



SUB-COMMITTEE ON SAFETY OF
NAVIGATION
47th session
Agenda item 13

NAV 47/13
26 July 2001
Original: ENGLISH

REPORT TO THE MARITIME SAFETY COMMITTEE

Table of contents

Section	Page No.
1 GENERAL	4
2 DECISIONS OF OTHER IMO BODIES	7
3 ROUTEING OF SHIPS, SHIP REPORTING AND RELATED MATTERS	7
4 INTEGRATED BRIDGE SYSTEMS (IBS) OPERATIONAL MATTERS	19
5 GUIDELINES RELATING TO SOLAS CHAPTER V	22
6 TRAINING AND CERTIFICATION OF MARITIME PILOTS AND REVISION OF RESOLUTION A.485(XII)	28
7 NAVIGATIONAL AIDS AND RELATED MATTERS	30
8 ITU MATTERS, INCLUDING RADIOCOMMUNICATION ITU-R STUDY GROUP 8 MATTERS	35
9 EFFECTIVE VOYAGE PLANNING FOR LARGE PASSENGER SHIPS	38
10 WORK PROGRAMME AND AGENDA FOR NAV 48	39
11 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2001	41
12 ANY OTHER BUSINESS	41
13 ACTION REQUESTED OF THE COMMITTEE	51

For reasons of economy, this document is printed in a limited number. Delegates are kindly asked to bring their copies to meetings and not to request additional copies.

LIST OF ANNEXES

- ANNEX 1 AGENDA FOR THE FORTY-SEVENTH SESSION INCLUDING A LIST OF DOCUMENTS
- ANNEX 2 NEW AND AMENDED TRAFFIC SEPARATION SCHEMES AND ASSOCIATED ROUTEING MEASURES
- ANNEX 3 JOINT STATEMENT BY DENMARK AND GERMANY
- ANNEX 4 ROUTEING MEASURES OTHER THAN TRAFFIC SEPARATION SCHEMES
- ANNEX 5 DRAFT RESOLUTION MSC. [...] (75) ON MANDATORY SHIP REPORTING SYSTEM
- ANNEX 6 STATEMENT BY THE ITALIAN DELEGATION ON SHIPS' ROUTEING
- ANNEX 7 DRAFT RESOLUTION MSC. [...] (75) ON AMENDMENT TO EXISTING MANDATORY SHIP REPORTING SYSTEM
- ANNEX 8 NOTES FOR THE SECRETARIAT TO DEVELOP A PAPER ON THE PREPARATION OF PROPOSALS FOR SUBMISSION ON SHIP ROUTEING SYSTEMS
- ANNEX 9 DRAFT ASSEMBLY RESOLUTION ON GUIDELINES FOR THE RECORDING OF EVENTS RELATED TO NAVIGATION
- ANNEX 10 DRAFT ASSEMBLY RESOLUTION ON GUIDELINES ON AUTOMATIC IDENTIFICATION SYSTEMS (AIS) OPERATIONAL MATTERS
- ANNEX 11 DRAFT MSC CIRCULAR ON GUIDELINES ON VDR OWNERSHIP AND RECOVERY
- ANNEX 12 DRAFT REVISED ANNEX 2 OF RESOLUTION A.485(XII) ON RECOMMENDATION ON OPERATIONAL PROCEDURES FOR MARITIME PILOTS OTHER THAN DEEP-SEA PILOTS
- ANNEX 13 DRAFT REVISED RESOLUTION A.815(19) ON WORLD WIDE RADIO NAVIGATION SYSTEM
- ANNEX 14 DRAFT RESOLUTION MSC. [...] (75) ON PERFORMANCE STANDARDS FOR BRIDGE NAVIGATION WATCH ALARMS
- ANNEX 15 DRAFT LIAISON STATEMENT TO ITU WORKING PARTY 8B
- ANNEX 16 REVISED WORK PROGRAMME OF THE SUB-COMMITTEE
- ANNEX 17 PROVISIONAL AGENDA FOR THE FORTY-EIGHTH SESSION
- ANNEX 18 DRAFT TERMS OF REFERENCE FOR THE WORK ON PLACES OF REFUGE

- ANNEX 19 DRAFT GENERAL FRAMEWORK ASSOCIATED WITH FUTURE
WORK ON PLACES OF REFUGE
- ANNEX 20 DRAFT GUIDELINES FOR SHIPS OPERATING IN ARCTIC ICE
COVERED WATERS (CHAPTERS 12 AND 13)
- ANNEX 21 NOTE FOR THE SUB-COMMITTEE ON STANDARDS OF TRAINING
AND WATCHKEEPING

1 GENERAL

1.1 The Sub-Committee on Safety of Navigation held its forty-seventh session from 2 to 6 July 2001 at the Headquarters of the Organization, under the chairmanship of Mr. K. Polderman (The Netherlands). The Vice Chairman, Dr. V.I. Peresykin (Russian Federation), was also present.

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

ANTIGUA AND BARBUDA	JAPAN
ARGENTINA	LIBERIA
AUSTRALIA	LITHUANIA
BAHAMAS	MALAYSIA
BANGLADESH	MALTA
BELGIUM	MARSHALL ISLANDS
BRAZIL	MEXICO
BULGARIA	NETHERLANDS
CANADA	NIGERIA
CHILE	NORWAY
CHINA	PANAMA
COLOMBIA	PERU
CROATIA	PHILIPPINES
CUBA	POLAND
CYPRUS	PORTUGAL
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	REPUBLIC OF KOREA
DENMARK	ROMANIA
ECUADOR	RUSSIAN FEDERATION
EGYPT	SAUDI ARABIA
ESTONIA	SINGAPORE
FINLAND	SOUTH AFRICA
FRANCE	SPAIN
GEORGIA	SWEDEN
GERMANY	THAILAND
GREECE	TURKEY
ICELAND	UKRAINE
INDONESIA	UNITED KINGDOM
IRAN (ISLAMIC REPUBLIC OF)	UNITED STATES
ISRAEL	URUGUAY
ITALY	VENEZUELA

and of the following Associate Member of IMO;

HONG KONG, CHINA

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

INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
LEAGUE OF ARAB STATES
EUROPEAN COMMISSION (EC)
INTERNATIONAL MOBILE SATELLITE ORGANIZATION (IMSO)

INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
INTERNATIONAL SHIPPING FEDERATION LIMITED (ISF)
INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
INTERNATIONAL UNION OF MARINE INSURANCE (IUMI)
INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS (ICFTU)
INTERNATIONAL ASSOCIATION OF MARINE AIDS TO NAVIGATION AND
LIGHTHOUSE AUTHORITIES (IALA)
INTERNATIONAL RADIO-MARITIME COMMITTEE (CIRM)
THE BALTIC AND INTERNATIONAL MARITIME COUNCIL (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 ASSOCIATION OF INDEPENDENT TANKERS OWNERS
(INTERTANKO)
SOCIETY OF INTERNATIONAL GAS TANKER AND TERMINAL OPERATORS
(SIGTTO)
INTERNATIONAL LIFEBOAT FEDERATION (ILF)
INTERNATIONAL COUNCIL OF CRUISE LINES (ICCL)
INTERNATIONAL ASSOCIATION OF DRY CARGO SHIPOWNERS
(INTERCARGO)
INTERNATIONAL SAILING FEDERATION (ISAF)
INTERNATIONAL MARINE CONTRACTORS ASSOCIATION (IMCA)
WORLD NUCLEAR TRANSPORT INSTITUTE (WNTI)
INTERNATIONAL HARBOUR MASTERS' ASSOCIATION (IHMA)
ARAB FEDERATION OF SHIPPING (AFS)
FRIENDS OF THE EARTH INTERNATIONAL (FOEI)
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATIONS (IFSMA)
WORLD WIDE FUND FOR NATURE (WWF)
INTERNATIONAL SALVAGE UNION (ISU)
INTERNATIONAL PARCEL TANKERS ASSOCIATION (IPTA)

1.4 In welcoming the participants, the Secretary-General first referred to the issue of "Places of refuge" which had been given high prominence during the incident involving the fully laden tanker **Castor** earlier in the year. He recalled that MSC 73 had highlighted the matter, one month before the incident had happened, among the safety-related issues selected for further consideration following the post-**Erika** casualty. The **Castor** incident had brought to light, once again, the question of "ports of refuge", "sheltered waters" or "safe havens". Speaking on this at FP 45 and subsequently at MSC 74, he had suggested that the time had come for IMO to consider the problem globally, as a matter of priority, and to adopt any measures required to ensure that, in the interests of safety of life at sea and environmental protection, coastal States reviewed their contingency arrangements so that disabled ships were provided with assistance and facilities as might be required in the circumstances. When he spoke on the issue at the conclusion of the debate at MSC 74, he had said that, although he could understand the political and technical connotations surrounding the sovereignty aspects of the issue, he believed that they should not hamper the progress that IMO should make in providing suitable answers to a global problem. And that, because of the non-mandatory character of the approach envisaged by IMO, he was confident that any concerns associated with the problem would be alleviated and that the matter would be tackled in IMO's usual successful manner to the benefit of safety of life at sea and environmental protection. The MSC had decided that, at this stage, the matter should be considered from the operational point of view and, as a consequence, it had

designated the Sub-Committee as the co-ordinating sub-committee. The Sub-Committee was therefore expected to prepare draft terms of reference on how to proceed for MSC 75 to consider, and for MEPC 47 to take into account, in any further work the MSC intended to carry out. The Sub-Committee was also requested to identify other IMO bodies which should be involved and to start the preparation of draft guidelines for coastal States to use in the identification and designation of places of refuge, for the evaluation of risks associated with relevant operations and for masters of ships in distress.

Turning to other important tasks before the Sub-Committee, the Secretary-General highlighted the consideration of proposals for routing and other measures aimed at enhancing the safety of navigation in areas of identified navigational hazards and environmentally sensitive sea areas. Among these proposals he mentioned particularly those calling for the establishment of new, and amendments to existing, traffic separation schemes; the establishment of, and amendments to, existing mandatory ship reporting systems; the establishment of three mandatory no anchoring areas; the establishment of, and amendments to, areas to be avoided; the establishment of recommended routes; the consideration of protective routing measures associated with Particularly Sensitive Sea Areas; and advice to the twenty-second session of the Assembly on the revised draft Assembly resolution on Identification and Protection of Special Areas and Particularly Sensitive Sea Areas.

Recalling that the revised text of SOLAS chapter V, as adopted by MSC 73, was expected to enter into force on 1 July 2002, he advised that the Sub-Committee was requested to finalize, so that they were in place before that date, at this session a set of important guidelines:

- .1 on recording events related to navigation, the proposed draft framework of this was approved in principle by MSC 73 (in the form of an Assembly resolution); and
- .2 on Automatic Identification Systems operational matters, which was also approved in principle by MSC 73 (also in the form of an Assembly resolution); as well as
- .3 on voyage data recorder ownership and recovery, for approval by MSC 75.

With regard to pilotage matters, the Sub-Committee had been requested to review and revise, from an operational aspect, the requirements of Annex 2 to resolution A.485 dealing with the training, qualifications and operational procedures for maritime pilots other than deep-sea pilots. This item had been with the Sub-Committee for the last three years and it was therefore important that it should be finalized at this session.

As to navigational aids and related matters, the Secretary-General mentioned that the Sub-Committee was expected to consider the revision of resolution A.815 on the World-Wide Radionavigation System, while, as part of its work on performance standards for navigational equipment, it was expected to finalize those for bridge watch alarms. In addition, a feasibility study on the mandatory carriage of voyage data recorders for existing cargo ships would be started at this session, as requested by MSC 73.

1.5 The Chairman thanked the Secretary-General for his words of encouragement and stated that the Secretary-General's advice and request would be given every consideration in the Sub-Committee's deliberations.

1.6 The delegation of Peru brought to the attention of the Sub-Committee the issue of maritime transport of nuclear and plutonium wastes, as for some time, this type of transport had been taking place on a regular basis from Europe to Asia, using the route of the Straits of Magellan. The latest case was in January 2001, which led the Permanent Commission of the South Pacific to express its concern, and also one of the affected countries to submit an additional declaration to the concerned States. The passage of the ship in January was not an isolated case and constituted just one of a series of planned voyages. Plutonium was an element of very high radioactivity and, should a maritime accident occur, an ecological disaster might occur.

The Peruvian delegation further stated that Peru as a prominent maritime nation, depended on the sea for a great proportion of its economy and resources and for this reason its Maritime Authority was concerned over the possibility of a casualty, and this concern had been transmitted to the Chairmen of the Maritime Safety Committee and the Marine Environment Protection Committee, but unfortunately there had been no response. The delegation further requested that consideration be given to the use of an alternative route for such transport.

Adoption of the agenda

1.7 The Sub-Committee adopted the agenda, as approved by MSC 74 (NAV 47/1 and NAV 47/2/2, annex 2). The agenda of the session, including a list of documents submitted under each agenda item is given in annex 1.

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted, in general decisions and comments (NAV 47/2, NAV 47/2/1 and NAV 47/2/2), pertaining to its work made by MEPC 45, MSC 73, COMSAR 5, STW 32, FSI 9, DE 44, MEPC 46 and MSC 74 and considered them under the relevant agenda items.

3 ROUTEING OF SHIPS, SHIP REPORTING AND RELATED MATTERS

New Traffic Separation Schemes (TSSs)

Routeing measures for the Adriatic Sea

3.1 At the request of the Government of Italy (NAV 47/3/5) and based on agreements between the Governments of Albania, Croatia, Italy, Slovenia and Yugoslavia, the Sub-Committee examined a proposal on the establishment of new traffic separation schemes including recommended routes system in the Adriatic Sea.

3.2 The delegation of the Republic of Croatia stated that the Adriatic Sea as a semi-closed and particularly sensitive sea deserved special attention and therefore its protection was of the utmost importance for every country along its coast. It also emphasized that any improvement in that field had to be based on a common approach and in close co-operation between all interested coastal states, which had been done through several agreements signed among the interested coastal states, and which should serve as the basis for establishment of the routeing system, traffic separation schemes and ship reporting system in the Adriatic Sea.

In that respect, the Croatian delegation supported the Italian initiative in submitting documents (NAV 47/3/4 and NAV 47/3/5) for implementation of a common routeing system, traffic separation schemes and ship reporting system in the Adriatic Sea with some necessary amendments relating to VHF frequencies, the reference to Croatian charts, and the missing

Area 7 and the new proposal for the waypoint (G) in the Annex of the document NAV 47/3/5. The aforementioned amendments were in the line with bilateral and trilateral agreements and if these could not be accepted at NAV 47, they should be further considered between the interested coastal states and submitted to NAV 48 as a joint proposal.

Off the Mediterranean Coast of Egypt

3.3 At the request of the Government of Egypt (NAV 47/3/12), the Sub-Committee examined a proposal on the establishment of new traffic separation schemes including recommended routes off the Mediterranean coast of Egypt and explaining the need to set up and establish safe routing measures in the approach to the Egyptian Ports and the north entrance to the Suez Canal, and to ensure that the safety of navigation is not affected by:

- the operation of exploration and drilling for natural gas and crude oil activities on the Egyptian coast in the territory and economic water; and
- the increased traffic volume due to the opening of new port (Shark El Tafrea) east of Port Said.

Amendments to existing Traffic Separation Schemes (TSSs)

Amendment to the existing Traffic Separation Scheme “South of Gedser”

3.4 The Sub-Committee considered a proposal by Denmark and Germany (NAV 47/3/2) calling for an amendment to the existing traffic separation scheme "South of Gedser" by an extension of the deep-water route "DW 17m" by 5 nautical miles southward. The proposed amendment was based on a simulation study carried out in Germany, which had confirmed the need for such an amendment. A demonstration of the simulation exercise carried out by the delegation of Germany during the meeting week was received with appreciation. Due to the increasing number of accidents/groundings in the area in recent times and the identification of navigational hazards owed to the sea bottom configuration, coupled with an anticipated increase in the deep-draught traffic owing to the expected completion of the Primorsk oil terminal in the Russian Federation in November 2001, the proposing Governments expressed deep concern as to the urgent need to improve the safety of navigation in the area. They further informed the Sub-Committee of their intention to implement the proposed amendment, subject to approval by the Sub-Committee, as of 6 January 2002, to direct the traffic flow of deep-draught vessels clear of the identified hazards. In order that the matter be given the widest possible publicity, the two Governments expressed their intention, in addition to informing shipping (including by appropriate Notices to Mariners) of the measures they would take to extend the deep-water route referred to above, to communicate pertinent information to the Secretary-General requesting that an appropriate circular be issued to bring the amended measure to the attention of shipmasters and all other parties concerned.

Amendment to the Ouessant traffic separation scheme

3.5 At the request of the Government of France, the Sub-Committee examined a proposal (NAV 47/3/6 and Corr.1 English Only) to modify the Ouessant traffic separation scheme to enhance maritime safety in the Bay of Biscay and the English Channel.

Amendment to the Traffic Separation Scheme “In the approaches to Los Angeles – Long Beach”

3.6 At the request of the Government of the United States, the Sub-Committee examined a proposal (NAV 47/3/8) to amend the existing traffic separation scheme “In the Approaches to Los Angeles – Long Beach”.

Amendment to the Traffic Separation Schemes in the Strait of Juan De Fuca and Its Approaches in Puget Sound and Its Approaches in Haro Strait, Boundary Pass, and in the Strait of Georgia

3.7 At the request of the Governments of the United States and Canada, the Sub-Committee examined a proposal (NAV 47/3/9) to amend the existing traffic separation schemes (TSSs) “In the Strait of Juan De Fuca and Its Approaches, “In Puget Sound and Its Approaches”, and to add TSSs and other routing measures “In Haro Strait, Boundary Pass, and in the Strait of Georgia”. The TSSs “In the Strait of Juan De Fuca and Its Approaches” were adopted by IMO on April 3, 1981, and implemented on January 1, 1982. The TSSs “In Puget Sound and Its Approaches” were adopted by IMO in December 1992, and implemented on June 10, 1993.

Amendment to ships routing system in the East part of the Gulf of Finland in connection with the coming into operation of the new oil port of Primorsk

3.8 At the request of the Government of the Russian Federation, the Sub-Committee examined a proposal (NAV 47/3/8) to amend the existing traffic separation schemes in the Gulf of Finland which are located in the territorial waters of the Russian Federation and were adopted by IMCO by resolution A.284(VIII) on 20 November 1973 and the establishment of a new deep water route in connection with the coming into operation of the new oil port of Primorsk.

3.9 The Sub-Committee also noted the additional detailed information provided by the Russian Federation (NAV 47/INF.6) on ships’ routing and rules of navigation from the Rodsher Island to the port of Primorsk.

Routing measures other than TSSs

Associated routing measures related to PSSAs around the Florida Keys and Malpelo Island

3.10 The Sub-Committee further noted that MEPC 46 had instructed NAV 47 to review and approve the associated routing measures related to PSSAs around the Florida Keys and Malpelo Island.

3.11 The Sub-Committee noted that MEPC 46, having considered a proposal by the United States (MEPC 46/6/2), agreed, in principle, that it met all of the requirements laid down in resolutions A.720(17) and A.885(21). However, prior to giving final approval to this proposal, MEPC 46 instructed NAV 47 to report back on any navigational issues that may need to be taken into account prior to final approval is given, so that these may be reflected in the appropriate MEPC resolution.

Mandatory no anchoring areas in the Tortugas Ecological Reserve and the Tortugas Bank in the Florida Keys

3.12 At the request of the Government of the United States, the Sub-Committee examined a proposal (NAV 47/3/1) for the establishment of three mandatory no anchoring areas, which is an integral part of a proposal to identify the marine area around the Florida Keys as a Particularly Sensitive Sea Area (PSSA). The establishment of these no anchoring areas would be one of the associated protective measures to protect the area proposed for PSSA designation from the risk of damage.

Amendment of the northernmost area to be avoided off the Florida coast

3.13 At the request of the Government of the United States, the Sub-Committee examined a proposal (NAV 47/3) for the amendment of the northernmost Area to be Avoided (ATBA) off the Florida Coast, which is an integral part of a proposal to identify the marine area around the Florida Keys as a Particularly Sensitive Sea Area (PSSA).

Establishment of an Area to be Avoided around Malpelo Island

3.14 The Sub-Committee further noted that MEPC 46 having considered a proposal by Colombia (MEPC 46/6/3) and following general support agreed to the proposal in principle. However, prior to giving final approval to this proposal and in view of the fact that the “measure to be adopted” is the introduction of an “area to be avoided”, the MEPC instructed NAV 47 to review any navigational issues that may need to be taken into account and report back to MEPC 47. MEPC 46 also requested to NAV 47 to ensure that the co-ordinates of the geographical points for the “area to be avoided” as given in document MEPC 46/6/3 are correct or to modify them accordingly.

3.15 The Sub-Committee considered the document by Colombia (MEPC 46/6/3) for the establishment of an “Area to be avoided” around Malpelo Island, which is an integral part of a proposal to identify the marine area around Malpelo Island as a Particularly Sensitive Sea Area (PSSA).

Amendment of the Area to Be Avoided “Off the Washington Coast”

3.16 At the request of the Government of the United States, the Sub-Committee examined a proposal (NAV 47/3/11) to amend the IMO-adopted Area to be Avoided (ATBA) “Off the Washington Coast” to increase its size and extend its applicability to commercial ships of 1,600 gross tonnage and above.

Recommended routes in the Strait of Juan de Fuca

3.17 At the request of the Government of the United States, the Sub-Committee examined a proposal (NAV 47/3/10) for recommended routes in the United States’ waters of the Strait of Juan de Fuca for smaller, slower moving vessels that normally do not use the traffic separation scheme.

Area to be avoided around exploitation platform

3.18 At the request of the Government of Canada, the Sub-Committee examined a proposal (NAV 47/3/14) for an “area to be avoided” by all ships around the Terra Nova Floating Production Storage and Offloading (FPSO) vessel located on the Grand Banks of

Newfoundland. Canada proposes the establishment of a 10 nm radius “area to be avoided” centred at the Terra Nova FPSO.

3.19 The Sub-Committee noted that some delegations were concerned at the establishment of an “area to be avoided” around a FPSO because it was felt that the proposed 10 nautical miles radius was rather excessive and might hamper the freedom of navigation. Accordingly, it was suggested that the issue be considered on a fundamental basis in the Working Group.

Area to be avoided - In the region of the Shetland Islands

3.20 At the request of the Government of the United Kingdom, the Sub-Committee examined a proposal (NAV 47/3/15) for international approval to amend the wording in Ships Routeing with respect to the two Areas to be Avoided (ATBAs) in the region of the Shetland Islands.

Mandatory Ship Reporting Systems

Mandatory Ship Reporting Systems in Greenland Waters

3.21 At the request of the Government of Denmark, the Sub-Committee examined a proposal (NAV 47/3/3) to establish mandatory ship reporting systems in Greenland Waters in accordance with the provisions of SOLAS regulation V/8-1.

Establishment of a Mandatory Ship Reporting System in the Adriatic Sea known as “ADRIATIC TRAFFIC”

3.22 At the request of the Government of Italy, the Sub-Committee examined a proposal (NAV 47/3/4) providing information on agreements between the Governments of Albania, Croatia, Italy, Slovenia and Yugoslavia on the establishment of a Mandatory Ship Reporting System in the Adriatic Sea known as “ADRIATIC TRAFFIC”.

3.23 The comments of the delegation of the Republic of Croatia on this proposal are reflected in paragraph 3.2.

Amendment to the existing mandatory ship reporting system “Off Ushant”

3.24 At the request of the Government of France, the Sub-Committee examined a proposal (NAV 47/3/7) to amend the mandatory ship reporting system "Off Ushant".

Identification and Designation of Particularly Sensitive Sea Areas

3.25 The Sub-Committee noted that MEPC 46 had prepared and approved, in principle, the text of the revised draft Assembly resolution on Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas to replace resolutions A.720(17) and A.885(21) and referred it to NAV 47 for review and comments. In addition, MEPC 46 approved, in principle, the text of the revised draft Assembly resolution (MEPC46/23, annex 6), and instructed NAV 47 to review the text carefully and submit its comments directly to the twenty-second session of the Assembly.

3.26 The Sub-Committee further noted that NAV 47 was requested to review specifically section 9.1 of the Guidelines relating to identification of PSSAs and all associated protective measures on charts in accordance with symbols and methods of the IHO.

3.27 In this context, the delegation of the United Kingdom raised the issue of the importance of the standardized symbol for the depiction of PSSAs on nautical charts. The observer from the IHO informed the Sub-Committee that work was in progress within the IHO and the Ships' Routeing Working Group would be updated on the matter during the course of the meeting.

Ship strikes of endangered northern right whales

3.28 The Sub-Committee appreciated the information provided by the United States (NAV 47/INF.2) on the results of the effectiveness of the two ship reporting systems, "Off the northeastern and southeastern coasts of the United States", adopted by the Maritime Safety Committee at its seventieth session and noted that at the time of adoption of the systems, the United States had offered to provide this information to the Sub-Committee.

3.29 The United States was pleased to report that in 2001, thirty right whale calves were born. Unfortunately, two of these calves have been killed by ship strikes. Efforts were thus continuing to find ways to address this issue. The United States thanked IMO Member Governments and the maritime community for their assistance in reducing ship strikes of right whales. Further information on this issue and related ongoing efforts was available from the United States Coast Guard Headquarters (G-OPL), 2100 Second Street SW, Washington DC 20593 or Office of Protected Resources, NOAA Fisheries, 1315 East-West Highway, Silver Spring, Maryland 20910. Any information on collisions between ships and whales in United States waters should be reported to the United States Coast Guard at the provided address. These reporting systems enlist mariners in these efforts and provide them with information on the issue of ship strikes as well as things such as the last known location of right whales. Compliance with these mandatory systems has been increasing. As of December 2000, compliance rates were estimated at 53%. Vigorous efforts were continuing to further perfect the system to increase compliance, including education of mariners on the critical need to submit properly formatted messages.

North Atlantic Right whales: Resolution of the International Whaling Commission

3.30 The Sub-Committee noted the information provided by Sweden (NAV 47/INF.3) on a resolution adopted by the International Whaling Commission (IWC) concerning the North Atlantic Right whales.

Sunk Precautionary Area

3.31 The Sub-Committee noted the information provided by the United Kingdom (NAV 47/INF.4) on the modification to the existing Sunk Precautionary Area at the approach to Harwich Haven and the Thames Estuary on the east coast of England.

3.32 The United Kingdom stated that in 1999 a precautionary area warning vessels to 'navigate with extreme caution' was established in the area of the sunk. Due to increased vessel traffic density in the approaches to Harwich Haven further risk control measures were undertaken and developed. These included promulgation of area information to the mariner, management of communications in the area and traffic information in the area. A dedicated VTS information service will be established and charts and publications will be suitably amended. Member Governments were requested to bring this information to the attention of their maritime administration and ships entitled to fly their flag.

Fisherman's Gat Precautionary Area

3.33 The Sub-Committee noted the information provided by the United Kingdom (NAV 47/INF.5) on the Fisherman's Gat scheme in the Thames Estuary.

3.34 The United Kingdom stated that the Fishermans GAT is a stable channel, which provides an alternative access to the inner estuary of the Thames. The Port of London Authority has therefore established extra VTS reporting points, a VTS procedure and an associated precautionary area. British admiralty charts of the area have also been suitably appended. Member Governments are requested to bring this information to the attention of their maritime administration and ships entitled to fly their flag.

Re-establishment of the Ships' Routeing Working Group

3.35 After 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), as follows:

- .1 consider all documents submitted under item 3 regarding routeing of ships, mandatory ship reporting and related matters and prepare routeing and reporting measures, as appropriate and recommendations for consideration and approval by Plenary;
- .2 with respect to the proposal by Denmark and Germany (NAV 47/3/2) review the urgency of the situation and propose a course of action for an early implementation, in line with the established guidelines and procedures of the Organization for the adoption and amendment of TSSs;
- .3 consider the documents referred by MEPC 46 (NAV 47/2/1, paragraph 2.1), regarding all associated routeing measures related to PSSAs around the Florida Keys and Malpelo Islands including review of draft Assembly resolution on Identification and Protection of Particularly Sensitive Sea Areas and prepare as appropriate and recommendations for consideration and approval by Plenary;
- .4 review the request of STW 32 (STW 32/16, paragraph 5.4) inviting NAV to provide examples clearly demonstrating the issues involved so that STW can develop appropriate guidance for maritime training institutes in the matter of conflicting actions in collision avoidance;
- .5 if time permits have a preliminary discussion on the development of information for the improvement of proposals on routeing measures; and
- .6 take into account the role of the human element including the Human Element Analysing Process (HEAP) given in MSC/Circ.878/MEPC/Circ.346 in all aspects of the items considered.

3.36 Having received the working group's report (NAV 47/WP.6), the Sub-Committee took action as summarised hereunder.

New Traffic Separation Schemes (TSSs)

Routing measures for the Adriatic Sea

3.37 The Sub-Committee noted the information of Croatia, also on behalf of Slovenia, that the proposal was not submitted as a joint proposal in accordance with SOLAS Chapter V, regulation 8(f).

3.38 It was also observed that the description of the proposed schemes was not in conformity with the standard format given in the General Provision of Ships Routeing.

3.39 Some delegations observed that the area of the Routeing Measures was too extensive and the terminology of some of the proposed Routeing Measures was not in accordance with General Provision of Ships Routeing.

3.40 The Sub-Committee was unable to agree to the proposal by Italy. Italy and Croatia indicated that further consultations with the governments concerned will be conducted and that they intend to submit a new proposal for the forty-eighth session of the Sub-Committee.

Off the Mediterranean Coast of Egypt

3.41 The Sub-Committee observed that the description of the proposed scheme was not in accordance with the standard format given in the General Provisions on Ships' Routeing and urged Member Governments to comply with these provisions in future submissions (see paragraphs 3.80 to 3.85 and annex 8).

3.42 The Sub-Committee approved to the proposed traffic separation schemes, with the improved description of these schemes, given at annex 2 to this report; which the Committee is invited to adopt.

3.43 The Sub-Committee did not approve the proposed recommended routes, presented as coastal routes, as parts of these routes run close to and or parallel with the new traffic separation schemes.

3.44 Egypt indicated that these routes already exist as coastal routes, which will be amended before the implementation of the new and amended traffic schemes, and will submit a proposal for new recommended routes to a future session of the Sub-Committee.

Amendments to existing Traffic Separation Schemes (TSSs)

Amendment to the existing Traffic Separation Scheme "South of Gedser"

3.45 The Sub-Committee agreed to the amended traffic separation scheme as given at annex 2 and, as recommended by the Working Group on Ships' Routeing.

3.46 In addition and, so that the amended measure, subject to approval by the Sub-Committee, be circulated as an IMO-adopted amended one and, in order to bring this to the attention of Member Governments as soon as possible and, furthermore, being concerned that the local conditions merited expedient consideration which, if the established procedures were to be followed strictly would mean a formal implementation date 6 months after adoption by MSC 75 in May 2002, the Sub-Committee took note of the possibility of the two Governments concerned submitting a proposal to the forthcoming twenty-second session of the Assembly requesting

adoption of the amended measure; circulation immediately thereafter; and entry into force as an IMO-adopted amended routeing measure six months after adoption by the Technical Committee of the Assembly, i.e. in June 2002.

3.47 The Sub-Committee noted that the proposed course of action, if taken by Denmark and Germany, would be without prejudice to the decisions of the Maritime Safety Committee on the issue and agreed that, should decisions be made in accordance with the proposed course of action, such course of action should be regarded as a reaction to exceptional circumstances and should, in no way, be seen as setting a precedent for the future.

3.48 Denmark and Germany will implement the extended deep water route as an interim measure to become effective 6 January 2002. This interim measure will be promulgated by Notices to Mariners and a note to the Hydrographic Offices concerned. It was the view of the Working Group that the Organisation should provide appropriate assistance in dissemination of this information.

3.49 Denmark and Germany made a statement on the implementation of the amended Deep Water Route which is given in annex 3.

Amendment to the Ouessant traffic separation scheme

3.50 The Sub-Committee agreed with the proposed amended scheme with an improved description of the scheme as prepared by France, given at annex 2, which the Committee is invited to adopt.

3.51 The Sub-Committee noted that the amended scheme will be implemented on 1 May 2003.

Amendment to the Traffic Separation Scheme “In the approaches to Los Angeles – Long Beach”

3.52 The Sub-Committee approved the proposed amendments to the existing traffic separation scheme “In the Approaches to Los Angeles – Long Beach”, given in annex 2, which the Committee is invited to adopt.

Amendment to the Traffic Separation Schemes in the Strait of Juan De Fuca and Its Approaches in Puget Sound and Its Approaches in Haro Strait, Boundary Pass, and in the Strait of Georgia

3.53 The Sub-Committee corrected the terminology of the proposed two-way traffic lanes in some sections to a two-way route in accordance with the requirements of General Provisions on Ships’ Routeing and approved the proposed amendments to the existing traffic separation schemes (TSSs) “In the Strait of Juan De Fuca and Its Approaches, “In Puget Sound and Its Approaches”, and to add TSSs and other routeing measures “In Haro Strait, Boundary Pass, and in the Strait of Georgia”, given in annex 2, which the Committee is invited to adopt.

Amendment to ships routeing system in the East part of the Gulf of Finland in connection with the coming into operation of the new oil port of Primorsk

3.54 The Sub-Committee agreed with the proposed amendments, as given at annex 2.

3.55 The Sub-Committee agreed that this was also an urgent case, which justified an interim measure by the Russian Federation for the early implementation of the traffic separation scheme,

consistent with the determination made in paragraph 3.16 of the report of the Ships-Routeing Working Group (NAV 47/WP.6).

3.56 The Russian Federation informed the Sub-Committee that the amended traffic separation scheme which is located in the territorial waters of the Russian Federation will be implemented by the Russian Federation as an interim measure on 1 November 2001 pending the formal adoption of the amended scheme by the Committee and implementation at a date six months later. This interim measure will be promulgated by notices to mariners and Hydrographic offices concerned.

Routeing measures other than TSSs

Associated routeing measures related to PSSAs in the marine area around the Florida Keys

Mandatory no anchoring areas in the Tortugas Ecological Reserve and the Tortugas Bank in the Florida Keys

3.57 The Sub-Committee agreed with the establishment of three mandatory no anchoring areas in the Tortugas Ecological Reserve and the Tortugas Bank in the Florida Keys, which is an integral part of a proposal to identify the marine area around the Florida Keys as a Particularly Sensitive Sea Area (PSSA), as given in annex 4, which the Committee is invited to adopt. It further requested the Secretariat to convey its decision to the MEPC.

Amendment of the northernmost area to be avoided off the Florida coast

3.58 The Sub-Committee agreed to approve the amendment of the northernmost area to be avoided (ATBA) off the Florida coast, which is an integral part of a proposal to identify the marine area around the Florida Keys as a Particularly Sensitive Sea Area (PSSA), as given in annex 4, which the Committee is invited to adopt. It further requested the Secretariat to convey its decision to the MEPC.

Associated routeing measures related to PSSAs around Malpelo Island

3.59 The Sub-Committee agreed to approve the establishment of an "Area to be avoided" around Malpelo Island, which is an integral part of a proposal to identify the marine area around Malpelo Island as a Particularly Sensitive Sea Area (PSSA), as given in annex 4 which the Committee is invited to adopt. It further requested the Secretariat to convey its decision to the MEPC. The Sub-Committee also confirmed the correct co-ordinates of the geographical points for the "area to be avoided".

Other PSSA matters

3.60 The Sub-Committee noted that it would facilitate consideration of ships' routeing and reporting proposals if countries' submitted proposals, separate from its PSSA application, directly to the Sub-Committee on Safety Navigation. Such proposals should set forth the information required by SOLAS and the general provisions on ships' routeing or the guidelines and criteria for ships reporting systems, as appropriate.

Amendment of the Area to Be Avoided "Off the Washington Coast"

3.61 The Sub-Committee agreed to approve the amendment to the Area to be Avoided (ATBA) "Off the Washington Coast" to increase its size and extend its applicability to

commercial ships of 1,600 gross tonnage and above, as given in annex 4 which the Committee is invited to adopt.

Recommended routes in the Strait of Juan de Fuca

3.62 The Sub-Committee agreed the recommended routes in the United States' waters of the Strait of Juan de Fuca for smaller, slower moving vessels that normally do not use the traffic separation scheme with changes to the terminology from "recommended routes" to a two-way route in accordance with the General Provisions of Ships' Routeing, as given in annex 4 which the Committee is invited to adopt.

Area to be avoided around exploitation platform

3.63 Taking account of discussions in Plenary, the delegation of Canada clarified the reason for proposing a 10 nautical mile radius for the "Area to be Avoided" around a Floating Production Storage and Offloading vessel (FPSO).

3.64 Some delegations were not in favour of the establishment of an "Area to be Avoided" around a FPSO because it was felt that it would lead to other such ATBA's in other regions restricting the rights of freedom of navigation in contravention of UNCLOS while some delegations expressed concern about the excessive radius.

3.65 It was observed that the purpose of the proposed routing measures was more in line with a precautionary area and Canada agreed with the Working Group to the establishment of a precautionary area with 10 miles radius instead of an area to be avoided.

3.66 The Sub-Committee agreed the establishment of a Precautionary area around the Terra Nova FPSO, as given in annex 4 which the Committee is invited to adopt.

Area to be avoided - In the region of the Shetland Islands

3.67 The Sub-Committee agreed to amend the wording in Ships Routeing with respect to the two existing ATBAs in the region of the Shetland Islands, as given in annex 4 which the Committee is invited to adopt.

Implementation of the new and amended traffic separation schemes including routeing measures other than TSSs

3.68 The new and amended traffic separation schemes including routeing measures other than TSSs given in annexes 2 and 4, which the Committee is invited to adopt, in accordance with resolution A.858(20), will be implemented at 0000 hours UTC six months after their adoption by the Committee.

Mandatory Ship Reporting Systems

Mandatory Ship Reporting Systems in Greenland Waters

3.69 The Sub-Committee agreed to change the area for reporting so as to cover the continental shelf or exclusive economic zone off Greenland for ships entering port or places of call and also made some minor amendments to the description of the mandatory reporting system and prepared the draft MSC resolution on a mandatory ship reporting system "In Greenland Waters", given in annex 5, which the Committee is invited to adopt, in accordance with

resolution A.858(20). The system will enter into force at 0000 hours UTC, six months after its adoption by the Committee.

Establishment of a Mandatory Ship Reporting System in the Adriatic Sea known as “ADRIATIC TRAFFIC”

3.70 The Sub-Committee observed that the proposed mandatory reporting system was not submitted as a joint proposal in accordance with Regulation 8-1 paragraphs (d) and (f) of SOLAS chapter V. Furthermore the description of the proposed mandatory reporting system is not in accordance with the standard format adopted by the Committee.

3.71 The capability of using only VHF for reporting in the large area of the Adriatic sea was questioned.

3.72 Greece observed that the proposed area in which ships were required to comply with requirements for mandatory reporting would also affect territorial waters of Greece and therefore the southern limit of the area for reporting should be shifted to the North.

3.73 The large volume of information to be supplied by ships, in accordance with the proposed reporting system, was also questioned.

3.74 In view of the above considerations the Sub-Committee was unable to agree with the proposed mandatory reporting system.

3.75 Italy and Croatia indicated that the Governments concerned with the establishment of a mandatory reporting system in the Adriatic sea will continue with consultations for the establishment of such system and that they intend to submit a new proposal for the forty-eighth session of the Sub-Committee.

3.76 Italy made a statement on the further development of proposals for ships routing and mandatory ship reporting systems in the Adriatic Sea, given at annex 6.

Amendment to the existing mandatory ship reporting system “Off Ushant”

3.77 The Sub-Committee approved the proposed amendment to the existing mandatory ship reporting system “Off Ushant” and prepared the draft MSC resolution on adoption of an amendment to the existing mandatory ship reporting system “Off Ushant”, given in annex 7, which the Committee is invited to adopt, in accordance with resolution A.858(20). The amendment will be implemented on 1 May 2003.

Identification and Designation of Particularly Sensitive Sea Areas

3.78 The Sub-Committee noted the revised draft Assembly resolution on Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas to replace resolutions A.720(17) and A.885(21) and considered the relevant parts including section 9.1 of the Guidelines relating to identification of PSSAs and all associated protective measures on charts in accordance with symbols and methods of the IHO. The Sub-Committee did not find any discrepancies with the General Provisions on Ships’ Routing. The Sub-Committee endorsed the draft Assembly resolution prepared by MEPC 46 and requested the Secretariat to inform the twenty-second session of the Assembly accordingly.

3.79 The observer from IHO informed the Sub-Committee that the IHO Chart Standardization Committee (paper charts) had not formally been requested to provide the symbology related to PSSA's by MEPC. The IHO had in response to a request from an IHO Hydrographic Commission, nearly completed the paper chart symbology, which would be forwarded to the Hydrographic Offices of IHO Member States for implementation. The IHO S 57 Transfer Standard had been frozen until December 2002, and it would be unlikely, therefore, that the appropriate symbology could be included in the electronic chart unless a specific request was received from IMO. The problem could be addressed in electronic charts by the addition of textual notes until symbology was incorporated. Paragraph 9.1 of the draft PSSA guidelines included the phrase, "...if an international symbol is adopted by the IHO ...", and it was IHO's considered opinion that these Guidelines could be approved. The IHO would progress both the paper and the digital symbology as a matter of urgency.

Information to improve submissions of routeing measures

3.80 During the discussion on the proposals for new and amended routing measures, the Working Group observed a number of shortcomings and inaccuracies in the submissions of proposed new or amended routeing measures.

3.81 The following points were noted:

- .1 the information required to justify the adoption of a routeing measure is in some cases not in accordance with the requirements of the General Provisions on Ships' Routeing
- .2 the terminology used for some of the proposed routeing measures is not in accordance with the routeing measures defined in the General Provisions on Ships' Routeing; and
- .3 some of the descriptions of the proposed routeing measures are not in accordance with the standard format used in the General Provisions on Ships' Routeing.

3.82 The Sub-Committee was of the opinion that the General Provisions on Ships' Routeing contain the necessary guidance for the development of proposals on routeing measures and therefore felt that there was no need to amend the General Provisions in order to further clarify the guidance contained in it.

3.83 The Sub-Committee agreed that it would be helpful to develop a note giving information to assist in the drafting of proposals for routing measures. The Sub-Committee felt that such a note could be developed by the Secretariat and may be used as a supplementary document to the annotations to the agenda.

3.84 The Working Group prepared a draft note for the Secretariat to develop a paper to assist in the drafting of proposals for routeing measures.

3.85 The Sub-Committee approved the paper given in annex 8, and instructed the Secretariat to develop on the basis of this paper a note as mentioned in paragraph 3.83 above.

4 INTEGRATED BRIDGE SYSTEMS (IBS) OPERATIONAL MATTERS

4.1 The Sub-Committee recalled that, at its forty-fourth session (NAV 44/14, paragraph 7.26) it had noted the information provided by Finland (NAV 44/INF.3) on the operational and design

standards for integrated navigation systems (INS) which highlighted the close relationship between integrated navigation systems (INS) and integrated bridge systems (IBS), and invited Finland to use the information given in NAV 44/INF.3 with the aim of producing an MSC circular at a future session of the NAV Sub-Committee and invited the Committee to include an item on IBS operational aspects in the Sub-Committee's work programme. MSC 70 subsequently decided to include this new item in the Sub-Committee's work programme with a completion date of 2001.

4.2 The Sub-Committee further recalled that, at its forty-sixth session, it had concurred with the views expressed by the Netherlands, on the urgent need for integration of information from different navigational equipment, such as radar, ECDIS and now AIS, within the integrated bridge systems, and the United States, on the invitation to the STW Sub-Committee to consider, as appropriate, on the basis of the performance standards and operational guidance for these systems (i.e. IBS, INS, AIS and ECDIS), the need for new comprehensive guidance on training in the use of new navigation technology which is installed to meet the requirements of the revised SOLAS chapter V, and noting that no proposals had been received under this agenda item, invited Members, and including all relevant international organizations, in particular IEC, to submit comments/proposals to NAV 47 to make progress on the matter, bearing in mind the target completion date of 2001. It had also agreed, subject to approval by the Committee, to invite the STW Sub-Committee to consider, as appropriate, on the basis of the performance standards and operational guidance for these systems (i.e. IBS, INS, AIS and ECDIS), the need for new comprehensive guidance on training in the use of the aforementioned new navigation technology.

4.3 The Sub-Committee noted that STW 32, taking into account the small number of documents submitted under this agenda item, had considered it premature to revise its scope of this agenda item in its work programme at the present time.

4.4 The Sub-Committee considered NAV 47/4 (Finland) as a basic document for a draft MSC circular on Guidance for Integrated Bridge Systems (IBS) operational aspects and noted comments from Japan that the document should be re-arranged to, in particular, separate technical requirements from operational requirements and mandatory carriage requirements from voluntary carriage of equipment. The Sub-Committee concluded that more studies were needed to generate guidelines on an overall integrated system.

4.5 Taking into account the above, the Sub-Committee invited the Committee to extend the target completion date for agenda item "Integrated bridge system (IBS) operational aspects" to 2002.

Presentation of navigational information

4.6 The Sub-Committee noted the present status of AIS carriage requirements, namely:

- .1 the revised SOLAS chapter V will enter into force on 1 July 2002;
- .2 it is expected that the guidelines on AIS operational matters will be finalized at NAV 47 and adopted by A.22 in November 2001; and
- .3 it is important that the development of detailed operational requirements for the display and use of AIS information on shipborne navigational displays should be undertaken by the Sub-Committee on a priority basis.

4.7 The Sub-Committee considered a proposal by IEC (NAV 47/4/1) suggesting that guidelines be developed to establish the principles for a database that includes a description of its application, contents, format and structure which should also include the principles on how terms or objects are added or deleted from the database and time and period for final deletion and archiving. The goal was to produce a database of all display objects with full description both in technical and nautical terms. The International Electrotechnical Commission was willing to set up a working group open to experts of IMO Members States and Observers for the development of a standard defining such a database, if so mandated by IMO.

4.8 The Sub-Committee invited IEC to set up a Working Group to develop a standard for the presentation of navigational information, being of the opinion that this standard should harmonize the following:

- .1 display and interaction objects;
- .2 multifunction displays;
- .3 co-location, merging, processing, fusion of graphical information; and
- .4 indication of quantity, status, integrity and accuracy of information.

The work should take account of appropriate IMO resolutions, IMO decisions on the Human Element given in resolution A.850(20), MSC/Circ.878, MSC/Circ.982 and MEPC/Circ.346 and appropriate decisions of the IHO.

4.9 The Sub-Committee instructed the Secretariat to convey the above paragraphs 4.6 to 4.8 to IEC and invited the Committee to endorse the action taken.

Guidelines for the display and integration of AIS target information

4.10 The Sub-Committee considered NAV 47/4/2 (CIRM) and NAV 47/4/3 (Sweden, Finland, Germany) concerning the display of AIS information in the ship-to-ship mode and the associated technical constraints and noted that graphical presentation of selected AIS information would be highly desirable, preferably combined with information from other sources such as radar and radar plotting aids. However, the accumulation of practical experience and the formal process for the development of suitable performance standards for the optimal combination of the information from radar and AIS, and their presentation on radar, ECDIS or other displays, cannot be achieved by the date of the first implementation of the carriage requirements for AIS.

4.11 The Sub-Committee, therefore, instructed the Technical Working Group to prepare a draft SN/Circular on Interim guidelines for the presentation and display of AIS target information to allow manufacturers to timely develop the relevant equipment and functions and to allow mariners to acquaint themselves with the use of intelligent combination of information from the first date of AIS employment.

4.12 Having considered the Technical Working Group's report (NAV 47/WP.1/Add.1), the Sub-Committee agreed on these guidelines and instructed the Secretariat to disseminate SN/Circ.217 with immediate effect given that the first date of AIS employment is 1 July 2002. The Committee was invited to endorse the action taken.

4.13 Being of the opinion that the matter should be considered further, the Sub-Committee welcomed the offer of the delegation of the United Kingdom to provide additional justification to the Committee to add a new item "Requirements for the display and use of AIS information on

I:\NAV\47\13.DOC

shipborne navigational displays” to the Sub-Committee's work programme and simultaneously the appropriate submission to NAV 48.

5 GUIDELINES RELATING TO SOLAS CHAPTER V

Guidelines for recording events related to navigation

5.1 The Sub-Committee recalled that NAV 43, had concurred to proposals by Germany and the Netherlands (NAV 43/5, annex 3 and NAV 43/5/1) that guidelines for recording events related to navigation should be prepared and cross-referenced in a footnote to SOLAS regulation V/27. A Drafting Group was instructed to consider NAV 43/5/1 and prepare provisional draft guidelines for submission to NAV 44 but was unable to do so due to time constraint.

5.2 The Sub-Committee further recalled that, at its forty-fifth session, it considered and agreed regulation V/27, as amended and decided to request the Committee to include in its work programme, a high-priority item on "Guidelines for recording events related to navigation" with a target completion date not later than the entry into force of the revised chapter V. MSC 72 subsequently approved and MSC 73 adopted this regulation, as re-numbered regulation 28.

5.3 The Sub-Committee noted that on the basis of the Netherlands proposal (NAV 43/5/1) and after lengthy discussion, NAV 46 concluded that the draft Assembly resolution:

- .1 should strictly adhere to the new regulation V/28 of the SOLAS Convention, and should be of a recommendatory nature;
- .2 should restrict itself to the recording of events related to navigational issues; and
- .3 should not duplicate other requirements for recording of events.

The United States proposed that entries on special events should include any over-riding operational condition requiring adjustment in the watchkeeping arrangements under STCW regulation VIII/1.

NAV 46, due to time constraints, was unable to finalize the matter, but developed a provisional draft Assembly resolution. The Committee was invited to review and approve this proposed framework and to authorize NAV 47 to finalize its work and forward the draft resolution directly to the Assembly for adoption at its twenty-second session. NAV 46 invited Member Governments to submit proposals to NAV 47 to make progress on the matter, bearing in mind the target completion date of 2001.

5.4 The Sub-Committee further noted that MSC 73 reviewed and approved, in principle, the proposed draft framework of Guidelines for recording events related to navigation; and authorized the Sub-Committee to finalize them, together with the associated draft Assembly resolution, at its forty-seventh session, for submission directly to the twenty-second session of the Assembly for adoption.

5.5 The Sub-Committee considered a proposal by the Republic of Korea (NAV 47/5/2) giving details of proposed guidelines for recording of events related to navigation.

5.6 It was decided that the draft Guidelines should be less prescriptive and detailed and the Sub-Committee therefore agreed that the framework developed by NAV 46 (NAV 46/16,

annex 17) should be used as a basis for finalizing such guidelines supplemented by the relevant parts of document NAV 47/5/2 and referred the matter to a Working Group (see paragraph 5.19).

Guidelines on Automatic Identification Systems (AIS) operational matters

5.7 The Sub-Committee recalled that MSC 72 noted that NAV 45 had agreed that for the introduction of mandatory carriage requirements for AIS, it was essential to develop guidelines for the operation of AIS for consideration and adoption by the twenty-second Assembly in 2001 so that it would become effective in time for the entry into force of amendments to chapter V and had requested the Committee to include a corresponding item in its work programme.

5.8 The Sub-Committee further recalled that, at its forty-sixth session, it considered documents NAV 46/10 (ICS), NAV 46/10/1 (IALA), MSC 72/10/8 (INTERTANKO) and MSC 72/10/12 (ICS) and developed draft Guidelines for the operational use of shipborne automatic identification systems (AIS).

5.9 The Sub-Committee noted that MSC 73 reviewed and approved, in principle, the proposed draft Guidelines and authorized the Sub-Committee to finalize them, together with the associated draft Assembly resolution, at its forty-seventh session, for submission directly to the twenty-second session of the Assembly for adoption.

5.10 The Sub-Committee considered a proposal by the United Kingdom (NAV 47/5) commenting on the draft approved by MSC 73 and offering suggested amendments.

5.11 The Sub-Committee agreed that the draft guidelines for the operational use of the shipborne automatic identification system (AIS) developed by NAV 46 (NAV 46/16, annex 18) and approved, in principle, by MSC 73 should be used as a basis for finalizing such guidelines improved by the relevant parts of document NAV 47/5 and referred the matter to a Working Group (see paragraph 5.19).

5.12 Following discussion, the Working Group was also instructed, in finalizing the draft Guidelines, to:

- .1 avoid, when referring to the COLREGs, any interpretation thereof;
- .2 delete any reference to type approval for AIS connected instruments; and
- .3 consider the need for manual switching of AIS in certain regions on a temporary basis.

Guidelines on voyage data recorders' ownership and recovery

5.13 The Sub-Committee recalled that, at its forty-sixth session, as requested by MSC 72, the Secretariat had updated the Sub-Committee with the advice prepared by IMO's Legal Office on this matter of voyage data recorders' ownership and recovery.

5.14 The Sub-Committee also recalled that, at its forty-sixth session, it further concluded that there were five basic issues that needed further consideration, namely:

- .1 recovery of VDR;
- .2 custody of VDR/data;
- .3 ownership of VDR/data;
- .4 read-out of VDR/data; and
- .5 access to the data.

NAV 46 was also of the opinion that the involvement of the FSI Sub-Committee would be necessary as the IMO Code for the Investigations of Marine Casualties and Incidents (resolution A.849(20)) had primarily been developed by FSI. It also agreed to request the Committee to include a new agenda item "Guidelines on Voyage Data Recorders (VDR) ownership and recovery" in its work programme and in the agenda for NAV 47 to further progress on the matter, which was endorsed by MSC 73.

5.15 The Sub-Committee noted that FSI 9 considered the issues identified by NAV 46 and agreed with the opinion of the working group on Casualty Analysis (FSI 9/WP.4 and NAV 47/2, paragraph 2.2), for the purpose of the accident investigation only, that:

.1 Recovery of the VDR

Recovery of the VDRs is conditional on the accessibility of the VDR or the data contained within. The Marine Casualty Investigator of the flag State or any other State, at the request of the flag State would be responsible for the recovery of the VDR. Where the vessel has sunk or the VDR is otherwise inaccessible, the investigator should consider what steps are required to recover the VDR and take reasonable actions weighing the potential use of the information against the viability of its recovery;

.2 Custody of VDR/data

Upon deciding to conduct an investigation, the Marine Casualty Investigator would need to have custody of the data in order to carry out the casualty investigation. If the data is not available, the removal of the VDR from the vessel might be required;

.3 Ownership of VDR/data

Ownership of the VDR/data is not an issue during a casualty investigation as it is similar to the logbook or other recorded data; it is assumed that the owner of the vessel owns the VDR and data. The owner would ensure that the Marine Casualty Investigator would be able to access and take custody of the VDR/data in the event of a casualty;

.4 Read-out of VDR/data

In accordance with resolution A.849(20), the flag State or any other State, at the request of the flag State, would arrange for the read-out of the VDR such that the data is presented in a form suitable for the investigation; and

.5 Access to data

During the investigation of a casualty or incident, the Marine Casualty Investigator would need to have access to the data. As would occur with the logbook or other recorded information, copies of the information should be made available to the ship owners and investigating States.

5.16 The Sub-Committee considered a proposal by the United Kingdom (NAV 47/5/1) suggesting amendments in light of the conclusions reached by FSI 9.

5.17 The Sub-Committee agreed that the outcome of FSI 9 (FSI 9/19, paragraph 10.22 and paragraph 5.14 above) should be used as a basis for finalizing such guidelines improved by the relevant parts of document NAV 47/5/1 and referred it to a Working Group (see paragraph 5.19).

5.18 Following discussion, the Working Group was also instructed, in finalizing the draft Guidelines, to clarify, in particular:

- .1 the terms “substantially interested States” and “consultation”;
- .2 the ownership of VDR and data; and
- .3 the responsibility of the investigator vis-à-vis cost liability.

Establishment of a Working Group

5.19 After preliminary discussion as reported in paragraphs 5.1 to 5.16 above, the Sub-Committee established a Working Group on Guidelines relating to SOLAS chapter V and instructed it, taking into account any decisions of, and comments and proposals in Plenary as well as relevant decisions of other IMO bodies (item 2), as follows:

- .1 finalize draft Guidelines for the recording events related to navigation and the associated draft Assembly resolution using NAV 46/16, annex 17 as the basic document;
- .2 finalize draft Guidelines on Automatic Identification Systems (AIS) operational matters and the associated draft Assembly resolution, liaising with the technical working group so as to avoid duplication or ambiguity and using NAV 46/16, annex 18 as the basic document;
- .3 finalize draft Guidelines on Voyage Data Recorders (VDR) ownership and recovery and the associated draft MSC circular for co-ordination and approval by MSC 75 subject to comments by FSI 10, using the outcome of FSI 9 as the basic text;
- .4 take into account the role of the human element including the Human Element Analysing Process (HEAP) given in MSC/Circ.878/MEPC/Circ.346 in all aspects of the issue concerned; and
- .5 submit a report to Plenary on Thursday morning.

5.20 Having received the working group's report (NAV 47/WP.3 and Add.1), the Sub-Committee took action as summarized hereunder.

Guidelines on AIS operation matters

5.21 The Sub-Committee agreed to delete all references to type approval for AIS connected equipment.

5.22 In considering the use of AIS in ports (paragraph 5.1.1 of the draft Guidelines), the Sub-Committee agreed that these should be left to the discretion of the relevant port authorities.

5.23 The Sub-Committee instructed the Secretariat to inform IALA of the need for a new text message, required for ships at berth.

5.24 In considering section 7 of the draft Guidelines and the proposed amendments thereto, the Sub-Committee avoided any interpretation of the COLREGs in the revised text and acted accordingly.

5.25 Noting that with the arrival of new technology on board, a new burden was placed on the OOW, the Sub-Committee acknowledged that there was a particular need for training in the use of AIS as a collision avoidance tool and invited the Committee to instruct the STW Sub-Committee to develop such training provisions in the STCW Code.

5.26 The delegation of the Bahamas, supported by some other delegations expressed concern about the section of the draft Guidelines on the use of AIS as a collision avoidance tool, in particular the advice given therein that the radar should be used in ground stabilized mode when correlating AIS and radar targets, which was in direct contradiction to other IMO instruments, which recommended the relative motion mode to be used in close quarter situations.

The delegation stressed that such guidance would leave the mariner confused and would aggravate the situation on the bridge rather than assist in solving it. The Sub-Committee, therefore, needed to take the human element more into account, when developing such guidelines.

5.27 The delegation of Germany supported by the majority of those who took the floor stated that confusion would only arise if equipment was stabilized to different modes and referred to the recently adopted ergonomic criteria for bridge systems, which required consistency in the display information, and, if complied with, confusion through equipment switched to different modes could not arise.

The delegation referred to exhaustive research, tests and experiments with experienced mariners, pilots and young officers, who had confirmed that much less mistakes were being made with AIS support than without. Additional research including questionnaires and training sessions had confirmed these findings. AIS was therefore considered to be of great advantage to the OOW in close quarter situations if used correctly. The draft Guidelines spelled that out, giving however the appropriate warning, that consistency in the modes used was required.

5.28 In the ensuing discussion it was recognized that a lot more work needed to be done on the future displays of AIS connected to other bridge equipment (i.e. radar, ARPA, ECDIS) and that the relevant performance standards needed to be expeditiously developed or revised respectively.

5.29 The Sub-Committee, considering ways for a compromise, reconvened the Working Group instructing it to redraft section 7 of the draft Guidelines to take account of the various concerns.

5.30 Having received the revised text, the Sub-Committee agreed to the new text, as amended, including an amendment to section 3, and approved the draft Guidelines for the onboard operational use of shipborne Automatic Identification Systems (AIS), as amended and set out in annex 9, together with the associated draft Assembly resolution for submission to the twenty-second session of the Assembly for adoption, as authorized by MSC 73.

Guidelines for the recording of events related to navigation

5.31 After a lengthy discussion on the non-detailed and prescriptive nature of the draft Guidelines, the need to stress their recommendatory nature vis-à-vis their use by Port State Control officers and the need to avoid duplication of recording of events, which are required already by other instruments, in particular with regard to ISM Code compliance, the Sub-Committee, taking all these issues into account, agreed to limit the text of the draft Guidelines to more general recommendations.

5.32 In considering the draft Guidelines, the Sub-Committee agreed that:

- .1 there was a need to address the period of record retention/storage in the draft Guidelines and inserted an appropriate paragraph 4.4 in the draft guidelines;
- .2 the events referred to in the draft Guidelines were not considered to be an exhaustive list but only some examples relating to navigation; and
- .3 the judgement of a potential hazardous situation was to be left to the discretion of the master.

5.33 The Sub-Committee approved the draft Guidelines for the recording of events related to navigation as amended and given in annex 10 together with the associated draft Assembly resolution for submission to the twenty-second session of the Assembly for adoption, as authorized by MSC 73.

Guidelines on VDR ownership and recovery

5.34 The Sub-Committee considered the main issues raised such as the term “substantially interested States” and the responsibility of the investigator for the recovery as well as the need for close co-ordination and co-operation in recovery operations.

5.35 With regard to the “substantially interested States” the Sub-Committee agreed to insert a footnote referring to that term as defined in resolution A 849(20) - Code for the investigation of marine casualties and incidents.

5.36 In considering the ownership of the VDR/data, the Sub-Committee agreed with the text proposed in document NAV 47/5/1 by the United Kingdom, since the custody of the VDR/data and the access to the data was addressed and clarified in new paragraphs 3 and 5 of the draft Guidelines respectively.

5.37 After a lengthy discussion on the issue of ownership of the VDR/data on the one hand and the custody of VDR/data and the access to the data on the other hand, the Sub-Committee agreed that there was a clear understanding that although the ownership of VDR and data would always remain with the ship owner (see paragraph 1), the investigator would always be granted custody of the VDR and data, if it was decided to recover the VDR, who in turn would give access to the data to the ship owner.

5.38 There was general agreement that the recovery could be facilitated by a VDR of a float free type.

5.39 However, the delegation of the United Kingdom stated that it considered this conclusion to be too simplistic until further technically detailed studies of the relative pros and cons

associated with different levels and types of protection for VDRs had been undertaken and reviewed by the Sub-Committee.

5.40 The Sub-Committee endorsed draft Guidelines on VDR ownership and recovery, as amended and set out in annex 11, together with the associated draft MSC circular for submission to MSC 75 for approval, subject to comments thereon by FSI 10.

5.41 The Sub-Committee Chairman was invited to liaise with the Chairmen of the FSI Sub-Committee and the Committee to agree that in view of the entry into force of the relevant SOLAS chapter V amendments on 1 July 2002 that the Sub-Committee is requested to consider the draft Guidelines and report thereon to MSC 75 as an urgent matter.

6 TRAINING AND CERTIFICATION OF MARITIME PILOTS AND REVISION OF RESOLUTION A.485(XII)

6.1 The Sub-Committee recalled that NAV 45 had considered and agreed a draft revised text of annex 2 - Recommendation on operational procedures for maritime pilots other than deep-sea pilots to resolution A.485(XII) and conveyed the draft revised text to STW 31.

6.2 The Sub-Committee noted that at STW 31, ICS, BIMCO, INTERCARGO, INTERTANKO, IFSMA, ISF, OCIMF and SIGTTO (STW 31/4/1) had considered the revised text of Annex 2 and recalled that the Committee, at its sixty-ninth session (MSC 69/22, paragraph 13.14), had noted that Master Pilot Information Exchange forms would be used by ships and pilotage organizations, as appropriate; furthermore, that NAV 45 had developed Guidelines for voyage planning that included voyage planning in those areas where a pilot would be on board which also included a requirement for account to be taken of available port information; and that ICS had recently revised its Bridge Procedures Guide that included guidance on 'Passage planning and pilotage' and 'Navigation with a pilot on board' and also included example formats of Master Pilot Exchange Information forms. Against this background, ICS and others proposed amendments to Annex 2 of resolution A.485 (XII).

6.3 The Sub-Committee recalled that MSC 72 noted the outcome of NAV 45 and also noted that at STW 31, ICS, BIMCO, INTERCARGO, INTERTANKO, IFSMA, ISF, OCIMF and SIGTTO proposed amendments to Annex 2 to resolution A.485(XII) (STW 31/4/1). STW 31, noting that the proposed amendments were related to operational requirements, considered it more appropriate to refer that joint submission to NAV 46 for consideration and advice, to enable STW 32 to complete its work on the revision of resolution A.485(XII). Accordingly, MSC 72 instructed NAV to reconsider the issue at its forty-sixth session under its agenda item on "Any other business" and to convey the outcome of its consideration to STW 32.

6.4 The Sub-Committee further recalled that NAV 46 considered all relevant documents submitted on this issue and established a Working Group, which agreed to take NAV 45/14, annex 12, as agreed by NAV 45, as basic document and to consider the proposed amendments thereto, as set out in the revised text of document NAV 46/15/2 (ICS, BIMCO, INTERCARGO, INTERTANKO, IFSMA, ISF, OCIMF and SIGTTO), annex.

6.5 The Sub-Committee also recalled that NAV 46, having discussed this issue at length, could not find a consensus thereon and decided to defer further consideration of the revised text of resolution A.485(XII), Annex 2 to the next session. It invited the Committee to include the item on revision of resolution A.485(XII), Annex 2 recommendation on Operational procedures for maritime pilots other than deep-sea pilots, in its work programme and agenda for NAV 47, as

a separate item. NAV 46 had noted that good progress had been made and urged Member Governments to submit proposals on this issue to NAV 47.

6.6 The Sub-Committee noted that STW 32, in considering a revised draft text of annex submitted by IMPA (STW 32/4), invited the Committee to extend the target completion date for the finalisation of the training requirements in order to allow the Sub-Committee to consider the operational requirements finalised by the NAV Sub-Committee. It also invited the Committee to allocate one session for the completion of this work and invited the Committee to urge the NAV Sub-Committee to complete its work on this item at NAV 47, taking into account the discussions at STW 32.

6.7 The Sub-Committee recognized that this issue had been on its agenda since NAV 44 i.e. nearly 3 years with an original completion date of 1999 and that the STW Sub-Committee was awaiting the finalization of the work by NAV to complete the whole task.

6.8 The Sub-Committee further recognized that the general issue were to bring Annex 2 to resolution A.485(XII), as far as practical and appropriate, in line with the new voyage planning responsibilities under resolution A.893(21) - Guidelines on voyage planning, and more specifically the question whether such responsibilities require pre-boarding exchange of information between Master and Pilot. Hence, the Sub-Committee should finalize the issue at this session.

6.9 The Sub-Committee took note of the proposals by INTERTANKO, OCIMF, BIMCO, SIGTTO, ICS, IFSMA and INTERCARGO (NAV 47/6) suggesting a draft new text for replacing Annex 2 to resolution A.485(XII), and IMPA (NAV 47/6/1) inviting the NAV Sub-Committee to accept the revised draft Annex 2 of resolution A.485(XII) developed by the working group at NAV 46 (NAV 46/WP.5, annex 2) for submission to STW 33 for finalization.

6.10 There was general discussion on the approach to be adopted and it was agreed, in principle, that it would be prudent to review NAV 45/14, annex 12, as the basic paper and invite comments and proposals on the basis of resolution A.893(21) and NAV 46/WP.5.

6.11 The Sub-Committee, after some discussion agreed that the revised text should be arranged in an operational and logical sequence with headings highlighting each operational stage, and as a result, the first sub-paragraph of paragraph 4 of NAV 46/WP.5, annex 2, was relocated as second paragraph, followed by the text of 3.1.1 and 3.1.4 of Annex to NAV 47/6, under the heading of Duties of master, bridge officers and pilot.

6.12 In considering communications language, the Sub-Committee agreed that, in addition to some wording improvements, a new paragraph, proposed by IMPA, was included, to explain that, when a pilot is communicating to parties external to the ship, the pilot is unable to communicate in English or in a language that cannot be understood on the bridge, the pilot should, as soon as practicable, explain what was said to enable the bridge personnel to monitor any subsequent actions taken by those external parties.

6.13 After agreeing all relevant amendments, the Sub-Committee established a Drafting Group and instructed it, taking into account the comments and decisions of the plenary, to prepare a final revised text of annex 2 of resolution A.485(XII) on Recommendation on operational procedures for maritime pilot other than deep-sea pilots, without re-opening any discussion on the substance of the document or of the plenary decisions.

Establishment of a Drafting Group

6.14 After preliminary discussion as reported in paragraphs 6.1 to 6.10 above, the Sub-Committee established a Drafting Group and instructed it, taking into account all conclusions and decisions of Plenary as well as relevant decisions of other IMO bodies (item 2), to revise and finalize annex 2 of resolution A.485(XII) relating to recommendation on operational procedures for maritime pilots other than deep-sea pilots, without reopening any discussion on the substance of the document or of the Plenary conclusions.

6.15 Having received the drafting group's report (NAV 47/WP.2), the Sub-Committee took action as summarized hereunder.

6.16 The Sub-Committee approved the draft revised Annex 2 to resolution A.485(XII) on Recommendation on operational procedures for maritime pilots other than deep-sea pilots as given in annex 12, and instructed the Secretariat to forward it to STW 33 to enable the STW Sub-Committee to complete its task.

6.17 The delegation of Cyprus reserved its position on the adoption of a revised Annex 2 of resolution A.485(XII).

6.18 The observer from INTERTANKO on behalf of OCIMF, BIMCO, SIGTTO, ICS, IFSMA and INTERCARGO, whilst accepting the Sub-Committee's decision to approve a revised Annex 2 to resolution A.485 (XII), placed on record their disappointment that in order to finalise the revision it had not been possible to fully address certain key issues as given in the joint Industry submission (NAV 47/6). Of particular importance to ship operators was the need to ensure a proper exchange of information between ships and pilots to enable masters to prepare passage plans according to the recommendations in resolution A.893(21), as well as accident investigation.

INTERTANKO further stated that although the industry organisations would have preferred to see greater clarity given to the above and other aspects of the master/pilot relationship in revised Annex 2, the organisations acceptance of the revised text was on the understanding that it nevertheless imposed a clear obligation on pilots to provide information essential to enable the Masters to complete their voyage plans.

7 NAVIGATIONAL AIDS AND RELATED MATTERS

World-Wide Radionavigation System

Current status and development plan for the GLONASS system

7.1 The Sub-Committee recalled that MSC 67, pursuant to operative paragraph 4 of resolution A.815(19) on the World-Wide Radionavigation System, recognized the Global Navigation Satellite System (GLONASS), proposed by the Russian Federation, as a component of the World-Wide Radionavigation System.

7.2 The Sub-Committee noted with interest the information provided by the Russian Federation (NAV 47/INF.8) on the current status and development plans for the GLONASS system, and also expressed its appreciation to the Russian Federation for keeping Members informed about the status of the GLONASS system.

Review of resolution A.815(19) on World-Wide Radionavigation System

7.3 The Sub-Committee recalled that, at its forty-sixth session, it had noted that in deciding whether or not to recognize a radionavigation system, as per resolution A.815(19), the Organization should consider whether:

- .1 the Government or organization providing and operating the system has stated formally that the system is operational and available for use by merchant shipping;
- .2 its continued provision is assured;
- .3 it is capable of providing position information within the coverage area declared by the Government or organization operating and providing the system with an accuracy not less than that given in the appendix, taking into account the maximum time interval between updates;
- .4 adequate arrangements have been made for publication of the characteristics and parameters of the system and of its status, including amendments as necessary; and
- .5 adequate arrangements have been made to protect the safety of navigation should it be necessary to introduce changes in the characteristics or parameters of the system which could adversely affect the performance of shipborne receiving equipment.

However, since the system availability for DGPS service of 99.8% required by resolution A.815(19) was proving difficult to achieve in practice and that IALA was studying the matter, it was concluded that resolution A.815(19) needed to be revised.

7.4 The Sub-Committee further recalled that, at its forty-sixth session, it invited the Committee to include a new agenda item "Review of resolution A.815(19) on World-wide radionavigation system" in the Sub-Committee's work programme and in the agenda for its next meeting so that the issue of availability could be addressed, which was subsequently endorsed by MSC 73.

7.5 The Sub-Committee considered document NAV 47/7/1 (IALA) proposing amendments to resolution A.815(19), in particular to its Appendix, introducing up-dates to the operational requirements for radionavigation systems for ocean, coastal and harbour approach and entrance phases of a ship's voyage, and agreed on the draft revision of resolution A.815(19).

7.6 The Committee was invited to consider the draft revised resolution A.815(19), given at annex 13, with a view for approval and subsequent adoption at the twenty-third session of the Assembly.

7.7 The Sub-Committee again drew the attention of Member Governments to SN/Circ.213 concerning chart datums and, in particular, the accuracy of positions on charts which could differ from the accuracy provided by radionavigation systems.

7.8 The Committee was invited to delete agenda item "Review of resolution A.815(19) on World-Wide Radionavigation System" from the Sub-Committee's work programme as the work was completed.

Performance standards for bridge watch alarms

7.9 The Sub-Committee recalled that MSC 71, after considering document MSC 71/20/4 (United Kingdom), the relevant part of document MSC 71/20/12 (Spain) and a resubmission of document MSC 70/20/12, decided to include, in the Sub-Committee's work programme, a high priority item on "Performance standards for bridge watch alarms", with 2 sessions needed for completion. The Committee, in making this decision, agreed that there was no intention to re-open the issue of the Officer of the navigational watch acting as the sole look-out in periods of darkness and also that the work to be carried out would be without prejudice to its future work on fatigue.

7.10 The Sub-Committee further recalled that, at its forty-fifth session, it considered the United Kingdom proposal (NAV 45/11), suggesting that the Sub-Committee starts work on "Performance standards for bridge watch alarms" at NAV 46, with a view to completion at NAV 47, and the detailed justification for the urgent consideration of this matter as set out in MSC 71/20/4. NAV 45, noting the decision of MSC 71, and subject to concurrence by MSC 72, which subsequently did concur, decided to add the item "Performance standards for bridge watch alarms" to its agenda for NAV 46.

7.11 The Sub-Committee also recalled that, at its forty-sixth session, it had instructed the Technical Working Group to consider NAV 46/7/4 (United Kingdom) and NAV 46/7/5 (Germany) and submit its report on the issue to NAV 47 for further consideration. Members were invited to consider the report of the Technical Working Group (NAV 47/7), when circulated, and submit comments and proposals thereon for consideration at NAV 47.

7.12 The Sub-Committee considered the report of the Technical Working Group (NAV 47/7, paragraphs 2.1 to 2.1 and annex) and the proposal by the United Kingdom (NAV 47/7/3) regarding draft performance standards for bridge-watch alarms.

7.13 The Sub-Committee (NAV 47/INF.7) noted with interest the information provided by Japan on the effectiveness of verbal communication function as a human-machine interface to navigation support systems such as a reset device for bridge navigational watch alarm systems (BNWASs).

Feasibility study of mandatory carriage of VDRs on existing cargo ships

7.14 The Sub-Committee recalled that MSC 73 (MSC 73/21, paragraph 3.25.1), noting that the number of those delegations who had spoken in favour of the installation of VDRs on existing cargo ships was not sufficient to ensure the required two-thirds majority for the adoption of the provision, as part of the revised SOLAS chapter V, did not agree to the corresponding proposals by Australia and the United States. However, having recognized difficulties associated with the fitting of VDR on existing cargo ships and that more experience was necessary in this respect, it accordingly, adopted resolution MSC.109(73) on Carriage of voyage data recorders (VDRs) on existing cargo ships (MSC 73/21, annex 17). It also instructed the NAV Sub-Committee, in co-operation with other sub-committees, as appropriate, to carry out a feasibility study on the carriage of VDRs on existing cargo ships, in accordance with the terms of reference specified in paragraph 3 of the aforementioned MSC resolution.

7.15 The Sub-Committee further recalled that MSC 73 consequently decided to request NAV 47 to consider the alternatives put forward under the agenda item on "Navigational aids and related matters" and:

- .1 to carry out the feasibility study, taking into account such factors as:
 - .1 practicability;
 - .2 technical problems relating to the retrofitting of VDRs;
 - .3 adequacy of existing performance standards, including the possible development of simplified standards;
 - .4 experience in the use of VDRs on ships already fitted with them, including data that could not have been obtained without VDR; and
 - .5 relevant financial implications, including a cost benefit analysis.
- .2 if the study clearly demonstrates the compelling need for mandatory carriage of VDRs on existing cargo ships, to prepare appropriate draft amendments to chapter V of the Convention and associated performance standards, for consideration by the Committee and action as appropriate; and
- .3 finalize the study not later than 1 January 2004.

7.16 The Sub-Committee considered proposals by the United Kingdom (NAV 47/7/2), Germany, Finland and Sweden (NAV 47/7/4) and Japan (NAV 47/7/6, NAV 47/7/7 and NAV 47/7/8).

7.17 Majority of the delegations who spoke in the plenary generally supported the Japanese proposal that storing AIS data and Bridge Audio in a protective capsule like EPIRB would be reasonable for VDR with some additional modification of the input to VDR.

Performance standards for marine transmitting heading devices (THDs)

7.18 The Sub-Committee recalled that, at its forty-sixth session, having considered the report of the Technical Working Group at NAV 45 (NAV 46/7, paragraphs 2.3 to 2.4) and the proposal by Japan (NAV 46/7/2), it had agreed on the draft performance standards for marine transmitting heading devices (THDs), for adoption by the Committee. The Committee had been invited to delete the agenda item "User requirements for heading systems" from the Sub-Committee's work programme, as the work had been completed. It further had invited Member Governments to co-operate in the work of the ISO in developing the THD technical standards.

7.19 The Sub-Committee noted that MSC 73, in adopting the performance standards for marine transmitting heading devices, decided to refer the proposal by Japan (MSC 73/11/2) on the use of a footnote relating to the value of the repeatability of the settle point error to NAV 47 for consideration under the agenda item on "Navigational aids and related matters".

Establishment of a Working Group

7.20 After preliminary discussion as reported in paragraphs 7.9 to 7.18 above, the Sub-Committee established a 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 prepare a draft MSC resolution for adoption of performance standards on bridge watch alarms, after considering NAV 47/7 (Technical Working Group) and NAV 47/7/3 (United Kingdom) and taking into account the Guidelines in MSC/Circ.930 MEPC/Circ.364;
- .2 progress work on the feasibility study of mandatory carriage of VDRs on existing cargo ships, taking into consideration NAV 47/2 (Secretariat), NAV 47/7/2 (United Kingdom), NAV 47/7/4 (Germany, Finland and Sweden), NAV 47/7/6 (Japan), NAV 47/7/7 (Japan) and NAV 47/7/8 (Japan);
- .3 review and insert the corresponding footnote, as appropriate, to the performance standards for marine transmitting heading devices (THDs), after considering MSC 73/11/2 (Japan) and NAV 47/7/5 (Japan); and
- .4 give preliminary consideration to the revision of performance standards for radar reflectors taking into account document MSC 73/18/4 (United Kingdom).

7.21 Having received the Working Group's report (NAV 47/WP.1), the Sub-Committee took action as summarised hereunder.

Performance standards for bridge watch alarms

7.22 The Sub-Committee agreed on the proposed draft performance standards for bridge watch alarms and, taking into account comments and proposals made, prepared the draft MSC resolution on Performance standards for a bridge navigational watch alarm system (BNWAS) and invited the Committee to consider the draft MSC resolution, given at annex 14, with view for adoption.

7.23 The Committee was invited to delete agenda item "Performance standards for bridge watch alarms" from the Sub-Committee's work programme as the work was completed.

Performance standards for marine transmitting heading devices (THDs)

7.24 The Sub-Committee concurred with the proposal by the Technical Working Group that a problem might arise with regard to accuracy achievable by THDs at high latitudes and agreed to insert footnote 2 "This may be increased by a multiple of secant latitude in all applications" into paragraph 4.3.2.2 "Static errors. The static error should be less than $\pm 1.0^\circ$;²" of the Annex to resolution MSC.116(73) on Performance standards for marine transmitting heading devices (THDs). The existing footnotes of the Annex should be subsequently renumbered.

7.25 The Sub-Committee, therefore:

- .1 instructed the Secretariat to include the agreed footnote into resolution MSC.116(73) published in IMO Publication "Performance standards for shipborne radiocommunications and navigational equipment"; and
- .2 invited the Committee to endorse the action taken.

TECHNICAL WORKING GROUP

7.26 The Sub-Committee instructed the Technical Working Group to consider a number of other documents submitted under items 4, 7 and 12. The outcome of the Working Group's

discussion related to these documents concerning Feasibility study of mandatory carriage of VDRs on existing cargo ships and Performance standards for radar reflectors would be circulated under the appropriate agenda item to NAV 48.

7.27 The Chairman of Working Group made a verbal report on feasibility study of mandatory carriage of VDRs on existing cargo ships that there was a need for more information to assist the study particularly concerning costs and benefits. In the Working Group's report, the Japanese proposal was supported by many members with some addition of the input data to VDR.

7.28 Members were invited to consider the report of the Technical Working Group, when circulated, and submit comments and proposals thereon for consideration at NAV 48.

7.29 The delegation of Japan expressed concern about the recent attitude of CIRM to IMO. The delegation believed that CIRM had been given consultative status mainly because of its technical contribution. Without pointing to a particular example at this stage, CIRM seemed to be mainly driven by its member companies' interests and not by its technical expertise alone.

CIRM having sometimes opposed the majority's view of Member Governments, the delegation of Japan expressed the hope that CIRM observers would limit their interventions to mainly technical matters and follow the rules governing the consultative status with IMO. With regard to the feasibility study on mandatory carriage of VDR on existing cargo ships, the delegation of Japan welcomed CIRM's contribution on the cost and technical analysis, which should be submitted to the next session of the Sub-Committee as an information paper. The Japanese delegation, however, could not accept CIRM as the co-ordinator for this feasibility study, as it would not be in accordance with the Committee's Guidelines on the organization and method of work and because CIRM and its member companies had a direct interest in the outcome of the Sub-Committee's consideration on this issue.

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

Revision of Recommendation ITU-R M.1371 on Technical Characteristics for a Universal Shipborne Automatic Identification System (AIS) using Time Division Multiple Access in the VHF Maritime Mobile Band

8.1 The Sub-Committee considered document NAV 47/8 (Secretariat) containing a note from Working Party 8B to IMO and IALA with the attached draft revised Recommendation ITU-R M.1371 which had been submitted to the fastest possible ITU-R approval procedure.

8.2 Taking into account comments and proposals made with respect to the procedure for updating the technical standards and configuration of the international application identifiers and the operating frequency channel management, the Sub-Committee prepared a liaison statement to ITU-R WP 8B requesting the appropriate clarifications, given at annex 15, and instructed the Secretariat to convey it to WP 8B and invited the Committee to endorse the action taken.

Questions assigned to Radiocommunication ITU-R Study Group 8 for the period 2000-2002

8.3 The Sub-Committee considered document NAV 47/8/1 (Secretariat) containing Questions allocated to SG 8 on issues of relevance to work of the Sub-Committee and took action as reflected in paragraphs below.

Threat to the radar spectrum

8.4 The Sub-Committee recalled that, at its forty-fifth session, it had considered document NAV 45/8 (Secretariat) containing the complete text of the Question approved by correspondence since the last Radiocommunication Assembly assigned to Study Group 8 (Question ITU-R No. 216-1/8 on Compatibility of radionavigation and radiolocation services operating in the bands 2 900 – 3 300 MHz and 5 350 - 5 650 MHz).

8.5 NAV 45 was of the opinion that Question No. 216-1/8 concerned ITU compatibility studies of services operating in the band 2 900 – 3 300 MHz which was used in part by the shipping industry for 3 GHz (10 cm or S band) radars. It was realized that an increasing number of mobile communication service providers were making plans to operate in and around the 3 GHz radar band and that this band is under extreme threat. The band moreover was of great importance to the Organization because of the superior performance of 3 GHz radars under adverse environmental conditions; many ships use the 3 GHz radar as their primary radar. The SOLAS Convention, however, limited the mandatory requirement for radar to a 9 GHz (3 cm or X band) radar as this equipment provided compatibility with the SART for the GMDSS. Therefore, NAV 45, being of the opinion that better protection could be sought for the 3 GHz band if there would be a clearer SOLAS requirement for the carriage of a 3 GHz radar, agreed appropriate modifications to regulation V/20 (now regulation V/19).

8.6 The IMO observer at the ITU 2000 World Radiocommunication Conference (WRC-2000) Conference reported that the band 2900 - 3300 MHz had not been threatened at WRC-2000 but subsequent ITU Conferences might well consider the possibility of sharing the band with other users. Also the ITU-R is known to be developing stricter limits for radar unwanted emissions which might increase the difficulties in correct operational functioning of some maritime safety services. Taking into account the above, NAV 46 invited Member Governments to submit their comments and proposals on the issue to COMSAR 5.

8.7 The Sub-Committee also noted that COMSAR 5, while welcoming actions leading to efficient use of the frequency spectrum, had noted a concern that it might take some time to modify radar equipment to implement changes in the present requirements. Radars meeting IMO requirements have to have narrow pulses which lead to wide spectrum. New technology radars using non-pulse signals may lead to unwanted consequences like failure in triggering SARTs and racons. The technical consequences of changes in the present radar requirements as well as introducing sharing with other services should be thoroughly studied before any changes are made.

8.8 Bearing in mind that the NAV Sub-Committee was competent to consider radar-related issues, COMSAR 5 agreed to invite the Committee to note the continued threat to the spectrum being used by maritime navigational radars and instruct the NAV Sub-Committee to review the relevant current requirements in co-operation with the COMSAR Sub-Committee. A note to the NAV Sub-Committee, to which special attention of the NAV Sub-Committee should be drawn is given in (COMSAR 5/14, annex 5). Recognizing that sharing studies are taking place in several fora, COMSAR 5 also agreed to invite Member Governments to co-ordinate their activity in IMO and ITU in order to support the relevant maritime interests and IMO views in ITU and make maritime radar experts available for ITU meetings whenever radar spectrum matters are considered.

8.9 The Sub-Committee further noted that MSC 74 shared COMSAR 5's concern on the possible loss of the frequency spectrum currently used by maritime navigational radars and instructed the NAV Sub-Committee to review the current requirements in co-operation with the

COMSAR Sub-Committee. In addition, it invited Member Governments to instruct their representatives to bring the above concern to the attention of relevant ITU meetings for consideration and appropriate action.

8.10 The Sub-Committee observed that the issue of threat to the radar spectrum was very important and that if the proposals for more stringent restrictions on the maximum permitted out-of-band emission limits and boundary conditions for radars were realized, the impact on the maritime radar community would be far reaching.

8.11 The Sub-Committee considered annex 5 to COMSAR 5/14 concerning the threat to current maritime safety radionavigation services in the frequency bands 2.9 – 3.1 GHz and 9.2 - 9.5 GHz and document NAV 47/8/2 (United Kingdom) on the future use of maritime radar and noted the points raised by COMSAR 5 that manufacturers would need considerable time to develop solutions to the envisaged ITU requirements for unwanted emissions and that, in liaison with the ITU, there should be extreme caution over the impositions of unwanted emission limits on a safety service within an unrealistic timescale and that there should be extreme caution with regard to the sharing of exclusive radiodetermination frequency bands, in which safety services operate, with other services.

8.12 In considering further the conclusions of COMSAR 5, the Sub-Committee pointed out that the impact on the operation of the maritime radionavigation safety service needed to be carefully examined should further sharing be envisaged by other non-radar services. The Sub-Committee agreed that consideration should be given to the review of the requirements for radars in the light of their current performance requirements contained in the relevant IMO resolutions. To this end the Sub-Committee concluded that, as a minimum, the aspects of the performance standards for radar need to be studied, as follows:

- .1 minimum range and range discrimination;
- .2 detection of SART's and RACON's;
- .3 target detection including performance under anomalous propagation and clutter conditions;
- .4 probability of detection and false alarm rate;
- .5 hazard and acceptable risk of interference to maritime radar;
- .6 the provision of hazard warning of fixed and floating objects; and
- .7 maximum range.

This work should be completed by 2003 to allow its conclusions to be used within the framework of current ITU-R studies, that are due to be completed by end 2006.

8.13 Noting the instruction of MSC 74 to review the requirements for radars, the Sub-Committee invited the Committee to add the topic of a review of the performance standards for radars to the Sub-Committee's work programme for completion in 2 sessions.

8.14 The Sub-Committee invited COMSAR 6 to take into account the matter in the above paragraphs 8.11 and 8.12 when preparing an IMO position to WRC-03.

9 EFFECTIVE VOYAGE PLANNING FOR LARGE PASSENGER SHIPS

9.1 The Sub-Committee noted that with regard to the dangers associated with collisions and groundings, MSC 73 (MSC 73/21, paragraph 4.14) had observed that the majority of such casualties were usually attributed to the human element. In this respect, there was still considerable disagreement within the maritime community on what constituted an *effective* voyage plan and MSC 73 agreed to place a new item on "Effective voyage planning for large passenger ships" in the Sub-Committee's work programme, with a target completion date of 2003 and agenda for NAV 47.

9.2 The Sub-Committee further noted that MSC 74 considered the matter through its working group on large passenger ships (MSC 74/WP.6) and approved the updated work plan, as set out in MSC 74/WP.6, annex 3, and included an item on Large passenger ship safety in the work programmes, and provisional agenda's for the forthcoming sessions, of the COMSAR, DE, FP, NAV, SLF and STW Sub-Committees. MSC 74 also conveyed documents MSC 73/WP.20 and MSC 74/WP.6, in their entirety, to the relevant sub-committees for background purposes and further instructed the relevant sub-committees to keep the Committee informed of their progress on matters assigned.

9.3 The Sub-Committee observed that two specific tasks had been assigned to it by MSC 73 and MSC 74, namely:

- .1 to consider effective voyage planning for large passenger ships; and
- .2 to consider measures to improve prevention of groundings and collisions.

9.4 The Chairman of the Maritime Safety Committee's Working Group on Large Passenger Ship Safety (Australia) gave a brief outline of the mandate of the Group and referred to the Secretary-General's view that this was an opportunity for the Organization to be proactive in respect of large passenger ships. He stated that the Group's concerns in relation to effective voyage planning related not only to normal or heavy traffic situations but that, because of market forces, large passenger ships were going more and more into remote areas. Specific concerns with such remote area operation were the adequacy or lack of hydrographic information, local knowledge and the lack of other traffic which could be utilized as SAR resources.

He further outlined that the issues to be considered by the Sub-Committee, to be included in voyage planning by the Master and the shipowner should include the afore-mentioned issues and also some consideration as to the consequences of a catastrophic accident to the ship while in such a remote area. Such issues should also include co-operation and liaison with the coastal State prior to going into and when within such remote areas as basic contingency planning for an emergency.

9.5 The delegation of Argentina informed the Sub-Committee of its bi-lateral agreement with Chile with respect to the optimization of SAR services provided by the Navies of the two countries for passenger ships operating in remote areas of the southern parts of South America, and especially in Antarctic areas.

9.6 The Sub-Committee noting, that no specific proposals have been submitted under this agenda item, invited Member Governments to submit proposals to NAV 48 to make progress on the matter, bearing in mind the target completion date of 2003.

10 WORK PROGRAMME AND AGENDA FOR NAV 48

10.1 The Sub-Committee noted that MSC 73, as proposed by NAV 46, decided to include the following new items in the Sub-Committee's work programme and provisional agenda for NAV 47:

- .1 on "Revision of resolution A.815(19) on world-wide radionavigation system", with a target completion date of 2001; and
- .2 on "Guidelines on voyage data recorders' ownership and recovery", with a target completion date of 2001.

10.2 The Sub-Committee also noted that MSC 73 (MSC 73/21, paragraph 3.109) further agreed to include a high priority item on "Feasibility study on carriage of VDRs on existing cargo ships", with 3 sessions needed to complete the item, in the Sub-Committee's work programme and further requested NAV 47 to consider the alternatives put forward under the agenda item on "Navigational aids and related matters". MSC 73 also agreed (MSC 73/21, paragraph 4.14) to include a high priority item on "Effective voyage planning for large passenger ships" in the Sub-Committee's work programme, with a target completion date of 2003 and in the provisional agenda for NAV 47.

10.3 The Sub-Committee further noted that MSC 74:

- .1 approved the updated work-plan for large passenger ship safety (MSC 74/WP.6, annex 3) and included an item on "Large passenger ship safety" in the Sub-Committee's work programme and provisional agenda of the forthcoming session;
- .2 decided to include, in the Sub-Committee's work programme, a high priority item on "Revision of the performance standards for radar reflectors", with two sessions needed to complete the item, instructing NAV 47 to give preliminary consideration to the item;
- .3 included, in the Sub-Committee's and the COMSAR and DE Sub-Committees' work programmes, a high priority item on "Places of refuge" (with terms of reference as agreed under agenda item 2), with a target completion date of 2003 for the NAV Sub-Committee and 2002 for the COMSAR and DE Sub-Committees, as well as the same item in the provisional agendas for COMSAR 6 and DE 45; and further assigned the Sub-Committee as the co-ordinating Sub-Committee on the matter and instructed NAV 47 to give preliminary consideration to the subject under its agenda item on "Any other business";
- .4 included, in the work programmes of the DE Sub-Committee (co-ordinator) and the Sub-Committee, a high priority item on "Anchoring, mooring and towing equipment", with a target completion date of 2003 as well as the same item in the provisional agenda for DE 45, while instructing NAV 47 to give preliminary consideration to the item; and
- .5 being of the opinion that, where appropriate, items should be assigned with specific target completion dates or a number of sessions needed to complete them, instructed all sub-committees to consider any continuous items on their work

programmes and to provide MSC 75 with pertinent proposals to replace, where appropriate, the continuous status with target completion dates and the number of sessions needed to complete such items. In this context, the sub-committees were also instructed to consider deleting the umbrella items, wherever possible, when proposing their revised work programmes.

10.4 The Sub-Committee considered a proposal by the United Kingdom (NAV 47/8/2) on the need to review the performance standards for radars and requirements associated with the interrogation of SARTs and RACONs as a high priority item. The Sub-Committee was of the opinion that there was an urgent need to address this issue in view of the threat to the radar spectrum and the potential degradation in maritime safety that could result from other services/users sharing the maritime radar frequency bands.

10.5 The Sub-Committee noted that MSC 74 shared the concern of the COMSAR Sub-Committee on the possible loss of the frequency and spectrum currently used by maritime navigational radars and had instructed the NAV Sub-Committee to review the current requirements in co-operation with the COMSAR Sub-Committee.

10.6 The Sub-Committee accordingly decided to invite the Committee to add this item on its work programme with a target completion date of 2003 and in its provisional agenda for NAV 48.

10.7 Taking into account the progress made at this session, the decisions of MSC 74 and the provisions of the agenda management procedure, the Sub-Committee prepared a revised work programme and provisional agenda for NAV 48 (NAV 47/WP.4) based on those approved by MSC 74 (NAV 47/2/2, annexes 1 and 2), as set out in annexes 16 and 17 respectively for consideration and approval by the Committee. While reviewing the work programme, the Sub-Committee agreed to invite the Committee to:

- .1 delete the following work programme items, as work on them has been completed.
 - .1.1 item H.1 World-wide radio navigation; 2001
 - .1.2 item H.2 Revision of resolution A.815(19) on World-wide radionavigation system; 2001
 - .1.3 item H.3 Performance standards for bridge watch alarm; 2001
 - .1.4 item H.4 Guidelines for recording events related to navigation; 2001
 - .1.5 item H.5 Guidelines on automatic identification system (AIS) operational matters (in co-operation with COMSAR); 2001
 - .1.6 item H.6 Guidelines on Voyage Data Recorders (VDR) ownership and recovery; 2001
 - .1.7 item H.7 Training and certification of maritime pilots and revision of resolution A.485(XII); and 2001

- | | | | |
|------|--|---|------|
| .1.8 | item L.1 | Development of guidelines for ships operating in ice-covered waters (co-ordinated by DE); | 2001 |
| .2 | extend the target completion date of the following work programme items: | | |
| .2.1 | item L.2 | Integrated bridge systems (IBS) operational aspects | 2002 |
| .3 | include one new work programme item: | | |
| .3.1 | item H.9 | Review of performance standards for radar equipment | 2003 |

Arrangements for the next session

10.8 The Sub-Committee anticipated that Working Groups on the following subjects may be established at NAV 48:

- .1 Ships' Routeing (item 3);
- .2 Technical matters [items 4, 8, 9 and 10]; and
- .3 [Places of refuge (item 5)].

Date of the next session

10.9 The Sub-Committee noted that its forty-eighth session had been tentatively scheduled to be held from 15 to 19 July 2002.

11 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2002

In accordance with rule 16 of the Rules of procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mr. K. Polderman (The Netherlands) as Chairman and Dr. V.I. Peresykin (Russian Federation) as Vice Chairman for 2002.

12 ANY OTHER BUSINESS

Amendments to Assembly resolution A.893(21) – Guidelines for Voyage Planning

12.1 The Sub-Committee noted that during the development of Assembly resolution A.893(21) - Guidelines on voyage planning, the possibility of an amendment to SOLAS Chapter V on voyage planning was recognized. A reference to a SOLAS regulation on voyage planning was included in the preliminary draft Assembly resolution, but was removed when it became clear that the SOLAS Chapter V amendments would not be finalized before the twenty-first session of the Assembly. The importance of expedient adoption by the twenty-first session of the Assembly of Guidelines on Voyage Planning took precedence over waiting until the SOLAS chapter V amendments were finalized and a reference to the appropriate regulation could be added. It was noted in the discussions that such a reference could be added to the Assembly resolution after the SOLAS amendments were finalized. The new revised SOLAS chapter V is expected to enter into force on 1 July 2002.

12.2 The Sub-Committee considered a proposal by the United States (NAV 46/15/1) proposing amendments to resolution A.893(21) to reflect the adoption of SOLAS regulation V/34 on safe navigation and avoidance of dangerous situations, which enters into force on 1 July 2002.

12.3 The Sub-Committee noted that this issue was not on its work programme and the Committee's agreement was required before starting the amendment procedure. Accordingly, the Sub-Committee requested the United States to submit its proposal to MSC 75.

Electronic Chart Display and Information System - ECDIS

12.4 The Sub-Committee considered a proposal by Germany (NAV 47/12/1), requesting clarification on ECDIS requirements as due to some different interpretation of the new SOLAS regulation (V/19, subparagraph 2.1.4), a ship carrying ECDIS instead of paper charts, might encounter problems when inspected by port state control officers around the world, if she is not in possession of a document to prove that the ECDIS in operation is accepted by the flag State.

12.5 Germany also requested all Member States which already apply regulation 19 of the revised SOLAS chapter V, subparagraph 2.1.4, to inform the Organization, through a general notification by their Government, stating their national implementation practice to fulfil these requirements, with the aim of providing assistance and clarification on the implication of the words "may be accepted" to port State control officers.

12.6 The Sub-Committee recognized the general concerns that had been raised in the German proposal (NAV 47/12/1), however, the Sub-Committee was of the opinion that the proposed course of action would only add to the paper work and that there were alternatives to get around this problem.

12.7 During the discussion, the Sub-Committee was informed by some delegations that it was possible to address the matter by the following options namely:

- .1 the ECDIS carriage could be reflected in the safety of equipment certificate on board the ship;
- .2 Record of Equipment for the Cargo Ship Safety Equipment Certificate (Form E) which details navigational systems and equipment (Paragraph 2.1) could reflect the ECDIS status; and
- .3 the flag State could address the matter on individual ship by ship basis or a holistic approach could be adopted for all ships flying its flag.

12.8 The Sub-Committee decided that the particular option was best left to respective national administrations.

Measures aimed at eliminating sub-standard oil tankers: Oil tanker safety-related matters

12.9 The Sub-Committee noted that in pursuance of a request of MEPC 45, MSC 73 considered a set of measures aimed at eliminating sub-standard oil tankers, using as basic documents Circular letter No.2263, dated 6 October 2000, issued by the Secretariat to this effect; and MSC 73/2/2 (paragraphs 6 and 7 and annex). In this connection, MSC 73, tasked its *ad hoc* working group with the consideration of the following:

- .1 to fully examine the measures listed in the annex to document MSC 73/2/2 aimed at eliminating sub-standard oil tankers, taking also into consideration document MSC 73/INF.14 (IACS), with a view to selecting only the **viable** proposals and rationalizing them in order to:
 - .1 avoid repetition;
 - .2 determine whether each of the selected measures refers to oil tankers only or to other ship types as well;
 - .3 determine whether any of the selected measures have already been, or are currently being, addressed by an IMO body;
 - .4 identify the selected measures which are either predominantly safety-related, environment-related or a mixture of both;
- .2 as the list annexed to document MSC 73/2/2 may not be exhaustive, to propose any additional measures which the group might consider necessary and rationalize them as per paragraphs .1.2 to .1.4 above;
- .3 to prepare an action plan for the consideration of all the identified rationalized measures, either by the MSC, the MEPC or the appropriate sub-committees, providing, in each case, any comments the group might deem necessary to make to assist in the process, and indicating to what session of the Committee(s) should each of the assigned sub-committees report; and
- .4 in carrying out the above tasks, to bear in mind that the introduction of additional “layers” to the existing survey requirements should be avoided and that, instead, emphasis should be placed on achieving full implementation of the current survey regime.

12.10 The Sub-Committee further noted that regarding the proposed measures selected by the group, as contained in annex 1 to the group’s report (MSC 73/WP.14), the Chairman proposed two specific actions that MSC 73 could take forward:

- .1 firstly, the only specific proposal which could go directly to the sub-committees was the one proposed by the Bahamas in document MEPC 45/7/11 and supported by MEPC 45. This proposal, which the working group had agreed should be taken further (MSC 73/WP.14, annex 1, item 9), albeit in a simplified manner, should be referred directly to the DE Sub-Committee for consideration in broader terms as proposed in document MEPC 45/7/11; and
- .2 secondly, the working group’s report (MSC 73/WP.14), as amended, should be referred to the sub-committees and to MEPC 46, requesting them to consider it in general - i.e. not to embark on substantial debate - but to address the relevant proposals for their attention and then advise MSC 74 on the outcome of the consideration of their assigned issues and submit possible proposals for inclusion in their work programmes.

MSC 73, in agreeing with the above proposals by the Chairman, requested Member Governments to consider the report of the working group (MSC 73/WP.14), as amended, and invited them to submit to the MEPC and the sub-committees concerned, if considered necessary,

comments and proposals on specific issues, in accordance with the Guidelines on the organization and method of work, so that the Committee could have a further debate on the safety-related issues and decide on the way forward for itself and the sub-committees.

12.11 The Sub-Committee also noted that MSC 74 requested NAV 47 to consider measures 16 and 17, namely:

“16: Consider whether there is a need to develop additional requirements for the proper handling of ships and prudent seamanship in adverse weather conditions; and

17: Consider what additional safety measures may be necessary for ships navigating in narrow waterways and/or areas of dense traffic.”

12.12 The Sub-Committee observed that no documents have been submitted under this sub-agenda item, and considered in general items 16 and 17 of annex 1 to MSC 73/WP.14.

12.13 The Sub-Committee considered measure 16 namely, whether there was a need to develop additional requirements for the proper handling of ships and prudent seamanship in adverse weather conditions, and was of the opinion that for the present there was no need to develop any new additional requirements.

12.14 With respect to measure 17 on what additional safety measures may be necessary for ships navigating in narrow waterways and/or areas of dense traffic, the Sub-Committee was of the opinion that part of such work was already being done on a continuous basis by the Ships' Routeing Working Group and hence for the present there was no need for any further work. However, after being informed by the observer from IALA on the current work by IALA on operational procedures, risk analysis, pilotage, VTS and AIS issues for confined waterways, the Sub-Committee was of the opinion that the outcome of IALA's work could form the basis for some future work, and invited IALA to inform the Sub-Committee accordingly.

Application of the Committee's guidelines

12.15 The Sub-Committee noted that MSC 73 concurred with the outcome of MEPC 43 that:

- .1 the number of working groups should be kept to a minimum; however, a maximum of three should be permitted, where necessary, unless the Committee's Guidelines are amended;
- .2 a priority order should be established for possible working group items which require detailed discussion within small groups;
- .3 the fact that established working groups have completed their task and have been terminated should not allow working group(s) to be convened in their place during the same session;
- .4 when more than three independent working groups are needed to address unrelated topics over several sessions, such groups may meet at alternative sessions of the Committee/subsidiary body within the maximum number of three working groups per session; and

- .5 intersessional working groups should be avoided unless considered absolutely essential and the meeting of such intersessional meetings should be assessed on a case-by-case basis.

After further discussion on further amendment proposals made and taking into account the outcome of MEPC 44, the Committee:

- .1 re-affirmed its commitment to strict adherence to the Guidelines and that its subsidiary bodies should do the same;
- .2 in line with the provisions of paragraph 7 of the Guidelines, agreed that, at an appropriate time, a meeting should be convened of the Chairmen of the Committees and Sub-Committees to examine any matters pertinent to the effective conduct of business of the Committees and their subsidiary bodies; and
- .3 instructed the Secretariat to inform the sub-committees accordingly.

12.16 The Sub-Committee further noted that MSC 74 considered the issue of Committee/Sub-Committee structure and requested the Chairmen of the MSC and MEPC to:

- .1 taking into account the comments and proposals made by MEPC 46 and MSC 74, together with any comments made by C 86 (when considering the reports of MEPC 46 and MSC 74 and during the latter's consideration of the organizational review of the Secretariat) and any proposals and suggestions received from Members in the interim, to prepare a paper containing a draft work plan to undertake a revision of the Committees' and sub-committees' structure and identify the preferred way forward, for consideration by the twenty-second session of the Assembly;
- .2 subject to approval and any comments by the Assembly, to arrange for a meeting of the Chairmen of the MSC and MEPC, together with the Chairman of the FAL Committee, and the Chairmen of the Sub-Committees, in conjunction with MSC 75; and
- .3 to prepare a paper on implementation of the aforementioned work plan for consideration by MSC 76 and MEPC 48.

12.17 The Sub-Committee took note of the information provided.

Places of refuge

12.18 The Sub-Committee noted that COMSAR 5 agreed:

- .1 that the issue was relevant to its work on SAR, as permitting a ship into a port might be one possibility to save lives;
- .2 to invite the Committee to include into the Sub-Committee's work programme a corresponding item on "Port of refuge" with one session to complete;
- .3 that more time was needed for detailed consideration of the matter on the national level;

- .4 to invite submissions on this issue to COMSAR 6; and
- .5 to invite the Committee to instruct the NAV Sub-Committee to consider the matter as a co-ordinating Sub-Committee.

12.19 The Sub-Committee further noted that MEPC 46, through its OPRC Working Group, also considered the matter and agreed (MEPC 46/23, paragraph 4.11.5) that the work carried out by it on the issue of sheltered waters/safe havens from the marine environment protection perspective should be forwarded to the Maritime Safety Committee for consideration. It also agreed a proposed set of issues from which criteria would need to be developed as guidance to Member States when considering sheltered water/safe haven from a marine environmental response perspective (MEPC 46/23, annex 4).

12.20 The Sub-Committee also noted that MSC 74 further considered the issue. In concluding his summing up of the MSC 74 discussion, the Chairman, taking into account the various comments and proposals made, suggested a way forward as follows:

- .1 the NAV Sub-Committee should be appointed as the co-ordinating Sub-Committee;
- .2 NAV 47 should be requested to give preliminary consideration to the issue including the identification of other IMO bodies which should be involved in the exercise, e.g. MEPC's OPRC Working Group (on pollution matters), COMSAR, DE, the SPI Working Group, etc;
- .3 NAV 47 should also be requested, taking into account the outcome of MEPC 46, to prepare draft terms of reference for MSC 75 to consider and MEPC 47 to take into account in any further work that the Committee intended to carry out on the issue; and
- .4 NAV 47 should be further authorized to convey requests for input directly to the relevant sub-committees identified and possibly the SPI Working Group subject to endorsement of the terms of reference it will prepare by MSC 75.

MSC 74 fully endorsed the Chairman's summation and, in addition to the above, made decisions as outlined in the ensuing paragraphs. In order to make progress on the issue, the Committee agreed with the Chairman's proposal that, at present, the issue should be considered from the "operational safety" point of view, and the most appropriate sub-committee for this was the NAV Sub-Committee (to act as the co-ordinator of possible contributions from other sub-committees, e.g. COMSAR, DE, etc. and the SPI Working Group).

Without prejudice to its work, the NAV Sub-Committee was also instructed to consider drafting guidelines on:

- action expected from coastal States providing "places of refuge" to ships in distress;
- the evaluation of risks associated with the provision of places of refuge; and
- action masters of ships in distress should take when in need of "places of refuges" (including action on board and action required by other ships in their vicinity, salvage operators and coastal States).

12.21 The Sub-Committee observed that MSC 74 included, in the Sub-Committee's work programme, a high priority item on "Places of refuge", with the mentioned terms of reference and a target completion date of 2003, in co-operation with the COMSAR and DE Sub-Committees; and assigned the NAV Sub-Committee as the co-ordinating Sub-Committee on the matter and instructed NAV 47 to give preliminary consideration to the subject under its agenda item on "Any other business".

12.22 The Sub-Committee noted that no specific documents have been submitted under this sub-agenda item, however, as MSC 74 considered this to be a very important issue, which had also been emphasised by the Secretary-General in his opening remarks; it was imperative that the issue was addressed on a priority basis.

12.23 The Sub-Committee was informed by the Secretariat that the matter had also been brought to the attention of the Legal Committee for it to consider it, if it so decides, from the international law, jurisdiction, rights of coastal states, liability, insurance, bonds, etc., points of view.

12.24 There was considerable discussion on the matter with a majority of the delegations of the view that there should be a global perspective of the issue taking into account regional peculiarities and also that factors to be taken into account should include safety of life, environmental protection and responsibilities of ship-owners and salvage matters.

12.25 The Sub-Committee agreed that the issues involved were of a very complex nature and that the issue needed to be addressed on a global basis. Some delegations felt that the term 'ships in distress' should be avoided as within the framework of various Conventions this has specific meaning leading to different requirements and could lead to confusion. Accordingly a better terminology should be used instead of "ships in distress".

12.26 The Sub-Committee also agreed that regional considerations along with safety of people, the environment around the area and salvage issues would have to be taken into account when determining places of refuge. With regard to contingency planning aspects, the Sub-Committee was of the opinion that resolution A.853 (20) – relating to places of refuge, should also be taken into account when drafting the guidelines.

12.27 The Sub-Committee further agreed that only operational issues should be considered in the preliminary stages and hence only the NAV and COMSAR Sub-Committees along with MEPC should be asked to provide the inputs. Thereafter if need be other IMO bodies could be involved.

Establishment of a Drafting Group

12.28 On the basis of the afore-mentioned preliminary discussion, the Sub-Committee established a drafting group and instructed it, to take into account all decisions of the plenary and other IMO bodies:

- .1 prepare draft terms of reference for MSC 75 to consider and MEPC 47 to take into account in any further work that the Committees intend to carry out on this issue;
- .2 identify for such terms of reference other IMO bodies which should be involved in the work;

- .3 prepare a general framework provisionally indicating the subjects and aspects to be addressed under the guidelines for:
 - .1 the identification and designation of suitable places of refuge;
 - .2 the evaluation of risks associated with the provisions of places of refuge; and
 - .3 the action of masters in need of places of refuge

12.29 Having received the drafting group's report (NAV 47/WP.5), the Sub-Committee took action as summarised hereunder.

12.30 The Sub-Committee as instructed, taking into account the preliminary discussions in the plenary and the decisions of other IMO bodies prepared draft terms of reference for the consideration of MSC 75 and MEPC 47 for further work on the issue (annex 18).

12.31 The Sub-Committee agreed that apart from the decision of MSC 74 for the NAV Sub-Committee to be the co-ordinating Sub-Committee, COMSAR Sub-Committee should be invited to provide the initial input for further progress and MEPC should be informed about the progress in the matter. The Sub-Committee also agreed that in case it was necessary at later stage other IMO bodies such as SLF, STW, DE and FSI Sub-Committees and the SPI Working Group could be requested to provide further inputs.

12.32 In preparing a general framework provisionally indicating the subjects and aspects to be addressed under the guidelines, the Sub-Committee agreed that at this moment for the purpose of development it would be best to discuss the matter under three chapters and on annex namely:

- .1 General;
- .2 Action of masters in need of places of refuge;
- .3 Action expected of coastal States; and
- .4 Evaluation of risks associated with the provisions of places of refuge.

12.33 In approving the general framework indicating in broad terms the subjects (annex 19), the Sub-Committee agreed that this list should not be considered to be exhaustive and invited Member Governments, intergovernmental and non-governmental organizations to submit comments and proposals for consideration at its next session.

Guidelines for ships operating in ice-covered waters

12.34 The Sub-Committee recalled that, at its forty-fourth session, it had given preliminary consideration to the matter, and, considering the heavy workload envisaged at NAV 45, invited the Committee to postpone further consideration of this issue until NAV 46. MSC 70 had agreed with this request and decided that work should start at NAV 46.

12.35 The Sub-Committee further recalled that, at its forty-fifth session, it noted that MSC 71 had instructed the DE (co-ordinator), BLG, FP, COMSAR, NAV, SLF and STW Sub-Committees to conduct their work on this issue in accordance with the approved framework (MSC 71/23, paragraph 9.16) with immediate effect, and had invited the MEPC to concur with

this course of action. It also decided to invite Members to submit comments/proposals on this issue for consideration at NAV 46.

12.36 The Sub-Committee noted that DE 43 established a working group to review the text of the draft guidelines and further agreed to refer the report of the working group (DE 43/WP.10) to DE 44 together with the status report of the draft guidelines (Part 2 of the report of the Working Group), which would be prepared in collaboration with the Secretariat.

12.37 The Sub-Committee also noted that DE 44 identified the parts of the draft Guidelines, as set out in DE 44/19, annex 8, which should be referred to other sub-committees, based on the comments received from other sub-committees on an initial matrix annexed to DE 41/WP.7, on annex 2 of DE 44/12 and on the most recent amendments to the draft Guidelines. DE 44 agreed to refer the relevant parts of the draft Guidelines to the appropriate sub-committees for consideration and instructed the Secretariat to provide the sub-committees with a clean version of the draft Guidelines, the table identifying the parts where their input is sought and the instructions of the MSC 71 (MSC 71/23, paragraph 9.16) regarding the preparation of the draft Guidelines.

12.38 The Sub-Committee reviewed the text of chapter 12 and 13 as given in the annex to NAV 47/2/1 and agreed the text as given in annex 20 for forwarding to DE 45.

Regional Marine Electronic Highway in the East Asian Seas

12.39 The Sub-Committee noted the information provided by the Secretariat, in addition to that contained in document MEPC 46/INF.35 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. It also noted that the project first phase will be in the Straits of Malacca and Singapore and started in March 2001 for a duration of one year and that project activities have commenced in real earnest with the scheduled start of the first national workshop planned for 18-20 July 2001. The project objective is to develop an Action Plan and a Project Brief for implementing the first phase regional MEH.

Revision of the SOLAS expression “ships constructed”

12.40 The Sub-Committee noted, that MSC 74 endorsed the opinion of FSI 9 that the SOLAS expression “ships constructed” should be revised so that it would be based on the principles of building contract and delivery dates similar to those in MARPOL regulation I/1(6) and paragraph 1.2 of the Unified Interpretations of provisions of MARPOL Annex I and that the revised expression should only apply to future amendments to SOLAS 74 which affect the design and construction of ships.

Performance standards for radar reflectors

12.41 The Sub-Committee noted that MSC 74 considered document MSC 73/18/4 (United Kingdom) proposing the revision of the performance standards for radar reflectors (resolution A.384(X)) to take account of the requirements of the revised SOLAS chapter V and the enhanced understanding of the technical attributes of such devices as well as the range at which they can be detected, and decided to include, in the Sub-Committee’s work programme, a high priority item on “Revision of the performance standards for radar reflectors”, with two sessions needed to complete the item, instructing NAV 47 to give preliminary consideration to the item.

12.42 The Sub-Committee noted that the Technical Working Group had given preliminary consideration to the issue of "Revision of the Performance Standards for Radar Reflectors" and the outcome of the Working Group's discussion related to this item would be circulated under the appropriate agenda item to NAV 48. Members were invited to consider the report of the Technical Working Group, when circulated, and submit comments and proposals thereon for consideration at NAV 48 bearing in mind the target completion date of 2003.

Anchoring, mooring and towing equipment (co-ordinated by DE)

12.43 The Sub-Committee noted that MSC 74 considered document MSC 73/18/8 (Australia and Canada) on the subject matter and agreed to include, in the work programmes of the DE Sub-Committee (co-ordinator) and NAV Sub-Committee, a high priority item on "Anchoring, mooring and towing equipment", with a target completion date of 2003 as well as the same item in the provisional agenda for DE 45, while instructing NAV 47 to give preliminary consideration to the item. In this context, IACS was requested to provide information on their rules and regulations relating to the issue and other pertinent information to the DE and NAV Sub-Committees.

12.44 The delegation of Australia outlined the background of the submission (MSC 73/18/8). The submission was a result of several recent incidents that had occurred. In one instance, in Australian waters whilst a 30,000 product tanker was leaving berth with the aid of a tug, the power of the tug severely damaged mooring bitts on the deck of the tanker which consequently opened up a tank of low flashpoint cargo. There was fortunately no resultant explosion but the potential for a disaster was clear. The Australian delegation considered that it was not an isolated problem internationally, and since the paper had been submitted, a similar incident had occurred again without too much adverse effect.

The Australian delegation also considered that the issue should also address standards relating to mooring lines and associated equipment following several accidents.

12.45 The observer from IACS stated that as requested by MSC 74, IACS would be submitting relevant documents to DE 45.

12.46 The observer from IMPA informed the Sub-Committee of its intention to send a circular letter to its members on this issue and inform the Sub-Committee of the outcome.

12.47 The Sub-Committee considered on a preliminary basis the proposals outlined in the document MSC 73/18/8 and was of the opinion that in the absence of more detailed proposals it was not possible to make progress at this session.

12.48 The Sub-Committee requested Members to submit proposals on the issue for detailed consideration at NAV 48 bearing in mind the target completion date of 2003.

Training in collision avoidance

12.49 The Sub-Committee recalled the opinion of NAV 46 that the STW Sub-Committee should be requested to make training establishments for officers of the navigational watch aware of the importance to pay proper attention in the training of officers of the navigational watch to the matter of conflicting actions in collision avoidance and its instructions to the Secretariat to bring this matter to the attention of the STW Sub-Committee.

12.50 The Sub-Committee further noted that STW 32 considered the need for the development of appropriate guidance for maritime training institutes and decided that there was insufficient information on which to take action, and invited the Committee to invite the Sub-Committee to provide examples to clearly demonstrate the issues involved in order that the STW Sub-Committee might propose appropriate solutions in due course. MSC 74 subsequently endorsed that request.

12.51 The Sub-Committee through its Ships Routeing and related matters working group (NAV 47/WP.6) considered the matter, and approved a note for the STW Sub-Committee, given in annex 21 providing the requested information on conflicting actions in collision avoidance.

12.52 The Sub-Committee further requested the Secretariat to convey the note to the STW Sub-Committee.

Expressions of appreciation

12.53 The Sub-Committee expressed appreciation to Captain R. Clipsham from IFSMA for his valuable contribution to the work of IMO and that of the Sub-Committee in particular and wished him a long and happy retirement.

13 ACTION REQUESTED OF THE COMMITTEE

13.1 The Committee, at its seventy-fifth session, is invited to:

- .1 adopt, in accordance with resolution A.858(20):
 - .1 the new traffic separation schemes, including associated routeing measures, off the Mediterranean coast of Egypt (paragraph 3.42 and annex 2);
 - .2 the amended traffic separation scheme "South of Gedser", including associated routeing measures and note that Denmark and Germany will implement the extended deep water as an interim measure to become effective 6 January 2002. (paragraphs 3.45 to 3.48 and annex 2);
 - .3 the amended traffic separation schemes, including associated routeing measures, Off Ouessant (paragraph 3.50 and annex 2);
 - .4 the amended traffic separation schemes including associated routeing measures in the approaches to Los Angeles - Long Beach (paragraph 3.52 and annex 2);
 - .5 the amended traffic separation schemes, including associated routeing measures, in the Strait of Juan De Fuca and its approaches in Puget Sound and in Haro Strait, Boundary Pass, and in the Strait of Georgia (paragraph 3.53, annex 2);
 - .6 the amended ships routeing system in the East part of the Gulf of Finland and note that the amended traffic separation scheme which is located in the territorial waters of the Russian Federation will be implemented by the Russian Federation as an interim measure on 1 November 2001 (paragraph 3.54 to 3.56, annex 2);

- .7 the three mandatory no anchoring areas in the Tortugas Ecological Reserve and the Tortugas Bank in the Florida Keys (paragraph 3.57, annex 4);
- .8 the amended northernmost area to be avoided off the Florida Coast (paragraph 3.58, annex 4);
- .9 the area to be avoided around Malpelo Island (paragraph 3.59, annex 4);
- .10 the amended area to be avoided off the Washington coast (paragraph 3.61, annex 4);
- .11 the two-way route in the Strait of Juan de Fuca (paragraph 3.62, annex 4);
- .12 the precautionary area around the Terra Nova FPSO (paragraph 3.66, annex 4);
- .13 the amended wording with respect to the two existing areas to be avoided in the region of the Shetland Islands (paragraph 3.67, annex 4);
- .14 the proposed mandatory ship reporting system "In Greenland Waters" (paragraph 3.69 and annex 5);
- .15 the amendment to the existing mandatory ship reporting system "Off Ushant" (paragraph 3.77 and annex 7);
- .2 note the joint statement by Denmark and Germany on the interim implementation of the amended Deep Water route (paragraph 3.49, annex 3);
- .3 note the statement of Italy on the further development of proposals for routing and mandatory ship reporting systems in the Adriatic sea (paragraph 3.76, annex 6);
- .4 note that the Sub-Committee endorsed the revised draft Assembly resolution on Guidelines for the identification and Designation of Particularly Sensitive Sea Areas to replace resolutions A.720(17) and A.885(21) prepared by MEPC 46 (paragraph 3.78);
- .5 note that the IHO would progress work on both the paper and the digital symbology for PSSAs as a matter of urgency (paragraph 3.79);
- .6 note that the Sub-Committee approved a note to assist the Secretariat in developing a paper for the drafting of proposals for routing measures (paragraphs 3.80 to 3.85, annex 8);
- .7 endorse the action of the Sub-Committee in circulating SN/Circ.217 on Interim Guidelines for the presentation and display of AIS target information (paragraph 4.12);
- .8 note that the Sub-Committee approved the draft Guidelines for the onboard operational use of shipborne Automatic Identification System (AIS), as amended,

together with the associated draft Assembly resolution for submission to A 22 for adoption, as authorized by MSC 73 (paragraph 5.30, annex 9);

- .9 note that the Sub-Committee approved the draft Guidelines for the recording of events related to navigation, as amended together with the associated draft Assembly resolution for submission to A 22 for adoption, as authorized by MSC 73 (paragraph 5.33, annex 10);
- .10 note that the Sub-Committee endorsed draft guidelines on VDR ownership and recovery, as amended together with the associated draft MSC circular for submission to MSC 75 for approval, subject to comments thereon by FSI 10 (paragraph 5.40, annex 11);
- .11 note that the Sub-Committee approved the draft revised annex 2 on recommendation on operational procedures for maritime pilots other than deep-sea pilots to resolution A.485(XII) and forwarded it to STW 33 to enable the STW Sub-Committee to complete its task (paragraph 6.16, annex 12);
- .12 approve the draft revised text of resolution A.815(19) on World-wide radionavigation system, for submission to the twenty-third session of the Assembly for adoption (paragraph 7.6 and annex 13);
- .13 adopt, in accordance with resolution A.886(21), the proposed draft MSC resolution on:
 - .1 Performance Standards for a Bridge Navigational Watch Alarm System (BNWAS) (paragraph 7.22 and annex 14);
- .14 endorse the action of the Sub-Committee to include the agreed footnote relating to the value of the repeatability of the settle point error into resolution MSC.116(73) published in IMO publication "Performance standards for shipborne radiocommunications and navigation equipment (paragraph 7.25);
- .15 endorse the action of the Sub-Committee in submitting a liaison statement to ITU-R Working Party 8B (paragraphs 8.1 and 8.2 and annex 15);
- .16 consider the draft terms of reference for the future work on Places of Refuge (paragraph 12.30, annex 18);
- .17 note that for the present only the COMSAR Sub-Committee should be invited to provide the initial input for further progress and MEPC should be informed about the progress in the matter (paragraph 12.31);
- .18 review and approve, in principle, the draft general framework associated with future work on Places of Refuge (paragraph 12.33, annex 19);
- .19 note that the Sub-Committee reviewed the text of chapters 12 and 13 on draft Guidelines for ships operating in Arctic ice-covered waters and forwarded the agreed text to DE 45 (paragraph 12.38 and annex 20);
- .20 note that the Sub-Committee approved a note for the STW Sub-Committee providing information on conflicting actions in collision avoidance to enable

STW 33 to develop guidance to make training establishments for officers of the navigational watch aware of the importance to pay proper attention in the training of officers of the navigational watch to the matter of conflicting actions in collision avoidance (paragraphs 12.49 to 12.52, annex 21); and

.21 approve the report in general.

13.2 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 16) in general and, in particular, to:

- .1 delete "World-wide radio navigation" as the task has been completed (paragraph 7.2);
- .2 delete "Revision of resolution A.815(19) on World-wide radionavigation system as the task has been completed (paragraph 7.8);
- .3 delete "Performance standards for bridge watch alarm" as the task has been completed (paragraph 7.23);
- .4 delete "Guidelines for recording events related to navigation" as the task has been completed (paragraph 5.33);
- .5 delete "Guidelines on automatic identification system (AIS) operational matters (in co-operation with COMSAR)" as the task has been completed (paragraph 5.30);
- .6 delete "Guidelines on Voyage Data Recorders (VDR) ownership and recovery" as the task has been completed (paragraph 5.41);
- .7 delete "Training and certification of maritime pilots and revision of resolution A.485(XII)" as the task has been completed (paragraph 6.16);
- .8 delete "Development of guidelines for ships operating in ice-covered waters (co-ordinated by DE)" as the task has been completed (paragraph 12.38);
- .9 extend the target completion date of "Integrated bridge systems (IBS) operational aspects" to 2002 (paragraph 4.5); and
- .10 include one new work programme item "Review of performance standards for radar equipment" with a target completion date of 2 sessions (paragraphs 4.13, 8.13 and 10.4).

13.3 The Committee is also invited to approve the proposed agenda for the Sub-Committee's forty-eighth session (annex 17) which has been developed using the agenda management procedure.

ANNEX 1

**AGENDA FOR THE FORTY-SEVENTH SESSION INCLUDING
A LIST OF DOCUMENTS**

1 Adoption of the agenda

- NAV 47/1 - Secretariat
NAV 47/1/1 - Secretariat

2 Decisions of other IMO bodies

- NAV 47/2 - Secretariat
NAV 47/2/1 - Secretariat
NAV 47/2/2 - Secretariat

3 Routeing of ships, ship reporting and related matters

- NAV 47/3 - United States
NAV 47/3/1 - United States
NAV 47/3/2 - Denmark and Germany
NAV 47/3/3 - Denmark
NAV 47/3/4 - Italy
NAV 47/3/5 - Italy
NAV 47/3/6 and
 Corr.1 English only - France
NAV 47/3/7 - France
NAV 47/3/8 - United States
NAV 47/3/9 - United States and Canada
NAV 47/3/10 - United States
NAV 47/3/11 - United States
NAV 47/3/12 - Egypt
NAV 47/3/13 - Russian Federation
NAV 47/3/14 - Canada
NAV 47/3/15 - United Kingdom
 NAV 47/INF.2 - United States
 NAV 47/INF.3 - Sweden
 NAV 47/INF.4 - United Kingdom
 NAV 47/INF.5 - United Kingdom
 NAV 47/INF.6 - Russian Federation
MEPC 46/6/2 - United States
MEPC 46/6/3 - Colombia
 NAV 47/WP.6 - Report of the Ships' Routeing Working Group

4 Integrated bridge systems (IBS) operational aspects

NAV 47/4	-	Finland
NAV 47/4/1	-	IEC
NAV 47/4/2	-	CIRM
NAV 47/4/3	-	Sweden, Finland and Germany
NAV 47/WP.1/Add.1	-	Report of the Technical Working Group

5 Guidelines relating to SOLAS chapter V on:

NAV 47/5	-	United Kingdom
NAV 47/5/1	-	United Kingdom
NAV 47/5/2	-	Republic of Korea
NAV 47/WP.3/Add.1	-	Report of the Working Group

6 Training and certification of maritime pilots and revision of resolution A.485(XII)

NAV 47/6	-	INTERTANKO, OCIMF, BIMCO, SIGTTO, ICS, IFSMA and INTERCARGO
NAV 47/6/1	-	IMPA
NAV 47/WP.2	-	Report of the Drafting Group

7 Navigational aids and related matters

NAV 47/7	-	Chairman of TWG
NAV 47/7/1	-	IALA
NAV 47/7/2	-	United Kingdom
NAV 47/7/3	-	United Kingdom
NAV 47/7/4	-	Germany, Finland and Sweden
NAV 47/7/5	-	Japan
NAV 47/7/6	-	Japan
NAV 47/7/7	-	Japan
NAV 47/7/8	-	Japan
NAV 47/INF.7	-	Japan
NAV 47/INF.8	-	Russian Federation
MSC 73/11/2	-	Japan
NAV 47/WP.1	-	Report of the Technical Working Group

8 ITU matters including radiocommunications ITU-R study Group 8 Matters

NAV 47/8	-	Secretariat
NAV 47/8/1	-	Secretariat
NAV 47/8/2*	-	United Kingdom
NAV 47/WP.1/Add.1	-	Report of the Technical Working Group

* also submitted under agenda item 10

9 Effective voyage planning for large passenger ships

(no documents submitted)

10 Work programme and agenda for NAV 48

- NAV 47/8/2** - United Kingdom
NAV 47/WP.4 - Draft revised work programme and provisional draft agenda of
the Sub-Committee

11 Election of Chairman and Vice-Chairman for 2002

12 Any other business

- NAV 47/12 - United States
NAV 47/12/1 - Germany
NAV 47/WP.5 - Report of the Drafting Group

13 Report to the Maritime Safety Committee

- NAV 47/WP.7 - Draft report to the Maritime Safety Committee

** also submitted under agenda item 8

ANNEX 2

**NEW AND AMENDED TRAFFIC SEPARATION SCHEMES AND
ASSOCIATED ROUTEING MEASURES**

OFF THE MEDITERRANEAN COAST OF EGYPT

(Reference charts: British Admiralty chart No. 2573, 2574 and 2578

Note: All positions are in degrees, minutes and decimals of a minute and are referred to World Geodetic System (WGS) 1984 Datum.)

Description of the new traffic separation schemes:**Western Approach to Mina Dumyat (143° - 323°)**

- (a) A separation line connects the following geographical positions:
- (1) 31°38'.60N, 31°47'.15E
 - (2) 31°45'.10N, 31°41'.50E
- (b) A traffic lane for northbound traffic is established between the separation line and a separation line connecting the following geographical positions:
- (3) 31°39'.00N, 31°47'.80E
 - (4) 31°45'.10N, 31°42'.40E
- (c) A traffic lane for southbound traffic is established between the separation line and a separation line connecting the following geographical positions:
- (5) 31°37'.75N, 31°47'.00E
 - (6) 31°45'.10N, 31°40'.50E

Precautionary area north Dumyat established by a line connecting the following geographical positions:

31°37'.75N, 31°47'.00E
 31°38'.60N, 31°47'.15E
 31°39'.00N, 31°47'.80E
 31°38'.45N, 31°48'.25E
 31°37'.50N, 31°48'.00E

Eastern Approaches to Mina Dumyat (055°-235°)

- (a) A separation line connects the following geographical positions:
- (7) 31°38'.45N, 31°48'.25E
 - (8) 31°44'.05N, 31°57'.55E

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

(9) 31°37'.50N, 31°48'.00E
(10) 31°43'.55N, 31°58'.10E

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

(11) 31°39'.00N, 31°47'.80E
(12) 31°44'.50N, 31°57'.00E

Western Approaches to Bur Said (135° - 315°)

- (a) A separation zone half mile wide as the following geographical positions:

(13) 31°44'.25N, 31°59'.30E
(14) 31°44'.00N, 31°58'.85E
(15) 31°31'.85N, 32°12'.95E
(16) 31°32'.20N, 32°13'.40E

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

(17) 31°32'.70N, 32°14'.00E
(18) 31°44'.70N, 32°00'.05E

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

(19) 31°31'.30N, 32°12'.35E
(20) 31°43'.55N, 31°58'.10E

Eastern Approach to Bur Said (059°-239°)

- (a) A separation zone half mile wide as the following geographical positions:

(21) 31°35'.45N, 32°22'.95E
(22) 31°35'.85N, 32°22'.65E
(23) 31°42'.55N, 32°35'.65E
(24) 31°42'.15N, 32°35'.95E

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

(25) 31°34'.80N, 32°23'.40E
(26) 31°46'.00N, 32°45'.30E

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

- (27) 31°46'.00N, 32°35'.20E
- (28) 31°43'.20N, 32°35'.20E
- (29) 31°35'.80N, 32°20'.80E

Precautionary area north west Bur Said established by a line connecting the following geographical positions:

- 31°45'.40N, 31°55'.95E
- 31°43'.55N, 31°58'.10E
- 31°44'.70N, 32°00'.05E
- 31°45'.40N, 31°59'.52E

EXTENSION OF THE DEEP WATER ROUTE DW 17M INTO THE TRAFFIC SEPARATION SCHEME SOUTH OF GEDSER

AMENDED DEEP-WATER ROUTE NORTH-EAST OF GEDSER

(Reference chart: German 163, INT 1351, 2001 edition.)

Note: This chart is based on WGS 84

Description of the deep-water route

A deep-water route with a minimum depth of water below mean sea level of 17 metres is bounded by a line connecting the following geographical positions:

Existing No.	New No.	Geographical positions in WGS 84		
	(1)	54°27'.10N,	012°10'.50E	added
	(2)	54°27'.73N,	012°11'.30E	added
(1)	(3)	54°31'.30N,	012°12'.80E	amended
(2)	(4)	54°36'.46N,	012°15'.83E	
(3)	(5)	54°46'.86N,	012°43'.23E	
(4)	(6)	54°46'.06N,	012°44'.03E	
(5)	(7)	54°35'.36N,	012°16'.93E	
(6)	(8)	54°31'.00N,	012°15'.20E	amended
	(9)	54°27'.40N,	012°13'.10E	added
	(10)	54°26'.57N,	012°11'.90E	added

Note:

Ships, other than ships which, because of their draught, must use the deep-water route, are recommended to use the areas to the north and south of this route, in such manner that eastbound ships proceed on the south side of the deep-water route and westbound ships on the north side.

Description of the amended Ushant traffic separation scheme:
(Reference chart: 6989)

1 The Ushant traffic separation scheme consists of:

- Two traffic lanes;
- A two way route;
- An Inshore traffic zone;
- An outer separation zone;
- A separation zone between the traffic lanes;
- A separation zone between the northeast bound lane and the two way route;
- A separation zone between the two way route and the inshore traffic zone.

2 The direction of navigation will be as follows:

- Northeast bound traffic, course on ground: 028° as far as the line of the turning point at 315° from the Créac'h light, then: 060° as far as the north-east boundary of the scheme.
- Southwestbound traffic, course on ground: 240° as far as the line of the turning point at 315° from the Créac'h light, then: 208° as far as the south-west boundary of the scheme.

Description of the modified traffic separation scheme:

the point co-ordinates are expressed in accordance with the WGS84 geodetic system.

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

	Latitude	Longitude
Point 1	48°57'.00 N	005°32'.50 W
Point 2	48°52'.75 N	005°28'.60 W
Point 3	48°48'.60 N	005°39'.60 W
Point 4	48°37'.40 N	005°48'.60 W
Point 5	48°39'.70 N	005°55'.20 W
Point 6	48°52'.05 N	005°45'.00 W

(b) A traffic lane for ships leaving the English Channel between the above separation zone and the following geographical points:

	Latitude	Longitude
Point 7	48°42'.00 N	006°01'.60 W
Point 8	48°55'.60 N	005°50'.60 W
Point 9	49°01'.10 N	005°36'.05 W

- (c) A traffic lane for ships entering the English Channel between that separation zone and the following geographical points:

	Latitude	Longitude
Point 10	48°35'.10 N	005°42'.30 W
Point 11	48°45'.00 N	005°34'.30 W
Point 12	48°48'.60 N	005°25'.10 W

- (d) An outer separation zone, seaward of the Ouessant traffic separation scheme, bounded by a line connecting points 7, 8, 9 and the following geographical points:

	Latitude	Longitude
Point 17	48°42'.60 N	006°02'.80 W
Point 18	48°56'.40 N	005°51'.60 W
Point 19	49°02'.00 N	005°36'.80 W

- (e) A separation zone bounded by a line connecting points 10, 11, 12 and the following geographical points:

	Latitude	Longitude
Point 13	48°39'.70 N	005°14'.70 W
Point 14	48°30'.60 N	005°26'.30 W

- (f) A coastal navigation zone bounded by a line connecting the following geographical points

	Latitude	Longitude
Point 15	48°29'.80 N	005°23'.50 W
Point 16	48°38'.00 N	005°12'.90 W
Men Korn Light	48°28'.00 N	005°01'.40 W
Jument Light	48°25'.35 N	005°08'.00 W

- (g) For ships in transit between ports situated between Cape Finisterre and Cape de la Hague, a two-way traffic lane 2 miles wide between the separation zone described in paragraph (e) and the coastal navigation zone.

This traffic lane is subject to French national legislation.

3 Special provision

See paragraph 2.2(c).

Ships carrying oils listed in appendix 1 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 listed in appendices I and II of Annex II of that Convention must, as far as possible, sail in the outer part of this lane.

IN THE APPROACHES TO LOS ANGELES – LONG BEACH

(Reference Chart: United States 18746, 2000 edition.

Note: This chart is based on North American 1983 Datum.)

Description of the amended traffic separation scheme

The traffic separation scheme “In the Approaches to Los Angeles – Long Beach” consists of three parts:

Western approach

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

- | | | |
|-----|------------|-------------|
| (1) | 33°37'.70N | 118°17'.60W |
| (2) | 33°36'.50N | 118°17'.60W |
| (3) | 33°36'.50N | 118°23'.10W |
| (4) | 33°43'.20N | 118°36'.90W |
| (5) | 33°44'.90N | 118°35'.70W |
| (6) | 33°37'.70N | 118°20'.90W |

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

- | | | |
|-----|------------|-------------|
| (7) | 33°38'.70N | 118°17'.60W |
| (8) | 33°38'.70N | 118°20'.60W |
| (9) | 33°45'.80N | 118°35'.10W |

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

- | | | |
|------|------------|-------------|
| (10) | 33°35'.50N | 118°17'.60W |
| (11) | 33°35'.50N | 118°23'.43W |
| (12) | 33°42'.30N | 118°37'.50W |

Southern approach

(a) A separation zone is established bounded by a line connecting the following geographic position:

- | | | |
|------|------------|-------------|
| (13) | 33°35'.50N | 118°10'.30W |
| (14) | 33°35'.50N | 118°12'.75W |
| (15) | 33°19'.00N | 118°05'.60W |
| (16) | 33°19'.70N | 118°03'.50W |

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

- | | | |
|------|------------|-------------|
| (17) | 33°35'.50N | 118°09'.00W |
| (18) | 33°20'.00N | 118°02'.30W |

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

- | | | |
|------|------------|-------------|
| (19) | 33°35'.50N | 118°14'.00W |
| (20) | 33°18'.70N | 118°06'.75W |

Precautionary area

(a) The precautionary area consists of the water area enclosed by the Los Angeles - Long Beach breakwater and a line connecting Point Fermin Light at 33°42'.30N, 118°17'.60W, with the following geographical positions:

- | | | |
|------|------------|-------------|
| (10) | 33°35'.50N | 118°17'.60W |
| (17) | 33°35'.50N | 118°09'.00W |
| (21) | 33°37'.70N | 118°06'.50W |
| (22) | 33°43'.40N | 118°10'.80W |

Note: Pilot boarding areas are located in the precautionary area. Due to heavy vessel traffic, mariners are advised not to anchor or linger in this precautionary area except to pick up or disembark a pilot.

IN THE STRAIT OF JUAN DE FUCA AND ITS APPROACHES

(Reference charts: United States 18400, 2000 edition; 18421, 2000 edition; 18440, 2000 edition; 18460, 1998 edition; 18465, 1995 edition; 18480, 1999 edition; 18485, 1998 edition; Canadian Hydrographic Service 3440, 1998 edition. *Note:* These charts are based on North American 1983 Datum.)

Description of the amended traffic separation scheme

Part I

In the approaches to the Strait of Juan de Fuca there are two traffic separation schemes and a precautionary area:

Western approach

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

- | | | |
|-----|------------|-------------|
| (1) | 48°30'.10N | 125°09'.00W |
| (2) | 48°30'.10N | 125°04'.67W |
| (3) | 48°29'.11N | 125°04'.67W |
| (4) | 48°29'.11N | 125°09'.00W |

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

- | | | |
|-----|------------|-------------|
| (5) | 48°31'.09N | 125°04'.67W |
| (6) | 48°31'.93N | 125°09'.00W |

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

(7) 48°27'.31N	125°09'.00W
(8) 48°28'.13N	125°04'.67W

South-western approach

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

(10) 48°23'.99N	125°06'.54W
(11) 48°27'.63N	125°03'.38W
(12) 48°27'.14N	125°02'.08W
(13) 48°23'.50N	125°05'.26W

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

(14) 48°22'.55N	125°02'.80W
(15) 48°26'.64N	125°00'.81W

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

(8) 48°28'.13N	125°04'.67W
(9) 48°24'.94N	125°09'.00W

Precautionary area

A precautionary area “JF”, is bounded by a line connecting the following geographical positions:

(5) 48°31'.09N	125°04'.67W
(2) 48°30'.10N	125°04'.67W
(3) 48°29'.11N	125°04'.67W
(8) 48°28'.13N	125°04'.67W
(11) 48°27'.63N	125°03'.38W
(12) 48°27'.14N	125°02'.08W
(15) 48°26'.64N	125°00'.81W
(16) 48°28'.13N	124°57'.90W
(18) 48°29'.11N	125°00'.00W
(25) 48°30'.10N	125°00'.00W
(17) 48°31'.09N	125°00'.00W

thence back to the point of origin at (5).

Part II

In the Strait of Juan de Fuca there are four separation schemes and a precautionary area:

Western lanes

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

(18) 48°29'.11N	125°00'.00W
(19) 48°29'.11N	124°43'.78W
(20) 48°13'.89N	123°54'.84W
(21) 48°13'.89N	123°31'.98W
(22) 48°14'.49N	123°31'.98W
(23) 48°17'.02N	123°56'.46W
(24) 48°30'.10N	124°43'.50W
(25) 48°30'.10N	125°00'.00W

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

(26) 48°16'.45N	123°30'.42W
(27) 48°15'.97N	123°33'.54W
(28) 48°18'.00N	123°56'.07W
(29) 48°32'.00N	124°46'.57W
(30) 48°31'.09N	124°47'.13W
(17) 48°31'.09N	125°00'.00W

Traffic may exit the lane between points (29) and (30) or may remain in the lane between points (30) and (17) en route to the precautionary area.

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

(16) 48°28'.13N	124°57'.90W
(31) 48°28'.13N	124°44'.07W
(32) 48°12'.90N	123°55'.24W
(33) 48°12'.94N	123°32'.89W

Southern lanes

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

(34) 48°10'.82N	123°25'.44W
(35) 48°12'.38N	123°28'.68W
(36) 48°12'.90N	123°28'.68W
(37) 48°12'.84N	123°27'.46W
(38) 48°10'.99N	123°24'.84W

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

(39) 48°11'.24N	123°23'.82W
(40) 48°12'.72N	123°25'.34W

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

(33) 48°12'.94N	123°32'.89W
(41) 48°09'.42N	123°24'.24W

Northern lanes

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

(42) 48°21'.15N	123°24'.83W
(43) 48°16'.16N	123°28'.50W
(44) 48°15'.77N	123°27'.18W
(45) 48°20'.93N	123°24'.26W

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

(46) 48°21'.83N	123°25'.56W
(26) 48°16'.45N	123°30'.42W

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

(47) 48°20'.93N	123°23'.22W
(48) 48°15'.13N	123°25'.62W

Eastern lanes

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

(49) 48°13'.22N	123°15'.91W
(50) 48°14'.03N	123°25'.98W
(51) 48°13'.54N	123°25'.86W
(52) 48°12'.89N	123°16'.69W

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

(54) 48°14'.27N	123°13'.41W
(55) 48°14'.05N	123°16'.08W
(48) 48°15'.13N	123°25'.62W

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

(40) 48°12'.72N	123°25'.34W
(53) 48°12'.34N	123°18'.01W

Precautionary area

A precautionary area “PA”, is bounded by a line connecting the following geographical positions:

(33) 48°12'.94N	123°32'.89W
(21) 48°13'.89N	123°31'.98W
(22) 48°14'.49N	123°31'.98W
(26) 48°16'.45N	123°30'.42W
(43) 48°16'.16N	123°28'.50W
(44) 48°15'.77N	123°27'.18W
(48) 48°15'.13N	123°25'.62W
(50) 48°14'.03N	123°25'.98W
(51) 48°13'.54N	123°25'.86W
(40) 48°12'.72N	123°25'.34W
(37) 48°12'.84N	123°27'.46W
(36) 48°12'.90N	123°28'.68W

thence back to point of origin at (33).

IN PUGET SOUND AND ITS APPROACHES

(Reference charts: United States 18421, 2000 edition; 18429, 1999 edition; 18430, 1996 edition; 18440, 2000 edition. *Note:* These charts are based on North American 1983 Datum.)

Description of the traffic separation scheme

The traffic separation scheme “In Puget Sound and its approaches” consists of a series of traffic separation schemes and precautionary areas broken into three geographic designations as follows:

- Part I: Rosario Strait
- Part II: Approaches to Puget Sound
- Part III: Puget Sound

Part I

Rosario Strait

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

(1) 48°48'.98N	122°55'.20W
(2) 48°46'.76N	122°50'.43W
(3) 48°45'.56N	122°48'.36W
(4) 48°45'.97N	122°48'.12W
(5) 48°46'.39N	122°50'.76W
(6) 48°48'.73N	122°55'.68W

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

(7) 48°49'.49N	122°54'.24W
(8) 48°47'.14N	122°50'.10W
(9) 48°46'.35N	122°47'.50W

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

(10) 48°44'.95N	122°48'.28W
(11) 48°46'.76N	122°53'.10W
(12) 48°47'.93N	122°57'.12W

(d) Connecting with precautionary “CA”, the waters contained within a circle of radius 1.24 miles centered at geographical position 48°45'.30N, 122°46'.50W.

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

(13) 48°44'.27N	122°45'.53W
(14) 48°41'.72N	122°43'.50W
(15) 48°41'.60N	122°43'.82W
(16) 48°44'.17N	122°45'.87W

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

(17) 48°44'.62N	122°44'.96W
(18) 48°41'.80N	122°42'.70W

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

(19) 48°44'.08N	122°46'.65W
(20) 48°41'.25N	122°44'.37W

(h) Connecting with precautionary “C”, the waters contained within a circle of radius 1.24 miles centered at geographical position 48°40'.55N, 122°42'.80W.

(i) A two-way route is established between the following geographical positions:

(21) 48°39'.33N	122°42'.73W
(22) 48°36'.08N	122°45'.00W
(23) 48°26'.82N	122°43'.53W
(24) 48°27'.62N	122°45'.53W
(25) 48°29'.48N	122°44'.77W
(26) 48°36'.13N	122°45'.80W
(27) 48°38'.38N	122°44'.20W
(28) 48°39'.63N	122°44'.03W

(j) Connecting with precautionary area “RB”, bounded to the north by the arc of a circle of radius 1.24 miles centered on geographical position 48°26'.38N, 122°45'.27W and connecting the following geographical positions:

(42) 48°25'.97N	122°47'.03W
(83) 48°25'.55N	122°43'.93W

and bounded to the south by a line connecting the following geographical positions:

(42) 48°25'.97N	122°47'.03W
(43) 48°24'.62N	122°48'.68W
(38) 48°23'.75N	122°47'.47W
(37) 48°25'.20N	122°45'.73W
(86) 48°25'.17N	122°45'.62W
(87) 48°24'.15N	122°45'.27W
(84) 48°24'.08N	122°43'.38W
(83) 48°25'.55N	122°43'.93W

Part II

Approaches to Puget Sound

The traffic separation scheme in the approaches to Puget Sound consists of a north-east/south-west approach, a north-west/south-east approach, a north/south approach and an east/west approach connecting with precautionary areas as follows:

North-east/south-west approach

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

(29) 48°24'.13N	122°47'.97W
(30) 48°20'.32N	122°57'.02W
(31) 48°20'.53N	122°57'.22W
(32) 48°24'.32N	122°48'.22W

connecting with precautionary area “RA”, the waters contained within a circle of radius 1.24 miles centered at 48°19'.77N, 122°58'.57W, and thence to:

(33) 48°16'.25N	123°06'.58W
(34) 48°16'.57N	123°06'.58W
(35) 48°19'.20N	123°00'.35W
(36) 48°19'.00N	123°00'.17W

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

(38) 48°23'.75N	122°47'.47W
(39) 48°19'.80N	122°56'.83W

connecting with precautionary area “RA”, and thence to:

(40) 48°15'.70N	123°06'.58W
(41) 48°18'.67N	122°59'.57W

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

(43) 48°24'.62N	122°48'.68W
(44) 48°20'.85N	122°57'.80W

connecting with precautionary area “RA”, and thence to:

(45) 48°19'.70N	123°00'.53W
(46) 48°17'.15N	123°06'.57W

(d) Connecting with precautionary area “ND”, which is bounded by a line connecting the following positions:

(47) 48°11'.00N	123°06'.58W
(46) 48°17'.15N	123°06'.57W
(48) 48°14'.27N	123°13'.41W
(49) 48°12'.34N	123°18'.01W
(50) 48°12'.72N	123°25'.34W
(51) 48°11'.24N	123°23'.82W
(52) 48°10'.82N	123°25'.44W
(53) 48°09'.42N	123°24'.24W
(54) 48°08'.39N	123°24'.24W

thence along the shoreline to the point of beginning (47).

North-west/south-east approach

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

(55) 48°27'.79N	123°07'.80W
(56) 48°25'.43N	123°03'.88W
(57) 48°22'.88N	123°00'.82W
(58) 48°20'.93N	122°59'.30W
(59) 48°20'.82N	122°59'.62W
(60) 48°22'.72N	123°01'.12W
(61) 48°25'.32N	123°04'.30W
(62) 48°27'.58N	123°08'.10W

connecting with precautionary area “RA”, and thence to:

(63) 48°18'.83N	122°57'.48W
(64) 48°13'.15N	122°51'.33W
(65) 48°13'.00N	122°51'.62W
(66) 48°18'.70N	122°57'.77W

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

(67) 48°28'.15N	123°07'.31W
(68) 48°25'.60N	123°03'.13W
(69) 48°23'.20N	123°00'.20W
(70) 48°21'.00N	122°58'.50W

connecting with precautionary area “RA”, and thence to:

(71) 48°19'.20N	122°57'.03W
(72) 48°13'.35N	122°50'.63W

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

(73) 48°27'.43N	123°08'.94W
(74) 48°25'.17N	123°04'.98W
(75) 48°22'.48N	123°01'.73W
(76) 48°20'.47N	123°00'.20W

connecting with precautionary area “RA”, and thence to:

(77) 48°18'.52N	122°58'.50W
(78) 48°12'.63N	122°52'.15W

(h) Connecting with precautionary area “SA”, the waters contained within a circle of radius 2 miles centered at geographical position 48°11'.45N, 122°49'.78W.

North/south approach (between precautionary areas “RB” and “SA”)

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

(79) 48°24'.15N	122°44'.08W
(80) 48°13'.33N	122°48'.78W
(81) 48°13'.38N	122°49'.15W
(82) 48°24'.17N	122°44'.48W

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

(84) 48°24'.08N	122°43'.38W
(85) 48°13'.10N	122°48'.12W

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

(87) 48°24'.15N	122°45'.27W
(88) 48°13'.43N	122°49'.90W

East/west approach (between precautionary areas “ND” and “SA”)

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

(89) 48°11'.50N	122°52'.73W
(90) 48°11'.73N	122°52'.70W
(91) 48°12'.48N	123°06'.58W
(92) 48°12'.23N	123°06'.58W

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

(93) 48°12'.22N	122°52'.52W
(94) 48°12'.98N	123°06'.58W

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

(95) 48°11'.73N	123°06'.58W
(96) 48°10'.98N	122°52'.65W

Part III

Puget Sound

The traffic separation scheme in Puget Sound consists of a series of traffic lanes with separation zones connecting with precautionary areas.

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

(97) 48°11'.08N	122°46'.88W
(98) 48°06'.85N	122°39'.52W
(99) 48°02'.48N	122°38'.17W
(100) 48°02'.43N	122°38'.52W
(101) 48°06'.72N	122°39'.83W
(102) 48°10'.82N	122°46'.98W

connecting with precautionary area “SC”, the waters contained within a circle of radius 0.62 miles centered at 48°01'.85N, 122°38'.15W, and thence to:

(103) 48°01'.40N	122°37'.57W
(104) 47°57'.95N	122°34'.67W
(105) 47°55'.85N	122°30'.22W
(106) 47°55'.67N	122°30'.40W
(107) 47°57'.78N	122°34'.92W
(108) 48°01'.28N	122°37'.87W

connecting with precautionary area “SE”, the waters contained within a circle of radius 0.62 miles centered at 47°55'.40N, 122°29'.55W, and thence to:

(109) 47°54'.85N	122°29'.18W
(110) 47°46'.52N	122°26'.30W
(111) 47°46'.47N	122°26'.62W
(112) 47°54'.80N	122°29'.53W

connecting with precautionary area “SF”, the waters contained within a circle of radius 0.62 miles centered at 47°45'.90N, 122°26'.25W, and thence to:

(113) 47°45'.20N	122°26'.25W
(114) 47°40'.27N	122°27'.55W
(115) 47°40'.30N	122°27'.88W
(116) 47°45'.33N	122°26'.60W

connecting with precautionary area “SG”, the waters contained within a circle of radius 0.62 miles centered at 47°39'.68N, 122°27'.87W, and thence to:

(117) 47°39'.12N	122°27'.62W
(118) 47°35'.18N	122°27'.08W
(119) 47°35'.17N	122°27'.35W
(120) 47°39'.08N	122°27'.97W

connecting with precautionary area “T”, the waters contained within a circle of radius 0.62 miles centered at 47°34'.55N, 122°27'.07W, and thence to:

(121) 47°34'.02N	122°26'.70W
(122) 47°26'.92N	122°24'.10W
(123) 47°23'.07N	122°20'.98W
(124) 47°19'.78N	122°26'.58W
(125) 47°19'.98N	122°26'.83W
(126) 47°23'.15N	122°21'.45W
(127) 47°26'.85N	122°24'.45W
(128) 47°33'.95N	122°27'.03W

connecting with precautionary area “TC”, the waters contained within a circle of radius 0.62 miles centered at 47°19'.48N, 122°27'.38W.

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

(129) 48°11'.72N	122°46'.83W
(130) 48°07'.13N	122°38'.83W
(131) 48°02'.10N	122°37'.32W
(132) 47°58'.23N	122°34'.07W
(133) 47°55'.83N	122°28'.80W
(134) 47°45'.92N	122°25'.33W
(135) 47°39'.68N	122°26'.95W
(136) 47°34'.65N	122°26'.18W
(137) 47°27'.13N	122°23'.40W
(138) 47°23'.33N	122°20'.37W
(139) 47°22'.67N	122°20'.53W
(140) 47°19'.07N	122°26'.75W

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

(141) 48°10'.15N	122°47'.58W
(142) 48°09'.35N	122°45'.55W
(143) 48°06'.45N	122°40'.52W
(144) 48°01'.65N	122°39'.03W
(145) 47°57'.47N	122°35'.45W
(146) 47°55'.07N	122°30'.35W
(147) 47°45'.90N	122°27'.18W
(148) 47°39'.70N	122°28'.78W
(149) 47°34'.47N	122°27'.98W
(150) 47°26'.63N	122°25'.12W
(151) 47°23'.25N	122°22'.42W
(152) 47°20'.00N	122°27'.90W

IN HARO STRAIT, BOUNDARY PASS, AND THE STRAIT OF GEORGIA

(Reference charts: United States 18421, 2000 edition; 18423, 2001 edition; 18431, 1996 edition; 18432, 1992 edition; 18433, 2000 edition; Canadian Hydrographic Service 3441, 1996 edition.

Note: The charts are based on North America 1983 Datum.)

Description of the traffic separation scheme

The traffic separation scheme “In Haro Strait, Boundary Pass, and In the Strait of Georgia” consists of a series of traffic separation schemes, two-way traffic lanes, and precautionary areas broken into two geographic designations as follows:

Part I: Haro Strait and Boundary Pass

Part II: Strait of Georgia

Part I

Haro Strait and Boundary Pass

(a) A precautionary area “V”, is established bounded by a line connecting the following geographical points:

(1) 48°21'.83N	123°25'.56W
(2) 48°21'.13N	123°24'.84W
(3) 48°20'.95N	123°24'.24W
(4) 48°20'.93N	123°23'.22W
(5) 48°21'.67N	123°21'.12W
(6) 48°22'.12N	123°21'.12W
(7) 48°22'.37N	123°21'.12W
(8) 48°22'.85N	123°21'.24W
(9) 48°23'.71N	123°23'.88W

thence back to point of origin (1).

(b) Connecting with precautionary area “V”, a separation zone is established bounded by a line connecting the following geographical positions:

(7) 48°22'.37N	123°21'.12W
(10) 48°22'.39N	123°18'.36W
(11) 48°23'.90N	123°12'.78W
(12) 48°23'.63N	123°12'.78W
(13) 48°22'.15N	123°18'.30W
(6) 48°22'.12N	123°21'.12W

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

(5) 48°21'.67N	123°21'.12W
(14) 48°21'.73N	123°18'.36W
(15) 48°23'.84N	123°10'.08W

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

(8) 48°22'.85N	123°21'.24W
(16) 48°22'.87N	123°18'.42W
(17) 48°24'.28N	123°13'.02W
(18) 48°24'.78N	123°12'.42W

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

(19) 48°24'.72N	123°11'.40W
(20) 48°28'.81N	123°11'.46W
(21) 48°28'.37N	123°10'.68W
(22) 48°27'.17N	123°10'.26W
(23) 48°24'.95N	123°10'.68W

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

(15) 48°23'.84N	123°10'.08W
(24) 48°27'.43N	123°08'.94W

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

(25) 48°28'.79N	123°12'.77W
(18) 48°24'.78N	123°12'.42W

(h) A precautionary area “HS”, is established bounded by a line connecting the following geographical points:

(25) 48°28'.79N	123°12'.77W
(26) 48°31'.73N	123°13'.02W

(27) 48°31'.03N	123°11'.22W
(28) 48°29'.45N	123°09'.42W
(29) 48°28'.15N	123°07'.31W
(30) 48°27'.79N	123°07'.80W
(31) 48°27'.58N	123°08'.10W
(24) 48°27'.43N	123°08'.94W
(21) 48°28'.37N	123°10'.68W
(20) 48°28'.81N	123°11'.46W

thence back to point of origin (25).

(i) A two-way route is established between the following geographical positions:

(27) 48°31'.03N	123°11'.22W
(32) 48°35'.18N	123°12'.78W
(33) 48°38'.37N	123°12'.36W
(34) 48°39'.20N	123°13'.09W
(35) 48°39'.41N	123°16'.06W
(26) 48°31'.73N	123°13'.02W

(j) A precautionary area “TP”, is established bounded to the north by the arc of a circle of radius 2.1 miles centered at geographical position 48°41.3N, 123°14.2W (Turn Point Light) and connecting the following points:

(36) 48°43'.04N	123°16'.06W
(37) 48°43'.15N	123°12'.75W
(42) 48°42'.23N	123°11'.35W
(43) 48°40'.93N	123°11'.01W

and bounded to the south by the arc of a circle of radius 2.1 miles centered at geographical position 48°41.3N, 123°14.2W (Turn Point Light) and connecting the following points:

(44) 48°39'.76N	123°11'.84W
(34) 48°39'.20N	123°13'.09W
(35) 48°39'.41N	123°16'.06W

thence a direct line connecting the following points:

(35) 48°39'.41N	123°16'.06W
(36) 48°43'.04N	123°16'.06W

(k) A two-way route is established between the following geographical positions:

(37) 48°43'.15N	123°12'.75W
(38) 48°46'.43N	123°03'.12W
(39) 48°48'.19N	123°00'.84W
(40) 48°47'.78N	122°59'.12W
(41) 48°45'.51N	123°01'.82W
(42) 48°42'.23N	123°11'.35W

Part II
Strait of Georgia

(a) A precautionary area “GS”, is established bounded by a line connecting the following geographical points:

(45) 48°52'.30N	123°07'.44W
(46) 48°54'.81N	123°03'.66W
(47) 48°49'.49N	122°54'.24W
(48) 48°47'.93N	122°57'.12W
(40) 48°47'.78N	122°59'.12W
(39) 48°48'.19N	123°00'.84W

thence to the point of origin (45).

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

(49) 48°53'.89N	123°05'.04W
(50) 48°56'.82N	123°10'.08W
(51) 48°56'.30N	123°10'.80W
(52) 48°53'.39N	123°05'.70W

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

(46) 48°54'.81N	123°03'.66W
(54) 48°57'.68N	123°08'.76W

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

(53) 48°55'.34N	123°12'.30W
(45) 48°52'.30N	123°07'.44W

(e) A precautionary area “PR”, is established bounded by a line connecting the following geographical points:

(53) 48°55'.34N	123°12'.30W
(54) 48°57'.68N	123°08'.76W
(55) 49°00'.37N	123°13'.32W
(56) 48°58'.18N	123°16'.74W

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

(57) 48°59'.53N	123°14'.66W
(58) 49°03'.80N	123°21'.24W
(59) 49°03'.14N	123°22'.26W
(60) 48°58'.90N	123°15'.63W

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

(55) 49°00'.37N	123°13'.32W
(62) 49°04'.52N	123°20'.04W

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

(61) 49°02'.51N	123°23'.76W
(56) 48°58'.18N	123°16'.74W

Description of the amended traffic separation scheme in the Gulf of Finland

Amendments to the traffic separation schemes previously adopted by IMO

(Reference map (INT 1214). Geodetic datum of the year 1942 (Pulkovo). For obtaining position in WGS datum such position should be moved 0'.14 (8".3) westward).

Traffic separation scheme near Gogland Island

The traffic separation scheme consists of two parts:

Part I consists of two traffic lanes separated by a zone with a centre line connecting the following geographical positions:

(1)	59°59'.00N	026°57'.40E
(2)	59°58'.52N	027°03'.10E
(3)	59°59'.47N	027°06'.30E.

The traffic separation zone is 0.5 mile wide.

The traffic lanes on the both sides of the traffic separation zone are 1 mile wide.

The direction of navigation will be 99°-279° and 59°.3-239°.3.

Part II consists of two traffic lanes separated by a line connecting the following geographical positions :

(1)	59°59'.47N	027°06'.30E
(2)	60°07'.55N	027°32'.80E.

The traffic lanes on the both sides of the traffic separation line are 1.25 miles wide.

The direction of navigation will be 59°.3-239°.3.

Traffic separation scheme near Sommers Island

The traffic separation scheme consists of four parts:

Part I consists of a roundabout around the separation zone 0.5 mile in diameter centred on the geographical position 60°11'.50N 027°46'.20E. The roundabout lane is 1 mile wide.

Part II consists of two traffic lanes separated by a zone with a centre line connecting the following geographical positions:

- (1) 60°07'.55N 027°32'.80E
- (2) 60°10'.77N 027°43'.62E.

The traffic separation zone is 0.5 mile wide.

The traffic lanes on both sides of the traffic separation zone are 1 mile wide.

The direction of navigation will be 59°.3-239°.3.

Part III consists of two traffic lanes separated by a line connecting the following geographical positions:

- (1) 60°11'.15N 027°49'.05E
- (2) 60°07'.70N 028°16'.10E.

The traffic lanes on both sides of the traffic separation line are 1 mile wide.

The direction of navigation will be 104°.3-284°.3.

Part IV consists of two traffic lanes separated by a line connecting the following geographical positions:

- (1) 60°12'.70N 027°47'.90E
- (2) 60°24'.54N 028°05'.05E.

The traffic lanes on both sides of the traffic separation line are 0.5 mile wide.

The direction of navigation will be 35°.7-215°.7.

Establishing of deep water route inside the borders of the traffic separation scheme from the Gogland Island to the Rodsher Island

The route lane is 1000 m wide with established direction of traffic flow and is intended for the passage of ships with a draught up to 15 m.

¹	Deep water route centre line connecting positions (Pulkovo-42)		Direction, degrees	Distance, miles	Lane width, cables
1	60°01'.55N 027°11'.20E	59°59'.12N 027°03'.05E	239.3	4.8	5.4
2	59°59'.12N 027°03'.05E	59°59'.90N 026°53'.57E	279	4.8	5.4
3	59°59'.90N 026°53'.57E	60°03'.25N 026°40'.00E	296.5	7.6	5.4
4	60°03'.25N 026°40'.00E	60°02'.06N 026°30'.30E	255.5	5	5.4

ANNEX 3

JOINT STATEMENT BY DENMARK AND GERMANY

Extension of the Deep-Water route “DW 17m” 5 nautical miles into the TSS “South of Gedser” in the Baltic Sea

Denmark and Germany proposed to NAV 47 (NAV 47/3/2) to extend the Deep-Water route “DW 17m” (hereinafter referred to as DW 17m) 5 nautical miles into the TSS “South of Gedser” in the Baltic Sea.

The proposed amendment was agreed.

Denmark and Germany explained that due to the already intensive traffic in the area and the coming increase of very large tankers passing the area, the implementation is of a very urgent nature. They further explained that there was a very strong public and political pressure, in the two countries, requiring that active measures to prevent new groundings in the area should be taken as soon as possible.

Considering that the next meeting of MSC would not take place until spring 2002 the intended implementation would not enter into force before end 2002.

Denmark and Germany therefore explained that, pending formal adoption by the Maritime Safety Committee and subsequent implementation of the amendment to the Deep-Water Route, they would implement the amendment on a bilateral basis as a regional interim measure 6 months after approval of the NAV-Subcommittee i.e. January 2002.

ANNEX 4

ROUTEING MEASURES OTHER THAN TRAFFIC SEPARATION SCHEMES

TORTUGAS ECOLOGICAL RESERVE AND TORTUGAS BANK

(Reference Charts: United States 11434, 1998 edition.

Note: These charts are based on North American 1983 Datum.)

Description of the mandatory No Anchoring Areas**Northernmost Area of the Tortugas Ecological Reserve**

To avoid destruction of this unique, fragile and pristine coral reef ecosystem from anchoring, all ships shall avoid anchoring in the area bounded by a line connecting the following geographical positions which is designated as a mandatory no anchoring area:

(1)	24°46'.00N	083°06'.00W
(2)	24°46'.00N	082°54'.00W
(3)	24°45'.80N	082°48'.00W
(4)	24°43'.53N	082°48'.00W
(5)	24°43'.53N	082°52'.00W
(6)	24°43'.00N	082°54'.00W
(7)	24°39'.00N	082°58'.00W
(8)	24°39'.00N	083°06'.00W
(9)	24°46'.00N	083°06'.00W

Southernmost Area of the Tortugas Ecological Reserve

To avoid destruction of this unique, fragile and pristine coral reef ecosystem from anchoring, all ships shall avoid anchoring in the area bounded by a line connecting the following geographical positions which is designated as a mandatory no anchoring area:

(10)	24°33'.00N	083°09'.00W
(11)	24°33'.00N	083°05'.00W
(12)	24°18'.00N	083°05'.00W
(13)	24°18'.00N	083°09'.00W
(14)	24°33'.00N	083°09'.00W

Tortugas Bank Outside of the Tortugas Ecological Reserve

To avoid the destruction of this unique and fragile coral reef ecosystem from anchoring by large ships, ships 50 meters or more in length shall avoid anchoring in the area bounded by a line connecting the following geographical positions which is designated as a mandatory no anchoring area:

(15)	24°32'.00N	083°00'.05W
(16)	24°37'.00N	083°06'.00W
(17)	24°39'.00N	083°06'.00W
(18)	24°39'.00N	083°00'.05W
(19)	24°32'.00N	083°00'.05W

OFF THE FLORIDA COAST

(Reference charts: United States 11450, 1998 edition; 11460, 1999 edition; 11462, 1998 edition; 11463, 1997 edition. Note: These charts are based on North American 1983 Datum.)

Description of the northernmost area to be avoided

In order to avoid risk of pollution and damage to the environment of these sensitive areas, all ships carrying cargoes of oil and hazardous materials and all other ships greater than 50 meters in length should avoid the following area:

(a) In the vicinity of the Florida Keys

The area bounded by a line connecting the following geographical positions is designated as an area to be avoided:

(1)	25°45'.00N	080°06'.10W
(2)	25°38'.70N	080°02'.70W
(3)	25°22'.00N	080°03'.00W
(4)	25°06'.38N	080°10'.48W
(5)	24°56'.37N	080°19'.26W
(6)	24°37'.90N	080°47'.30W
(7)	24°29'.20N	081°17'.30W
(8)	24°22'.30N	081°43'.17W
(9)	24°28'.00N	081°43'.17W
(10)	24°28'.70N	081°43'.50W
(11)	24°29'.80N	081°43'.17W
(12)	24°33'.10N	081°35'.15W
(13)	24°33'.60N	081°26'.00W
(14)	24°38'.20N	081°07'.00W
(15)	24°43'.20N	080°53'.20W
(16)	24°46'.10N	080°46'.15W
(17)	24°51'.10N	080°37'.10W
(18)	24°57'.50N	080°27'.50W
(19)	25°09'.90N	080°16'.20W
(20)	25°24'.00N	080°09'.10W
(21)	25°31'.50N	080°07'.00W
(22)	25°39'.70N	080°06'.85W
(23)	25°45'.00N	080°06'.10W

MALPELO ISLAND

(Reference charts: INT 6105 “Gulf of Cupica to Bay of Buenaventura” and INT 6000 “West Coast of Colombia”).

Description of area to be avoided in the area of Malpelo Island

With a view to avoiding the risk of serious damage to important systems, to the environment, and to the economy of the area, all fishing vessels and all other ships in excess of 500 gross tonnage should avoid the area bounded by lines connecting the following geographical points:

- A 04°04'48" N 81°43'18" W
- B 04°04'48" N 81°28'07" W
- C 03°52'09" N 81°28'07" W
- D 03°52'09" N 81°43'18" W

AMENDMENT OF THE AREA TO BE AVOIDED OFF THE WASHINGTON COAST

(Reference charts: United States 18500, 1999 edition, and 18480, 1999 edition.

Note: These charts are based on North American 1983 Datum.)

Description of the area to be avoided

In order to reduce the risk of a marine casualty and resulting pollution and damage to the environment of the Olympic Coast National Marine Sanctuary, all ships and barges* carrying cargoes of oil or hazardous materials, and all ships 1,600 gross tons and above solely in transit should avoid the area bounded by a line connecting the following geographical positions:

(1)	48°23'.30N	124°38'.20W
(2)	48°24'.17N	124°38'.20W
(3)	48°26'.15N	124°44'.65W
(4)	48°26'.15N	124°52'.80W
(5)	48°24'.67N	124° 55'.71W
(6)	47°51'.70N	125°15'.50W
(7)	47°07'.70N	124°47'.50W
(8)	47°07'.70N	124°11'.00W

RECOMMENDED TWO-WAY ROUTE IN THE STRAIT OF JUAN DE FUCA

(Reference charts: United States 18400, 2000 edition; 18460, 1998 edition; 18465, 1995 edition; 18480, 1999 edition.

Note: These charts are based on North American 1983 Datum.)

Eastbound Route

1 Slower moving traffic, such as tugs and barges and small fishing vessels, transiting eastbound should follow the route established south of the traffic separation scheme "In the Strait of Juan de Fuca" and north of the line created by the following geographical positions:

(1)	48°27'.14N	124°44'.36W
(2)	48°11'.90N	123°55'.57W
(3)	48°11'.94N	123°34'.00W

* This ATBA does not apply to any warship, naval auxiliary, barge (whether towed by a government or commercial tug), or other ship owned or operated by a Contracting Government and used, for the time being, only on government non-commercial service.

Westbound Route

2 Slower moving traffic, such as tugs and barges and small fishing vessels, transiting westbound should follow the route established south of the line created by the following geographical positions:

(1) 48°27'.14N	124°44'.36W
(2) 48°11'.90N	123°55'.57W
(3) 48°11'.94N	123°34'.00W

IN THE REGION OF THE GRAND BANKS OF NEWFOUNDLAND

DESCRIPTION OF THE PRECAUTIONARY AREA

In order to reduce the risk of a marine casualty and resulting pollution and damage to the environment, all ships not involved in the oil related activities being conducted within the area, should navigate with particular caution in the area having a 10 nm radius centered on 46°28'.53N and 048°28'.86W. Ship movement in the area is monitored on a 24 hour basis. Any ship planning to transit the precautionary area is advised to contact the Terra Nova FPSO on VHF channel 16 and to comply with the instructions given while transiting the area.

AREAS TO BE AVOIDED IN THE REGION OF THE SHETLAND ISLANDS

Amend the notes to the descriptions of the areas to be avoided, to read as follows:

‘To avoid the risk of pollution and severe damage to the environment and economy of Shetland, all vessels over 5,000 gross tonnage carrying, or capable of carrying oil or other liquid hazardous cargoes in bulk should avoid the area bounded by lines connecting the following geographical positions:’

ANNEX 5

**DRAFT RESOLUTION MSC...(75)
(adopted on [.. May 2002])****MANDATORY SHIP REPORTING SYSTEM**

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/8-1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 concerning the adoption by the Organization of ship reporting systems,

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 resolution MSC.111(73),

HAVING CONSIDERED the recommendations of the Sub-Committee on Safety of Navigation at its forty-seventh session,

1. ADOPTS, in accordance with SOLAS regulation V/8-1, the mandatory ship reporting system in Greenland waters, as described in the Annex to the present resolution;
2. DECIDES that the said mandatory ship reporting system will enter into force at 0000 hours UTC on [1 December 2002];
3. REQUESTS the Secretary-General to bring this resolution and its Annex to the attention of Member Governments and Contracting Governments to the SOLAS Convention.

ANNEX

DESCRIPTION OF THE MANDATORY SHIP REPORTING SYSTEMS IN GREENLAND WATERS

Two systems are established, one – named GREENPOS – for ships on voyage to and from Greenland ports and places of call and one – named COASTAL CONTROL (KYSTKONTROL) – for ships in coastal trade between Greenland ports and Greenland places of call.

1 CATEGORIES OF SHIPS REQUIRED TO PARTICIPATE IN THE SYSTEMS

1.1 Ships required to participate in the reporting system GREENPOS:

All ships, on voyage to or from Greenland ports and places of call.

1.2 Ships required to participate in the reporting system COASTAL CONTROL:

All ships of 20 gross tonnage and more, and fishing vessels, on voyage between Greenland ports and places of call.

2 GEOGRAPHICAL COVERAGE OF THE SYSTEM AND THE NUMBER AND EDITION OF THE REFERENCE CHART USED FOR THE DELINEATION OF THE SYSTEM

2.1 The reporting system GREENPOS covers the area within the Continental Shelf or Exclusive Economic Zone off the coast of Greenland.

2.2 The reference charts are Danish charts Nos. 1000 (datum Qornoq 1927), 2000 and 3000 (datum unknown).

3 FORMAT, CONTENT OF REPORTS, TIMES AND GEOGRAPHICAL POSITIONS FOR SUBMITTING REPORTS, AUTHORITY TO WHOM REPORTS SHOULD BE SENT AND AVAILABLE SERVICES

3.1 Format

3.1.1 The GREENPOS reports shall be sent to Island Commander Greenland/MRCC Groennedal and shall be drafted in accordance with the format shown in Annex 1, Appendix 1.

3.1.2 The COASTAL CONTROL reports shall be sent to the relevant coast radio station and shall be drafted in accordance with the format shown in Annex 1, Appendix 2.

3.1.3 The information requested from ships is derived from the Standard Reporting Format shown in IMO Resolution A.851(20).

3.2 Content

3.2.1 The report required from a ship participating in the two reporting systems contains only information which is essential to achieve the objectives of the systems, i.e.:

- .1 the **ship's name, call sign and position** are needed for establishing the identity of the ship and its initial position (letters A, B, C or D);
- .2 the **ship's course and speed, destination, intended voyage** and information about **deficiencies and weather and ice conditions** are important in order to maintain track of the ship so as to be able to implement search and rescue measures if a report from a ship fails to appear and to be able to service the safe navigation of the ship in the areas where weather and ice conditions can be extremely severe (letters E, F, I, L, Q and S);
- .3 the **number of persons on board** and other relevant **information** are important in relation to the allocation of resources in a search and rescue operation (letter X).

3.3 Position for submitting reports

3.3.1 In the GREENPOS-system, cf. the provisions of Annex 1, Appendix 1, ships shall submit their reports when within the Continental Shelf or Exclusive Economic Zone off the coast of Greenland.

3.3.2 In the COASTAL CONTROL system, cf. the provisions of Annex 1, Appendix 2, ships shall submit their reports when on voyage between Greenland ports and places of call.

3.3.3 Ships coming from an Atlantic voyage may remain in the GREENPOS-system while on voyage between Greenland ports and Greenland places of call, when agreed upon by Island Commander Greenland.

3.4 Authority

3.4.1 Island Commander Greenland/MRCC Groennedal is the responsible authority for the radio reporting systems and for initiating and carrying out maritime search and rescue operations in Greenland waters outside local areas. In local areas the police is the responsible authority.

3.5 Services offered

3.5.1 If a report from a ship participating in the GREENPOS system fails to appear, and it is not possible to establish communication with the ship, or an emergency is reported, MRCC Groennedal is responsible for initiating a search for the ship in accordance with the rules laid down for the search and rescue service, including the involvement of other participating ships known to be in that particular area.

3.5.2 If a report fails to appear from a ship participating in the COASTAL CONTROL system, and it is not possible for the coast radio station to establish communication with the ship, or an emergency is reported, the police of the port of destination shall be informed. It is then the responsibility of the police to initiate a search in accordance with the rules laid down for the search and rescue service, including the involvement of other participating ships known to be in that particular area.

4 INFORMATION TO BE PROVIDED TO THE PARTICIPATING SHIP AND PROCEDURES TO BE FOLLOWED.

4.1 Ships will be provided with information of importance for the safety of navigation in East Greenland waters from the NAVTEX transmitter Reykjavik and in West Greenland ports and places of call from the NAVTEX transmitter on Kook Islands (Igdlutaligssuaq/Telegraføen) at Nuuk/Godthåb.

4.2 If necessary, individual information can be provided to a ship, particularly in relation to special local conditions.

5 COMMUNICATION REQUIRED FOR THE SYSTEM, FREQUENCIES ON WHICH REPORTS SHOULD BE TRANSMITTED AND INFORMATION TO BE REPORTED.

GREENPOS

5.1 For ships entering and navigating in the reporting area, reports shall be addressed to Island Commander Greenland (GLK) via Naval Radio Station Groennedal (OVC), which can be contacted via all modern communication forms including Inmarsat C, tele-fax and e-mail. Island Commander Greenland (GLK), is responsible for monitoring the voyage from the time of receiving the first Sailing Plan (SP) until the time of receiving the Final Report (FR).

5.2 The reports required from a ship entering and navigating in the reporting area shall begin with the word GREENPOS and shall contain a 2-letter abbreviation for identification of the report (Sailing Plan, Position Report, Final Report or Deviation Report). Telegrams so prefixed are dispatched free of charge and as carrying the priority URGENT.

Dependent on the type of report, the following information shall be included as mentioned under paragraph 4 in annex 1, Appendix 1:

System identifier: GREENPOS

- A - Ship's name and call sign;
- B - Date Time Group (UTC);
- C or D - Position;
- E - True course;
- F - Speed;
- I - Destination and ETA (UTC);
- L - Intended voyage;
- Q - Defects and deficiencies;
- S - Weather and ice conditions; and
- X - Total number of persons on board and other relevant information.

COASTAL CONTROL

5.3 For each voyage between Greenland ports and places of call, reports shall be addressed to the coast radio station, which is situated in the same control area as the contemplated destination (Aasiaat radio, Qaqortoq radio or Ammassalik radio) cf. Appendix A. The coast radio stations can be contacted via all modern communication forms including Inmarsat C, tele-fax and e-mail. The coast radio station, is responsible for monitoring the voyage from the time of receiving the Sailing Plan (SP) until the time of receiving the subsequent Final Report (FR).

- 5.4 The reports required from a ship entering and navigating in the reporting area shall begin with the word COASTAL CONTROL and shall contain a 2-letter abbreviation for identification of the report (Sailing Plan, Position Report, Final Report or Deviation Report). Telegrams so prefixed are dispatched free of charge and as carrying the priority URGENT.

Dependent on the type of report, the following information shall be included as mentioned under paragraph 4 in annex 1, Appendix 2:

System identifier: COASTAL CONTROL

- A - Ship's name and call sign;
- B - Date Time Group (LT);
- C or D - Position;
- E - True course;
- F - Speed;
- I - Destination and ETA (LT);
- L - Intended voyage;
- Q - Defects and deficiencies;
- X - Total number of persons on board and other relevant information.

6 RELEVANT RULES AND REGULATIONS IN FORCE IN THE AREA OF THE PROPOSED SYSTEM

6.1 Regulations for Preventing Collisions at Sea

The International Regulations for Preventing Collisions at Sea are applicable in Greenland waters.

7 SHORE-BASED FACILITIES TO SUPPORT OPERATION OF THE SYSTEM

- 7.1 Island Commander Greenland is the shore-based authority which on the basis of GREENPOS reports is in possession of position, route etc. for each ship on voyage to or from Greenland. The coast radio stations are via COASTAL CONTROL reports kept informed about all ships on voyage between Greenland ports or places of call.

- 7.2 Furthermore, information about ships and their characteristics can be obtained from the AMVER system operated by the United States Coast Guard.

- 7.3 The coast radio stations and Naval Radio Station Groennedal, which form part of the coast radio service, will at all times be manned.

8 INFORMATION CONCERNING THE APPLICABLE PROCEDURES IF THE COMMUNICATION FACILITIES OF THE SHORE-BASED AUTHORITY FAIL

- 8.1 The coast radio service is designed with sufficient system redundancy to cope with normal equipment failure.

9 MEASURES TO BE TAKEN IF A SHIP FAILS TO COMPLY WITH THE REQUIREMENTS OF THE SYSTEM

- 9.1 The objective of the system is to enable Island Commander Greenland/MRCC Groennedal to initiate SAR measures as fast and effective as possible, if an emergency is reported or a report from a ship fails to appear, and it is impossible to establish communication with the ship. All means will be used to obtain the full participation of ships required to submit reports. If reports are not submitted and the offending ship can be positively identified, then information will be passed on to the relevant Flag State Authorities for investigation and possible prosecution in accordance with national legislation.

Appendix 1

Greenland Ship Reporting System (GREENPOS)

Rules for Drafting of Reports

1 Ships on voyage to and from Greenland ports and places of call shall send reports when within the Continental Shelf or Exclusive Economic Zone off the coast of Greenland. The Reports shall be sent four times a day, between 0000-0030, 0600-0630, 1200-1230, and 1800-1830 UTC.

2 The reports shall be sent directly to Island Commander Greenland (GLK) via Naval Radio Station Groennedal (OVC), which maintains a continuous listening watch on 2182 kHz, or via a coast radio station. Naval Radio Station Groennedal (OVC) and coast radio stations can be contacted via all modern communication forms including Inmarsat C, Tele-fax and E-mail.

3 Each report shall begin with the word GREENPOS and a 2-letter abbreviation for identification of the report. Telegrams so prefixed are dispatched free of charge and as carrying the priority URGENT.

4 The reports shall be drawn up in accordance with the following diagram. Designators, which are not mandatory, can be included if necessary.

Designator	Mandatory for type of report	Information	Text
	All	Code word	"GREENPOS"
	All	Type of report: Sailing Plan Position Report Final Report Deviation Report	One of the following 2-letter identifiers: "SP" (Sailing Plan) "PR" (Position Report) "FR" (Final Report) "DR" (Deviation Report).
A.	All	Ship	Name and call sign. (E.g.: AGNETHE NIELSEN/OULH)
B.	All	Date Time Group corresponding to the position under designator C. or D. given in UTC (Co-ordinated Universal Time)	A 6-digit group followed by a Z. The first 2 digits giving date of month, the next 2 digits giving hours and the last 2 digits minutes. The Z indicates that the time is given in UTC. (E.g.: 041330Z).
C.	C. or D. for all	Position by latitude and longitude	A 4-digit group giving latitude in degrees and minutes suffixed with N, and a 5-digit group giving longitude in degrees and minutes suffixed with W. (E.g.: 5710N 04112W).

D.	C. or D. for all	Position by geographical name of place	Name of place or true bearing (3-digits) and distance in nautical miles (quote the word "distance") from an unambiguous known name of place. (E.g.: 165 distance 53 Cape Farewell).
E.	SP, PR	True course	A 3-digit group (E.g.: 083).
F.	SP, PR	Speed in knots	A 2-digit group (E.g.: 14).
I.	SP	Destination and ETA (UTC)	The name of the destination followed by expected time of arrival, expressed as under designator B. (E.g.: Nanortalik 181400Z).
L.	SP	Intended voyage	A brief description of the intended route, as estimated by the Master. (E.g.: From present position by great circle until 100 n.m. S. of Cape Farewell then along the ice edge to QAQORTOQ).
Q.		Defects and deficiencies	Brief details of defects and deficiencies of significance for the safety of the ship. (E.g.: Breakdown on Radar and VHF).
S.	All	Weather- and ice conditions	Brief information about weather at the time of the report and about the ice situation since the last report. (E.g.: SW 5, ice edge observed from 6120N03905W).
X.	SP	The total number of persons on board. Other relevant information.	Number of persons on board shall be given. (E.g.: POB 16). Any other information of importance to the safety of own or other ships. (E.g.: Going before the wind due to heavy icing).

5 Sailing Plan ("SP") to be sent as a first report:

- a. When entering the reporting area
- b. On last departure from Greenland port
- c. When a ship – not obliged to report – wishes to be covered by the GREENPOS-system.

Example:

GLK GROENNEDAL

GREENPOS – SP

A. NONAME/NKFG

B. 071310Z

C. 5720N04510W

E. 330

F. 15

I. QAQORTOQ 080200Z

L. DIRECT IN OPEN WATERS

S. OVERCAST – SW 5 – NO ICE

X. POB 16.

- 6** **Position Report (“PR”)** to be sent 4 times a day:
At 0000-0030Z, 0600-0630Z, 1200-1230Z and 1800-1830Z.

Example:

GLK GROENNEDAL
GREENPOS - PR
A. NONAME/NKFG
B. 122310Z
C. 6024N05005W
E. 125
F. 10
S. CLEAR SKY – NW 5 – 1/10 ICE.

- 7** **Final Report (“FR”)** to be sent:
- When leaving the reporting area.
 - On arrival at Greenland destination.
 - When a ship – not obliged to report – wishes to be released from the ship reporting system.

Example:

GLK GROENNEDAL
GREENPOS – FR
A. NONAME/NKFG
B. 131700Z
C. 5705N03840W
S. E 6 – NO ICE.

- 8** **Deviation Report (“DR”)** to be sent:
When the position of the ship is or will be changed considerably compared with the position, at which the ship, based on former reports, is expected to be.

Example:

GLK GROENNEDAL
GREENPOS – DR
A. NONAME/NKFG
B. 130800Z
C. 6005N04952W
L. HEADING TOWARDS ARSUK FIORD IN STEAD OF QAQORTOQ DUE TO ENGINE TROUBLE.

Appendix 2

Greenland Ship Reporting System
COASTAL CONTROL
(KYSTKONTROL)

Rules for Drafting of Reports

1 Ships on voyages between Greenland ports and places of call shall send reports to the coast radio station, which is situated in the same control area as the contemplated destination (Aasiaat radio, Qaqortoq radio or Ammassalik radio) cf. Appendix A. Coast radio stations can be contacted via all modern communication forms including Inmarsat C, tele-fax and e-mail. This coast radio station is responsible for monitoring the ship's voyage from the time of receiving the sailing plan until the time of receiving the subsequent final report.

2 The reports shall be sent to the coast radio station, which is situated in the same control area as the contemplated destination (Aasiaat radio, Qaqortoq radio or Ammassalik radio) cf. Appendix A. Coast radio stations can be contacted via all modern communication forms including Inmarsat C, tele-fax and e-mail.

3 Each report shall begin with the word COASTAL CONTROL followed by a 2-letter abbreviation for identification of the report. Telegrams so prefixed are dispatched free of charge and as carrying the priority URGENT.

4 The reports shall be drawn up in accordance with the following diagram. Designators, which are not mandatory, can be included if necessary.

Designator	Mandatory for type of report	Information	Text
	All	Code word	"COASTAL CONTROL"
	All	Type of report: Sailing Plan Position Report Deviation Report Final Report	One of the following 2-letter identifiers: "SP" (Sailing Plan – on departure) "PR" (Position Report) "DR" (Deviation Report) "FR" (Final Report – on arrival)
A.	All	Ship	Name and call sign. (E.g.: AGNETHE NIELSEN/OULH)
B.	All	Date Time Group corresponding to the position under designator C. or D. given in Local Time (LT)	A 6-digit group. The first 2 digits giving date of month, the next 2 digits giving hours and the last 2 digits minutes. (E.g.: 041330)

C.	C. or D. for all	Position by latitude and longitude	A 4-digit group giving latitude in degrees and minutes suffixed with N, and a 5-digit group giving longitude in degrees and minutes suffixed with W. (E.g.: 5710N 04112W).
D.	C. or D. for all	Position by geographical name of place	Name of place or true bearing (3-digits) and distance in nautical miles (quote the word "distance") from an unambiguous known name of place. (E.g.: 165 distance 5 Paamiut).
E.	PR	True course	A 3-digit group (E.g.: 083).
F.	PR	Speed in knots	A 2-digit group (E.g.: 14).
I.	SP	Destination and ETA (LT)	The name of the destination followed by expected time of arrival, expressed as under designator B. (E.g.: Nanortalik 181400).
L.	SP	Intended voyage	A brief description of the intended route, as estimated by the Master. (E.g.: From present position along the ice edge to QAQORTOQ).
Q.		Defects and deficiencies	Brief details of defects and deficiencies of significance for the safety of the ship. (E.g.: Breakdown on Radar and VHF).
X.	SP	The total number of persons on board. Other relevant information.	Number of persons on board shall be given. (E.g.: POB 16). Any other information of importance to the safety of own or other ships. (E.g.: Going before the wind due to heavy icing).

5 Sailing Plan ("SP") to be sent as a first report by departure:

Example:

Coast Radio Station QAQORTOQ
COASTAL CONTROL – SP
A. NONAME/NKFG
B. 071310
D. NARSSAQ
I. QAQORTOQ 080200
L. DIRECT IN OPEN WATERS
X. POB 16.

6 Position Report ("PR"). If a voyage is of a longer duration than 24 hours and the ship is equipped with radio, a position report shall furthermore be sent at least once every 24 hours to the control station, to which the departure report was addressed.

Example:

Coast Radio Station QAQORTOQ
COASTAL CONTROL – PR
A. NONAME/NKFG
B. 122310
D. OFF ARSUK
E. 310
F. 8

7 Deviation Report (“DR”) to be sent to the control station, to which the departure report was addressed if there are changes from the information given in the departure report. A deviation report shall also be sent, if the previous given time of arrival is overdue with more than one hour.

Example:

Coast Radio Station QAQORTOQ
COASTAL CONTROL – DR

- A. NONAME/NKFG
- B. 130800
- D. ARRIVED IVITTUT AT 1500
- L. AWAITING WEATHER IMPROVEMENT BEFORE CONTINUING TO PAAMIUT. A
NEW SAILING PLAN WILL BE SENT

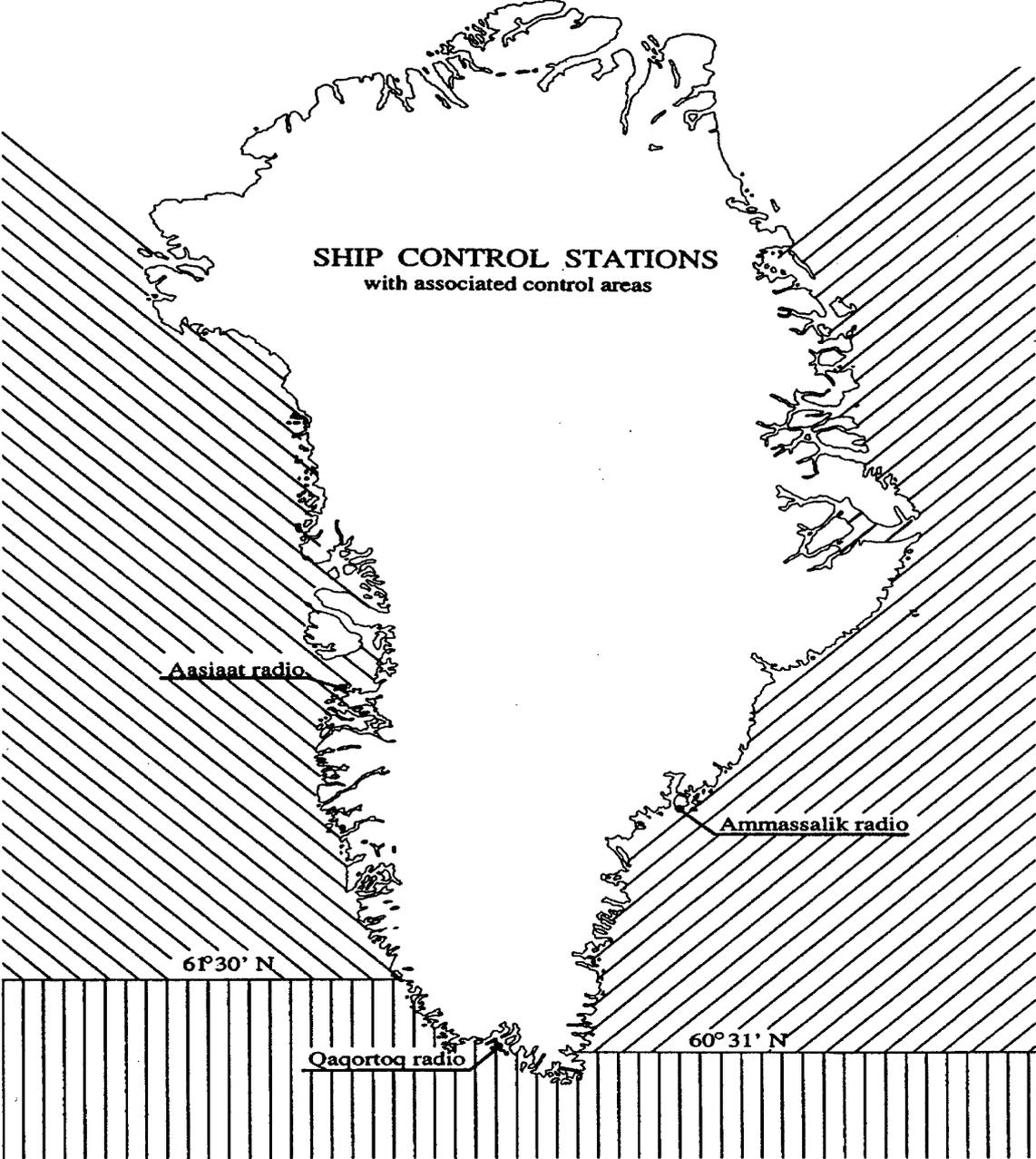
8 Final Report (“FR”) to be sent immediately upon arrival, to the control station to which the departure report was addressed.

Example:

Coast Radio Station QAQORTOQ
COASTAL CONTROL – FR

- A. NONAME/NKFG
- B. 131700
- D. ARRIVED PAMIUT

Appendix A



ANNEX 6**STATEMENT BY THE ITALIAN DELEGATION ON SHIPS' ROUTEING**

Italy wishes to thank all delegates attending the forty-seventh session of the Safety of Navigation Sub-Committee (NAV 47) who considered the debate that has taken place on the issue concerning the Adriatic Sea.

This brought forth remarks and suggestions for future actions and set up a common platform for contacts and discussions that will be carried out in the coming months amongst Adriatic countries that is much appreciated.

Italy would like to confirm its own commitment in order to improve the work already done, with a view to submitting, together with the other concerned countries, new proposals in accordance with the International agreements signed at the Adriatic Conference in Ancona on May 19th 2000.

The above mentioned papers, to be submitted during the NAV 48, will be aimed at pursuing the international endorsement requested by SOLAS Convention.

ANNEX 7

**DRAFT RESOLUTION MSC...(75)
(adopted on [.. May 2002])****AMENDMENT TO EXISTING MANDATORY SHIP REPORTING SYSTEM**

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/8-1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 concerning the adoption by the Organization of ship reporting systems,

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 resolution MSC.111(73),

HAVING CONSIDERED the recommendations of the Sub-Committee on Safety of Navigation at its forty-seventh session,

1. ADOPTS, in accordance with SOLAS regulation V/8-1, the amendment to the existing mandatory ship reporting system for the waters "Off Ushant", as described in the Annex to the present resolution;
2. DECIDES that the said amendment to the existing mandatory ship reporting system will enter into force at 0000 hours UTC on [1 December 2002];
3. REQUESTS the Secretary-General to bring this resolution and its Annex to the attention of Member Governments and Contracting Governments to the SOLAS Convention.

ANNEX

Mandatory ship reporting system “Off Ushant”

Amend first sentence of section 2 as follows:

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

“The reporting system covers a circular area 40 miles in radius centred on the Ile d’Ouessant (Stiff radar tower).”

ANNEX 8

NOTES FOR THE SECRETARIAT TO DEVELOP A PAPER ON THE PREPARATION OF PROPOSALS FOR SUBMISSION ON SHIP ROUTEING SYSTEMS

1 INTRODUCTION

1.1 The purpose of this document is to provide information to Member Governments in the development, drafting, and submission of proposals to the International Maritime Organization (IMO) for ships' routeing systems. This document sets forth the issues that should be included in such a proposal to facilitate its assessment and approval by the Subcommittee on Safety of Navigation (NAV) and final adoption by the Maritime Safety Committee (MSC).

1.2 Ships' routeing systems can be established to improve safety of life at sea, safety and efficiency of navigation, and/or increase the protection of the marine environment. To be considered by IMO, a proposal for a ships' routeing system must first be submitted to NAV in accordance with the IMO rules and procedures for the submission of documents. After a proposal has been approved by NAV, NAV will forward the proposal to the MSC for final adoption. A new or amended IMO-adopted routeing system will not come into force earlier than six months after adoption or, if later than six months, a date proposed by the proposing Member Government(s), after it has communicated such date to IMO.

2 APPLICABLE REQUIREMENTS

2.1 Regulation 8 of Chapter V* of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, provides the authority for the adoption of ships' routeing systems by IMO. Ships' routeing systems adopted by IMO are recommended for use by, and may be made mandatory for, all ships, certain categories of ships, or ships carrying certain cargoes. The initiation of action to establish a routeing system is the responsibility of the Member Government or Governments concerned.

2.2 Part A of the IMO publication, *Ships' Routeing*, sets forth the General Provisions on Ships' Routeing (GPSR). These provisions delineate the details of establishing a ships' routeing system, including definitions of the types of systems available; the procedures and responsibilities of Member Governments and IMO; the planning of, and methods for, establishing a system; design criteria; use of the system; and representation of systems on charts. When developing a proposal, Member Governments should in particular review the GPSR for the definition of the type of system desired, the method for establishing that particular type of system, and, if the system is a traffic separation scheme or a deep-water route, the specific information pertaining to those types of systems.

2.3 In addition to the information in this document, Member Governments should also review the latest versions of SOLAS Chapter V, Regulation 8 and the General Provisions on Ships' Routeing.

* Regulation 10 of chapter V, as amended

3 ELEMENTS OF A PROPOSAL

3.1 *Summary.* The proposal should first set forth the objectives for pursuing the routing system, the demonstrated need for its establishment, and the reasons why the proposed system is preferred. This should include any history of groundings, collisions, or damage to the marine environment. This summary should also state whether the system applies to all ships, certain categories of ships, or ships carrying certain cargoes. Additionally, the summary should set forth the proposed impact on navigation, including the expected impact on shipping.

3.2 *Description of the Area.* The proposal must contain the location of the proposed area, including the geographic coordinates; the number, edition, and geodetic datum of the reference chart used to delineate the routing system; and a chartlet on which the proposed routing system is marked. It is important that the geographic coordinates are thoroughly checked to ensure that they are correct. Member Governments must bring an appropriate full-scale nautical chart, with the routing system delineated on it, to the meeting of NAV at which the proposal is being considered.

3.3 *Co-operation between States.* Where two or more Governments have a common interest in a particular area, they should formulate a joint proposal for the routing system with integrated measures and procedures for cooperation between the jurisdictions of the proposing Governments. If any bilateral or multilateral agreements have been reached pertaining to the joint proposal, reference should be made to such agreements. Upon receiving such a proposal, IMO will ensure that the details of the proposal are disseminated to the Governments which have a common interest in the area, including countries in the vicinity of the proposed ships' routing system.

3.4 *Traffic Considerations.* The proposed routing system should aim to provide safe passage for ships and thus the proposal should include the following information:

- .1 Existing and proposed aids to navigation. Routes should be designed to allow optimum use of aids to navigation in the area. For traffic separation schemes, such aids to navigation should enable mariners to determine their position with sufficient accuracy to navigate in accordance with Rule 10 of the 1972 COLREG's.
- .2 Traffic patterns. Information should be provided to the extent possible on:
 - traffic patterns,
 - existing traffic management measures,
 - the volume or concentration of traffic,
 - vessel interactions,
 - distance offshore, and
 - the type and quantity of substances on board (e.g., hazardous cargo, bunkers).

Routes should follow as closely as possible existing patterns of traffic flow, course alterations along the route should be as few as possible, and convergence areas and route junctions should be kept to a minimum and should be as widely separated from each other as possible. Route junctions and convergence areas should not be placed where crossing traffic is expected to be heavy.

- .3 Adequacy of the state of hydrographic surveys and nautical charts in the area of the proposed routeing system;
- .4 Any alternative routeing measure, if necessary, for all ships, certain categories of ships, or ships carrying certain cargoes which may be excluded from using a routeing system or any part thereof; and
- .5 Any drilling rigs, exploration platforms, and other offshore structures that may exist in the vicinity of the proposed routeing system. Member Governments should ensure, as far as practicable, that such structures are not established within the traffic lanes of routeing systems or near their terminations.

3.5 *Marine Environmental Considerations.*

- .1 The proposal should contain information on environmental factors, such as the prevailing weather conditions, tidal streams, and currents, and the possibility of ice concentrations. Routeing systems should not be established in areas where the instability of the seabed is such that frequent changes in the alignment and positions of the main channels, and thus of the routeing system itself, are likely.
- .2 For proposals intended to protect the marine environment, the proposal should state whether the proposed routeing system can reasonably be expected to significantly prevent or reduce the risk of pollution or other damage to the marine environment of the area concerned and whether, given the overall size of the area to be protected and the aggregate number of environmentally sensitive areas established within the area concerned, the routeing system could have the effect of unreasonably limiting the sea area available for navigation.

3.6 *Mandatory Routeing Systems.* The proposal should clearly state whether the routeing system is being proposed as recommendatory or mandatory. In submitting a proposal for a mandatory system, a Member Government must provide the following additional information:

- .1 Proper and sufficient justification for making the system mandatory;
- .2 Whether the ports and harbours of littoral States would be adversely affected by the system; and
- .3 Whether the mandatory routeing system is limited to what is essential in the interest of safety of navigation and protection of the marine environment.

3.7 *Position-fixing in relation to the routeing system.* Member Governments should submit information indicating the availability of position-fixing aids or services.

3.8 *Miscellaneous Information.* Member Governments should also consider submitting the following information:

- .1 Presence of fishing grounds in the area of the proposed system, the existing activities and foreseeable development of offshore exploration and exploitation of the seabed, offshore structures, and foreseeable changes in the traffic pattern because of port or offshore terminal development;

- .2 A summary of other measures taken in the area of the proposed system;
- .3 Any consultations that have taken place with mariners using the area, port authorities, or other groups with an interest in the area; and
- .4 In the case of a mandatory system, the details of the measures to be taken to monitor compliance with the system and the actions intended if a ship fails to comply with its requirements.

4 **STANDARD FORMAT**

4.1 Proposing Governments should refer to the appropriate section of the latest version of the GPSR for examples of the correct format for the description of the proposed routeing measures. All proposals for routeing measures should contain in an annex, the description of the proposed routeing measure in accordance with the standard format used for the type of measure in the General Provisions for Ships' Routeing.

ANNEX 9

**DRAFT ASSEMBLY RESOLUTION ON GUIDELINES FOR THE
RECORDING OF EVENTS RELATED TO NAVIGATION**

The text of this draft Assembly resolution was submitted directly to A 22 as authorized by MSC.

For reason of economy, the text of the draft Assembly resolution submitted in document A 22/9/Add.1, annex 2, is not reproduced here.

ANNEX 10

**DRAFT ASSEMBLY RESOLUTION FOR THE ON BOARD OPERATIONAL
USE OF SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEM (AIS)**

The text of this draft Assembly resolution was submitted directly to A 22 as authorized by MSC.

For reason of economy, the text of the draft Assembly resolution submitted in document A 22/9/Add.1, annex 1, is not reproduced here.

ANNEX 11**DRAFT MSC CIRCULAR****GUIDELINES ON VOYAGE DATA RECORDERS (VDR)
OWNERSHIP AND RECOVERY**

1 The Maritime Safety Committee, [at its seventy-fifth session (15 to 24 May 2002)], adopted the annexed Guidelines on Voyage data recorders (VDR) ownership and recovery which have been developed to support provisions of the revised regulation V/15 of the SOLAS Convention – and, in particular, the Carriage requirements for voyage data recorders under revised regulation V/20, which is expected to enter into force on 1 July 2002. The other purpose is to assist companies in defining operational procedures and operational limits for VDRs and provide guidance to masters for training on board ships.

2 These Guidelines reflect the five basic issues relevant to VDRs ownership and recovery which are: ownership of VDR/data; custody of VDR/data; recovery of VDR; read-out of VDR/data; and access to data, as envisaged by the revised SOLAS chapter V.

3 In view of the complexity of the matter, close co-ordination and co-operation among interested parties, as appropriate, in any recovery operation of VDRs is encouraged.

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

ANNEX

GUIDELINES ON VOYAGE DATA RECORDERS (VDR) OWNERSHIP AND RECOVERY

1 Ownership of VDR/data:

The ship owner will, in all circumstances and at all times, own the VDR and its data. However, in the event of an accident the following guidelines would apply.

2 Recovery of VDR:

Recovery of the VDR is conditional on the accessibility of the VDR or the data contained therein.

- (a) In the case of a non-catastrophic accident, recovery of the memory should be straightforward. For example, in some VDRs it can be accomplished by removal of a hard disc from the VDR unit. This action will have to be taken soon after the accident to best preserve the relevant evidence for use by both the *investigator*¹ and the ship owner. As the *investigator* is very unlikely to be in a position to instigate this action soon enough after the accident, the owner must be responsible, through its on-board standing orders, for ensuring the timely preservation of this evidence in this circumstance.
- (b) In the case of abandonment of a vessel during an emergency, masters should, where time and other responsibilities permit, recover the memory and remove it to a place of safety and preserve it until it can be passed to the *investigator*.
- (c) In the case of a catastrophic accident, where the VDR is inaccessible and the data has not been retrieved prior to abandonment, a decision will need to be taken by the Flag State in co-operation with any other substantially interested States² on the viability and cost of recovering the VDR balanced against the potential use of the information. If it is decided to recover the VDR the *investigator* should be responsible for co-ordinating its recovery. The possibility of the capsule having sustained damage must be considered and specialist expertise will be required to ensure the best chance of recovering and preserving the evidence. In addition the assistance and co-operation of the owners, insurers and the manufacturers of the VDR and those of the protective capsule may be required.

¹ The term *investigator* refers to the Marine Casualty Investigator of the flag State or, where it has been agreed, under the terms of the Code for Investigation of Marine Casualties and Incidents, that another State will lead the investigation, the Marine Casualty Investigator of that State

² Refer to resolution A 849(20) – Code for the Investigation of Marine Casualties and Incidents, para. 4.11.

3 Custody of VDR/data:

In all circumstances, during the course of an investigation, the *investigator* should have custody of the original VDR data, perhaps in the form of the whole or part(s) of the VDR itself, in the same way as if he has custody of other records or evidence under the Code for the Investigation of Marine Casualties and Incidents.

4 Read-out of VDR/data:

In all circumstances the responsibility to arrange down loading and read-out of the data from the recovered memory in whatever form should, in the first instance, be undertaken by the *investigator* who should keep the ship owner fully informed. Additionally, especially in the case of a catastrophic accident where the memory may have sustained damage, the assistance of specialist expertise may be required to ensure the best chance of success.

5 Access to the data:

Although the *investigator* will have custody of the original VDR memory in whatever form for the duration of the investigation, a copy of the data must be provided to the ship owner at an early stage in all circumstances.

Further access to the data will be governed by the applicable domestic legislation of the flag state, coastal state and the lead investigating state as appropriate and the guidelines given in the Code for the Investigation of Marine Casualties and Incidents.

ANNEX 12**DRAFT REVISED ANNEX 2 OF RESOLUTION A.485(XII) ON RECOMMENDATION
ON OPERATIONAL PROCEDURES FOR MARITIME PILOTS OTHER
THAN DEEP-SEA PILOTS****General**

1 Efficient pilotage depends, among other things, upon the effectiveness of the communications and information exchanges between the pilot, the master and the bridge personnel and upon the mutual understanding each has for the functions and duties of the other. Establishment of effective co-ordination between the pilot, the master and the bridge personnel, taking due account of the ship's systems and equipment available to the pilot, will aid a safe and expeditious passage.

Duties of master, bridge officers and pilot

2 Despite the duties and obligations of a pilot, the pilot's presence on board does not relieve the master or officer in charge of the navigational watch from their duties and obligations for the safety of the ship. It is important that, upon the pilot boarding the ship and before the pilotage commences, the pilot, the master and the bridge personnel are aware of their respective roles in the safe passage of the ship.

3 The master, bridge officers and pilot share a responsibility for good communications and understanding of each other's role for the safe conduct of the vessel in pilotage waters.

4 Masters and bridge officers have a duty to support the pilot and to ensure that his/her actions are monitored at all times.

Pilot boarding point

5 The appropriate competent pilotage authority should establish and promulgate the location of safe pilot embarkation and disembarkation points.

6 The pilot boarding point should be at a sufficient distance from the commencement of the act of pilotage to allow safe boarding conditions.

7 The pilot boarding point should also be situated at a place allowing for sufficient time and sea room to meet the requirements of the master-pilot information exchange. (See paragraphs 12 to 17 below)

Procedures for requesting pilot

8 The appropriate competent pilotage authority should establish, promulgate and maintain procedures for ordering a pilot for an inbound or outbound ship, or for shifting a ship.

9 As human resources and technical means have to be planned well in advance, the operation of an efficient pilotage service requires information on the Estimated Time of Arrival (ETA) or departure (ETD) to be furnished by the ship as early as possible with frequent updates where possible.

10 Communication by VHF or other dedicated means should be established as soon as possible to enable the master to confirm the ship's ETA and the Pilot Station to furnish relevant information regarding pilot boarding.

11 The initial ETA message to the Pilot Station should include all the information required by local regulations, including:

- ship's name, call sign, ship's agent;
- ship's characteristics: length, beam, draught, air draught if relevant, speed, thruster(s);
- date and time expected at the pilot boarding point;
- destination, berth (if required, side alongside); and
- other relevant requirements and information.

Master - Pilot Information Exchange

12 The master and the pilot should exchange information regarding navigational procedures, local conditions and rules and the ship's characteristics. This information exchange should be a continuous process that generally continues for the duration of the pilotage.

13 Each pilotage assignment should begin with an information exchange between the pilot and the master. The amount and subject matter of the information to be exchanged should be determined by the specific navigation demands of the pilotage operation. Additional information can be exchanged as the operation proceeds.

14 Each competent pilotage authority should develop a standard exchange of information practice, taking into account regulatory requirements and best practices in the pilotage area. Pilots should consider using an information card, form, checklist or other memory aid to ensure that essential exchange items are covered. If an information card or standard form is used by pilots locally regarding the anticipated passage, the layout of such a card or form should be easy to understand. The card or form should supplement and assist, not substitute for, the verbal information exchange.

15 This exchange of information should include at least:

- presentation of a completed standard Pilot Card. In addition, information should be provided on rate of turns at different speeds, turning circles, stopping distances and, if available, other appropriate data;
- general agreement on plans and procedures, including contingency plans, for the anticipated passage;
- discussion of any special conditions such as weather, depth of water, tidal currents and marine traffic which may be expected during the passage;

- discussion of any unusual ship-handling characteristics, machinery difficulties, navigational equipment problems or crew limitations which could affect the operation, handling or safe manoeuvring of the ship;
- information on berthing arrangements; use, characteristics and number of tugs; mooring boats and other external facilities;
- information on mooring arrangements; and
- confirmation of the language to be used on the bridge and with external parties.

16 It must be clearly understood that any passage plan is a basic indication of preferred intention and both the pilot and the master should be prepared to depart from it when circumstances so dictate.

17 Pilots and competent pilotage authorities should be aware of the voyage planning responsibilities of masters under applicable IMO instruments* .

Communications language

18 Pilots should be familiar with the IMO Standard Marine Communication Phrases and use them in appropriate situations during radiocommunications as well as during verbal exchanges on the bridge. This will enable the master and officer in charge of the navigational watch to better understand the communications and their intent.

19 Communications on board between the pilot and bridge watchkeeping personnel should be conducted in the English language or in a language other than English which is common to all those involved in the operation.

20 When a pilot is communicating to parties external to the ship, such as vessel traffic services, tugs or linesmen and the pilot is unable to communicate in the English language or a language that can be understood on the bridge, the pilot should, as soon as practicable, explain what was said to enable the bridge personnel to monitor any subsequent actions taken by those external parties.

Reporting of incidents and accidents

21 When performing pilotage duties, the pilot should report or cause to be reported to the appropriate authority, anything observed which may affect safety of navigation or pollution prevention. In particular, the pilot should report, as soon as practicable, any accident that may have occurred to the piloted ship and any irregularities with navigational lights, shapes and signals.

Refusal of pilotage services

22 The pilot should have the right to refuse pilotage when the ship to be piloted poses a danger to the safety of navigation or to the environment. Any such refusal, together with the reason, should be immediately reported to the competent authority for action as appropriate.

* Refer to SOLAS regulation V/34 and resolution A.893(21) Guidelines for voyage planning and STCW Code, Section A-VIII/2, Part 2

Fitness for duty

23 Pilots should be adequately rested and mentally alert in order to provide undivided attention to pilotage duties for the duration of the passage.

ANNEX 13**DRAFT REVISED RESOLUTION A.815(19)****WORLD-WIDE RADIONAVIGATION SYSTEM**

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,

RECALLING ALSO resolutions A.666(16) and A.815(19), by which it adopted the Report on the Study of a World-Wide Radionavigation System,

RECOGNIZING the need for a world-wide radionavigation system to provide ships with navigational position-fixing throughout the world,

RECOGNIZING ALSO the need to amend the Report on the Study of a World-Wide Radionavigation System,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its seventy-fifth session,

1. ADOPTS, as the IMO policy for the recognition and acceptance of suitable radionavigation systems intended for international use, the revised Report on the Study of a World-Wide Radionavigation System set out in the Annex to the present resolution;
2. INVITES Governments to keep the Organization informed of the operational development of suitable radionavigation systems conforming to this policy which might be considered by the Organization for use by ships world-wide;
3. INVITES ALSO Governments and organizations providing radionavigation systems to consent to recognition of these systems by IMO;
4. REQUESTS the Maritime Safety Committee to recognize those systems, which conform to the requirements of the Annex to this resolution, and to publish information on such systems;
5. REQUESTS ALSO the Maritime Safety Committee to keep the aforesaid Report under review for adjustment as necessary;
6. REVOKES resolutions A.529(13) and A.815(19).

ANNEX

REVISED REPORT ON THE STUDY OF A WORLD-WIDE RADIONAVIGATION SYSTEM

1 INTRODUCTION

1.1 Studies on a world-wide radionavigation system has been taking place since 1983. These studies have provided a basis on which Chapter V of the 1974 SOLAS Convention has been amended to include a requirement for ships to carry means of receiving transmissions from a suitable radionavigation systems throughout their intended voyage.

1.2 The operational requirements for world-wide radionavigation systems are given in the appendix.

1.3 It is not considered feasible for IMO to fund a world-wide radionavigation system. Existing and planned systems which are being provided and operated by Governments or organizations have therefore been studied, in order to ascertain the conditions under which such systems might be recognized or accepted by IMO.

2 PROCEDURES AND RESPONSIBILITIES CONCERNING THE RECOGNITION OF SYSTEMS

2.1 Procedures and functions of IMO

2.1.1 The recognition by IMO of a radionavigation system would mean that the Organization recognizes that the system is capable of providing adequate position information within its coverage area and that the carriage of receiving equipment for use with the system satisfies the relevant requirements of the 1974 SOLAS Convention, as amended.

2.1.2 IMO should not recognize a radionavigation system without the consent of the Government or organization which has provided and is operating the system.

2.1.3 In deciding whether or not to recognize a radionavigation system, IMO should consider whether:

- the Government or organization providing and operating the system has stated formally that the system is operational and available for use by merchant shipping;
- its continued provision is assured;
- it is capable of providing position information within the coverage area declared by the Government or organization operating and providing the system with a performance not less than that given in the appendix;
- adequate arrangements have been made for publication of the characteristics and parameters of the system and of its status, including amendments, as necessary; and
- adequate arrangements have been made to protect the safety of navigation should it be necessary to introduce changes in the characteristics or parameters of the system that could adversely affect the performance of shipborne receiving equipment.

2.1.4 In deciding, in the light of any changes to a recognized system, whether the system should continue to be recognized, the criteria listed in paragraph 2.1.3 should be applied.

2.2 Responsibilities of Governments or organizations

2.2.1 The provision and operation of a radionavigation system is the responsibility of the Governments or organizations concerned.

2.2.2 Governments or organizations willing to have a radionavigation system recognized by IMO should formally notify IMO that the system is operational and available for use by merchant shipping. The Government or organization should also declare the coverage area of the system and provide as much other information as practicable to assist IMO in its consideration of the factors identified in paragraph 2.1.3.

2.2.3 Governments or organizations that have a system recognized by IMO should not allow changes to the operational characteristics of the system under which the system was recognised without notifying IMO (see resolution A.577(14)).

3 SHIPBORNE RECEIVING EQUIPMENT

3.1 To avoid the necessity of carrying more than one set of receiving equipment on a ship, the shipborne receiving equipment should be suitable for operating either with a world-wide radionavigation system, or with radionavigation systems which cover the area in which the ship trades.

3.2 Shipborne receiving equipment should conform to the relevant performance standards not inferior to those adopted by the Organization.

3.3 Radionavigation systems should make it possible for shipborne receiving equipment automatically to select the appropriate stations for determining the ship's position with the required performance.

3.4 Shipborne receiving equipment should be provided with at least one output* from which position information can be supplied in a standard form to other equipment.

* IEC Publication 61162

APPENDIX

OPERATIONAL REQUIREMENTS

1 INTRODUCTION

1.1 The operational requirements for a world-wide radionavigation system should be general in nature and capable of being met by a number of systems. All systems should be capable of being used by an unlimited number of ships.

1.2 The requirements may be met by individual radionavigation systems or by a combination of such systems.

1.3 For ships with operating speeds above 30 knots more stringent requirements may be necessary.

2 NAVIGATION IN THOSE HARBOUR ENTRANCES, HARBOUR APPROACHES AND COASTAL WATERS WITH A HIGH VOLUME OF TRAFFIC AND/OR SIGNIFICANT DEGREE OF RISK*

2.1 Where a radionavigation system is used to assist in the navigation of ships in all such waters, the system, including any augmentation, should provide positional information with an error not greater than 10 m with a probability of 95%.

2.2 Taking into account the radio frequency environment, the coverage of the system should be adequate to provide position-fixing throughout this phase of navigation.

2.3 Update rate of the computed and displayed position data should be greater than once every 10 s. If the computed position data is used for AIS, graphical display or for direct control of the ship, then the update rate should be greater than once every 2 s**.

2.4 Signal availability should exceed 99.8%, calculated over a 2-year period***.

2.5 When the system is available, the service reliability should be $\geq 99.97\%$ over 3 h.

2.6 A warning of system non-availability or discontinuity should be provided to users within 10 s.

* SOLAS regulation V/13 requires each contracting Government to provide, as it deems practical and necessary either individually or in co-operation with other contracting Governments, such aids to navigation as the volume of traffic justifies and the degree of risk requires.

** This applies to the computed and displayed position data, but not to the update rate of correction data, which remains valid for approximately 30 s.

*** Calculated in accordance with guidance contained in IALA Recommendation R-121 on the Performance and Monitoring of DGNS Services in the Frequency Band 283.5 – 325 KHz.

3 NAVIGATION IN THOSE HARBOUR ENTRANCES, HARBOUR APPROACHES AND COASTAL WATERS WITH A LOW VOLUME OF TRAFFIC AND/OR A LESS SIGNIFICANT DEGREE OF RISK*

3.1 Where a radionavigation system is used to assist in the navigation of ships in such waters the system, including any augmentation, should provide positional information with an error not greater than 10m with a probability of 95%.

3.2 Taking into account the radio frequency environment, the coverage of the system should be adequate to provide position-fixing throughout this phase of navigation.

3.3 Update rate of the computed and displayed position data should be greater than once every 10s. If the computed position data is used for AIS, graphical display or for direct control of the ship, then the update rate should be greater than once every 2s.**

3.4 Signal availability should exceed 99.5%, calculated over a 2-year period.***

3.5 When the system is available, the service continuity should be $\geq 99.85\%$ over 3 h.

3.6 A warning of system non-availability or discontinuity should be provided to users within 10 s.

4 NAVIGATION IN OCEAN WATERS

4.1 Where a radionavigation system is used to assist in the navigation of ships in ocean waters, the system should provide positional information with an error not greater than 100 m with a probability of 95%. This degree of accuracy is suitable for purposes of general navigation and provision of position information in the GMDSS.

4.2 In view of the fact that merchant fleets operate world-wide, the information provided by a radionavigation system must be suitable for use for general navigation by ships engaged on international voyages in any ocean waters.

4.3 Taking into account the radio frequency environment, the coverage of the system should be adequate to provide position-fixing throughout this phase of navigation.

4.4 Update rate of the computed and displayed position data should be greater than once every 10 s. If the computed position data is used for AIS, graphical display or for direct control of the ship, then the update rate should be greater than once every 2 s.

* SOLAS regulation V/13 requires each contracting Government to provide, as it deems practical and necessary either individually or in co-operation with other contracting Governments, such aids to navigation as the volume of traffic justifies and the degree of risk requires.

** This applies to the computed and displayed position data, but not to the update rate of correction data, which remains valid for approximately 30 s.

*** Calculated in accordance with guidance contained in IALA Recommendation R-121 on the Performance and Monitoring of DGNSS Services in the Frequency Band 283.5-325 KHz.

4.5 Signal availability should exceed 99.8% calculated over a 30-day period.

4.6 A warning of system non-availability or discontinuity should be provided to users as soon as practicable by Maritime Safety Information (MSI) systems.

ANNEX 14**DRAFT RESOLUTION MSC...(75)
(adopted on .. May 2002)****PERFORMANCE STANDARDS FOR A BRIDGE NAVIGATIONAL
WATCH ALARM SYSTEM (BNWAS)**

THE MARITIME SAFETY COMMITTEE,

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

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

RECOGNIZING that, many operational bridge-related marine accidents could be averted if an effective and operational Bridge Navigational Watch Alarm System (BNWAS) was fitted to vessels,

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

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

RECOGNIZING the need to prepare appropriate performance standards for BNWASs,

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

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

ANNEX

DRAFT RECOMMENDATION ON PERFORMANCE STANDARDS FOR A BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM

1 SCOPE

The purpose of a Bridge Navigational Watch Alarm System (BNWAS) is to monitor bridge activity and detect operator disability which could lead to marine accidents. The system monitors the awareness of the Officer of the Watch (OOW) and automatically alerts the Master or another qualified OOW if for any reason the OOW becomes incapable of performing the OOW's duties. This purpose is achieved by a series of indications and alarms to alert first the OOW and, if he is not responding, then to alert the Master or another qualified OOW. Additionally, the BNWAS may provide the OOW with a means of calling for immediate assistance if required. The BNWAS should be operational whenever the ship's heading or track control system is engaged, unless inhibited by the Master.

2 REFERENCES

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

3 DEFINITIONS

Bridge – Wheelhouse and bridge wings

4 OPERATIONAL REQUIREMENTS

4.1 Functionality

4.1.1 Operational modes

4.1.1.1 The BNWAS should incorporate the following operational modes:

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

¹ IEC Publication 60945

4.1.2 Operational sequence of indications and alarms

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

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

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

4.1.2.4 If not reset, the BNWAS should additionally sound a second stage remote audible alarm in the back-up officer's and/or Master's location 15 s after the first stage audible alarm is initiated.

4.1.2.5 If not reset, the BNWAS should additionally sound a third stage remote audible alarm at the locations of further crew members capable of taking corrective actions 90 s after the second stage remote audible alarm is initiated.

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

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

4.1.3 Reset function

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

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

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

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

4.1.4 Emergency call facility

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

4.2 Accuracy

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

4.3 Security

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

4.4 Malfunctions, alarms and indications

4.4.1 Malfunction

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

5 ERGONOMIC CRITERIA

5.1 Operational controls

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

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

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

5.1.4 Reset facilities

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

5.2 Presentation of information

5.2.1 Operational mode

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

5.2.2 Visual indications

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

5.2.3 First stage bridge audible alarm

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

5.2.4 Second and third stage remote audible alarm

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

6 DESIGN AND INSTALLATION

6.1 General

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

6.2 Specific requirements

6.2.1 System physical integrity

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

6.2.2 Reset devices

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

² IMO Resolution A.830(19)

³ IEC Publication 60945

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

6.3 Power supply

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

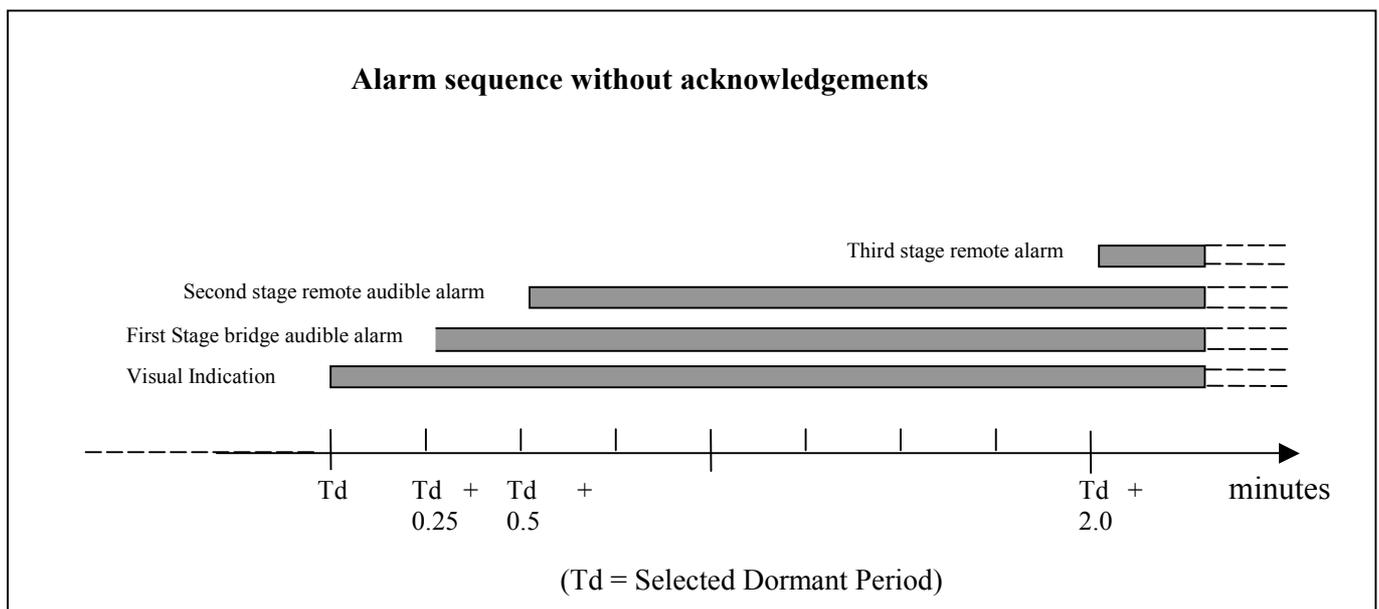
7 INTERFACING

7.1 Inputs

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

7.2 Outputs

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



⁴ IEC Publication 61162

ANNEX 15

DRAFT LIAISON STATEMENT TO ITU-R WORKING PARTY 8B

1 The IMO Sub-Committee on Safety of Navigation (NAV), at its forty-seventh session (2 to 6 July 2001), noted the Draft Revised Recommendation ITU-R M.1371-1 and thanks the ITU-R for its timely work. The Sub-Committee requested that ITU consider two clarifications to the draft Revision as follows:

- .1 Recommends 1 to 4 anticipate that IALA will maintain (update) the technical standards and configuration of the international application identifiers. IMO has an interest in any changes anticipated in order that the system will continue to meet the IMO operational performance standards, given in IMO resolution MSC.74(69), annex 3.

IMO therefore requests ITU to clarify that ITU will co-ordinate any proposed changes which could affect the IMO performance standard.

- .2 Annex 2, section 4.1.1 describe the operating frequency channel management by automatic switching in response to commands from a base station and by manual switching from AIS input device. IMO notes that there may be areas where alternative frequencies are in use but where no base stations exist. This should be an unusual situation, however where it exists, information should be available to all ships sailing in these areas. Therefore, IMO requests that all Administrations notify IMO of these areas for the circulation by the appropriate IMO circulars as well as promulgate this information to shipping in these areas by a suitable means.

Also IMO recognizes that from the viewpoint of avoiding accidents due to human error, automatic switching should be the normal procedure and manual switching should be limited to specific purposes such as maintenance for the equipment.

2 IMO requests that ITU-R Working Party 8B consider the above and prepare appropriate clarification to be circulated to all Administrations.

ANNEX 16

REVISED WORK PROGRAMME OF THE SUB-COMMITTEE

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	Continuous	MSC 72/23, paragraphs 10.69 to 10.71 and 20.41 to 20.42; NAV 46/16, section 3
2	ITU matters, including Radio-communication ITU-R Study Group 8 matters	Continuous 2003	MSC 69/22, paragraphs 5.69 to 5.70; NAV 46/16, paragraphs 8.1 to 8.9
3	Casualty analysis (co-ordinated by FSI)	Continuous	MSC 70/23, paragraphs 9.17 and 20.4 NAV 46/16, paragraphs 15.24 to 15.28
H.1	World wide radio navigation system	2001	MSC 69/22, paragraphs 5.65 and 20.43; NAV 46/16, paragraphs 7.1 to 7.10
H.2 *	Revision of resolution A.815(19) on World wide radionavigation system	2001	NAV 46/16, paragraph 7.11; MSC 73/21, paragraph 18.21.1
H.3	Performance standards for bridge watch alarm	2001	MSC 71/23, paragraph 20.28; NAV 46/16, paragraphs 7.12 to 7.14

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 48, shown in annex 2.

* Strikeout = delete text
Grey = new text

Sub-Committee on Safety of Navigation (NAV) (continued)

		Target completion date/number of sessions needed for completion	Reference
H.4	Guidelines for recording events related to navigation	2001	MSC 72/23, paragraph 21.39.1; NAV 46/16, paragraphs 10.1 to 10.8
H.5	Guidelines on automatic identification system (AIS) operational matters (in co-operation with COMSAR)	2001	MSC 72/23, paragraphs 10.65 to 10.68; NAV 46/16, paragraphs 10.9 to 10.29
H.6	Guidelines on voyage data recorders' ownership and recovery	2001	NAV 46/16, paragraph 15.38; MSC 73/21, paragraph 18.21.2
H.7	Training and certification of maritime pilots and revision of resolution A.485(XII) (co-ordinated by STW)	2001	MSC 72/23, paragraph 21.39; NAV 46/16, paragraphs 15.9 to 15.19
H.81	Feasibility study on carriage of VDR on existing cargo ships	3 sessions 2004	MSC 73/21, paragraphs 11.31 and 18.22
H.92	Large passenger ship safety: effective voyage planning for large passenger ships	2003	MSC 73/21, paragraph 18.23, MSC 74/24, paragraph 21.4
H.103	Places of refuge (in co-operation with COMSAR and DE MEPC)	2003	MSC 74/24, paragraph 21.31
H.114	Revision of fishing vessel Safety Code and Voluntary Guidelines (co-ordinated by SLF)	2 sessions 2003	MSC 74/24, paragraph 21.5
H.125	Revision of the performance standards for radar reflectors	2 sessions 2003	MSC 74/24, paragraph 21.29
H.136	Anchoring, mooring and towing equipment (co-ordinated by DE)	2 sessions 2003	MSC 74/24, paragraph 21.30

Sub-Committee on Safety of Navigation (NAV) (continued)

	Target completion date/number of sessions needed for completion	Reference
H.147 Measures to prevent accidents with lifeboats (co-ordinated by DE)	2 sessions 2003	MSC 74/24, paragraph 21.34
H.158 Matters related to bulk carrier safety	1 session 2002	MSC 74/24, paragraph 21.6
[H.9 Review of performance standards for radar equipment	2 sessions	COMSAR 5/14, paragraphs 5.17, 5.18, annex 5); MSC 74/24, paragraphs 9.16 to 9.17; NAV 47/13, section 10]
L.1 Development of guidelines for ships operating in Arctic ice-covered waters (co-ordinated by DE)	2001	MSC 69/22, paragraph 20.51; MSC 71/23, paragraph 20.43; NAV 46/16, paragraphs 12.1 to 12.5
L.2 Integrated bridge systems (IBS) operational aspects	2001 [2002]	MSC 70/23, paragraph 20.17.2; NAV 46/16, section 5; NAV 47/WP.1, paragraphs 2.11 to 2.12

ANNEX 17

PROVISIONAL AGENDA FOR THE FORTY-EIGHTH SESSION*

SUB-COMMITTEE ON SAFETY OF NAVIGATION (NAV) – 48TH 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 Integrated Bridge Systems (IBS) operational aspects
 - 5 Places of refuge
 - 6 Revision of fishing vessel Safety Code and Voluntary Guidelines
 - 7 Anchoring, mooring and towing equipment
 - 8 Feasibility study on carriage of VDR on existing cargo ships
 - 9 Revision of performance standards for radar reflectors
 - 10 Review of performance standards for radar equipment***
 - 11 ITU matters, including Radiocommunication ITU-R Study Group 8 matters
 - 12 Large passenger ship safety: Effective voyage planning for large passenger ships
 - 13 Measures to prevent accidents with lifeboats
 - 14 Matters related to bulk carrier safety
 - 15 Casualty analysis**
 - 16 Work programme and agenda for NAV 49
 - 17 Election of Chairman and Vice-Chairman for 2003
 - 18 Any other business
 - 19 Report to the Maritime Safety Committee

* Agenda item numbers do not necessarily indicate priority.

** Items under continuous review.

*** Subject to the approval of MSC 75.

ANNEX 18**DRAFT TERMS OF REFERENCE FOR THE WORK
ON PLACES OF REFUGE**

1 Placing the highest priority to the safety of all involved in any operation concerning the provision of places of refuge in order to provide a safe haven for ships in need and, with due attention to all environmental aspects associated with these operations, to develop a practical way for IMO to address the issue of places of refuge, from the operational safety point of view, by preparing guidelines for:

- .1 actions a master of a ship should take when in need of a place of refuge (including actions on board and actions required in seeking assistance from other ships in the vicinity, salvage operators, flag State and coastal States).
- .2 the evaluation of risks associated with the provision of places of refuge and relevant operations in both a general and a case by case basis; and
- .3 actions expected of coastal States for the identification, designation and provision of such suitable places together with any relevant facilities;

2 To develop criteria to assist in the preparation of the guidelines giving due consideration to regional concerns, if any.

3 To prepare a provisional framework of the guidelines to be developed.

4 In conducting the work, to be guided, as appropriate, by resolution A.852(20) (Guidelines for a structure of an integrated system of contingency planning for shipboard emergencies).

ANNEX 19**DRAFT GENERAL FRAMEWORK ASSOCIATED WITH FUTURE WORK ON
PLACES OF REFUGE****Chapter I****General**

1. Introduction
 - Objectives of providing a place of refuge
2. Background
3. Purpose of the Guidelines
4. Definitions

Chapter II**Guidelines for action of master in need of places of refuge**

- 1 Appraisal of the situation
- 2 Identification of hazards and assessment of associated risks
- 3 Identification of the required actions
- 4 Establishment of responsibilities/communications with all parties involved
- 5 Response actions
- 6 Reporting procedures

Chapter III**Guidelines for actions expected of coastal States**

- 1 Assessment for a place of refuge
 - generic assessment
 - event specific assessment
- 2 Decision-making process for the allocation and use of a place of refuge

ANNEX

Guidelines for the evaluation of risks associated with the provision of places of refuge

- 1 Identification of events such as:
 - fire
 - explosion
 - damage to the ship
 - collision
 - pollution
 - impaired vessel stability
 - grounding

- 2 Assessment of risks related to the identified event taking into account:
 - .1 Environmental and social factors such as:
 - safety of those on board
 - threat to public safety
 - designated environmental areas
 - sensitive habitats and species
 - fisheries
 - economic/industrial facilities
 - amenity resources
 - facilities available

 - .2 Natural conditions such as:
 - weather and sea conditions
 - bathymetry
 - seasonal effects
 - tides

 - .3 Contingency planning such as:
 - roles and responsibilities of authorities and responders
 - response equipment needs and availability
 - response techniques
 - international co-operation

- 3 Emergency response and follow-up action such as:
 - lightering
 - towage
 - stowage
 - salvage
 - storage

- 4 Financial implications

ANNEX 20

**DRAFT GUIDELINES FOR SHIPS OPERATING IN ARCTIC
ICE-COVERED WATERS (CHAPTERS 12 AND 13)****CHAPTER 12****NAVIGATIONAL EQUIPMENT****12 Application**

It should be noted that the provisions prescribed in this chapter are not to be considered in addition to the requirements of SOLAS chapter V. Rather, any equipment fitted or carried in compliance with the requirements of SOLAS chapter V may be considered as part of the recommended equipment complement detailed in this chapter. Unless specifically provided in this chapter, the performance standards and other applicable guidance for equipment and systems contained in this chapter should be applied *mutatis mutandis* as per SOLAS chapter V.

12.1 Compasses

12.1.1 Magnetic variations in high latitudes may lead to unreliable readings from magnetic compasses.

12.1.2 Gyro-compasses may become unstable in high latitudes and may need to be shut down.

12.1.3 Companies should ensure that their systems for providing reference headings are suitable for their intended areas and modes of operation, and that due consideration has been given to the potential effects noted in paragraphs 12.1.1 and 12.1.2. For operations in Arctic ice-covered waters, vessels should be fitted with at least two gyro-compasses.

12.2 Speed and distance measurement

12.2.1 All Polar Class ships should be fitted with at least two speed and distance measuring devices. Each device should operate on a different principle, and at least one device should be capable of being operated in both the sea and the ground stabilized mode.

12.2.2 Speed and distance measuring devices should provide each conning position with a speed indication at least once per second.

12.2.3 Speed and distance measurement device sensors should not project beyond the hull and should be installed to protect them from damage by ice.

12.3 Depth sounding device

12.3.1 All Polar Class ships should be fitted with at least two independent echo-sounding devices which provide indication of the depth of water under the keel. Due regard should be taken of the potential for ice interference or damage to any device designed to operate below the waterline.

12.4 Radar installations

12.4.1 All Polar Class ships should be fitted with at least two functionally independent radar systems. One of these should operate in the 3 GHz (10 cm, S-band) frequency range.

12.4.2 Radar plotting systems that may be installed should have the capability of operating in both the sea and the ground stabilized mode.

12.5 Electronic positioning and electronic chart systems

12.5.1 All Polar Class ships should be provided with an electronic position fixing system.

12.5.2 A satellite system (GPS or GLONASS or equivalent) should be fitted on any ship intending to navigate in areas outside of reliable coverage by a terrestrial hyperbolic system.

12.5.3 Systems described in paragraphs 12.5.1 and 12.5.2 should provide input to allow for continuous representation of the ship's speed provided by a speed and distance measuring device according to paragraph 12.2, and the ship's heading provided by a compass according to paragraph 12.1.

12.5.4 Where fitted, electronic charting systems should be able to use position input from systems compliant with paragraphs 12.5.1 and 12.5.2.

12.6 Automatic identification system (AIS)

12.6.1 All Polar Class ships should be provided with an automatic identification system (AIS) for ships using the broadcast mode.

12.7 Rudder angle indicator

12.7.1 Separate rudder angle indicators should be provided for each rudder on ships with more than one rudder.

12.7.2 In ships without a rudder, indication should be given of the direction of steering thrust.

12.8 Searchlights and visual signals

12.8.1 Ships of Polar Classes 1 to 5 inclusive, and all ships intended to operate in periods of prolonged darkness, should be equipped with at least two suitable searchlights which should be controllable from conning positions.

12.8.2 The searchlights described in paragraph 12.8.1 should be installed to provide, as far as is practicable, all-round illumination suitable for docking, astern manoeuvres or emergency towing.

12.8.3 The searchlights described in paragraph 12.8.1 should be fitted with an adequate means of de-icing to ensure proper directional movement.

12.8.4 Ships of Polar Classes 1 to 5 inclusive, all icebreakers and all ships that may be involved in an escort of more than one ship following in an ice track should be equipped with a manually operated flashing red light visible from astern to indicate when the ship is stopped. This should be capable of use from any location from which the ship can be manoeuvred. The flashing light should have a range of visibility of at least two (2) nautical miles. The colour and frequency of the flashing light should be according to standards given in COLREG. The horizontal and vertical arcs of visibility of the flashing light should be as specified for stern lights in COLREG.

12.9 Vision enhancement equipment

12.9.1 All Polar Class ships should be fitted with a suitable means to de-ice sufficient conning position windows to provide unimpaired forward and astern vision from conning positions.

12.9.2 The windows described in paragraph 12.9.1 should be fitted with an efficient means of clearing melted ice, freezing rain, snow, mist and spray from outside and accumulated condensation from inside. A mechanical means to clear moisture from the outside face of a window should have operating mechanisms protected from freezing or the accumulation of ice that would impair effective operation.

12.9.3 All persons engaged in navigating the ship should be provided with adequate protection from direct and reflected glare from the sun.

12.9.4 All indicators providing information to the conning positions should be fitted with means of illumination control to ensure readability under all operating conditions.

12.10 Voyage data recorder

12.10.1 Ships of Polar Classes 1 to 5 inclusive should be fitted with a voyage data recorder.

12.11 Ice routing equipment

12.11.1 All ships should be provided with equipment capable of receiving ice and weather information charts.

12.11.2 Ships of Polar Classes 1 to 3 inclusive should be fitted with equipment capable of receiving and displaying ice imagery.

PART C

OPERATIONAL

CHAPTER 13

OPERATIONAL GUIDELINES

13.1 Documentation

13.1.1 All ships operating in Arctic ice-covered waters should carry on board at all times an operating manual and training manual for all ice navigators on board the ship.

13.2 Ship operational control

13.2.1 The ship should not be intentionally operated outside the worst intended conditions and design limitations.

13.3 Operating and training manuals

Operating manual

13.3.1 The operating manual, or supplementary manual in the case of ships not normally operating in Arctic ice-covered waters, should contain at least the following information on issues directly related to operations in such waters. With respect to contingency planning in the event that the ship suffers ice damage, the manual should conform to guidelines developed by the Organization*:

Normal operation

- .1 principal particulars of the ship;
- .2 loading procedures and limitations including any applicable prohibitions against carrying pollutants in tanks and compartments against the hull envelope, maximum operational weight, position of centre of gravity and distribution of load necessary for operation in Arctic ice-covered waters;
- .3 acknowledgment of changes in standard operating procedures for radio equipment and navigational aids applicable to Arctic operations;
- .4 information regarding the handling of the ship as determined in accordance with Chapter 16 of these Guidelines (Environmental protection and damage control);
- .5 maximum towing speeds and towing loads where applicable;

Risk management

- .6 procedures for checking the integrity of hull structure;
- .7 description and operation of fire detection and fire-extinguishing equipment in a Arctic environment; and

For Polar Class ships, the operating manual should include the following supplementary information, in clearly defined chapters specified by the Administration:

- .8 operating limitations for the ship and essential systems in anticipated ice conditions and temperatures;
- .9 details arising from the standards of Chapter 3 of these Guidelines (Subdivision and Stability) likely to be of direct practical use to the crew in an emergency;
- .10 passage planning procedures accounting for anticipated ice conditions;
- .11 deviations in standard operating procedures associated with operation of propulsion and auxiliary machinery systems, remote control and warning systems

* Refer to resolution A.852(20) Guidelines for the Structure of an Integrated System of Contingency Planning for Shipboard Emergencies.

and electronic and electrical systems made necessary by operations in Arctic ice-covered waters;

- .12 deviations in standard damage control procedures made necessary by operations in Arctic ice-covered waters; and
- .13 evacuation procedures into water, onto ice, or into a combination of the two, with due regard to Chapter 11 of these Guidelines.

13.3.2 Regarding information on machinery or system failures, guidance should take into account the results of any risk or failure analysis reports developed during the ship design.

Training manual

13.3.3 The training manual should cover all aspects of ship operation in Arctic ice-covered waters listed below plus other related information considered necessary by the Administration:

- .1 summary of the Guidelines for ships operating in Arctic ice-covered waters;
- .2 ice recognition;
- .3 navigation in ice; and
- .4 escorted operation.

Instructions for drills and emergency instructions as detailed in paragraph 13.4 should be incorporated as annexes to the manual.

13.3.4 The Company should ensure that any additional documentation referenced in the training manual and required to provide a full understanding of its contents is on board the ship for all operations in Arctic ice-covered waters.

13.4 Drills and emergency instructions

13.4.1 On board instruction and operation of the ship's evacuation, fire and damage control appliances and systems should include appropriate cross training of crew members with appropriate emphasis to changes to standard procedure made necessary by operations in Arctic ice-covered waters.

13.4.2 Evacuation

13.4.2.1 Evacuation drill scenarios should be varied so that different emergency conditions are simulated, including abandonment into the water, onto the ice, or a combination of the two.

13.4.2.2 Each evacuation craft drill should include:

- .1 exercises in passenger control in cold temperatures as appropriate;
- .2 checking that all personnel are suitably dressed;
- .3 donning of immersion suits or thermal protective clothing by appropriate crew members;

- .4 testing of emergency lighting for assembling and abandonment; and
- .5 giving instructions in the use of the ship's life-saving appliances and in survival at sea, on the ice or a combination of both.

13.4.2.3 Rescue boat drills should be conducted as follows:

- .1 As far as is reasonable and practicable, rescue boats should be launched each month as part of the evacuation drill with their assigned crew aboard and manoeuvred in the water, with due consideration of the dangers of launching into Arctic ice-covered waters if applicable.
- .2 If rescue boat launching drills are carried out with the ship making headway, such drills should be practiced in sheltered waters only and under the supervision of an officer experienced in such drills.*

13.4.2.4 Individual instructions may cover different parts of the ship's life-saving system, but all the ship's life-saving equipment and appliances should be covered within any period of one month on passenger ship and two months on cargo ship. Each member of the crew should be given instructions which should include but not necessarily be limited to:

- .1 problems of hypothermia, first-aid treatment of hypothermia and other appropriate first-aid procedures; and
- .2 special instructions necessary for use of the ship's life-saving appliances in severe weather and severe sea conditions on the ice or in a combination of water and ice cover.

13.4.3 Fire drills

13.4.3.1 Fire drill scenarios should vary each week so that emergency conditions are simulated for different ship compartments, with appropriate emphasis on those changes to standard procedure made necessary by operations in Arctic ice-covered waters and low temperatures.

13.4.3.2 Each fire drill should include elements required by the International Convention for the Safety of Life at Sea, 1974, as amended, plus additional elements made necessary by operation in an Arctic environment.

13.4.4 Damage control

13.4.4.1 Damage control drill scenarios should vary each week so that emergency conditions are simulated for different damage conditions with appropriate emphasis to those conditions resultant from operations in Arctic ice-covered waters.

* Refer to resolution A.624(15) Guidelines for Training Crews for the Purpose of Launching Lifeboats and Rescue Boats from Ships Making Headway Through the Water.

13.4.5 Survival kits

13.4.5.1 Where fitted, the master should ensure that sufficient Personal Survival Kits (PSKs) and Group Survival Kits (GSKs) are available, in full working order, and ready for immediate use, to meet the standards set forth in paragraph 11.2.4.

13.4.5.2 The master should keep spare personal survival equipment on board for the purpose of providing replacements for missing or damaged items of equipment in those personal survival kits issued to the ship's complement. In addition, a number of sewing kits and replacement parts (buttons, boot laces etc.) should be kept on board for the purpose of minor repair to personal survival kit items of clothing.

13.4.5.3 Group survival kit inspections should be carried out no less frequently than on an annual basis at the beginning of each operating season.

ANNEX 21

NOTE FOR THE SUB-COMMITTEE ON STANDARDS OF
TRAINING AND WATCHKEEPING**Conflicting actions in collision avoidance**

An International Conference on Preventing Collisions at Sea was held at Dalian, China, in September 1996. One of the “problem areas” identified at the Conference was “Conflicting actions in collision avoidance and the application of Rule 8”. The problem areas identified at the Dalian Conference were brought to the attention of the Sub-Committee by the Netherlands Government, NAV 43/3/4 and by the IAIN, NAV 43/3/12.

In NAV 46/16, paragraphs 4.22 to 4.28 the Sub-Committee recalled that MSC 70 had authorized it to consider the issue of conflicting actions in collision avoidance and to propose solutions. Reports of collision cases indicated that at times in head-on encounters Rule 8 was applied in isolation of the other Steering and Sailing rules. The Sub-Committee agreed on a draft amendment to Rule 8(a) to link Rule 8 with the other Steering and Safety Rules. The Sub-Committee was of the opinion that the STW Sub-Committee should be requested to make training establishments for officers of the navigational watch aware of the importance to pay proper attention in the training of officers of the navigational watch to the matter of conflicting actions in collision avoidance.

This matter has been brought to the attention of the STW Sub-Committee. The STW Sub-Committee has invited (MSC 74/7, paragraph 2.3) the NAV Sub-Committee to provide examples clearly demonstrating the issues involved in order that the STW Sub-Committee might propose appropriate solutions in due course.

At the Dalian Conference several papers drew attention to the relatively high frequency of conflicting actions in collision avoidance, especially in meeting or crossing situations. In the paper “Radar assisted collisions – why they happen” M.T. Stevens noted the tendency of vessels to make alterations of course away from the target in order to achieve a safe passing distance. In the paper “Collision avoidance with starboard-to-starboard meeting vessels in restricted visibility” by J. Zhao, W.G. Price, R.P. Grime and P.A. Wilson the most important problem was considered to be unco-ordinated action between the two vessels. According to W. Hirsch most mariners follow the principle of turning to starboard in a collision situation while a fairly high number attach more importance, especially in a starboard-to-starboard encounter, to achieving a wider berth by altering course to port. According to this paper cancelling action, vessels not in sight of one another, forms one third of all collisions at sea the German Maritime Boards of Inquiry have to deal with.

One of the best-known examples of conflicting action is the collision between the two passenger vessels **Andrea Doria** and **Stockholm** off Nantucket light vessel on 25 July 1956. The two vessels were proceeding in opposite directions in fog. The **Stockholm** made a series of small alterations to starboard then turned hard to starboard. The **Andrea Doria** made a small alteration of course to port to increase the starboard-to-starboard passing distance then turned hard to port before the collision.

A further example is the collision in fog between the two VLCCs **Venoil** and **Venpet** off South Africa on 2 October 1977. The vessels were proceeding in opposite directions. The **Venoil** made several small alterations of course to starboard to increase the port-to-port passing distance. The **Venpet** made a series of small alterations of course to port to pass starboard-to-starboard.

The following more recent examples were given at the Dalian Conference in the paper by W.Hinsch:

1992	EUROPA	INCHON GLORY	South China Sea
1993	GUDRUN	GINA P	Baltic Sea
1994	EVIVA	CHARALAMOS B	North Sea
1995	GUDRON II	ZIEMIA LUBELSKA	Baltic Sea
1995	ALEXANDRA	XIN HUA 7	south of Pusan

Traffic separation schemes have brought about an improvement by reducing the number of end-on, or near end-on, encounters but there are still many coastal regions where there is no traffic separation. Bringing this matter to the attention of mariners may be the best means of further improvement. Several papers at the Dalian Conference stressed the importance of training, especially radar training, as a means of reducing collisions at sea.

References:

International Conference on Preventing Collisions at Sea, Dalian 1996, Report of Proceedings "Maritime Collisions and Prevention", Publishing House of Dalian Maritime University, ISBN 0952059241, 0952059231.
