



SUB-COMMITTEE ON DANGEROUS
GOODS, SOLID CARGOES AND
CONTAINERS
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REPORT TO THE MARITIME SAFETY COMMITTEE

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1 GENERAL

1.1 The Sub-Committee held its eleventh session from 11 to 15 September 2006 under the chairmanship of Mrs. Olga P. Lefevre (France). The Vice-Chairman, Captain Juan P. Heusser (Chile), was also present.

1.2 The session was attended by delegations from the following Member States:

ALGERIA	LATVIA
ANGOLA	LIBERIA
ARGENTINA	LITHUANIA
AUSTRALIA	MALAYSIA
BAHAMAS	MALTA
BELGIUM	MARSHALL ISLANDS
BRAZIL	MEXICO
CANADA	MOROCCO
CHILE	NETHERLANDS
CHINA	NEW ZEALAND
COLOMBIA	NIGERIA
CUBA	NORWAY
CYPRUS	PANAMA
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	PERU
DEMOCRATIC PEOPLE'S REPUBLIC OF THE CONGO	POLAND
DENMARK	REPUBLIC OF KOREA
DOMINICAN REPUBLIC	RUSSIAN FEDERATION
ECUADOR	SAUDI ARABIA
EGYPT	SINGAPORE
ESTONIA	SOUTH AFRICA
FINLAND	SPAIN
FRANCE	SWEDEN
GERMANY	SWITZERLAND
GREECE	THAILAND
INDONESIA	TURKEY
IRAN (ISLAMIC REPUBLIC OF)	TUVALU
ISRAEL	UNITED KINGDOM
ITALY	UNITED STATES
JAPAN	URUGUAY
	VENEZUELA

the following Associate Member of IMO:

HONG KONG, CHINA

and the following State not Member of IMO:

COOK ISLANDS

1.3 The session was also attended by a representative from the following United Nations specialized agency:

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

observers from the following intergovernmental organizations:

EUROPEAN COMMISSION (EC)

MARITIME ORGANISATION FOR WEST AND CENTRAL AFRICA (MOWCA)

and by observers from the following non-governmental organizations in consultative status:

INTERNATIONAL CHAMBER OF SHIPPING (ICS)

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

INTERNATIONAL UNION OF MARINE INSURANCE (IUMI)

INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS (ICFTU)

BIMCO

INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)

ICHCA INTERNATIONAL LIMITED

EUROPEAN CHEMICAL INDUSTRY COUNCIL (CEFIC)

OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)

INSTITUTE OF INTERNATIONAL CONTAINER LESSORS (IICL)

INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATIONS (IFSMA)

INTERNATIONAL ROAD TRANSPORT UNION (IRU)

DANGEROUS GOODS ADVISORY COUNCIL (DGAC)

INTERNATIONAL ASSOCIATION OF DRY CARGO SHIPOWNERS

(INTERCARGO)

THE INSTITUTE OF MARINE ENGINEERING, SCIENCE AND TECHNOLOGY

(IMarEST)

WORLD NUCLEAR TRANSPORT INSTITUTE (WNTI)

INTERNATIONAL BULK TERMINALS ASSOCIATION (IBTA)

INTERNATIONAL VESSEL OPERATORS HAZARDOUS MATERIALS

ASSOCIATION, INC. (VOHMA)

Opening address of the Secretary-General

1.4 In welcoming the participants, the Secretary-General observed that this session of the Sub-Committee is the first one that IMO is holding outside its Headquarters building during the refurbishment period and thanked the International Coffee Organization for hosting the event. He assured that the Secretariat was determined to continue providing the same quality services and the usual efficient support to all meetings during this period and, while being hopeful that the delegates would also be willing and prepared to face, with resolute spirit and good humour, any discomfort and disruption from normal operations, appreciated their understanding and co-operation.

The Secretary-General drew the Sub-Committee's attention to the theme for this year's World Maritime Day: **Technical Co-operation: IMO's response to the 2005 World Summit**, with special emphasis on the maritime needs of Africa. He pointed out that this theme had given the Organization the opportunity to contribute to the fulfilment of the Millennium Development Goals, set by the 2000 Millennium Summit and re-affirmed at the 2005 World Summit, as the world community's response to identified needs and challenges presented by the fact that

hundreds of millions of people are left defenceless against hunger, disease and environmental degradation. He emphasized that maritime activity had a key role to play in meeting these goals as shipping can also contribute substantially to sustainable development.

With regard to items of significance on the agenda, the Secretary-General, referring to difficulties surrounding the carriage of IMDG Code class 7 radioactive materials, recalled the Assembly's request that the possibility should be explored of establishing an *ad hoc* mechanism in the Secretariat to co-ordinate efforts to speedily resolve such difficulties and that, being presented with the appropriate Secretariat's proposal, the MSC and the Facilitation Committee responded positively. He considered it important that the issue is dealt with collectively by the Sub-Committee and the two Committees, so that there continues to be a balance between facilitation, safety and security, and that the Sub-Committee would take this into account when advising the MSC on the safety and security aspects of the carriage of such materials.

Turning to the amendments to the IMDG Code, adopted by the MSC last May, the Secretary-General acknowledged progress made in harmonizing the provisions of the IMDG Code with those of the UN Recommendations on the transport of dangerous goods. In this context, he stressed that, while the commitment to harmonization is important for multi-modal transport and the efficiency of world trade, it is equally important that a sight is not lost of the unique and specific requirements pertaining to the carriage of dangerous goods by sea. He, therefore, urged prudence and maximum care when preparing subsequent amendments to the IMDG Code.

Concerning the development of amendments to the BC Code and the identification of mandatory and recommendatory parts thereof, the Secretary-General was hopeful that the experience acquired in the process of reformatting and making mandatory the IMDG Code would prove its worth and that the amendments to the BC Code and giving it mandatory status would contribute to the enhancement of the safe, secure and efficient carriage of the solid bulk cargoes the Code deals with.

As to the development of Guidance on providing safe working conditions for securing of containers, he felt that it would help to identify where improvements should, and can, be made in the design and operation of containerships, to the benefit of the safety of both shore workers and ships' crew, and looked forward to a successful outcome of the matter.

The Secretary-General referred to other important issues on the agenda, such as casualty and incident reports and analysis; measures to enhance maritime security; guidance on serious structural deficiencies in containers; the review of the SPS Code; amendments to the CSS Code; the revisions of the LHNS and OSV Guidelines; the extension of the BLU Code to include grain; and the review of the recommendations on the safe use of pesticides in ships, all of which deserve meticulous and in-depth consideration and, noting the good progress made intersessionally, thanked correspondence groups, especially their co-ordinators and all the participating Governments and organizations, for providing their expertise, time and other resources.

On additional issues of a more general nature, the Secretary-General referred to security at IMO meetings and stressed that complacency about security was not an option, and no compromise could be made on this critical issue, and all delegates should therefore abide by the security rules in place, as outlined in Circular letter No.2692.

Referring to the Voluntary IMO Member State Audit Scheme, the Secretary-General outlined three areas on which he would appreciate receiving favourable responses from Member States, namely that they offer themselves for audit, as requested in resolution A.974(24); that they nominate auditors to enable the selection of audit teams for the conduct of the audits of volunteering Members; and that they nominate qualified auditors to participate in the regional training courses which the Organization was planning to convene to provide uniform training for effective implementation of the Scheme. He stated that he looked forward to receiving many more offers, together with the particulars of auditors from whom to choose audit teams.

Chairman's remarks

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

Adoption of the agenda and related matters

1.6 The Sub-Committee adopted the agenda (DSC 11/1/Rev.1) and a provisional timetable (DSC 11/1/1/Add.1) for guidance during the session. The agenda, as adopted, with a list of documents considered under each agenda item, is set out in document DSC 11/INF.7.

1.7 The Sub-Committee's decisions on the establishment of working and drafting groups are reflected under sections of this report covering corresponding agenda items.

2 DECISIONS OF OTHER IMO BODIES

General

2.1 The Sub-Committee noted the decisions and comments pertaining to its work made by A 24, FP 50, DE 49, MEPC 54, BLG 10, MSC 81 and FAL 33, as reported in documents DSC 11/2 and DSC 11/2/Add.1, and took them into account in its deliberations when dealing with relevant agenda items.

Application of the Committee's Guidelines

Start of working groups' work on Monday mornings

2.2 The Sub-Committee noted that MSC 81 had reaffirmed that the start of a working group's work on Monday is an option and should be decided at the meeting with caution. However, it should be encouraged that, whenever possible, terms of reference of working groups should be agreed at the previous sessions of the parent committee(s) or sub-committee(s). Another option would be that the draft terms of reference of working and drafting groups issued at the beginning of the session, in accordance with paragraph 3.39 of the Guidelines on the organization and method of work, also identify items on which the groups could start, if decided, working on Monday mornings, without prior consideration of the related agenda items in plenary.

Work method of a working group with splinter group(s)

2.3 The Sub-Committee noted that MSC 81 had agreed that there should be no official splinter group(s). However, where the establishment of a splinter group(s) was necessary for the facilitation and efficiency of the work, the working group should have a unanimous agreement on

its establishment and the outcome of the work of the group(s) should be considered and agreed by members of the working group and incorporated in the report of the working group.

Processing of documentation

2.4 The Sub-Committee noted that MSC 81 had requested the Secretariat to make every effort to ensure the timely posting of documents on the IMODOCS website and also requested Member Governments and international organizations to submit documents as early as possible and not just on the deadlines of the submission of documents.

Numbering of circulars

2.5 The Sub-Committee noted that, in order to facilitate the identification and retrieval of information circulated by means of joint MSC/MEPC circulars, since September 2005, the Secretariat had started issuing joint MSC/MEPC circulars with the following symbols:

- .1 organization and methods of work, as MSC-MEPC.1/Circ.;
- .2 general matters, as MSC-MEPC.2/Circ.;
- .3 casualty-related matters, as MSC-MEPC.3/Circ.;
- .4 port State control-related matters, as MSC-MEPC.4/Circ.;
- .5 survey and certification-related matters, as MSC-MEPC.5/Circ.;
- .6 national contact points for safety and pollution prevention and response, as MSC-MEPC.6/Circ.; and
- .7 human element-related matters, as MSC-MEPC.7/Circ.,

and that all circulars would be henceforth identified within a circular series, starting with the allocation of “.1” to its symbol, where the circular would not be issued under any other existing circular series symbol.

3 AMENDMENTS TO THE IMDG CODE AND SUPPLEMENTS, INCLUDING HARMONIZATION OF THE IMDG CODE WITH THE UN RECOMMENDATIONS ON THE TRANSPORT OF DANGEROUS GOODS

GENERAL

3.1 The Sub-Committee noted that subitems .1 and .2 of this agenda item, concerning respectively the harmonization of the IMDG Code with the UN Recommendations on the transport of dangerous goods, and amendments to the IMDG Code and supplements were closely associated with each other and decided to consider the submissions related to these two subitems together.

FACILITATION OF THE CARRIAGE OF DANGEROUS GOODS

Difficulties encountered with the shipment of IMDG Code class 7 radioactive materials

Ad hoc mechanism within the Organization to speedily resolve difficulties in the carriage of class 7 materials

3.2 On the basis of documents DSC 11/2, DSC 11/2/Add.1 and DSC 11/3/12, the Sub-Committee noted that operative paragraph 7 of resolution A.984(24) requested the Secretary-General to explore the possibility of establishing an *ad hoc* mechanism within the Organization to co-ordinate efforts to speedily resolve difficulties in the carriage of the IMDG Code class 7 radioactive materials, in close co-operation with the IAEA.

3.3 The Sub-Committee considered the proposal of the Secretariat, whereby, in the above context, a way forward might be the establishment of a contact point at the Secretariat so that sectors of the industry experiencing difficulties in the shipments of class 7 radioactive materials could provide information as to the causes of such delays and denials and make proposals on the way forward. IMO would monitor the situation in accordance with the reports provided and take appropriate action which might include contacting the relevant national authorities with the view to facilitating the carriage of such materials. In that context, the role of IMO would be that of a facilitator.

3.4 Having noted that the aforementioned proposal of the Secretariat had been noted by MSC 81 and supported by FAL 33 which had established the correspondence group on a mechanism within IMO for the resolution of difficulties in the carriage of class 7 radioactive materials, with the terms of reference listed in paragraph 12.22 of document FAL 33/19, the Sub-Committee supported the proposal noting that such a mechanism would contribute to the resolution of such difficulties and requested the Secretariat to keep the Sub-Committee informed of the relevant developments.

Assignment of specific UN number and proper shipping name

3.5 With regard to the negative perceptions associated with the carriage of IMDG Code class 7 radioactive materials, the Sub-Committee noted the decision of FAL 33 that it would not be appropriate to assign specific UN numbers and, thus, an associated proper shipping name to those radioactive material(s), in packaged form, which are solely used in medical or public health applications, on the basis of the requirements of the end-users of the radioactive materials.

Entry in the Transport Document and/or Dangerous Goods Manifest (FAL Form 7) to confirm that the RAM shipment is to be used in medical or public health applications only

3.6 The Sub-Committee, noting that FAL 33 had agreed to an entry in the Transport Document and/or Dangerous Goods Manifest (FAL Form 7) whereby Cobalt 60 shipments specifically produced for immediate use in medical, consumer, public health or agriculture applications would be declared as such as that would facilitate its identification by the public authorities concerned, was of the view that from a technical point of view such an entry in the Transport Document and/or Dangerous Goods Manifest raises the following technical concerns:

- .1 the definition of medical, consumer, public health or agriculture applications is not clear in the broader context of radioactive materials;

- .2 there is a limitation on the amount of information that can be placed in the transport document and/or dangerous goods manifest;
- .3 as of now, IAEA had not developed such an entry for incorporation in any transport document; and
- .4 the issue is multimodal in nature and should be brought to the attention of the UN Committee of experts on the transport of dangerous goods and on the globally harmonized system of classification and labelling of chemicals.

3.7 Subsequently, the Sub-Committee requested the Secretariat to inform FAL 34 and MSC 83 accordingly.

Comments on IMO FAL Compendium (FAL.5/Circ.15)

3.8 At the request of FAL 33, the Sub-Committee considered section G of the FAL Compendium (DSC 11/2/Add.1, annex) and, having considered matters under its purview, prepared the draft amendments to FAL Compendium, set out in annex 1, for submission to FAL 34 for action as appropriate and invited MSC 83 to note the above.

CONSIDERATION OF THE REPORT OF THE EDITORIAL AND TECHNICAL (E AND T) GROUP

3.9 The Sub-Committee approved, in general, the report of the Editorial and Technical Group on its session which was held from 3 to 7 October 2005 and took decisions on actions requested of the Sub-Committee as indicated in paragraphs 3.10 to 3.14.

Errata and corrigenda to the IMDG Code (amendment 32-04)

3.10 The Sub-Committee noted that, as instructed by DSC 10, the group had finalized errata and corrigenda to the IMDG Code (DSC 11/3, paragraph 12.1 and annex 3) which were published in November 2005 before amendment 32-04 to the IMDG Code entered into force on 1 January 2006.

IMDG Code draft amendment (33-06)

3.11 The Sub-Committee noted that the group, as instructed by DSC 10, had finalized draft amendment (33-06) to the IMDG Code (MSC 81/3/3 and MSC 81/3/3/Corr.1), which, as amended by the Committee, was adopted unanimously at MSC 81 by resolution MSC.205(81).

Ventilation requirements for UN 2211 and UN 3314, and amendments to section 7.17 of the 2000 High Speed Craft (HSC) Code with respect to change of flashpoint from 61°C to 60°C

3.12 The Sub-Committee, having considered the view of the group regarding ventilation requirements for UN 2211 and UN 3314, and the need to amend SOLAS regulation II-2/19 (II-2/54) and section 7.17 of the 2000 HSC Code with respect to change of flashpoint from 61°C to 60°C, referred the matter to the Correspondence Group on Application of the requirements for dangerous goods in packaged form in SOLAS and the HSC Code for consideration and to advise the Sub-Committee on the course of action to be taken (see paragraph 15.3).

Amendments to the revised emergency response procedures for ships carrying dangerous goods (EmS Guide)

3.13 The Sub-Committee noted that the group, having finalized the IMDG Code amendment (33-06) and noting that the EmS Guide needed consequential amendments, prepared amendments to the Guide (MSC.1/Circ.1025), which were subsequently approved by MSC 81 for dissemination by means of MSC.1/Circ.1025/Add.1 on Amendments to the Revised emergency response procedures for ships carrying dangerous goods.

REVIEW OF ANNEX III TO MARPOL 73/78

3.14 The Sub-Committee recalled that DSC 10 had established the Working Group on Review of Annex III to MARPOL 73/78 with the terms of reference indicated in paragraph 3.84 of document DSC 10/17 and, having considered the report of the working group (DSC 10/WP.1), took decisions as detailed in paragraph 3.85 of document DSC 10/17.

3.15 Having noted that the working group had continued working outside normal working hours and had prepared all consequential amendments to the IMDG Code as a result of amendments to Annex III to MARPOL 73/78, the Sub-Committee appreciated the efforts of the working group in preparing those amendments and referred the report (DSC 11/3/6) to the E and T Group for finalization when preparing draft amendment (34-08) to the IMDG Code.

3.16 In reference to paragraph 2.10.2.6 in annex 2 of document DSC 11/3/6, the Sub-Committee decided to have the authorization procedure, in accordance with section 7.9.2 (Approvals and certificates), instead of working group's recommended exemption procedure in accordance with section 7.9.1 (Exemptions), concerning substances, materials or articles that are identified as marine pollutants in the IMDG Code which no longer meet the criteria as marine pollutant and as such need not be transported in accordance with the provisions of the IMDG Code applicable to marine pollutants.

EXEMPTIONS FROM THE IMDG CODE

3.17 In their joint submission DSC 11/3/2, Germany and Sweden described the transport situation to and from the Baltic Sea countries when transporting in accordance with the provisions of the IMDG Code and proposed that competent authorities may jointly authorize any other provision by equivalent arrangement in sea areas with limited wave heights, if satisfied that such provision is at least as effective and safe as provided by the IMDG Code.

3.18 Having noted the associated information provided by Finland (DSC 11/INF.5) regarding the concept of low wave heights by means of giving examples of wave heights in the Baltic Sea, the Adriatic Sea, the Aegean Sea and the Great Lakes of North America, the Sub-Committee was of the view that such arrangements were allowed under the existing provisions in section 7.9.1 of the IMDG Code and, as such, an amendment to the IMDG Code was not required. Furthermore, the Sub-Committee was of the view that, if appropriate, Member Governments may wish to consider submitting proposals on improvements to the aforementioned section to DSC 12.

STOWAGE AND SEGREGATION

Addition of UN 2794 to segregation group 1 (acids)

3.19 Germany (DSC 11/3/5) proposed that UN 2794 (Batteries, wet, filled with acids electric storage) should be added to segregation group 1 (acids) in 3.1.4.4 of the IMDG Code as an associated entry regarding UN 2795 (Batteries, wet, filled with alkali electric storage) is included in segregation group 18 (alkalis).

3.20 Noting that an identical proposal had been submitted by Belgium, France and the Netherlands (DSC 11/3/10, paragraph 7), the Sub-Committee agreed with the proposal, in principle, and forwarded it to the group for consideration with the view to incorporation in the draft amendment (34-08) to the IMDG Code.

Segregation requirements

Competent authority approval for “away from” segregation

3.21 The Sub-Committee recalled that DSC 10, considering the proposal by the Netherlands (DSC 10/3/10) on deletion of the requirement for competent authority approval for the transport in cargo transport units of substances for which “away from” stowage applies, had not accepted the proposal on grounds of safety and had expressed the view that it was timely to review the whole of the segregation provisions and had invited Member Governments and international organizations to submit proposals on the subject for consideration by the Sub-Committee.

3.22 Having considered the joint proposal by Belgium, France and the Netherlands (DSC 11/3/10) proposing additional safety requirements to ensure that substances reacting dangerously with each other would no longer be permitted in one cargo transport unit which would justify the deletion of the competent authority approval for ‘away from’ stowage in cargo transport units without impairing safety, the Sub-Committee did not agree, at this stage, to the proposal as many delegations believed that the proposal was not sufficiently advanced and considered that further work would be necessary.

Review of chapters 7.1 (stowage) and 7.2 (segregation) of the IMDG Code

3.23 The United Kingdom (DSC 11/3/16) proposed a substantive review of chapters 7.1 (stowage) and 7.2 (segregation) to make the IMDG Code more user friendly and to reflect the current practice of containerization rather than break bulk, on which it is believed the segregation provisions are based.

3.24 The Sub-Committee agreed that the above proposal had merit and invited interested delegations to co-operate with the delegation of the United Kingdom with the view to preparing a firmer proposal for consideration at a future session of the Sub-Committee.

Incident regarding stowage and handling of explosives

3.25 The Sub-Committee considered document DSC 11/3/8 (Canada) which described an incident involving a small explosion, associated with damaged packaging and proposed an additional general clause 7.1.7.4.3.1 to include provisions required to safely deal with spillage of class 1 materials due to damaged packaging and “wetted” material of class 1 drying out and not being properly detected.

3.26 Noting that the proposal by Canada had merit, the Sub-Committee agreed to the additional general clause, in principle, and forwarded it to the group for further consideration and improvement and how to deal with spillages, with the view to incorporation in the draft amendment (34-08) to the IMDG Code. In that context, the Sub-Committee noted the view of some of the delegations that the proposed general clause should be recommendatory in nature, expanded to include other hazards, and that its application to other classes as well should be explored. The Sub-Committee was of the view that hazards of spills of class 1 materials should also be seen in the context of friction, sources of heat, sparks, etc.

Inclusion of segregation group in the transport document

3.27 The United States (DSC 11/3/11), recognizing the need to give a clear indication that additional segregation requirements may apply to a substance, proposed a revised text of 5.4.1.5.11.1 of the IMDG Code on how to include the appropriate segregation group in the transport document.

3.28 The Sub-Committee, noting that the existing relevant provisions in the IMDG Code would benefit from the revised text of 5.4.1.5.11.1, agreed to the proposal, in principle, and forwarded it to the group for consideration with the view to incorporation in the draft amendment (34-08) to the IMDG Code. In that context, the Sub-Committee instructed the E and T Group to take into account the need for a harmonized approach when establishing the sequence of information in the transport document and to prepare an associated example.

MISCELLANEOUS PROPOSALS

Special provisions for magnesium nitrate (UN 1474)

3.29 In considering the submission by Poland (DSC 11/3/1), which in the light of the properties and on the basis of experience from shipments of Magnesium Nitrate (UN 1474), proposed the application of special provision (SP) 223 to that substance, the Sub-Committee noted that the issue had been addressed by the development of new SP 332, prepared by the UN Sub-Committee of experts on the transport of dangerous goods, and, having agreed to the proposal, in principle, forwarded it to the group for further consideration with the view to incorporating new SP 332 in the draft amendment (34-08) to the IMDG Code.

Unpacked ice in cargo transport units

3.30 The Sub-Committee considered document DSC 11/3/3 by Germany which, in the light of experience gained from shipments of dry ice used unpacked for cooling purposes, proposed:

- .1 that transport of unpacked dry ice in freight containers should not be permitted;
- .2 with regard to IMO special provision 297 concerning carriage of dry ice under certain condition, to align IMO SP 297 with that of the UN Recommendations SP 297; and
- .3 that 5.4.2.1.8 of the IMDG Code should be amended to read “When packages containing carbon dioxide solid (dry ice) are loaded into the container/vehicle, the exterior of the container/vehicle should be conspicuously marked on two sides “WARNING CO2 SOLID (DRY ICE)”.

3.31 Noting that the above proposals by Germany had merit, the Sub-Committee agreed to the proposals, in principle, and forwarded them to the group for consideration with the view to incorporation in the draft amendment (34-08) to the IMDG Code. In that context, the Sub-Committee noted the views of some of the delegations that stowage of cargo transport units containing dry ice should be prohibited under deck and that the need to have them appropriately marked should be further explored. The Sub-Committee, noting that the issue might need to be looked at in the general context of multimodal transport, invited the delegation of Germany to consider raising the issue at a future meeting of the UN Sub-Committee of experts on the transport of dangerous goods.

Missing UN numbers in the IMDG Code and amendments to the Index

3.32 The Sub-Committee considered proposals by Germany (DSC 11/3/4), the United States (DSC 11/3/15) and Germany (DSC 11/3/5), which proposed, respectively, as follows:

- .1 additions of those UN numbers which are in UN Recommendations on the transport of dangerous goods, fourteenth edition, along with the appropriate associated entries, in the IMDG Code;
- .2 support to the above proposal in document DSC 11/3/4; and
- .3 amendments and improvements to the Index in order to clarify and/or align certain entries with the corresponding entries in the dangerous goods list.

3.33 Having agreed to the above proposals in principle, in order to harmonize with the UN Recommendations, the Sub-Committee forwarded the aforementioned documents to the group with the view to incorporating the appropriate modifications when preparing the draft amendment (34-08) to the IMDG Code. With regards to the second part of the proposal by the United States in paragraph 4 of document DSC 11/3/15 relating to the use of new and alternative technologies that have been developed in the context of powered vehicles and equipment, the Sub-Committee noted the intention of the United States to submit a proposal for consideration at DSC 12.

Transport in portable tanks

3.34 The Sub-Committee considered a proposal by Belgium (DSC 11/3/7) to delete, from the IMDG Code, existing transport provision (TP)13, which requires that a self-contained breathing apparatus is provided when the substance concerned is transported, as SOLAS regulation II-2/19 (II-2/54) addressed the issue of requirement for breathing apparatus.

3.35 Having noted that the proposal had merit, agreed to it, in principle, and instructed the E and T Group to amend TP 13 to the effect that a set of breathing apparatus should be provided if no other is provided on board, for incorporation in draft amendment 34-08 to the IMDG Code.

Alkaline storage batteries (household) involved in an accident

3.36 Germany (DSC 11/3/9), on the basis of an independent maritime casualty investigation on a fire on board a German containership, proposed the need for an urgent review of the transport provisions, in particular those for UN 3028.

3.37 Having considered the proposal by Germany and noting that the issues raised in the proposal are primarily concerned with the classification of batteries, the Sub-Committee invited the delegation of Germany to consider raising the matter at the UNCOE and noted the intention of the delegation of Germany to provide more information regarding cold temperatures and its impact on certain cargoes, for consideration at DSC 12.

Harmonization of labelling/placarding location

3.38 The Sub-Committee considered document DSC 11/3/13 by the Islamic Republic of Iran, which proposed identification of the correct location of the labels and placards, in order to avoid misinterpretation of the provisions concerning the labelling and placarding by the users of the IMDG Code, such as operators, liners and shippers. Furthermore, in order to facilitate the removal of labels and placards which are no longer required, the use of an appropriate solvent which would not damage the label or the container was also proposed.

3.39 In the course of debate on the matter, the Sub-Committee, having appreciated the submission by the Islamic Republic of Iran, agreed that compliance with the proposal might lead to additional expenditure and thus add to shipment costs. Furthermore, the Sub-Committee noted that the issue was a multimodal one and needed to be considered by other organizations, such as the UNCOE and ISO.

Deletion of SP 911 for carbon dioxide

3.40 In their document DSC 11/3/14, the Republic of Korea, understanding that SP911 and the relevant provisions of dangerous goods in limited quantities concerning carbon dioxide (UN 1013, class 2.2) appeared to conflict with each other, proposed to delete SP911 from the IMDG Code. Following debate, the Sub-Committee agreed to the proposal, in principle, and forwarded it to the group for consideration with the view to incorporation in the draft amendment (34-08) to the IMDG Code.

4 AMENDMENTS TO THE BC CODE, INCLUDING EVALUATION OF PROPERTIES OF SOLID BULK CARGOES

General

4.1 The Sub-Committee, in addition to considering documents submitted under this agenda item, also considered documents DSC 11/6/6 (France) and DSC 11/INF.3 (France) as the proposals contained therein had relevance to the issues being considered under this item.

Reports of the working group established at DSC 10 and the correspondence group

4.2 The Sub-Committee recalled that at DSC 10 it had established the Working Group on the Amendments to the BC Code and its Mandatory Application, with the terms of reference outlined in paragraph 5.4 of document DSC 10/17 and that on the basis of the oral report of the chairman of the working group it had established the Correspondence Group on Amendments to the BC Code and its Mandatory Application, with the terms of reference indicated in paragraph 5.7 of document DSC 10/17.

4.3 Having considered the part of the report of the working group established at DSC 10 (DSC 11/4) relating to this item and the report of the correspondence group (DSC 11/4/1), as well as documents submitted to this session pertaining thereto, the Sub-Committee, approved the reports, in general, and took decisions as detailed in paragraphs 4.4 to 4.10.

4.4 The Sub-Committee:

- .1 agreed to amend the BC Code to clarify ventilation provisions in the Code (DSC 11/4, paragraphs 6 and 7);
- .2 having considered the submission by Italy (DSC 11/4/6) which provided new information about properties of products obtained from used tyres and a new proposal to include a new entry for “Chopped tyres in coarse size” in Group C of the BC Code, concurred, in principle, to have the two additional entries on “Chopped rubber and plastic insulation” and “Chopped tyre rubber” in the BC Code (DSC 11/4, paragraphs 8, 9 and 10);
- .3 agreed that although the Material Safety Data Sheet (MSDS) can provide the master or his representative with useful supplementary information on a cargo, it cannot be a substitute accepted as an alternative to the cargo information which should be provided by shipper as required by SOLAS regulation VI/2 and the BC Code (DSC 11/4, paragraph 14); and
- .4 noted the outcome of the correspondence group’s work regarding the clarification on the classification of Seed Cake (DSC 11/4/1, paragraph 5) and agreed, in principle, to the proposal by Australia (DSC 11/4/9 and DSC 11/INF.6) concerning the regulation of fuzzy cotton by means of a proposed schedule, for inclusion as a Group B, MHB,

and decided to forward the above proposals and comments to the working group for further consideration and to advise the Sub-Committee accordingly.

Other IMO instruments

4.5 Having noted the relevant view of the working group (DSC 11/4, paragraph 15), the Sub-Committee invited Member Governments and international organizations to provide the Secretariat with information on the identification of other IMO instruments which may require consequential amendments as a result of adoption of the 2004 BC Code (DSC 11/4, paragraph 15).

Direct reduced iron (DRI)

4.6 The Sub-Committee recalled that DSC 10 had considered a preliminary report on an explosion during the transport of direct reduced iron fines and, having been advised of another accident involving a similar cargo which may self-heat and/or evolve hydrogen in contact with water, had agreed to DSC.1/Circ.36 on Accidents involving transport of direct reduced iron fines, requesting all concerned that extreme care and appropriate action to be taken, taking into account the provisions of relevant IMO instruments when handling and transporting this type of cargo in bulk. Also, DSC 10 urged Member Governments and the industry to submit to the Organization relevant information regarding safe handling and carriage of this cargo at their earliest convenience.

4.7 With regard to issues relevant to DRIs, the Sub-Committee had for its consideration submissions by:

- .1 the correspondence group (DSC 11/4/1, paragraph 7 and annex 2) proposing a draft schedule for DRI Fines;
- .2 Venezuela (DSC 11/4/2, DSC 11/4/3 and DSC 11/4/4) providing analysis of DRI fines, proposed schedule for classification of DRI, and appropriate practices for the transportation of DRI fines;
- .3 France (DSC 11/6/6 and DSC 11/INF.3) providing information on the total loss of bulk carrier **Adamandas** which was caused by re-oxidation of a cargo of DRI pallets; and
- .4 the Marshall Islands and INTERCARGO (DSC 11/4/10) providing final casualty report of m.v. **Ythan**.

4.8 Following the discussion of the above proposals and associated reports, the Sub-Committee agreed that they had merit and decided to forward them to the working group for detailed consideration and advice.

Improvements to the text of the BC Code

4.9 On the basis of proposals by the working group regarding improvements to the text of the 2004 BC Code (DSC 11/4/1, paragraphs 9 and 10 and annexes 3 and 4), the Sub-Committee, noting that incorporation of those amendments in the Code would improve its text, agreed with the proposals, in principle, and forwarded the proposals to the working group for further consideration with the view to incorporating them in the draft mandatory BC Code.

Voluntary application of the mandatory BC Code

4.10 In the interest of safety, the Sub-Committee, being desirous of applying the provisions of the mandatory BC Code, as anticipated to be agreed by DSC 12 and adopted by MSC 84, on a voluntary basis from 1 July 2008 pending its official envisaged mandatory application date of 1 January 2011, agreed to the timetable on the development of the mandatory BC Code set out in annex 2, prepared on the basis of that developed by DSC 9, and invited MSC 82 to endorse the proposed timetable.

Miscellaneous proposals

Classification of sulphur

4.11 Germany (DSC 11/4/5), noting that Sulphur (lump and coarse grained) is listed in the BC Code in Group B (cargo with chemical hazard) under class 4.1 UN 1350, expressed the view that that classification appeared inconsistent as the assignment of UN 1350 does not apply to sulphur formed to a specific shape, which could lead to misinterpretation and confusion.

4.12 The Sub-Committee noted that sulphur (UN 1350), formed to a specific shape when shipped in packaged form, is exempted from the provisions of the IMDG Code as the dust generated is minimal and not likely to cause hazard. However, noting that sulphur, formed to a specific shape, when shipped in bulk is likely to have the dust hazard, the Sub-Committee could

not support the above view but encouraged the delegation of Germany to submit a new proposal taking into consideration the comments made in plenary, for consideration at DSC 12.

Establishment of criteria for materials hazardous only in bulk (MHB)

4.13 The United States (DSC 11/4/7), on the basis of criteria established for materials hazardous only in bulk (MHB), proposed to classify ammonium nitrate based fertilizer (non-hazardous), chromite ore, and tapioca as MHB.

4.14 Noting that the proposal on establishing a criteria for MHB substances by the United States had merit, the Sub-Committee forwarded it to the working group for detailed consideration and advice and concluded that it was premature to classify the three above-mentioned cargoes as MHB.

Self-heating of cargo of coal

4.15 In considering document DSC 11/4/8 (Canada), the Sub-Committee noted the details of the incident provided by Canada concerning the self-heating of a cargo of coal of about 50,000 tonnes on a self-unloader type vessel arriving into Canada after an extended ocean voyage and further noted the intention of the delegation of Canada to submit a definitive version of the proposal, to DSC 12, for an amendment to the BC Code for the Sub-Committee's consideration.

Establishment of the working group

4.16 The Sub-Committee agreed to consider the establishment of the Working Group on Amendments to the BC Code and its Mandatory Application, after submissions under agenda item 5 had been considered (see paragraphs 5.1 to 5.9).

Oral report of the chairman of the working group

4.17 On having received the oral report of the Chairman of the working group, the Sub-Committee took action as detailed in paragraphs 5.10 to 5.12

5 MANDATORY APPLICATION OF THE BC CODE

General

5.1 The Sub-Committee recalled that MSC 79 had endorsed the timetable (DSC 9/15, annex 1) on the envisaged sequence of events leading to the mandatory application of the BC Code, which could be subject to revision depending upon the progress made over the years and that under this agenda item, the following two subitems needed consideration, namely:

- .1 identification of mandatory and recommendatory parts of the BC Code, including consequential amendments; and
- .2 amendments to SOLAS chapters VI and VII on making the BC Code mandatory.

Reports of the working group established at DSC 10 and the correspondence group

5.2 The Sub-Committee recalled that at DSC 10 it had established the Working Group on the Amendments to the BC Code and its Mandatory Application with the terms of reference outlined

in paragraph 5.4 of document DSC 10/17 and that on the basis of the oral report of the Chairman of the working group it had established the Correspondence Group on Amendments to the BC Code and its Mandatory Application, under the joint co-ordination of Australia and Japan, with the terms of reference in paragraph 5.7 of document DSC 10/17.

5.3 Having considered the part of the report of the working group established at DSC 10 (DSC 11/4, paragraphs 22.9 to 22.12) relating to the item and report of the correspondence group (DSC 11/5 and DSC 11/5/1), as mentioned above, the Sub-Committee approved the reports, in general, and took decisions as detailed in paragraphs 5.4 to 5.7.

5.4 The Sub-Committee, with regard to:

identification of mandatory and recommendatory parts of the BC Code, including consequential amendments

- .1 agreed that further work would be required to develop procedures dealing with the transport of cargoes not listed in the BC Code and procedures for the introduction of new cargoes into the Code (DSC 11/4, paragraph 20);
- .2 agreed to make the whole of Appendix 1, other than the EmS schedules and description of cargoes, of the BC Code mandatory.

amendments to SOLAS chapters VI and VII on making the BC Code mandatory

- .3 agreed that in preparing draft amendments to SOLAS, any operational requirements for the carriage of solid bulk cargoes of SOLAS chapters VI and VII should be replicated in the BC Code for ease of reference (DSC 11/4, paragraph 21); and
- .4 noted that work relevant to the identification of any operational parts of SOLAS chapters VI and VII which should be replicated in the Code for ease of use could not be completed by the working group established at DSC 10 or the correspondence group.

Requirement for exemption provisions in the mandatory BC Code

5.5 Australia (DSC 11/5/2), on the basis of progress made by the working and correspondence groups, proposed the need to incorporate a requirement for exemption provisions in the mandatory BC Code and, in addition, proposed that the BC Code absorb the provisions of MSC/Circ.1146 (Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted or for which a fixed gas fire-extinguishing system is ineffective).

5.6 The Sub-Committee agreed, in principle, to the proposals by Australia and forwarded them to the working group for detailed consideration with the view to incorporating them in the draft mandatory BC Code.

5.7 In this context, the Sub-Committee, as advised by the delegation of Norway, noted document MEPC 55/6/3 proposing that any future review of MARPOL Annex V should include a review of the discharge requirements for dry cargo residues.

Establishment of a working group

5.8 The Sub-Committee, after consideration of proposals submitted under this agenda item and agenda item 4, established the Working Group on Amendments to the BC Code and its Mandatory Application, under the chairmanship of Captain J. D. Troyat (France), and instructed the group, taking into account the relevant decisions taken and comments made in plenary, to:

- .1 deliberate the issues under two separate agenda items;
- .2 finalize the clarification on the classification of Seed Cake (agenda item 4);
- .3 identify those operational parts of SOLAS chapters VI and VII which should be replicated in the BC Code for ease of reference (agenda item 4);
- .4 include the security-related provisions on the basis of those in DSC 11/7, annex 1, in the draft mandatory BC Code (agenda item 4);
- .5 consider documents DSC 11/4, DSC 11/4/1, DSC 11/4/2, DSC 11/4/3, DSC 11/4/4, DSC 11/4/6, DSC 11/4/9, DSC 11/4/10, DSC 11/5/1, DSC 11/5/2, DSC 11/6/6, DSC 11/INF.3 and DSC 11/INF.6 and prepare amendments for incorporation in the draft mandatory BC Code (agenda item 4);
- .6 consider document DSC 11/4/7 and advise the Sub-Committee on the course of action to be taken;
- .7 prepare the draft mandatory BC Code incorporating all agreed amendments and identify the mandatory, recommendatory and optional provisions by using the words “shall”, “should” and “may” respectively, and where agreement on provisions for incorporation in the draft mandatory BC Code is not reached, place that text in square brackets and, where possible, provide alternative text in square brackets in the draft mandatory Code for the Sub-Committee to decide (agenda item 4);
- .8 consider the need for, and if required, prepare draft amendments to MSC/Circ.1146 (agenda item 4);
- .9 finalize draft amendments to SOLAS chapters VI and VII, in the standard format, taking into consideration documents DSC 11/4, DSC 11/5 and DSC 11/12, paragraphs 7 and 10 (agenda item 5); and
- .10 deliver an oral report on progress made to plenary on Friday, 15 September 2006, also advising on draft terms of reference for the correspondence group and submit a written report to DSC 12.

5.9 The Sub-Committee also reiterated its instruction to the group, given at DSC 10, that, when preparing the draft mandatory BC Code and amendments to the SOLAS Convention, to adopt the same approach which was taken by the Sub-Committee when preparing the mandatory text of the IMDG Code and appropriate amendments to the SOLAS Convention.

Oral report of the Chairman of the working group

5.10 The Sub-Committee, having received the oral report by the Chairman of the Working Group on Amendments to the BC Code and its Mandatory Application, noted that the working group considered all the tasks given by the Sub-Committee and made progress thereon, particularly on the issues related to the identification of mandatory and recommendatory parts of the BC Code and amendments to SOLAS to mandate the BC Code. The group invited the Sub-Committee to consider, in the light of the outstanding work relevant to the BC Code and its mandatory application, establishing a correspondence group to continue with the task in hand.

5.11 In order to facilitate the consideration of issues relevant to the classification of DRIs, other than DRI (A) briquettes, hot-moulded, the Sub-Committee invited Member Governments and international organizations to submit information needed for the definition of DRI (A), other than direct reduced iron (A) briquettes, hot-moulded, on the basis of the set out in annex 3.

Establishment of a correspondence group

5.12 Having noted the recommendations of the working group, the Sub-Committee agreed to establish the Correspondence Group on Amendments to the BC Code and its Mandatory Application, under the joint co-ordination of Australia* and Japan**, with the following terms of reference:

The correspondence group is instructed, taking into account the relevant decisions taken in the working group and comments made in plenary, to:

- .1 prepare a draft mandatory BC Code for consideration at DSC 12 (agenda items 4 and 5);
- .2 consider the clarification on the classification of Seed Cake schedules in document DSC 11/4/1, annex 1 (agenda item 4) and:
 - .1 draft explanatory notes to explain the BCSN SEED CAKE, UN 1386 (b), for inclusion after the BCSN and before the DESCRIPTION; and
 - .2 harmonize provisions in the seed cake schedules regarding the issue of certificates and make consequential amendments to SEED CAKE (non-hazardous);
- .3 redraft paragraph 5.1 of section 5 of the BC Code, taking into account that not all cargoes need trimming (agenda item 4);

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- .4 draft a standard cargo declaration form for solid bulk cargoes based on MSC/Circ.663 and incorporate in section 4 of the BC Code (agenda item 4);
- .5 redraft section 9 of the BC Code in line with document DSC 11/5/1, annex 7 (agenda item 4);
- .6 identify possible discrepancies on ventilation requirements in the BC Code and SOLAS Convention, as considered in document DSC 11/5/1, annex 6, and amend as necessary (agenda item 4);
- .7 finalize the text in square brackets in the Foreword contained in DSC 11/5, annex 1 (agenda item 4);
- .8 regarding section 1 of the BC Code (agenda item 4):
 - .1 draft a new paragraph, to be added to section 1 of the BC Code, with the title “Exemptions and equivalent measures”, based on document DSC 11/5/2;
 - .2 finalize the text in square brackets in the “General provisions” contained in document DSC 11/5, annex 2 (agenda item 4);
- .9 identify remaining inconsistencies in the BC Code, taking into account document DSC 11/4/1, annexes 3 and 4 and amend as necessary (agenda item 4);
- .10 finalize the draft text in square brackets (DSC 12/4, paragraph 16.3) for incorporation in section 4 of the draft mandatory Code (paragraph 4.1.3) (agenda item 4);
- .11 include the provisions in document DSC 11/7, annex 1, prepared by the Drafting Group on Measures to Enhance Maritime Security, as a new section 11 in the BC Code, entitled “Security Provisions”, taking into account those changes already made by the working group (agenda item 4);
- .12 prepare a consolidated set of amendments to SOLAS chapters II-2, VI and VII, in the standard format, for future adoption, based on document DSC 11/5, annex 3 and DSC 11/12, paragraphs 7 and 10 (agenda item 5);
- .13 redraft section 6, section 7 (paragraph 7.2), sections 8 and 10 (paragraphs 10.4 and 10.5) of the BC Code, in order to class them as mandatory (agenda item 5);
- .14 give priority to items .1 and .12; and
- .15 submit a written report to DSC 12.

6 CASUALTY AND INCIDENT REPORTS AND ANALYSIS

General

6.1 The Sub-Committee considered submissions relevant to this agenda item, recalling that documents DSC 11/6/6 (France) and DSC 11/INF.3 (France), concerning investigation of the total loss of the bulk carrier **Adamandas**, had been considered under agenda item 4 (see paragraphs 4.7 and 4.8), and took decisions on the remaining documents as detailed in the following paragraphs.

Explosion on board m.v. “Rickers Genoa”

6.2 The Sub-Committee considered a proposal by Germany (DSC 11/6 and DSC 11/INF.4) which introduced an incident whereby, in March 2005, the general cargo ship **Rickmers Genoa** collided with the general cargo ship **Sun Cross** in the Yellow Sea. **Sun Cross** sank, **Rickmers Genoa** sustained hull damage at port side and her number 1 hold was flooded up to six metres. Subsequently, an explosion occurred and the chief officer was reported as missing. The investigation showed that the cargo, which was not declared as dangerous, reacted with the seawater under evolution of flammable gas. Most probably, an explosive atmosphere was generated in the hold which was ignited when the chief officer checked the water level.

6.3 Having considered the proposal, the Sub-Committee invited Member Governments and international organizations to further consider the issues highlighted in the proposal by Germany, including the lessons to be learnt from that accident and, with regards to the classification issues, invited the delegation of Germany to raise them at a future session of the UN Committee of Experts on the transport of dangerous goods and on the globally harmonized system of classification of labelling of chemicals.

Incident with “top picker”

6.4 Canada (DSC 11/6/4) reported on an incident with a container, which released from a “top picker” after being lifted and driven a short distance, resulted in further damage to it and furthermore, the top of the container appeared to be severely damaged.

6.5 After an elaborate consideration of the above report, the Sub-Committee noted the view of some of the delegations that a preliminary examination of the photographs of damaged top of the container gave an impression that, at the time of lifting, the container was overloaded during earlier operations which resulted in the rupture of the top corner. The delegation of Canada, having invited interested delegations to provide comments on the report on the incident, informed the Sub-Committee of its intention to submit further information for consideration at DSC 12.

Container inspection programmes

6.6 The Sub-Committee noted the results of container inspection programmes as submitted by Belgium (DSC 11/6/2), Canada (DSC 11/6/1), Chile (DSC 11/6/9), Italy (DSC 11/6/3/Rev.1), the Republic of Korea (DSC 11/6/7), Sweden (DSC 11/6/5), and the United States (DSC 11/6/8).

6.7 The Sub-Committee recalled that, according to the 2004 consolidated report on container inspection programmes (DSC 10/6/10), a total of 7,301 cargo transport units had been inspected and 1,928 cargo transport units were found with deficiencies, that is about 26.4% of the cargo transport units inspected had deficiencies. A total of 2,975 deficiencies were found, that is a deficiency rate of 40.7%.

6.8 The Sub-Committee considered the results of the consolidated report on container inspection programmes (DSC 11/6/10, Secretariat), which was prepared on the basis of the reports referred to in paragraph 6.6 above, whereby a total of 25,284 cargo transport units were inspected and 7,979 cargo transport units were found with deficiencies, that is about 32% of the cargo transport units inspected had deficiencies. A total of 8,574 deficiencies were found, that is a deficiency rate of 33.9%.

6.9 In considering the results of container inspection programmes, the Sub-Committee noted the view of some of the delegations that these results need to be analysed and evaluated with care and caution and that prudence needed to be exercised when drawing any conclusions from such results as, in some countries, inspections are carried out using risk-based programmes.

6.10 The Sub-Committee expressed its appreciation to those Member Governments which had submitted results of container inspection programmes and its concern about the high rate of deficiencies and the lack of adherence to the provisions of the IMDG Code, especially in the areas of placarding and marking, and documentation.

6.11 The Sub-Committee urged Member Governments, who had not yet carried out container inspection programmes, to do so and submit the relevant information to the Sub-Committee in accordance with MSC.1/Circ.1202.

Results of IMO survey on inspections of containers/vehicles carrying packaged dangerous goods

6.12 The Sub-Committee recalled that MSC 79, on the basis of relevant decisions of DSC 9, approved the Questionnaire on inspections of containers/vehicles carrying packaged dangerous goods (MSC/Circ.1147) and requested Member Governments to provide the information requested in the questionnaire set out in the annex to that circular and to forward completed questionnaires to the Secretariat.

6.13 The Sub-Committee noting that only nineteen Member Governments had submitted the completed questionnaire, urged those Member Governments which had not submitted the results so far, to consider doing so for consideration at DSC 12.

7 MEASURES TO ENHANCE MARITIME SECURITY

General

7.1 The Sub-Committee recalled that DSC 10, having noted the relevant decisions of other IMO bodies and following discussions on measures to enhance maritime security, established the Drafting Group on Measures to enhance maritime security under the chairmanship of Mr. K. Bradley (United Kingdom), with the terms of reference indicated in paragraph 9.19 of document DSC 10/17.

7.2 The Sub-Committee recalled the progress made by the drafting group as orally reported by the chairman of the drafting group and detailed in paragraph 9.20 of document DSC 10/17.

7.3 The Sub-Committee recalled, in particular, with regard to the revision of Recommendations on the safe transport of dangerous cargoes and related activities in port areas (MSC/Circ.675), the kind offer of ICHCA International Ltd. and IAPH to undertake the editorial revision of the circular for finalization at this session of the Sub-Committee.

Report of the drafting group established at DSC 10

7.4 Having considered the report of the aforementioned drafting group, the Sub-Committee approved the report, in general, and took decisions as detailed in paragraphs 7.5 to 7.7.

Draft amendments to the BC Code (resolution MSC.193(79))

7.5 The Sub-Committee, having recalled that a chapter on security provisions had been incorporated in the IMDG Code and that the underlying rationale behind those provisions is that the relevant mandatory provisions shall not go beyond those specified in the ISPS Code, decided that it would be prudent to take a similar approach when incorporating similar provisions in the BC Code. Having agreed with the proposed amendments contained in annex 1 to document DSC 11/7, in principle, the Sub-Committee instructed the Working Group on Amendments to the BC Code and its mandatory Application to incorporate these amendments in the draft mandatory BC Code, subject to editorial review by the drafting group referred to in paragraph 7.9.

Draft amendments to the IMO/ILO/UN ECE Guidelines for packing of cargo transport units (MSC/Circ.787)

7.6 The Sub-Committee recalled that MSC 76 had approved the IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs) which were prepared by the Working Group on Ship/Port Interface (SPI Working Group) in co-operation with the UN ECE Working Party on Combined Transport (WP.24), subject to editorial improvements by the UN ECE, ILO and IMO Secretariats, if necessary. The Committee had instructed the IMO Secretariat to publish the Guidelines, in co-operation with the UN ECE and ILO, after endorsement by these two organizations. The guidelines were subsequently endorsed by the Inland Transport Committee of the UN ECE in January 1997 and by the Governing Body of ILO in March 1997 and circulated as MSC/Circ.787.

7.7 Having considered the draft amendments to the Guidelines annexed to MSC/Circ.787 (DSC 11/7, paragraph 10.3 and annex 2), the Sub-Committee decided to forward the draft amendments to the drafting group for finalization.

Revised recommendations on the safe transport of dangerous cargoes and related activities in port areas

7.8 The Sub-Committee, having considered the draft Revised recommendations on the safe transport of dangerous cargoes and related activities in port areas (DSC 11/7/1) and having appreciated the efforts of ICHCA International Limited in preparing it, decided to forward the draft Revised recommendations to the drafting group for finalization.

Establishment of the drafting group

7.9 The Sub-Committee, having considered the report of the drafting group established at DSC 10 and following discussions on measures to enhance maritime security, agreed to establish a Drafting Group on Measures to Enhance Maritime Security, under the chairmanship of

Mr. Keith Bradley (United Kingdom), and instructed the group, taking into account the relevant decisions taken and comments made in plenary, to:

- .1 finalize the draft Revised recommendations on the safe transport of dangerous cargoes and related activities in port areas (DSC 11/7/1), including the associated draft MSC circular, with the view to approval at MSC 82;
- .2 finalize the draft amendments to the BC Code on security provisions for referral to the Working Group on Amendments to the BC Code and its mandatory application; and
- .3 finalize draft amendments to the IMO/ILO/UN ECE Guidelines for packing of cargo transport units and prepare an associated draft MSC circular.

Report of the drafting group

7.10 Upon receiving the report of the drafting group, the Sub-Committee approved the report, in general, and took decisions as follows:

- .1 agreed to the draft Revised recommendations on the safe transport of dangerous cargoes and related activities in port areas, including modifications agreed by the group, and the associated draft MSC circular, set out in annex 4, for submission to MSC 82 for approval and requested the Secretariat to conduct a further editorial review of the draft Revised recommendations, with particular reference to reviewing, amending and updating the list of documents referenced therein;
- .2 noted that the group had prepared revised draft amendments to the BC Code on security provisions which were referred to the Working Group on Amendments to the BC Code and its mandatory application, for further consideration; and
- .3 agreed to the draft amendments to the IMO/ILO/UN ECE Guidelines for packing of cargo transport units and the associated draft MSC circular, set out in annex 5, for submission to MSC 82 for approval and further action, as appropriate, bearing in mind that they should be endorsed by ILO and UN ECE.

7.11 Having noted the view of the delegation of Greece that the text of the draft Revised recommendations on the transport of dangerous cargoes and related activities in port areas, as agreed to by the Sub-Committee, did not take into account many items (definitions, etc.) which are included in the ISPS Code and the ISM Code and, as such, a further review is needed for the text of the draft Recommendations to be compatible with the aforementioned Codes, the Sub-Committee agreed the opinion that the review of the Recommendations, in accordance with the terms of reference approved by the Committee, had been completed by the Sub-Committee and should another review be required, then an appropriate proposal, in accordance with the Guidelines on the organization and method of work, should be submitted by interested Member Governments to the Committee.

Completion of the item

7.12 Having considered that work on the item had been completed, the Sub-Committee invited the Committee to delete the item from its work programme.

8 GUIDANCE ON SERIOUS STRUCTURAL DEFICIENCIES IN CONTAINERS: REPORTING PROCEDURE ON SERIOUS STRUCTURAL DEFICIENCIES

8.1 The Sub-Committee recalled that MSC 80, recognizing the need for guidance to the officer exercising control under the provisions of article VI of the International Convention for Safe Containers (CSC), 1972, had approved CSC/Circ.134 on Guidance on serious structural deficiencies in containers.

8.2 The Sub-Committee recalled (DSC 10/17, paragraph 8.3) that the general purpose of a separate reporting procedure was to collect, collate and disseminate reports on serious structural deficiencies found in inspections of all containers and had noted that an amendment to MSC circular on inspection programmes for cargo transport units carrying dangerous goods (MSC/Circ.859), to incorporate the reporting procedure, would limit the reporting procedure to only those cargo transport units which carried dangerous goods and that, as such, an amendment to that circular, if approved, would apparently partially serve the objective behind the reporting procedure.

8.3 In this regard, the Sub-Committee further recalled that DSC 10 had noted that about 90% of the cargo transport units carried, at some stage, dangerous goods and that the main objective of the reporting procedure was to establish a sampling regime, whereby, statistics on serious structural deficiencies might be obtained which would assist in determining the future course of action to address issues related to those deficiencies.

8.4 The Sub-Committee recalling also that DSC 10 had prepared amendments to MSC/Circ.859 (DSC 10/17, paragraphs 3.29, 6.21 and 8.5 and annex 6), noted that MSC 81 had approved MSC.1/Circ.1202 on Inspection programmes for cargo transport units carrying dangerous goods, which superseded MSC/Circ.859.

Completion of the item

8.5 Noting that DSC 10 had urged Member Governments and organizations concerned to give further consideration to issues relevant to reporting procedures on serious structural deficiencies and to submit proposals to DSC 11, and that no proposals had been submitted on the issue, the Sub-Committee agreed not to pursue the matter further and invited the Committee to delete the item from the work programme of the Sub-Committee.

9 REVIEW OF THE SPS CODE

9.1 The Sub-Committee recalled that MSC 78 had considered the need to update the Code of Safety for Special Purpose Ships (SPS Code) to reflect amendments to SOLAS chapter III and the adoption of the LSA Code and further recalled that since the SPS Code was adopted in 1983, many requirements of the SOLAS Convention had been amended and that considerable experience had been gained in the Code's application.

9.2 The Sub-Committee noted the view of some of the delegations that carriage of dangerous goods in special purpose ships should be subject to the relevant provisions of the IMDG Code, as amended, and that handling and stowage of such cargoes ashore should be subject to a formal safety assessment.

9.3 Having noted the relevant outcomes of NAV 51, SLF 48, FP 50 and DE 49 (DSC 11/9/1) and the excerpt of chapter 7 of the SPS Code dealing with the stowage of explosives (DSC 11/9, annex), the Sub-Committee instructed the E and T Group to consider the matter at its May 2007 meeting and advise the Sub-Committee accordingly.

9.4 The Secretariat was requested to inform the DE Sub-Committee (co-ordinator) of the above outcome.

10 AMENDMENTS TO THE CSS CODE

Review of the Guidelines for securing arrangements for the transport of road vehicles on ro-ro ships (resolution A.581(14))

10.1 The Sub-Committee recalled that DSC 10, having considered a proposal by Sweden (DSC 10/7), had agreed that the proposal had merit, and noting that by agreeing to the proposed amendment in isolation might have repercussions on other parts of the CSS Code, had invited Sweden to submit a revised proposal for consideration at this session of the Sub-Committee.

10.2 In their document DSC 11/10, Sweden proposed to amend the Guidelines for securing arrangements for the transport of road vehicles on ro-ro ships (resolution A.581(14)) such that it would be possible for the operator to secure road vehicles on ro-ro ships with a suitable number of lashings and a combined strength, depending on the requirements for the actual weight of the vehicle and the particulars of the ship and further expressed the view that by securing vehicles in the lower part of the concerned weight interval or on ferries on short voyages in restricted area by lashings with MSL of not less than 100kN is not feasible as it does not increase the level of safety.

10.3 The Sub-Committee appreciated the efforts of Sweden in preparing a comprehensive proposal on amendments to the CSS Code; however, expressing its concern, in particular, over the conclusion of the proposal that, incorporating the proposed amendment in the CSS Code might make it possible for the operator to secure a vehicle with a higher number of lashings, each with a lower MSL, where that could be the most practical solution, the Sub-Committee instructed the working group established under agenda item 13 (Guidance on providing safe working conditions for securing of containers) to consider document DSC 11/10 and advise the Sub-Committee accordingly.

Draft MSC circular on specialized cargoes and regional trade

10.4 The Sub-Committee recalled that DSC 10, having considered the report of the correspondence group and noting that the information contained in the report of the group was relevant to specialized cargoes and regional trade, and thus it was not appropriate to amend the CSS Code, had agreed that the information should be brought to the attention of Member Governments by means of a MSC circular.

Extension of the target completion date of the item

10.5 In view of the above developments (see paragraph 10.4), the Sub-Committee decided to invite the Committee to extend the target completion date of the item to 2007 so as to enable the interested delegation to prepare the draft MSC circular on the issue.

11 REVISION OF THE LHNS AND OSV GUIDELINES

11.1 The Sub-Committee noted that MSC 81 had noted the SLF 48's referral of:

- .1 the draft revised OSV Guidelines to the DSC Sub-Committee for finalization and subsequent submission to the Committee, for adoption; and
- .2 the draft amendments to the LHNS Guidelines to the DSC Sub-Committee for finalization and subsequent submission to MSC 82 and MEPC 55, for adoption, and the SLF Sub-Committee's referral of the model form of Certificate of Fitness contained in the draft amendments to the LHNS Guidelines to the BLG Sub-Committee for comments and referral to the DSC Sub-Committee.

11.2 The Sub-Committee recalled that DSC 10 had established a correspondence group, under the co-ordination of Australia, with the following terms of reference:

- .1 consider the draft OSV Guidelines prepared by SLF 48 (DSC 10/10/2, annex 1), in the context of matters under the purview of the DSC Sub-Committee, and prepare the final draft text of the Guidelines;
- .2 prepare a consolidated set of draft amendments to the LHNS Guidelines taking into account the relevant outcomes of SLF 48 (DSC 10/10/2, annexes 2 and 3), draft amendments agreed and noted by the Sub-Committee (paragraphs 10.5 and 10.6 of document DSC 10/17) and comments by BLG 10 on those amendments; and
- .3 consider including a reference to the Guidelines for vessels with dynamic positioning systems (MSC/Circ.645) in the OSV Code.

11.3 Having considered the report of the correspondence group (DSC 11/11), the Sub-Committee approved the report, in general, and took action as detailed in the following paragraphs.

Draft Guidelines for the design and construction of offshore supply vessels

11.4 As indicated in paragraph 11.2 above, the Sub-Committee finalized Guidelines for the design and construction of offshore supply vessels, prepared by SLF and BLG Sub-Committees, having included therein matters under the purview of the DSC Sub-Committee (DSC 11/11, annex 1) and noted that a reference to the Guidelines for vessels with dynamic positioning systems (MSC/Circ.645) had been inserted in the Guidelines. The draft MSC resolution on Adoption of the Guidelines for the design and construction of offshore supply vessels [,2007] is set out in annex 6, for submission to MSC 82 for adoption.

Amendments to the LHNS Guidelines

11.5 The Sub-Committee finalized the consolidated set of amendments to the LHNS Guidelines, prepared by the SLF and BLG Sub-Committees, in the context of matters under the purview of the DSC Sub-Committee (DSC 11/11, annexes 2 and 3). The draft MSC and MEPC resolutions on Adoption of the amendments to the LHNS Guidelines are set out in annexes 7 and 8, for submission to MSC 82 and MEPC 55, respectively, for adoption.

11.6 The Sub-Committee noted that it would be useful to have a complete text of the LHNS Guidelines, incorporating the aforementioned amendments and that such a consolidated text might be in the form of a publication.

Reference to the Guidelines for vessels with dynamic positioning systems (MSC/Circ.645) in the Code of safe carriage of cargoes and persons by offshore supply vessels (OSV Code) (resolution A.863(20))

11.7 The Sub-Committee agreed to the draft MSC resolution on Adoption of the amendments to the Code of safe carriage of cargoes and persons by offshore supply vessels (OSV Code) (resolution A.863(20)), set out in annex 9, for submission to MSC 82 for adoption.

Completion of the item

11.8 Having agreed that work on the item had been completed, the Sub-Committee invited the Committee to delete the item from its work programme.

12 EXTENSION OF THE BLU CODE TO INCLUDE GRAIN

GENERAL

12.1 The Sub-Committee noted that MSC 81 had endorsed the course of action taken by DSC 10 whereby the development of the amendments to the Code of Practice for the Safe Loading and Unloading for Bulk Carriers (BLU Code); the Manual on loading and unloading of solid bulk cargoes for terminal representatives; and SOLAS chapter VI is consequential to the work of the Sub-Committee on the extension of the BLU Code to include grain, as tasked by MSC 79, and to the adoption of the 2004 BC Code.

12.2 The Sub-Committee recalled that DSC 10 had established a correspondence group, under the co-ordination of the United States, with the following terms of reference:

- .1 prepare draft amendments to the BLU Code thus extending the application of the provisions of the Code to ships carrying grain including other consequential amendments;
- .2 identify and prepare consequential amendments needed to the BLU Code in the light of the 2004 BC Code;
- .3 identify and prepare consequential amendments needed to the Manual on loading and unloading of solid bulk cargoes for terminal representatives in view of the extension of the BLU Code to include grain; and

- .4 consider the need to prepare amendments to SOLAS chapter VI in view of the extension of the BLU Code to include grain.

REPORT OF THE CORRESPONDENCE GROUP

12.3 Having considered the report of the correspondence group (DSC 11/12), the Sub-Committee took action as detailed in the ensuing paragraphs.

Amendments to the BLU Code (resolution A.862(20))

Application of the BLU Code to ships carrying grain

12.4 The Sub-Committee, having considered the proposed amendments to the BLU Code regarding its application to ships carrying grain (DSC 11/12, paragraph 3), agreed to the draft MSC resolution on Adoption of amendments to the BLU Code (resolution A.862(20)), concerning the application of the Code to ships carrying grain, set out in annex 10, for submission to MSC 82 for adoption.

Comment on the Form for Cargo Information, Appendix 5

12.5 Having noted the comment on the Form for cargo information, appendix 5 of the BLU Code, the Sub-Committee, recognizing its importance and the part it plays in the safety of cargo loadings (DSC 11/12, paragraph 4), decided to consider the matter further when the mandatory BC Code had been finalized.

Consequential amendments to the BLU Code in the light of the 2004 BC Code (resolution MSC.193(79))

12.6 The Sub-Committee considered a proposal for consequential amendments to the BLU Code in the light of the 2004 BC Code (resolution MSC.193(79)) (DSC 11/12, paragraph 5) and agreed that it would be prudent to prepare the consequential amendments to the BLU Code once the mandatory BC Code had been finalized. Therefore, the Committee was invited to extend the target completion date of this item to 2008.

Consequential amendments to the Manual on loading and unloading of solid bulk cargoes for terminal representatives (MSC/Circ.1160)

12.7 The Sub-Committee, having considered the proposed amendments to the aforementioned manual consequential to the application of the BLU Code to ships carrying grain (DSC 11/12, paragraph 6), agreed to the draft MSC circular on Amendments to the manual on loading and unloading of solid bulk cargoes for terminal representatives (MSC/Circ.1160), set out in annex 11, for submission to MSC 82 for approval.

Amendments to SOLAS chapter VI, in view of the extension of the BLU Code to include grain

12.8 Having considered the proposal for amendments to SOLAS chapter VI (DSC 11/12, paragraphs 7 and 10), the Sub-Committee agreed to the proposal and, having further recognized the need to have a co-ordinated approach when preparing relevant amendments to SOLAS, instructed the Correspondence Group on Amendments to the BC Code and its Mandatory Application to take the relevant decision of the Sub-Committee into account when preparing amendments to SOLAS chapter VI.

BLU Code and Manual on loading and unloading of solid bulk cargoes for terminal representatives as supplement to the BC Code

12.9 The Sub-Committee, having considered the view of the correspondence group regarding the supplement to the BC Code, agreed with the proposal, in principle, and requested the Secretariat to work out the modalities for the proposed supplement comprising the BLU Code and the Manual on loading and unloading of solid bulk cargoes for terminal representatives.

13 GUIDANCE ON PROVIDING SAFE WORKING CONDITIONS FOR SECURING OF CONTAINERS

General

13.1 The Sub-Committee recalled that MSC 80 had considered document MSC 80/21/7 (United Kingdom), proposing incorporation, in the Code of Safe Practice for Cargo Stowage and Securing, guidance on providing a safe working platform for the securing of containers, to ensure that ship designers, builders and owners take account of the need to provide adequate arrangements to enable safe lashing and securing operations to take place so that no person is exposed to unnecessary risks to their safety and health whilst undertaking lashing and securing tasks in compliance with the ship's approved cargo securing plan. Subsequently, the Committee decided to include, in the DSC Sub-Committee's work programme and the provisional agenda for DSC 10, a high priority item on "Guidance on providing safe working conditions for securing of containers".

Report of the correspondence group

13.2 The Sub-Committee recalled that DSC 10 had established the Correspondence Group on the Guidance on providing safe working conditions for securing of containers, under the co-ordination of the United Kingdom, with the terms of reference indicated in paragraph 13.2 of document DSC 10/17. Having considered the report of the correspondence group (DSC 11/13), the Sub-Committee took decisions as detailed in paragraphs 13.3 to 13.7.

Comments from DE, NAV and SLF Sub-Committees on the guidance

13.3 The Sub-Committee, having noted the views of the correspondence group, as detailed in document DSC 11/13, (paragraphs 5 and 6), concerning a possible way forward in assisting in the identification of best practice to ensure that containerships have suitable and safe securing access and identifying best design criteria for new containerships to ensure suitable and safe securing access, invited the DE and NAV Sub-Committees to give comments on the views of the group.

13.4 In the above context, the Sub-Committee, noting that as the SLF 50 agenda includes an item on "Development of options to improve effect on ship design and safety of the 1969 TM Convention", decided to refer document DSC 11/13 to the SLF Sub-Committee to take them into account when developing the options.

Revision of Guidelines for the preparation of cargo securing manual (MSC/Circ.745)

13.5 Having considered the views of the correspondence regarding possible improvements that can be made to the Guidelines for the preparation of cargo securing manual (MSC/Circ.745), as detailed in document DSC 11/13 (paragraph 8 and annex 1), the Sub-Committee, noting that the views had merit, instructed the working group to consider the matter and prepare improvements to the Guidelines.

Miscellaneous and amendments to the CSS Code (resolution A.714(17))

13.6 The Sub-Committee considered the view of the correspondence group concerning improvement of cargo operational procedures, additional requirements needed for conventional bulk and general cargo ships that carry containers, and developing criteria for inclusion in the CSS Code (resolution A.714(17)), as detailed in document DSC 11/13 (paragraphs 7, 9, 10 and 11 and annex 2) and instructed the working group to consider the view of the correspondence group and prepare proposals for consideration by the Sub-Committee, including amendments to the CSS Code.

Revision of Recommendations on safety of personnel during container securing operations (MSC/Circ.886)

13.7 The Sub-Committee, considering the view of the correspondence group, as referenced to in document DSC 11/13 (paragraph 13.4), regarding the need to revise the Recommendations on safety of personnel during container securing operation (MSC/Circ.886), whereby increased focus is given to deck operation, agreed that the view had merit and instructed the working group to further consider the issue and prepare appropriate amendments to the Recommendations.

Loss of containers overboard from m. v. “P&O Nedlloyd Genoa”

13.8 The Sub-Committee noted the information provided by the delegation of the United Kingdom that following adverse weather conditions, **P&O Nedlloyd Genoa** suffered a container collapse directly in front of the bridge, which resulted in 27 containers lost overboard, 28 collapsed on deck, and nine containers remained secured in position, and that some aspects of the report of the casualty, which may be downloaded from the MAIB website www.maib.gov.uk, might be beneficial to the working group in their deliberations.

Establishment of the working group

13.9 Having deliberated the item, the Sub-Committee established the Working Group on Guidance on providing safe working conditions for securing of containers under the chairmanship of Captain Colin Thomas (United Kingdom), and instructed the group, taking into account document DSC 11/13 and the relevant decisions taken and comments made in plenary, to:

- .1 prepare draft Revised Guidelines for the preparation of Cargo Securing Manual (MSC/Circ.745) and an associated draft MSC circular;
- .2 prepare draft amendments, including new Annex, to the CSS Code (resolution A.714(17)) and an associated draft MSC circular;
- .3 consider document DSC 11/10 (Sweden) and advise the Sub-Committee accordingly;
- .4 prepare draft Revised Recommendations on safety of personnel during container securing operations (MSC/Circ.886) and an associated draft MSC circular; and
- .5 deliver an oral report on progress made to plenary on Friday, 15 September 2006, also advising on draft terms of reference for the correspondence group, and submit a written report to DSC 12.

Oral report of the Chairman of the working group

13.10 Having received the oral report of the Chairman of the working group, the Sub-Committee noted that the group had completed work related to items .1 and .3 to .5 of its terms of reference (see paragraphs 13.9), had made progress on item .2 of the terms of reference and that the written report of the working group would be submitted to DSC 12.

Establishment of the correspondence group

13.11 Having noted the recommendations of the working group, the Sub-Committee established a Correspondence Group on Guidance on Providing Safe Working Conditions for Securing of Containers, under the co-ordination of the United Kingdom*, with the following terms of reference:

- .1 continue the development of draft amendments, including a new Annex, to the CSS Code (resolution A.714(17)) and the associated draft MSC circular: and
- .2 submit a written report to DSC 12.

Extension of the target completion date

13.12 In view of the above developments, the Sub-Committee agreed to invite the Committee to extend the target completion date for the item to 2007.

14 REVIEW OF THE RECOMMENDATIONS ON THE SAFE USE OF PESTICIDES IN SHIPS

14.1 The Sub-Committee recalled that at, DSC 10, Germany (DSC 10/3/15 and DSC 10/4/4), noting that the Recommendations on the safe use of pesticides in ships cover three aspects of the use of pesticides on board ships (i.e. the fumigation of freight containers and cargo transport units subject to the IMDG Code, the fumigation of cargo holds containing dry cargo, subject to the BC Code, and the control of rodent pests on board all kinds of ships) and that the provisions governing them are interspersed in the existing version of the Recommendations, thus making it difficult to identify the provisions of relevance and posing significant health risks, had proposed to review the existing Recommendations under three separate relevant topics.

14.2 At DSC 10, the Sub-Committee having agreed that the proposal by Germany had merit had invited the Committee to include the item in the Sub-Committee's work programme and MSC 81 endorsed the proposal by DSC 10.

*** Co-ordinator**

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14.3 The Sub-Committee considered document DSC 11/14 (United Kingdom) which, with a view to facilitating timely revision of the Recommendations on the safe use of pesticides in ships, provided:

- .1 a comprehensive guidance document to minimize the risks of personnel and assist in the operational issues involved in the transport supply chain of fumigated containerized cargoes; and
- .2 an aide-memoire summarizing the key points for distribution to those involved in fumigating containers.

14.4 Following a general discussion of the document and noting that some of the proposed obligations placed on the master are, perhaps, excessive, the Sub-Committee agreed to the offer of the delegation of Germany to submit, to DSC 12, taking into consideration document DSC 11/14, draft revised Recommendations.

15 APPLICATION OF REQUIREMENTS FOR DANGEROUS GOODS IN PACKAGED FORM IN SOLAS AND THE 2000 HSC CODE

15.1 The Sub-Committee recalled that MSC 80, in considering document MSC 80/23/3 (Japan), had noted the possible errors contained in table 19.3 in SOLAS chapter II-2 regarding the application of the requirements to various classes of dangerous goods and the invitation to rectify the table and the relevant IMO instruments.

15.2 It was also recalled that MSC 80 had agreed, in principle, to the proposal and had invited Japan to consider submitting an appropriate proposal to MSC 81 for new work programme item for the DSC and FP Sub-Committees, and noted that MSC 81, having considered document MSC 81/23/5 (Japan), had decided to include, in the FP and DSC Sub-Committees' work programmes and the provisional agendas for FP 51 and DSC 11, a high priority item on "Application of requirements for dangerous goods in package form in SOLAS and 2000 HSC Code", with a target completion date of 2007, and assigned the FP Sub-Committee as co-ordinator.

15.3 Having considered the submission by Japan (MSC 81/23/5) which, indicating possible errors contained in table 19.3 of SOLAS chapter II-2 regarding the application of the requirements to various classes of dangerous goods and possible errors in table 717-3 of the 2000 HSC Code, proposed to develop amendments to SOLAS regulation II-2/19 and chapter 7 of the 2000 HSC Code and an appropriate MSC circular on Document of compliance with the special requirements for ships carrying dangerous goods under the provisions of SOLAS regulation II-2/19, the Sub-Committee decided to establish a correspondence group, under the co-ordination of Japan*, to deal with the issue with the following terms of reference:

Taking into account the comments made and decisions taken in plenary, the group should:

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- .1 consider document DSC 11/3 (paragraphs 12.3 and 12.5) and advise the Sub-Committee on the course of action to be taken;
- .2 consider the proposed amendments to SOLAS regulation II-2/19.3, table 19.3 in annex 1 to document MSC 81/23/5 and prepare draft amendments to table 19.3;
- .3 prepare draft amendments to table 7.17-3 in the 2000 HSC Code in line with those to table 19.3 of SOLAS regulation II-2/19.3 referred to in subparagraph .2 above;
- .4 consider the application of the proposed amendments referred to in subparagraphs .2 and .3 to existing ships and prepare an appropriate draft MSC circular, taking into account the proposed MSC circular in annex 2 to document MSC 81/23/5; and
- .5 submit a written report to DSC 12.

16 WORK PROGRAMME AND AGENDA FOR DSC 12

16.1 Taking into account the progress made at this session and the provisions of the agenda management procedure contained in paragraphs 3.11 to 3.23 of the Guidelines on the organization and method of work (MSC/Circ.1099), the Sub-Committee revised its work programme (DSC 11/WP.2) based on that approved by MSC 81, taking into account relevant decisions of MEPC 54, and prepared the revised Sub-Committee's work programme and provisional agenda for DSC 12. While reviewing the work programme, the Sub-Committee agreed to invite the MSC, and the MEPC as far as environment-related items are concerned, to:

- .1 delete the following work programme items, as work on them has been completed:
 - .1.1 item H.3 – Measures to enhance maritime security;
 - .1.2 item H.4 – Guidance on serious structural deficiencies in containers: reporting procedure on serious structural deficiencies; and
 - .1.3 item H.7 – Revision of the LHNS and OSV Guidelines;
- .2 extend the target completion date of the following work programme items:
 - .2.1 item H.6 – Amendments to the CSS Code, to 2007;
 - .2.2 item H.8 – Extension of the BLU Code to include grain, to 2008; and
 - .2.3 item H.9 – Guidance on providing safe working conditions for securing of containers, to 2007;
- .3 replace the number of sessions needed for completion of the following work programme item by the target completion date, as item has been included in the provisional agenda for DSC 12:
 - .3.1 item H.12 – Guidance on protective clothing 2008;

- .4 renumber the work programme items accordingly.

The Sub-Committee invited the Committee to approve the proposed revised work programme and provisional agenda for DSC 12, set out in annex 12.

Arrangements for the next session

16.2 The Sub-Committee agreed to establish, at DSC 12, working and drafting groups on the following subjects:

- .1 amendments to the BC Code and its mandatory application;
- .2 application of the requirements for dangerous goods in packaged form in SOLAS and the 2000 HSC Code;
- .3 guidance on providing safe working conditions for securing of containers; and
- .4 review of the recommendations on the safe use of pesticides in ships.

Date of next session

16.3 The Sub-Committee noted that its twelfth session had been tentatively scheduled to take place from 10 to 14 September 2007.

Future sessions of the Editorial and Technical (E and T) Group

16.4 The Sub-Committee noted that MSC 81 had approved two intersessional meetings of the E and T Group which are scheduled to take place in May and September 2007 and that the May 2007 meeting will be held from 28 May to 1 June 2007 in St. Petersburg, the Russian Federation. The venue for the September 2007 meeting will be announced in due course.

Urgent matters emanating from DSC 12

16.5 Noting the close proximity between DSC 12 (September 2007) and MSC 83 (October 2007), the Sub-Committee invited MSC 82 to agree that, in addition to its work programme and agenda for DSC 13, the outcome of DSC 12 on the following items would be urgent matters to be considered by MSC 83:

- .1 amendments to the BC Code, including evaluation of properties of solid bulk cargoes;
- .2 mandatory application of the BC Code; and
- .3 extension of the BLU Code to include grain.

17 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2007

17.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mrs. Olga P. Lefevre (France) as Chairman and Mr. Juan P. Heusser (Chile) as Vice-Chairman, both for the year 2007.

18 ANY OTHER BUSINESS

Courses on the implementation of the IMDG Code

18.1 The Sub-Committee noted (DSC 11/18) that, under the Organization's programme on enhancement of maritime safety, since April 2002, eleven regional and nine national courses on the implementation of the IMDG Code have been delivered and two national courses, one in the Philippines and the other in the Caribbean, are planned for the later half of 2006. Overall, out of a total of 152 countries invited to participate in these courses, about 815 participants, nominated by their respective Governments, from 122 countries should have benefited from these programmes.

World convention on the transport of dangerous goods

18.2 The Sub-Committee recalled that DSC 10, when considering issues relevant to the World convention on the transport of dangerous goods, had invited Member Governments and international organizations to give consideration to the issue and provide comments for consideration at DSC 11 so that a firmer position of the Organization could be forwarded to the UN Committee of experts on the transport of dangerous goods and on the globally harmonized system of classification and labelling of chemicals.

18.3 The Sub-Committee noted the relevant outcome of the December 2005 session of the UN Sub-Committee of experts on the transport of dangerous goods (DSC 11/17), in particular that that Sub-Committee had noted that the present periodicity of amendments to the UN Recommendations cause problems of implementation in some countries which had difficulties in updating their national regulations every two years. It was suggested that that Sub-Committee should avoid amending the Recommendations when not absolutely necessary, bearing in mind that the Recommendations had reached a reasonable degree of maturity and were often subject to editorial changes which did not change the substance of the regulations. It was also mentioned that the present system was rather flexible and allowed that Sub-Committee to take ambitious decisions which could be quickly put into question if not accepted by modal bodies, while in the context of a global convention, such decisions would require a wide consensus and, as a consequence, it might be much more difficult to take efficient account of the technological developments.

18.4 Also, the Sub-Committee noted that at the July 2006 meeting of the UN Sub-Committee, on the issue of a possible world convention, some experts had agreed that the provisions currently reflected in international legal instruments specific to each mode of transport could be made applicable to all modes of transport through a single legal instrument when these provisions are relevant for all modes, and that this would avoid the deviations which currently complicate multimodal transport operations. This would also simplify the tasks of governments and the related administrative burden. Nevertheless, several experts reiterated their views that a world convention was not necessarily the best solution and that the need for such a convention had not been demonstrated. Some of them felt that there were not so many variations, and when variations existed they were justified either by modal or regional considerations. Reflecting such variations in a world convention would require a complex system of co-operation with the relevant international organizations. In addition, the existing international instruments would still be needed for requirements which concern one mode of transport only.

Fire-fighting and stowage of water-reactive materials

18.5 Germany (DSC 11/18/1), noting that some water-reactive substances react with carbon dioxide in hot atmosphere rendering the use of the fire-fighting media not only ineffective but even dangerous, proposed the addition of a new agenda item on “Fire-fighting and stowage of water-reactive materials” in the work programme of the Sub-Committee to develop specific carriage requirements for materials covered by EmS Fire Schedule Golf.

18.6 The Sub-Committee while agreeing that the proposal of Germany had merit, noted the intention of Germany to submit an appropriate proposal to the Committee for a new work programme item in accordance with the Guidelines on the organization and method of work.

Expressions of condolences

18.7 The Sub-Committee, being informed of the passing of Captain H. J. Roos who contributed to the work of the Organization for a number of years, expressed its deep condolences and requested the delegation of Germany to pass them to the family and friends of Captain H. J. Roos.

19 ACTION REQUESTED OF THE COMMITTEES

19.1 The Maritime Safety Committee, at its eighty-second session, is invited to:

- .1 note the progress made on the development of the mandatory BC Code and amendments to SOLAS chapters VI and VII to make the Code mandatory and endorse the proposed timetable on the development of the mandatory BC Code (paragraphs 4.10 and 5.9 and annex 2);
- .2 approve MSC circular on Revised recommendations on the safe transport of dangerous cargoes and related activities in port areas (paragraph 7.10.1 and annex 4);
- .3 approve the draft Amendments to the IMO/ILO/UN ECE Guidelines for packing of cargo transport units and associated draft MSC circular and take action as appropriate bearing in mind that the amendments should also be endorsed by ILO and UN ECE (paragraph 7.10.3 and annex 5);
- .4 adopt the draft MSC resolution on Adoption of Guidelines for the design and construction of offshore supply vessels [,2007] (paragraph 11.4 and annex 6);
- .5 adopt the draft MSC resolution on Adoption of amendments to the Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels (LHNS Guidelines) (paragraph 11.5 and annex 7);
- .6 adopt the draft MSC resolution on Adoption of amendments to the Code of safe carriage of cargoes and persons by offshore supply vessels (OSV Code) (paragraph 11.7 and annex 9);

- .7 adopt the draft MSC resolution on Adoption of amendments to the Code of safe practice for the safe loading and unloading of bulk carriers (BLU Code) (paragraph 12.4 and annex 10);
- .8 approve the draft MSC circular on Amendments to the Manual on loading and unloading of solid bulk cargoes for terminal representatives (paragraph 12.7 and annex 11);
- .9 approve the proposed revised work programme of the Sub-Committee and provisional agenda for DSC 12 (paragraph 16.1 and annex 12); and
- .10 agree to the list of urgent matters to be considered by MSC 83 (paragraph 16.5).

19.2 The Maritime Safety Committee, at its eighty-third session, is invited to:

- .1 support the view of the Sub-Committee that an *ad hoc* mechanism within the Organization to speedily resolve difficulties in the carriage of class 7 materials would contribute to the resolution of such difficulties (paragraphs 3.2 to 3.4);
- .2 note that as requested by FAL 33, the Sub-Committee considered the issue of an entry in the Transport Document and/or Dangerous Goods Manifest (FAL Form 7), whereby Cobalt 60 shipments specially produced for immediate use in medical, consumer, health or agriculture applications would be declared as such as that would facilitate its identification by the public authorities concerned, raises technical concerns (paragraph 3.6);
- .3 note that, as requested by FAL 33, the Sub-Committee considered section G of the IMO FAL Compendium and prepared the amended section (paragraph 3.8 and annex 1); and
- .4 approve the report in general.

19.3 The Marine Environment Protection Committee, at its fifty-fifth session, is invited to:

- .1 note the decisions of the Sub-Committee with regard to review of Annex III to MARPOL 73/78 (paragraphs 3.14 to 3.16); and
- .2 adopt the draft MEPC resolution on Adoption of amendments to the Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels (LHNS Guidelines) (paragraph 11.5 and annex 8).

ANNEX 1**AMENDMENTS TO FAL FORM 7 – DANGEROUS GOODS MANIFEST****G. FAL Form 7 – Dangerous Goods Manifest**

The recommended EDI format for the Dangerous Goods Manifest is the UN/EDIFACT International Forwarding and Transport Dangerous Goods Notification message (IFTDGN). The “PROTECT” message implementation guide Version 2.0 of this message contains the full documentation to fulfil the information requirements of a dangerous goods manifest. IMO FAL recommends this guide as an EDI equivalent of FAL Form 7 Dangerous Goods Manifest. The message permits the transfer of information required by public authorities relating to dangerous goods of a ship on arrival and departure.

The basic items of information necessary for each dangerous substance, material, or article are:

- .1 The UN Number shown for the dangerous goods in the IMDG Code, preceded by the letters “UN”.
- .2 The proper shipping name, as determined according to 3.1.2 of the IMDG Code, including the technical name enclosed in parenthesis.
- .3 The primary hazard class or, when assigned, the division of the goods, including for Class 1, the compatibility group letter. The words “Class” or “Division” may be included preceding the primary hazard class or division numbers.
- .4 Subsidiary hazard class or division number(s) corresponding to the subsidiary risk label(s) required to be applied, when assigned, shall be entered following the primary hazard class or division and shall be enclosed in parenthesis. The words “Class” or “Division” may included preceding the subsidiary hazard class or division numbers.
- .5 Where assigned, the packing group for the substance or article which may be preceded by “PG” (e.g. “PG II”).
- .6 For empty uncleaned packagings, bulk containers and tanks, empty means of containment (including packagings, IBCs, bulk containers, portable tanks, road tank vehicles, railway tank wagons) which contain the residue of dangerous goods of classes other than Class 7 shall be described as such by, for example, placing the words “EMPTY UNCLEANNED” or “RESIDUE LAST CONTAINED” before or after the proper shipping name.
- .7 For waste dangerous goods (other than radioactive wastes) which are being transported for disposal, or for processing for disposal, the Proper Shipping Name shall be preceded by the word “WASTE”, unless this is already a part of the proper shipping name.
- .8 If the Proper Shipping Name of a substance which is transported or offered for transport in a liquid state at a temperature equal to or exceeding 100°C, or in a solid state at a temperature equal to or exceeding 240°C, does not convey the

elevated temperature condition (for example, by using the term “MOLTEN” or “ELEVATED TEMPERATURE” as part of the Proper Shipping Name), the word “HOT” shall immediately precede the Proper Shipping Name.

- .9 If the goods to be transported are marine pollutants, the goods shall be identified as “MARINE POLLUTANT”.
- .10 If the dangerous goods to be transported have a flash point of 60°C or below (in °C closed-cup (c.c.)), the minimum flashpoint shall be indicated. Because of the presence of impurities the flashpoint may be lower or higher than the reference temperature indicated in the Dangerous Goods List for the substances. For class 5.2 organic peroxides which are also be flammable, the flashpoint need not to be declared.
- .11 For the *total quantity of dangerous goods*, additional information as required in 5.4.1.5.1.
- .12 For *limited quantities*, additional information as required in 5.4.1.5.2.
- .13 For *salvage packagings*, additional information as required in 5.4.1.5.3.
- .14 For *substances stabilized by temperature control*, additional information as required in 5.4.1.5.4.
- .15 For *self-reactive substances and organic peroxides*, additional information as required in 5.4.1.5.5.
- .16 For *infectious substances*, additional information as required in 5.4.1.5.6.
- .17 For *radioactive material*, additional information as required in 5.4.1.5.7.
- .18 For *aerosols*, additional information as required in 5.4.1.5.8.
- .19 For *explosives*, additional information as required in 5.4.1.5.9.
- .20 For *viscous substances*, additional information as required in 5.4.1.5.10.
- .21 For *special provisions for segregation*, additional information as required in 5.4.1.5.11.
- .22 For *transport of solid dangerous goods in bulk containers*, additional information as required in 5.4.1.5.12.

Examples:

UN 1092, Acrolein, stabilized, class 6.1 (3), PG I, (- 24°C c.c.) MARINE POLLUTANT
UN 2761, Organochlorine pesticide, solid, toxic, n.o.s. (Aldrin 19%), class 6.1, PG III, MARINE POLLUTANT.

IMO FAL 9.4.1 - If the dangerous goods documentation is presented to the carrier by means of electronic data processing (EDP) or electronic data interchange (EDI) transmission techniques, the signature(s) may be replaced by the name(s) (in capitals) of the person authorized to sign.

In the dangerous goods Manifest document FAL form 7 the following information should be mentioned where appropriate:

- .1 Name, type (as applicable), IMO number, voyage number and flag State of the ship.
- .2 Additional handling information for segregation purposes.
- .3 Port of loading.
- .4 Port of discharge.
- .5 Destination if applicable.
- .6 Agent, Shipper/consignor/sender of the goods and EM Telephone only where required.
- .7 Shipper's, Freight Forwarders reference or booking number.
- .8 Consignee if this information is available often this will be the notify party.
- .9 Shipping marks if required.
- .10 Container identification (as applicable), tank number.
- .11 Container size type as applicable.
- .12 Number and kind of packages.
- .13 UN No.
- .14 The proper shipping name and if applicable the technical name.
- .15 Primary hazard class.
- .16 Subsidiary risk(s) where assigned.
- .17 Packing group where assigned.
- .18 Flashpoint in °C (c.c.), emergency and control temperature in °C if applicable.
- .19 Marine pollutant if applicable.
- .20 EmS No.
- .21 Gross mass (kg) Net mass (kg) and/or if applicable cube m³.
- .22 Total quantity of dangerous goods (by volume or mass as appropriate).
- .23 Name of company (agent) and/ or master preparing the notification.
- .24 Date of preparation of the notification.

- .25 Place of preparation of the notification.
- .26 Stowage position on board as applicable.
- 1 Particulars of the ship can be given in segment TDT with qualifier 20=main transport in data element 8028 the voyage number can be given, whilst the IMO number should be placed in 8213 and the name to be placed in data element 8212, the nationality flag State to be given in data element 8453. [To be developed more fully]
 - 2 Additional handling information such as segregation requirements etc. to be given in the HAN (Handling Instructions) segment.
 - 3 Port of loading to be given in the LOC segment under TDT with Qualifier 3227 9=port of loading and the UN/LOCODE in 3225.
 - 4 Port of discharge to be given in LOC segment qualifier 11=port of discharge and the UN/LOCODE in data element 3225.
 - 5 Destination if applicable to be given in the LOC segment under CNI Consignment Information Qualifier 7=Place of delivery and either the Locode in 3225 or the name in 3224.
 - 6 Agent, Shipper/Forwarder this information if required and available should be conveyed in the NAD segment in the CNI (Consignment information) group 006. The EM telephone number in the CTA/COM segments indicating the contact qualifier IC=Information Contact and 3412 the name, the telephone number in COM data element 3148 with code TE in 3155.
 - 7 Shippers, freight forwarders reference number or booking number can be given in the RFF segment in GR 006 under CNI-NAD. Qualifier FF=Freight forwarder, AAY=Carrier agent reference, BN=Booking reference number. Data element 1154 the actual reference no. The (sequential) multi modal transport document number can be given in the BGM (Begin Message) segment under data element 1004 this might be used as the number of the declaration.
 - 8 Consignee NAD segment under CNI Qualifier CN=Consignee data element 3039 party ID or qualifier NI=Notify party with in data element 3124 the NAD particulars.
 - 9 Shipping marks if applicable in the PCI segment under GID in the CNI group data element 7102.
 - 10 The container data to be given in the EQD segment qualifier is CN=ISO container.
 - 11 Size Type to be given in EQD.
 - 12 Number and kind of packages to be given in Segment GID under data elements 7224 and 7064 or coded in 7065.
 - 13 The proper shipping name or DG technical name to be handled in FTX Qualifier AAD Dangerous goods technical name.
 - 14 In segment DGS the hazard class Regulation code IMD=IMO IMDG codes in 8351 the code.
 - 15 In DGS data element 7124 the UNDG number.
 - 16 The Packing group in data element 8339.
 - 17 Subsidiary risk to be indicated in data element 8246.
 - 18 Flashpoint to be indicated in DGS segment data element 7088.

- 19 MARPOL indication to be handled through the FTX segment in the DGS group Data Element 4440.
- 20 In DGS 8364 the EmS number should be stated.
- 21 The mass to be handled through data element in MEA of the CNI/GID/DGS group. The weight of containers to be handled through MEA under EQD.
- 22 Total gross in MEA under EQD.
- 23 Arrival or departure in the BGM segment.
- 24 Place to be indicated in the LOC segment qualifier 91 place of document issue.
- 25 Stowage position on board in DGS/LOC segment Qualifier 147.

IFTDGN

INFORMATION	SEGMNT	QUALIFIER	DATA ELEM. 1	DATA ELEM 2	CODE	REMARK
1 Name Ship	TDT	20=main transp.	8212 Name	8213 IMO no		
1 Type	TDT					
1 IMO number	TDT		8213 IMO no.			
1 Voyage reference	TDT		8028 Conv Ref no			
1 Nationality Flag State of ship	TDT		8453 Nationality – Flag State		UN Rec. 3	
2 Handling	HAN		4078 handling txt	4079 Handling	Local code	Gen Segreg
3 Port of loading	LOC	9=port of loading	3225 Locode		UN Rec 16	
4 Port of discharge	LOC	11=POD	3225 Locode	3224 name loc	UN Rec 16	
4 Port where rep.	LOC	172=report loc.	3225 Locode		UN Rec 16	
5 Destination	LOC	47=re destination	3225 Locode	3224 Place		Under CNI
6 Agent Shipper - Sender, Forwarder	NAD	OS=Orig shipper FW=Forwarder CG=Agent				Under CNI
7 Shipper reference	RFF	BN=Booking Reff	1154 number			
Transport doc	BGM		1004 act. Number			Doc number
8 Consignee notify	NAD	NI=Notify	3124 name/ addr.			
9 Shipping marks	PCI	7102=marks				Gen marks
9 Quantity	MEA	AAF=Cust line it	6313 ABV=Cargo loaded	6411 ton 6314 weight		
10 Container Data	EQD SGP	CN=ISO Container	8260 Actual container id no			
11 Size Type	EQD	8155 iso size/type				
12 Number & kind	GID		7224 no of pack	7065 pack type	UN Rec 21	Under CNI
13 Proper shipping name	DGS/FTX	AAD=DG technical name	4440 the name in English			English preferred
14, 20, Hazard Info / class	DGS	8273=IMD	8351=haz code	8364=EMS	8410=MFA G	See basic information
15 UN number	DGS			7124=UNDG		
16 Packing Group	DGS		8339=packing			
17 Subsidiary risk(s)	DGS		8246=haz code 2		Second risk codes	
18 Flashpoint	DGS				7106=Flpnt	
19 Marine Pollutant	FTX	AAC=Extra DG	4441 Marpol			
20 EmS No.	See DGS	8364				
21 Measurement	MEA	6311=AAE	6313=AAL Net weight			
22 Total gross cont	MEA	6311=WT	6411=KGM 1001	6314 weight		Under EQD
23 Arrival Dept ind	BGM		Doc type		185=arrival	186=depart
23 Name of master / agent	NAD	CPE=vess master AG=agent	3036=name 3039=party ID		Code lists Local	
24. Date of signat.	LOC	qualifier 91= place document issue				
25. Place of signat.	TDT/LOC	qualifier 91= place document issue	3227=Location Id.			Segment 3
26. Stowage position on board	DSG/LOC	LOC 147= Stowage cell	3227 use in 3225 ISO codes BBBRRTT			Segment 14

Usage notes: The dangerous goods notification is very well suited for transfer as an EDI message. The used format of the Protect message implementation guide is suitable for multimodal transport and as such contains quite a bit of extra information. The dangerous goods manifest can be seen as the source for information to be given to the various authorities. There remains a difference between the information given by the ship, which is of a generic nature e.g. Name of vessel and carrying so much cargo of these classes. And the information provided by the agents which is an extract from the manifest. Whilst both are real information requirements and both can be handled by the IFTDGN it will mostly be the agent who will send the full EDI message whilst the master will convey the information in a number of ways. XML and other technologies like AIS (Automatic Identification Systems of IMO) might be able to fulfil such requirements automated in the not too distant future.

ANNEX 2

**TIMETABLE ON THE DEVELOPMENT
OF THE MANDATORY BC CODE**

No.	Event	Meeting	Date
1	Preparation of the revised and reformatted recommendatory BC Code	DSC 9	September 2004
2	Adoption of the revised and reformatted recommendatory BC Code	MSC 79	December 2004
3	Preparation of the draft amendment to SOLAS chapters VI and VII for making the BC Code mandatory	DSC 10 to DSC 12	2005 to 2007
4	Preparation of the draft mandatory BC Code	DSC 10 to DSC 12	2005 to 2007
5	Approval of the draft amendments to SOLAS chapters VI and VII for making the BC Code mandatory and request to the Secretary-General to circulate them under six-month rule with the view to adoption at MSC 84	MSC 83	October 2007
6	Adoption of the draft mandatory BC Code	MSC 84	May 2008
7	Adoption of draft amendment to SOLAS chapters VI and VII	MSC 84	May 2008
8	Voluntary application of the mandatory BC Code	-	1 July 2008
9	Entry into force of the amendments to SOLAS Convention (mandatory BC Code)	-	1 January 2011

ANNEX 3**INFORMATION NEEDED FOR THE DEFINITION OF DIRECT REDUCED IRON,
OTHER THAN DIRECT REDUCED IRON (A) BRIQUETTES,
HOT-MOULDED**

- 1 Product types:
 - .1 physical properties including grain sizes (bulk density and grain size distribution); and
 - .2 chemical properties.
- 2 Ship type
- 3 Mechanical ventilation:
 - .1 arrangements of the ventilation system;
 - .2 performance (number of air changes per hour);
 - .3 duration of ventilation; and
 - .4 type of fan drive (level of explosion proof).
- 4 Inerting methods and hazards with this cargo.
- 5 Monitoring arrangement and results of measurements during voyage (hydrogen, oxygen, temperature).
- 6 Moisture content and temperature at time of shipment.
- 7 Emergency procedures during voyage.
- 8 Any other information (such as loading/unloading precautions, etc.).

ANNEX 4**DRAFT MSC CIRCULAR****REVISED RECOMMENDATIONS ON THE SAFE TRANSPORT OF DANGEROUS CARGOES AND RELATED ACTIVITIES IN PORT AREAS**

- 1 The Maritime Safety Committee, at its sixty-fourth session (5 to 9 December 1994), adopted Recommendations on the safe transport of dangerous cargoes and related activities in port areas, which were disseminated by means of MSC/Circ.675.
- 2 The Committee, at its [eighty-second session (29 November to 8 December 2006)], recognizing the need to align the relevant provisions of the Guidelines with those of the IMDG Code, as amended, and with the ISPS Code concerning security provisions, approved the revised Guidelines on the safe transport of dangerous cargoes and related activities in port areas, set out in the annex.
- 3 Member Governments are invited to bring the annexed recommendations to the attention of the appropriate authorities, shipowners, ship and berth operators, relevant cargo interests, emergency services and all others concerned.
- 4 This circular revokes the aforementioned MSC/Circ.675.

ANNEX

**DRAFT REVISED RECOMMENDATIONS ON THE SAFE TRANSPORT OF
DANGEROUS CARGOES AND RELATED ACTIVITIES IN PORT AREAS
(MSC/Circ.675)**

FOREWORD

A Recommendation on the Safe Practice of Dangerous Goods in Ports and Harbours was first circulated by the Organization in November 1973.

The subsequent development of new techniques in shore and ship operations, as well as the desirability of having more comprehensive recommendations which included dangerous goods in packaged form, liquid and solid dangerous substances and liquefied gas carried in bulk, made it necessary to revise and update the Recommendation.

The Recommendation which was originally adopted as resolution A.289 (VIII), has been revised on several occasions and circulated as MSC/Circ.299 (12 February 1981), MSC/Circ.299/Add.1 (8 July 1983) and MSC/Circ.675 (30 January 1995).

The 1995 edition of the Recommendations included necessary updates and some novel features, the most important of which was guidance for the implementation of the Recommendations by those Member States which were in the process of developing the regulation of the transport of dangerous goods and related activities in their ports.

In 1996, the Maritime Safety Committee agreed that the IMDG Code should be reformatted in a style consistent with the format of the UN Model Regulations with the intention of enhancing user-friendliness, compliance with the regulations and the safe transport of dangerous goods.

At its seventy-fifth session in May 2002, the Maritime Safety Committee confirmed its earlier decision to make the IMDG Code mandatory in international law. Thus, IMDG Code Amendment 31 became mandatory on 1 January 2004 without any transitional period under the umbrella of chapters VI and VII of SOLAS 74, as amended.

The Recommendations are aligned with relevant IMO codes and the IMDG Code in particular. It is considered essential to harmonize the rules within the port area with the ship in order to ensure smooth operations and to avoid misunderstandings between ship and shore.

The Recommendations make a distinction between keeping and storage. Dangerous cargoes temporarily in the port area as part of the transport chain are not considered as being stored as their presence is solely concerned with awaiting loading onto and further onward movement by another mode of transport. Because this is an operation covered by the Recommendations, the term “keeping” is included in the overall definition of handling. Storage, which involves the holding of substances for an indeterminate period not directly involved with the transportation process, is considered to be outside the scope of these Recommendations and has been excluded from the definitions. Regulatory authorities may wish to regulate the storage of such substances but that would be achieved by other regulations unconnected with the transportation process.

For the purpose of these Recommendations the term “cargo interests” refers to those organizations which can be involved with the dangerous cargoes even before such cargoes reach the port area and a ship, and also includes consignors (shippers), packers, those concerned with documentation, consolidators and forwarding agents. Experience has shown that this group has a crucial role to play in the safe transport of dangerous cargoes and that the Recommendations should also apply to them.

It is important to draw to the attention of the users of these Recommendations that the term “dangerous cargo” comprises oils, noxious liquid chemicals and gases carried in bulk, solid bulk materials possessing chemical hazards, solid bulk materials hazardous only in bulk, harmful substances in packaged form (covered by Annex III of MARPOL 73/78) as well as dangerous goods in packaged form (covered by the IMDG Code).

Throughout the Recommendations the terms defined in chapter 2 have been highlighted in bold italic type.

A non-exhaustive glossary of relevance to the handling of dangerous cargoes is given in appendix 1 to this document.

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- Annex 1 Advance notification
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- Annex 5 Bunkering precautions, including bunkering checklist
- Annex 6 Alphabetical index of cross-references between recommendations in sections 3 and 7
- Annex 7 Guide to fumigation
- Appendix 1 Glossary of terminology of relevance to the handling of dangerous cargoes
- Appendix 2 Selected bibliography list of internationally recognized codes and guides relevant to the transport and handling of dangerous cargoes in port areas

1 INTRODUCTION

1.1 The entry and presence of **dangerous cargoes** in **port areas** and any consequential **handling** should be controlled to ensure the general safety and security of the area, the containment of the cargoes, the safety of all persons in or near the **port area**, and the protection of the environment.

1.2 The safety of life at sea and the safety and security of a **ship**, its cargo and its crew in a **port area** are directly related to the care which is taken with **dangerous cargoes** prior to loading or unloading, and during their **handling**.

1.3 These Recommendations are confined to **dangerous cargoes** which are in a **port area** as part of the transport chain. These Recommendations do not apply to dangerous substances which are used in a **port area** or are for general storage in the **port area**, but Governments may wish to control such use and storage by national legal requirements. Should a substance covered by either of these exclusions subsequently be shipped, these Recommendations should then be applied, even though the substance is already in the **port area**.

1.4 An essential pre-requisite for the safe **transport** and **handling** of **dangerous cargoes** is their proper identification, containment, packaging, packing, securing, marking, labelling, placarding and documentation. This applies whether the operation takes place in a **port area** or at premises away from a **port area**.

1.5 Whilst the total transport chain includes inland, port and marine elements, it is essential that every care is taken by those responsible for the matters in 1.4 and that all relevant information is passed to those involved in the transport chain and to the final consignee. Attention should be paid to the possible differing requirements for different modes of **transport**.

1.6 The safe transport and handling of **dangerous cargoes** is based on correct and accurate application of regulations for transport and handling of such cargoes and depends on appreciation by all persons concerned of the risks involved and on the full and detailed understanding of the regulations. This can only be achieved by properly planned and carried out training and retraining of persons concerned.

1.7 Surveys carried out by **regulatory authorities** of many countries have indicated the need for greater training activities. Therefore, chapter 4 has been updated in response to those needs based on the provisions set out in chapter 1.3 of the reformatted IMDG Code.

1.8 Chapter 5 is addressed to the **regulatory authority**, **port authority**, **berth operator** and **cargo interests** and describes their roles in the transport chain of **dangerous cargoes** and activities in **port areas** in respect of such cargoes.

1.9 These Recommendations are intended to set out a standard framework within which legal requirements can be prepared by Governments, whether for the first time or as a revision, to ensure the safe **transport** and **handling** of **dangerous cargoes** in **port areas**. These Recommendations are not intended to specify standards of construction and equipment.

1.10 The IMO has adopted over the years a number of internationally recognized codes and guides, which are of direct relevance to the safe and secure *transport* and *handling* of *dangerous cargoes* in *port areas*, and which may serve as valuable sources of information in the development of national legal requirements. Appendix 2 is a bibliography which lists the relevant IMO requirements and other relevant publications.

1.11 The codes and guides are under continuous review and are regularly revised. It is essential that only the most up-to-date editions are used. The contents of these codes and guides have been repeated in these Recommendations only to the extent necessary.

1.12 Governments should ensure that national legal requirements concerning the *transport* and *handling* of *dangerous cargoes* are to the greatest extent possible compatible with the relevant codes and guides (see operative paragraph 2 of IMO resolution A.717(17) which: “STRONGLY URGES Governments to co-ordinate their work in the different organizations to prevent conflicts with established rules and regulations relating to the maritime transport of dangerous, hazardous and harmful cargoes, including environmentally hazardous substances (marine pollutants) and wastes”).

1.13 Governments may consider pursuing co-operative programmes or agreements, between Member Governments and private industry, to establish integrated supply chain safety and security standards in the *transport* and *handling* of *dangerous cargoes*.

2 APPLICATION AND DEFINITIONS

2.1 Application

These Recommendations apply to the entry and presence of *dangerous cargoes* in *port areas* both on ship and on shore. It is intended that they should be made applicable to any *ship* visiting a port irrespective of its flag. They should not apply to *ships' stores* and equipment nor to troopships and warships.

2.1 The purpose of this section is to assist those drafting national legal requirements to ensure that such requirements are as effective as possible, by covering all possible circumstances in which dangerous cargoes are present in port areas, but do not apply in circumstances which should be excluded.

It is recommended that the definitions are carefully studied and used so as to prevent misunderstandings.

2.2 Definitions

For the purpose of these Recommendations, the following definitions apply:

Berth means any dock, pier, jetty, quay, wharf, marine terminal or similar structure (whether floating or not) at which a ship may tie up. It includes any plant or premises, other than a ship, used for purposes ancillary or incidental to the loading or unloading of dangerous cargoes.

Berth operator means any person or body of persons who has for the time being the day-to-day control of the operation of a berth.

Bulk means cargoes which are intended to be carried without any intermediate form of containment in a cargo space which is a structural part of a ship or in a tank permanently fixed in or on a ship.

Cargo interests means a consignor (shipper), carrier, forwarder, consolidator, packing centre or any person, company or institution involved in any of the following activities: identification, containment, packaging, packing, securing, marking, labelling, placarding or documentation, as appropriate, of dangerous cargoes for receipt by a port and transport by sea and having control over the cargo at any time.

Certificate of Fitness means a certificate issued by or on behalf of an Administration in accordance with the relevant codes for the construction and equipment of a type of ship certifying that the construction and equipment of the ship are such that certain specified dangerous cargoes may be carried in that ship.

Dangerous cargoes means any of the following cargoes, whether packaged, carried in bulk packagings or in bulk within the scope of the following instruments:

- oils covered by Annex I of MARPOL 73/78;
- gases covered by the Codes for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk;
- noxious liquid substances/chemicals, including wastes covered by the Codes for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk and Annex II of MARPOL 73/78;
- solid bulk materials possessing chemical hazards and solid bulk materials hazardous only in bulk (MHBs), including wastes, covered by Appendix B of the Code of Safe Practice for Solid Bulk Cargoes (BC Code);
- harmful substances in packaged form (covered by Annex III of MARPOL 73/78); and
- dangerous goods, whether substances, materials or articles (covered by the IMDG Code).

The term *dangerous cargoes* includes any empty uncleaned packagings (such as tank-containers, receptacles, intermediate bulk containers (IBCs), bulk packagings, portable tanks or tank vehicles) which previously contained dangerous cargoes, unless the packagings have been sufficiently cleaned of residue of the dangerous cargoes and purged of vapours so as to nullify any hazard or has been filled with a substance not classified as being dangerous.

Document of Compliance means a document issued by or on behalf of an Administration to a ship carrying dangerous goods in packaged form or in solid form in bulk under SOLAS regulation II-2/19.4 as evidence of compliance of construction and equipment with the requirements of that regulation.

Flexible pipe means a flexible hose and its end fittings, which may include means of sealing the ends, used for the purpose of transferring dangerous cargoes.

Handling means the operation of loading or unloading of a ship, railway wagon, vehicle, freight container or other means of transport, transfer to, from or within a warehouse or terminal area or within a ship or transshipment between ships or other modes of transport and includes intermediate keeping, i.e. the temporary storage of dangerous cargoes in the port area during their transport from the point of origin to their destination for the purpose of changing the modes or means of transport and movement within the port which is part of the transport supply chain for those cargoes.

This term has been very widely drawn so as to cover all of the many operations which relate to dangerous cargoes in a port area.

Hot work means the use of open fires and flames, power tools or hot rivets, grinding, soldering, burning, cutting, welding or any other repair work involving heat or creating sparks which may lead to a hazard because of the presence or proximity of dangerous cargoes.

Loading arm means an articulated hard pipe system and its associated equipment, which may include quick release couplings, emergency release systems or hydraulic power pack, used for the purpose of transferring dangerous cargoes.

The term includes articulated pipes and hardarms.

Master means the person having command of a ship.

It does not include a pilot or watchman.

Packing means the packing, loading or filling of dangerous cargoes into receptacles, intermediate bulk containers (IBCs), freight containers, tank containers, portable tanks, railway wagons, bulk containers, vehicles, ship borne barges or other cargo transport units.

Pipeline means all pipes, connections, valves and other ancillary plant, apparatus and appliances in a port provided or used for, or in connection with, the handling of dangerous cargoes, but does not include a flexible pipe, loading arm or any part of a ship's pipes, apparatus or equipment other than the termination of those parts of the ship's pipes, apparatus or equipment to which a flexible pipe is connected.

Port area means the land and sea area established by legislation.

Note: Some port areas may overlap and legal requirements should take account of this possibility. In establishing the definition of port area in national legislation, careful thought needs to be given to ensuring that the laws apply to all of the various premises which might be involved.

Port authority means any person or body of persons empowered to exercise effective control in a port area.

It should be recognized that in some countries the effective control referred to is exercised by more than one authority, which may not necessarily include the port authority in the common sense of that phrase e.g. Captain of the Port. The control should encompass safety, security and environmental protection.

Regulatory authority means the national, regional or local authority empowered to make legal requirements in respect of a port area and having powers to enforce the legal requirements.

Responsible person means a person appointed by a shore side employer or by the master of a ship who is empowered to take all decisions relating to a specific task, having the necessary current knowledge and experience for that purpose and, where required, is suitably certificated or otherwise recognized by the regulatory authority.

Ship means any seagoing or non-seagoing water craft, including those used on inland waters, used for the transport of dangerous cargoes.

Ships' stores means materials which are on board a ship for the upkeep, maintenance, safety, operation or navigation of the ship (except for fuel and compressed air used for the ship's primary propulsion machinery or for fixed auxiliary equipment) or for the safety or comfort of the ship's passengers or crew. Materials which are intended for use in commercial operations by a ship are not to be considered as ships' stores (e.g. materials used for diving, surveying and salvage operations).

Ships' stores have been defined to include those substances which a ship would normally need to carry for its normal running, including for the comfort of passengers and crew, but does not extend to substances which it might carry for purposes of carrying out specialist functions of a ship, e.g. explosives carried on a deep sea salvage ship or dangerous substances used by a well stimulation ship.

Skilled person means any person having the current knowledge, experience and competence to perform a certain duty.

Stowage means the positioning of packages, intermediate bulk containers (IBCs), freight containers, tank containers, portable tanks, bulk containers, vehicles, ship borne barges, other cargo transport units and bulk cargoes on board ships, in warehouses, sheds or other areas.

Transport means the movement by one or more modes of transport in port areas.

Unstable substance means a substance which, by nature of its chemical make-up, tends to polymerize or otherwise react in a dangerous manner under certain conditions of temperature or in contact with a catalyst. Mitigation of this tendency can be carried out by special transport conditions or by introducing adequate amounts of chemical inhibitors or stabilizers into the product.

2.3 Security-related terms

Security-related terms not otherwise defined in the present document have the meaning assigned to them in SOLAS chapter XI-2 and in the ISPS Code.

3 WAREHOUSES, TERMINAL AREAS AND INFRASTRUCTURE

3.1 General

3.1.1 This chapter relates to jetties, *pipelines*, cargo sheds, container stacking areas, warehouses and terminal areas for *dangerous cargoes*, access and transport roads, rail links and waterways in *port areas*.

3.1.2 The *regulatory authority* should take every care that, in defining the *port area*, it covers only areas where *dangerous cargoes* are transported, handled or kept for the purpose of changing the mode or means of *transport*. Refineries, chemical plants, factories, etc., should not be included in the *port area* except for jetties or wharves relating to those activities.

3.1.2 All dangerous cargoes moving by road, rail, barge or ship are governed by transport legal requirements covering such matters as packing, marking, labelling or placarding, documentation and segregation. Worldwide, the transport legal requirements should be adequate to protect the population and the environment along the transport chain, including handling at the beginning or the end of the transport chain and during changes of the mode of transport. This applies to all dangerous cargoes.

As ports are places where there is an interchange between the modes of transport, the transport legal requirements to all the relevant modes of transport will apply in ports.

However, in many industrialized countries there are specific legal requirements and standards for the design, construction and operation of refineries, chemical plants, tank farms, factories, storage and distribution centres or similar installations. They may include legislation relating to labour, environment, pollution prevention, water protection or explosives.

These specific legal requirements and standards sometimes differ considerably from the legal requirements based on these Recommendations. To avoid conflict between the different legal requirements and the authorities responsible for their implementation, the Recommendations should not be applied to areas within or near a port that are not directly related to or involved in the transport of dangerous cargoes. The Recommendations may also be applied to marine terminals not situated in port areas.

Example 1

One way of defining areas to which legal requirements based on the Recommendations apply is to attach a plan to the port laws or port by-laws, showing the various areas in different colours, e.g. (see figure 1):

Blue =water areas to which the legal requirements apply;
Red =ship/shore interface areas (berth, jetties, wharves) to which the legal requirements apply;
Yellow =shore areas to which the legal requirements apply; and
White =shore areas to which the legal requirements do not apply.

Figure 1*

* To be inserted.

3.1.3 The **regulatory authority** should establish general legal requirements to be met for new facilities or for extensions or major changes to existing facilities.

3.1.3 The legal requirements and standards should cover, e.g.:

- .1 public works planning procedures;
- .2 zoning;
- .3 planning/project approval procedures;
- .4 environmental impact assessment;
- .5 planning laws for towns and country;
- .6 building, including standards for static and building materials and the carrying out of construction work;
- .7 fire protection;
- .8 environment protection, including protection from noxious substances, water pollution, explosives, ground pollution;
- .9 factories; and
- .10 labour safety.

For most of the above subjects, international conventions, guidelines or recommendations are available.

3.1.4 The **regulatory authority** should also encourage the upgrading of existing facilities to meet such requirements.

3.1.5 When establishing such requirements the **regulatory authority** should make every effort to prevent conflicts with established legal requirements relating to the **transport of dangerous cargoes** including environmentally hazardous substances and wastes.

3.1.5 Operative paragraph 2 of IMO resolution A.717(17) states: “Strongly urges Governments to co-ordinate their work in the different organizations to prevent conflicts with the established rules and regulations relating to the maritime transport of dangerous, hazardous and harmful cargoes, including environmentally hazardous substances (marine pollutants) and wastes.”

3.2 Land use planning

3.2.1 When planning new facilities or upgrading of existing facilities in a **port area** the following factors should be considered:

- .1 the protection of safety, health and security of persons, property and the environment;
- .2 the **dangerous cargoes** to be transported or handled;
- .3 other hazardous installations in the vicinity;

- .4 population density in the area under consideration including the vulnerability of the population;
- .5 ease of evacuation or other measures which may need to be taken in the event of an accident;
- .6 emergency services and procedures available;
- .7 possibility and probability of an accident occurring and the effects on health, property and the environment, depending on the *dangerous cargoes* to be transported or handled;
- .8 the provision of repair and cleaning facilities for *ships* and cargo transport units; and
- .9 the requirements of MARPOL 73/78 with respect to reception facilities.

3.2.1.7 In order to prevent flooding and fire and to provide protection against water pollution, additional precautions may be necessary.

Example 2

The following points should be considered:

- .1 the location of facilities on areas which are safe from flooding or are adequately protected from it by means such as dykes or walls;
- .2 ensuring unrestricted access/egress of the emergency services such as fire brigade or ambulance;
- .3 the limitation of size of areas where dangerous cargoes are kept;
- .4 the use of non-flammable construction materials;
- .5 the provision of lightning protection equipment;
- .6 the installation of smoke- and heat-extraction equipment;
- .7 ensuring an adequate supply of fire-extinguishing water and, if necessary, other extinguishing agents;
- .8 the provision of automatic fire detection equipment and, if necessary, automatic fire extinguishing installations and other fire-fighting equipment;
- .9 the provision of facilities to retain contaminated fire-extinguishing and cooling water; and
- .10 the provision of sealed areas and absorption equipment facilities for retaining spilled substances harmful to the aquatic environment.

3.2.2 Land use planning decisions should take into account the cumulative risk of all hazardous installations and substances in the vicinity of ports.

3.2.2 Centres of population and other factories, refineries or chemical plants in the vicinity should be taken into account when planning port facilities.

The cumulative risk of all hazardous installations and substances in the vicinity of the port, the population in the vicinity, the standard of the facilities and the emergency services available should be considered in determining limitations for classes of cargo to be handled, kept or transported in a port or which will remain on board a ship in transit.

3.2.3 Land use planning decisions should always take into account international guidelines, experience and recommendations available from the various international bodies.

3.2.3 When planning port facilities consideration should be given to the need for repair or cleaning facilities for ships and/or cargo transport units such as shipyards, lay-by berths, tank cleaning stations or workshops. Depending on the size of the port and the number and types of ships and cargoes, it may be necessary to provide all or at least some of these facilities.

3.3 Considerations for specific dangerous cargoes

3.3.1 *Substances harmful to the aquatic environment*

3.3.1.1 Where practicable, wherever such substances are present in the **port area**, suitable means should be used to prevent these substances entering into the soil, water areas or drainage systems. This also applies to pipe and conveyor bridges.

3.3.1.1 It may be impracticable to seal the complete port area to prevent substances harmful to the aquatic environment entering the soil.

However, if there are areas where only specific types of cargo, e.g. bulk liquids, are handled or kept, the ground should be sealed. This may not be practicable in existing ports. In other areas other means, such as absorbents, should be available for use in case of an accidental spillage. To prevent harmful substances entering into the drainage systems, drain openings should be closed by means of special covers during the handling of such cargoes.

3.3.1.2 Whenever practicable, drainage systems should be furnished with shut-off valves, sumps or basins and shore discharge facilities for contaminated water.

3.3.1.3 Whenever practicable, such areas should be separated by containment walls, bunds or sills.

3.3.2 *Explosives*

3.3.2.1 Explosives should not be permitted to enter the **port area** unless the **regulatory authority** has granted permission to handle explosives. This should include explosives in transit.

3.3.2.1 Class-1 cargoes other than division 1.4S should only be allowed to enter the port area for direct transport to or from ships (import and export). However, situations may arise where, despite all the precautions taken, these cargoes have to be kept in the port area for several hours. In such situations a special site should be available for such short-term keeping.

Example 3

An example of such a special facility might be a bunker like structure which:

- .1 consists of an area surrounded on three sides by a double steel pile wall, filled with sand;
- .2 has on its fourth side a double locked steel door;
- .3 is without a roof;
- .4 is accessible by road and rail;
- .5 has a sprinkler system installed;
- .6 has a storage tank underneath with sufficient capacity of collecting contaminated water; and
- .7 has an office container next to it with communication facilities provided for the watchmen, who should be present around the clock when cargo is inside the bunker.

Example 4

Another example would be to take the cargo to an isolated place which is secure.

3.3.2.2 Where necessary and permitted by the **regulatory authority** a special site with suitable protection and with access by road and rail should be provided for the yard placement or storage location of explosives.

3.3.2.3 Any such site should be fenced off to prevent the entry of unauthorized persons and should have facilities for watchmen, including adequate means of communications.

3.3.2.4 Items for consideration by the **regulatory authority** in connection with the **handling** of explosives in ports are set out in annex 2.

3.3.3 *Temperature-controlled dangerous cargoes*

3.3.3.1 Where necessary, special areas, with shore facilities for connecting temperature-controlled cargo transport units to shore utilities should be provided. The facilities should include back-up systems.

3.3.3.1 Certain dangerous cargoes such as self-reactive substances (class 4.1), organic peroxides (class 5.2) and related substances need to be transported and handled under temperature control provisions specified in chapters 2.4, 2.5 and 7.7 of the IMDG Code. These chapters provide information on their control temperature and emergency temperature and methods of temperature control. Some infectious substances (class 6.2) shall also be transported and handled under special temperature control provisions which are required for their safe and successful delivery from a consignor to a consignee.

This provides guidance to port authorities/berth operators if such cargoes have to be kept for short periods in a port area.

Some dangerous cargoes are transported under controlled temperature or are stabilized by temperature control for quality assurance purposes rather than for safety purposes.

It is recommended that direct delivery for loading or discharging of such cargoes should be arranged particularly if they are in cargo transport units. Where this is not possible, ports should designate special areas or sheds where these cargoes can be kept. These areas or sheds should have facilities, including back-up systems, for connecting temperature controlled cargo transport units to shore power supplies.

Certain dangerous cargoes may be transported in cargo transport units of a type refrigerated by liquid or solid refrigerants, such as solid carbon dioxide (dry ice) or liquid nitrogen. In such cases sufficient refrigerant, with a margin for reasonable delays, should be carried in or with the cargo transport unit. Neither liquid oxygen nor liquid air should be used as a refrigerant. In the case of carbon dioxide, the cargo transport unit shall be marked in accordance with the relevant special provision in the IMDG Code.

Temperature-controlled dangerous cargoes, being loaded in insulated, refrigerated and mechanically refrigerated vehicles, may be transported by ships if these vehicles conform to the provisions of sections 7.7.3, 7.7.4 and 7.7.5, as appropriate, of chapter 7.7 of the IMDG Code.

Less stringent means of temperature control may be used or artificial refrigeration may be dispensed with by the written competent authority approval, during the transport and handling of such dangerous cargoes at low ambient temperatures or during short international voyages.

Because of the properties of this type of dangerous cargo (some may require explosive subsidiary risk labelling), it is necessary to control the temperature of any cargo transport unit to determine if dual refrigerating units may be required. It may be necessary to implement emergency procedures (e.g. disposal of packages) if the specified temperature of the unit, the emergency temperature, is reached. This is particularly important for ports in tropical zones in which the need for an open-sided shed for the keeping of such units should be considered.

3.3.4 *Radioactive material*

3.3.4.1 Where necessary, special areas, which include buildings built in accordance with international safety standards, should be provided for radioactive material.

3.3.4.1 Normally radioactive material (dangerous goods of class 7 covered by chapter 2.7 of the IMDG Code) should only be allowed to enter the port for direct transshipment. If they have to be kept in the port area for several hours special facilities should be provided. An additional high fence at an adequate distance could provide additional safety and security.

3.3.4.2 Any such areas should be secured to prevent the entry of unauthorized persons.

3.4 **Specific considerations for warehouses and terminal areas**

3.4.1 *Dangerous cargo areas*

3.4.1.1 Dangerous cargo areas should have separate areas with all necessary facilities appropriate to the hazards emanating from the cargoes to be kept. Where appropriate these facilities should include separate ventilation, drainage, fire resisting walls, ceilings, etc.

3.4.1.1 The quantity and type of dangerous cargo areas will vary from port to port and depend on the volume and types of cargo handled in it. In some ports it may be sufficient to have dedicated open areas which are either fenced off or clearly marked. More sensitive dangerous cargoes may need to be kept in purpose built dangerous goods boxes, permanently stationed containers, magazines in general cargo sheds or dedicated and clearly marked areas in such sheds. Other cargoes may require to be kept in an area that is covered by a roof but open on all sides. Consideration should also be given to the maximum amount of cargo to be kept in area, and the maximum height of the stowage of such cargo.

Example 5

Figures 2 and 3 show how one port, handling about 400,000 tons of packaged dangerous cargoes of all classes annually, has dealt with it.

Figure 2*

Figure 3*

3.4.1.2 Dangerous cargo areas should, where possible, be located so that management and/or security personnel may keep them under continuous observation. Otherwise, an alarm system may be provided or the spaces inspected at frequent intervals.

3.4.1.3 The spaces should enable an adequate segregation of dangerous cargoes in accordance with the legal requirements of the *regulatory authority*.

3.4.2 *Container stacking areas/rail sidings/lorry parking areas*

3.4.2.1 Separate areas may be designated for specific *dangerous cargoes*.

3.4.2.1 In addition to providing sufficient space for segregation, the layout of the dangerous cargo area should provide adequate access to the dangerous cargoes kept in that area and access lanes for handling equipment such as lift trucks.

3.4.2.2 Segregation requirements of the *regulatory authority* should be met when designating areas.

3.4.2.3 Care should be taken that, in case of an emergency, adequate access is provided for handling equipment, emergency services, etc.

3.4.2.3 The following illustrates how one port with straddle carrier operations has dealt with it (see also figure 4).

Figure 4*

Example 6

One hundred and eighty-five lanes out of a total of three hundred and seventy (every odd numbered lane) are designated for containers carrying dangerous cargoes. Each such lane is marked with a red triangle. Only the first container positioned in a lane may contain dangerous cargoes to allow opening of the door for easy access in case of an emergency. The segregation requirements for the containers are in accordance with the IMDG Code requirements for “on deck” stowage, which are set out in chapter 7.1 of the Code. However, in this case stacking of dangerous goods containers is prohibited. For containers requiring temperature control, lanes with shore power connection stations are available.

3.4.2.4 Adequate emergency facilities should be provided. These should be appropriate to the hazards of the *dangerous cargoes* to be handled.

* To be inserted.

3.4.3 *Fumigation areas*

3.4.3.1 Separate areas should be provided or designated for *ships* and/or cargo transport units to be fumigated.

3.4.3.2 Whenever practicable, these areas should be fenced off to prevent the entry of unauthorized persons and should have facilities for watchmen. The facilities should include adequate means of communication.

3.4.3.3 A Guide to fumigation operations is set out in annex 7.

3.4.4 *Special areas for damaged dangerous cargoes and wastes contaminated with dangerous cargoes*

3.4.4.1 Special areas for damaged dangerous cargoes and wastes contaminated with dangerous cargoes should be provided, where damaged dangerous cargoes may be kept and repacked or contaminated wastes separated and kept until their disposal.

3.4.4.1 The following describes how one port has dealt with it:

Example 7

The facility consists of an area surrounded by a high fence which is easily accessible by road and rail. Inside there are two buildings. One is for the personnel required to work there and contains all controls for the drainage system, means of communication and emergency equipment.

The second is a shed where damaged cargo can be kept safely. The shed is divided into three sections, each of which can accommodate one 40 foot container. The floor is sloped to allow the containment of 30 m³ of contaminated liquids within shed. The floor is made of concrete and has a double barrier-layer sheet underneath which seals it from the ground. The barrier-layer sheet has a drain system which enables the user to immediately detect any damage (leakage) by means of a vacuum pump. The handling area in front of the shed is also made of concrete and sealed.

The drainage system has been especially designed and is resistant to approximately 95% of all dangerous substances handled in the port. All pipes are made of PE-HD (high density polyethylene) while all valves are coated with PTFE (polytetrafluoroethylene). Three storage basins are available, two small ones of 2 m³ capacity each and a large one with a capacity of 80 m³. All basins are coated.

Normally, all valves are kept in an open position to allow direct drainage into the harbour. When damaged cargo or contaminated waste is handled, the valves are closed. Only when no spillages have occurred during the handling are the valves opened again.

3.4.4.2 Such areas should, where appropriate, be covered, have a sealed floor or ground, separate drainage systems with shut-off valves, sumps or basins and means to discharge contaminated water to special facilities in order to safeguard the *port area* and the environment.

3.4.4.3 Such areas should be fenced off to prevent the entry of unauthorized persons and should have facilities for watchmen. The facilities should include adequate means of communication.

3.4.5 *Repairing/cleaning facilities*

3.4.5.1 Where repair or cleaning facilities for **ships** or cargo transport units are provided, they should be situated well away from any area where dangerous cargoes are transported or handled. This should not preclude the carrying out of minor voyage repairs on ships at cargo handling **berths** or cleaning of cargo tanks at tanker terminals.

3.4.5.2 Cleaning facilities should be designated and constructed to protect the environment when environmentally hazardous substances are used or are otherwise involved, in the cleaning process.

3.4.6 *Reception facilities*

3.4.6.1 Facilities should be provided for the reception and disposal of bilge water, wastes, ballast and slops, contaminated with **dangerous cargoes**, as appropriate.

3.4.7 *Tank storage and pipelines*

3.4.7.1 Permanent installations for the storage of liquid **dangerous cargoes**, including **pipelines**, in the **port area** should be designated, constructed and maintained in accordance with the **regulatory authority's** legal requirements, taking into account temperature, the development of pressure, compatibility of substances and the need to ensure harmonization with the requirements laid down for **ships**.

4 TRAINING

4.1 Regulatory authorities

4.1.1 The **regulatory authority** should establish minimum requirements for training and, where appropriate, qualifications for each person involved, directly or indirectly, in the **transport** or **handling** of **dangerous cargoes**.

4.1.2 **Regulatory authorities** involved in the development or enforcement of legal requirements relating to the supervision of **transport** or **handling** of **dangerous cargoes** should ensure that their personnel are adequately trained, commensurate with their responsibilities.

4.2 Management

4.2.1 Management should ensure that all shipboard and shore personnel involved in the **transport** or **handling** of **dangerous cargoes** or in the supervision thereof are adequately trained, commensurate with their responsibilities within their organization.

4.2.2 Management at all levels should exercise day-to-day responsibility for health and safety.

4.2.2 Whilst duties to comply with legal requirements cannot be delegated by management, responsibilities within undertakings to implement safe operational procedures on a day to day basis may be delegated, as appropriate, to all levels of management and should be exercised by them.

4.2.3 In order to draw up safe operational procedures for the transport and handling of dangerous cargoes, management should carry out an assessment of the risks involved. In certain cases a quantified risk assessment may be necessary.

4.2.3 It is generally accepted that the majority of all accidents are linked to the human element, for example attitude, communication problems or fatigue. It is essential, therefore, that operating procedures take the human factor into account.

4.3 Personnel (cargo interests, berth operators and ships)

4.3.1 Every person engaged in the *transport* or handling of *dangerous cargoes* should receive training on the safe *transport* and *handling* of *dangerous cargoes*, commensurate with his responsibilities.

4.3.2 Shore-based personnel should receive general awareness/familiarization training, function-specific training and safety training. Such persons may be those who:

- .1 classify dangerous goods and identify Proper Shipping Names of dangerous goods;
- .2 pack dangerous goods in packages;
- .3 mark, label or placard dangerous goods;
- .4 pack/unpack cargo transport units;
- .5 prepare transport documents for dangerous goods;
- .6 offer dangerous goods for transport;
- .7 accept or receive dangerous goods for transport;
- .8 handle dangerous goods in transport;
- .9 prepare dangerous goods loading/stowage plans;
- .10 load/unload dangerous goods into/from ships;
- .11 carry dangerous goods in transport;
- .12 inert cargo tanks;
- .13 measure and sample cargo tanks;
- .14 wash cargo tanks under the approved procedures and arrangements;
- .15 enforce, survey or inspect for compliance with applicable legal requirements and rules and regulations; or

- .16 are otherwise involved in the transport of dangerous goods as determined by the competent authority.

4.4 Training content

4.4.1 *General awareness/familiarization training*

4.4.1.1 Every person should receive training on the safe **transport** and **handling** of **dangerous cargoes**, commensurate with his duties. The training should be designed to provide familiarity with the general hazards of relevant **dangerous cargoes** and the legal requirements. Such training should include a description of the types and classes of **dangerous cargoes**; marking, labelling and placarding, packing, segregation and compatibility requirements; a description of the purpose and content of the transport documents; and a description of available emergency response documents.

4.4.2 *Function-specific training*

4.4.2.1 Every person should receive detailed training concerning specific requirements for the **transport** and **handling** of **dangerous cargoes** which are applicable to the function that he performs.

4.4.3 *Safety training*

4.4.3.1 Each person should receive training commensurate with the risks in the event of a release of **dangerous cargoes** and the functions he performs, on:

- .1 methods and procedures for accident avoidance, such as proper use of package-handling equipment and appropriate methods of **stowage** and **segregation** of **dangerous cargoes**;
- .2 necessary emergency response information and how to use it;
- .3 general dangers of the various types and classes of **dangerous cargoes** and how to prevent exposure to their hazards including, if appropriate, the use of personal protective clothing and equipment; and
- .4 immediate procedures to be followed in the event of an unintentional release of **dangerous cargoes**, including any emergency procedures for which the person is responsible and the personal protection procedures to be followed.

4.4.3.2 Such training should be provided or verified upon employment in a position involving the **transport** or **handling** of **dangerous cargoes** and should be periodically supplemented with retraining, as deemed appropriate by the **regulatory authority**.

4.4.3.3 Records of all safety training undertaken should be kept by the employer and made available to the employee if requested.

4.4.3.3 Detailed description of recommended training for shore-side personnel involved in the transport and handling of dangerous cargoes are given in section 1.3.1 of chapter 1.3 of the IMDG Code.

4.4.4 *Security training* (see also section 5)

4.4.4.1 Security training for personnel having duties in relation to the handling and transport of dangerous cargoes should be appropriate with their responsibilities and duties under the provisions of the port facility security plan (section A/2.1.5 of the ISPS Code). In addition, the training requirements specific to security of dangerous goods given in chapter 1.4 of the IMDG Code should also be addressed.

5 SECURITY PROVISIONS

5.1 The special measures to enhance maritime security are contained in SOLAS chapter XI-2 and in the ISPS Code. The requirements form the international framework through which ships and port facilities can co-operate to detect and deter acts which threaten security in the international maritime transport sector.

5.2 In addition, explicit security provisions for personnel, involved in the transport of dangerous goods by sea and shore-based personnel involved in handling IMDG Code classified dangerous cargoes in ports, have been included in the IMDG Code since Amendment 32-04.

5.3 Notwithstanding the provisions of section 2.1 on application, because of the importance of detecting and preventing possible security threats and breaches in security, when IMDG Code classified dangerous cargoes might be involved, attention is drawn to the requirements of chapter 1.4 (Security provisions) of the IMDG Code.

5.4 Competent authorities should consider developing appropriate security-related provisions, based on the philosophy on which chapter 1.4 of the IMDG Code is based, for the non packaged *dangerous cargoes*.

6 RESPONSIBILITIES

6.1 Role of regulatory authorities

6.1.1 The *regulatory authority* should ensure that appropriate legal requirements, based upon these Recommendations are made and reviewed regularly.

6.1.1 The regulatory authority responsible for port safety varies from country to country. More than one authority is frequently involved with different authorities, being responsible for different aspects, e.g. for marine and inland transport safety and the safety of ships' crew and passengers, shore side safety and the safety of shore employees, land use planning or environmental matters. In some countries the regulatory authority or authorities may be national or federal bodies, whilst in others the authorities may be the state, regional or local authorities or a combination of some or all of these.

It is possible that different sections of the Recommendations will be incorporated in separate legal requirements or legal requirements which are the responsibility of two or more regulatory authorities. In such cases it is essential that there is effective liaison between the authorities to ensure that the legal requirements are consistent and that gaps are not left between them.

In some cases it may be necessary for legal requirements made by different regulatory authorities to overlap. An example could be requirements applying to shore side organizations working on ships and ships' crew. Again it is essential that there is effective liaison between the authorities to ensure that the legal requirements are harmonized.

6.1.2 The **regulatory authority** should make arrangements for appropriate enforcement action to be taken to ensure compliance with the legal requirements.

6.1.2 To be effective it is essential that the legal requirements are enforced consistently in accordance with a country's legal system. Enforcement ensures that those with duties under the legal requirements are aware of the likelihood of penalties being imposed on them if they fail to comply with the legal requirements.

Regulatory authorities should, therefore, consider by what body the legal requirements should be enforced and ensure that the officers concerned are adequately trained and instructed.

Regulatory authorities' enforcement strategy should include random checks.

6.1.3 As some of the matters covered by these Recommendations are better dealt with by the people on the spot, the **regulatory authority** should consider whether some of the legal requirements should be enforced by the **port authority**.

6.1.3 Regulatory authorities should consider if any of the legal requirements need to be dealt with on a day-to-day basis by persons on the spot. If regulatory authorities decide this is so and it is permitted by the legal system of the country or State concerned, they should consider whether particular legal requirements should be enforced by the port authority rather than by themselves.

6.1.4 Where appropriate, national legal requirements should permit purely local matters to be regulated by local rules (by-laws), enforced by the **port authority**. Such local rules should not duplicate nor be contrary to any of the national legal requirements.

6.1.4 The regulatory authority should make provision for port authorities to make local rules or by-laws. Potential confusion due to differences between the local rules or by-laws in different ports can be minimized by the development by regulatory authorities of model by-laws to harmonize the requirements of by-laws that are found to be necessary in many ports.

6.1.5 The **regulatory authority** should take steps to ensure that appropriate advice is made available to all those who have duties under the legal requirements.

6.1.5 Persons with duties under the legal requirements often need advice or guidance on how to comply with them. Regulatory authorities should take steps to ensure that such advice is available. This may take the form of internationally recognized codes or guidance, such as certain chapters and sections of the IMDG Code and its Supplement which remain recommendatory, while the IMDG Code is a mandatory IMO instrument, or the International Safety Guide for Oil Tankers and Terminals (ISGOTT), the ILO Code of Practice Safety and Health in Ports, national guidance published by the regulatory authority or guidance published by other reputable bodies such as industry organizations. In addition, the regulatory authority should be prepared to give advice about the legal requirements when appropriate.

6.2 Role of port authorities

6.2.1 The **port authority** should exercise control over the movement of shipping through the **port area** and should establish systems for the receipt of prior notification and the conditions under which **dangerous cargoes** may enter the **port area**.

6.2.1 The port authority should make known any limitations on the classes or quantities of dangerous cargoes that may be handled in the port area. In determining any such limits, the port authority should take into account any relevant requirements of the regulatory authority (e.g. limits specified in an explosives licence), land use planning restrictions and sensitive nearby premises such as schools, hospitals, special needs housing etc. Special consideration should be given to the needs of ships to enter the port area under stress of weather or other emergency. In some cases it may not be appropriate to permit a ship to enter the port owing to the potential risks to other ships and shore premises.

The port authority should make arrangements to regulate the presence or handling of any cargo which gives rise to a risk to the health or safety of any person, whether or not within the port area, due to the condition of the dangerous cargo itself or the condition of a freight container, portable tank or other receptacle containing the cargo or of any ship or vehicle carrying it. The condition referred to does not relate to the inherent properties of the cargo, e.g. the corrosiveness of an acid.

6.2.2 The **port authority** should exercise control over the shore side entry of **dangerous cargoes** into the **port area** and should establish systems for the receipt of prior notification and the conditions under which **dangerous cargoes** may enter the **port area**.

6.2.2 The international nature of shipping means that ships are likely to call at many ports in many countries. Significant differences in the legal requirements relating to dangerous cargoes in transit between different ports and countries could cause confusion and misunderstandings which could possibly lead to dangerous situations. So far as possible, therefore, the legal requirements of ports within a country and of ports of different countries should be harmonized. This is best done by basing the necessary legal requirements on these Recommendations.

6.2.3 The **port authority**, where it has been empowered to do so, should make provisions to enforce the relevant part of the national legal requirements.

6.2.3 The port authority should make arrangements for suitably trained personnel to enforce any national legal requirements that the regulatory authority requires it to enforce.

6.2.4 Where appropriate, the **port authority** should develop and enforce local port rules (by-laws) covering **dangerous cargoes** in the **port area**.

6.2.4 Any local rules or by-laws should be kept to the minimum and should deal only with local matters specific to the port. They should not duplicate or be inconsistent with the national legal requirements. Such by-laws may include navigational requirements relating to the circumstances of a particular port. The port authority should make arrangements for any such local rules or by-laws to be enforced by suitably trained personnel.

6.2.5 The **port authority** should, when it is within the scope of its responsibility, develop, maintain, publicize and practice, as appropriate, plans for any foreseeable emergency concerning **dangerous cargoes** in the **port area**.

6.2.5 The port authority should prepare and keep up to date an emergency plan for dealing with any emergencies that may arise. This should include emergencies which involve, or could involve, dangerous cargoes in the port area. The emergency plan should be compatible with any local emergency plan and emergency plans of any nearby premises with which it may overlap and any other body, for example, other responsible authorities, that may be involved in such an emergency.

The emergency plan should cater for all emergencies that are likely to occur. In addition to considering the emergencies that are likely to occur during the normal operation of the port, the port authority should consider external emergencies that could affect dangerous cargoes whilst in the port area. These may include the entry of ships in distress carrying dangerous cargoes not normally handled in the port, emergencies in nearby premises and emergencies involving bridges in the port area or aircraft.

6.3 Role of berth operators and cargo interests

6.3.1 The *berth operator* and *cargo interests* have the prime responsibility for carrying out the *transport* and *handling* of *dangerous cargoes* in a manner which safeguards the health and safety of their employees and others who may be affected by the operations, including the general public.

6.3.1 In many cases particularly at intermodal transfer points such as ports, the activities of two or more undertakings will overlap. In such cases the duties will also overlap and co-operation between the managements on the undertakings will be essential to ensure that the necessary standards of health and safety are maintained.

6.3.2 The *berth operator* and *cargo interests* should consider the risks associated with such activities in *port areas* and take them into account when devising safe operational procedures. The procedures should ensure compliance with relevant legal requirements.

6.3.3 The *berth operator* and *cargo interests* should provide appropriate information, instruction, training and supervision to their employees to ensure that the safe operational procedures are followed in practice. Such supervision should include procedures to verify that *dangerous cargoes* comply with the relevant legal requirements and can be accepted for onward *transport*.

6.3.3 Health and safety in relation to the transport and handling of dangerous cargoes is only achieved by positive action. It needs to be managed in the same way as any other resources. A framework for achieving successful management of health and safety involves:

- .1 setting up a clear policy for health and safety which fully complies with the minimum standards laid down in national and local legal requirements, as appropriate;
 - .2 drawing up realistic and safe operational procedures and standards;
 - .3 organizing staff to implement the procedures;
 - .4 routine checking of actual practices against the procedures; and
 - .5 periodic audit and review of the arrangements as a whole.
-

6.3.4 The *berth operator* should ensure that appropriate plans are made to deal with foreseeable emergencies. Such plans should be co-ordinated with the port emergency plan and relate to incidents and their consequences in the area they control within the *port area* and in adjacent areas or premises.

6.3.5 The **berth operator** should ensure that all accidents and other emergencies, including those involving property, are properly investigated to identify their causes, reported as required by national and local legal requirements, and that any remedial action necessary to correct any deficiencies and prevent any recurrence is taken promptly.

6.3.6 The **berth operator** and **cargo interests** should ensure that the safety of all aspects of the **transport** and **handling of dangerous cargoes** is regularly reviewed.

6.3.6 Management should periodically undertake a review of all aspects of the management of health and safety in connection with the transport and handling of dangerous cargoes, so as to ensure that proper procedures are being implemented, that they remain appropriate for the risks they are intended to control, that operational and accident experience is taken into account and that complacency is avoided.

6.3.7 **Cargo interests** should also ensure that **dangerous cargoes** they forward for **transport** by sea comply with the relevant legal requirements.

6.3.7 In many ways the management of cargo interests holds the key to the health and safety of all those further along the transport chain. Often only they will have control over the correct packing, segregation and securing of the contents of cargo transport units. In many cases the packer of a cargo transport unit will be the last person who sees the inside of it until it reaches its final destination and will, therefore, have the prime responsibility for ensuring it is correctly and securely packed. Cargo interests should ensure that all cargo transport units for transport by sea are suitable for the purpose in accordance with the Container Safety Convention (CSC), 1972, where relevant and are correctly packed, placarded, marked and documented in accordance with the requirements of the IMDG Code and other relevant codes and are loaded in accordance with the IMO/ILO/UN ECE Guidelines for packing of cargo transport units before passing them on along the transport chain.

6.4 Awareness

6.1.1 All persons involved with the **transport** or **handling of dangerous cargoes** should be appropriately trained to ensure that they are aware of the hazards associated with such cargoes and the precautions that should be taken.

6.4.1 It is essential that every person in any undertaking involved with the transport or handling of dangerous cargoes has an appropriate degree of training and awareness of the hazards and risks associated with such dangerous cargoes and of the procedures and precautions that should be followed. Lack of such knowledge can result in injury to themselves and others. This is equally applicable to all employees.

7 GENERAL RECOMMENDATIONS FOR REGULATORY AUTHORITIES, PORT AUTHORITIES, SHIPS, BERTH OPERATORS AND CARGO INTERESTS

7.1 Regulatory authorities and port authorities

7.1.1 Acceptability of dangerous cargoes in port areas

7.1.1.1 The **regulatory authority** should determine the classes and quantities of **dangerous cargoes** which may be permitted to transit or to enter a **port area** by any mode of **transport** and

the conditions under which they are to be handled, having regard to the facilities available for the reception and keeping of **dangerous cargoes** and the location of the **port area** in relation to nearby installations and centres of population. The **regulatory authority** should make such information available in the national and, where appropriate, English languages.

7.1.1.1 Restrictions on the type and quantity of dangerous cargoes allowed to stay within the port area may be necessary, depending on nearby housing areas, other hazardous installations such as tank farms or chemical plants and special environmental protection areas.

When establishing quantity limitations or other restrictions, the considerations should be given to the expertise and the equipment available within the organizations responsible for emergency response (e.g. fire brigade, hospitals, ambulance).

It is very important that those who are involved in the transport of dangerous cargoes by sea are informed about any restrictions by means of official publications (e.g. port by-laws) to avoid such dangerous cargoes arriving by ship or other means of transport and having to be rejected because of restrictions. As English is internationally accepted as the maritime language, the use of that language is recommended.

7.1.1.2 The **port authority** should be empowered to refuse **dangerous cargoes** intended for keeping within, or transit through, the **port area**, if it is considered that their presence would endanger life or property because of their condition, the condition of their consignment, the condition of their mode of conveyance, or the conditions in the **port area**. Notwithstanding this provision all reasonable effort should be made to aid a **ship** in distress, particularly when the lives of its crew are in danger.

7.1.1.3 If any **dangerous cargo** within the **port area** constitutes an unacceptable hazard, the **port authority** should be able to remove, or order the removal of, any such cargo or any **ship**, package, freight container, tank-container, portable tank, vehicle or other cargo transport unit containing it.

7.1.1.4 An **unstable substance** should not be accepted unless all conditions necessary to ensure its safe **transport** and **handling** have been specified and met.

7.1.1.5 Competent Authority approvals or exemptions should accompany all shipments when operational and/or transport requirements different to the IMDG Code have been permitted by a Competent Authority (MSC/Circ.1075).

7.1.2 *Advance notification*

7.1.2.1 The **regulatory authority** should establish a system whereby the **port authority** is notified in good time, but generally not less than 24 hours in advance of the arrival of **dangerous cargoes** in the **port area**. The **regulatory authority** should establish and make information on the various categories and minimum quantities of such categories of **dangerous cargoes** for which prior notification of arrival is required. The system may enable special arrangements to be made or exemptions to be granted as appropriate for certain categories and/or quantities of **dangerous cargoes**, for certain modes of **transport** and for short voyages. This will include **ships** carrying **dangerous cargoes** which intend to transit through the **port area**. Where possible all dangerous goods should be manifested on FAL Form 7 as amended.

7.1.2.1 The notification serves the purpose of allowing the port authority to check if the cargoes to be handled or in transit can be accommodated without jeopardizing the port's safety at the intended date and time, taking into account the type and quantity of cargo involved and any quantity limitations in force.

Furthermore, it allows the port authority to verify the details (such as classification, quantity, type, packing group) and to arrange any necessary corrections in advance. It may also be used to inform the emergency services well in advance of the type and quantities expected, so that they will be able to take the necessary precautions in case of a specific risk from such cargoes.

All port authorities should know where their dangerous cargoes and related documents are located. In many ports the individual advance notifications are used to create an overview of all the dangerous cargoes in the port, that is, which cargoes are located where and in what quantities. The use of electronic data processing (E.D.P.) will facilitate the keeping of such records but requires a standardized notification format.

7.1.2.2 Advance notification should also be given when a *ship* or a cargo transport unit arrives under fumigation. The notification should contain the name of the fumigant and the date of application.

7.1.2.2 Reference is made to the "Recommendations on the Safe Use of Pesticides in Ships" in the Supplement to the IMDG Code. In many cases additional national health regulations have to be observed.

7.1.2.3 The advance notification should also include any deficiency of the *ship*, its equipment and/or the containment of *dangerous cargoes* which may affect the safety in the *port area* or the *ship*.

7.1.2.4 The *regulatory authority* should establish a system whereby the *port authority* of the port of departure is notified, in good time but generally not less than 3 hours prior to the departure of a ship, of the *dangerous cargoes* on board.

7.1.2.5 The advance arrival and departure notification should be given by letter, telex, telefax, or electronic data interchange (EDI) transmission techniques such as the international forwarding and transport of dangerous goods notification (IFTDGN) or any other means acceptable to the *port authority*.

7.1.2.5 In accordance with the requirements of chapter VII part A regulation 4 of the SOLAS Convention - and the requirements of Annex III of the MARPOL 73/78 Convention, ships shall make available, to the port State authority, a detailed stowage plan or a list of all dangerous cargoes with their stowage position on board prior to leaving the port. This serves to ensure the availability of information on dangerous cargoes on board in cases where the relevant cargo documents cannot be obtained or communication is impossible due to an accident involving the ship. It can also be used to ensure advance notification to the next port of call.

7.1.2.6 The information which should be given is set out at annex 1.

7.1.2.7 For *dangerous cargoes* arriving by sea the notification should be given by the *master* of the ship, the shipowner, or his agent. For *dangerous cargoes* arriving by road, rail or inland watercraft, advance notification should be given by the *cargo interests*.

7.1.3 *Berthing*

7.1.3.1 The **port authority** should be empowered to:

- .1 direct when and where a ship, having any **dangerous cargoes** on board, should anchor, moor, **berth** or remain within the **port area**, taking into consideration relevant matters such as the quantity and nature of the **dangerous cargoes** involved, the environment, the population, the weather conditions;
- .2 direct, in an emergency, a **ship** having any **dangerous cargoes** on board to be moved within the **port area**, or to be removed from the port area having due regard to the safety of the **ship** and its crew; and
- .3 attach such requirements to any such directions as are appropriate to local circumstances and the quantity and nature of the **dangerous cargoes** involved.

7.1.3.2 The **regulatory authority** should require that adequate safe means of access are provided between the **ship** and the shore.

7.1.4 *Emergency procedures*

7.1.4.1 The **regulatory authority** should require that appropriate emergency arrangements (plans and procedures) are made, brought to the attention of all concerned and ensure their training is appropriate and commensurate with their responsibilities. These arrangements should include:

- .1 the provision of appropriate emergency response alarm operating points;
- .2 procedures for notification of an incident or emergency to the appropriate emergency response services within and outside the **port area**;
- .3 procedures for notification of an incident or emergency to the **port area** users both on land and water;
- .4 the provision of emergency equipment appropriate to the hazards of the **dangerous cargoes** to be handled;
- .5 the formation of a local emergency response team to co-ordinate action in the case of a major emergency and to deal with any day-to-day untoward incidents such as a minor leak or spillage of **dangerous cargoes**;
- .6 co-ordinated arrangements for the release of a ship in case of an emergency; and
- .7 arrangements to ensure adequate access/egress at all times.

7.1.4.1 Berth emergency plans should be harmonized with the port emergency plan and the emergency plans of any other relevant nearby premises. The plans should include agreed arrangements for alerting the port authority and other premises as appropriate.

The emergency plan should set out clearly how it is to be initiated, the steps to be taken to put it into practice and identify the facilities and equipment that would be available in the event of an emergency.

It is essential to ensure that communications can be maintained with the emergency services at all times during an emergency. It is therefore necessary to ensure that facilities for dealing with the media and the public are kept separate from those used to control the emergency.

The emergency plan should be distributed to all organizations and to all bodies who may be involved with it in the event of an emergency.

Port authority personnel who may be involved in putting the emergency plan into effect should be suitably instructed and trained in its operation.

Persons who may be involved in clean up measures should be aware of the limitations of their knowledge and capabilities and have clear instructions as to when to call on external sources of help.

The emergency plan should be exercised at regular intervals, e.g. at least once per year. Whilst full-scale exercises are desirable, they may only be practicable infrequently. In such circumstances table-top exercises should be carried out at more frequent intervals.

The emergency plan should be reviewed periodically on a routine basis, as well as after each occasion that it has to be put into effect or is exercised and when changes are made in the port. Any lesson that can be learned should be incorporated in a revision of the plan.

7.1.4.2 The **regulatory authority** should require the preparation and maintenance of records of the **dangerous cargoes** which are present in the **port area** for use in emergency.

7.1.4.2 The records may be prepared from the notifications required by 7.1.2.1 and 7.1.2.4, together with details of arrival and departure. The records should show the type, quantity and location of the dangerous cargoes in the port area.

The records should include:

- .1 intermediate keeping within the port area for the purpose of changing the mode of transport;
- .2 dangerous cargoes remaining on board in transit (see 7.2.5.1.1); and
- .3 dangerous cargoes to be loaded and discharged in the port (see 7.2.5.1.2/3).

The use of electronic data processing (EDP) has the advantage of having the possibility to provide other authorities like fire brigade, port police or port health or other authorities with the same information through electronic data interchange (EDI).

Provided that the system is constantly updated and functions without disturbance, it can provide instant information to the emergency services about the type and quantities of dangerous cargoes that may be involved in an incident, immediately after the receipt of the notification. It will enable the emergency services to plan manpower and equipment deployment already on their way to the location of the incident and take all necessary precautions right away (e.g. evacuation of people, etc.) especially when the system is connected to a dangerous substances database.

The records can also be maintained manually. In such cases each shed, warehouse or area where dangerous cargoes are kept, should have a designated place (e.g. a red box) where all relevant documents of each dangerous cargo kept within the premises are placed. The location should be chosen in close co-operation with the emergency services and should be well known to them. The person responsible for the shed, warehouse or area will also be responsible for ensuring that only documents of cargoes still within the premises are kept in the designated place.

In addition to the designated places for documents a detailed plan of each shed, warehouse or area should be prepared by the port authority in close co-operation with the emergency services and the berth operator, specifying the exact location within the shed, warehouse or area where dangerous cargoes may be kept. This should specify the class(es) and the maximum quantities that may be kept there. When specifying the class(es) and quantities, due consideration should be given to the construction and the emergency equipment installed. All parties concerned should have a copy of the plans.

7.1.4.3 The **regulatory authority** should require that emergency response information is available where **dangerous cargoes** are handled and that it is accessible at all time.

7.1.4.3 The information is intended to give the berth operator's personnel some guidance on the first aid and first steps to be taken to limit the extent of injuries in case of an incident until the arrival of the emergency services.

The use of electronic data banks can be of great assistance, provided the authorities and operators have direct access to the information in them.

7.1.5 *Fire precautions*

7.1.5.1 The **regulatory authority** should require that areas where certain **dangerous cargoes** are handled are designated as areas where smoking and other sources of ignition are prohibited and where only electrical equipment of a type safe for use in a flammable or explosive atmosphere is used.

7.1.5.1 Attention is drawn to the relevant recommendations published by the International Electrotechnical Commission.

When considering the dangers of fire and explosion that may result from the carriage of dangerous cargoes, it should be appreciated that nominally empty holds and cargo transport units may still contain residues and flammable vapours and may remain hazardous.

7.1.5.2 The carrying out of **hot work** and the use of any equipment or activity which may lead to a fire or explosion hazard should be prohibited in areas where certain **dangerous cargoes** are handled, unless authorized by the **port authority**.

7.1.5.3 In areas or spaces where a flammable or explosive atmosphere may exist or develop, electrical equipment and gas measuring equipment should be of a type safe for use in that environment.

7.1.5.4 Fire precautions applying to individual classes of dangerous goods, and where necessary to individual substances, are recommended in sections 7.3.2, 7.3.5 to 7.3.9 and the Dangerous Goods List of the IMDG Code.

7.1.6 *Environmental precautions*

7.1.6.1 The **regulatory authority** should require that special areas for the holding and repacking of damaged **dangerous cargoes** and wastes contaminated with **dangerous cargoes** are provided wherever necessary.

7.1.6.1 An example of a possible facility is given in the Guidance to 3.4.4.1.

Safe reserve packagings (e.g. oversize drums) as well as absorbing or binding agents, cleaning equipment, equipment for limiting the spread of liquids (e.g. drain covers, oil booms) should be readily available.

Personnel should be regularly trained in the correct and safe use of this equipment.

7.1.6.2 The **port authority** should ensure that damaged packages, unit loads or cargo transport units are immediately and safely moved to the special area mentioned in 7.1.6.1. They should ensure that damaged packages, unit loads or cargo transport units do not leave the special area unless the **dangerous cargoes** have been properly repacked in appropriate salvage packagings and are in all respects fit and safe for further **transport** and **handling**.

7.1.7 *Reporting of incidents (including security incidents)*

7.1.7.1 Any person having charge of **dangerous cargoes** should inform the **port authority** immediately of any incident relevant to such cargo that occurs within the **port area** which may endanger the safety or security of persons, of the ship or of other ships within the port, of the port or of any other property or the environment.

7.1.7.1 To ensure a prompt and effective response, treatment of injured personnel and mitigation of damage, it is essential that a concise and accurate description of the incident is available to the emergency response centre as quickly as possible. If immediately available, the description should include such details as:

- .1 nature and time of the incident;
- .2 precise location;
- .3 type, quantity and condition of cargo involved;
- .4 particular hazards present/marine pollutant;
- .5 details of marks and labels;
- .6 if an IMDG Code classified cargo, Proper Shipping Name, class (when assigned, the division of the goods and the compatibility group letter for class 1), UN number, and packing group;
- .7 name of manufacturer of the cargo;
- .8 extent of damage/pollution;
- .9 sequence of events leading to the incident;
- .10 number and types of injuries/fatalities; and
- .11 emergency response taken.

The information contained in the notification referred to in 7.1.2.1 or kept in the places mentioned in 7.2.5.1 and in the Guidelines to 7.1.4.2 may be of assistance.

7.1.8 *Inspections*

7.1.8.1 The **port authority** should make regular inspections to ensure the implementation of the safety precautions in the **port area** and the safe **transport** and **handling** of **dangerous cargoes**. They should be empowered to:

- .1 inspect documents and certificates concerning the safe **transport, handling, packing, stowage** and **segregation** (when appropriate) of **dangerous cargoes** in the **port area**;
- .2 inspect packages, unit loads and cargo transport units containing **dangerous cargoes** to verify that they are packed, marked, labelled or placarded in accordance with the provisions of the IMDG Code or the appropriate national or international standards applicable for the mode of **transport**; that unnecessary labels, placards and marks have been removed; and that the cargo transport units have been loaded, packed and secured in accordance with the IMO/ILO UN ECE Guidelines for Packing Cargo in Freight Containers or Vehicles;
- .3 inspect freight containers, tank-containers, portable tanks and vehicles containing **dangerous cargoes** to ensure that they have a current safety approval plate in accordance with the International Convention for Safe Containers (CSC), 1972, as amended, when applicable, and are in compliance with the applicable provisions of part 4 and part 6 of the IMDG Code; and
- .4 check, by external examination, the physical condition of each freight container, tank-container, portable tank or vehicle containing **dangerous cargoes** for obvious damage affecting its strength or packaging integrity and for the presence of any sign of leakage of contents.

7.1.8.1 For ships carrying bulk liquids reference should be made to 9.1.1.3.

The regular inspections should be carried out by especially trained personnel of the port authority. When selecting cargoes for inspection, the ones most likely to pose a risk (for example consolidated containers) should be chosen, unless there is a special action programme aimed at specific cargoes.

When carrying out inspections, care should be taken to ensure minimum disturbance of operations. Delays due to inspections should be avoided unless cargoes or cargo transport units are detained for safety or security reasons.

It is recommended that the berth operator and the cargo interests are informed about the intended inspections and that the latter be requested to participate in the inspections. This ensures that no claims of pilferage or damage to cargo can be levied against the inspection team.

It also gives the cargo interests the possibility to see at first hand any deficiency and enables them to report the findings to the originator, who in turn will then be able to check and rectify his procedures to avoid future deficiencies.

7.1.8.2 If any of the inspections or checks mentioned above reveal deficiencies which may affect the safe **transport** or **handling** of **dangerous cargoes**, the **port authority** should immediately advise all parties concerned and request them to rectify all deficiencies prior to any further **transport** or **handling** of the **dangerous cargoes**.

Such inspections may also be carried out by the **berth operator** (see 7.3.12.1).

7.1.9 *Hot work and other repair or maintenance work*

7.1.9.1 The **port authority** should require that it is notified of any person's intention to carry out **hot work** or any other repair or maintenance work, either on board a **ship** or ashore, which may constitute a hazard because of the presence of **dangerous cargoes**, and such work is authorized only when it can be carried out without creating such a hazard.

7.1.9.1 The requirement for an authorization and advance notice of the intended period of hot work enables all emergency response institutions, such as the fire brigade, to be given adequate notice so they can void objections or advise additional precautionary measures.

In special cases, such as hot work in holds of tankers or in or nearby enclosed spaces, a thorough inspection of the area should be conducted by specialists who can determine whether specific safety measures are required.

7.1.9.2 In the case of **hot work** in or near tanks, a gas-free certificate, issued by a chemist or other suitably qualified person approved by the **port authority**, should be pre-requisite. This certificate should be renewed if circumstances alter and at least every 24 hours.

7.1.9.3 **Hot work** should only be carried out by persons approved by the **port authority** and only after being authorized as required in 7.1.5.2. When carrying out such work all necessary precautions should be taken.

7.1.9.4 Minimum safety requirements for carrying out **hot work** are set out in annex 4.

7.1.10 *Entry into confined or enclosed spaces*

7.1.10.1 The **port authority** should require the **master** of a **ship** and the **berth operator** within their respective areas of responsibility to ensure that before any personnel enter any confined or enclosed space, appropriate precautions are taken against the possible presence of dangerous vapours or oxygen depletion.

7.1.11 *Cargoes and cargo transport units under fumigation*

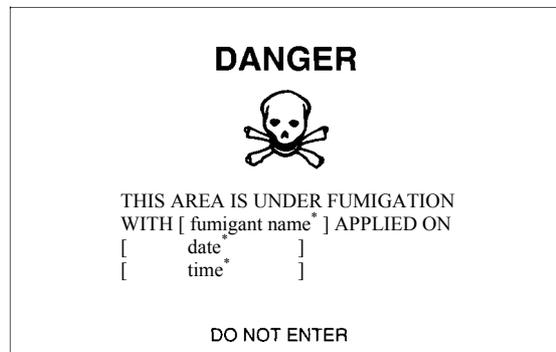
7.1.11.1 The **port authority** should designate specific areas for **ships** or cargo transport units which arrive under fumigation or are to be fumigated. Entry into such areas should be restricted. Appropriate signs (preferably pictograms similar to that shown in figure 5) should be displayed in such areas ashore.

7.1.11.1 For containers under fumigation, reference should be made to the Recommendations on the Safe Use of Pesticides in Ships and IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs) in the Supplement to the IMDG Code. Such containers shall also carry the fumigation warning sign. In many cases additional national legal requirements relating to health should be observed.

Annex 3 of the Recommendations on the Safe Use of Pesticides in Ships shows a warning sign to be used for ships, ships' compartments, freight containers, barges and cargo transport units under fumigation. A similar label is shown in annex 2 of the IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs).

Figure 5 of these Recommendations shows an example of a pictorial warning sign suitable for cargo sheds, other spaces ashore which are fumigated or about to be fumigated or in which cargo transport units under fumigation are kept. The sign should be of an appropriate size to be clearly seen.

Figure 5



7.1.11.2 No unauthorized persons should be allowed access to ships, warehouses, sheds or cargo transport units until all parts of such ships, warehouses, sheds or cargo transport units have been determined gas-free, fumigation warning signs have been removed and a clearance certificate issued by a **responsible person**.

7.1.11.3 Prior to giving permission for access to ships, warehouses, sheds or cargo transport units under fumigation, the port authority should require a clearance certificate from a responsible person that it is safe to do so.

7.1.11.4 No person should fumigate the contents of a freight container, barge or cargo transport unit once it has been loaded on board a ship.

7.1.11.5 A Guide to fumigation operations is set out in annex 7.

7.1.12 *Reception facilities for contaminated bilge water, wastes, ballast and slops*

7.1.12.1 The **regulatory authority** should make the necessary legal requirements to ensure that, where necessary, contaminated bilge water and hazardous wastes are removed from the **ship** prior to leaving the **port area**.

7.1.12.1 Reference should be made to the MARPOL 73/78 Convention and the IMO Comprehensive Manual on Port Reception Facilities for additional information and guidance.

7.1.12.2 The **regulatory authority** should ensure that adequate reception facilities are provided for the reception and disposal of bilge water, wastes, ballast and slops contaminated with **dangerous cargoes**, as appropriate.

7.1.12.3 The **regulatory authority** should ensure that the legal requirements for bunkering (7.1.14) are also applied to reception operations.

7.1.13 *Safe transport and handling*

7.1.13.1 The **regulatory authority** should establish guidelines for measures to be taken to ensure the safe **transport** and **handling** of **dangerous cargoes**, especially the packing, stowage and segregation of incompatible cargoes in compliance with the requirements of part 4 and part 7 of the IMDG Code.

7.1.13.2 Where the handling of dangerous cargoes involves the temporary keeping of the cargoes in the port area for the purpose of changing the mode of transport, requirements similar to those described in chapter 7.1 and 7.2 of the IMDG Code should be adopted for the stowage and segregation in the port area.

7.1.13.2 An example of general guidance on stowage and segregation of dangerous cargoes is shown in figure 6, however, divergence from these guidelines may be appropriate. In a remote area, less stringent regulations may be acceptable. If a port is sited in the vicinity of housing areas, chemical plants or tank farms for example, it may be necessary to impose more stringent stowage and segregation requirements.

In all cases, all interested parties should be informed of the required standard by port by-laws and other publications to avoid any problems in day-to-day operation.

Figure 6 [to be added]

7.1.14 *Bunkering*

7.1.14.1 The **regulatory authority** and **port authority** should include legal requirements for bunkering in port laws or port by-laws which should include the use of a bunkering checklist reflecting local circumstances. Bunkering of **ships** should normally only be allowed at designated installations or by using bunker vessels. Bunkering precautions including a bunkering checklist are set out in annex 5.

7.1.14.2 Where bunkering is carried out simultaneously with the **handling** of **dangerous cargoes**, gas freeing, purging or tank cleaning, the **port authority** may consider the need for special permission to be given and special precautions to be taken to avoid damage to connecting **pipelines** or **flexible pipes** or any other damage. The permission should only be given when all the questions contained in the bunkering checklist have been answered affirmatively.

7.1.14.3 Dangerous cargoes of class 1 (except those in division 1.4S) and bulk cargoes of class 5.1 should not be loaded or unloaded when bunkering is in progress unless permission has been granted by the port authority and under conditions prescribed by the port authority.

7.1.15 *Explosives*

7.1.15.1 **Dangerous cargoes** of class 1 other than division 1.4S should only be permitted to enter the **port area** for direct shipment to or from **ships**, unless permitted by the **regulatory authority**.

7.1.15.2 The **regulatory authority** should establish specific requirements for the **transport** and **handling** of **explosives**, having regard to the hazards involved and the population density in the vicinity of the **port area** and any other relevant circumstances.

7.1.15.3 The **regulatory authority** establishing these specific requirements should highlight the fact that the classification of explosive substances and articles, together with the compatibility group assignment and the Proper Shipping Name, under which the substance or article is to be transported, shall have approval by the competent authority of the country of manufacture prior to **transport** in compliance with the provisions of chapter 2.1 of the IMDG Code.

7.1.15.4 The following precautions during loading and unloading of explosives should be taken into account:

- .1 Artificial lighting
Electric lights, except arc lights, are the only form of artificial lighting permitted during cargo operations involving dangerous goods of class 1 (requirements for electrical equipment and cables are set out in chapter 7.1 of the IMDG Code);
- .2 Radio and radar
During loading or unloading of cargoes of class 1 (except those in division 1.4), no radio or radar transmitters should be used on the ship, in cranes or elsewhere in the vicinity, except for VHF transmitters with a the power output that does not exceed 25 W and no part of their aerial systems pass within the minimum safe distance of 2 metres from the explosives.

Some articles of class 1 contain initiation systems which are sensitive to electromagnetic radiation from external sources such as radio or radar transmitters. Therefore all such equipment should be de-energized by opening the main switches controlling the equipment and tagging them to ensure that the devices are not energized until loading or unloading has ceased.
- .3 Mechanical aids to stowage
All mechanical aids to stowage, whether power-driven or not, should be properly maintained and inspected before use to ensure that they are in a good working condition, comply with an appropriate recognized standard and are serviced in accordance with the manufacturer's maintenance recommendations.
- .4 Defective packages
Any damaged, leaking, affected by moisture or otherwise defective package should not be accepted for shipment. No repair of defective or damaged packages should be permitted on board the ship.
- .5 Protections against weather
Packages containing dangerous goods of class 1 should be prevented from becoming wetted since, the danger may, in some cases, be aggravated by wetting.
- .6 Security
To ensure the security of dangerous goods of class 1, a responsible person should be present at all times whilst the hatches are open. Unauthorized persons should never be allowed access to compartments where goods of class 1 are stowed.

7.1.15.5 Basic items for consideration by the **regulatory authority** are set out at annex 2.

7.1.16 *Radioactive material*

7.1.16.1 Radioactive material, assigned to class 7 of the IMDG Code and described in chapter 2.7 of the Code, should only be permitted to enter the **port area** for direct shipment or delivery unless permitted by the **regulatory authority**.

7.1.16.1 When radioactive material cannot directly go to or from a ship for unforeseen reasons they should only be kept in port areas with the permission of the **regulatory authority**.

7.1.16.2 Packaged radioactive material should not be brought into the **port area** unless they are in conformity with the International Energy Agency's (IAEA) Regulations for the Safe Transport of Radioactive Materials, and the requirements of the IMDG Code or similar national legal requirements.

7.1.16.3 Packages containing radioactive material should be stowed and segregated in compliance with the detailed requirements of sections 7.1.14 and 7.2.9 of the IMDG Code. Guidance on segregation distances required on shore is set out in annex 3.

7.1.16.4 In the event of any accident involving radioactive material or packages of radioactive materials or any theft or loss of any such materials or packages, the **port authority** and relevant national authorities should be notified immediately. If there is any possibility of loss of containment of radioactive material, the area should be isolated and the appropriate contingency plans put into operation.

7.1.17 *Infectious substances*

7.1.17.1 Infectious substances (class 6.2 of the IMDG Code) should only be permitted to enter the **port area** for direct shipment or delivery unless permitted by the **regulatory authority**.

7.1.17.1 When infectious substances cannot directly go to or from a ship for unforeseen reasons they should only be kept in port areas with the permission of the regulatory authorities.

7.1.17.2 The **regulatory authority** should establish specific requirements for the **handling** of infectious substances, including but not limited to:

- .1 areas for **handling**;
- .2 stringent supervision; and
- .3 additional equipment for the containment of such substances.

7.1.18 *Signals*

7.1.18.1 The **regulatory authority** should decide if and when a **ship** engaged in the **transport** or **handling** of certain specified **dangerous cargoes** in the **port area**, should exhibit by day or by night any special visual signals.

7.1.18.2 The specified **dangerous cargoes** referred to in 7.1.18.1 should include:

- .1 **bulk** liquids with a flashpoint below 60°C closed cup;
- .2 **bulk** flammable and/or toxic gases; and
- .3 explosives (other than division 1.4S), liquid desensitized explosives assigned to class 3 and solid desensitized explosives assigned to class 4.1; to the degree specified by the **regulatory authority**.

7.1.18.2 The reason for exhibiting a day or night signal is to advise maritime traffic and personnel within the port area about an increased hazard created by the presence of the dangerous cargoes listed in 7.1.18.2. Vessels exhibiting such signals may be subject to the special requirements and special instructions of the port authority.

7.1.18.3 The following four scenarios should be considered:

- .1 the **ship** is moored or at anchor by day;
- .2 the **ship** is moored or at anchor at night;
- .3 the **ship** is under way by day; or
- .4 the **ship** is under way at night.

7.1.18.3 When practicable, a dedicated anchorage or berth should be provided for vessels carrying dangerous cargoes listed in 7.1.18.2 requiring the exhibition of such signals. Special restrictions may be applied to:

- .1 access to the vessels;
- .2 radio and radar transmissions;
- .3 transiting the anchorage; and
- .4 passing of ships moored or anchored.

Port authorities should give consideration to the separation of ships under way exhibiting the signals required by 7.1.18.1. The port authority may also impose specific separation distances and regulate the movement of vessels to avoid the passing of such ships in narrow channels or at bends.

7.1.18.4 Where signals are to be exhibited, they should be:

- .1 by day flag “B” of the International Code of Signals; and
- .2 by night an all-round fixed red light.

7.1.19 *Communications*

7.1.19.1 The **port authority** should ensure that every **ship** engaged in the **transport** of **dangerous cargoes** can maintain effective communications with the **port authority**. When appropriate and practicable such communications should be carried out by VHF in accordance with the provisions of SOLAS regulation IV/7 and complying with the performance standards set out in IMO Assembly resolution A.609(15) and the requirements of the **regulatory authority**.

7.1.19.1 Effective communications are a prerequisite for the safety of the ship and its crew as well as for the port, its employees, installations and the environment. They are necessary for the exchange of the important information, such as the safety of navigation, waiting and berthing orders, and notification or reporting of incidents.

For ships entering and leaving the port, reporting locations should be established. Furthermore, ships should be requested to maintain constant watch on pre-assigned channels while within the port area. The reporting points and listening channels should be published in the port by-laws, port or terminal information books and hydrographical publications, for example the World Vessel Traffic Service Guide.

It may also be necessary to require ships carrying certain dangerous cargoes to take a suitable telephone on board while alongside (see Guidance to 7.2.1.2.1).

7.1.20 *Pilotage and tug assistance*

7.1.20.1 The **port authority** should decide if and when a **ship** engaged in the **transport** of **dangerous cargoes** should take a pilot on board and/or tug assistance while entering, leaving or moving in the **port area**.

7.1.20.2 In making such decision consideration should be given to:

- .1 the type of **ship** and its manoeuvrability;
- .2 the traffic situation;
- .3 the layout of the **port area**;
- .4 the tidal and weather situation; and
- .5 the categories (classes) and quantities of **dangerous cargoes** carried.

7.1.21 *Unmanned barges*

7.1.21.1 The **regulatory authority** should establish specific rules for unmanned barges carrying **dangerous cargoes**, including but not limited to:

- .1 handling of such barges;
- .2 waiting areas;
- .3 watchkeeping; and
- .4 fire precautions and fire-fighting arrangements.

7.1.21.1 Unmanned barges carrying dangerous cargoes should be moored in designated areas where adequate access to emergency facilities such as fire-fighting monitors, fire-fighting boats or tug assistance is available. A shore-based watchman should safeguard the barges. He should be provided with adequate means of communication.

7.1.22 *Exemptions*

7.1.22.1 The **regulatory authority** should take account of the varying degrees of hazards presented by **dangerous cargoes** and provide for exemptions from the provisions of these Recommendations, as appropriate. Exemptions should take account of nature, class and amount of the **dangerous cargoes** involved and the specific circumstances of the **port area**. In all cases it should be ensured that the exemption will not give rise to a significant risk to persons.

7.1.23 *Knowledge of rules and regulations*

7.1.23.1 The **port authority** should appoint at least one **responsible person** who has adequate knowledge of the current national and international legal requirements concerning the **transport** and **handling of dangerous cargoes**.

7.1.24 *References*

7.1.24.1 The **port authority** and terminal operators should ensure that all relevant national and international legal requirements, guidelines, recommendations or other documents governing, referring or relating to:

- .1 the **transport of dangerous cargoes**;
- .2 ships carrying such cargoes; and
- .3 installations handling, transporting, producing or otherwise using such cargoes;

which have to be consulted within the **port area**, are readily available at the **port authority** for reference and are updated as appropriate.

7.2 **Ships carrying dangerous cargoes**

7.2.1 *Entering the port area*

7.2.1.1 Prior to entering a **port area**, the **master** of a **ship** having **dangerous cargoes** on board should:

- .1 familiarize himself and the crew, as appropriate, with the legal requirements relating to *ships* carrying or handling *dangerous cargoes* in the *port area*;
- .2 check the condition of the *ship*, its machinery, equipment and appliances, as appropriate;
- .3 check wherever possible, the *dangerous cargoes* and their containments for any damage or leakage; and
- .4 inform the *port authority* of any relevant deficiency of the *ship*, its machinery, equipment or appliances or any damage or leakage of *dangerous cargoes* or failure of containment system which may endanger life, property or the environment.

7.2.1.1 Shipowners should ensure that the master is provided with all relevant information in the working language of the ship (see also 7.1.1.1).

7.2.1.2 Unless exempted by the *port authority*, the **master** of a *ship* should ensure that upon entering the *port area*:

- .1 proper communications are maintained with the *port authority*; and
- .2 when required, the signals referred to in 7.1.18.1 are displayed.

7.2.1.2 Effective communications are a prerequisite for the safety of the ship and its crew as well as for the port, its employees, installations and the environment. They are necessary for the exchange of the important information, such as the safety of navigation, waiting and berthing orders, and notification or reporting of incidents.

For the safety of the ship and its crew, the master of a ship carrying dangerous cargoes may need to take a suitable telephone on board while alongside, even when it is not specifically required by port regulations.

7.2.2 *Watchkeeping*

7.2.2.1 The **master** of a *ship* should ensure that a safe deck watch and a safe engine watch are maintained at all times. The **master** should ensure that at all times there are sufficient crew available to operate the appropriate shipboard appliances in the case of an emergency.

7.2.2.2 The **master** of a *ship* should, in organizing safe watchkeeping arrangements, take full account of the nature, quantity, *packing* and *stowage* of the *dangerous cargoes* and of any special conditions required.

7.2.2.3 In organizing the watches, full account should also be taken of the requirements of sections A/VIII - 4.1 and A/VIII - 4.5 of the STCW Code.

7.2.3 *Berthing*

7.2.3.1 The **master** of a *ship* should ensure that the moorings used in securing the ship are of an appropriate type, and of sufficient strength and number for the size of the ship and the local conditions.

7.2.3.2 Unless exempted by the **port authority**, the **master** of a **ship** which has to display the signals referred to in 7.1.18.1 should, at all times, while it is berthed in the **port area**:

- .1 provide towing wires (otherwise referred to in some places as “fire wires”) of adequate size at the bow and the stern ready for immediate use. The towing eye should be passed outboard and kept at about the water level by means of a rope stopper which will break under stress and release an adequate length of towing wire, stowed on deck for immediate use. The end of the wire should be properly secured to mooring bits; and
- .2 ensure that the mooring arrangements are such that the **ship** can be released quickly in an emergency.

7.2.3.3 The **master** of a **ship** should ensure that machinery necessary for the safety of the ship or the **handling** of cargo or ballast is properly maintained, attended and always ready for use and that funnel uptakes and boiler tubes are not blown without the permission of the **port authority**.

7.2.3.4 The **master** of a **ship** should ensure that adequate safe means of access are provided between the **ship** and the shore.

7.2.4 *Emergency procedures*

7.2.4.1 The **master** of a **ship** should, as appropriate, make himself, his officers and his crew familiar with the emergency response procedures established in the **port area** and the facilities available at the **berth**.

7.2.4.2 The **master** of a **ship** should consider the necessity for arrangements for a safe and quick emergency escape, taking into account the nature of the **dangerous cargoes** and any special conditions on board.

7.2.4.3 The **master** of a **ship** should establish emergency response procedures on board the **ship** to deal with incidents involving **dangerous cargoes** carried or to be carried on board and should ensure that the officers and crew are properly trained in carrying out such procedures.

7.2.5 *Emergency information*

7.2.5.1 The **master** of a **ship** carrying **dangerous cargoes** should ensure that in addition to the information to be provided in accordance with SOLAS regulation II-2/15.2.4.2, the following information is kept at the same place:

- .1 a list of all **dangerous cargoes** on board in transit;
- .2 a list of all **dangerous cargoes** to be unloaded in the **port area**; and
- .3 a list of all **dangerous cargoes** to be loaded in the **port area** and the intended **stowage** and loading arrangement on board the **ship**.

7.2.5.2 The **master** of a **ship** should ensure that the officer on duty has the necessary information on measures to be taken to deal with incidents involving **dangerous cargoes** and that it is available for use in emergencies.

7.2.5.3 The **master** should ensure that, in addition to the emergency response procedures required for dangerous cargoes, any appropriate security provisions are readily accessible. Such information includes for example the Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS Guide) for use in conjunction with the transport document, the Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG) (included in the IMDG Code Supplement) and safety data sheets.

7.2.5.4 The **master** of a **ship** should ensure that the duty officer is always aware of the crew members or passengers and/or visitors on board or on shore leave.

7.2.5.4 This can be achieved by ensuring all crew members/passengers/visitors, etc. report to the duty officers when they leave the ship. A record should be kept by the duty officer.

The purpose of this requirement is the need for the emergency services to know, in case of an incident, if all persons have left the ship or if any is still on board, e.g. trapped inside the accommodation.

7.2.6 *Fire Precautions*

7.2.6.1 The **master** of a **ship** should ensure that:

- .1 places where smoking is prohibited are designated; and
- .2 notices in a pictogram form prohibiting smoking are clearly visible at all locations and at a safe distance from places where smoking would constitute a hazard.

7.2.6.1 When considering the dangers of fire and explosion that may result from the carriage of dangerous cargoes, it should be appreciated that nominally empty holds and cargo transport units may still contain residues and flammable vapours and may remain hazardous.

7.2.6.2 The **master** of a **ship** should ensure that tools or equipment that are used in an area or space where a flammable or explosive atmosphere may exist or may develop, are used in such a manner that no fire or explosion can be caused.

7.2.6.3 The **master** of a **ship** should ensure that, in areas or spaces in which a flammable atmosphere may occur, only portable electrical equipment, including any used for sampling or ullaging, of a type safe for use in a flammable atmosphere is used.

7.2.6.3 Attention is drawn to the relevant recommendations published by the International Electrotechnical Commission.

7.2.6.4 The **master** of a **ship** should ensure that electrical equipment on a wandering electrical lead is not used in areas or spaces where a flammable atmosphere may occur.

7.2.6.5 The **master** of a **ship** should ensure that adequate and properly tested fire-fighting facilities, appropriate to the dangerous cargoes on board, are readily available and that the crew is trained and practised in the use of the tested fire-fighting equipment.

7.2.7 *Environmental precautions*

7.2.7.1 The **master** of a **ship** carrying **dangerous cargoes** on board should ensure that all necessary measures are taken to avoid accidental release of such cargoes into the environment.

7.2.7.1 Masters should ensure that all scuppers are well plugged and that absorbing and neutralizing materials are readily available and used properly, taking into account the safety of the crew and of the ship. Care should be taken, when cleaning spilled areas that only means suitable for the type of cargo spilled are used.

To avoid accidental release of dangerous cargoes into the environment, it is of utmost importance that only well qualified and trained personnel, with adequate knowledge of the risks emanating from the dangerous cargoes involved, are used in dealing with dangerous cargoes accidents, so as to ensure correct and safe handling procedures. Personnel should be trained regularly in the correct and safe use of equipment.

7.2.8 *Reporting of incidents*

7.2.8.1 The **master** of a **ship**, within his area of responsibility, should ensure that, if an incident occurs during the handling of dangerous cargoes which may endanger the safety or security of persons, of the ship or of other ships within the port, of the port or of any other property or the environment, the person having charge of the **handling** immediately causes the operation to be stopped, if it is safe to do so, and prevents it being resumed until adequate safety measures have been taken. The **master** of a **ship** should impose upon each member of his crew the obligation of reporting the incident, to the person having charge of the operation and to the appropriate authorities, of any such incident occurring during the **handling of dangerous cargoes**.

7.2.8.1 To ensure a prompt and effective response, treatment of injured personnel and mitigation of damage, it is essential that a concise and accurate description of the incident is available to the emergency response centre as quickly as possible. This description should include such details as shown in the Guidance to 7.1.7.1.

The information contained in the notification referred to in 7.1.2.1 of the Recommendations or kept in the places mentioned in 7.2.5.1 and in the Guidance to 7.1.4.2 may be of assistance.

7.2.8.2 The **master** of a **ship** should ensure that any incident which may affect the safety or security of the **port area**, the population or the environment, is immediately reported to the **port authority**. These may include incidents involving the ship, its crew, machinery, equipment or appliances, or to the **dangerous cargoes** or their containments which occur while in the **port area**, or after notification in accordance with 7.1.2 has been given.

7.2.8.3 The **master** of a **ship** should ensure that any damaged or leaking package, unit load or cargo transport unit containing **dangerous cargoes** on board the **ship** is reported immediately to the **berth operator** and the **port authority** and that suitable remedial action is taken in accordance with 7.1.6.2.

7.2.9 *Inspections*

7.2.9.1 The **master** of a **ship** should ensure that, where practicable, regular inspections are carried out by the crew on the condition of the **dangerous cargoes** or their containments while on board the **ship** in the **port area**.

7.2.9.2 The **master** of a **ship** should ensure that all necessary support is given to the **port authority** when an inspection of **dangerous cargoes** and/or their containments on board the **ship** is carried out by them.

7.2.10 *Hot work and other repair or maintenance work*

7.2.10.1 The **master** of a **ship**, after having consulted the **berth operator**, where appropriate, should ensure that no repair or maintenance work resulting in the immobilization of the **ship**, its cargo handling equipment or the non-functioning of its safety appliances is carried out without prior permission of the **port authority**.

7.2.10.2 The **master** of a **ship** and persons carrying out the repair or maintenance work, after having consulting the **berth operator**, should ensure that they are in possession of a permit to proceed issued by the **port authority** before any such work involving **hot work** and any other repair or maintenance work which may lead to a hazard because of the presence of **dangerous cargoes**, is carried out on a **ship**.

7.2.10.2 The requirement for a permit and advance notice of the intended period of hot work enables all emergency response institutions, such as the fire brigade, to be given adequate notice so they can voice objections and advise additional precautionary measures.

In special cases, such as hot work in holds of tankers or in or nearby enclosed spaces, a thorough inspection of the area should be conducted by specialists who can determine whether specific safety measures are required.

7.2.10.3 Minimum safety requirements for carrying out **hot work** are set out in annex 4.

7.2.11 *Entry into confined or enclosed spaces*

7.2.11.1 The **master** of a **ship** should ensure that no person enters any enclosed space, such as a cargo space, cargo tank, void space around such tank, cargo handling space, ballast tank or other confined or enclosed space which has contained or may contain dangerous vapours or oxygen depleting cargoes, unless the space is free of dangerous vapours, is not deficient in oxygen, and that entry has been authorized by a **responsible person**. The **responsible person** should be trained in the use of the relevant equipment to test the space and sufficiently knowledgeable to interpret correctly the results obtained. The **responsible person** should record the measurements taken.

7.2.11.2 Where it is necessary for operational purposes to enter a space which cannot be freed of dangerous vapours within a reasonable time or it is unlikely that the space will remain free of dangerous vapours, then entry should only be made by personnel wearing self-contained breathing apparatus, and any other necessary protective equipment and clothing. The entire operation should be carried out under the direct supervision of the **responsible person** who should be provided with self-contained breathing apparatus, protective equipment and rescue harness. The breathing apparatus, protective and rescue equipment should not be of a type that could introduce a source of ignition into the space.

7.2.11.3 The **master** of a **ship** should ensure that entry into a space mentioned in 7.2.11.1 follows the carefully established procedures contained in international codes and guides.

7.2.12 *Fumigation of ships, cargo spaces or cargo transport units*

7.2.12.1 The **master** of a **ship** under fumigation or which has compartments under fumigation or fumigated cargo transport units on board should ensure, that appropriate warning signs (see 7.1.11.1) are displayed at a clearly visible position at the gangway or entrance to the compartment or cargo transport unit. The signs should state the hazard to anyone entering the **ship**, compartment or cargo transport unit.

7.1.12.1 Reference should be made to the Recommendations on the Safe Use of Pesticides in Ships and IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs) in the Supplement to the IMDG Code. In many cases additional national legal requirements relating to health should be observed.

7.2.12.2 The **master** of a **ship** should ensure that no person enters the **ship**, compartment or cargo transport unit which has been fumigated unless it has been thoroughly ventilated, determined gas-free, fumigation warning signs removed and a **responsible person** has determined that it is safe to enter and issued a clearance certificate. Where pertinent, all confined space entry procedures shall be complied with.

7.2.12.4 A guide to fumigation operations is set out in annex 7.

7.2.13 *Contaminated bilge water, wastes, ballast or slops*

7.2.13.1 The **master** of a **ship** should ensure that bilge water, wastes, ballast or slops contaminated with **dangerous cargoes** are collected and kept on board whilst in the **port area** either in the cargo space, or other designated spaces, or watertight receptacles to avoid accidental spillage.

7.2.13.2 The **master** of a **ship** having bilge water, wastes, ballast or slops contaminated with **dangerous cargoes** on board should ensure that such contaminated bilge water, wastes, ballast or slops are removed from the **ship** in accordance with the requirements of the **regulatory authority** prior to the **ship** leaving the **port area**.

7.2.14 *Alcohol and drug abuse*

7.2.14.1 The **master** of a **ship**, within his area of responsibility, should ensure that no person under the influence of alcohol or drugs is allowed to participate in any operation involving the **handling** of **dangerous cargoes**. Any such persons should be kept clear of the immediate areas where **dangerous cargoes** are being transported or handled.

7.2.15 *Weather conditions*

7.2.15.1 The **master** of a **ship**, within his area of responsibility, should not permit **dangerous cargoes** to be handled in weather conditions which may seriously increase the risk.

7.2.15.1 As an example, no explosives or liquid bulk dangerous cargoes should be handled during thunderstorms nor should unprotected cargoes, which react dangerously when in contact with water, be handled during rain.

7.2.16 *Lighting*

7.2.16.1 The **master** of a **ship**, within his area of responsibility, should ensure that the areas where **dangerous cargoes** are handled or where preparations are being made for the **handling** of **dangerous cargoes** and access to such areas are adequately illuminated.

7.2.17 *Handling equipment*

7.2.17.1 The **master** of a **ship**, within his area of responsibility, should ensure that all ship's equipment, including cargo-securing equipment, used in the **handling** of **dangerous cargoes** is suitable for such use and used only by **skilled persons**.

7.2.17.2 The **master** of a **ship**, within his area of responsibility, should ensure that all ship's cargo handling equipment is of an approved type, properly maintained, and tested in accordance with national and international legal requirements.

7.2.18 *Protective equipment*

7.2.18.1 The **master** of a **ship**, within his area of responsibility, should, when unnecessary, provide a sufficient quantity of appropriate protective equipment and clothing for the **ship's** personnel involved in the **handling** of **dangerous cargoes**.

7.2.18.2 The protective equipment and clothing should provide adequate protection against the hazards specific to the **dangerous cargoes** handled and should, where appropriate, be of an approved type or made in conformity with an approved standard.

7.2.19 *Security procedures*

7.2.19.1 The master of the ship should familiarize himself with the security requirements of the port.

7.3 **Shore installations**

7.3.1 *Berthing*

7.3.1.1 The **berth operator** should ensure that:

- .1 adequate and safe mooring facilities are provided; and
- .2 adequate safe access is provided between the **ship** and the shore.

7.3.2 *Supervision*

7.3.2.1 The **berth operator** should ensure that areas where packages or cargo transport units are kept are properly supervised and packages or cargo transport units are regularly inspected for leakage or damage. Any leaking package or cargo transport units should only be handled under the supervision of a **responsible person**.

7.3.2.2 The **berth operator** should ensure that no person, without reasonable cause, opens or otherwise interferes with any freight container, tank-container, portable tank or vehicle containing **dangerous cargoes**. When a freight container, tank-container, portable tank or

vehicle is opened by a person authorized to examine its contents, the **berth operator** should ensure that the person concerned is aware of the possible hazards arising from the presence of the **dangerous cargoes**.

7.3.3 *Identification, packing, marking, labelling or placarding and certification*

7.3.3.1 The **berth operator** should ensure that **dangerous cargoes** entering his premises have been duly certified or declared by the **cargo interests** as being properly identified, packed, marked, labelled or placarded so as to comply with the appropriate provisions of the IMDG Code or, alternatively, with appropriate national or international legal requirements applicable to the relevant mode of **transport**.

7.3.4 *Safe handling and segregation*

7.3.4.1 A **berth operator** transporting or handling **dangerous cargoes** should appoint at least one **responsible person** who has adequate knowledge of the national or international legal requirements concerning the **transport** and **handling** of **dangerous cargoes**, including the segregation of incompatible cargoes.

7.3.5 *Emergency procedures*

7.3.5.1 The **berth operator** should ensure that appropriate emergency arrangements are made and brought to the attention of all concerned. These arrangements should include:

- .1 the provision of appropriate emergency alarm operating points;
- .2 procedures for notification of an incident or emergency to the appropriate emergency services within and outside the **port area**;
- .3 procedures for notification of an incident or emergency to the **port authority** and **port area** users both on land and water;
- .4 the provision of emergency equipment appropriate to the hazards of the **dangerous cargoes** to be handled;
- .5 co-ordinated arrangements for the release of a **ship** in the case of an emergency; and
- .6 arrangements to ensure adequate access/egress at all times.

7.3.5.2 The **berth operator** should consider the necessity of arrangements for a safe and quick emergency escape, taking into account the nature of the **dangerous cargoes** and any special conditions.

7.3.6 *Emergency information*

7.3.6.1 The **berth operator** should ensure that a list of all **dangerous cargoes** in the warehouses, sheds or other areas, including the quantities, and if appropriate Proper Shipping Names, correct technical names (if applicable), UN numbers, classes or, when assigned, the division of the goods, including for class 1, the compatibility group letter, subsidiary hazard classes (if

assigned), packing group (where assigned) and exact location is held readily available for the emergency services.

7.3.6.1 Notifications in accordance with 7.1.2.1 could be used for preparing the comprehensive record of all dangerous cargoes present in the port area at any given time (see also Guidance to 7.1.4.2).

7.3.6.2 The **berth operator** should ensure that the **responsible person** for a warehouse, shed or area, where **dangerous cargoes** are handled, is as far as possible aware of the status of occupancy with the **dangerous cargoes** in his area and this is available in case of emergencies.

7.3.6.3 The **berth operator** should ensure that the person responsible for cargo handling operations involving **dangerous cargoes** has the necessary information on measures to be taken to deal with incidents involving **dangerous cargoes** and that it is available for use in emergencies.

7.3.6.4 To ensure the availability of the information referred to in 7.3.6.1 to 7.3.6.3, electronic or other automatic data processing or transmission techniques should be used.

7.3.6.4 Dangerous substances data sheets are normally available from manufacturers of chemicals. Electronic databases with emergency response information are also available and should be used when direct access to the data can be ensured.

7.3.6.5 The **berth operator** should ensure that the port or **berth** emergency response procedures and port or **berth** emergency telephone numbers are placed at prominent locations within or at warehouses, sheds or areas where **dangerous cargoes** are transported or handled.

7.3.6.6 The **berth operator** should ensure that fire-fighting and pollution-combating equipment and installations are clearly marked as such and notices drawing attention to them are clearly visible at all appropriate locations.

7.3.6.7 The **berth operator** should inform the **master** of any **ship** carrying or handling **dangerous cargoes** of the emergency procedures in force and the services available at the **berth**.

7.3.7 *Fire precautions*

7.3.7.1 The **berth operator** should ensure that:

- .1 all parts of the **berth** and any **ship** moored to it are at all times accessible to emergency services;
- .2 audible of visual alarms for emergency use are installed in the area or other means of rapid communication with emergency services are available;
- .3 the **berth** is fitted with an international ship/shore connection that complies with the requirements of regulation II/2/10.2.1.7 to supply water to the ship's fire-fighting equipment for ships of 500 gross tonnage and upwards regardless of the year of build;
- .4 all areas used for the **handling** of **dangerous cargoes** are kept clean and tidy;

- .5 before **dangerous cargoes** are handled, the **master** of a **ship** is informed of the location of the nearest means of summoning emergency services; and
- .6 the lighting and other electrical equipment in areas where **dangerous cargoes** are present on the **berth** is of a type safe for use in a flammable or explosive atmosphere.

7.3.7.1.6 Attention is drawn to the relevant recommendations published by the International Electrotechnical Commission.

7.3.7.2 The **berth operator** should ensure that:

- .1 places where smoking is prohibited are designated; and
- .2 notices in a pictogram form prohibiting smoking are clearly visible at all locations and at a safe distance from places where smoking would constitute a hazard.

7.3.7.3 The **berth operator** should ensure that equipment used in an area or space where a flammable or explosive atmosphere may exist or develop, is of a type safe for use in a flammable or explosive atmosphere and used in such a manner that no fire or explosion can be caused.

7.3.7.3 When considering the dangers of fire and explosion that may result from the carriage of dangerous cargoes, it should be appreciated that nominally empty holds and cargo transport units may still contain residues and flammable or explosive vapours and may remain hazardous.

7.3.7.4 The **berth operator** should ensure that only portable electrical equipment of a type safe for use in a flammable atmosphere is used in an area or space in which a flammable atmosphere may occur.

7.3.7.4 Attention is drawn to the relevant recommendations published by the International Electrotechnical Commission.

7.3.7.5 The **berth operator** should ensure that electrical equipment on a wandering lead is not used in areas or spaces where a flammable atmosphere may occur.

7.3.8 *Fire fighting*

7.3.8.1 The **berth operator** should ensure that adequate and properly tested fire-fighting equipment and facilities are provided and readily available in accordance with the requirements of the **regulatory authority** in areas where **dangerous cargoes** are transported or handled.

7.3.8.2 The **berth operator** should ensure that personnel involved in the **handling** or **transport** of **dangerous cargoes** are trained and practised in the use of fire-fighting equipment in accordance with the requirements of the **regulatory authority**.

7.3.9 *Environmental precautions*

7.3.9.1 The **berth operator** should ensure that **dangerous cargoes** are only handled in areas which comply with the requirements of the **regulatory authority**.

7.3.9.2 The **berth operator** should ensure that any damaged package, unit load or cargo transport unit containing **dangerous cargoes** is dealt with in accordance with the requirements of the **regulatory authority** and is not transported or handled unless the **dangerous cargoes** have been properly repacked and are in all respects fit and safe for further **transport** and **handling**.

7.3.9.3 The **berth operator** should ensure that, if necessary, any damaged package, unit load or cargo transport unit containing **dangerous cargoes** is removed to a designated area for such cargoes.

7.3.9.3 An example of a facility is given in the Guidance to 3.4.4.1.

To avoid accidental release of dangerous cargoes into the environment, it is of utmost importance that only well qualified and trained personnel, with adequate knowledge of the risks emanating from the dangerous cargoes involved, deal with dangerous cargoes accidents, so as to ensure correct and safe handling procedures.

Safe reserve packagings (e.g. oversize drums) as well as absorbing or binding agents, cleaning equipment and equipment limiting the spread of liquids (e.g. drain covers, oil booms) should be readily available.

Personnel should be trained regularly in the correct and safe use of equipment.

7.3.10 *Pollution combating*

7.3.10.1 The **berth operator** should ensure that adequate equipment is available to minimize the damage in case of a spillage of **dangerous cargoes**.

7.3.10.1 Equipment should include oil booms, drain covers, absorbing and neutralizing agents, as well as cleaning materials and portable collection basins.

7.3.10.2 The **berth operator** should ensure that personnel involved in the **transport** and **handling** of **dangerous cargoes** are trained and practised in the use of pollution combating equipment and facilities in accordance with the requirements of the **regulatory authority**.

7.3.11 *Reporting of incidents*

7.3.11.1 The **berth operator**, within his area of responsibility, should ensure that, if an incident occurs during the **handling** of **dangerous cargoes** which may endanger the safety or security of persons, of ships within the port, of the port or of any other property, or the environment, the person having charge of the **handling** immediately causes the operation to be stopped, if it is safe to do so, and prevents it being resumed until appropriate safety measures have been taken. The **berth operator** should require every member of his personnel to report to the person having charge of the operation, any such incident they see to occur during the **handling** of **dangerous cargoes**.

7.3.11.1 To ensure a prompt and effective response, treatment of injured personnel and mitigation of damage, it is essential that a concise and accurate description of the incident is available to the emergency response centre as quickly as possible. This description should include such details as shown in the Guidance to 7.1.7.1.

The information contained in the notification referred to in 7.1.2.1 or kept in the places mentioned in 7.3.6 and in the Guidance to 7.1.4.2 may be of assistance.

7.3.11.2 The **berth operator** should ensure that any incident involving **dangerous cargoes** which may endanger the safety or security of persons, or of ships within the port or of the port or of any other property or the environment is reported immediately to the **port authority**.

7.3.11.3 The **berth operator** should ensure that any damaged or leaking package, unit load or cargo transport unit containing **dangerous cargoes** is reported immediately to the **port authority** and that suitable remedial action is taken in accordance with 6.1.6.2.

7.3.12 *Inspections*

7.3.12.1 The **berth operator**, where appropriate, should:

- .1 check documents and certificates concerning the safe **transport, handling, packing** and **stowage** of **dangerous cargoes** in the **port area** at the time of receipt;
- .2 check, where practicable, packages, unit loads and cargo transport units containing **dangerous cargoes** to verify that they are marked, labelled or placarded in accordance with the provisions of the IMDG Code and the appropriate national or international legal requirements applicable for the mode of transport and that unnecessary labels, placards and marks have been removed and that the cargo transport units have been loaded, packed and secured in accordance with the IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs);
- .3 check freight containers, tank-containers, portable tanks and vehicles containing **dangerous cargoes** to ensure that they have a current safety approval plate in accordance with the International Convention for Safe Containers (CSC), 1972, as amended, when applicable, or have been approved in accordance with the relevant provisions of the IMDG Code or by a certification or approval system of an appropriate authority; and
- .4 check, by external examination, the physical condition of each freight containers, tank-containers, portable tanks or vehicles containing **dangerous cargoes** for obvious damage affecting its strength or packaging integrity and for the presence of any sign of leakage of contents.

7.3.12.2 The **berth operator** should make such checks regularly to ensure implementation of the safety precautions in the **port area** and the safety of **transport**.

7.3.12.3 If any of the checks mentioned above reveal deficiencies which may affect the safe **transport** or **handling** of **dangerous cargoes** the **berth operator** should immediately advise all parties concerned and request them to rectify all deficiencies prior to any further **transport** or **handling** of **dangerous cargoes**.

7.3.12.4 The **berth operator** should ensure that every necessary support will be given to the **port authority** or any other person or institution entitled to carry out inspections when they intend to carry out an inspection of **dangerous cargoes**.

7.3.13 *Hot work and other repair or maintenance work*

7.3.13.1 The **berth operator** should ensure that no repair or maintenance work resulting in non-availability of the emergency/fire equipment required by these Recommendations is carried out at the **berth** without prior permission of the **port authority**.

7.3.13.2 The **berth operator** and the company carrying out the repairs, after having consulted the **master** of a **ship**, where appropriate, should ensure that they are in possession of a permit to proceed issued by the **port authority** before any repair or maintenance work involving **hot work**, or any other such work which may lead to a hazard because of the presence of **dangerous cargoes**, is carried out.

7.3.13.2 The requirement for a permit and advance notice of the intended period of hot work or non-availability of equipment enables all emergency response institutions, such as the fire brigade, to be given adequate notice so they can voice objections and advise additional precautionary measures.

In special cases, such as hot work in holds of tankers or in or nearby enclosed spaces, a thorough inspection of the area should be conducted by specialists who can determine whether specific safety measures are required.

7.3.13.3 Minimum safety requirements for carrying out **hot work** are set out in annex 4.

7.3.14 *Entry into confined or enclosed spaces*

7.3.14.1 The **berth operator** should ensure that no person enters any enclosed space such as for example a cargo space, cargo tank, void space around such tank, cargo handling space, or other confined or enclosed space which has contained or may contain dangerous vapour or oxygen depleting cargoes, unless the space is free of dangerous vapour and not deficient in oxygen, and is certified to that effect by a **responsible person** trained in the use of the relevant equipment and sufficiently knowledgeable to interpret correctly the results obtained. The **responsible person** should record the measurements taken.

7.3.14.2 Where it is necessary for operational purposes to enter a space which cannot be freed of dangerous vapour within a reasonable time and which, therefore, can not be certified as provided in 7.3.14.1, or it is unlikely that the space will remain free of dangerous vapour, then entry should only be made by persons wearing a self-contained breathing apparatus and any other necessary protective equipment and clothing. The entire operation should be carried out under the direct supervision of a **responsible person** who should be provided with self-contained breathing apparatus, protective equipment and rescue harness. The breathing apparatus, protective and rescue equipment should not be of a type that could introduce a source of ignition into the space.

7.3.14.3 The **berth operator** should ensure that entry into a space mentioned in 7.3.14.1 follows carefully established procedures which are contained in international codes and guides.

7.3.15 *Fumigation of warehouses, sheds or cargo transport units*

7.3.15.1 The **berth operator** should ensure that fumigation of warehouses, sheds or cargo transport units is carried out in accordance with the requirements of the **regulatory authority**. Reference should be made to the Recommendations on the Safe Use of Pesticides in Ships in the Supplement to the IMDG Code.

7.3.15.2 The **berth operator** should ensure that fumigation of cargo transport units is carried out only in areas designated by the **port authority** for this purpose.

7.3.15.3 The **berth operator** should ensure that fumigated warehouses, sheds or cargo transport units are conspicuously marked, informing anyone approaching them of the hazard involved.

7.3.15.3 Annex 3 of the Recommendations on the Safe Use of Pesticides in Ships shows a warning sign to be used for ships, ships' compartments, freight containers, barges and cargo transport units under fumigation. A similar label is shown in annex 2 of the IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs).

Figure 5 of these Recommendations shows an example of a pictorial warning sign suitable for cargo sheds, other spaces ashore which are fumigated or about to be fumigated or in which cargo transport units under fumigation are kept.

7.3.15.4 The **berth operator** should ensure that no person enters a warehouse, shed or cargo transport unit unless it has been properly ventilated, determined gas-free, fumigation warning signs have been removed and a **responsible person** has determined that it is safe to enter and issued a clearance certificate.

7.3.15.5 A Guide to fumigation operations is set out in annex 7.

7.3.16 *Contaminated wastes*

7.3.16.1 The **berth operator** should ensure that wastes contaminated with **dangerous cargoes** are immediately collected and disposed of in accordance with the requirements of the **regulatory authority**.

7.3.17 *Alcohol and drug abuse*

7.3.17.1 The **berth operator**, within his area of responsibility, should ensure that no person under the influence of alcohol or drugs is allowed to participate in any operation involving the **handling** of **dangerous cargoes**. Any such persons should always be kept clear of the immediate areas where **dangerous cargoes** are being transported or handled.

7.3.18 *Weather conditions*

7.3.18.1 The **berth operator**, within his area of responsibility, should not permit **dangerous cargoes** to be handled in weather conditions which may seriously increase the risk.

7.3.18.1 As an example, no explosives or liquid bulk dangerous cargoes should be handled during thunderstorms nor should unprotected cargoes which react dangerously, when in contact with water, be handled during rain.

7.3.19 *Lighting*

7.3.19.1 The **berth operator**, within his area of responsibility, should ensure that areas where **dangerous cargoes** are handled or where preparations are being made to handle **dangerous cargoes** and access to such areas are adequately illuminated.

7.3.20 *Handling equipment*

7.3.20.1 The **berth operator**, within his area of responsibility, should ensure that all equipment used in the **handling** of **dangerous cargoes** is suitable for such use and used only by **skilled persons**.

7.3.20.2 The **berth operator**, within his area of responsibility, should ensure that all cargo handling equipment is of an approved type where appropriate, properly maintained and tested in accordance with national and international legal requirements.

7.3.21 *Protective equipment*

7.3.21.1 The **berth operator**, within his area of responsibility, should ensure, when necessary, that a sufficient quantity of appropriate protective equipment is available to all personnel involved in the **handling** of **dangerous cargoes**.

7.3.21.2 Such equipment should provide adequate protection against the hazards specific to the **dangerous cargoes** handled and should be of an approved type or made in conformity with an approved standard.

7.4 **Cargo interests**

7.4.1 *Documents and certificates*

7.4.1.1 The **cargo interests** should ensure that all documents and certificates concerning **dangerous cargoes** are issued in accordance with the IMDG Code and national or international legal requirements applicable to the relevant modes of **transport**. Required shipping papers with the related certificates, where applicable, should always be with the party having the **dangerous cargo**, at each stage while in the **port area**.

7.4.2 *Identification, packing, marking, labelling or placarding and certification*

7.4.2.1 The **cargo interests** should ensure that **dangerous cargoes** are properly identified, packed, marked, labelled or placarded so as to comply with the appropriate provisions of part 5 of the IMDG Code and with appropriate national or international legal requirements applicable to the relevant modes of **transport** and that unnecessary, placards, marks and labels have been removed.

7.4.3 *Freight containers, tank-containers, portable tanks and vehicles*

7.4.3.1 The ***cargo interests*** should ensure that freight containers, tank-containers, portable tanks and vehicles used for carrying ***dangerous cargoes*** are safe for use and have a current safety approval plate in accordance with the International Convention for Safe Containers (CSC), 1972, as amended, when appropriate, and have been approved in accordance with the relevant provisions of part 6 of the IMDG Code, or by a certification or approval system of an appropriate authority.

7.4.3.2 The ***cargo interests*** should ensure that cargo transport units are packed with ***dangerous cargoes*** in accordance with the IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs) or any other national or international legal requirements applicable to the mode of ***transport*** so as to ensure the safe ***transport*** and ***handling*** of such units in the ***port area***.

7.4.3.2 To ensure safe transport by sea, road, rail or barge, it is of utmost importance that, prior to leaving the premises of the originator, freight containers and other cargo transport units are packed and stowed in accordance with the IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs). Corrections along the transport chain are not usually possible as deficiencies are unlikely to be detected prior to damage occurring. If they are possible they are likely to be costly and to result in delays. It is, therefore, essential that the cargo interests ensure compliance with the IMO/ILO/UN ECE Guidelines at the place of packing the cargo transport units. It should be noted that safe packing and stowage also has commercial advantages, as customers will always prefer intact goods and insurance claims should drop considerably.

7.4.4 *Inspections*

7.4.4.1 The ***cargo interests*** should appoint a ***responsible person*** when ***dangerous cargoes*** are handled or transhipped who should prior to and during the transport chain check that the provisions set out in 7.4.1 to 7.4.3 are complied with.

7.4.4.2 The ***responsible person*** of the ***cargo interests*** should check, by visual examination, the physical condition of each freight container, tank-container, portable tank or vehicle for obvious damage affecting its strength or packaging integrity and for the presence of any sign of leakage of contents.

7.4.4.3 The ***responsible person*** of the ***cargo interests*** should make such checks regularly to ensure implementation of the safety precautions in the transport chain to the ***port area***.

7.4.4.4 If any of the checks in 7.4.1 to 7.4.3 reveal deficiencies which may affect the safe ***transport*** or ***handling*** of ***dangerous cargoes*** the ***responsible person*** of the ***cargo interests*** should advise all parties concerned immediately and request them to rectify all deficiencies prior to any further ***transport*** or ***handling*** of ***dangerous cargoes***.

7.4.4.5 The ***responsible person*** of the ***cargo interests*** should ensure that every necessary support will be given to the ***port authority*** or the ***berth operator*** when an inspection of the ***dangerous cargoes*** is carried out by them.

7.4.4.5 The cargo interests should consider appointing an agent or forwarder in the port of loading or discharging who could participate in the inspections carried out by the regulatory or port authorities (see also Guidance to 7.1.8.1). This is to ensure that their interests are met during the inspection and actions can be taken to avoid future mistakes and deficiencies.

7.4.4.6 The *cargo interests* should, commensurate with their responsibilities, ensure that the security provisions concerning *dangerous cargoes* in accordance with the relevant IMO Codes and national or international legal requirements applicable to the relevant modes of transport are implemented.

8 DANGEROUS CARGOES IN PACKAGED FORM

8.1 Documentation

8.1.1 Passenger ships and cargo ships of 500 gross tonnage or over constructed on or after 1 September 1984 and carrying dangerous goods, shall comply with the requirements of regulation II-2/19 of SOLAS 1974. In this connection, such ships are required to carry on board a *document of compliance* in accordance with SOLAS 1974, regulation II-2/19.4 as evidence that the *ship* complies with the special requirements for ships carrying dangerous goods stipulated in SOLAS regulation II-2/19. Cargo ships of less than 500 gross tonnage constructed on or after 1 February 1992 shall comply with the requirements of regulation II-2/19 of SOLAS 1974, unless Administrations have reduced the requirements and this has been recorded in the *document of compliance*.

8.1.2 The *document of compliance* provides information on the classes of dangerous goods that may be carried on deck and in each compartment of the ship.

8.1.3 On board a *ship* carrying packaged *dangerous cargoes* a special list or manifest setting out the dangerous goods and marine pollutants and their location is required. A detailed stowage plan, which identifies by class and sets out the location of all dangerous goods and marine pollutants on board, may be used in place of such a special list or manifest. IMO FAL form 7 provides a format for such a manifest.

8.1.4 The dangerous goods and/or marine pollutants list or manifest shall be based on the documentation and certification required by chapter 5.4 of the IMDG Code and contain the stowage location and the total quantity of dangerous goods and/or marine pollutants on board.

8.1.5 The *regulatory authority* should establish appropriate arrangements for the inspection of the *ship*, to ensure, where appropriate, that the dangerous goods have been loaded and stowed in accordance with the *document of compliance*.

8.2 Supervision

8.2.1 As soon as practicable after the berthing of the *ship*, the *master* and the *berth operator*, within their respective areas of responsibility, should ensure that a **responsible person** is appointed to supervise the *handling of dangerous cargoes*. The *responsible person* should be aware of the risks involved and the steps to be taken in an emergency and who will maintain any necessary contact with the *master* and the *berth operator*.

8.2.1 Communication between persons, especially between the responsible persons, who are involved in handling of dangerous cargoes, is very important. This is why it has to be clear to all parties who is the responsible person on the ship and at the berth. Both the master of the ship concerned and the berth operator should ensure that a responsible person is appointed who will supervise, within their respective areas of responsibility, the handling of dangerous cargoes. For the ship the responsible person will usually be the chief officer or cargo officer. On the berth the responsible person, in most cases, will be supervisor on duty responsible for the loading/unloading operations.

8.3 Information for operational and emergency purposes

8.3.1 The *master* of a *ship* and the *berth operator*, within their respective areas of responsibility, should have the following information with respect to all *dangerous cargoes* transported or handled immediately available:

- .1 the description of *dangerous cargoes* in accordance with chapter 5.4 of the IMDG Code;

8.3.1.1 The information is not only necessary for emergency procedures such as fire, spillage, leakage or accidental contact, but also for loading/unloading operations and stowage and segregation requirements. The necessary information consists of documentation of dangerous goods shipments as described in chapter 5.4 of the IMDG Code (e.g. dangerous goods transport document including dangerous goods declaration (multimodal dangerous goods declaration form may be used) and container/vehicle packing certificate. These documents shall be available for the dangerous cargoes to be loaded.

- .2 details of special equipment needed for the safe *handling* of a particular *dangerous cargo*; and

8.3.1.2 When special equipment is needed for the handling of dangerous cargoes, information and any relevant test and examination certificates about this equipment shall be immediately available to the master, the berth operator and the responsible persons.

- .3 the emergency procedures, including action to be taken in the event of a spillage or leakage, counter measures against accidental contact, fire-fighting procedures and suitable fire-fighting media.

8.3.1.3 Information in respect of emergency procedures should be immediately available to the master, the berth operator and the responsible persons. The information should be placed in a location immediately accessible to the persons concerned, e.g. aboard ship in the cargo office, at the berth in the terminal operations office, etc.

For the ship this information consists, among other things, of the Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS Guide), the Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG) and the emergency and fire plan of the ship.

The information at the berth should include the emergency procedures on the berth, fire and emergency arrangements on the berth and the telephone numbers of the fire service, ambulance, police and the authorities to be informed in case of an incident concerning dangerous cargoes. It is furthermore recommended that all concerned are informed about the emergency procedures which apply to the ship and the berth.

If a telephone can be placed on the ship, this is recommended, together with the telephone number of the responsible person of the berth and the emergency telephone number to be dialled in case of an incident concerning dangerous cargoes.

8.3.2 The *master* of a *ship* and the *berth operator*, within their respective areas of responsibility, should each appoint a *responsible person* who should maintain records of *dangerous cargoes* loaded and/or unloaded. The *responsible person* and records should be available to assist in emergencies. The responsible person is not automatically the same responsible person who is supervising the handling of dangerous cargoes. If the responsible persons are not the same, this should be made clear to the parties involved. The reason that only one person should be responsible for these records is so that all documents concerned are kept in one record system and handled by one person, to avoid the records becoming incomplete. This should not mean that the records become inaccessible to other parties. The records should be kept in an immediately accessible place (e.g. the ship's cargo office or the terminal-operations office of the berth).

8.3.2.1 A copy of a dangerous goods and/or marine pollutants list or manifest shall be made available before departure to the person(s) or organization(s) designated by the port State authority.

8.4 General handling precautions

8.4.1 The *master* of a *ship* and the *berth operator*, within their respective areas of responsibility, should ensure that:

- .1 every person engaged in the *handling* of *dangerous cargoes* exercises reasonable care to avoid damage to packages, unit loads and cargo transport units.

8.4.1.1 This can be achieved by making all persons handling dangerous cargoes aware of the dangers which can occur during loading and unloading dangerous cargoes. Persons handling dangerous cargoes should also know how to handle the equipment they use and be aware of the limits of the equipment;

- .2 whilst *dangerous cargoes* are being *handled*, precautions are taken to prevent unauthorized access to handling areas.

8.4.1.2 Unauthorized persons who enter areas where dangerous cargoes are handled can cause dangerous situations, not only to themselves but also to authorized persons working in these areas. To prevent such situations, access to the entrance to the handling area should be controlled. When persons who are not directly involved in the handling of dangerous cargoes have to pass through the area, they should only do so via designated walkways.

- .3 if there is any loss of containment of *dangerous cargo*, every practical step is taken to minimize risks to persons and adverse effects to the environment.

9 LIQUID BULK DANGEROUS CARGOES (INCLUDING LIQUIFIED GAS)

9.1 General

9.1 Comprehensive guidance on the Recommendations of this section is provided in the documents listed in the bibliography set out in appendix 2. Particular attention is drawn to:

ICS/OCIMF/IAPH: International Safety Guide for Oil Tankers and Terminals (ISGOTT) – Fifth edition, 2006;

ICS/OCIMF/SIGTTO: Guide to Contingency Planning for Gas Carrier Alongside and Within Port Limits – Second edition, 1999;

SIGTTO: Guide to Contingency Planning for Marine Terminals Handling Liquefied Gases in Bulk – First edition, 2001;

OCIMF/SIGTTO: Inspection Guidelines for Ships Carrying Liquefied Gases in Bulk – Second edition 1998;

OCIMF: Vessel Inspection Questionnaire for Oil Tankers, Combination Carriers, Shuttle Tankers, Chemical Carriers and Gas Carriers, Barges, Towing Vessels Utilized for Handling Barges and Vessels Carrying Packaged Cargoes (VIQ) – Third edition, 2005;

OCIMF: Harmonized Vessel Particulars Questionnaire (VPQ) ;

SIGTTO: Liquefied Gas Handling Principles on Ships and in Terminals – Third edition, 2000; and

OECD: Guiding Principles for Chemical Accident Prevention, Preparedness and Response – 1992.

9.1.1 *International certificates*

9.1.1.1 The following international certificates may be relevant:

- .1 International Oil Pollution Prevention Certificate (IOPP Certificate);
- .2 International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk (NLS Certificate);
- .3 International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, or the Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, whichever is appropriate;
- .4 International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, whichever is appropriate; and
- .5 Certificate of Fitness issued under the Provisions of the Guidelines for the Transport and Handling of Limited Amounts of Hazardous and Noxious Liquid Substances in Bulk on Offshore Support Vessels (LHNS Certificate).

9.1.1.2 The **port authority** should, in accordance with the legal requirements of the **regulatory authority**, be able to prohibit:

- .1 the entry into the **port area** of a **ship** carrying **bulk** oil, unless the **master** is in possession of a valid IOPP Certificate, supplemented with form B – Record of Construction and Equipment for Oil Tankers;
- .2 the entry into the **port area** of a **ship** carrying liquid **bulk dangerous cargoes** to which the Codes for the Construction and Equipment of Ships Carrying Dangerous Chemicals or Liquefied Gases in Bulk are applicable, unless the **master** is in possession of a valid **Certificate of Fitness**;
- .3 the entry into the **port area** of a **ship** carrying liquid **bulk dangerous cargoes** to which the Codes for the Construction and Equipment of Ships Carrying Dangerous Chemicals or Liquefied Gases in Bulk are not applicable, unless the **master** is in possession of a valid NLS Certificate; and
- .4 the loading and unloading of liquid **bulk dangerous cargoes** into or from **ships** referred to in 9.1.1.2.1 to 9.1.1.2.3 unless the **master** is in possession of a valid IOPP Certificate, **Certificate of Fitness** or NLS Certificate, as appropriate, for the **ship** and those **dangerous cargoes**.

9.1.1.3 The **regulatory authority** should establish appropriate arrangements for the inspection of a **ship**, to ensure that it complies with any certificate, referred to in 9.1.1.1, where is reason to believe that the **ship** may not comply.

9.1.2 Vapour emission control

Subject to the requirements of the **regulatory authority**, the **port authority** may require that whenever certain liquid **bulk dangerous cargoes** are handled, suitable and safe measures are taken to prevent or control the emission of vapour into the atmosphere. Attention is drawn to IMO Circular MSC/Circ.585 on Standards for Vapour Emission Control Systems.

9.1.2 This is a complex matter and under continuous development by experts. Local environmental conditions and legal requirements should be taken into account in deciding whether to require any vapour-return line or vapour-disposal system. If such a system should be required, due attention should be given to avoiding additional hazards.

9.1.3 *Information for operational and emergency purposes*

The **master** of a **ship** and the **berth operator**, within their respective areas of responsibility, should have immediately available the following information with respect to each **dangerous cargo transported or handled**:

- .1 the product name of the cargo, the UN number (where available) and a description of the relevant physical and chemical properties (including reactivity) necessary for the safe containment and **handling** of the cargo;
- .2 procedures for the cargo transfer, slop transfer, gas-freeing, inerting, ballasting, de-ballasting and tank cleaning;
- .3 special equipment needed for the safe **handling** of a particular cargo; and

- .4 appropriate emergency response procedures, including the:
- action to be taken in the event of a spillage or leak;
 - countermeasures against accidental contact; and
 - fire-fighting procedures and the suitable fire-fighting media.

9.2 Ships carrying liquid bulk dangerous cargoes

9.2.1 *Compatibility*

9.2.1.1 The **master** of a **ship** should in co-operation with the **port authority** and **berth operator**, where appropriate, ensure that during the **handling** of liquid **bulk dangerous cargoes**, which may react in a hazardous manner (physically or chemically) with any other cargo carried or handled, every precaution is taken to prevent such hazard by selecting non-adjacent tanks with separate venting systems for their carriage and using separate pumping and piping systems for their **handling**.

9.2.1.2 The **master** of a **ship** should ensure that no liquid **bulk dangerous cargoes** comes into contact with any tank, pipe, valve or any other equipment in the **ship** which may cause a hazard by weakening, chemical reaction or any other means. He should also be aware of the hazard associated with solidification of cargo in ships' vent lines, substances which react with water and oxidizing agents.

9.2.2 *Handling*

9.2.2.1 The **master** of a **ship** should ensure that:

- .1 precautions are taken at all times to prevent flammable and/or toxic vapour from entering a service or control station, accommodation or machinery spaces on the **ship**;
- .2 except for vents designed to prevent excess pressure or vacuum within a cargo space, all openings from cargo spaces are kept closed during **handling** of flammable and/or toxic cargoes, or ballast water contaminated with such cargoes, except with the permission of the **port authority** and **berth operator**; and
- .3 any tools or equipment used, e.g. for sampling or ullaging are used in a manner so as not to cause ignition.

9.2.2.2 In the case of flammable cargoes sighting and ullage ports should be kept closed unless required to be open for operational purposes. If, for design reasons, they are required to be open, the openings should be protected by a flame screen which may be removed for a short period during ullaging, sighting, sounding and sampling. The flame screens should be a good fit and be kept clean and in good condition.

9.2.2.3 The **master** of a **ship** should ensure that, if an incident occurs during the handling of liquid **bulk dangerous cargoes** or ballast water contaminated with liquid **bulk dangerous cargoes** which necessitates a repair to the cargo piping system or connections, or which interferes in any way with the uninterrupted flow of liquid **bulk dangerous cargoes** or ballast water, such **handling** is stopped and not resumed until adequate safety measures have been taken with the approval of the **port authority** and, where appropriate, the **berth operator**.

9.2.3 *Gas-freeing, tank cleaning and inerting*

9.2.3.1 The **master** of a **ship** carrying or having carried liquid **bulk dangerous cargoes** should ensure that gas-freeing, tank cleaning (including crude oil washing), or purging with inert gas is carried out in accordance with the **ship's** operating manuals which lay down the correct procedure to be employed. Such operating manuals should deal comprehensively with the procedure to be employed and should incorporate the recommendations and guidelines of IMO or other organizations where they are appropriate.

9.2.3.1 Ship's operating manuals should be approved by the Administration. The guidelines referred to concern inert gas systems and crude oil washing systems.

9.2.3.2 No gas-freeing, tank cleaning or purging should be carried out without the permission of the **port authority** and the **berth operator**, where appropriate.

9.2.4 *Containment of spillage*

9.2.4.1 The **master** of a **ship** should ensure that during handling operations all scuppers are kept closed except to the extent that it is necessary to allow water to drain off, and that the scuppers are inspected regularly. Where corrosive liquids or refrigerated gases are being handled, the scuppers may be kept open if permitted by the **port authority**, provided that an ample supply of water is available at all times in the vicinity of the manifolds. Attention is however drawn to the requirements of regulations of Annex I and Annex II of MARPOL 73/78 for provision of shipboard oil pollution emergency plans and marine pollution emergency plans for noxious liquid substances.

9.3 **Shore installations**

9.3.1 *Warning notices*

9.3.1.1 The **berth operator** should ensure that, before handling liquid **bulk dangerous cargoes** at any **berth** on the shore, appropriate warning notices, preferably pictograms, are placed at all entrances and approaches to the **berth**.

9.3.2 *Compatibility*

9.3.2.1 The **berth operator** should ensure that liquid **bulk dangerous cargoes** are handled and kept in such a manner so as to preclude the possibility of a dangerous interaction with incompatible cargoes or materials.

9.3.3 *Communications*

9.3.3.1 The **berth operator** should ensure that effective communication has been established between a **berth** used for the **handling** of liquid **bulk dangerous cargoes** and the installation from or into which such **cargoes** are being transferred. Communication equipment so used should be of a type safe for use in a flammable atmosphere or explosive atmosphere and be in a good order.

Note: VHF equipment operating on frequencies allocated to the maritime mobile service should only be used for communications between a ship and the shore installations where allowed by the *regulatory authority* and where permitted by the *port authority*.

9.3.4 Pipelines used for liquid bulk dangerous cargoes

9.3.4.1 The *berth operator* should ensure that a *pipeline* or *flexible pipe*:

- .1 is not used for cargoes other than those for which it is suitable, having regard to the temperature and compatibility of such cargoes;
- .2 is suitably protected if it is liable to be damaged by impact; and
- .3 is electrically continuous except for the inclusion of an insulating flange or non-conductive spool piece when used for the transfer of a flammable liquid. The *pipeline* on a seaward side of the insulating section should be electrically continuous to the *ship*, and that on the landward side should be electrically continuous to the jetty earthing system. The insulating flange should be tested in accordance with chapter 17 of ISGOTT.

9.3.4.1 The use of a ship/shore bonding cable is not only considered to be ineffective but could also be dangerous. Port authorities are urged to adopt the recommendation concerning the use of an insulating flange or a non-conducting hose to ensure electrical discontinuity between the ship and shore.

9.3.4.2 The *berth operator* should ensure that:

- .1 adequate precautions are taken to prevent a short-circuit of the insulating section referred to in 9.3.4.1.3;
- .2 the insulating and earthing systems referred to in 9.3.4.1.3 are inspected and tested at appropriate intervals to ensure their effectiveness; and
- .3 any other metallic connections between the *berth* and the *ship* are protected or arranged so as to ensure that there is no possibility of incendive sparking where a flammable atmosphere may be present.

9.3.4.2 Reference is made to the appropriate checklists in the International Safety Guide for Oil Tankers and Terminals (ISGOTT).

9.3.5 Sources of ignition

9.3.5.1 The *berth operator* should ensure that the *master* of a *ship* is notified of any conditions which may require precautions to be taken for avoidance of sources of ignition on the *ship* such as galley stoves or cooking appliances with non-immersed elements.

9.3.6 *Containment of spillage*

9.3.6.1 The **berth operator** should ensure that all drain holes and pipes and all other drains of any kind on the jetty, where liquid **bulk dangerous cargoes** might escape in case of an accident, are closed before **handling** commences and are kept closed during the whole of the period of the **handling** of liquid **bulk dangerous cargoes**.

9.3.6.2 In case of a spillage occurring, adequate means of containment and disposal, as required by the **regulatory authority** or **port authority**, should be available at short notice.

9.3.7 *Shore electricity supply*

9.3.7.1 The **berth operator** should ensure that any shore communication cables to a **ship** are of a type certified safe for use in hazardous areas.

9.3.7.2 The **berth operator** should ensure that no shore electrical supply is connected to a **ship**, except a supply of a type certified safe for use in flammable atmosphere, or in an emergency and with approval of the **port authority**.

9.3.7.3 The **berth operator** should ensure that no connection, cable or electrical supply is used near a **ship** carrying flammable cargoes at a **berth** where such cargoes are present or where a flammable atmosphere may be present, unless it is certified for use in such places.

9.4 **Handling**

9.4.1 *Flexible pipes*

9.4.1.1 The **master** of a **ship** and **berth operator** within their respective areas of responsibility should ensure that:

- .1 no **flexible pipe** is used for cargoes other than those for which it is suitable, having regard to the temperature and compatibility of such cargoes, or at any working pressure for which it is unsuitable;
- .2 each type of **flexible pipe** complete with end fittings has been prototype tested and a certificate provided to show the bursting pressure. Prototype hoses may not be used in service;
- .3 before being placed in service, each **flexible pipe** supplied should be hydraulically tested in accordance with the requirements of the **regulatory authority**;
- .4 before being put into use on any day a **flexible pipe**, other than one being used at a monobuoy or other off-shore facility, is visually inspected. **Flexible pipes** used at monobuoys and other off-shore facilities should be inspected at frequent intervals;
- .5 a **flexible pipe** is permanently and legibly marked, showing the type of hose, its specified maximum working pressure and its month and year of manufacture;
- .6 there are adequate electrical insulation flanges;

- .7 the length of each **flexible pipe** is sufficient to satisfactorily operate within the defined operating envelope without overstressing the terminal connections;
- .8 a **flexible pipe** rigged for the **handling** of liquid **bulk dangerous cargoes** is kept under adequate supervision;
- .9 there are adequate procedures for the disconnection of the **flexible pipe** in the event of an emergency, to protect the environment, personnel safety and equipment; and
- .10 any **flexible pipe** after use is drained and purged of the liquid **bulk dangerous cargoes** and that in cases where this is not possible or has not been carried out, the **flexible pipe** is provided at each free end with a suitable means to prevent the escape of vapour or admission of air. Such equipment should always be provided on **flexible pipes** used for the **handling** of highly toxic liquids or liquefied gas.

9.4.2 *Loading arms*

9.4.2.1 The **master** of a **ship** and **berth operator** within their respective areas of responsibility should ensure that:

- .1 there are adequate procedures for the operation, supervision and disconnection of **loading arms** in the event of emergency, to protect the environment, personnel safety and equipment;
- .2 no **loading arm** is used for substances other than those for which it is suitable, having regard to the temperature and compatibility of such substances and the working pressure or flow rate for which it is suitable;
- .3 in an emergency there are adequate means for draining the inner and outer arms after normal use and before disconnection;
- .4 the operating envelope of the **loading arms** is suitable for the **ship**;
- .5 the manifold spacing is satisfactory when more than one **loading arm** is connected;
- .6 each **loading arm** has been periodically maintained and has a current certificate for its fitness for use; and
- .7 there are adequate electrical insulation flanges.

9.4.3 *Preliminary precautions*

9.4.3.1 The **master** of a **ship** and **berth operator** within their respective areas of responsibility should ensure that cargo handling controls, gauging systems, emergency shutdown and alarm systems, where applicable, have been tested and found to be satisfactory before cargo handling operation begins.

9.4.3.2 The **master** of a **ship** and **berth operator** should before liquid **bulk dangerous cargoes** are pumped into or out of a **ship** from or into a shore installation:

- .1 agree in writing on the handling procedures including the maximum loading or unloading rates taking into account:
 - .1.1 the arrangement, capacity and maximum allowable pressure of the *ship*'s cargo lines and the shore *pipelines*;
 - .1.2 the arrangement and capacity of the vapour venting system;
 - .1.3 the possible pressure increase due to emergency shut-down procedures;
 - .1.4 the possible accumulation of electrostatic charge; and
 - .1.5 the presence of *responsible persons* during start up operations on board *ship* and ashore;
- .2 complete and sign an appropriate safety check list showing the main safety precautions to be taken before and during such handling operations;
- .3 agree in writing the action to be taken and the signals to be used in the event of an emergency during handling operations; and
- .4 ensure appropriate safety equipment and clothing are used.

9.3.4.3 The *berth operator* should ensure that master flow and drain valves, and other valves that would permit direct outward flow of a *bulk* liquid storage tanks contents to the surface are securely locked in the closed position when in a non-operating or non-standby status.

9.3.4.4 The *berth operator* should ensure that starter controls on all *bulk* liquid transfer pumps are locked in the "off" position, or located at a site accessible only to authorized personnel.

9.3.4.5 The *berth operator* should ensure that loading/unloading connections of pipelines, loading arms, or transfer hoses are securely capped or blank-flanged when not in service or in standby service.

9.4.4 *Pumping*

9.4.4.1 The *master* of a *ship* and *berth operator* within their respective areas of responsibility should ensure that:

- .1 frequent checks are made to ensure that the agreed back-pressures and loading or unloading rates are not exceeded;
- .2 all responsible care is taken to prevent all relevant *pipelines, loading arms, flexible pipes* and associated equipment on board the *ship* and ashore from developing a leak, and that they are kept under adequate supervision during the *handling* of liquid *bulk dangerous cargoes*;
- .3 effective communication between the *ship* and the shore installations is maintained throughout the handling operations;

- .4 the safety check list mentioned in 9.4.3.2.2 is available for inspection throughout the handling operations;
- .5 simultaneous working of *ships' stores* with the *handling* of *dangerous cargoes*, gas-freeing, purging or tank cleaning is only carried out when permitted by the *port authority* and all practicable precautions are taken to avoid damage to connecting *loading arms, flexible pipes* or associated equipment or any other hazards;
- .6 during the *handling* of liquid *bulk dangerous cargoes*, arrangements are made for the gauging of *ships' tanks* to ensure that no tank is overfilled;
- .7 *responsible persons* are present during operations on board *ship* and ashore; and
- .8 appropriate safety equipment and clothing are used.

9.4.5 *Completion of operation*

9.4.5.1 The *master* of a *ship* and *berth operator* within their respective areas of responsibility should ensure that after the completion of every transfer of liquid *bulk dangerous cargoes* the valves of the discharging and receiving cargo spaces and tanks are closed and any residual pressure in the relevant *pipelines, loading arms* and *flexible pipes* is released, unless the same valves are required to be open for normal plant or *ship* operations. They should also ensure that:

- .1 prior to the disconnection of the shore *pipelines* from the *ship*, the *loading arms, flexible pipes* and piping are drained of liquids, the pressure relieved and the piping vented;
- .2 all safety precautions are taken, including the blanking off of the *ship* manifold connection and the shore *pipeline*; and
- .3 appropriate safety equipment and clothing are used.

9.4.6 *Ship-to-ship transfer*

9.4.6.1 The *ship-to-ship* transfer of liquid *bulk dangerous cargoes* should be subject to the authorization of the *port authority* and, where appropriate, the permission of the *berth operator*. If the *port authority* permits *ship-to-ship* transfer, it should impose conditions such as special safety check lists and control of the place where the operation may be undertaken, taking into account the particular hazards involved.

9.4.6.1 Attention is drawn to the ICS/OCIMF Ship-to-Ship Transfer Guide (Liquefied Gases) and Ship-to-Ship Transfer Guide (Petroleum). An example of a checklist is given in Annex 5.

9.5 **Special categories**

9.5.1 *Excess pressure in tanks containing liquefied gas*

9.5.1.1 The *master* of a *ship* and *berth operator* within their respective areas of responsibility should ensure that excess pressure does not develop in the tanks containing liquefied gas under

pressure in the *ship* or on the *berth*. Where appropriate, the surroundings should be cooled by whatever means are available, including the use of water spray.

9.5.2 *Refrigerated liquefied gas*

9.5.2.1 The *master* of a *ship*, the *port authority* and *berth operator* within their respective areas of responsibility should ensure that the loading or unloading of liquefied gas at low temperature is only carried out if:

- .1 all relevant shore and ship tanks, *pipelines*, *loading arms* and relevant *ships'* piping are gradually and evenly cooled to prevent thermal stress;
- .2 all automatic controls, gas detectors and other associated instruments are in working order; and
- .3 suitable protective equipment and clothing is available and used as appropriate.

9.6 **Combination carriers**

9.6.1 A combination carrier which has previously carried crude oil or petroleum products having a flashpoint not exceeding 60°C c.c. as a cargo, should be subject to Section 9 of these Recommendations unless it can be proved that no liquid, solid or gaseous residues of such cargo remain in any of the *ship's* tanks, holds, void spaces, cargo or ballast lines, pumps or pump rooms.

9.6.2 When a combination carrier, referred to in 9.6.1, is moored in a port terminal other than an oil terminal and the *ship* is not gas-free:

- .1 the area 25 metres around the ship should be regarded as a hazardous area where special precautions against fire should be taken;
- .2 the tanks should be inerted;
- .3 a *ship*/shore safety check list should be completed; and
- .4 the area should be watched by a special shore safety guard in addition to the *ship's* deck watch.

10 **SOLID BULK DANGEROUS CARGOES**

10.1 **Documentation**

10.1.1 *Ships* of 500 gross tonnage or above constructed on or after 1 September 1984 and carrying dangerous goods, shall comply with the requirements of regulation II-2/19 of SOLAS 1974. In this connection, such *ships* are required to carry on board a *document of compliance* in accordance with SOLAS 1974, regulation II-2/19.4 as evidence that the *ship* complies with the special requirements for ships carrying *dangerous cargoes* stipulated in SOLAS regulation II-2/19. Cargo *ships* of less than 500 gross tonnage constructed on or after 1 February 1992 shall comply with the requirements of regulation II-2/19 of SOLAS 1974, unless Administrations have reduced the requirements and this has been recorded in the *document of compliance*.

10.1.2 The *document of compliance* also provides information on the classes of *dangerous cargoes* that may be carried.

10.1.3 Also, on board a *ship* carrying solid *bulk dangerous cargoes*, a list, a manifest or detailed stowage plan detailing the *dangerous cargo* and its location on board is required.

10.1.4 The *regulatory authority* should establish appropriate arrangements for the inspection of the *ship*, to ensure, where appropriate, that the solid *bulk dangerous cargoes* have been loaded and stowed in accordance with the *document of compliance*.

10.2 Responsibility for compliance

10.2.1 When solid *bulk dangerous cargoes* are carried, handled or stowed, the *master* of a *ship* and *berth operator* within their respective areas of responsibility should ensure that the loading and unloading operations are carried out in accordance with the Bulk Cargo (BC) Code and the Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code), where applicable, and the recommendations in 10.3 to 10.8 and the Manual on Loading and Unloading of Solid Bulk Cargoes for Terminal Representatives.

10.3 Emission of harmful dusts

10.3.1 Where the *transport, handling* or *stowage* of solid *bulk dangerous cargoes* may give rise to the emission of dust, all necessary practicable precautions should be taken to prevent and minimize the emission of such dusts and to protect persons and the environment from them.

10.3.2 The precautions should include the use of appropriate protective clothing, respiratory protection, and barrier creams, when needed; as well as personal washing and hygiene and laundering of clothing.

10.4 Emissions of dangerous vapour/oxygen deficiency

10.4.1 Where the *transport* or *handling* of solid *bulk dangerous cargoes* may give rise to the emission of a toxic or flammable vapour, all necessary practicable precautions should be taken to prevent and minimize the emission of such vapours and to protect persons from toxic vapours.

10.4.2 Whenever solid *bulk dangerous cargoes* which may emit a toxic or flammable vapour is stowed or carried, an appropriate instrument for measuring the concentration of the toxic or flammable vapour should be provided. Enclosed spaces used for such cargoes and adjacent spaces should be provided with effective ventilation.

10.4.3 Except in an emergency, no person should enter an enclosed space in which a solid *bulk dangerous cargo* that may emit a toxic or flammable vapour is stowed or is deficient in oxygen unless the atmosphere in the space has been determined not to be hazardous to human health or safety. If entry is necessary during an emergency, a person who enters the space should wear appropriate self-contained air breathing apparatus in accordance with confined space entry procedures (see 7.2.11.2).

10.5 Emission of explosive dusts

10.5.1 Where the *transport* or *handling* of solid *bulk dangerous cargoes* may give rise to the emission of dust that is liable to explode on ignition, all necessary practicable precautions should be taken to prevent such an explosion and to minimize the effects of an explosion if one should occur.

10.5.2 Precautions include ventilating an enclosed space to limit the concentration of dust in the atmosphere, avoiding sources of ignition, minimizing the heights of walls of materials, and hosing down rather than sweeping.

10.6 Spontaneously combustible substances and substances that react with water

10.6.1 Solid *bulk dangerous cargoes* that, on contact with water, may evolve flammable or toxic vapours or become liable to spontaneous combustion, should be kept as dry as reasonably practicable. Such cargoes should be handled only during dry weather conditions.

10.7 Oxidizing substances

10.7.1 Solid *bulk dangerous cargoes* that is an oxidizing substance should be transported, handled and stowed in a manner that prevents, in so far as reasonably practicable, contamination with combustible or carbonaceous materials. Oxidizing substances should be kept away from any source of heat or ignition.

10.8 Incompatible materials

10.8.1 Solid *bulk dangerous cargoes* should be carried, handled and stowed in a manner that prevents any dangerous interaction with incompatible materials. This should apply between *bulk dangerous cargoes* mutually as well as between solid *bulk dangerous cargoes* and *dangerous cargoes* in packaged form.

ANNEX 1

**ADVANCE NOTIFICATION
(7.1.2.6)**

The information provided to the port authority before dangerous cargoes are brought into or moved out of a port area should include:

1 ARRIVAL BY WATER

1.1 Packaged dangerous cargoes:

- .1 the name of the ship and ship's IMO number, agent and estimated time of arrival (ETA), normally not less than 24 hours before arrival;
- .2 a list showing the Proper Shipping Name of the dangerous goods, the UN number, the class or, when assigned the division of the goods, including for class 1, the compatibility group letter, (if applicable), any subsidiary risk, the number and type of packages, packing group, the flashpoints range (as appropriate), the quantity and additional information as required by the chapter 5.4 of the IMDG Code;

1.1.2 Each cargo, consignment or item in the list should be numbered consecutively to enable easy reference.

- .3 the precise stowage of the dangerous cargoes on board, indicating those to be unloaded and those to be left on board;

1.1.3 Dangerous cargoes which are to remain on board should be stated with due reference to the number in the list (see above).

- .4 the condition of the dangerous cargoes if any undue hazard is likely to arise; and
- .5 any known defect which may substantially affect the safety of the port area or the ship.

1.2 Bulk dangerous cargoes (liquid or solid):

- .1 the name of the ship and ship's IMO number, agent and estimated time of arrival (ETA), normally not less than 24 hours before arrival;
- .2 a list showing the product name of the bulk dangerous cargoes and any other information required by the relevant IMO code;
- .3 whether a valid International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, or a Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, whichever is appropriate, an International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk

(NLS Certificate) and/or an International Oil Pollution Prevention Certificate, as appropriate, are held for the cargo;

- .4 location of the dangerous cargoes on board, indicating those to be unloaded and those to be left on board;

1.2.4 Combination carriers entering a dry cargo terminal should state the nature of the last three cargoes and their flashpoints, where applicable, and the present condition of the tanks/cargo holds (i.e. whether they are gas-free).

- .5 the condition of the dangerous cargoes and any known defect in the cargo containment and handling system, equipment or instrumentation related to the cargo carried in bulk with may lead to any undue hazard; and
- .6 any known defect which may substantially affect the safety of the port area or the ship.

1.3 Additional information that may be provided to the port authority before dangerous cargoes are brought into or moved out of a port area may be amongst those specified in Part B of the ISPS Code. Other examples of information which are required by the regulatory authorities in relation to packaged dangerous cargoes:

- .1 Container number;
- .2 Transport licence number or reference (if IMDG Code class 1 or 7);
- .3 Name and contact details of consignee or of the local forwarder (if available).

2 ARRIVAL BY LAND

2.1 Packaged dangerous cargoes and bulk dangerous cargoes (liquid or solid):

- .1 name of the consignor (shipper) and date of delivery to the port area, normally not less than 24 hours before arrival;
- .2 for packaged dangerous cargoes: the Proper Shipping Names of the dangerous goods, the UN number, the class or, when assigned the division of the goods, including for class 1, the compatibility group letter, (if applicable), any subsidiary risk, the number and type of packages, packing group, the flashpoints range (as appropriate), the quantity and additional information as required by chapter 5.4 of the IMDG Code;
- .3 for bulk dangerous cargoes: the product name and any other information required by the relevant IMO code; and
- .4 the name of the ship into which the dangerous cargoes are to be loaded (if applicable), the ship's agent and the berth.

3 DEPARTURE BY WATER

3.1 Packaged dangerous cargoes:

- .1 the name of the ship and ship's IMO number, agent and estimated time of departure (ETD), as required by the regulatory authorities;
- .2 a list showing the Proper Shipping Names of the dangerous goods, the UN number, the class or, when assigned the division of the goods, including for class 1, the compatibility group letter, (if applicable), any subsidiary risk, number and type of packages, packing group, the flashpoints range (as appropriate), the quantity and additional information as required by chapter 5.4 of the IMDG Code; and
- .3 the stowage location of the dangerous cargoes on board.

3.2 Bulk dangerous cargoes (liquid or solid):

- .1 the name of the ship and ship's IMO number, agent and estimated time of departure (ETD), as required by the regulatory authorities;
- .2 a list showing the product names of the bulk dangerous cargoes and any other information required by the relevant IMO code;
- .3 whether a valid International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, or a Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, whichever is appropriate, and/or an International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk (NLS Certificate) and/or, an International Oil Pollution Prevention Certificate, as appropriate, is held by the ship for the cargo; and
- .4 the stowage or location of the dangerous cargoes on board.

ANNEX 2

TRANSPORT AND HANDLING OF EXPLOSIVES OF CLASS 1 (3.3.2.4, 7.1.15.4)

Basic items for consideration by the Regulatory Authority

1 General

1.1 It should be ensured that relevant instructions are given to control the movement of any means of transport involved in the transport of explosives in the port area.

1.2 It should be ensured that there is at all times a responsible person in charge of any cargo of explosives in the port area.

2 Explosives in compatibility group L

2.1 Explosives in compatibility group L should not be handled in a port area unless the special permission of the port authority has been obtained and any special precautions, required by the port authority, have been taken.

3 Handling of deteriorated explosives

3.1 Because of the sensitivity of many explosives, special conditions should be considered and agreed before any explosives, which for any reason may have deteriorated or undergone a change of condition that may materially increase the hazards attendant upon their transport or handling, are moved in the port area. Such special conditions should be agreed in writing between the port authority, competent authority, where required by national regulations, and the responsible person having charge of explosives.

4 Loading and unloading of explosives

4.1 Other than in exceptional circumstances permitted by the relevant legal authorities, no explosives should be brought to a berth for loading into a ship unless the ship is ready to receive them. No explosives should be unloaded from a ship at a berth, unless the means of transport by which they are to be removed from the port area is ready to receive them. Once the handling of explosives has begun, it should proceed with due diligence.

4.2 The area of the berth where the explosives are being handled should be clearly marked out as a protected area in which the provisions of 3.3.2, 7.2.6.1 and 7.3.7.2 are strictly enforced. The limits of the area should extend at least 10 metres from the immediate handling area.

4.3 The space in the ship or cargo transport unit in which explosives are to be loaded should be carefully cleaned and maintained in a clean condition and particular attention should be paid to the provisions of 7.3.7.1.4.

4.4 Explosives should not be handled during the hours of darkness unless prior consent has been obtained from the port authority which should take into account all relevant considerations, including the standard of illuminations, security, fatigue of workers and weather conditions.

4.5 Equipment for handling explosives should be of an approved type, properly maintained and tested in accordance with national and international standards.

5 Weather conditions

5.1 Because of the nature of explosives, the provisions of 7.2.15 and 7.3.18 with respect to the handling of dangerous cargoes in adverse weather conditions need careful attention, particularly in respect of wet conditions.

6 Additional fire precautions

6.1 No source of ignition should be brought into or near to a place where explosives are being handled. The wearing of shoes or boots with unprotected metal nails, heels or tips of any kind should be prohibited, except where the consignment consists only of articles of class 1, and care taken to ensure that any portable lights and other electrical equipment are of a type safe for use in a flammable atmosphere.

7 Radio or radar transmitting

7.1 During the handling of explosives no radar or radio transmitter should be used within 50 metres of the cargo handling area, except under such conditions, including power output limitations, frequency and other factors, as may be established by the regulatory authority. The regulatory authority should be guided by explosives and radio experts on the minimum distance between the handling of various types of explosives and operational transmitters.

8 Bunkering

8.1 No bunkering should be permitted during the handling of explosives or while the hatches of cargo spaces containing explosives are open, unless the permission of the port authority has been obtained.

9 Damaged packages

9.1 If in the course of handling explosives in the port area any package of explosives, or the seal of any such package, appears to be damaged, that package should be set aside for examination and repair or other safe disposal.

9.2 If any explosives are spilled or escape from a package, the responsible person supervising the handling should ensure that such spillage is immediately collected and safe arrangements are made for its repacking or disposal. Every such incident should be immediately reported to the port authority.

10 Completion of loading

10.1 When loading is completed the loaded ship or vehicle should depart from the port area as soon as is reasonably practicable.

11 Security

11.1 As the safety of the handling of explosives is affected by the degree of security attained, consideration should be given to all security measures necessary to prevent unauthorized access

to explosives including appropriate checks that all packages are received in good order and condition at all stages of the handling operation. Explosives should neither be moved nor handled unless the relevant permits have been issued and such tasks should be undertaken in accordance with the conditions specified in the relevant permits.

12 Explosives in class 1, division 1.4, compatibility group S

12.1 The regulatory authority should grant any exemption necessary from their requirements in the case of explosives in class 1, division 1.4, compatibility group S in accordance with the IMDG Code.

ANNEX 3

SEGREGATION OF RADIOACTIVE MATERIALS ON SHORE (7.1.16.3)

1 Application

1.1 Any material referred to in table 2.7.7.2.1 of the IMDG Code on Basic radionuclide values should be declared as a radioactive material.

2 Segregation from persons

2.1 Limitation of the radiation exposure of persons should be based on keeping doses as low as reasonably practicable within the current maximum annual dose-equivalent limit recommended by the International Commission on Radiological Protection (ICRP) for members of the public and workers.

2.2 The ICRP recommended dose limits are revised from time to time. The 1990 recommendations are for a maximum annual dose – equivalent limit of 20 mSv averaged over 5 years with 50 mSv in any one year for occupationally exposed workers and 1 mSv for members of the general public.

2.3 Members of the general public should normally not have access to or near areas of ports where radioactive materials are kept.

2.4 Category II or III (yellow label) packages, overpacks, freight containers or tanks containing radioactive materials which are not taken directly to or from a ship should be kept in areas or stores separated from any place regularly frequented by workers by at least the distances given in the table below, unless measurements taken by using an appropriate instrument show clearly that the radiation level at all points inside that place is less than 7.5 microSv/h. Where members of the general public necessarily require access to the vicinity of such areas or stores it should be for short periods only.

TABLE

Segregation of category II or III packages, overpacks, freight containers or tanks from workers.

Sum of transport indices	Minimum segregation distances in metres
Up to 5	4
Over 5 to 10	6
Over 10 to 20	8
Over 20 to 30	10
Over 30 to 40	12
Over 40 to 50	13
Over 50 to 100*	18
Over 100 to 150*	22
Over 150 to 200*	26

* For 2 or more stacks of packages, etc., see 4.1.2 below.

The segregation distance should be adhered to regardless of whether walls or ceilings intervene between the storage area and the occupied place.

2.5 Where the package, overpack, freight container or tank is not in a special store, the area covered by applying the table above should be barriered or marked off. Entry into the special store or barriered off area should be for the purpose of essential duties only and the time spent in handling packages, overpacks, freight containers or tanks containing radioactive materials should be kept to the minimum necessary. If the frequency of keeping packages, overpacks, freight containers or tanks of radioactive materials on the premises is such that persons on average over the year spend more than 10 hours per week in the vicinity of the special store or barriered off area where such materials are present, more stringent measures should be adopted, possibly including monitoring of radiation doses received. Guidance on this should be sought from the regulatory authority.

2.6 These criteria should be regarded as minimum standards. In some countries the regulatory authority has made national legal requirements requiring higher standards. In such cases it will be necessary to comply with the provisions of such legislation.

2.7 No person under 18 years of age should be employed in the handling of Category II or III packages, overpacks, freight containers or tanks, or remain in their vicinity for significant periods. The regulatory authority should consider the need for any restriction on the employment of pregnant women.

3 Segregation from undeveloped film

3.1 Radioactive material should be segregated from undeveloped film and mailbags (which should be assumed to contain undeveloped film) by at least the distances given in the table in 2.4 of this annex.

4 General stowage requirements

4.1 Unless authorized under special arrangements by the regulatory authority:

- .1 the radiation doses levels likely to be encountered from any package, "overpack", freight container or tank in a port area should not exceeded 2 mSv/h at the external surface or 0.1 mSv/h at 2 metres from the surface of any conveyance used in routine transport; and
- .2 the total number of packages, overpacks, freight containers or tanks aboard a single conveyance or a single stack in a port area should be so limited that the total sum of the transport indices does not exceed 50.

4.2 The total sum of the transport indices of any individual group of packages, overpacks, freight containers or tanks stowed in a port area should not exceed 100. An intervening space of at least 6 m should be left between groups. A number of stacks may be included in the same group.

4.3 Stowage of packages, overpacks, freight containers and tanks aboard ships shall be in accordance with the requirements for class 7 set out in chapter 7.1 of the IMDG Code.

4.4 Segregation provisions for packages, overpacks, freight containers and tanks aboard ships shall be in accordance with the requirements of class 7 set out in chapter 7.2 of the IMDG Code.

5 Customs facilities

5.1 Consideration should be given to the need for the provision of appropriately separated areas for any customs examination of packages, overpacks, freight containers or tanks containing radioactive materials that may be necessary in the port area. Any customs officer likely to examine packages, etc., should receive appropriate training in basic radiation protection.

ANNEX 4

**MINIMUM SAFETY REQUIREMENTS FOR CARRYING OUT
HOT WORK
(7.1.9, 7.2.10, 7.3.13)**

1 Before starting any hot work, on board a ship or on a berth, the responsible person of the company to carry out the hot work shall be in possession of a written authorization to carry out such hot work issued by the port authority. Such authorization should include details of the specific location of the hot work as well as the safety precautions to be followed.

2 In addition to the safety precautions required by the port authority, before starting any hot work, the responsible person of the company to carry out the hot work together with the responsible person(s) of the ship and/or berth, should add any additional safety precautions required by the ship and/or berth.

These should include:

- .1 the examination, and frequency of re-examination of local areas and adjacent areas, including tests, carried out by accredited testing establishments, to ensure the areas are free, and continue to be free, of flammable and/or explosive atmospheres and, where appropriate, are not deficient in oxygen;
- .2 the removal of dangerous cargoes and other flammable substances and objects away from the working and adjacent areas. This includes scale, sludge, sediment and other possible flammable material;
- .3 efficient protection of flammable structural members, e.g. beams, wooden walls, floors, doors, wall and ceiling coverings against accidental ignition; and
- .4 the sealing of open pipes, pipe lead-throughs, valves, joints, gaps and open parts to prevent the transfer of flames, sparks and hot particles from the working areas to adjacent or other areas.

3 A duplicate of the hot work authorization and safety precautions should be posted adjacent to the work area as well as at each entrance to the work area. The authorization and safety precautions should be readily visible to, and clearly understood by, all persons engaged in the hot work.

4 While carrying out hot work it is essential that:

- .1 checks are carried out to ensure that conditions have not changed; and
- .2 at least one suitable fire extinguisher, or other suitable fire extinguishing equipment is readily available for immediate use at the location of the hot work.

5 During hot work, on completion and for a sufficient time after completion of such work, an effective fire-watch should be maintained in the area of the hot work as well as adjacent areas where a hazard resulting from the transfer of heat may be created.

6 Reference should also be made to the appropriate publications listed in the bibliography (see Appendix 2) where additional valuable guidance on hot work procedures may be found. In particular, the International Safety Guide for Oil Tankers and Terminals (ISGOTT) should be consulted.

ANNEX 5

**BUNKERING PRECAUTIONS, INCLUDING BUNKERING CHECKLIST
(7.1.14)**

- 1 The master of a ship involved in bunkering shall ensure that bunkering will only take place if:
 - .1 notification of the intention to bunker is given to the port authority well in advance, stating the place, type of bunker oil to be transhipped and the expected time that bunkering will commence;
 - .2 the relevant Safety Data Sheet has been supplied in accordance with resolution MSC.150(77) on Safety Data Sheets for MARPOL Annex I cargoes and marine fuel oils; and
 - .3 the questions on the bunkering check list below are answered truthfully and affirmatively.
- 2 The master of a ship shall not begin bunkering unless he has ensured that:
 - .1 the scuppers are firmly closed;
 - .2 bunker pipes, which are not in use, are well blanked;
 - .3 the bunker hoses are properly supported;
 - .4 the bunker hoses have sufficient play;
 - .5 the bunker connection has been provided with a good seal;
 - .6 there is a well-tightened bolt in every bolt hole in the bunker pipe connection flanges;
 - .7 there is a sufficiently large overflow basin under the bunker pipe connection(s); and
 - .8 any cargo handling operations in progress will not hazard the bunker operations.
- 3 The master of a bunker vessel shall not begin bunkering unless he has ensured that:
 - .1 the bunker vessel is securely moored;
 - .2 the bunker hoses are in good condition;
 - .3 the bunker hoses have sufficient play;
 - .4 the bunker connection has been provided with a good seal; and

- .5 there is a well-tightened bolt in every bolt hole in the bunker pipe connection flanges.
- 4 The master of a ship involved in bunkering shall ensure that the connection described in paragraphs 2 and 3 remain fulfilled during the entire bunkering procedure.
- 5 Both the master of a ship and the master of a bunker vessel should ensure, that a constant visual watch is maintained throughout the whole transfer operation.
- 6 Both the master of a ship and the master of a bunker vessel have to ensure that all scuppers are closed and that sufficient absorbing materials are available in case of an accidental spillage.
- 7 If it cannot be ensured during the whole bunkering operation that the requirements laid down in this annex are fulfilled, the master of a ship and/or the bunker vessel shall cease the bunker operation immediately.
- 8 In this annex, bunkering is taken to mean the transfer of bunker oil that is a flammable liquid intended for the propulsion and or the auxiliary operation of a ship or liquid intended for lubricating the ship's engine or her other machinery.

PRE-TRANSFER BUNKERING CHECKLIST

Name of Bunkering Barge Name of Vessel taking Bunker
 Licence Plate Master's Name
 Master's/Driver's Name Date of Transshipment
 Time of Transshipment Place of Transshipment

Bunker barge/truck	Vessel taking bunker
<p>1. How much bunker oil will be transhipped:</p> <p>Fuel tonnes actual m³ Gas oil tonnes actual m³ Lub oil tonnes actual m³</p> <p>2. What are the means of communication between the barge/truck and the vessel taking bunkers: </p> <p>3. Who is responsible for communications with the vessel taking bunkers:</p> <p>Name Position</p> <p>4. Who is in charge of supervising the operation and taking immediate action in case of malfunction:</p> <p>Name Position</p> <p>5. (a) Is there an emergency stop facility:</p> <p>Yes/No Where</p> <p>(b) Has the emergency stopping procedure been discussed and agreed with the vessel taking bunkers:</p> <p>Yes/No</p>	<p>1. Who measured the contents of the bunker tanks:</p> <p>Name Position</p> <p>2. The measures were:</p> <p>Tank Actual contents Free space (up to 98% filling) No. tonnes m³ No. tonnes m³ No. tonnes m³ No. tonnes m³</p> <p>3. How often will the contents of the bunker tanks be checked during the bunker operations:</p> <p>Every minutes</p> <p>4. Who is responsible for taking the measurements referred to in point 3:</p> <p>Name Position</p> <p>5. How much bunker oil will be transhipped:</p> <p>Fuel tonnes actual m³ Gas oil tonnes actual m³ Lub oil tonnes actual m³</p> <p>6. What are the means of communication between the barge/truck and the vessel taking bunkers: </p> <p>7. Who is responsible for communications with the bunker barge/truck:</p> <p>Name Position</p>

<p>6. Nominated volume to be transhipped: Grade Volume</p> <p>Marine Gas Oil tonnes m³ LFO tonnes m³ LFO tonnes m³ LFO tonnes m³ Lub oil tonnes m³</p> <p>7. Agreed maximum pumping rates and line pressures:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">grade</th> <th style="text-align: left;">pumping rate in tonnes/hr.</th> <th style="text-align: left;">line pressure in psi/bar*</th> </tr> </thead> <tbody> <tr><td>.....</td><td>.....</td><td>.....</td></tr> <tr><td>.....</td><td>.....</td><td>.....</td></tr> <tr><td>.....</td><td>.....</td><td>.....</td></tr> <tr><td>.....</td><td>.....</td><td>.....</td></tr> </tbody> </table> <p>I confirm that I shall not exceed above volumes, pumping rates and line pressures* and that my crew will remain on duty close to the hose connection in order to oversee the safe bunker operation and to be able to respond to an emergency throughout the delivery.</p> <hr style="border: 1px solid black;"/> <p style="text-align: center;">Barge Master/Truck driver</p> <p>* if applicable</p>	grade	pumping rate in tonnes/hr.	line pressure in psi/bar*	<p>8. Who is in charge of supervising the operation and taking immediate action in case of malfunction:</p> <p>Name</p> <p>Position</p> <p>9. Accepted volume to be transhipped: Grade Volume</p> <p>Marine Gas Oil tonnes m³ LFO tonnes m³ LFO tonnes m³ LFO tonnes m³ Lub oil tonnes m³</p> <p>10. Agreed maximum pumping rates and line pressures:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">grade</th> <th style="text-align: left;">pumping rate in tonnes/hr.</th> <th style="text-align: left;">line pressure in psi/bar*</th> </tr> </thead> <tbody> <tr><td>.....</td><td>.....</td><td>.....</td></tr> <tr><td>.....</td><td>.....</td><td>.....</td></tr> <tr><td>.....</td><td>.....</td><td>.....</td></tr> <tr><td>.....</td><td>.....</td><td>.....</td></tr> </tbody> </table> <p>I confirm that I am able to receive the above volumes at the pumping rates and line pressures* agreed to above, that the ship's engineers in charge of the receiving operation will not close any valve which will restrict the flow of the product without adequate notice to the barge or truck personnel, and that my crew will remain on duty close to the hose connection in order to oversee the safe bunker operation and to be able to respond to an emergency throughout the delivery.</p> <hr style="border: 1px solid black;"/> <p>Master/Chief Engineer*</p> <p>* if applicable</p>	grade	pumping rate in tonnes/hr.	line pressure in psi/bar*
grade	pumping rate in tonnes/hr.	line pressure in psi/bar*																													
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THIS CHECKLIST HAS TO BE COMPLETED PRIOR TO COMMENCEMENT OF BUNKERING OPERATIONS

ANNEX 6

**ALPHABETICAL INDEX OF AND CROSS-REFERENCES BETWEEN
RECOMMENDATIONS IN SECTIONS 3 AND 7**

Section	Infra-structure	Regulatory and port authorities	Ships	Shore installations	Cargo interests
	3	7.1	7.2	7.3	7.4
Acceptability of dangerous cargoes		7.1.1			
Advance notification		7.1.2			
Alcohol and drug abuse			7.2.14	7.3.17	
Berthing		7.1.3	7.2.3	7.3.1	
Bilge water, waste ballast or slops			7.2.13		
Bunkering		7.1.14			
Communications		7.1.19			
Container areas	3.4				
Contaminated waste				7.3.16	
Dangerous cargo areas	3.4.1				
Documents and certificates					7.4.1
Emergency information			7.2.5	7.3.6	
Emergency procedures		7.1.4	7.2.4	7.3.5	
Entering the port area			7.2.1		
Entry into confined or enclosed spaces		7.1.10	7.2.11	7.3.14	
Environment precautions	3.3.1	7.1.6	7.2.7	7.3.9	
Exemptions		7.1.22			
Explosives	3.3.2	7.1.15			
Freight containers, portable tanks, vehicles					7.4.3
Facilities for damaged cargo	3.4.4				
Fire fighting				7.3.8	
Fire precautions		7.1.5	7.2.6	7.3.7	
Fumigation of ships, sheds, CTUs, etc.	3.4.3	7.1.11	7.2.12	7.3.15	
General	3.1		7.2.17	7.3.20	
Handling equipment					
Hot work and other repair or maintenance work	3.4.5	7.1.9	7.2.10	7.3.13	
Identification, packing, marking, labelling				7.3.3	7.4.2
Infectious substances		7.1.17			
Inspections		7.1.8	7.2.9	7.3.12	7.4.4
Knowledge of rules and regulations		7.1.23			
Land-use planning	3.2				
Lighting			7.2.16	7.3.19	
Pilotage and tug assistance		7.1.20			

Section	Infra-structure	Regulatory and port authorities	Ships	Shore installations	Cargo interests
	3	7.1	7.2	7.3	7.4
Pollution combating				7.3.10	
Protective equipment			7.2.18	7.3.21	
Radioactive materials	3.3.4	7.1.16			
Reception facilities for slops, etc.	3.4.6	7.1.12			
References		7.1.24			
Reporting of incidents		7.1.7	7.2.8	7.3.11	
Safe transport, handling and segregation		7.1.13		7.3.4	
Signals		7.1.18			
Specific areas	3.4				
Specific dangerous cargoes	3.3				
Supervision			7.2.2		
Tank storage and pipelines	3.4.7				
Temperature-controlled dangerous cargoes	3.3.3				
Unmanned barges		7.1.21			
Watchkeeping			7.2.2		
Weather conditions			7.2.15	7.3.18	

ANNEX 7

GUIDE TO FUMIGATION (3.4.3, 7.1.11, 7.2.12, 7.3.15)

- 1 The port and other relevant authorities should be notified, as required by the relevant legal requirements, in advance of the impending arrival of cargo transport units (CTUs) and bulk cargoes under fumigation.
- 2 The notification should at least contain the following information:
 - .1 Cargo or the material fumigated;
 - .2 Fumigant;
 - .3 Quantity and concentration of fumigant; and
 - .4 Date of application of the fumigant.
- 3 Persons handling fumigated cargoes or other fumigated materials should receive appropriate training relevant to their duties. Such training should at least include the following elements:
 - .1 Information in relation to fumigants;
 - .2 Recognition of characteristics of fumigated containers, other CTUs or cargo spaces;
 - .3 Procedures for emptying fumigated containers and CTUs and for discharging fumigated bulk cargoes;
 - .4 Use of personal protection equipment; and
 - .5 Guidance on the evaluation of potential risk during the handling of fumigated cargoes or materials.
- 4 Fumigation warning signs should be posted or displayed on the fumigated CTUs and outside cargo spaces containing fumigated cargoes or materials on board ships.
- 5 When a CTU or a cargo space has been sufficiently ventilated, a clearance certificate should be issued, by a responsible person, for the purpose of documenting that the CTU or the cargo space is safe for entry.
- 6 Opening of CTUs and bulk cargoes under fumigation should be done by a skilled person holding appropriate documentation issued by the national or local regulatory authorities.
- 7 Port areas used for fumigation purposes should be clearly identified and fenced. Fumigation warning signs should be displayed as required by the relevant legal requirements.

8 Fumigation activities should be carried out away from public or other work areas as required by the relevant legal requirements.

9 A “fumigator-in-charge” should be designated by the fumigation company, government agency or appropriate authority.

* * *

APPENDIX 1

GLOSSARY OF TERMINOLOGY OF RELEVANCE TO THE HANDLING OF DANGEROUS CARGOES

A

Absorbent

Any material or substance capable to accept into its inner structure another substance.

Acids

One of a large class of chemical substances whose water solutions have one or more of the following properties:

- sour taste;
- ability to make litmus dye turn to red;
- ability to react with and dissolve certain metals to form salts; and
- ability to react with bases or alkalis to form salts.

All acids contain hydrogen. In water, ionization (splitting of the molecule) occurs. Acids are referred to as **strong** or **weak** according to the concentration of hydrogen ion that results from ionization.

Adhesive

Any substance, inorganic or organic, natural or synthetic, that is capable of bonding other substances together by surface attachment.

Alcohol

A class of hydroxyl containing organic compounds. They have a generic formula $C_nH_{2n+1}OH$ (for saturated hydrocarbons), where OH is a hydroxyl group. There are also alcohols for unsaturated hydrocarbons. Alcohols in general are colourless liquids with a wide range of boiling points. Alcohols for methyl to butyl are mobile liquids. Those from C_5 to C_{11} are only liquids; above C_{12} they are usually solids. The most toxic members of the class are methyl alcohol and allyl alcohol.

Alkaline earth metals

These are calcium, barium, strontium and radium (group II A of the Periodic Table).

Alpha emitter

Radioactive substance (material) or article, which contains radioactive material, that spontaneously emits alpha particles (helium nucleus). Alpha particle has the mass 4 and the positive charge 2.

Aliphatic azo compounds

Any of a group of organic compounds which have the structure (-C-N=N-C-). Electrons involved in such kind of bonds have complicated orbits, and are extremely sensitive to additional input of external energy, which makes them capable to break the existing bonds. The break of the bonds affect the whole molecule which undergoes spontaneous decomposition.

Aliphatic hydrocarbons

One of the major groups of organic compounds characterized by straight-chain arrangements of the constituent carbon atoms.

Anhydrous

Descriptive of an inorganic compound that does not contain water either adsorbed on its surface or combined as water of crystallization.

Aromatic compounds

A major group of unsaturated cyclic hydrocarbons containing one or more rings. Example: benzene group (1 ring), naphthalene group (2 rings) and anthracene group (3 rings).

Aromatic sulphohydrazides

Organic compounds which have in their molecules aromatic radicals bonded with groups with the structure (-SO₂-NH-NH₂). Electrons involved in such kind of bonds have notably complicated orbits, and are extremely sensitive to additional input of external energy, which makes them capable to break the existing bonds. The break of the bonds affect the whole molecule which undergoes spontaneous decomposition.

Azide

Any of a group of compounds having the characteristic formula R (N₃)_x. R may be almost any metal atom, a hydrogen atom, a halogen atom, the ammonium radical, certain inorganic complexes and organic radical. The azide group has a chain structure N=N=N. Electrons involved in such kind of bonds have complicated orbits, and are extremely sensitive to additional input of external energy, which makes them capable to break the existing bonds. The break of the bonds affects the whole molecule which undergoes spontaneous decomposition. All the heavy metal azides, hydrogen azide and most the light metal azides are explosives. Many of the organic azides are explosives.

B

Beta emitter

Radioactive substance (material) or article, which contains radioactive material that spontaneously emits beta particles. Beta particle is a negatively charged particle identical with an electron emitted from a radioactive atomic nucleus. Beta rays (streams of these particles) may cause skin burns and do harm if they enter the body.

C

Catalyst

Any substance of which a fractionally small percentage strongly affects the rate of a chemical reaction.

Cellulose

A natural carbohydrate high polymer consisting of anhydroglucose units joined by an oxygen linkage to form long molecular chains that are essentially linear. Cellulose is a colourless solid, insoluble in water and organic solvents.

cis-, trans-

Prefixes used to describe the structure of geometrical isomers of organic compounds.

Condensation

The change of state of a substance from the vapour to the liquid or solid form.

D**Decomposition**

A fundamental type of chemical change. In decomposition, one substance breaks down into two or more simpler substances.

Decontamination (radioactive)

Removal of radioactive poisons from equipment, receptacle, clothing, skin, etc.

Deflagration

A mode of explosion constituting the very rapid autocombustion of particles of explosive as a surface phenomenon. Initiated by contact of a flame or spark, but may be caused by impact or friction.

Detonation

The extremely rapid, self-propagating decomposition of an explosive accompanied by a high pressure and high temperature wave that moves at from 1,000 to 9,000 metres per second. Detonation may be initiated by mechanical impact, friction or heat.

Diazonium salts

Compounds which have a structure $(-\text{CN}_2^+\text{Z}^-)$, where Z^- is a radical with the negative charge. Electrons involved in such kind of bonds have complicated orbits, and are extremely sensitive to additional input of external energy, which makes them capable to break the existing bonds. The break of the bonds affect the whole molecule which undergoes spontaneous decomposition.

Diluent

An ingredient used to reduce the concentration of an active material to achieve a desirable and beneficial effect.

Distillation

A separation process in which a liquid is converted to vapour and the vapour then condensed to a liquid. This condensed liquid is called the distillate. The usual purpose of distillation is purification.

E**Ether**

An organic compound in which an oxygen atom is interposed between two carbon atoms of organic radicals in the molecular structure.

Exothermic

A process or chemical reaction which is accompanied by evolution of heat.

Extraction

A process when some components are removed from, e.g., a liquid phase mixture.

F

Fertilizer

A substance or mixture that contains one or more of the primary plant nutrients and sometimes also secondary nutrients or their traces. The primary nutrients are nitrogen, phosphorus and potassium. Secondary nutrients are calcium, magnesium and sulphur.

Fish-meal

Ground dried fish as fertilizer or animal feed. Hazard: strong tendency to spontaneous heating.

Fumigant

A toxic agent in vapour form that destroys rodents, insects and infectious organisms. The process of applications of such agent is called fumigation.

G

Gamma rays

Electromagnetic radiation of extremely short wavelength and intensively high energy. Gamma rays origin in the atomic nucleus.

H

Halogen

One of the chemically related elements, fluorine, chlorine, bromine, iodine and astatine.

Halogenated hydrocarbons

A hydrocarbon in which one or more atoms of hydrogen is replaced by a halogen or halogens.

Heavy metal

Metal of density 5 and over.

Hydrocarbon gas

A gas composed entirely of hydrocarbons.

Hydrocarbons

Organic compounds consisting exclusively of the elements carbon and hydrogen.

Hydrocarbons halogenated

Hydrocarbons in which one or more hydrogen atoms have been replaced by fluorine (F), chlorine (Cl), bromine (Br) or iodine (I).

Hydroxides

A large group of compounds consisting of ions of metal or non-metal and ions of oxygen and hydrogen.

I

Inert

A term used in chemistry to indicate complete chemical inactivity of an element or compound.

Example:

- are inert gaseous elements; and
- carbon dioxide is an inert gaseous compound.

Inert gas

Helium, neon, argon, krypton, xenon and radon are inert gases, so called noble gases. Krypton, xenon and radon have radioactive isotopes and nuclides.

In respect of oil tankers, this is a gas or a mixture of gases, such as flue gas, containing insufficient oxygen to support the combustion of hydrocarbons.

Inertization

In respect of oil tankers, this is an introduction of inert gas into a tank with the object of attaining the inert conditions.

Inhibitor

A compound that retards or stops an undesired chemical reaction, such as corrosion, oxidation or polymerization.

Inorganic acids

These are mineral acids: sulphuric, nitric, hydrochloric, phosphoric. Hazard: all mineral acids are highly irritating and corrosive to living tissues.

Inorganic compound

Any chemical compound that does not contain the element carbon (C) with the exception of carbon dioxide, and compounds containing a carbonate radical ($-\text{CO}_3$), i.e., calcium carbonate.

Isomer

A molecule having the same number and kind of atoms as another molecule, but differing from it in respect to atomic arrangement and configuration.

Isotope

One two or more forms or species of an element that have the same atomic number, i.e. the same position in the Periodic Table, but different atomic masses. The difference in mass is due to the presence on one or more extra neutrons in the molecule.

K

Ketone

A class of liquid organic compounds in which the carbonyl group, $\text{C}=\text{O}$, is attached to two carbon atoms. The electronic bonds in the carbonyl group, $\text{C}=\text{O}$, are quite weak. Ketones are used primarily as solvents.

L

LC₅₀

It means a median lethal dose and characterizes toxicity. It is the statistically derived single dose of a substance which causes death in one half of the animals tested in accordance with the appropriate testing criteria.

M

Meta (m-), see ortho.

Mineral oil

Any liquid product of petroleum within the viscosity range of products commonly called oils.

N

n-

Abbreviation for normal. If hydrocarbon molecules are structured as a straight chain of carbon atoms, it is indicated by the abbreviation n-.

Nitrates

These are salts of the nitric acid (HNO₃). Users of nitrates are: manufacture of ammonium nitrate for fertilizer and explosives; organic synthesis (dyes, drugs, explosives, cellulose nitrate, nitrate salts); metallurgy, photoengraving; etching steel; ore flotation; medicine.

Nitrocellulose

Synonyms: cellulose nitrate; nitrocotton; guncotton; pyroxylin. Formula approximately C₆H₇O₂(ONO₂)₃. Contains from 10 to 14% nitrogen. Derivation: treatment of cellulose with mixture of nitric and sulphuric acids. Hazard: highly flammable; dangerous fire and explosion risk.

N-nitroso compounds

Compounds which have quite unstable, so called, N-nitroso group in the structure (-N-N=O). Electrons involved in such kind of bonds have complicated orbits, and are extremely sensitive to additional input of external energy, which makes them capable to break the existing bonds. The break of the bonds affects the whole molecule which undergoes spontaneous decomposition.

Nuclide

This is a particular species of atom, characterized by the mass, the charge (number of protons), and the energy content of its nucleus. A radionuclide is a radioactive nuclide.

O

Organic acids

Organic compound which contains one or more COOH-group (radical).

Organic compounds (substances), see hydrocarbons

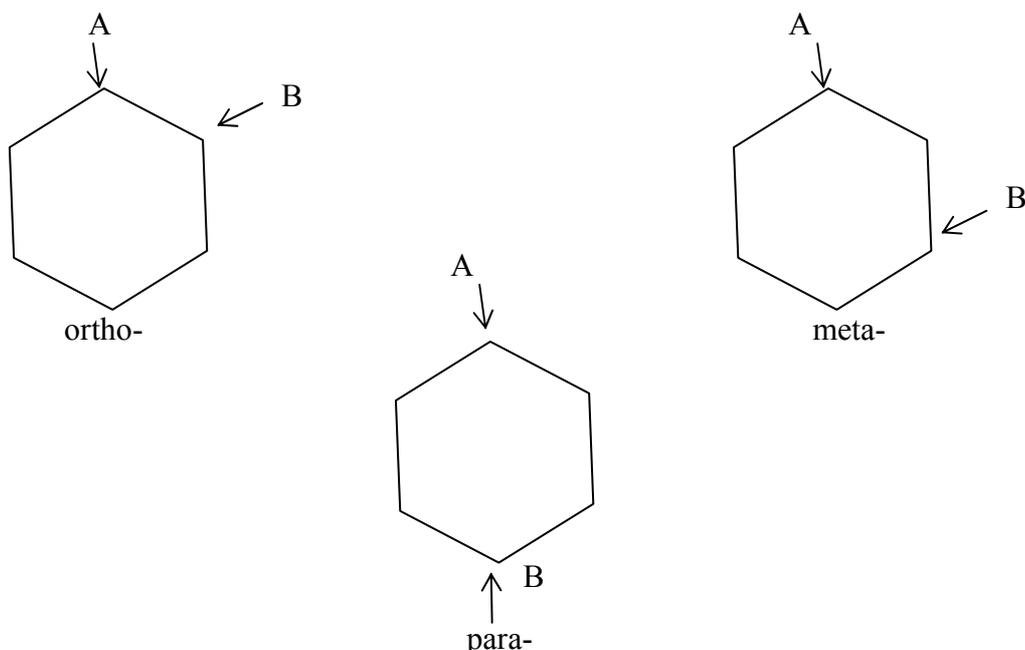
Organometallic compound (substance)

A compound comprised of a metal attached directly to the carbon.

Ortho- (o-)

A prefix meaning “straight ahead”; meta- means “beyond”; para- means “opposite”. These prefixes are used in organic chemistry in naming disubstitution products derived from benzene in which the substituent atoms or radicals are located in certain definite positions on the benzene ring.

Illustration: A and B are different radicals



Oxygen depleted atmosphere

The oxygen content in the atmosphere is 19% or less.

Oxygen enriched atmosphere

The oxygen content in the atmosphere is 23% or more.

P

Pasty substances

Substances of semisolid consistency and adhesive properties, to some extent.

Para (p-), see ortho

Peroxide

Any compound containing a bivalent O-O group where one of the oxygen atoms is very loosely bound in the molecule and have a tendency to react with some other substances or form oxygen as a gas (O₂). Peroxides are very unstable and may undergo decomposition even at low ambient temperature.

Illustration of the structure:

Hydrogen peroxide H-O-O-H

Organic peroxide R-O-O-R, where R symbolize an organic radical.

Pesticide

Any substance, organic or inorganic, used to destroy or inhibit the action of plant or animal pests.

Polymerization

A chemical reaction in which two or more relatively simple molecules (monomers) combine to form a chainlike macromolecule, or polymer.

Pyrophoric

Descriptive of any substance that ignites spontaneously in air.

R**Radioactivity**

Spontaneous nuclear transformation. The energy of the process is emitted in the form of alpha (α), beta (β) or gamma (γ) rays.

Refrigerant gas

A substance which, by undergoing a change of phase (e.g., liquid to vapour), lowers the temperature of its environment.

S**Salts**

Compounds formed when the hydrogen of an acid is replaced by a metal or its equivalent (e.g., an NH_4^+ radical).

sec-

Abbreviation for secondary, as applied to names of organic compounds.

Stowage factor

The stowage factor of bulk cargo is the figure which expresses the number of cubic metres which one tonne of material will occupy.

Strong acid, see Acids**sym-**

Abbreviation for symmetrical. A prefix denoting the structure of organic compounds.

T**tert-**

Abbreviation for tertiary. Can be considered as a trisubstituted methyl radical, $\text{R}_1\text{R}_2\text{R}_3\text{C}$ -, in which the central carbon is attached to three other carbons.

Threshold limit value (TLV)

The time-weighted average concentration of a substance to which employees may be repeatedly exposed, for a normal 8-hour workday or 40-hours workweek, day after day, without adverse effect.

trans- (see cis-)

U

Ullage

Amount by which the full capacity of a receptacle exceeds the volume of the contents.

uns-

Abbreviation for unsymmetrical. A prefix denoting the structure of organic compounds.

V

Viscosity

The internal resistance to flow exhibited by a fluid. Water is the primary viscosity standard with an accepted viscosity at 20°C of 0.01002 poise.

W

Weak acid, see acids

Work permit

A document issued by a responsible person permitting specific work to be done during a specific period in a defined area.

APPENDIX 2

SELECTED BIBLIOGRAPHY LIST OF INTERNATIONALLY RECOGNIZED CODES AND GUIDES RELEVANT TO THE TRANSPORT AND HANDLING OF DANGEROUS CARGOES IN PORT AREAS

[Items in italics not found in on-line catalogues/lists]

PIANC	<i>Dangerous Goods in Ports: Recommendations for port designers and port operators</i>
UNEP	<i>APELL: for Port Areas: Preparedness and Response to Chemical Accidents in Ports</i>
ILO	Code of Practice: Safety and Health in Ports – 2005
IMO/ILO	Code of Practice: Security in Ports – 2004
ICS/OCIMF/IAPH	International Safety Guide for Oil Tankers and Terminals (ISGOTT) – Fifth edition, 2006
ICS/OCIMF	Ship-to-Ship Transfer Guide (Liquefied Gases) – Second edition, 1995 Prevention of Oil Spillages through Cargo Pumproom Sea Valves – Second edition, 1991 Ship-to-Ship Transfer Guide (Petroleum) – Fourth edition, 2005
ICS/OCIMF/SIGTTO	Guide to Contingency Planning for the Gas Carrier Alongside and Within Port Limits – Second edition, 1999
OCIMF/SIGTTO	Inspection Guidelines for Ships Carrying Liquefied Gases in Bulk – Second edition, 1998
ICS	Ship/Shore Safety Checklist for Bulk Carriers – 2000 Tanker Safety Guide (Chemicals) – Third edition, 2002 Tanker Safety Guide (Liquefied Gas) – Second edition, 1995
OCIMF	Effective Mooring – Second edition, 2005 Vessel Inspection Questionnaire for Oil Tankers, Combination Carriers, Shuttle Tankers, Chemical Carriers and Gas Carriers, Barges, Towing Vessels Utilized for Handling Barges and Vessels carrying Packaged Cargoes (VIQ) – Third edition, 2005 Harmonized Vessel Particulars Questionnaire (VPQ) Marine Terminal Baseline Criteria and Assessment Questionnaire – First edition, 2004 Mooring Equipment Guidelines – Second edition, 1997 Recommendations for Equipment Employed in the Mooring of Ships at Single Point Moorings – Third edition, 1993 Recommendations for Oil Tanker Manifolds and Associated Equipment – Fourth edition, 1991 Recommendations for Manifolds for Refrigerated Liquefied Gas Carriers for Cargoes from 0°C to minus 104°C – Second edition, 1987 Recommendations for Manifolds for Refrigerated Liquefied Natural Gas Carriers (LNG) – Second edition, 1994
SIGTTO	Guidelines for Hazard Analysis – 1992 Safe Havens for Disabled Gas Carriers – 2003 Liquefied Gas Handling Principles on Ships and in Terminals – Third edition, 2000 Guide to Contingency Planning for Marine Terminals Handling Liquefied Gases in Bulk – First edition, 2001
OECD	<i>Guiding Principles for Chemical Accident Prevention, Preparedness and Response – Second edition, 2003</i> Guidance concerning Chemical Safety in Port Areas (Environment Monograph No.118) – 1996

ICHCA	Safety Panel Briefing Pamphlet No.6 – Guidance on the Preparation of Emergency Plans – 1994
WCO	<i>“High Level Guidelines for Co-operative Arrangements Between Members and Private Industry to Increase Supply Chain Security and Facilitate the Flow of International Trade”.</i>
IAEA	Regulations for the Safe Transport of Radioactive Materials – 2005

RELEVANT IMO INSTRUMENTS AND GUIDELINES

- International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, and earlier SOLAS Conventions where applicable;
- International Convention for the Prevention of Pollution from Ships, (MARPOL 73/78), as amended;
- International Maritime Dangerous Goods (IMDG) Code and the Supplement to it (includes EmS Guide, Medical First Aid Guide (MFAG), Reporting Procedures, IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs), International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on board Ships (INF Code), Recommendations on the Safe Use of Pesticides in Ships and Resolutions and Circulars referred to in the IMDG Code and the Supplement);
- International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) and earlier Code (BCH Code) where applicable;
- International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) and earlier Codes, the Gas Carrier Code and the Code for Existing Ships Carrying Liquefied Gases in Bulk, where applicable;
- Manual on Oil Pollution, sections I to VI;
- Manual on Chemical Pollution, sections 1 and 2;
- Comprehensive Manual on Port Reception Facilities;
- International Convention on Oil Pollution, Preparedness, Response and Co-operation (OPRC), 1990;
- International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (HNS Convention)
- Inert Gas Systems;
- Crude Oil Washing Systems;
- Facilities in Ports for the Reception of Oily Wastes;
- Graphical Symbols for Fire Control Plans;
- International Convention for Safe Containers (CSC), 1972, as amended;
- Code of Safety for Nuclear Merchant Ships;
- Safety Recommendations on the Use of Ports by Nuclear Merchant Ships;
- Code for Safe Practice for Cargo Stowage and Securing;
- International Code for the Safe Carriage of Grain in Bulk (International Grain Code); and
- International Ship and Port Facility Security Code (ISPS Code).

THE LATEST EDITION OR AMENDMENTS OF PUBLICATIONS
SHOULD BE CONSULTED IN ALL CASES

ADDITIONAL MATERIAL FOR INCLUSION IN THE RECOMMENDATIONS
(PARAGRAPH REFERENCES ARE INCLUDED)

CONTENTS

- Figure 1: Plan of port area (3.1.2)
- Figure 2: Plan showing dangerous goods areas (3.4.1.2)
- Figure 3: Dangerous goods boxes (3.4.1.2)
- Figure 4: Container storage area (3.4.2.3)
- Figure 5: Fumigation warning sign (7.1.11.1, 7.3.15.3)
- Figure 6: Segregation tables for port areas (7.1.13.2)

FIGURE 6

SEGREGATION TABLE FOR DANGEROUS CARGOES IN PORT AREAS

Classes	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	8	9	
Flammable gases	2.1	0	0	0	s	a	s	0	s	s	0	a	0
Non-toxic, non-flammable gases	2.2	0	0	0	a	0	a	0	0	a	0	0	0
Toxic gases	2.3	0	0	0	s	0	s	0	0	s	0	0	0
Flammable liquids	3	s	a	s	0	0	s	a	s	s	0	0	0
Flammable solids, self-reactive substances and desensitized explosives	4.1	a	0	0	0	0	a	0	a	s	0	a	0
Spontaneously combustible substances	4.2	s	a	s	s	a	0	a	s	s	a	a	0
Substances which, in contact with water, emit flammable gases	4.3	0	0	0	a	0	a	0	s	s	0	a	0
Oxidizing substances	5.1	s	0	0	s	a	s	s	0	s	a	s	0
Organic peroxides	5.2	s	a	s	s	s	s	s	s	0	a	s	0
Toxic substances (liquid and solids)	6.1	0	0	0	0	0	a	0	a	a	0	0	0
Corrosives (liquid and solids)	8	a	0	0	0	a	a	a	s	s	0	0	0
Miscellaneous dangerous substances and articles	9	0	0	0	0	0	0	0	0	0	0	0	0

Note for the segregation table

Cargoes of classes 1 (except division 1.4S), 6.2 and 7 should normally be allowed into the port area for direct shipment or delivery only. These classes have not been included in the table. However, if, through unforeseen circumstances, these cargoes have to be temporarily kept, it should be in designated areas. Segregation requirements of the individual class as stipulated in the IMDG Code should be considered by the port authority when establishing specific requirements.

NOTE TO FIGURE 6

SEGREGATION ADVICE FOR THE TEMPORARY KEEPING OF DANGEROUS CARGOES IN PORT AREAS

1 The reception and keeping of dangerous cargoes of classes 1 (other than division 1.4S), 6.2 and 7 should be subject to special rules for each port as the handling facilities at each terminal or berth vary considerably. The rules should be agreed with the authorities responsible for the safety of the port.

2 All dangerous cargoes delivered to the port area should be marked, documented, packaged, labelled or placarded in accordance with the IMDG Code.

3 The segregation of dangerous cargoes should be in accordance with chapter 7.2 of the IMDG Code as follows:

3.1 Packages/IBCs/trailers/flat racks or platform containers

- 0 = no segregation necessary unless required by the individual schedules
- a = away from – minimum 3 m separation required
- s = separated from – in open areas, minimum 6 m separation required in sheds or warehouses, minimum 12 m separation required unless separated by an approved fire wall

3.2 Closed containers/portable tanks/closed road vehicles

- 0 = no segregation necessary
- a = away from – no segregation necessary
- s = separated from – in open areas, longitudinally and laterally, minimum 3 m separation required, in sheds or warehouses longitudinally and laterally, minimum 6 m separation required unless separated by an approved fire wall

3.3 Open road vehicles/railway freight wagons/open-top containers

- 0 = no segregation necessary
- a = away from – minimum 3 m separation required
- s = separated from – in open areas, longitudinally and laterally, minimum 6 m separation required, in sheds or warehouses longitudinally and laterally, minimum 12 m separation required unless separated by an approved fire wall

Notes:

1 For freight containers, portable tanks, lorries, flat racks or platform containers or rail wagons a distance of 3 m is equal to the width of a standard 20-foot container, or one rail track, one trailer lane or, in the case of successive rail wagons, the longitudinal buffer space.

2 The segregation table shown uses “0” to indicate that no general segregation is required but those individual requirements of the Dangerous Goods List of the IMDG Code shall be consulted. The IMDG Code’s general segregation table (7.2.1.16), however, uses an “X” instead of the “0” used in these Recommendations. The difference is intentional, to emphasize the difference in the use of the segregation tables.

3 Closed type unit means a unit in which dangerous goods are totally enclosed by sufficiently strong boundaries, such as a freight container, a tank or a vehicle. Units with fabric sides or tops are not closed type units.

4 General

4.1 For dangerous cargoes with a secondary hazard, the segregation requirement for the secondary hazard should be applied when it is the more stringent. For cargo transport units containing dangerous cargoes of more than one class, the most stringent segregation requirement should be applied.

4.2 Dangerous cargoes in packaged non-containerized form, belonging to different classes, should not be stowed directly above each other. This applies to packaged dangerous cargoes belonging to one class but having different secondary hazards and also to certain cargoes of class 8.

4.3 Containers, tank-containers and portable tanks containing dangerous cargoes, where practicable, should not be stowed directly above each other or overlap. Exemptions should only be allowed for containers which contain dangerous cargoes of the same class. This does not apply to containers with different cargoes of class 8. Where applicable, containers should be stowed in such a manner as to allow, when applicable, access to the doors and both sides at all times.

4.4 Dangerous cargoes with toxic (poisonous) labels or placards should be separated from foodstuffs and animal feeds.

4.5 The segregation requirements only apply to dangerous cargoes in storage areas and on vehicles in the port areas.

4.6 All dangerous cargoes, except for individual packages, should, where applicable, be separated by a minimum distance of 1 m in order to permit access.

ANNEX 5**DRAFT MSC CIRCULAR****AMENDMENTS TO THE IMO/ILO/UN ECE GUIDELINES FOR PACKING
OF CARGO TRANSPORT UNITS (CTUs)**

1 The Maritime Safety Committee of IMO, at its sixty-seventh session (2 to 6 December 1996), approved the IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs), which were subsequently endorsed by the Inland Transport Committee of the UN ECE in January 1997 and by the Governing Body of the ILO in March 1997 and disseminated by means of MSC/Circ.787.

2 The Committee, at its [eighty-second session (29 November to 8 December 2006)], approved the amendments to the Guidelines, set out in the annex and requested the Secretariat to disseminate the aforementioned amendments by means of an MSC circular and publish them, in co-operation with the UN ECE and ILO, after endorsement by these two organizations.

3 Member Governments and international organizations are invited to bring the annexed amendments to the attention of all parties concerned.

ANNEX

DRAFT AMENDMENTS TO THE IMO/ILO/UN ECE GUIDELINES FOR PACKING OF CARGO TRANSPORT UNITS

SCOPE

These Guidelines are essential to the safe packing of CTUs by those responsible for the packing and securing of the cargo and by those whose task it is to train people to pack such units. However, they are not exhaustive and other sources of information may be relevant. Training is essential if safety standards are to be maintained. These Guidelines detail practical measures to ensure the safe packing of cargo onto or into CTUs. As such they are concerned with issues of safety and are not intended to address practical measures to enhance security, *per se*.

These Guidelines are not intended to conflict with, or to replace or supersede, any existing regulations or recommendations which may concern the carriage of cargo in CTUs. They do not cover the filling or emptying of tank containers, portable tanks or road tank vehicles, or the transport of any bulk cargo in bulk packagings.

Guidance on the security aspects of the movement of CTUs intended for carriage by sea may be found in a variety of documents including the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS); the International Ship and Port Facility Security Code (ISPS Code); the ILO/IMO Code of Practice on Security in Ports; and the Standards and the Publicly Available Specifications developed or being developed by the International Standards Organization (ISO) to address cargo security management and other aspects of supply chain security. Furthermore, the World Customs Organization (WCO) has developed a Framework of Standards to secure and facilitate global trade (the Framework of Standards).

However, it is important to bear in mind that all personnel involved in the transport chain have a significant role to play enhancing safety and security, not only in the prevention of unlawful acts. Significant financial losses are incurred through theft of cargo and the costs must ultimately be borne by customers and end users through increased insurance and transportation costs. The trafficking of illicit drugs has a detrimental effect on society. The movement of weapons in contravention of national laws and internationally agreed arms embargoes; the illegal migration and human trafficking; the smuggling of nuclear materials and precursors for weapons of mass destruction; protection of national revenues; environmental and cultural concerns, and the need to deprive terrorist organizations of funding are all issues of relevance to the transportation of CTUs. Furthermore, cargo handlers' and transporters' lives are lost and environments are damaged through the transportation of undeclared, improperly described and unsafely packed dangerous goods.

It is therefore extremely important that all personnel involved in the packing, security sealing, handling, transportation and processing of cargo should be made aware of the need for vigilance and the diligent application of practical procedures to enhance security, in accordance with national legislation and international agreements.

ANNEX 6**DRAFT RESOLUTION MSC...(82)
(adopted on ...)****ADOPTION OF THE GUIDELINES FOR THE DESIGN AND CONSTRUCTION OF
OFFSHORE SUPPLY VESSELS[, 2007]**

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.469(XII) by which the Assembly adopted the Guidelines for the design and construction of offshore supply vessels (OSV Guidelines),

NOTING that the Assembly, by the aforementioned resolution, authorized the Committee to amend the Guidelines as may be necessary to incorporate new features of offshore supply vessels,

RECOGNIZING that the OSV Guidelines had been adopted in 1981 and were based on the requirements of the 1974 SOLAS Convention, as amended in that year, while a number of amendments to the Convention and other IMO instruments (such as the Intact Stability Code) have since been adopted which might affect the Guidelines,

BEING DESIROUS of keeping the OSV Guidelines up to date,

HAVING CONSIDERED, at its [eighty-second session (29 November to 8 December 2006)], the revised OSV Guidelines proposed by the Sub-Committee on Stability and Load Lines and on Fishing Vessels Safety, at its forty-eighth session,

1. ADOPTS the Guidelines for the design and construction of offshore supply vessels[, 2007], the text of which is set out in the Annex to the present resolution;
2. INVITES all Governments to take appropriate steps to give effect to the annexed Guidelines for the design and construction of offshore supply vessels[, 2007];
3. SUPERSEDES resolution A.469(XII).

ANNEX

**GUIDELINES FOR THE DESIGN AND CONSTRUCTION OF OFFSHORE SUPPLY
VESSELS[, 2007]**

CONTENTS

	PREAMBLE
1	GENERAL
1.1	Application
1.2	Definitions
1.3	Principles governing near-coastal voyages
2	INTACT STABILITY
3	SUBDIVISION AND DAMAGE STABILITY
3.1	General
3.2	Damage assumptions
3.3	Damage stability criteria
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5	FIRE PROTECTION
6	LIFE-SAVING APPLIANCES
7	RADIOCOMMUNICATIONS
8	DOCUMENTATION
9	TRANSPORT OF HAZARDOUS AND LIQUID NOXIOUS SUBSTANCES IN BULK

PREAMBLE

1 These Guidelines have been developed for the design and construction of new offshore supply vessels with a view to promoting the safety of such vessels and their personnel, recognizing the unique design features and service characteristics of these vessels.

2 These Guidelines furthermore provide a standard of safety equivalent to the relevant requirements of the International Convention for the Safety of Life at Sea, 1974, as amended, and in particular to the stability criteria of the Code on Intact Stability for all Types of Ships Covered by IMO Instruments (IS Code), as amended.

3 Recognizing that for certain limited areas of operation and service characteristics it is unreasonable to apply these Guidelines in full, the possibility of relaxations has been introduced by the concept of “near-coastal voyage”.

4 Provisions for offshore supply vessels carrying more than 12 industrial personnel are not included in these Guidelines.

5 When an offshore supply vessel is used for special purposes, such as diving assistance or oceanographic surveys, the persons on board in connexion with these special purposes should be treated as special personnel.

6 The content of these Guidelines was reviewed in [2007] in order to update the references contained therein, to enhance subdivision and damage stability requirements, to remove duplication of the content between the Guidelines and the IS Code and to introduce an appropriate documentation of compliance with the Guidelines.

1 GENERAL

1.1 Application

1.1.1 Every new decked offshore supply vessel of 24 m and over but not more than 100 m in length should comply with the provisions of Parts 2 and 3 of these Guidelines. The intact and damage stability of a vessel of more than 100 m in length should be to the satisfaction of the Administration.

1.1.2 Parts 4, 5, 6 and 7 of these Guidelines apply to every new decked offshore supply vessel of 500 gross tonnage and above.

1.1.3 Where these Guidelines set forth alternative safety standards to those contained in the Convention and where the Convention is applicable, these Guidelines may be applied under the equivalency provisions of regulation 5 of chapter I of the Convention.

1.1.4 Vessels fitted with dynamic positioning equipment should comply with the guidelines developed by the Organization*.

* Refer to the Guidelines for vessels with dynamic positioning systems (MSC/Circ.645) and Guidelines for dynamic positioning system (DP) operator training (MSC/Circ.738).

1.1.5 For a vessel engaged in near-coastal voyages, the principles in 1.3 of these Guidelines should guide the Administration in the development of its national standards. Relaxations from the requirements of these Guidelines may be permitted by an Administration for vessels engaged in near-coastal voyages off its own coasts provided the operating conditions are, in the opinion of that Administration, such as to render compliance with the Guidelines unreasonable or unnecessary.

1.1.6 Unless expressly provided otherwise, an existing offshore supply vessel should be required to comply with these Guidelines as far as is practicable in the opinion of the Administration.

1.1.7 Where a vessel other than an offshore supply vessel, as defined in 1.2.1, is employed on a similar service, the Administration should determine the extent to which compliance with these Guidelines is required.

1.2 Definitions

For the purpose of these Guidelines, unless expressly provided otherwise:

1.2.1 *Offshore supply vessel* means a vessel:

- .1 which is primarily engaged in the transport of stores, materials and equipment to offshore installations; and
- .2 which is designed with accommodation and bridge erections in the forward part of the vessel and an exposed cargo deck in the after part for the handling of cargo at sea.

1.2.2 *New vessel* means a vessel the keel of which is laid or which is at a similar stage of construction six months after the date on which these Guidelines were adopted.

1.2.3 *Existing vessel* means a vessel which is not a new vessel.

1.2.4 The terms “length (L) of a vessel”, “perpendiculars”, “weathertight” and “summer load line” have the meanings as defined in the Protocol of 1988 relating to the International Convention on Load Lines, 1966, as amended.

1.2.5 *Administration* means the Government of the State whose flag the vessel is entitled to fly.

1.2.6 *Offshore installation* means a marine structure located at an offshore site.

1.2.7 *IS Code* means the Code on Intact Stability for all Types of Ships Covered by IMO Instruments, as amended.

1.2.8 *Near-coastal voyage* means a voyage in the vicinity of the coast of a State as defined by the Administration of that State.

1.2.9 *Convention* means the International Convention for the Safety of Life at Sea, 1974, as amended.

1.3 Principles governing near-coastal voyages

1.3.1 The Administration defining near-coastal voyages for the purpose of these Guidelines should not impose design and construction standards for a vessel entitled to fly the flag of another State and engaged in such voyages in a manner resulting in a more stringent standard for such a vessel than for a vessel entitled to fly its own flag. In no case should the Administration impose, in respect of a vessel entitled to fly the flag of another State, standards in excess of these Guidelines for a vessel not engaged in near-coastal voyages.

1.3.2 With respect to a vessel regularly engaged in near-coastal voyages off the coast of another State the Administration should prescribe design and construction standards for such a vessel at least equal to those prescribed by the Government of the State off whose coast the vessel is engaged, provided such standards do not exceed these Guidelines in respect of a vessel not engaged in near-coastal voyages.

1.3.3 A vessel which extends its voyage beyond a near-coastal voyage should comply with these Guidelines.

2 INTACT STABILITY

The vessel should comply with the relevant provisions for offshore supply vessels contained in the IS Code. Reference should be made to appendix 1 for operational matters related to stability criteria.

SUBDIVISION AND DAMAGE STABILITY

3.1 General

Taking into account, as initial conditions before flooding, the standard loading conditions required by the relevant provisions of Part B of the IS Code and the damage assumptions in 3.2, the vessel should comply with the damage stability criteria as specified in 3.3.

3.2 Damage assumptions

3.2.1 Damage should be assumed to occur anywhere in the vessel's length between transverse watertight bulkheads.

3.2.2 The assumed extent of damage should be as follows:

- .1 longitudinal extent: vessels with the length (L) greater than 43 m, 3 m plus 3% of the vessel's length. For those with length (L) not greater than 43 m, 10% of the vessel's length,
- .2 transverse extent: transverse extent of damage should be assumed as 760 mm, measured inboard from the side of the vessel perpendicularly to the centreline at the level of the summer load waterline,
- .3 vertical extent: from the underside of the cargo deck, or the continuation thereof, for the full depth of the vessel.

3.2.3 A transverse watertight bulkhead extending from the vessel's side to a distance inboard of 760 mm or more at the level of the summer load line joining longitudinal watertight bulkheads may be considered as a transverse watertight bulkhead for the purpose of the damage calculations.

3.2.4 If pipes, ducts or tunnels are situated within the assumed extent of damage, arrangements should be made to ensure that progressive flooding cannot thereby extend to compartments other than those assumed to be floodable for each case of damage.

3.2.5 If damage of a lesser extent than that specified in paragraph 3.2.2 results in a more severe condition, such lesser extent should be assumed.

3.2.6 Where a transverse watertight bulkhead is located within the transverse extent of assumed damage and is stepped in way of a double bottom or side tank by more than 3.05 m, the double bottom or side tanks adjacent to the stepped portion of the transverse watertight bulkhead should be considered as flooded simultaneously.

3.2.7 If the distance between adjacent transverse watertight bulkheads or the distance between the transverse planes passing through the nearest stepped portions of the bulkheads is less than the longitudinal extent of damage given in paragraph 3.2.2.1 only one of these bulkheads should be regarded as effective for the purpose of paragraph 3.2.1.

3.3 Damage stability criteria

3.3.1 The final waterline, taking into account sinkage, heel and trim, should be below the lower edge of any opening through which progressive flooding may take place. Such openings should include air pipes and those which are capable of being closed by means of weathertight doors or hatch covers and may exclude those openings closed by means of watertight manhole covers and flush scuttles, small watertight cargo tank hatch covers which maintain the high integrity of the deck, remotely operated watertight sliding doors and sidescuttles of the non-opening type.

3.3.2 In the final stage of flooding, the angle of heel due to unsymmetrical flooding should not exceed 15°. This angle may be increased up to 17° if no deck immersion occurs.

3.3.3 The stability in the final stage of flooding should be investigated and may be regarded as sufficient if the righting lever curve has, at least, a range of 20° beyond the position of equilibrium in association with a maximum residual righting lever of at least 100 mm within this range. Unprotected openings should not become immersed at an angle of heel within the prescribed minimum range of residual stability unless the space in question has been included as a floodable space in calculations for damage stability. Within this range, immersion of any of the openings referred to in paragraph 3.3.1 and any other openings capable of being closed weathertight may be authorized.

3.3.4 The Administration should be satisfied that the stability is sufficient during intermediate stages of flooding.

3.4 Assumptions for calculating damage stability

3.4.1 Compliance with paragraph 3.3 should be confirmed by calculations which take into consideration the design characteristics of the vessel, the arrangements, configuration and permeability of the damaged compartments and the distribution, specific gravities and the free surface effect of liquids.

3.4.2 The permeability of compartments assumed to be damaged should be as follows:

<i>Spaces</i>	<i>Permeability</i>
Appropriated to stores	60
Occupied by accommodation	95
Occupied by machinery	85
Void spaces	95
Intended for dry cargo	95

The permeability of tanks should be consistent with the amount of liquid carried, as shown in the loading conditions specified in paragraph 3.1. The permeability of empty tanks should be assumed to be not less than 95.

3.4.3 The free surface effect should be calculated at an angle of heel of 5° for each individual compartment or the effect of free liquid in a tank should be calculated over the range of positive residual righting arm, by assessing the shift of liquids by moment of transference calculations.

3.4.4 Free surface for each type of consumable liquid should be assumed for at least one transverse pair of tanks or a single centreline tank. The tank or tanks to be taken into account should be those where the effect of free surface is the greatest.

3.4.5 Alternatively, the actual free surface effect may be used provided the methods of calculation are acceptable to the Administration.

3.5 Subdivision

3.5.1 The machinery spaces and other working and living spaces in the hull should be separated by watertight bulkheads.

3.5.2 Arrangements made to maintain the watertight integrity of openings in watertight subdivisions should comply with the relevant provisions for cargo ships contained in chapter II-1 of the Convention.

3.5.3 A collision bulkhead should be fitted that complies with relevant provisions for cargo ships of chapter II-1 of the Convention.

3.5.4 An afterpeak bulkhead should be fitted and made watertight up to the freeboard deck. The afterpeak bulkhead may, however, be stepped below the freeboard deck, provided the degree of safety of the vessel as regards subdivision is not thereby diminished.

4 MACHINERY AND ELECTRICAL INSTALLATIONS

The vessel should comply with the relevant provisions for cargo ships contained in parts C, D and E of chapter II-1 of the Convention.

5 FIRE PROTECTION

The vessel should comply with the relevant provisions for cargo ships contained in chapter II-2 of the Convention.

6 LIFE-SAVING APPLIANCES

The vessel should comply with the relevant provisions for cargo ships contained in chapter III of the Convention.

7 RADIOCOMMUNICATIONS

The vessel should comply with the relevant provisions for cargo ships of chapter IV of the Convention.

8 DOCUMENTATION

The Administration, its nominated surveyor or duly authorized organization recognized by the Administration should issue a Document of Compliance, the model form of which is set out in the appendix 2, after it is satisfied that the vessel complies with the provisions of these Guidelines.

9 TRANSPORT OF HAZARDOUS AND LIQUID NOXIOUS SUBSTANCES IN BULK

A vessel involved in the transport of limited quantities of hazardous and liquid noxious substances in bulk should comply with the revised Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels, as amended*.

* Refer to resolution A.673(16), as amended by resolutions MSC...(…) and MEPC...(…).

APPENDIX 1

OPERATIONAL MATTERS PERTAINING TO STABILITY CRITERIA FOR OFFSHORE SUPPLY VESSELS

The following operational matters should be considered in relation to stability criteria under section 2 of the Guidelines:

- 1 The stability criteria mentioned in the IS Code are minimum values; no maximum values are recommended. It is advisable to avoid excessive values, since these might lead to acceleration forces which could be prejudicial to the vessel, its complement, its equipment and the safe carriage of the cargo.
- 2 Where anti-rolling devices are installed in a vessel, the Administration should be satisfied that the stability criteria in the IS Code can be maintained when the devices are in operation.
- 3 A number of factors such as beam wind on a vessel with large windage area, icing, rolling characteristics, following seas, etc., adversely affect stability and the Administration is advised to take these into account in so far as is deemed necessary.

APPENDIX 2

FORM OF THE OFFSHORE SUPPLY VESSEL DOCUMENT OF COMPLIANCE

DOCUMENT OF COMPLIANCE

(Official seal)

Issued under the provisions of the

GUIDELINES FOR THE DESIGN AND CONSTRUCTION OF OFFSHORE SUPPLY
VESSELS[, 2007]

(resolution MSC...(..))

under the authority of the Government of

.....
(full official designation of country)

by
(full official designation of the competent person or organization recognized by the Administration)

Particulars of the vessel*

Name of vessel
Distinctive number or letters
Port of registry
Gross tonnage
Deadweight
IMO Number**
Date on which keel was laid or
on which the vessel was at
a similar stage of construction

The vessel is exempted from compliance with the following provisions of the Guidelines:

.....

THIS IS TO CERTIFY that the design and construction of the vessel complies with relevant provisions of the Guidelines.

Issued at
(place of issue of Certificate)

.....
(Date of issue)

.....
*(signature of authorized official
issuing the certificate)*

(Seal or stamp of the authority, as appropriate)

* Alternatively, the particulars of the vessel may be placed horizontally in boxes.

** In accordance with IMO ship identification number scheme, adopted by the Organization by resolution A.600(15).

ANNEX 7

**DRAFT RESOLUTION MSC...(82)
(adopted on ...)****ADOPTION OF AMENDMENTS TO THE GUIDELINES FOR THE TRANSPORT AND
HANDLING OF LIMITED AMOUNTS OF HAZARDOUS AND NOXIOUS LIQUID
SUBSTANCES IN BULK ON OFFSHORE SUPPORT VESSELS**

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.673(16) by which the Assembly adopted the Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels (LHNS Guidelines),

NOTING that the Assembly, by the aforementioned resolution, authorized the Maritime Safety Committee and the Marine Environment Protection Committee to amend the Guidelines as may be necessary,

NOTING ALSO that the Maritime Safety Committee, at its [...] session, adopted the Guidelines for the design and construction of offshore supply vessels[, 2007] (OSV Guidelines),

NOTING FURTHER that the LHNS Guidelines were referred to in and applied in addition to the OSV Guidelines, stipulating that, where the Guidelines set forth alternative safety standards to those contained in the OSV Guidelines, the provisions of the LHNS Guidelines should be followed,

BEING DESIROUS of keeping the LHNS Guidelines up to date,

NOTING that the Marine Environment Protection Committee, at its [...] session, adopted by resolution MEPC...(...) identical amendments to the LHNS Guidelines,

HAVING CONSIDERED, at its [eighty-second session (29 November to 8 December 2006)], the amendments to the LHNS Guidelines proposed by the Sub-Committee on Stability and Load Lines and on Fishing Vessels Safety, at its forty-eighth session,

1. ADOPTS the amendments to the Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels (resolution A.673(16)), the text of which is set out in the Annex to the present resolution;
2. INVITES all Governments to take appropriate steps to give effect to the annexed amendments to the LHNS Guidelines.

ANNEX

**DRAFT AMENDMENTS TO THE GUIDELINES FOR THE TRANSPORT AND
HANDLING OF LIMITED AMOUNTS OF HAZARDOUS AND NOXIOUS LIQUID
SUBSTANCES IN BULK ON OFFSHORE SUPPORT VESSELS
(RESOLUTION A.673(16))**

PREAMBLE

1 In paragraph 2, the words “regulation 13(4) of Annex II” are replaced by the words “regulation 11(2) of Annex II”.

2 In paragraph 5, the year “[2007]” is inserted after “Guidelines for the Design and Construction of Offshore Supply Vessels” and “(resolution A.469(XII))” is replaced by “resolution MSC...(...)”.

CHAPTER 1 – GENERAL

1.1 Application

2a Paragraph 1.1.7 is deleted.

2b Insert new paragraph 1.1.7 “For provisions regulating the transport of dangerous goods and marine pollutants in packaged form, including transport of dangerous goods in portable tanks, refer to the International Maritime Dangerous Goods (IMDG) Code.”

3 In paragraph 1.1.8, the reference to “(resolution A.469(XII))” is deleted in the first sentence and the words “to those contained in resolution A.469(XII)” are deleted in the second sentence.

1.2 Scope

4 In paragraph 1.2.2.1.2, the words “category A, B and C” are deleted.

1.3 Definitions

5 Paragraph 1.3.6 is deleted.

6 Paragraphs 1.3.7, 1.3.8 and 1.3.9 are renumbered as paragraphs 1.3.6, 1.3.7 and 1.3.8, respectively.

7 Paragraph 1.3.10 is renumbered as paragraph 1.3.9 and the words “, as amended” are added after the words “MEPC.19(22)”.

8 Paragraph 1.3.11 is renumbered as paragraph 1.3.10 and the words “, as amended” are added after the words “MSC.5(48)”.

9 Paragraphs 1.3.12 and 1.3.13 are deleted.

1.5 Survey and certification

10 In paragraph 1.5.1, the following new sentence is added after the existing first sentence:

“If the language used is not English, French or Spanish, the text should include the translation into one of these languages.”

11 In paragraph 1.5.2, the words “regulation 11 of Annex II” are replaced by the words “regulations 7 and 9 of Annex II”.

CHAPTER 2 – STABILITY AND CARGO TANK LOCATION

12 In paragraph 2.1.1, the year “[2007]” is inserted after the words “Guidelines for the design and construction of offshore supply vessels” and the words “(resolution A.469(XII))” are replaced by “resolution MSC...(...)”.

CHAPTER 3 – SHIP DESIGN

3.4 Cargo tank construction

12a Paragraph 3.4.2 is deleted.

12b Insert new paragraph 3.4.2 “Instead of the use of permanently attached deck-tanks, portable tanks meeting the requirements of the International Maritime Dangerous Goods (IMDG) Code or other portable tanks specifically approved by the Administration may be used for cargoes indicated in paragraph 1.2.2 provided that the tanks are properly located and secured to the vessel.”

13 In paragraph 3.4.4.1, the words “0.7 bar” are replaced by the words “0.07 MPa”.

3.6 Cargo tank vent systems

14 In paragraph 3.6.2, the reference to “8.2.2” is replaced by the reference to “8.3.4”.

3.9 Fire-fighting requirements

15 In paragraph 3.9.1.1, the references to “60, 61, 62 and 63” are replaced by the references to “4.5.5, 10.8 and 10.9”.

16 In paragraph 3.9.1.2, the references to “56.1, 56.2, 56.4, 56.8 and 56.7” are replaced by the references to “4.5.1.1, 4.5.1.2, 4.5.1.4, 4.5.2.1 to 4.5.2.3 and 9.2.4.2.5”, respectively and the word “metres” is replaced by the symbol “m”.

17 In paragraph 3.9.1.3, the reference to “57.1” is replaced by the reference to “9.2.4.1” and the reference to “42.5.1” is replaced by the reference to “9.2.3.1.1.1”.

18 In paragraph 3.9.1.4, the reference to “44” is replaced by the reference to “9.2.3” and the reference to “58” is replaced by the reference to “9.2.4.2”.

19 In paragraph 3.9.1.5, the word “regulation” is replaced by the word “regulations” and the reference to “59” is replaced by the reference to “4.5.3, 4.5.4 and 4.5.6 to 4.5.8”.

20 The existing text of paragraph 3.9.1.6 is replaced by the following:

“regulations 10.2, 10.4 and 10.5, except regulation 10.5.6, should apply as they would apply to tankers of 2,000 gross tonnage and over;”.

21 In paragraph 3.9.1.7, the reference to “61” is replaced by the reference to “10.8”.

22 In paragraph 3.9.1.8, the reference to “63” is replaced by the reference to “10.9”.

23 In paragraph 3.9.2.3, the words “should be provided” are deleted.

24 In paragraph 3.9.2.3.4.3, the words “per square metre” are deleted.

25 The existing text of paragraph 3.9.2.4 is replaced by the following:

“An alternative to the systems required in 3.9.2.3 above may be approved in accordance with the procedures contained in SOLAS regulation II-2/17.”

3.16 Emergency remote shutdown

26 In paragraph 3.16, the words “50 bar gauge” are replaced by the words “5 MPa”.

CHAPTER 4 – POLLUTION REQUIREMENTS

27 The existing text of paragraph 4.1 is replaced by the following:

“Each ship certified to carry noxious liquid substances should be provided with a Cargo Record Book, a Procedure and Arrangements Manual and a Shipboard Marine Emergency Plan developed for the ship in accordance with Annex II to MARPOL 73/78 and approved by the Administration.”

28 The existing text of paragraph 4.2 is replaced by the following:

“Discharge into the sea of residues of noxious liquid substances permitted for the carriage in Ship Type 3, or products listed in appendix 1 or ballast water, tank washings, or other residues or mixtures containing such substances, is prohibited. Any discharges of residues and mixtures containing noxious liquid substances should be to reception facilities in port. As a consequence of this prohibition, the Administration may waive the requirements for efficient stripping and underwater discharge arrangements in MARPOL 73/78, Annex II.”

29 Paragraph 4.3 is deleted and paragraph 4.4 is renumbered as paragraph 4.3.

30 The existing text of appendix 1 is replaced by the following:

APPENDIX 1

TABLE OF PERMITTED PRODUCTS

	Flammability
Oil-based mud containing mixtures of products listed in Chapters 17 and 18 of the IBC Code and the MEPC.2/Circular and permitted to be carried under paragraph 1.2 of these Guidelines	No
Water based mud containing mixtures of products listed in Chapters 17 and 18 of the IBC Code and the MEPC.2/Circular and permitted to be carried under paragraph 1.2 of these Guidelines	No
Sodium Chloride Brine	No
Calcium Bromide Brine	No
Calcium Chloride Brine	No
Calcium nitrate/Magnesium nitrate/Potassium chloride solution	No
Calcium Nitrate Solution (50% or less)	No
Drilling brines (containing zinc salts)	No
Zinc Bromide Brine	No
Potassium Formate Solutions	No
Potassium Chloride Solutions	Yes
Potassium Chloride solution (10% or more)	No
Ethyl Alcohol	Yes
Ethylene Glycol	No
Ethylene Glycol tert butyl ether	Yes
Methyl Alcohol	Yes
Acetic acid	Yes
Formic acid	Yes
Hydrochloric Acid	No
Hydrochloric-hydrofluoric mixtures containing 3% or less	No
Hydrofluoric acid	No
Sulphuric Acid	No
Toulene	Yes
Xylene	Yes
Liquid carbon dioxide	No
Liquid nitrogen	No
Noxious liquid, NF, (7) n.o.s. (trade name ..., contains ...) ST3, Cat. Y	No
Noxious liquid, F, (8) n.o.s. (trade name, contains ...) ST3, Cat. Z	Yes
Noxious liquid, NF, (9) n.o.s. (trade name ..., contains ...) ST3, Cat. Z	No
Noxious liquid, F, (10) n.o.s. (trade name ..., contains ...) ST3, Cat. Z	Yes
Noxious liquid, (11) n.o.s. (trade name ..., contains ...) Cat. Z	No
Non-noxious liquid, (12) n.o.s. (trade name ..., contains ...) Cat. OS	No

APPENDIX 2 – MODEL FORM OF CERTIFICATE OF FITNESS

31 The existing text of appendix 2 is replaced by the following:

“CERTIFICATE OF FITNESS

(Official seal)

Issued under the provisions of the

**GUIDELINES FOR THE TRANSPORT AND HANDLING OF LIMITED AMOUNTS OF
HAZARDOUS AND NOXIOUS LIQUID SUBSTANCES IN BULK ON OFFSHORE
SUPPORT VESSELS**
(resolution A.673(16), as amended by resolutions MSC....(82) and MEPC....(55))

under the authority of the Government of

.....
(full official designation of country)

by
*(full official designation of the competent person
or organization recognized by the Administration)*

Particulars of ship¹

Name of ship
Distinctive number or letters
IMO Number²
Port of registry
Gross tonnage
Date on which keel was laid or on
which the vessel was at a similar
stage of construction or (in the case of a converted vessel) date
on which conversion for the carriage
of bulk liquids subject to these
Guidelines was commenced:

The ship also complies fully with the following amendments to the Guidelines:

.....
.....
The ship is exempted from compliance with the following provisions of the Guidelines:

¹ Alternatively, the particulars of the ship may be placed horizontally in boxes.

² In accordance with IMO ship identification number scheme, adopted by the Organization by resolution A.600(15).

THIS IS TO CERTIFY:

- 1 That the ship has been surveyed in accordance with the provisions of 1.5 of the Guidelines;
- 2 That the survey showed that the construction and equipment of the ship:
 - .1 complied with the relevant provisions of the Guidelines applicable to “new” ships³;
 - .2 complied with the provisions of the Guidelines in respect of “existing” ships³.
- 3 That the ship has been provided with a Manual in accordance with Appendix 4 of Annex II of MARPOL 73/78 as called for by regulation 14 of Annex II and that the arrangements and equipment of the vessel prescribed in the manual are in all respects satisfactory;
- 4 That the ship complies with the requirements of the Guidelines and Annex II to MARPOL 73/78 for carriage in bulk of the following products provided that all relevant operational provisions of the Guidelines and Annex II are observed:

Products (refer to Notes 1, 2 on completion of Certificate)	Conditions of carriage (tank numbers, etc.)	Pollution Category
Continued on attachment 1, additional signed and dated sheets ³ . Tank numbers referred to in this list are identified on attachment 2, showing a signed and dated simplified tank plan.		

³ Delete as appropriate.

5 That, in accordance with 1.4³ of the Guidelines and 2.8.2³ of the IBC Code, the provisions of the Guidelines and the Code are modified in respect of the vessel in the following manner:
.....

6 That the ship must be loaded:

.1 in accordance with the loading conditions provided in the approved loading manual, stamped and dated and signed by a responsible officer of the Administration, or of an organization recognized by the Administration³;

.2 in accordance with the loading limitations appended to this Certificate³.

Where it is required to load the ship other than in accordance with the above instructions, then the necessary calculations to justify the proposed loading conditions should be communicated to the certifying Administration who may authorize in writing the adoption of the proposed loading condition.⁴

This Certificate is valid until (dd/mm/yyyy):⁵
subject to surveys in accordance with 1.5 of the Guidelines.

Completion date of the survey on which this certificate is based:
(dd/mm/yyyy)

Issued at
(Place of issue of Certificate)

.....
(Date of issue)

.....
(Signature of authorized official
issuing the certificate)

(Seal or stamp of the authority, as appropriate)

³ Delete as appropriate.

⁴ Instead of being incorporated in the Certificate, this text may be appended to the Certificate if duly signed and stamped.

⁵ Insert the day of expiry, as specified by the Administration, which should not exceed 5 years from the date of initial survey or the periodical survey.

Notes on completion of Certificate:

- 1 Products: products listed in appendix 1 to the Guidelines or which have been evaluated by the Administration in accordance with 1.2.4 of the Guidelines should be listed. In respect of the latter “new” products, any special requirements provisionally prescribed should be noted.
- 2 Products: the list of products the vessel is suitable to carry should include the Noxious Liquid Substances of category Z which are not covered by the Guidelines and should be identified as “IBC Code chapter 18 category Z”.

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that at a survey required by 1.5.2 of the Code the ship was found to comply with the relevant provisions of the Guidelines.

Annual survey: Signed:
(Signature of duly authorized official)
Place:
Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

Annual/Intermediate³ survey: Signed:
(Signature of duly authorized official)
Place:
Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

Annual/Intermediate³ survey: Signed:
(Signature of duly authorized official)
Place:
Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

³ Delete as appropriate.

Annual survey:

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

ANNUAL/INTERMEDIATE SURVEY IN ACCORDANCE WITH PARAGRAPH 1.5.6.8.3

THIS IS TO CERTIFY that, at an annual/intermediate³ survey in accordance with paragraph 1.5.8.6.3 of the Code, the ship was found to comply with the relevant provisions of the Guidelines:

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID
FOR LESS THAN 5 YEARS WHERE PARAGRAPH 1.5.6.3 APPLIES**

The ship complies with the relevant provisions of the Guidelines, and this Certificate shall, in accordance with paragraph 1.5.6.3 of the Code, be accepted as valid until (dd/mm/yyyy):
.....

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN
COMPLETED AND PARAGRAPH 1.5.6.4 APPLIES**

The ship complies with the relevant provisions of the Guidelines, and this Certificate shall, in accordance with paragraph 1.5.6.4 of the Code, be accepted as valid until (dd/mm/yyyy):.....

³ Delete as appropriate.

Annual survey:

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE
UNTIL REACHING THE PORT OF SURVEY OR FOR A PERIOD
OF GRACE WHERE PARAGRAPH 1.5.6.5 OR 1.5.66 APPLIES**

This Certificate shall, in accordance with paragraph 1.5.6.5/1.5.6.6³ of the Code, be accepted as valid until

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE WHERE
PARAGRAPH 1.5.6.8 APPLIES**

In accordance with paragraph 1.5.6.8 of the Code, the new anniversary date is

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

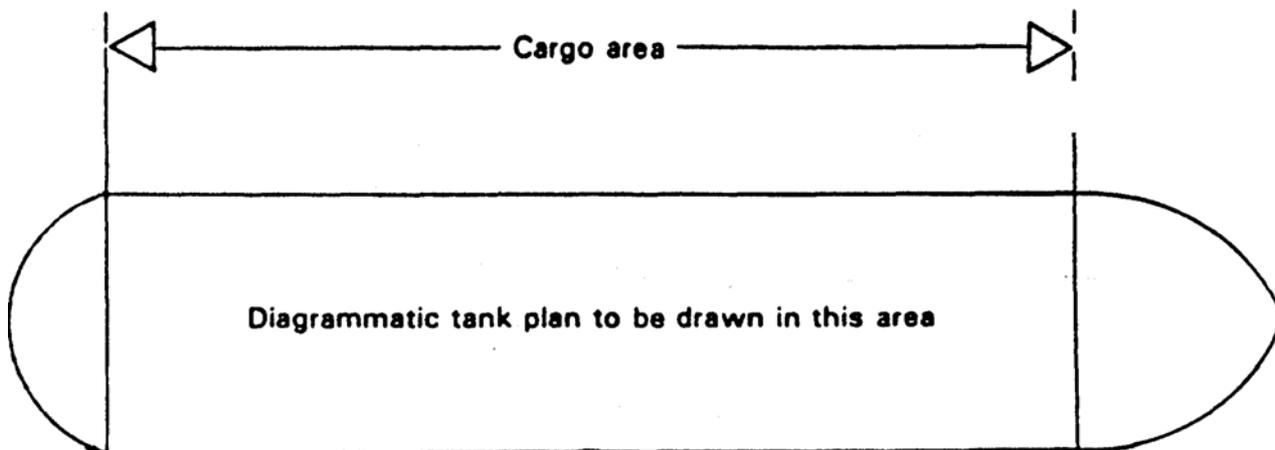
³ Delete as appropriate.

**ATTACHMENT 2
TO THE CERTIFICATE OF FITNESS**

TANK PLAN (specimen)

Name of ship:

Distinctive number or letters:



Date
(dd/mm/yyyy)
(as for certificate)

.....
*(Signature of official issuing the Certificate
and/or seal of issuing authority)"*

ANNEX 8

**DRAFT RESOLUTION MEPC...(55)
(adopted on ...)****ADOPTION OF AMENDMENTS TO THE GUIDELINES FOR THE TRANSPORT AND
HANDLING OF LIMITED AMOUNTS OF HAZARDOUS AND NOXIOUS LIQUID
SUBSTANCES IN BULK ON OFFSHORE SUPPORT VESSELS
(RESOLUTION A.673(16))**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee,

RECALLING ALSO resolution A.673(16) by which the Assembly adopted the Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels (LHNS Guidelines),

NOTING that the Assembly, by the aforementioned resolution, authorized the Maritime Safety Committee and the Marine Environment Protection Committee to amend the Guidelines as may be necessary,

NOTING ALSO that the Maritime Safety Committee, at its [...] session, adopted the Guidelines for the design and construction of offshore supply vessels[, 2007] (OSV Guidelines),

NOTING FURTHER that the LHNS Guidelines were referred to in and applied in addition to, the OSV Guidelines, stipulating that where the Guidelines set forth alternative safety standards to those contained in OSV Guidelines, the provisions of the LHNS Guidelines should be followed,

BEING DESIROUS of keeping the LHNS Guidelines up to date,

NOTING that the Maritime Safety Committee, at its [...] session, adopted by resolution MSC...() identical amendments to the LHNS Guidelines,

HAVING CONSIDERED, at its [...] session, the amendments to the LHNS Guidelines proposed by the Sub-Committee on Stability and Load Lines and on Fishing Vessels Safety, at its forty-eighth session,

1. ADOPTS the amendments to the Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels (resolution A.673(16)), the text of which is set out in the Annex to the present resolution;
2. INVITES all Governments to take appropriate steps to give effect to the annexed amendments to the LHNS Guidelines.

ANNEX

**DRAFT AMENDMENTS TO THE GUIDELINES FOR THE TRANSPORT AND
HANDLING OF LIMITED AMOUNTS OF HAZARDOUS AND NOXIOUS LIQUID
SUBSTANCES IN BULK ON OFFSHORE SUPPORT VESSELS
(RESOLUTION A.673(16))**

PREAMBLE

1 In paragraph 2, the words “regulation 13(4) of Annex II” are replaced by the words “regulation 11(2) of Annex II”.

2 In paragraph 5, the year “[2007]” is inserted after “Guidelines for the Design and Construction of Offshore Supply Vessels” and “(resolution A.469(XII))” is replaced by “resolution MSC...(...)”.

CHAPTER 1 – GENERAL

1.1 Application

2a Paragraph 1.1.7 is deleted.

2b Insert new paragraph 1.1.7 “For provisions regulating the transport of dangerous goods and marine pollutants in packaged form, including transport of dangerous goods in portable tanks, refer to the International Maritime Dangerous Goods (IMDG) Code.”

3 In paragraph 1.1.8, the reference to “(resolution A.469(XII))” is deleted in the first sentence and the words “to those contained in resolution A.469(XII)” are deleted in the second sentence.

1.2 Scope

4 In paragraph 1.2.2.1.2, the words “category A, B and C” are deleted.

1.3 Definitions

5 Paragraph 1.3.6 is deleted.

6 Paragraphs 1.3.7, 1.3.8 and 1.3.9 are renumbered as paragraphs 1.3.6, 1.3.7 and 1.3.8, respectively.

7 Paragraph 1.3.10 is renumbered as paragraph 1.3.9 and the words “, as amended” are added after the words “MEPC.19(22)”.

8 Paragraph 1.3.11 is renumbered as paragraph 1.3.10 and the words “, as amended” are added after the words “MSC.5(48)”.

9 Paragraphs 1.3.12 and 1.3.13 are deleted.

1.5 Survey and certification

10 In paragraph 1.5.1, the following new sentence is added after the existing first sentence:

“If the language used is not English, French or Spanish, the text should include the translation into one of these languages.”

11 In paragraph 1.5.2, the words “regulation 11 of Annex II” are replaced by the words “regulations 7 and 9 of Annex II”.

CHAPTER 2 – STABILITY AND CARGO TANK LOCATION

12 In paragraph 2.1.1, the year “[2007]” is inserted after the words “Guidelines for the design and construction of offshore supply vessels” and the words “(resolution A.469(XII))” are replaced by “resolution MSC...(...)”.

CHAPTER 3 – SHIP DESIGN

3.4 Cargo tank construction

12a Paragraph 3.4.2 is deleted.

12b Insert new paragraph 3.4.2 “Instead of the use of permanently attached deck-tanks, portable tanks meeting the requirements of the International Maritime Dangerous Goods (IMDG) Code or other portable tanks specifically approved by the Administration may be used for cargoes indicated in paragraph 1.2.2 provided that the tanks are properly located and secured to the vessel.”

13 In paragraph 3.4.4.1, the words “0.7 bar” are replaced by the words “0.07 MPa”.

3.6 Cargo tank vent systems

14 In paragraph 3.6.2, the reference to “8.2.2” is replaced by the reference to “8.3.4”.

3.9 Fire-fighting requirements

15 In paragraph 3.9.1.1, the references to “60, 61, 62 and 63” are replaced by the references to “4.5.5, 10.8 and 10.9”.

16 In paragraph 3.9.1.2, the references to “56.1, 56.2, 56.4, 56.8 and 56.7” are replaced by the references to “4.5.1.1, 4.5.1.2, 4.5.1.4, 4.5.2.1 to 4.5.2.3 and 9.2.4.2.5”, respectively and the word “metres” is replaced by the symbol “m”.

17 In paragraph 3.9.1.3, the reference to “57.1” is replaced by the reference to “9.2.4.1” and the reference to “42.5.1” is replaced by the reference to “9.2.3.1.1.1”.

18 In paragraph 3.9.1.4, the reference to “44” is replaced by the reference to “9.2.3” and the reference to “58” is replaced by the reference to “9.2.4.2”.

19 In paragraph 3.9.1.5, the word “regulation” is replaced by the word “regulations” and the reference to “59” is replaced by the reference to “4.5.3, 4.5.4 and 4.5.6 to 4.5.8”.

20 The existing text of paragraph 3.9.1.6 is replaced by the following:

“regulations 10.2, 10.4 and 10.5, except regulation 10.5.6, should apply as they would apply to tankers of 2,000 gross tonnage and over;”.

21 In paragraph 3.9.1.7, the reference to “61” is replaced by the reference to “10.8”.

22 In paragraph 3.9.1.8, the reference to “63” is replaced by the reference to “10.9”.

23 In paragraph 3.9.2.3, the words “should be provided” are deleted.

24 In paragraph 3.9.2.3.4.3, the words “per square metre” are deleted.

25 The existing text of paragraph 3.9.2.4 is replaced by the following:

“An alternative to the systems required in 3.9.2.3 above may be approved in accordance with the procedures contained in SOLAS regulation II-2/17.”

3.16 Emergency remote shutdown

26 In paragraph 3.16, the words “50 bar gauge” are replaced by the words “5 MPa”.

CHAPTER 4 – POLLUTION REQUIREMENTS

27 The existing text of paragraph 4.1 is replaced by the following:

“Each ship certified to carry noxious liquid substances should be provided with a Cargo Record Book, a Procedure and Arrangements Manual and a Shipboard Marine Emergency Plan developed for the ship in accordance with Annex II to MARPOL 73/78 and approved by the Administration.”

28 The existing text of paragraph 4.2 is replaced by the following:

“Discharge into the sea of residues of noxious liquid substances permitted for the carriage in Ship Type 3, or products listed in appendix 1 or ballast water, tank washings, or other residues or mixtures containing such substances, is prohibited. Any discharges of residues and mixtures containing noxious liquid substances should be to reception facilities in port. As a consequence of this prohibition, the Administration may waive the requirements for efficient stripping and underwater discharge arrangements in MARPOL 73/78, Annex II.”

29 Paragraph 4.3 is deleted and paragraph 4.4 is renumbered as paragraph 4.3.

30 The existing text of appendix 1 is replaced by the following:

“APPENDIX 1

TABLE OF PERMITTED PRODUCTS

	Flammability
Oil based mud containing mixtures of products listed in Chapter 17 and 18 of the IBC Code and the MEPC.2/Circular and permitted to be carried under paragraph 1.2 of these Guidelines	No
Water based mud containing mixtures of products listed in Chapter 17 and 18 of the IBC Code and the MEPC.2/Circular and permitted to be carried under paragraph 1.2 of these Guidelines	No
Sodium Chloride Brine	No
Calcium Bromide Brine	No
Calcium Chloride Brine	No
Calcium nitrate/Magnesium nitrate/Potassium chloride solution	No
Calcium Nitrate Solution (50% or less)	No
Drilling brines (containing zinc salts)	No
Zinc Bromide Brine	No
Potassium Formate Solutions	No
Potassium Chloride Solutions	Yes
Potassium Chloride solution (10% or more)	No
Ethyl Alcohol	Yes
Ethylene Glycol	No
Ethylene Glycol tert butyl ether	Yes
Methyl Alcohol	Yes
Acetic acid	Yes
Formic acid	Yes
Hydrochloric Acid	No
Hydrochloric-hydrofluoric mixtures containing 3% or less	No
Hydrofluoric acid	No
Sulphuric Acid	No
Toulene	Yes
Xylene	Yes
Liquid carbon dioxide	No
Liquid nitrogen	No
Noxious liquid, NF, (7) n.o.s. (trade name ..., contains ...) ST3, Cat. Y	No
Noxious liquid, F, (8) n.o.s. (trade name, contains ...) ST3, Cat. Z	Yes
Noxious liquid, NF, (9) n.o.s. (trade name ..., contains ...) ST3, Cat. Z	No
Noxious liquid, F, (10) n.o.s. (trade name ..., contains ...) ST3, Cat. Z	Yes
Noxious liquid, (11) n.o.s. (trade name ..., contains ...) Cat. Z	No
Non-noxious liquid, (12) n.o.s. (trade name ..., contains ...) Cat. OS	No

APPENDIX 2 – MODEL FORM OF CERTIFICATE OF FITNESS

31 The existing text of appendix 2 is replaced by the following:

“CERTIFICATE OF FITNESS

(Official seal)

Issued under the provisions of the

**GUIDELINES FOR THE TRANSPORT AND HANDLING OF LIMITED AMOUNTS OF
HAZARDOUS AND NOXIOUS LIQUID SUBSTANCES IN BULK ON OFFSHORE
SUPPORT VESSELS**

(resolution A.673(16), as amended by resolutions MSC...(82) and MEPC....(55))

under the authority of the Government of

.....
(full official designation of country)

by
*(full official designation of the competent person
or organization recognized by the Administration)*

Particulars of ship¹

Name of ship
Distinctive number or letters
IMO Number²
Port of registry
Gross tonnage
Date on which keel was laid or on
which the vessel was at a similar
stage of construction or (in the case of a converted vessel) date
on which conversion for the carriage
of bulk liquids subject to these
Guidelines was commenced:

The ship also complies fully with the following amendments to the Guidelines:

.....
.....
The ship is exempted from compliance with the following provisions of the Guidelines:

¹ Alternatively, the particulars of the ship may be placed horizontally in boxes.

² In accordance with IMO ship identification number scheme, adopted by the Organization by resolution A.600(15).

THIS IS TO CERTIFY:

- 1 That the ship has been surveyed in accordance with the provisions of 1.5 of the Guidelines;
- 2 That the survey showed that the construction and equipment of the ship:
 - .1 complied with the relevant provisions of the Guidelines applicable to “new” ships³;
 - .2 complied with the provisions of the Guidelines in respect of “existing” ships³.
- 3 That the ship has been provided with a Manual in accordance with Appendix 4 of Annex II of MARPOL 73/78 as called for by regulation 14 of Annex II and that the arrangements and equipment of the vessel prescribed in the manual are in all respects satisfactory;
- 4 That the ship complies with the requirements of the Guidelines and Annex II to MARPOL 73/78 for carriage in bulk of the following products provided that all relevant operational provisions of the Guidelines and Annex II are observed:

Products (refer to Notes 1, 2 on completion of Certificate)	Conditions of carriage (tank numbers, etc.)	Pollution Category
Continued on attachment 1, additional signed and dated sheets ³ . Tank numbers referred to in this list are identified on attachment 2, showing a signed and dated simplified tank plan.		

³ Delete as appropriate.

5 That, in accordance with 1.4³ of the Guidelines and 2.8.2³ of the IBC Code, the provisions of the Guidelines and the Code are modified in respect of the vessel in the following manner:
.....

6 That the ship must be loaded:

.1 in accordance with the loading conditions provided in the approved loading manual, stamped and dated and signed by a responsible officer of the Administration, or of an organization recognized by the Administration³;

.2 in accordance with the loading limitations appended to this Certificate³.

Where it is required to load the ship other than in accordance with the above instructions, then the necessary calculations to justify the proposed loading conditions should be communicated to the certifying Administration who may authorize in writing the adoption of the proposed loading condition.⁴

This Certificate is valid until (dd/mm/yyyy)⁵
subject to surveys in accordance with 1.5 of the Guidelines.

Completion date of the survey on which this certificate is based:
(dd/mm/yyyy)

Issued at
(Place of issue of Certificate)

.....
(Date of issue)

.....
(Signature of authorized official
issuing the certificate)

(Seal or stamp of the authority, as appropriate)

³ Delete as appropriate.

⁴ Instead of being incorporated in the Certificate, this text may be appended to the Certificate if duly signed and stamped.

⁵ Insert the day of expiry, as specified by the Administration, which should not exceed 5 years from the date of initial survey or the periodical survey.

Annual survey:

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

ANNUAL/INTERMEDIATE SURVEY IN ACCORDANCE WITH PARAGRAPH 1.5.6.8.3

THIS IS TO CERTIFY that, at an annual/intermediate³ survey in accordance with paragraph 1.5.8.6.3 of the Code, the ship was found to comply with the relevant provisions of the Guidelines:

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID
FOR LESS THAN 5 YEARS WHERE PARAGRAPH 1.5.6.3 APPLIES**

The ship complies with the relevant provisions of the Guidelines, and this Certificate shall, in accordance with paragraph 1.5.6.3 of the Code, be accepted as valid until (dd/mm/yyyy):
.....

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN
COMPLETED AND PARAGRAPH 1.5.6.4 APPLIES**

The ship complies with the relevant provisions of the Guidelines, and this Certificate shall, in accordance with paragraph 1.5.6.4 of the Code, be accepted as valid until (dd/mm/yyyy):
.....

³ Delete as appropriate.

Annual survey:

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE
UNTIL REACHING THE PORT OF SURVEY OR FOR A PERIOD
OF GRACE WHERE PARAGRAPH 1.5.6.5 OR 1.5.66 APPLIES**

This Certificate shall, in accordance with paragraph 1.5.6.5/1.5.6.6³ of the Code, be accepted as valid until

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE WHERE
PARAGRAPH 1.5.6.8 APPLIES**

In accordance with paragraph 1.5.6.8 of the Code, the new anniversary date is

Signed:
(Signature of duly authorized official)

Place:

Date (dd/mm/yyyy):

(Seal or stamp of the Authority, as appropriate)

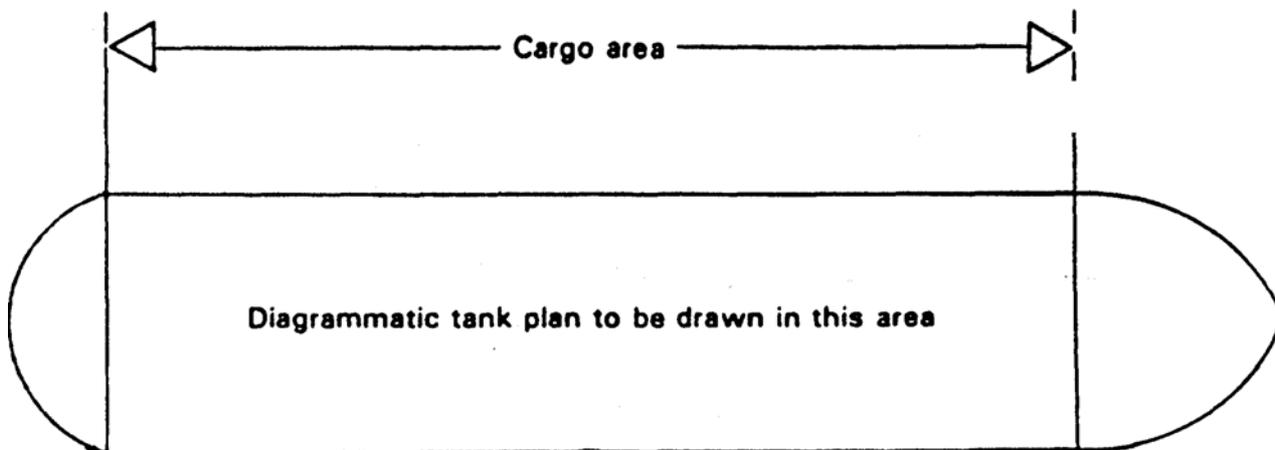
³ Delete as appropriate.

**ATTACHMENT 2
TO THE CERTIFICATE OF FITNESS**

TANK PLAN (specimen)

Name of ship:

Distinctive number or letters:



Date
(dd/mm/yyyy)
(as for certificate)

.....
*(Signature of official issuing the Certificate
and/or seal of issuing authority)"*

ANNEX 9

**DRAFT RESOLUTION MSC...(82)
(adopted on [...] December 2006)**

**ADOPTION OF AMENDMENTS TO THE CODE OF SAFE PRACTICE FOR
THE CARRIAGE OF CARGOES AND PERSONS BY OFFSHORE SUPPLY VESSELS
(OSV CODE)**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING FURTHER resolution A.863(20) on Code of Safe Practice for the Carriage of Cargoes and Persons by Offshore Supply Vessels (OSV Code), adopted by the Assembly at its twentieth session,

NOTING that the Assembly requested the Maritime Safety Committee to keep OSV Code under review and to amend it as necessary,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its eleventh session,

1. ADOPTS the amendments to the Code of Safe Practice for the Carriage of Cargoes and Persons by Offshore Supply Vessels (OSV Code), the text of which is set out in the Annex to the present resolution;
2. INVITES Member Governments to bring the annexed amendments to the attention of all parties concerned.

ANNEX

**AMENDMENTS TO THE CODE OF SAFE PRACTICE FOR
THE CARRIAGE OF CARGOES AND PERSONS BY OFFSHORE SUPPLY VESSELS
(OSV CODE)**

**CHAPTER 1
GENERAL**

1.1 Definitions

1 At the end of paragraph 1.1.3, the following new sentence is added:

“Vessels fitted with dynamic positioning equipment should comply with the guidelines developed by the Organization*.”

*
Refer to the Guidelines for vessels with dynamic positioning systems (MSC/Circ.645) and the Guidelines for dynamic positioning systems (DP) operating training (MSC/Circ.738).

1.4 Cargo handling and stability

2 In paragraph 1.4.6, the words “Guidelines for the design and construction of offshore supply vessels (resolution A.469(XII))” are replaced by the words “Guidelines for the design and construction of offshore supply vessels [, 2007] (resolution MSC....(82))”.*

*
The final date of the Guidelines and the resolution number should be inserted following the adoption of the Code by MSC 82.

ANNEX 10

**DRAFT MSC RESOLUTION
(adopted on [...December 2006])**

**ADOPTION OF AMENDMENTS TO THE CODE OF PRACTICE FOR THE SAFE
LOADING AND UNLOADING OF BULK CARRIERS (BLU CODE)**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO resolution A.862(20), by which the Assembly, at its twentieth session, adopted the Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code),

NOTING that the Assembly authorized the Committee to keep this Code under review and amend it as may be necessary,

CONSIDERING that the application of the BLU Code should be extended to ships carrying grain,

HAVING CONSIDERED, at its [eighty-second] session, amendments to the BLU Code prepared by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its eleventh session,

1. ADOPTS the amendments to the Code of Practice for the Safe Loading and Unloading of Bulk Carriers, the text of which is set out in the Annex to the present resolution;
2. DETERMINES that the said amendments should become effective on 1 January 2007.

ANNEX

AMENDMENTS TO THE CODE OF PRACTICE FOR THE SAFE LOADING AND UNLOADING OF BULK CARRIERS (BLU CODE)

INTRODUCTION

- 1 In paragraph 3, the words “, excluding grain,” are deleted.
- 2 The following new paragraph 8 is added after the existing paragraph 7:

“8 In the event of a conflict between this Code and the International Code for the Safe Carriage of Grain in Bulk (International Grain Code), the provisions of the International Grain Code should prevail.”

SECTION 5

CARGO LOADING AND UNLOADING OF BALLAST

- 3 At the end of paragraph 5.1.4, the words “, or the International Grain Code, as appropriate” are added.

APPENDIX 4

GUIDELINES FOR COMPLETING THE SHIP/SHORE SAFETY CHECKLIST

- 4 At the end of paragraph 17, the words “, or the International Grain Code, as appropriate” are added.

ANNEX 11

DRAFT MSC CIRCULAR

**AMENDMENTS TO THE MANUAL ON LOADING AND UNLOADING OF SOLID
BULK CARGOES FOR TERMINAL REPRESENTATIVES**

1 The Maritime Safety Committee, at its eighty-second session (29 November to 8 December 2006), approved amendments to the Manual on Loading and Unloading of Solid Bulk Cargoes for Terminal Representatives (MSC/Circ.1160), prepared by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers, at its eleventh session, as set out in the annex, in the light of amendments made to the Code of Practice for Safe Loading and Unloading of Bulk Carriers (BLU Code) to extend its application to ships carrying grain.

2 Member Governments are invited to bring the annexed amendments to the attention of all parties concerned with a view to implementing them as deemed appropriate.

ANNEX

AMENDMENTS TO THE MANUAL ON LOADING AND UNLOADING OF SOLID BULK CARGOES FOR TERMINAL REPRESENTATIVES (MSC/CIRC.1160)

INTRODUCTION

1 In paragraph 1, the words “ships which are loading, carrying or unloading grain” are deleted.

2 The following new paragraph 6 is added after the existing paragraph 5:

“6 In the event of a conflict between the Code of Safe Practice for Solid Bulk Cargoes (BC Code) and the International Code for the Safe Carriage of Grain in Bulk (International Grain Code), the provisions of the International Grain Code should prevail.”.

SECTION 5

CARGO LOADING AND HANDLING OF BALLAST

3 At the end of paragraph 5.1.4, the words “or the International Grain Code, as appropriate” are added.

SECTION 6

UNLOADING CARGO AND HANDLING OF BALLAST

4 In paragraph 6.2.2, after the words “(MSDS) for those materials”, the words “When employed on grain laden ships, the terminal representatives should be familiar with the International Grain Code.” are added.

ANNEX 4

TRAINING OF TERMINAL PERSONNEL INVOLVED IN LOADING AND/OR UNLOADING BULK CARRIERS

5 In paragraph 1, the words “and BC” are replaced by “, BC” and the words “and the International Grain Code, as appropriate” are added at the end of the paragraph.

ANNEX 12

**PROPOSED REVISED WORK PROGRAMME OF THE SUB-COMMITTEE
AND PROVISIONAL AGENDA FOR DSC 12**

PROPOSED REVISED WORK PROGRAMME OF THE SUB-COMMITTEE

		Target completion date/number of sessions needed for completion	Reference
1	Harmonization of the IMDG Code with the UN Recommendations on the Transport of Dangerous Goods	Continuous	MSC 63/23, paragraph 10.6; DSC 11/19, section 3
2	Reports on incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Continuous	CDG 45/22, section 11 and paragraph 20.2; DSC 11/19, section 6
3	Amendments to the BC Code, including evaluation of properties of solid bulk cargoes	Continuous	BC 34/17, section 3; DSC 11/19, section 4
4	Casualty analysis (co-ordinated by FSI)	Continuous	MSC 70/23, paragraphs 9.17 and 20.4; DSC 11/19, section 6
H.1	Amendment (34-08) to the IMDG Code and supplements	2007	DSC 3/15, paragraph 12.6; DSC 11/19, section 14
H.2	Mandatory application of the BC Code	2007	DSC 3/15, paragraph 12.7; MSC 78/25, paragraph 13.7; DSC 11/19, section 5

-
- Notes:**
- "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.
 - Items printed in bold letters have been selected for the provisional agenda for DSC 12.
 - The struck-out text indicates proposed deletions and the shaded text proposes additions or changes.

		Target completion date/number of sessions needed for completion	Reference
H.3	Measures to enhance maritime security	2006	MSC 75/24, paragraph 22.9; DSC 9/15, section 9
H.4	Guidance on serious structural deficiencies in containers: reporting procedure on serious structural deficiencies	2006	DSC 10/17, section 8
H.5 H.3	Review of the SPS Code (co-ordinated by DE)	2007	MSC 78/26, paragraph 24.9; DSC 11/19, section 9
H.6 H.4	Amendments to the CSS Code	2006 2007	MSC 78/26, paragraph 24.15.3; DSC 11/19, section 10
H.7	Revision of the LHNS and OSV Guidelines	2006	MSC 79/23, paragraph 20.8
H.8 H.5	Extension of the BLU Code to include grain	2006 2008	MSC 79/23, paragraph 20.7 ; DSC 11/19, section 12
H.9 H.6	Guidance on providing safe working conditions for securing of containers	2006 2007	MSC 80/24, paragraph 21.8; DSC 11/19, section 13
H.10 H.7	Review of the Recommendations on the safe use of pesticides in ships	2007	DSC 10/17, paragraph 4.23 ; DSC 11/19, section 14
H.11 H.8	Application of requirements for dangerous goods in packaged form in SOLAS and the 2000 HSC Code (co-ordinated by FP)	2007	MSC 81/25, paragraphs 23.9 and 23.14; DSC 11/19, section 15
H.12 H.9	Guidance on protective clothing	2 sessions 2008	MSC 81/25, paragraph 23.8; DSC 11/19, paragraph 16.1.3.1

DRAFT PROVISIONAL AGENDA FOR DSC 12*

- Opening of the session
- 1 Adoption of the agenda
- 2 Decisions of other IMO bodies
- 3 Amendments to the IMDG Code and supplements, including harmonization of the IMDG Code with the UN Recommendations on the Transport of Dangerous Goods
 - .1 harmonization of the IMDG Code with the UN Recommendations on the Transport of Dangerous Goods
 - .2 amendment (34-08) to the IMDG Code and supplements
- 4 Amendments to the BC Code, including evaluation of properties of solid bulk cargoes
- 5 Mandatory application of the BC Code
 - .1 identification of mandatory and recommendatory parts of the BC Code, including consequential amendments
 - .2 amendments to SOLAS chapters VI and VII on making the BC Code mandatory
- 6 Casualty and incident reports and analysis
- 7 Review of the SPS Code
- 8 Amendments to the CSS Code
- 9 Extension of the BLU Code to include grain
- 10 Guidance on providing safe working conditions for securing of containers
- 11 Review of the Recommendations on the safe use of pesticides in ships
- 12 Application of requirements for dangerous goods in packaged form in SOLAS and the 2000 HSC Code
- 13 Guidance on protective clothing
- 14 Work programme and agenda for DSC 13
- 15 Election of Chairman and Vice-Chairman for 2008
- 16 Any other business
- 17 Report to the Maritime Safety Committee

* Agenda items do not necessarily indicate priority.