Display (MKD) is capable of displaying text messages, it was never intended for the graphical display and presentation of AIS Application-Specific Messages information. However, there are a number of general and equipment-specific international standards that have been adopted by IMO, IHO and IEC that contain “guidance” related to the presentation and display of various types of shipborne navigation-related information.

Standards/Guidelines

General

Performance Standards for the Presentation of Navigation-related Information on Shipborne Navigational Displays, IMO resolution MSC.191(79), 6 December 2004.

Guidelines for the Presentation of Navigation-related Symbols, Terms and Abbreviations, IMO SN/Circ.243, 15 December 2004.

Presentation of Navigation-related Information on Shipborne Navigational Displays – General Requirements, methods of testing, required test requirements. IEC 62288, Edition 1.0, July 2008.

Equipment-Specific

There are specific equipment/system standards that have been adopted by IMO, IHO and IEC that contain “guidance” related to the presentation/display of shipborne navigation-related information. However, most were adopted prior to resolution MSC.191(79), SN/Circ.236, or IEC 62288 being issued. Eventually, these equipment-specific performance standards will need to be “updated” in order to comply with the overall harmonized requirements contained in resolution MSC.191(79). In the interim, there does not appear to be any existing requirement that would preclude the presentation/display of any of the AIS Application-Specific Messages applications contained in SN/Circ.236 or the revised/new messages. However, it will not be possible to reach a general consensus about the consistent and uniform display of AIS binary messages until the performance standards for individual shipboard equipment and systems are aligned with resolution MSC.191(79).

ECDIS

Revised Performance Standards for ECDIS, IMO resolution MSC.232(82), 2006.

Specifications for Chart Content and Display Aspects of ECDIS, IHO S-52, Ed. 4.2, Appendix 2, *Colour and Symbol Specifications for ECDIS*, March 2004.

Radar

Performance Standards for Radar Equipment, IMO resolution MSC.192(79), 2004.

INS

Performance Standards for an Integrated Navigation System (INS), IMO resolution MSC.86(70), Annex 3.

Integrated Navigation Systems (INS) – Operational and performance requirements, methods of testing and required test results. IEC 61294, Ed. 1, 2004.

AIS

Performance Standards for a Universal Shipborne Automatic Identification System (AIS), IMO resolution MSC.74(69), Annex 3, 19 May 1998.

Guidelines for the Onboard Operational Use of Shipborne Automatic Identification Systems (AIS), IMO resolution A.917(22), 25 January 2002.

Display of AIS Target Information, IMO SN/Circ.217, 11 July 2001.

Guidance of the Application of AIS Binary Messages, IMO SN/Circ.236, 28 May 2004.

Guiding Principles for the Presentation/Display of AIS Application-Specific Messages

At this time, it is premature to propose specific presentation and display standards for AIS Application-Specific Messages. More experience is needed in order to determine how AIS Application-Specific Messages information should be displayed in conjunction with other chart-related and operational information. Further, the presentation and display of AIS Application Specific Messages information should conform to the concept of operation envisioned for e-navigation. As currently defined:

“e-navigation is 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.” (NAV 54/25, annex 12).

Most likely, AIS Application-Specific Messages will become means to achieve many of the core objectives of e-navigation (NAV 54/25, annex 12):

- .1 *facilitate safe and secure navigation of vessels having regard to hydrographic, meteorological and navigational information and risks;*
- .2 *facilitate vessel traffic observation and management from shore/coastal facilities, where appropriate;*
- .3 *facilitate communications, including data exchange, among ship to ship, ship to shore, shore to ship, shore to shore and other users;*

- .4 *provide opportunities for improving the efficiency of transport and logistics;*
- .5 *support the effective operation of contingency response, and search and rescue services;*
- .6 *demonstrate defined levels of accuracy, integrity and continuity appropriate to a safety-critical system;*
- .7 *integrate and present information on board and ashore through a human-machine interface which maximizes navigational safety benefits and minimizes any risks of confusion or misinterpretation on the part of the user;*
- .8 *integrate and present information on board and ashore to manage the workload of the users, while also motivating and engaging the user and supporting decision-making.*

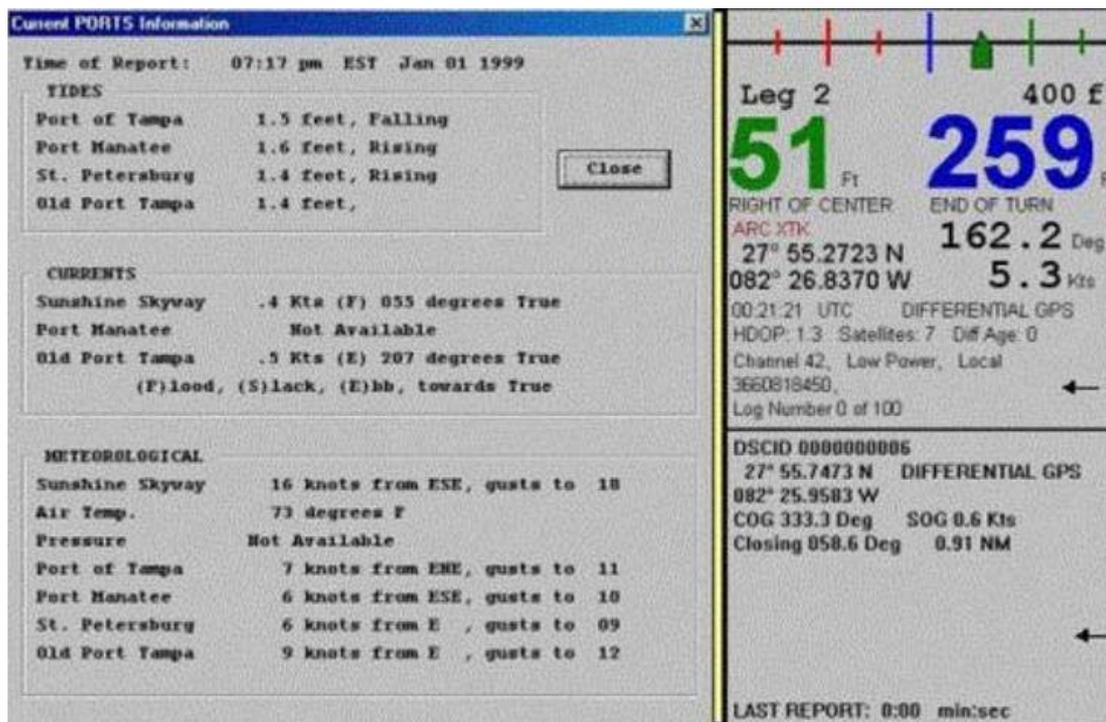
In the interim, the following guiding principles should apply to the display of AIS Application-Specific Messages information both for shipborne equipment/systems (e.g., ECDIS, radar and INS) and for shore-based systems (e.g., VTS Centre console):

1. Use **consistent** symbology across all displays
2. **Uniqueness** – only one possible meaning
3. **Non-ambiguous** – ability to determine differences (i.e. distinct)
4. **Intuitively obvious** – an easily recognized symbol, icon or pattern
5. Have a **basic symbol** for different categories. Further attributes should be enhancements (not changes) to the basic symbol.

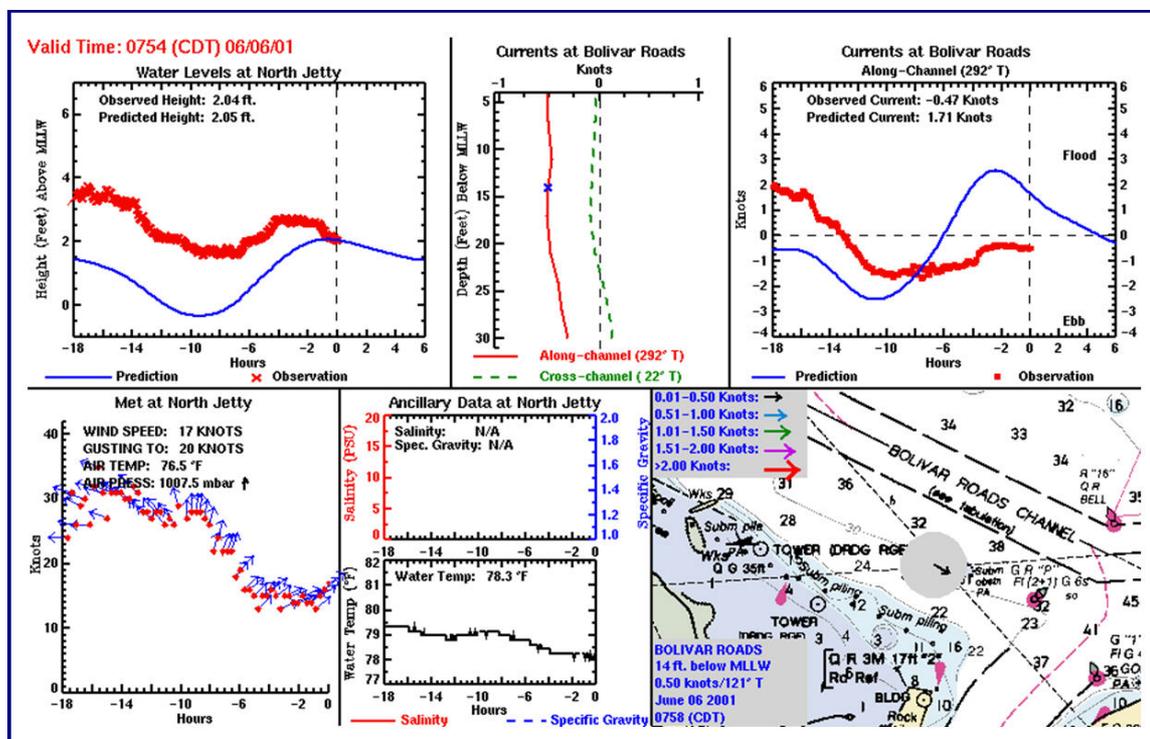
Application-Specific Message Information: Portrayal Examples

“Portrayal” is the process of representing or depicting (i.e. showing an example of what is or could be). The following are selected examples of how some of current and new Application-Specific Messages applications are being portrayed. This includes alpha-numeric, graphs, symbols and geographic (i.e. spatial) information.

Meteorological and hydrographic data (FI = 11, FI = 26)

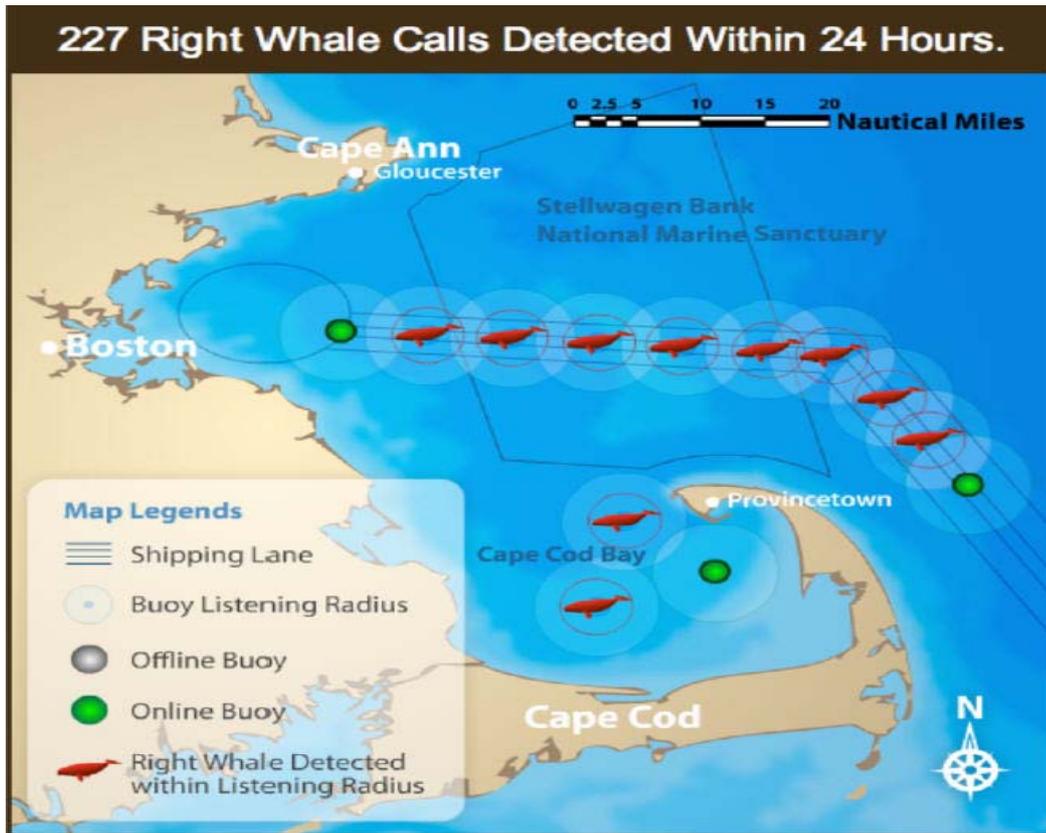


Example 1 – This is an example of real-time alpha-numeric data pertaining to tidal changes, current flow velocity, and meteorological conditions. Transmitted as an AIS Application-Specific Message from a VTS Centre, the information is displayed on Portable Pilot Units (PPUs) that are carried on board vessels by Maritime Pilots.

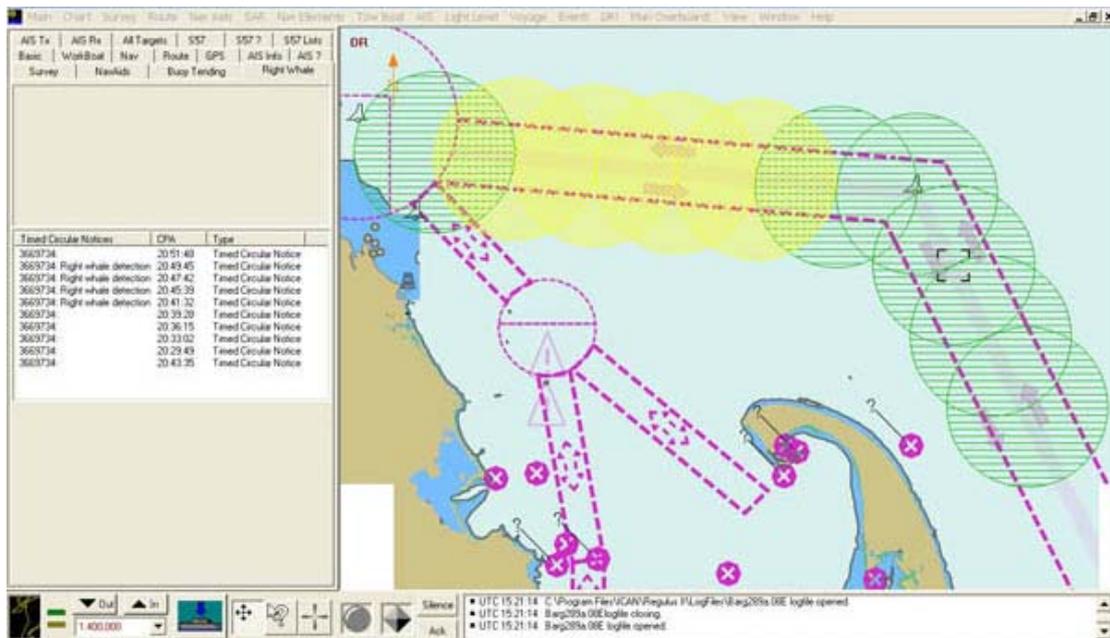


Example 2 – This is a graphical display of both predicted and observed met/hydro data. While similar to alpha-numeric text in terms of data content, the information is displayed as a time-series graphs capable of depicting differences and trends (i.e. predicted vs. observed). This also includes alpha-numeric text that is displayed over geographic data (a raster navigational chart).

Area Notice – Broadcast (FI = 22)

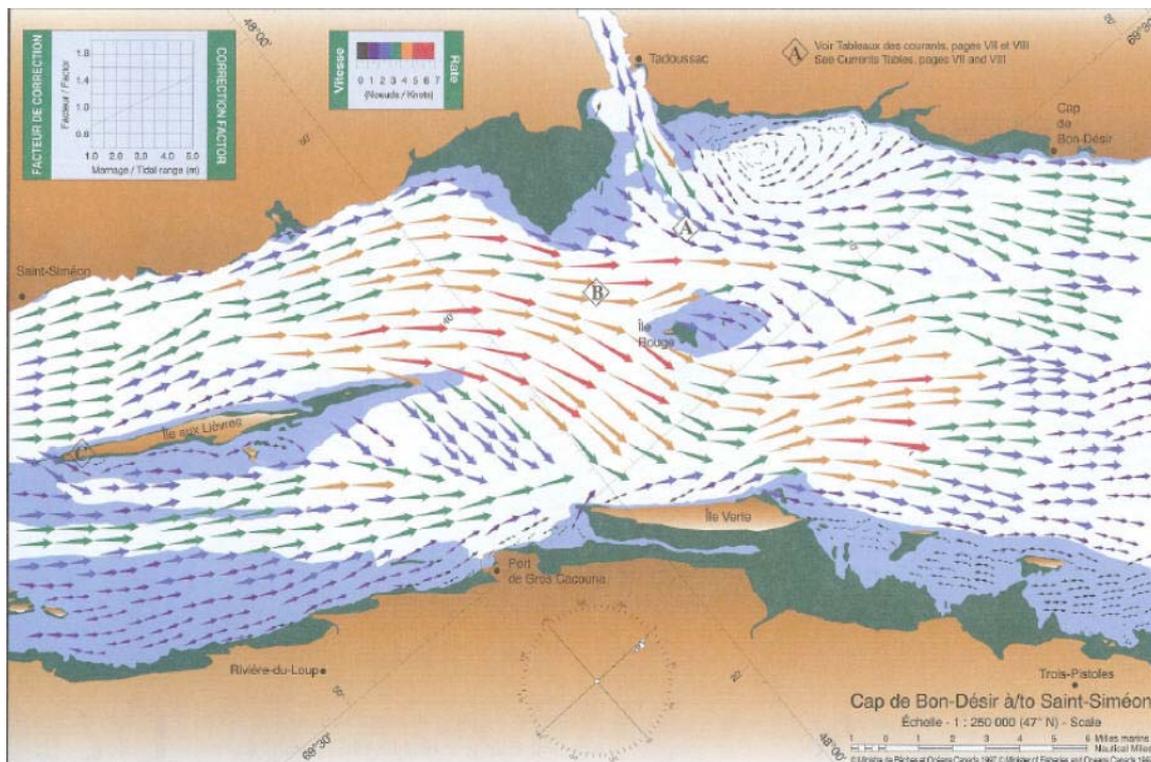


Example 1 – This is an example of shore-based geographic display of a marine sanctuary area, traffic separation scheme, locations of passive-acoustic buoys, and acoustic detections of North Atlantic right whales (an endangered species). The red-green colour scheme indicates the status of buoy operation.

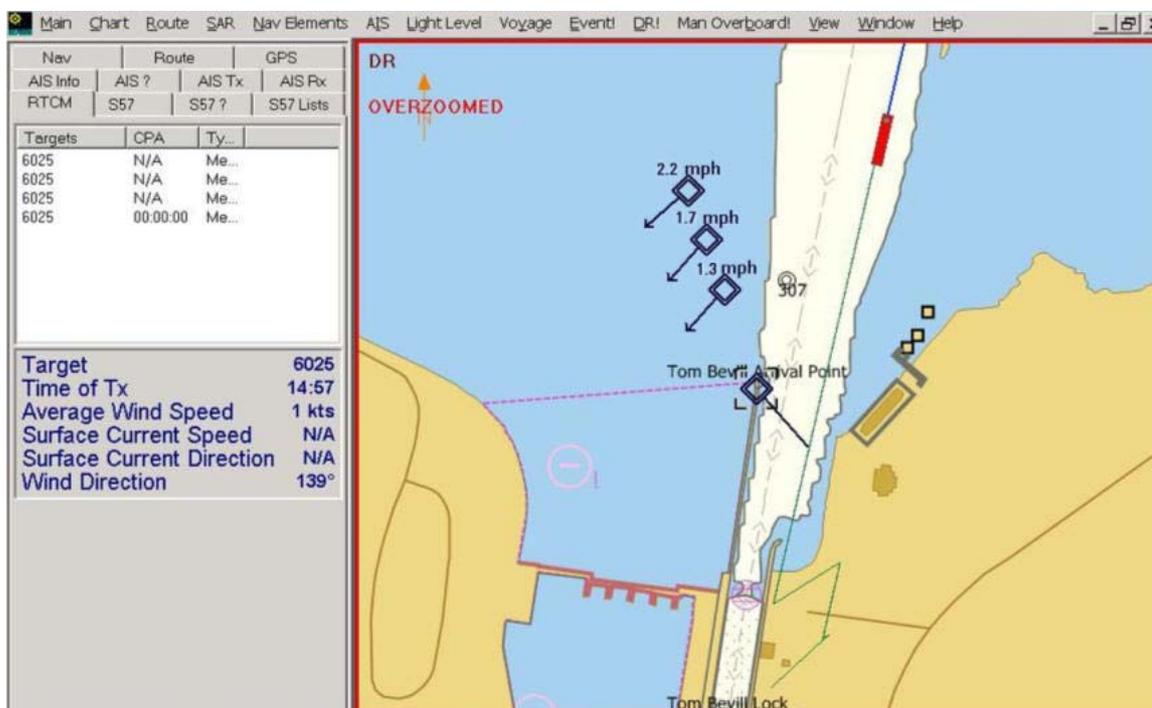


Example 2 – This is an example of data pertaining to the date/time detection and location of North Atlantic right whales (an endangered species) in a traffic separation scheme within a marine sanctuary area. Transmitted via AIS Application-Specific Message from an Operations Centre, this information is displayed on shipborne Electronic Chart System (ECS) as semi-transparent red-yellow-green colours that do not obscure the underlying Electronic Navigational Chart (ENC) data.

Tidal window (FI = 14)

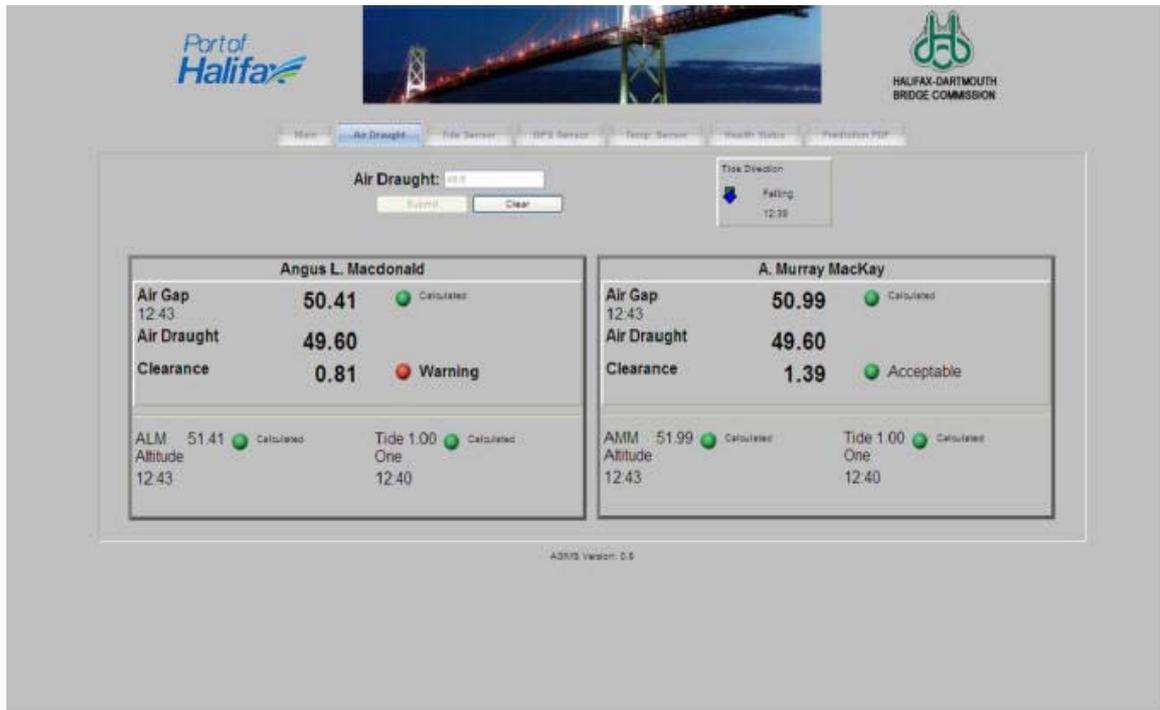


Example 1 – This is a geographical example of tidal current data. Current flow information is shown as coloured arrows (symbols) that indicate both the direction and speed of current flow for a date/time period at a specific location. This display is similar to the colour scheme used in the “Tidal Atlas” that is issued as a printed nautical publication.

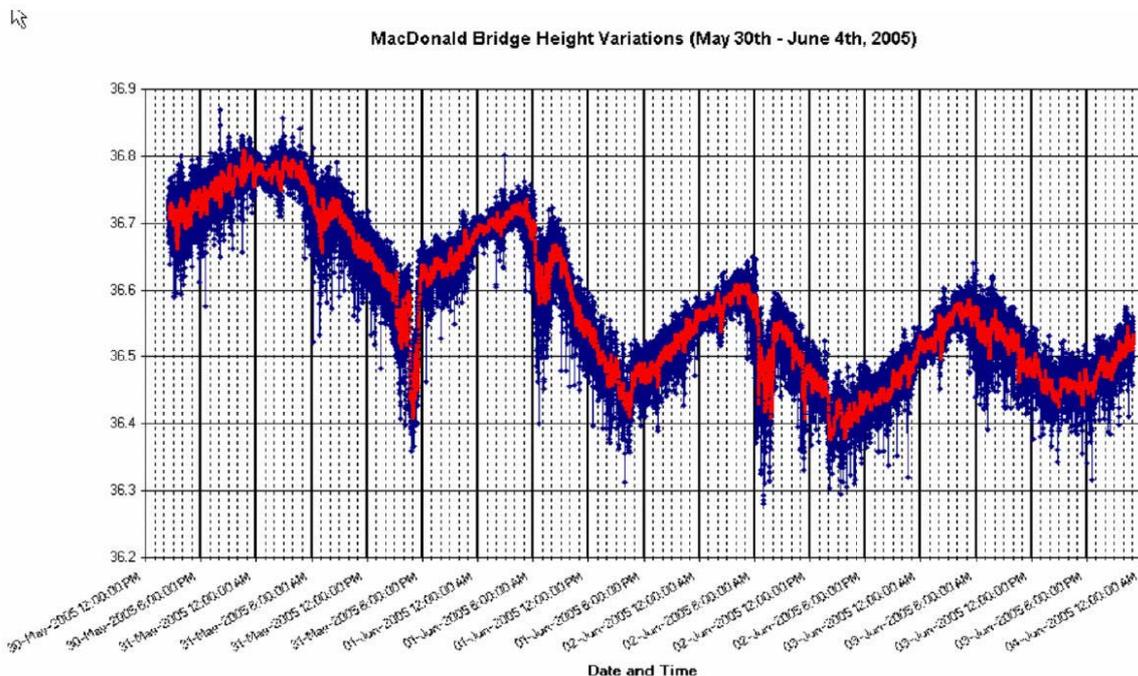


Example 2 – This is a geographic display of current flow data at the entrance of a lock on a major inland waterway. Current flow information is shown as arrow symbols that indicate the surface current speed/direction on a continuous basis. This information is transmitted via AIS Application-Specific Message from a VTS Centre, and displayed on an Electronic Chart System installed on board a towboat vessel using Inland ENC data.

Extended ship static and voyage-related data (FI = 15)

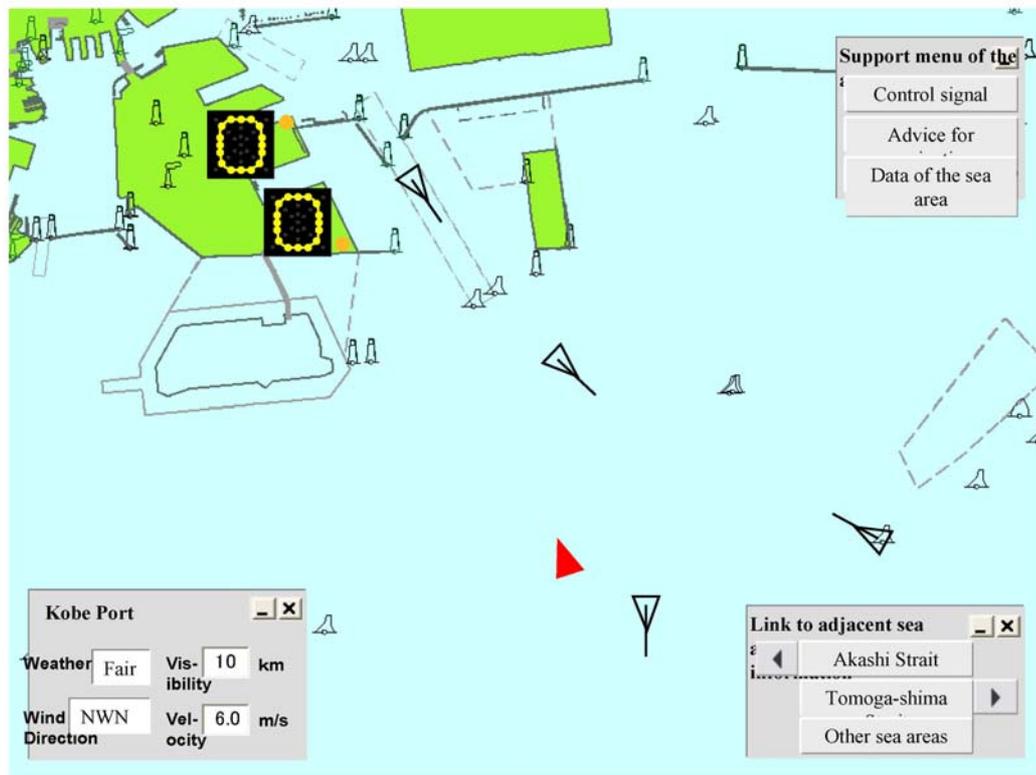


Example 1 – This is an example of real-time alpha-numeric data pertaining to air gap/air draft. Transmitted via AIS Application-Specific Message from a Port Authority, the information is displayed on Portable Pilot Units that are carried on board vessels by Maritime Pilots. A red-green colour scheme is used to indicate a warning of exceeding minimum clearance parameters.



Example 2 – This is a graphical display of the same air gap/air draft data. While similar to alpha-numeric text in terms of data content, the information is displayed as a date/time series graph that indicates variations and trends.

Marine traffic signal (FI = 19)



Example 1 – This is an example of a geographic display of marine traffic signal data that would be sent from a VTS Centre to a vessel entering port. In addition to displaying information on a signal station and status of the control signal, there are other links capable of providing advice about the harbour and adjacent sea area, and alpha-numeric text information on local weather conditions.

ANNEX 15**IMO AIS APPLICATION-SPECIFIC MESSAGE CATALOGUE****Recommended organization, structure and management****1 Main Recommendation**

1.1 The IMO AIS Binary Application-Specific Message Catalogue should be organized and managed based on guidance contained in *ISO Standard 19135*.

2 Roles and Responsibilities (from ISO 19135)

2.1 Register Owner: International Maritime Organization (IMO)

- .1 Establishes/hosts the register(s).
- .2 Establishes the policy for submission and access.
- .3 Has primary responsibility for the management, dissemination and intellectual content of the Catalogue.

2.2 Register Manager: Maritime Safety Division

The Register Manager is responsible for the administration of the Catalogue. This includes:

- .1 Publishes guidance on proper submission procedure for proposals.
- .2 Once received, from submitting organizations:
 - a) reviews proposals for completeness
 - b) returns proposals to the submitting organization if incomplete.
- .3 Maintains items within the Catalogue.
- .4 Provides periodic reports to the Control Body.

2.3 Control Body: IMO Sub-Committee on Safety of Navigation

The Control Body decides on the acceptability of proposals, and/or changes to the content of a catalogue.

2.4 Submitting Organizations:

IMO Member Governments, United Nations specialized agencies, intergovernmental and non-governmental organizations in consultative status may submit proposals based on established submission procedures.

2.5 Proposers:

Proposers are any stakeholders (e.g., government, industry, academia and user groups) who submit a proposal via a Submitting Organization.

2.6 Recommended Organization/Structure:

Register Owner	IMO
Register Manager	Maritime Safety Division
Control Body	Sub-Committee on Safety of Navigation (NAV)
Submitting Organizations	IMO Member Governments, United Nations specialized agencies, intergovernmental and non-governmental organizations in consultative status
Proposers	All interested stakeholders

3 Submission Form

Submitter (i.e. IMO Member Government, NGO, etc.)	
Date of Submission	
Type of Submission (new or revised)	
Name of Application (keep short)	
Type of Message (i.e. msg 6 or 8)	
Proposed DAC and FI	
Intended Use (include typical applications, e.g., AtoN monitoring)	
How portrayed (e.g., text only, graphical on ECDIS/ECS, etc.)	
Number of Slots	
Reporting Rate	
Technical Point-of-Contact	

Message parameters

Parameter	No. of bits	Description

Further Description of Parameters
(as needed)

ANNEX 16

**DRAFT AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE
SAFETY OF LIFE AT SEA, 1974, AS AMENDED****REGULATION 23*****Pilot transfer arrangements*****1 Application**

1.1 Ships engaged on voyages in the course of which pilots may be employed shall be provided with pilot transfer arrangements.

1.2 Equipment and arrangements for pilot transfer which are installed on or after [entry-into-force date] shall comply with the requirements of this regulation, and due regard shall be paid to the standards adopted by the Organization¹.

1.3 Except as provided otherwise, equipment and arrangements for pilot transfer which are provided on ships before [entry-into-force date] shall at least comply with the requirements of regulation 17 or 23, as applicable, of the International Convention for the Safety of Life at Sea, 1974 in force prior to that date, and due regard shall be paid to the standards adopted by the Organization prior to that date.

1.4 Equipment and arrangements which are replaced after [the date of entry into force of this regulation] shall, in so far as is reasonable and practicable, comply with the requirements of this regulation.

1.5 With respect to ships constructed before 1 January 1994, regulation 23.5 shall apply not later than the first survey² after [entry-into-force date].

1.6 Regulation 23.6 applies to all ships.

2 General

2.1 All arrangements used for pilot transfer shall efficiently fulfil their purpose of enabling pilots to embark and disembark safely. The appliances shall be kept clean, properly maintained and stowed and shall be regularly inspected to ensure that they are safe to use. They shall be used solely for the embarkation and disembarkation of personnel.

2.2 The rigging of the pilot transfer arrangements and the embarkation of a pilot shall be supervised by a responsible officer having means of communication with the navigation bridge and who shall also arrange for the escort of the pilot by a safe route to and from the navigation bridge. Personnel engaged in rigging and operating any mechanical equipment shall be instructed in the safe procedures to be adopted and the equipment shall be tested prior to use.

¹ Refer to resolution A....(27).

² Refer to MSC.1/Circ.1290, annex on the Unified Interpretation of the term "first survey" referred to in SOLAS regulations.

2.3 A pilot ladder shall be certified by the manufacturer as complying with this regulation or with an international standard acceptable to the Organization.³ Ladders shall be inspected in accordance with chapter I, regulations 6, 7 and 8.

2.4 All pilot ladders used for pilot transfer shall be clearly identified with tags or other permanent marking so as to enable identification of each appliance for the purposes of survey, inspection and record keeping. A record shall be kept on the ship as to the date the identified ladder is placed into service and any repairs effected.

2.5 Reference in this regulation to an accommodation ladder includes a sloping ladder used as part of the pilot transfer arrangements.

3 Transfer arrangements

3.1 Arrangements shall be provided to enable the pilot to embark and disembark safely on either side of the ship.

3.2 In all ships where the distance from sea level to the point of access to, or egress from, the ship exceeds 9 m, and when it is intended to embark and disembark pilots by means of the accommodation ladder⁴, or other equally safe and convenient means in conjunction with a pilot ladder, the ship shall carry such equipment on each side, unless the equipment is capable of being transferred for use on either side.

3.3 Safe and convenient access to, and egress from, the ship shall be provided by either:

- .1 a pilot ladder requiring a climb of not less than 1.5 m and not more than 9 m above the surface of the water so positioned and secured that:
 - .1.1 it is clear of any possible discharges from the ship;
 - .1.2 it is within the parallel body length of the ship and, as far as is practicable, within the mid-ship half length of the ship;
 - .1.3 each step rests firmly against the ship's side; where constructional features, such as rubbing bands, would prevent the implementation of this provision, special arrangements shall, to the satisfaction of the Administration, be made to ensure that persons are able to embark and disembark safely;
 - .1.4 the single length of pilot ladder is capable of reaching the water from the point of access to, or egress from, the ship and due allowance is made for all conditions of loading and trim of the ship, and for an adverse list of 15°; the securing strong point, shackles and securing ropes shall be at least as strong as the side ropes; or

³ Refer to the recommendations by the International Organization for Standardization, in particular publication ISO 799:2004, *Ships and marine technology — Pilot ladders*.

⁴ Refer to SOLAS regulation II-1/3-9, *Means of embarkation on and disembarkation from ships*, adopted by resolution MSC.256(84) together with the associated Guidelines.

- .2 an accommodation ladder in conjunction with the pilot ladder (i.e. a combination arrangement), or other equally safe and convenient means, whenever the distance from the surface of the water to the point of access to the ship is more than 9 m. The accommodation ladder shall be sited leading aft. When in use, means shall be provided to secure the lower platform of the accommodation ladder to the ship's side, so as to ensure that the lower end of the accommodation ladder and the lower platform are held firmly against the ship's side within the parallel body length of the ship and, as far as is practicable, within the mid-ship half length and clear of all discharges.
 - .2.1 when a combination arrangement is used for pilot access, means shall be provided to secure the pilot ladder and manropes to the ship's side at a point of nominally 1.5 m above the bottom platform of the accommodation ladder. In the case of a combination arrangement using an accommodation ladder with a trapdoor in the bottom platform (i.e. embarkation platform), the pilot ladder and man ropes shall be rigged through the trapdoor extending above the platform to the height of the handrail.

4 Access to the ship's deck

4.1 Means shall be provided to ensure safe, convenient and unobstructed passage for any person embarking on, or disembarking from, the ship between the head of the pilot ladder, or of any accommodation ladder or other appliance, and the ship's deck. Where such passage is by means of:

- .1 a gateway in the rails or bulwark, adequate handholds shall be provided;
- .2 a bulwark ladder, two handhold stanchions rigidly secured to the ship's structure at or near their bases and at higher points shall be fitted. The bulwark ladder shall be securely attached to the ship to prevent overturning.

5 Shipside doors

Shipside doors used for pilot transfer shall not open outwards.

6 Mechanical pilot hoists

Mechanical pilot hoists shall not be used.

7 Associated equipment

7.1 The following associated equipment shall be kept at hand ready for immediate use when persons are being transferred:

- .1 two man-ropes of not less than 28 mm and not more than 32 mm in diameter properly secured to the ship if required by the pilot; man-ropes shall be fixed at the rope end to the ring plate fixed on deck and shall be ready for use when the pilot disembarks, or upon request from a pilot approaching to board (the manropes shall reach the height of the stanchions or bulwarks at the point of access to the deck before terminating at the ring plate on deck);

.2 a lifebuoy equipped with a self-igniting light;

.3 a heaving line.

7.2 When required by paragraph 4, stanchions and bulwark ladders shall be provided.

8 Lighting

Adequate lighting shall be provided to illuminate the transfer arrangements overside and the position on deck where a person embarks or disembarks.

ANNEX 17

DRAFT ASSEMBLY RESOLUTION A.[...](27)

PILOT TRANSFER ARRANGEMENTS

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,

NOTING the provisions of regulation V/23 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its [eighty-seventh] session,

1. ADOPTS the Recommendation on Pilot Transfer Arrangements set out in the Annex to the present resolution;
2. INVITES Governments to draw the attention of all concerned to this Recommendation;
3. FURTHER INVITES Governments to ensure that mechanical pilot hoists are not used;
4. FURTHER REQUESTS Governments to ensure that pilot ladders and their arrangements, use and maintenance conform to standards not inferior to those set out in the Annex to the present resolution; and
5. REVOKES resolution A.889(21).

ANNEX

DRAFT PROPOSED AMENDMENTS TO RESOLUTION A.889(21)

RECOMMENDATION ON PILOT TRANSFER ARRANGEMENTS

1 General

Ship designers are encouraged to consider all aspects of pilot transfer arrangements at an early stage in design. Equipment designers and manufacturers are similarly encouraged, particularly with respect to the provisions of paragraphs 2.1.2, 3.1 and 3.3.

2 Pilot ladders

A pilot ladder should be certified by the manufacturer as complying with this section or with the requirements of an international standard acceptable to the Organization.¹

2.1 Position and construction

2.1.1 The securing strong points, shackles and securing ropes should be at least as strong as the side ropes specified in 2.2 below.

2.1.2 The steps of the pilot ladders should comply with the following requirements:

- .1 if made of hardwood, they should be made in one piece, free of knots;
- .2 if made of material other than hardwood, they should be of equivalent strength, stiffness and durability to the satisfaction of the Administration;
- .3 the four lowest steps may be of rubber of sufficient strength and stiffness or other material to the satisfaction of the Administration;
- .4 they should have an efficient non-slip surface;
- .5 they should be not less than 400 mm between the side ropes, 115 mm wide and 25 mm in depth, excluding any non-slip device or grooving;
- .6 they should be equally spaced not less than 310 mm or more than 350 mm apart;
and
- .7 they should be secured in such a manner that each will remain horizontal.

¹ Refer to the recommendations by the International Organization for Standardization, in particular publication ISO 799:2004, *Ships and marine technology – Pilot ladders*.

2.1.3 No pilot ladder should have more than two replacement steps which are secured in position by a method different from that used in the original construction of the ladder, and any steps so secured should be replaced as soon as reasonably practicable by steps secured in position by the method used in the original construction of the pilot ladder. When any replacement step is secured to the side ropes of the pilot ladder by means of grooves in the sides of the step, such grooves should be in the longer sides of the step.

2.1.4 Pilot ladders with more than five steps should have spreader steps not less than 1.8 m long provided at such intervals as will prevent the pilot ladder from twisting. The lowest spreader step should be the fifth step from the bottom of the ladder and the interval between any spreader step and the next should not exceed nine steps.

2.1.5 When a retrieval line is considered necessary to ensure the safe rigging of a pilot ladder, the line should be fastened at or above the last spreader step and should lead forward. The retrieval line should not hinder the pilot nor obstruct the safe approach of the pilot boat.

2.1.6 A permanent marking should be provided at regular intervals (e.g., 1 m) throughout the length of the ladder consistent with ladder design, use and maintenance in order to facilitate the rigging of the ladder to the required height.

2.2 Ropes

2.2.1 The side ropes of the pilot ladder should consist of two uncovered ropes not less than 18 mm in diameter on each side and should be continuous, with no joints and have a breaking strength of at least 24 Kilo Newtons per side rope. The two side ropes should each consist of one continuous length of rope, the midpoint half-length being located on a thimble large enough to accommodate at least two passes of side rope.²

2.2.2 Side ropes should be made of manila or other material of equivalent strength, durability, elongation characteristics and grip which has been protected against actinic degradation and is satisfactory to the Administration.

2.2.3 Each pair of side ropes should be secured together both above and below each step with a mechanical clamping device properly designed for this purpose, or seizing method with step fixtures (chocks or widgets), which holds each step level when the ladder is hanging freely. The preferred method is seizing.²

3 Accommodation ladders used in conjunction with pilot ladders

3.1 Arrangements which may be more suitable for special types of ships may be accepted, provided that they are equally safe.

² Refer to the recommendations by the International Organization for Standardization, in particular publication ISO 799:2004, *Ships and marine technology — Pilot ladders*, part 4.3a and part 3, paragraph 3.2.1.

3.2 The length of the accommodation ladder should be sufficient to ensure that its angle of slope does not exceed 45°. In ships with large draft ranges, several pilot ladder hanging positions may be provided, resulting in lesser angles of slope. The accommodation ladder should be at least 600 mm in width.

3.3 The lower platform of the accommodation ladder should be in a horizontal position and secured to the ship's side when in use. The lower platform should be a minimum of 5 metres above sea level.

3.4 Intermediate platforms, if fitted, should be self-levelling. Treads and steps of the accommodation ladder should be so designed that an adequate and safe foothold is given at the operative angles.

3.5 The ladder and platform should be equipped on both sides with stanchions and rigid handrails, but if handropes are used they should be tight and properly secured. The vertical space between the handrail or handrope and the stringers of the ladder should be securely fenced.

3.6 The pilot ladder should be rigged immediately adjacent to the lower platform of the accommodation ladder and the upper end should extend at least 2 m above the lower platform. The horizontal distance between the pilot ladder and the lower platform should be between 0.1 and 0.2 m.

3.7 If a trapdoor is fitted in the lower platform to allow access from and to the pilot ladder, the aperture should not be less than 750 mm x 750 mm. The trapdoor should open upwards and be secured either flat on the embarkation platform or against the rails at the aft end or outboard side of the platform and should not form part of the hand holds. In this case the after part of the lower platform should also be fenced as specified in paragraph 3.5 above, and the pilot ladder should extend above the lower platform to the height of the handrail and remain in alignment with and against the ship's side.

3.8 Accommodation ladders, together with any suspension arrangements or attachments fitted and intended for use in accordance with this recommendation, should be to the satisfaction of the Administration³.

4 Mechanical pilot hoists

The use of mechanical pilot hoists is prohibited by SOLAS regulation V/23.

5 Access to deck

Means should be provided to ensure safe, convenient and unobstructed passage for any person embarking on, or disembarking from, the ship between the head of the pilot ladder, or of any accommodation ladder, and the ship's deck; such access should be gained directly by a platform securely guarded by handrails. Where such passage is by means of:

- .1 a gateway in the rails or bulwark, adequate handholds should be provided at the point of embarking on or disembarking from the ship on each side which should be not less than 0.7 m or more than 0.8 m apart. Each handhold should be rigidly

³ Refer to SOLAS regulation II-1/3-9 concerning accommodation ladders.

secured to the ship's structure at or near its base and also at a higher point, not less than 32 mm in diameter and extend not less than 1.2 m above the top of the bulwarks. Stanchions or handrails should not be attached to the bulwark ladder;

- .2 a bulwark ladder should be securely attached to the ship to prevent overturning. Two handhold stanchions should be fitted at the point of embarking on or disembarking from the ship on each side which should be not less than 0.7 m or more than 0.8 m apart. Each stanchion should be rigidly secured to the ship's structure at or near its base and also at a higher point, should be not less than 32 mm in diameter and should extend not less than 1.2 m above the top of the bulwarks. Stanchions or handrails should not be attached to the bulwark ladder.

6 Safe approach of the pilot boat

Where rubbing bands or other constructional features might prevent the safe approach of a pilot boat, these should be cut back to provide at least 6 metres of unobstructed ship's side. Specialized offshore ships less than 90 m or other similar ships less than 90 m for which a 6 m gap in the rubbing bands would not be practicable, as determined by the Administration, do not have to comply with this requirement. In this case, other appropriate measures should be taken to ensure that persons are able to embark and disembark safely.

7 Installation of pilot ladder winch reels

7.1 Point of access

When a pilot ladder winch reel is provided it should be situated at a position which will ensure persons embarking on, or disembarking from, the ship between the pilot ladder and the point of access to the ship, have safe, convenient and unobstructed access to or egress from the ship.

The point of access to or egress from the ship may be by a ship's side opening, an accommodation ladder when a combination arrangement is provided, or a single section of pilot ladder.

7.1.1 The access position and adjacent area should be clear of obstructions, including the pilot ladder winch reel, for distances as follows:

- .1 a distance of 915 mm in width measured longitudinally;
- .2 a distance of 915 mm in depth, measured from the ship's side plating inwards;
- .3 a distance of 2,200 mm in height, measured vertically from the access deck.

7.2 Physical positioning of pilot ladder winch reels

Pilot ladder winch reels are generally fitted on the ship's Upper (Main) Deck or at a ship's "Side Opening" which may include side doors, gangway locations or bunkering points. Winch Reels fitted on the Upper Deck may result in very long pilot ladders.

7.2.1 Pilot ladder winch reels which are fitted on a ship's upper deck for the purpose of providing a pilot ladder which services a ship side opening below the upper deck or, alternatively, an accommodation ladder when a combination arrangement is provided should:

- .1 be situated at a location on the Upper Deck from which the pilot ladder is able to be suspended vertically, in a straight line, to a point adjacent to the ship side opening access point or the lower platform of the accommodation ladder;
- .2 be situated at a location which provides a safe, convenient and unobstructed passage for any person embarking on, or disembarking from, the ship between the pilot ladder and the place of access on the ship;
- .3 be situated so that safe and convenient access is provided between the pilot ladder and the ship's side opening by means of a platform which should extend outboard from the ship's side for a minimum distance of 750 mm, with a longitudinal length of a minimum of 750 mm. The platform should be securely guarded by hand rails;
- .4 safely secure the pilot ladder and manropes to the ship's side at a point on the ship's side at a distance of 1,500 mm above the platform access point to the ship side opening or the lower platform of the accommodation ladder;
- .5 if a combination arrangement is provided, have the accommodation ladder secured to the ship's side at or close to the lower platform so as to ensure that the accommodation ladder rests firmly against the ship's side.

7.2.2 Pilot ladder winch reels fitted inside a ship's side opening should:

- .1 be situated at a position which provides a safe, convenient and unobstructed passage for any person embarking on, or disembarking from, the ship between the pilot ladder and the place of access on the ship;
- .2 be situated at a position which provides an unobstructed clear area with a minimum length of 915 mm and minimum width of 915 mm and minimum vertical height of 2,200 mm;
- .3 if situated at a position which necessitates a section of the pilot ladder to be partially secured in a horizontal position on the deck so as to provide a clear access as described above, then allowance should be made so that this section of the pilot ladder may be covered with a rigid platform for a minimum distance of 915 mm measured horizontally from the ship's side inwards.

7.3 Hand rails and hand grips

Hand rails and hand grips should be provided in accordance with section 5 to assist the pilot to safely transfer between the pilot ladder and the ship, except as noted in paragraph 7.2.1.3 for arrangements with platforms extending outboard. The horizontal distance between the hand rails and/or the hand grips should be not less than 0.7 m or more than 0.8 m apart.

7.4 Securing of the pilot ladder

Where the pilot ladder is stowed on a pilot ladder winch reel which is located either within the ship's side opening or on the Upper Deck.

7.4.1 The pilot ladder winch reel should not be relied upon to support the pilot ladder when the pilot ladder is in use.

7.4.2 The pilot ladder should be secured to a strong point, independent of the pilot ladder winch reel.

7.4.3 The pilot ladder should be secured at deck level inside the ship side opening or, when located on the ship's Upper Deck, at a distance of not less than 915 mm measured horizontally from the ship's side inwards.

7.5 Mechanical securing of pilot ladder winch reel

All pilot ladder winch reels should have means of preventing the winch reel from being accidentally operated as a result of mechanical failure or human error.

7.5.1 Pilot ladder winch reels may be manually operated or, alternatively, powered by either electrical, hydraulic or pneumatic means.

7.5.2 Manually operated pilot ladder winch reels should be provided with a brake or other suitable arrangements to control the lowering of the pilot ladder and to lock the winch reel in position once the pilot ladder is lowered into position.

7.5.3 Electrical, hydraulic or pneumatically driven pilot ladder winch reels should be fitted with safety devices which are capable of cutting off the power supply to the winch reel and thus locking the winch reel in position.

7.5.4 Powered winch reels should have clearly marked control levers or handles which may be locked in a neutral position.

7.5.5 A mechanical device or locking pin should also be utilized to lock powered winch reels.

ANNEX 18**DRAFT MSC CIRCULAR****UNIFIED INTERPRETATIONS OF SOLAS CHAPTER V**

1 The Maritime Safety Committee, at its [eighty-seventh session] (12 to 21 May 2010), with a view to providing more specific guidance for vague expressions such as “The ship’s side shall be visible from the bridge wing”, which are open to different interpretations contained in IMO instruments, approved the unified interpretations of SOLAS chapter V prepared by the Sub-Committee on Safety of Navigation, as set out in the annex.

2 Member Governments are invited to use the annexed unified interpretations as guidance when applying relevant provisions of SOLAS chapter V to ships contracted for construction¹ on or after [1 January 2011] and to bring the unified interpretations to the attention of all parties concerned.

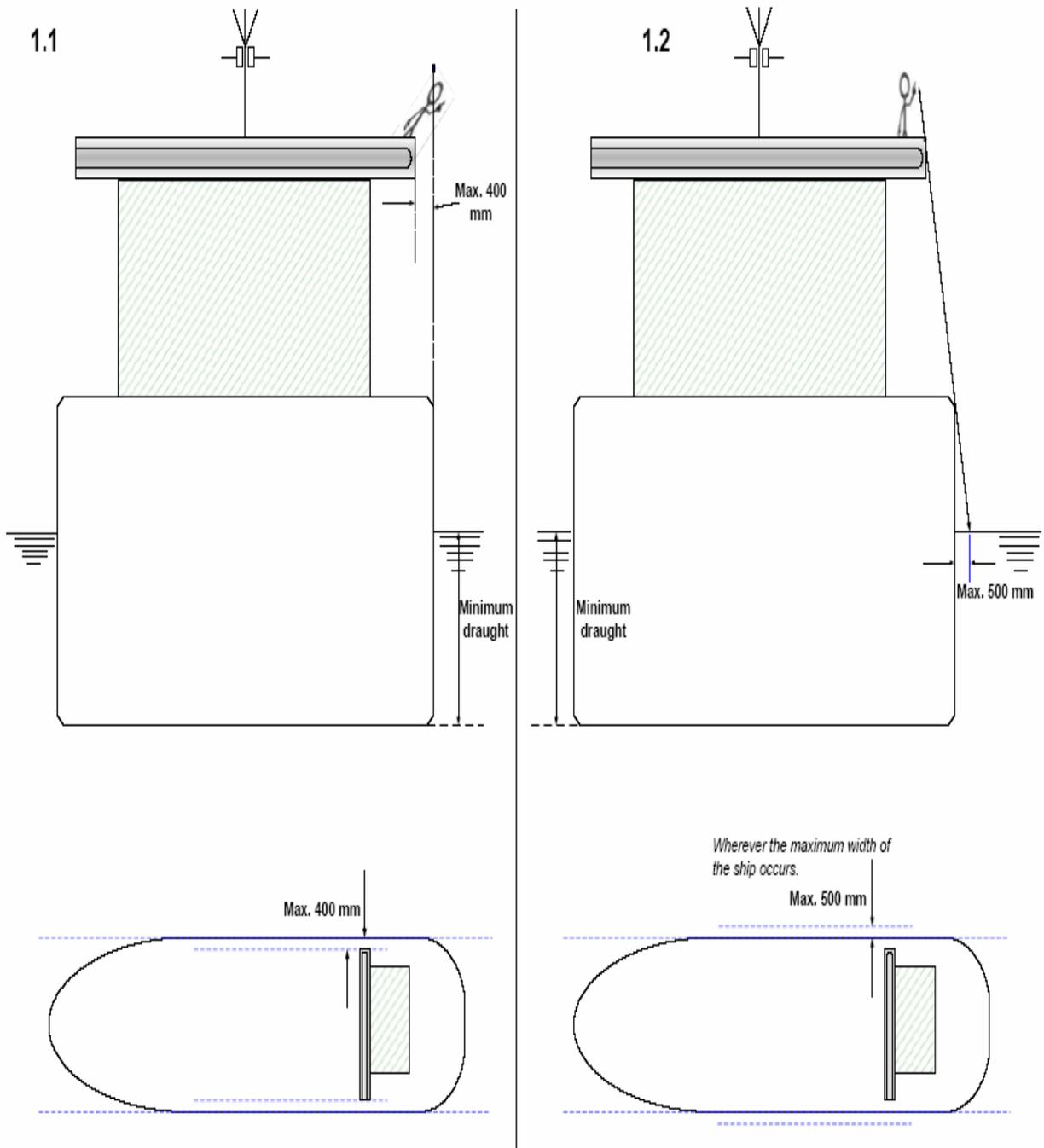
¹ The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder.

ANNEX

UNIFIED INTERPRETATIONS OF SOLAS CHAPTER V

Regulation V/22.1.6 – Navigation bridge visibility

- 1 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 bridge wing, which needs not to be more than 400 mm, to the location vertically right under the maximum beam of the ship at the lowest seagoing draught 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.
- 2 A schematic diagram depicting the unified interpretations is also attached herewith.
- 3 For particular types of ships such as tug/tow boat, offshore supply vessel (OSV), rescue ship, work ship (e.g., Floating Crane), 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 this ship type is changed through conversion then this interpretation in this paragraph would no longer apply.



ANNEX 19

**DRAFT REVISED WORK PROGRAMME OF THE SUB-COMMITTEE
AND PROVISIONAL AGENDA FOR THE FIFTY-SIXTH SESSION**

SUB-COMMITTEE ON SAFETY OF NAVIGATION (NAV)

		Target completion date/number of sessions needed for completion	Reference
1	Routeing of ships, ship reporting and related matters <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> 5.2.4.1	Continuous	MSC 72/23, paragraphs 10.69 to 10.71, 20.41 and 20.42; NAV 55/21, section 3
2	Casualty analysis (coordinated by FSI) <i>Strategic direction:</i> 12.1 <i>High-level action:</i> 12.1.2 <i>Planned output:</i> 12.1.2.1 to .2	Continuous	MSC 70/23, paragraphs 9.17 and 20.4; NAV 55/21, section 16
3	Consideration of IACS unified interpretations <i>Strategic direction:</i> 1.1 <i>High-level action:</i> 1.1.2 <i>Planned output:</i> 1.1.2.1	Continuous	MSC 78/26, paragraph 22.12; NAV 55/21, section 17
H.1	ITU matters <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> -	[2009 11]	MSC 69/22, paragraphs 5.69 and 5.70; NAV 55/21, section 8
.1	Radiocommunication ITU-R Study Group matters	[2009 11]	
H.2	Development of guidelines for IBS, including performance standards for bridge alert management <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> 5.2.4.2	2009	MSC 78/26, paragraph 24.30; NAV 54/25, section 4

- Notes:** 1 “H” means a high priority item and “L” means a low priority item. However, within the high and low priority groups, items have not been listed in any order of priority.
2 Items printed in bold letters have been selected for the provisional agenda for NAV 55.

SUB-COMMITTEE ON SAFETY OF NAVIGATION (NAV) (continued)

		Target completion date/number of sessions needed for completion	Reference
H.3.2	Development of an e-navigation strategy implementation plan (in cooperation with COMSAR and STW) <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> 5.2.4.4	2012	MSC 81/25, paragraphs 23.34 to 23.37; NAV 55/21, section 11
H.4.3	Guidelines on the layout and ergonomic design of safety centres on passenger ships <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> 5.2.4.2	[2009]10	MSC 81/25, paragraph 23.42; NAV 55/21, section 12
H.5	Code of conduct during demonstrations/campaigns against ships on high seas (in cooperation with FSI) <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> 5.2.4.2	2009	MSC 82/24, paragraph 21.36; NAV 54/25, section 10
H.6	Measures to minimize incorrect data transmissions by AIS equipment (in cooperation with FSI and COMSAR, as necessary) <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> 5.2.4.2	2009	MSC 82/24, paragraph 21.38; NAV 54/25, section 11
H.74	Review of vague expressions in SOLAS regulation V/22 <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> 5.2.4.2	[2009]10	MSC 82/24, paragraphs 21.39 and 21.40; NAV 55/21, section 13

SUB-COMMITTEE ON SAFETY OF NAVIGATION (NAV) (continued)

		Target completion date/number of sessions needed for completion	Reference
H.8	Revision of the Guidance on the application of AIS binary messages <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> 5.2.4.2	2009	MSC 82/24, paragraph 21.41; NAV 54/25, section 18
H.9	Improved safety of pilot transfer arrangements (in cooperation with DE) <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> 5.2.4.2	2009	MSC 82/24, paragraph 21.42; NAV 54/25, section 19
H.10 5	Amendments to the Performance standards for VDR and S-VDR <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> -	2011	MSC 83/28, paragraph 25.34; MSC 84/24, paragraph 22.43 NAV 55/21, section 6
H.11 6	Development of procedures for updating shipborne navigation and communication equipment (in cooperation with COMSAR) <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> -	2010	MSC 83/28, paragraph 25.33 NAV 55/21, section 7
H.12 7	Safety provisions applicable to tenders operating from passenger ships (coordinated by DE) <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> -	3 sessions	MSC 84/24, paragraph 22.40
H.13 8	Guidelines for consideration of requests for safety zones larger than 500 metres around artificial islands, installations and structures in the EEZ <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> -	2010	MSC 84/24, paragraph 22.41 NAV 55/21, section 5

SUB-COMMITTEE ON SAFETY OF NAVIGATION (NAV) (continued)

		Target completion date/number of sessions needed for completion	Reference
H.44 9	New symbols for AIS aids to navigation <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> -	2013*	MSC 86/26, paragraph 23.27
H.45 10	Amendments to the World-wide Radionavigation System <i>Strategic direction:</i> 5.2 <i>High-level action:</i> 5.2.4 <i>Planned output:</i> -	2011*	MSC 86/26, paragraph 23.28
H.46 11	Review of the principles for establishing the safe manning level of ships including mandatory requirements for determining safe manning (coordinated by STW) <i>Strategic direction:</i> 5 <i>High-level action:</i> 5.2.2 <i>Planned output:</i> 5.2.2.2	2010*	MSC 81/25, paragraphs 23.58 to 23.60; STW 40/14, section 8; MSC 86/26, paragraphs 9.10 and 23.24
H.47 12	Amendments to the 1966 LL Convention and the 1988 LL Protocol related to seasonal zone (coordinated by SLF) <i>Strategic direction:</i> 5 and 7 <i>High-level action:</i> 5.2.1/5.2.4/ 7.1.2 <i>Planned output:</i> -	2011*	MSC 86/26, paragraphs 23.25 and 23.44

* To be included in the provisional agenda for NAV 56.

SUB-COMMITTEE ON SAFETY OF NAVIGATION (NAV) – 56TH SESSION*

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Routing of ships, ship reporting and related matters
 - 4 Guidelines for consideration of requests for safety zones larger than 500 metres around artificial islands, installations and structures in the EEZ
 - 5 Amendments to the Performance standards for VDR and S-VDR
 - 6 Development of procedures for updating shipborne navigation and communication equipment
 - 7 ITU matters, including Radiocommunication ITU-R Study Group matters
 - 8 Development of an e-navigation strategy implementation plan
 - 9 Guidelines on the layout and ergonomic design of safety centres on passenger ships
 - 10 Review of vague expressions in SOLAS regulation V/22
 - 11 New symbols for AIS aids to navigation
 - 12 Amendments to the World-wide Radionavigation System
 - 13 Review of the principles for establishing the safe manning level of ships including mandatory requirements for determining safe manning
 - 14 Amendments to the 1966 LL Convention and the 1988 LL Protocol related to seasonal zone
 - 15 Casualty analysis
 - 16 Consideration of IACS unified interpretations
 - 17 Work programme and agenda for NAV 57
 - 18 Election of Chairman and Vice-Chairman for 2011
 - 19 Any other business
 - 20 Report to the Maritime Safety Committee

* Agenda item numbers do not necessarily indicate priority.

ANNEX 20

STATUS OF THE PLANNED OUTPUTS OF THE SUB-COMMITTEE RELATING TO THE HIGH-LEVEL ACTION PLAN OF THE ORGANIZATION AND PRIORITIES FOR THE 2008-2009 BIENNIUM AND 2010-2011 BIENNIUM

2008-2009 biennium

Strategic Directions (SDs) (A.989(25))			High-level Actions (HLAs)			Planned outputs for 2008-2009		
ENHANCING THE STATUS AND EFFECTIVENESS OF IMO								
1	IMO is the primary international forum for technical matters of all kinds affecting international shipping and legal matters related thereto. An inclusive and comprehensive approach to such matters will be a hallmark of IMO. In order to maintain that primacy, it will:	1.1	Further develop its role in maritime affairs <i>vis-à-vis</i> other intergovernmental organizations, so as to be able to deal effectively and comprehensively with complex cross-agency issues	1.1.2	Cooperate with the United Nations and other international bodies on matters of mutual interest	1.1.2.1	Cooperation with:	<ul style="list-style-type: none"> - IACS: consideration of unified interpretations Status: ongoing - IHO: PSSA charting methods and symbols Status: completed
						1.1.2.2	Liaison statements issued to or from (MSC):	<ul style="list-style-type: none"> - IALA: VTS, aids to navigation, e-navigation and AIS matters Status: ongoing - IEC: radiocommunications and safety of navigation Status: ongoing - IHO: hydrographic matters and promotion of ENCs covering various parts of the globe Status: ongoing - ITU: radiocommunications Status: ongoing
2	IMO will foster global compliance with its instruments governing international shipping and will promote their uniform implementation by Member States			2.1.1	Monitor and improve conventions, etc., and provide interpretation thereof if requested by Member States	2.1.1.5	Promotion of the implementation of mandatory and non-mandatory instruments (MSC)	Status: ongoing
DEVELOPING AND MAINTAINING A COMPREHENSIVE FRAMEWORK FOR SAFE, SECURE, EFFICIENT AND ENVIRONMENTALLY SOUND SHIPPING								
5	IMO's highest priority will be the safety of human life at sea. In particular, greater emphasis will be accorded to:			5.2.4	Keep under review measures to improve navigational safety, including e-navigation, ships' routing, ship reporting systems, vessel traffic services, requirements and standards for shipborne navigational aids and systems	5.2.4.1	New or amended mandatory IMO instruments (MSC):	<ul style="list-style-type: none"> - Amendments to COLREG Annex I Status: completed - Amendments to SOLAS for the carriage of BNAS Status: completed - Development of carriage requirements for ECDIS Status: completed - New routing measures and mandatory ship reporting systems, including associated protective measures for PSSAs Status: ongoing - Review of COLREGs regarding the right of way of vessels

Strategic Directions (SDs) (A.989(25))			High-level Actions (HLAs)		Planned outputs for 2008-2009	
						over pleasure craft Status: [completed]
					5.2.4.2	New or amended non-mandatory IMO instruments (MSC): <ul style="list-style-type: none"> - Amendments to the General Provisions on Ships' Routing Status: [completed] - Code of conduct during demonstrations/campaigns against ships on high seas Status: [completed] - Guidance on interpretation of UNCLOS provisions vis-à-vis IMO instruments Status: ongoing - Guidelines on the layout and ergonomic design of safety centres on passenger ships Status: ongoing - Improved safety of pilot transfer arrangements Status: [completed] - Measures to minimize incorrect data transmissions by AIS equipment Status: ongoing - Review of vague expressions in SOLAS regulation V/22 Status: [ongoing] - Revised performance standards for IBS Status: [completed] - Revision of the Guidance on the application of AIS binary messages Status: [completed]
					5.2.4.3	Update and development of worldwide radionavigation systems (GPS, GLONASS and GALILEO) (MSC) Status: [completed]
					5.2.4.4	Strategic review and policy framework for e-navigation (MSC) Status: [completed]
CURRENTLY NOT INCLUDED						
				5....		5.... Development of procedures for updating shipborne navigation and communication equipment Status: ongoing
				5....		5.... Amendments to the Performance standards status for VDR and S-VDR Status: ongoing

2010-2011 biennium

Strategic Directions (SDs) (A.989(25))		High-level Actions (HLAs)		Planned outputs for 2010-2011		Status
ENHANCING THE STATUS AND EFFECTIVENESS OF IMO						
1	IMO is the primary international forum for technical matters of all kinds affecting international shipping and legal matters related thereto. An inclusive and comprehensive approach to such matters will be a hallmark of IMO. In order to maintain that primacy, it will:	1.1	Further develop its role in maritime affairs <i>vis-à-vis</i> other intergovernmental organizations, so as to be able to deal effectively and comprehensively with complex cross-agency issues	1.1.2	Cooperate with the United Nations and other international bodies on matters of mutual interest	1.1.2.1 Cooperation with: - IACS: consideration of unified interpretations - IHO: PSSA charting methods and symbols Continuous 1.1.2.2 Liaison statements issued to or from (MSC): - IALA: VTS aids to navigation, e-navigation and AIS matters - IEC: radiocommunications and safety of navigation - IHO: hydrographic matters and promotion of ENC's covering various parts of the globe - ILO: seafarers' issues - ITU: radiocommunications - UNHCR: persons rescued at sea - WMO: meteorological issues Continuous
2	IMO will foster global compliance with its instruments governing international shipping and will promote their uniform implementation by Member States			2.1.1	Monitor and improve conventions, etc., and provide interpretation thereof if requested by Member States	2.1.1.5 Promotion of the implementation of mandatory and non-mandatory instruments (MSC) Continuous
DEVELOPING AND MAINTAINING A COMPREHENSIVE FRAMEWORK FOR SAFE, SECURE, EFFICIENT AND ENVIRONMENTALLY SOUND SHIPPING						
5	IMO's highest priority will be the safety of human life at sea. In particular, greater emphasis will be accorded to:			5.2.4	Keep under review measures to improve navigational safety, including e-navigation, ships' routing, ship reporting systems, vessel traffic services, requirements and standards for shipborne navigational aids and systems	5.2.4.1 New or amended mandatory IMO instruments (MSC): - New routing measures and mandatory ship reporting systems, - Including associated protective measures for PSSAs - Amendments to the 1966 LL Convention and the 1988 LL Protocol related to seasonal zones - Amendments to the World-Wide Radio-Navigation System Continuous Continuous 2011 5.2.4.2 New or amended non-mandatory IMO instruments (MSC): - Code of conduct during demonstrations/campaigns against ships on high seas - Guidance on interpretation of UNCLOS provisions <i>vis-à-vis</i> IMO instruments - Guidelines on the layout and ergonomic design of safety centres on passenger ships - Improved safety of pilot transfer arrangements - Measures to minimize incorrect data transmissions by AIS equipment - Review of vague expressions in SOLAS regulation V/22 - Revision of the Guidance on the application of AIS binary Messages 2010 Continuous 2010 2010 2010 2010

Strategic Directions (SDs) (A.989(25))				High-level Actions (HLAs)		Planned outputs for 2010-2011		Status
							<ul style="list-style-type: none"> - Procedures for updating shipborne navigation and Communication equipment - Amendments to the Performance standards for VDR and S-VDR - Guidelines for consideration of requests for safety zones larger than 500 metres around artificial islands, installations and structures in the EEZ - New symbols for AIS Aids to Navigation 	2010 2011 2010 2013 (ongoing)
						5.2.4.3	- Development of e-navigation strategy implementation plan (MSC)	2012 (ongoing)