INTERNATIONAL MARITIME ORGANIZATION

IMO

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SUB-COMMITTEE ON FIRE PROTECTION
53rd session
Agenda item 23

FP 53/WP.5
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DRAFT REPORT TO THE MARITIME SAFETY COMMITTEE

(See document FP 53/WP.5/Add.1 for agenda items 14 to 23 and annexes)

1 GENERAL

Introduction

1.1 The Sub-Committee held its fifty-third session from 16 to 20 February 2009 under the chairmanship of Mr. J.C. Cubisino (Argentina). The Vice-Chairman, Mr. C. Abbate (Italy), was also present.

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

ALGERIA
ANGOLA
ARGENTINA
BAHAMAS
BRAZIL
CANADA
CHILE
CHINA
COLOMBIA
COOK ISLANDS
CROATIA
CUBA
CYPRUS
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA
DENMARK
DOMINICAN REPUBLIC
ECUADOR
EGYPT
FINLAND
FRANCE
GERMANY
GHANA
GREECE
INDONESIA
IRAN (ISLAMIC REPUBLIC OF)
ITALY
JAPAN
LATVIA
LIBERIA
MARSHALL ISLANDS
MEXICO
MOROCCO
NETHERLANDS
NIGERIA
NORWAY
PANAMA
PAPUA NEW GUINEA
PERU
PHILIPPINES
POLAND
PORTUGAL
REPUBLIC OF KOREA
RUSSIAN FEDERATION

SAUDI ARABIA
SOUTH AFRICA
SPAIN
SWEDEN
SYRIAN ARAB REPUBLIC
THAILAND
TURKEY
TUVALU
UKRAINE
UNITED KINGDOM
UNITED STATES
URUGUAY
VANUATU

and by the following Associate Members of IMO:

HONG KONG, CHINA
FAROE ISLANDS (DENMARK)

1.3 The session was also attended by representatives from the following intergovernmental organizations:

EUROPEAN COMMISSION (EC)
MARITIME ORGANIZATION FOR WEST AND CENTRAL AFRICA (MOWCA)

1.4 The session was also attended by observers from the following non-governmental organizations:

INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
INTERNATIONAL UNION OF MARINE INSURANCE (IUMI)
INTERNATIONAL TRANSPORT WORKERS FEDERATION (ITF)
INTERNATIONAL RADIO-MARITIME COMMITTEE (CIRM)
INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS (IAPH)
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)
OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)
INTERNATIONAL ASSOCIATION OF DRILLING CONTRACTORS (IODC)
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATION (IFSMA)
INTERNATIONAL ASSOCIATION OF INDEPENDENT TANKER OWNERS (INTERTANKO)
SOCIETY OF INTERNATIONAL GAS TANKER AND TERMINAL OPERATORS LIMITED (SIGTTO)
CRUISE LINES INTERNATIONAL ASSOCIATION (CLIA)
INSTITUTE OF MARINE ENGINEERING, SCIENCE AND TECHNOLOGY (IMarEST)
INTERNATIONAL PARCEL TANKERS ASSOCIATION (IPTA)
THE ROYAL INSTITUTION OF NAVAL ARCHITECTS (RINA)

Secretary-General's opening address

1.5 The Secretary-General, welcomed participants and delivered his opening address, the full text of which is reproduced in document FP 53/INF.8.

Chairman's remarks

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

Adoption of the agenda and related matters

1.7 The Sub-Committee adopted the agenda (FP 53/1) and agreed to be guided in its work, in general, by the annotations contained in document FP 53/1/1. The agenda, as adopted, with the list of documents considered under each agenda item, is set out in document FP 53/INF….

2 DECISIONS OF OTHER IMO BODIES

General

2.1 The Sub-Committee noted the decisions and comments pertaining to its work made by BLG 12, DE 51, STW 39, MSC 84, FSI 16, NAV 54, SLF 51, DSC 13, MEPC 58 and MSC 85, as reported in documents FP 53/2 and FP 53/2/1, and took them into account in its deliberations when dealing with relevant agenda items.

Applications of the Committee's Guidelines

2.2 In considering the outcome of MSC 84, the Sub-Committee noted that the Committee had recalled that MSC 83, having considered the report of the 2007 Chairmen's meeting, noted that the Chairmen had reiterated the recommendations of its last meeting, which MSC 83 and MEPC 57 had agreed to, that:

.1 intersessional working groups and technical groups should not be held at the same time as Committee or sub-committee meetings; and

.2 splinter groups of a working group, if established, should meet outside normal working hours,

and that MSC 84 had noted the recommendation of the aforementioned meeting that the agenda management procedures specified in the Committees' Guidelines should be strictly adhered to.

2.3 The Sub-Committee further noted that MSC 84, having noted MEPC 57's concurrent decisions, had approved the revised Guidelines on the organization and method of work, which had been disseminated by means of circular MSC-MEPC.1/Circ.2 superseding MSC-MEPC.1/Circ.1.

3 PERFORMANCE TESTING AND APPROVAL STANDARDS FOR FIRE SAFETY SYSTEMS

General

3.1 The Sub-Committee recalled that, at FP 52, it had approved the revised action plan identifying the priorities, timeframes and objectives for each priority category prepared by the working group established on the matter (FP 52/WP.2, annex 8).

3.2 The Sub-Committee also recalled that, at FP 52, it had re-established the Correspondence Group on Performance Testing and Approval Standards for Fire Safety Systems and approved terms of reference, as set out in paragraphs 3.35 and 3.36 of document FP 52/21, and had instructed the group to submit its report to FP 53.

3.3 With regard to the outcome of MSC 85, the Sub-Committee noted that the Committee had considered document MSC 85/23/2 (Sweden), proposing to develop appropriate guidance on the method to determine the No Observed Adverse Effect Level (NOAEL) and Lowest Observed Adverse Effect Level (LOAEL), had agreed to expand the existing Sub-Committee's work programme item on "Performance testing and approval standards for fire safety systems" to develop the above guidance, and had extended the target completion date of the expanded item to 2011.

3.4 The Sub-Committee had for its consideration under this agenda item documents submitted by Norway (FP 53/3/4), Sweden (FP 53/3/3), the United States (FP 53/3 and FP 53/3/1), IACS (FP 53/2) and ISO (FP 53/INF.7). In the context of this item, the Sub-Committee also considered document FP 53/12/4 submitted by IACS.

Report of the working group (part 2) established at FP 52

3.5 The Sub-Committee considered part 2 of the report of the Working Group on Performance Testing and Approval Standards for Fire Safety Systems established at FP 52 (FP 53/3) and, having approved it in general, noted that the group's report had been considered in detail by the correspondence group established at FP 52 (FP 53/3/1).

Consideration of medium-term priority categories

3.6 The Sub-Committee noted that that group reviewed the proposed medium-term priorities contained in annex 8 to document FP 52/WP.2 and agreed to add consideration of dry chemical powder extinguishing systems for gas carriers, and high-expansion foam systems using inside air for the protection of ro-ro and cargo spaces to the list of priorities (FP 53/3, annex 5).

Report of the correspondence group

3.7 The Sub-Committee considered the report of the Correspondence Group on Performance Testing and Approval Standards for Fire Safety Systems (FP 53/3/1) together with the documents referred to in paragraph 3.4 and, having approved it in general:

.1 noted the group's concern regarding the application of the revised chapter 5 of the FSS Code, as adopted by resolution MSC.206(81) and agreed that a draft MSC circular should be prepared to provide guidance to clarify that the revised chapter 5 should apply only to new ships constructed on or after 1 July 2010;

.2 agreed that a draft amendment to chapter 1 of the FSS Code should be prepared in order to ensure that the application of any future amendments to the Code is unambiguous; and

.3 considered whether the interpretations on fixed-gas extinguishing systems contained in the MSC/Circ.1120 should be included in any future amendments to chapter 5 of the FSS Code and decided that the working group to be established should further consider the matter and advise the Sub-Committee accordingly.

Guidelines for maintenance and inspections of fixed CO_2 systems

3.8 The delegation of the Netherlands requested clarification regarding the draft Guidelines for maintenance and inspections of fixed CO_2 systems, as agreed in principle by FP 50 (FP 50/21, paragraph 4.21). The above delegation stated that the report of FP 51 records the Sub-Committee's decision to invite the STW Sub-Committee to comment on the draft Guidelines and that the report of STW 39 (STW 39/12) does not contain comments on this issue and, STW 40 did not consider the draft Guidelines. Additionally, the delegation of the Netherlands requested clarification on the finalization of the draft guidelines.

3.9 In light of the above request, the Sub-Committee noted that paragraph 3.15 of document FP 51/19 stated that the STW Sub-Committee might need to be invited to comment on the draft Guidelines after finalization and, to date, no action has been yet in this regard. In considering the request on the finalization of the draft Guidelines, the Sub-Committee noted that FP 50 had agreed, in principle, to the draft Guidelines for maintenance and inspections of fixed CO_2 systems (FP 50/WP.2, annex 4), with a view to finalizing them at this session (see paragraph …).

Minimum required capacity of the emergency fire-pump

3.10 In considering document FP 53/3/2 (IACS), seeking clarification concerning the minimum required capacity of the emergency fire pump when it is arranged to provide additional services beyond the basic service as required by the FSS Code, the Sub-Committee agreed to refer the document to the working group for further consideration under its work on the short- and medium-term priorities (FP 52/WP.2, annex 8). In this regard, the group was instructed to take into account regulation II-2/10.2.2.4.2 regarding the requirement for two jets of water.

Guidance on the method to determine the NOAEL and LOAEL

3.11 The Sub-Committee considered document FP 53/3/3 (Sweden), proposing the development of guidance on the method to determine the No Observed Adverse Effect Level (NOAEL) and Lowest Observed Adverse Effect Level (LOAEL), which is referred to in the amendments to the Revised Guidelines for approval of equivalent fixed gas fire-extinguishing systems, as referred to in SOLAS 74, for machinery spaces and cargo pump-rooms (MSC/Circ.848), approved by MSC 84 by means of MSC.1/Circ.1267, and decided to refer the document to the working group for further consideration under its work on the long-term

priorities, identified in annex 8 to document FP 52/WP.2. Having noted the comments by the delegation of the Ukraine regarding the need to avoid duplicating the work of other international organizations, the Sub-Committee agreed that any standards to be developed should be within the purview of IMO.

Incident during a test performed in accordance with MSC/Circ.1165

3.12 In considering document FP 53/3/4 (Norway), containing information on an explosion of an engine mock-up during test of water-based fire-extinguishing system according to the Revised Guidelines for the approval of equivalent water-based fire-extinguishing systems for machinery spaces and cargo pump-rooms (MSC/Circ.1165), the Sub-Committee noted the information and agreed that the working group should prepare an FP circular.

Update of standardization work at ISO

3.13 In considering document FP 53/INF.7 (ISO), informing the Sub-Committee of the ISO work in ISO/TC 8/SC 1 (Ships and marine technology, Sub-Committee on Lifesaving and Fire Protection) of interest to the Sub-Committee, including the revision of various standards related to the work on Performance testing and approval standards for fire safety systems, the Sub-Committee noted the information provided, and, in particular that standard ISO 15371:2000 has been updated and, agreed to consider, at FP 54, amending the footnote in SOLAS regulation II-2/10.6.4 to refer to the new edition of the standard.

Establishment of the working group

3.14 Recalling its relevant decision at FP 52 regarding a working group, the Sub-Committee established the Working Group on Performance Testing and Approval Standards and, taking into account the comments and decisions made in plenary, instructed it to:

.1 continue work on the short- and medium-term priorities identified in annex 8 to document FP 52/WP.2, taking into account the report of the working group established at FP 52 (FP 53/3), the report of the correspondence group (FP 53/3/1) and documents FP 53/3/2 (IACS) and FP 53/3/4 (Norway) and, in particular, to:

.1.1 finalize the Revised Guidelines for the performance and testing criteria, and surveys of foam concentrates for fixed fire-extinguishing systems (FP 53/3/1, annex 7);

.1.2 finalize the draft amendments to SOLAS regulation II-2/7.4.1 (FP 53/3/1, annex 1);

.1.3 finalize the draft revised chapters 9 and 10 of the FSS Code (FP 53/3/1, annexes 1 and 2);

.1.4 further consider the draft amendments to chapter 1 of the FSS Code regarding the application of resolution MSC.206(81) (FP 53/3/1, annex 6), and, if it is appropriate, prepare a draft MSC circular on Guidance on the application of the revised chapter 5 of the FSS Code for consideration by the Sub-Committee, with a view to approval at MSC 86;

.1.5 consider whether the draft amendments to chapter 5 of the FSS Code should include the interpretations contained in MSC/Circ.1120, in the context of the group's workload; and

.1.6 prepare draft amendments to resolution MSC.265(84), in order to clarify its application, taking into account the corrigenda to the aforementioned resolution (MSC 84/24/Add.2/Corr.1) and document FP 53/12/4 (IACS);

.2 continue work on the long-term priorities identified in annex 8 to document FP 52/WP.2, taking into account the report of the working group established at FP 52 (FP 53/3), the report of the correspondence group (FP 53/3/1) and document FP 53/3/3 (Sweden);

.3 update the Revised plan for the harmonization, or new development, of performance testing and approval standards for fire safety systems contained in annex 8 to document FP 52/WP.2, taking into account the progress made to date, and prepare a revised plan identifying the priorities, timeframes and objectives for each priority category; and

.4 consider whether there is a need to re-establish the correspondence group and, if so, prepare the terms of reference for consideration by the Sub-Committee.

3.15 The Sub-Committee recalled that the group had been also instructed, under agenda item 7 (Guidelines for drainage systems in closed vehicle and ro-ro spaces and special category spaces), to finalize the draft Guidelines for the drainage of fire-fighting water from vehicle and ro-ro spaces and special category spaces for passenger and cargo ships, taking into account the report of the correspondence group (FP 53/7) (see paragraph 7.8).

[**Report of the working group**

3.16 Having received the report of the working group (FP 53/WP.1), the Sub-Committee approved it in general and took action as outlined hereunder.

Performance and testing criteria and surveys of foam concentrates

3.17 The Sub-Committee, having noted that the group's consideration on the draft Revised Guidelines for the performance and testing criteria, and surveys of foam concentrates for fixed fire-extinguishing systems (FP 53/3/1, annex 7), in particular on the reference test and periodic retest for protein-based alcohol-resistant foam concentrates, agreed to the draft Revised Guidelines for the performance and testing criteria, and surveys of foam concentrates for fixed fire-extinguishing systems and the associated draft MSC circular, set out in annex …, for submission to MSC 86 for approval.

Amendments to SOLAS regulation II-2/7.4.1 and chapter 9 of the FSS Code

3.18 In agreeing the draft amendments to SOLAS regulation II-2/7.4.1 and chapter 9 of the FSS Code concerning fixed fire detection and fire alarm systems (FP 53/3/1, annex 1), the Sub-Committee, recognizing that the recent amendments to chapter 9 of the FSS Code, as adopted by resolution MSC.217(82) (annex 2) are expected to enter into force on 1 July 2010 and, consequently, chapter 9 of the FSS Code could not be further amended before the aforementioned date, agreed to the draft amendments to SOLAS regulation II-2/7.4.1, as set out in annex …, and to chapter 9 of the FSS Code, as set out in annex …, for submission to MSC 87 for approval and subsequent adoption.

Amendments to chapter 10 of the FSS Code

3.19 Having considered the draft amendments to chapter 10 of the FSS Code concerning fixed fire detection and fire alarm systems, prepared by the group based on annex 2 to document

FP 53/3/1, the Sub-Committee agreed to the draft amendments to chapter 10 of the FSS Code, as set out in annex …, for submission to MSC 86 for approval and subsequent adoption.

Guidelines for high-expansion foam for the protection of machinery spaces, cargo pump-rooms, cargo spaces and vehicle, special category and ro-ro spaces

3.20 With regard to the draft amendments to chapter 6 of the FSS Code concerning the matter related to the draft Guidelines for high-expansion foam for the protection of machinery spaces, cargo pump-rooms, cargo spaces and vehicle, special category and ro-ro spaces (FP 53/3/1, annex 3), the Sub-Committee noted that the group had agreed that the detailed test methods included in the draft revised chapter 6 of the FSS Code (FP 53/3/1, annex 3, appendices 1 to 4) should be divided into separate guidelines with only the principal requirements in the FSS Code, taking into account that detailed guidelines are not suitable for mandatory instruments, and had decided to further consider the draft amendments to chapter 6 of the FSS Code through a correspondence group.

Testing and approval of fixed inert gas fire-extinguishing systems for general cargo

3.21 With regard to the draft Guidelines for the testing and approval of fixed inert gas fire-extinguishing systems for general cargo as required by SOLAS regulation II-2/10.7.1 (FP 53/3/1, annex 5), the Sub-Committee noted that the group had decided to further consider the draft guidelines through a correspondence group.

Fixed gas and water-spraying fire-extinguishing systems for vehicle spaces and ro-ro spaces

3.22 The Sub-Committee noted that the group, having considered the draft amendments to SOLAS regulation II-2/20 concerning fixed fire-extinguishing systems for vehicle spaces and ro-ro spaces and associated draft amendments to chapters 5 and 7 of the FSS Code (FP 53/3/1, annex 4), had decided that the design criteria should be moved from SOLAS regulation II-2/20 to chapter 5 of the FSS Code and that the footnotes in SOLAS regulation II-2/20 should be moved to the appropriate chapters of the FSS Code.

3.23 Having recognized that the revised chapter 5 of the FSS Code, as amended by resolution MSC.206(81), is expected to enter into force on 1 July 2010 and, therefore, chapter 5 of the FSS Code could not be further amended before the above date, the Sub-Committee agreed to the draft amendments to SOLAS regulation II-2/20, as set out in annex …, and to chapters 5 and 7 of

the FSS Code, as set out in annex …, for submission to MSC 87 for approval and subsequent adoption.

Application of the revised chapter 5 of the FSS Code, as adopted by resolution MSC.206(81)

3.24 The Sub-Committee agreed to the draft MSC circular on Guidance on application of the revised chapter 5 of the FSS Code, as adopted by resolution MSC.206(81), to clarify that the revised chapter 5 of the FSS Code should apply only to ships constructed on or after 1 July 2010, as set out in annex …, for submission to MSC 86 for approval.

3.25 In this context, the Sub-Committee agreed to the draft amendments to chapter 1 of the FSS Code, in order to make it clear that amendments to the Code adopted after 1 July 2002 should, unless expressed otherwise, apply only to ships constructed on or after the date on which the amendments enter into force, as set out in annex …, for submission to MSC 86 for approval and subsequent adoption.

Consideration of MSC/Circ.1120 in relation to chapter 5 of the FSS Code

3.26 Having noted that the group had considered whether the draft amendments to chapter 5 of the FSS Code should include the interpretations contained in MSC/Circ.1120, the Sub-Committee, recognizing that MSC/Circ.1120 includes not only interpretations of chapter 5 of the FSS Code but also includes interpretations of other chapters of the FSS Code and SOLAS, endorsed the group's decision to consider this matter as a long-term issue after finalizing other issues that have already been listed in the revised plan (see also paragraph 3…).

Application of SOLAS chapter II-2 and the FSS Code requirements for emergency fire pumps

3.27 The Sub-Committee, having noted the group's consideration on document FP 53/3/2, seeking clarification of application of the requirements in SOLAS chapter II-2, with respect to determining the capacity of the emergency fire pump when it is arranged to provide additional services beyond the basic service as required by the FSS Code, agreed to the draft MSC circular on Interpretation of application of SOLAS regulation II-2/10 and the FSS Code related to emergency fire pump capacity, as set out in annex …, for submission to MSC 86 for approval.

Clarification on the implementation of resolution MSC.265(84)

3.28 Having noted that the group had considered document FP 53/12/4, seeking clarification of the application of resolution MSC.265(84) on Amendments to the Revised Guidelines for approval of sprinkler systems equivalent to that referred to in SOLAS regulation II-2/12 (resolution A.800(19)), the Sub-Committee agreed to the draft amendments to the Revised Guidelines and the associated draft MSC resolution, as set out in annex …, for submission to MSC 86 for adoption.

Dry chemical powder extinguishing systems

3.29 The Sub-Committee, having noted the group's consideration on the draft Guidelines for the approval of fixed dry chemical powder extinguishing systems for gas carriers (FP 53/3/1, annex 8), agreed to the draft Guidelines and the associated draft MSC circular, as set out in annex …, for submission to MSC 86 for approval.

Fixed deck foam systems

3.30 The Sub-Committee noted that the group had considered the draft amendments to chapter 14 of the FSS Code concerning fixed deck foam systems (FP 53/3/1, annex 9), regarding the application of fixed deck foam systems to oil tankers and chemical tankers, and that the group had agreed that the requirements for chemical tankers in SOLAS and the IBC Code are in need of revision and proposed that ships carrying flammable chemicals listed in chapters 17 and 18 of the IBC Code should be required to meet the higher IBC Code foam application rates regardless of flashpoint.

3.31 Subsequently, the Sub-Committee agreed to the draft amendments to chapter 14 of the FSS Code, as set out in annex …, and requested the Secretariat to forward the draft amendments as well as the outcome of the group's discussion (FP 53/WP.1, paragraphs 28 to 30) to the BLG Sub-Committee for comment before finalization.

Guidelines on determining the no observed adverse effect level (NOAEL) and lowest observed adverse effect level (LOAEL) values for halocarbon fire-extinguishing agents

3.32 The Sub-Committee agreed to the draft Guidelines on determining the no observed adverse effect level (NOAEL) and lowest observed adverse effect level (LOAEL) values for

halocarbon fire-extinguishing agents and the associated draft MSC circular, as set out in annex …, for submission to MSC 86 for approval.

Information on an explosion of an engine mock-up during test

3.33 With regard to document FP 53/3/2, informing the explosion hazard associated with the test procedure contained in the Revised Guidelines for the approval of equivalent water-based fire-extinguishing systems for machinery spaces and cargo pump-rooms (MSC/Circ.1165), the Sub-Committee approved FP.1/Circ…. on Explosion of an engine mock-up during test to inform Member Governments and test laboratories of the incident, and invited MSC 86 to endorse the course of action taken by the Sub-Committee.

Consideration of IACS UI SC 216 on water-based fire-extinguishing systems

3.34 The Sub-Committee, having noted that the group had considered additional information provided by the observer from IACS, as set out in annex 16 to document FP 53/WP.1, concerning UI SC 216 on water-based fire-extinguishing systems, agreed to further consider the issue through a correspondence group and decided to also refer the matter to the correspondence group established under agenda item 18 on "Explanatory notes for the application of safe return to port requirements" (see paragraph 18…).

Application for existing approvals according to MSC/Circ.848

3.35 Having considered the lack of clear direction with respect to the expiry dates for existing approvals issued in accordance with the Revised Guidelines for approval of equivalent fixed gas fire-extinguishing systems, as referred to in SOLAS 74, for machinery spaces and cargo pump-rooms (MSC/Circ.848), as amended by MSC.1/Circ.1267, the Sub-Committee agreed to the draft MSC circular on Application for existing approvals according to the Revised Guidelines for approval of equivalent fixed gas fire-extinguishing systems, as referred to in SOLAS 74, for machinery spaces and cargo pump-rooms (MSC/Circ.848), as set out in annex …, for submission to MSC 86 for approval.

Maintenance and inspections of fixed carbon dioxide fire-extinguishing systems

3.36 The Sub-Committee agreed to the draft MSC circular on Guidelines for maintenance and inspections of fixed carbon dioxide fire-extinguishing systems, as set out in annex …, for submission to MSC 86 for approval.

Revised plan of action

3.37 The Sub-Committee approved the revised work plan for the development of performance testing and approval standards for fire safety systems, as contained in annex 19 to document FP 53/WP.1.

Establishment of a correspondence group

3.38 The Sub-Committee re-established the correspondence group, under the co-ordination of the United States*, taking into account the relevant information contained in document FP 53/3/1 and the outcome of the working group outlined in its reports (part 1 (FP 53/WP.1) and part 2), to:

.1 further consider the draft amendments to chapter 6 of the FSS Code, based on annex 3 to document FP 53/3/1;

.2 further consider the draft Guidelines for the testing and approval of fixed inert gas fire-extinguishing systems for general cargo as required by SOLAS regulation II-2/10.7.1, based on annex 5 to document FP 53/3/1;

.3 further consider matters related to IACS Unified Interpretation SC 216 on water-based fire-extinguishing systems (FP 53/WP.1, annex 16);

.4 further consider the medium- and long-term priority systems listed in annex 19 to document FP 53/WP.1; and

.5 submit a report to FP 54.]

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4 COMPREHENSIVE REVIEW OF THE FIRE TEST PROCEDURES CODE

GENERAL

4.1 The Sub-Committee recalled that, at FP 52, the Sub-Committee had established the Working Group on Comprehensive Review of the Fire Test Procedures Code and, having approved the first part of its report, agreed to consider part 2 of the group's report at this session.

4.2 It was also recalled that, at FP 52, the Sub-Committee had re-established the Correspondence Group on Comprehensive Review of the Fire Test Procedures Code with the terms of reference, set out in paragraph 4.30 of document FP 52/21, and instructed the group to submit its report to FP 53.

REPORT OF THE WORKING GROUP (PART 2) ESTABLISHED AT FP 52

4.3 The Sub-Committee considered part 2 of the report of the Working Group on Comprehensive Review on the Fire Test Procedures Code established at FP 52 (FP 53/4 and FP 53/INF.4) and, having approved it in general, noted that the aforementioned correspondence group had considered the matters identified in the report of the working group during its deliberations.

REPORT OF THE CORRESPONDENCE GROUP

4.4 The Sub-Committee considered the report of the Correspondence Group on Comprehensive Review on the Fire Test Procedures Code (FP 53/4/1), together with documents FP 53/4/2 and FP 53/4/3 (Japan), FP 53/4/4 (Republic of Korea) and FP 53/4/5 (IACS) and, having approved it in general, agreed to refer the draft revised Fire Test Procedures Code and related fire test procedures to the working group referred to in paragraph 4.6 for further consideration.

OTHER DOCUMENTS SUBMITTED

4.5 Following consideration of documents:

.1 FP 53/4/2 (Japan), providing the results of the experimental tests of the plate thermometer for use of the furnace control in the FTP Code, annex 1, part 3, by using "B" class bulkhead;

.2 FP 53/4/3 (Japan), providing the information and a suggestion on the surface flammability test of the draft revised FTP Code, part 5, for introducing the updated standard ISO 5658-2, which was obtained through experimental tests in Japan;

.3 FP 53/4/4 (Republic of Korea), presenting the test results regarding the use of propane and acetylene for the surface flammability test, as it was determined that acetylene is a hazardous gas requiring extreme caution during its use; and

.4 FP 53/4/5 (IACS), commenting on the work undertaken by the correspondence group on the approval and test methods for large fire doors, and proposing revised criteria for assessment to be applied in cases where the dimensions exceed 15% width and height and 10% area of the fire tested door,

the Sub-Committee agreed that the above documents should be forwarded to the working group for detailed consideration.

ESTABLISHMENT OF THE WORKING GROUP

4.6 Recalling its relevant decision at FP 52 regarding a working group, the Sub-Committee established the Working Group on Comprehensive Review on the Fire Test Procedures Code and instructed it, taking into account the comments and decisions made in plenary, to finalize the draft revised FTP Code based on the text prepared by the working group established at FP 52 (FP 53/4 and FP 53/INF.4) and the correspondence group (FP 53/4/1), taking into account documents FP 53/4/2, FP 53/4/3, FP 53/4/4 and FP 53/4/5.

[**REPORT OF THE WORKING GROUP**

4.7 Having received the report of the working group (FP 53/WP.3), the Sub-Committee approved it in general and took action as outlined hereunder.

REVISION OF THE FTP CODE

Period of grace for previous FTP Code test procedures

4.8 The Sub-Committee agreed that within five years after the Code enters into force, the Administrations may renew the type approvals of products tested in accordance with the previous version of the Code regardless of the age of the test reports.

Validity of the test report after the revised FTP Code enters into force

4.9 The Sub-Committee noted that the group considered and agreed that at least five years would be necessary for manufacturers to apply to various Administrations to seek type approval based on a test report. The Sub-Committee also noted that the majority of the group agreed to specify the maximum duration (15 years) for which a type approval may be reissued for a product without re-testing.

Reference to ISO standards

4.10 The Sub-Committee noted that the group, having considered paragraph 2 of document FP 53/4, examined the status and contents of the ISO standards which are referred to in the draft new FTP Code, agreed to refer to the published ISO standards.

Part 1 – Non-combustibility test

Organic contents

4.11 The Sub-Committee noted that the group considered extensively the requirements for a test method and the relevant paragraphs in parts 1 and 3 of the draft revised FTP Code for moisture and organic content in the samples for insulation materials for the fire division specimen and agreed with the proposed text, introduced to parts 1 and 3 of the Code, based on EURIMA's (European Insulation Manufacturers Association) comments concerning uniform procedures for monitoring and verifying combustible content in insulation products.

Part 2 – Smoke and toxicity test

Presentation by ISO

4.12 The Sub-Committee noted that the group received a presentation by a representative of ISO on the result of the inter-laboratory tests which were conducted according to the draft part 2. The Sub-Committee also noted that the group, after expressing its appreciation to ISO,

recognized the usefulness of the result of the inter-laboratory tests for the purpose of its consideration on the draft revised FTP Code, and decided to use the information as the basis of its consideration.

Toxicity index for gas-measuring of part 2

4.13 The Sub-Committee noted that in considering the toxicity index, the group recalled that during FP 52, Members States were invited to provide relevant data on toxicity test results in order to consolidate the existing database for further analysis (FP 52/21, paragraph 4.20). The Sub-Committee also noted that no useful data was submitted to the correspondence group, and in this context, the group considered that the application of the toxicity index was premature but should be kept for future consideration, and agreed to retain the existing toxicity criteria.

Part 3 – Test for "A", "B" and "F" class divisions

Large doors

4.14 In noting that the group considered the fundamental requirements for the testing and evaluation of large doors (larger than those decided upon in MSC/Circ.1273), taking into account the IACS Unified Interpretation as well as document FP 53/4/5, the Sub-Committee agreed that it is premature to include the proposed analysis method into the draft revised FTP Code as a mandatory part at this stage but it could be used on a recommendatory basis. Therefore, the Sub-Committee agreed to the draft MSC circular recommending the use of the method, set out in annex …, for submission to MSC 86 for approval.

Light-weight constructions

4.15 The Sub-Committee, recognizing that preparation of the draft amendment to SOLAS chapter II-2 for light-weight construction was not within the terms of reference of the working group, agreed not to take any action on the proposed amendment. However, the Sub-Committee, also recognizing the merit of the draft text of fire test procedures for light-weight construction prepared by the working group, agreed to keep the draft text, set out in annex 5 to document FP 53/WP.3, for future consideration.

Standard ISO 834-1 – Plate thermometer

4.16 During the discussion of document FP 53/4/2, the majority of delegations supported the use of plate thermometers for controlling the fire test furnace. However, some delegations

expressed concern that furnace control by plate thermometer would require an increased heat input to the test furnace and so would result in increased heat input to the specimen at the beginning of the test. One delegation informed on its experience that such an increase of heat is very small within the first several minutes and there is no such increase of heat after 10 minutes. This view was supported by several delegations. It was also proposed to keep the sheathed thermocouple as an alternative and to leave to the Administration to decide which kind of thermocouple should be used. The Sub-Committee noted the group's agreement to delete this possibility and to include the only option for the plate thermometers for controlling the fire test furnace.

Other comments

Ambient conditions, part 3

4.17 The Sub-Committee noted that the group considered the proposal to change the range of ambient temperature from 20 ± 0°C to 5 to 35°C, with reference to the BS 476 standard. The Sub-Committee also noted that, during the discussion, some delegations suggested to keep the current ambient temperature of 20 ± 10°C as presented in standard ISO 834-1 and that the final agreement was that the fire resistance test should be started within the temperature range of 10°C and 35°C.

Conditioning of the test specimen

4.18 The Sub-Committee noted that the group, in considering the method of conditioning of the fire resistance test specimen prior to the test, while noting that the fire resistance test specimen should, ideally, be kept in a standard temperature/humidity condition (23 $\pm$ 2°C and 50 $\pm$ 5% relative humidity) prior to the test, recognized that it may not be practical and agreed that the fire resistance test specimen should be kept at ambient temperature at the testing laboratory until it reaches an equilibrium condition, which should be determined by small samples of the materials used in the test specimen and placed at the same place of the fire resistance test specimen.

Cable transit

4.19 The Sub-Committee noted that the group, considering how much area should be occupied by cables in the cable transits for testing, agreed that two test specimens should be prepared: one for the maximum and the other for the minimum, as specified by the manufacturer's specification for the inside cross-sectional area to be occupied by cables. Some delegations expressed the view

that such a specification would solve any misunderstanding between testing condition and actual installation.

Cotton pad test

4.20 The Sub-Committee, recognizing the difficulty in determining the temperature of the position to which a cotton pad should apply, as required by part 3 of the revised FTP Code, agreed that application of cotton pads should be terminated when the duration of attained insulation class (e.g., 30 min for "A-30" class) passed, and made modifications in part 3 to follow this principle. The Sub-Committee also recognized that this alteration may lead to a larger change on the fire resistance testing and integrity criteria.

Intumescent materials

4.21 The Sub-Committee noted that the group, having received an opinion that intumescent materials intentionally used as an insulation material should not be removed by gap gauge during the fire test, considered paragraph 8.4.4.3 of appendix 1 of part 3. One delegation expressed concern that such intumescent materials would not give sufficient fire protection in actual use due to unknown life under environmental conditions within ships. The Sub-Committee noted that the group could not reach any concrete conclusion, and decided to leave the text as it is.

Part 5 – Test for surface flammability

Test method and test apparatus (standard ISO 5658-2 updated)

Presentation by ISO

4.22 The Sub-Committee noted that the group received a presentation by a representative of ISO on the result of the inter-laboratory tests which were conducted according to the draft part 5 and, recognizing the usefulness of the result of the inter-laboratory tests for the purpose of consideration on choice of the type of pilot flame (impinging or remote flame), decided to use the information as the basis of its consideration.

Pilot Flame

4.23 The Sub-Committee noted that, in considering the revised standard ISO 5658-2 and documents FP 53/4/3 and FP 53/4/4, where pilot burner gas would be changed from acetylene to

propane, the group also considered using propane gas instead of acetylene gas for the pilot flame and, after extensive discussion, agreed to use only an impinging pilot flame by propane gas.

Part 8

Individual test for cover materials and filling materials

4.24 The Sub-Committee noted that, during the discussion of this matter in the group, there were divided views on individual test for cover and filling materials. The group, noting also the majority's view that the type approval should be given to the final product of upholstered furniture, recognized the merit of test procedures for independent tests for cover and filling materials, and agreed to place them into a new appendix to part 8.

Cigarette ignition source

4.25 The Sub-Committee noted that the observer from ISO informed the group that there are activities within the United States and ISO to establish a standard for a fire safety cigarette which may be used in many states, and it may become difficult to obtain the cigarette specified in parts 8 and 9 in those states. He further expressed the view that introduction of such a fire safety cigarette may change the risk of fire due to cigarettes and such fire scenarios should be reviewed. This information and view was supported by some delegations. The Sub-Committee also noted that the group, noting the information, agreed to keep the fire test method using cigarettes as it is in parts 8 and 9, and to the need for a future review of the test methods using smouldering source as the ignition source.

Draft revised FTP Code

4.26 Having considered the above matters, the Sub-Committee agreed to the revised FTP Code and the associated draft MSC resolution, as set out in annex …, for submission to MSC 86 for approval and subsequent adoption.

4.27 Consequently the Sub-Committee requested the Secretariat to consolidate and adjust the texts and to effect any necessary editorial modifications as may be identified in order to avoid inconsistencies, specifically on the amendments adopted during FP 52 and FP 53.

Draft amendments to SOLAS chapter II-2

4.28 The Sub-Committee agreed to the draft amendments to SOLAS chapter II-2, as set out in annex …, for submission to MSC 86 for approval and subsequent adoption, in conjunction with the adoption of the revised FTP Code referred to in paragraph 4.27.

Completion of the work item

4.29 Since work on the item has been completed, the Sub-Committee invited the Committee to delete it from its work programme.]

5 MEASURES TO PREVENT EXPLOSIONS ON OIL AND CHEMICAL TANKERS TRANSPORTING LOW-FLASH POINT CARGOES

General

5.1 The Sub-Committee recalled that at MSC 83, the Committee included, in the Sub-Committee's work programme and the provisional agenda for FP 52, a high-priority item on "Measures to prevent explosions on oil and chemical tankers transporting low-flashpoint cargoes", with a target completion date of 2009, in co-operation with the BLG and DE Sub-Committees as necessary and when requested by the FP Sub-Committee.

5.2 It was also recalled that MSC 83 agreed that, under the aforementioned work programme item, the Sub-Committee should first consider measures for new ships, taking into account the different operational demands on chemical tankers and the need that essential data is submitted and considered first and, depending on the outcome of their consideration, the Committee would then consider the extension of the item towards appropriate measures for existing oil and chemical tankers transporting low-flashpoint cargoes, taking into account the comments made during the discussion.

5.3 The Sub-Committee further recalled that at MSC 83, the Committee agreed to take into account the concerns raised in respect of dangerous atmospheres (FP 52/20, annex).

5.4 It was noted that at FP 52, the Sub-Committee decided to establish a working group at this session to progress the matter and urged Member Governments and international organizations to submit the essential data on the subject to FP 53 for consideration and action, as appropriate.

5.5 The Sub-Committee had the following documents for consideration under this agenda item:

.1 FP 53/5 (Secretariat), containing the outcome of FP 52 on matters related to this item;

.2 FP 53/5/1 (Secretariat), containing the relevant parts of the reports of investigation into the **Chassiron, Panam Serena** and **Bow Mariner**;

.3 FP 53/5/2 (Secretariat), containing a compilation of the analyses of tank related fire and explosion casualties on oil and chemical tankers considered by the FSI Sub-Committee since FSI 8, in order to provide essential data on this subject to assist the Sub-Committee with its work on this task;

.4 FP 53/5/3 (Norway), containing a formal safety assessment on the installation of inert gas systems on tankers of less than 20,000 dwt, in order to provide the Sub-Committee with further information and analysis on this issue, recommending that also smaller ships should have inert gas system fitted, in order not to lead to a lower safety standard for some types or sizes of ships. It should be noted that the port turnaround has not been taken into account when the study was performed;

.5 FP 53/5/4 (Japan), recommending that oil tankers, including product carriers, should follow the latest edition of the International Safety Guide for Oil Tankers and Terminals (ISGOTT) and proposing a draft recommendation for safe operation on tankers;

.6 FP 53/5/5 (IPTA and ICS), discussing different operation issues related to the introduction of mandatory requirements for the installation of inert gas systems (IGS) on chemical tankers;

.7 FP 53/5/6 (IPTA and ICS), providing two examples of actual voyages undertaken by parcel/chemical tankers during 2008, which could be considered as typical of the type of operations constantly being carried out in the chemical/parcel tanker trade;

.8 FP 53/5/7 (IPTA and ICS), commenting on document FP 53/5/3 (Norway) on the many issues raised to propose mandatory requirements for IGS; and

.9 FP 53/INF.3 (Japan), providing the result of analysis of fire and explosion casualties in cargo areas on oil and chemical tankers, and concluding from the analysis that safety measures against fire and explosion in cargo areas on tankers should be considered comprehensively.

Standards for the design of in-tank pumps

5.6 The Sub-Committee noted the information provided by IACS regarding the development of international safety standards for the design and operation of in-tank pumps and, in particular, that the above standards are currently under development and would be ready for circulation in March 2009. The observer from IACS also informed the Committee that relevant document on the matter would be submitted to FP 54.

Discussion of submissions

5.7 In the course of considering the documents referred to in paragraph 5.5 above, the Sub-Committee noted the following views expressed during the discussion:

.1 the results of the Inter-Industry Working Group report on fires and explosions on chemical and product tankers (MSC 81/8/1) should be included in the list documents to considered on the matter;

.2 industry guidance such as the International Safety Guide for Oil Tankers and Terminals (ISGOTT) should be considered as part of any measures to be developed, taking into account that the failure to follow procedures was the main cause for the fires and explosions identified by the Inter-Industry Working Group;

.3 enhanced training regarding cargo tank operating procedures should be included in the ongoing revision of the STCW Convention, in particular, concerning tanker endorsements;

.4 inert gas system should be installed on oil and chemical tankers to reduce the risk of fire and explosions;

.5 most chemical cargoes entail a relatively high level of tank preparation, which will usually involve the crew entering the tank to complete cleaning operations, and the installation of inert gas systems on chemical tankers could increase the risk of asphyxiation;

.6 the possibility of increased port time in areas where congestion is already a major factor needs to be taken into account when considering the application of inert gas to chemical carriers;

.7 the potential for over pressurization of cargo tanks is possible if shore-supplied inerting is made mandatory;

.8 the effectiveness of having inert gas on small ships engage in short voyages was doubted; and

.9 it was noted that the FSA studies on effectiveness of installation of vent gas system came to a different conclusion due to different factors being taken into account.

5.8 In summarizing, the Chairman emphasized is that the Sub-Committee needs to develop a positive response to the problem by addressing the issues highlighted in the documents submitted and the various interventions made on the subject. In this regard, he proposed that the working group should consider operational measures to deal with human element, technical measures for preventing fires and explosions; including the possibility of requiring inert gas systems on oil and chemical tankers.

Establishment of the working group

5.9 Recalling its relevant decision at FP 52 regarding a working group, the Sub-Committee established the Working Group on Measures to Prevent Explosions on Oil and Chemical Tankers Transporting Low-Flash Point Cargoes and instructed it, taking into account the comments and decisions made in plenary, to:

.1 consider operational and technical measures to prevent fires and explosions on new oil and chemical tankers transporting low-flash point cargoes, taking into account the different operational demands on chemical tankers, the concerns raised in respect of dangerous atmospheres, and documents FP 53/5, FP 53/5/1, FP 53/5/2, FP 53/5/3, FP 53/5/4, FP 53/5/5, FP 53/5/6, FP 53/5/7, FP 53/INF.3, FP 52/20/1, FP 52/INF.2, FP 51/10/1, MSC 81/8/1 and MSC 81/INF.8, and prepare recommendations for new ships only, which should be composed of:

.1.1 operational measures to deal with human element considerations;

.1.2 technical measures which should have added value for preventing fires and explosions, in particular, considering loading and unloading operations and tank cleaning and inspections; and

.1.3 exploring the possibility of requiring inert gas (IG) or equivalent systems, taking into account the different ship types and sizes.

Report of the working group

5.10 Having received the report of the working group (FP 53/WP.2), the Sub-Committee approved it in general and took action as outlined hereunder.

5.11 The Sub-Committee noted that views in the group were divided whether the discussions on the measures to prevent fires and explosions should be separated from the issue of tank entry and cargo operating procedures, i.e. measures to ensure a tank is safe before entry, but that, however, the majority of the group had agreed that the two issues should not be treated separately since the problems associated with tank entry were fundamental to the discussions.

5.12 The Sub-Committee also noted that concerns were raised regarding an increase in turnaround time in ports should inerting of tanks be required for all new oil and chemical tankers and also that such requirement would add another layer to an already very complex process for chemical tankers, and that it was also pointed out that inerting may increase the risk associated with tank entries and that technology to avoid entering tanks was not yet fully developed.

5.13 The Sub-Committee agreed that the results of the Inter-Industry Working Group formed to investigate fires and explosions on chemical and product tankers (MSC 81/8/1) should be further thoroughly considered in the work on the agenda item, together with any other relevant document.

5.14 The Sub-Committee noted that any tank entry was always hazardous, whether tanks had been inerted or not, and that an empty tank did not equal a safe tank. The importance of following established procedures for entering enclosed spaces was stressed.

5.15 The Sub-Committee also noted that the delivery of nitrogen to chemical tankers from shore facilities was considered by the group, whereby potential problems with a guaranteed supply and the quality of nitrogen and possible problems with over pressurization of ships' tanks from shore nitrogen supply were mentioned.

Operational measures to deal with human element considerations

5.16 The Sub-Committee noted that the group had discussed the cargo-specific element of the training for chemical tanker endorsements and had agreed that more training on the specifics of hazardous chemicals, including low-flash point cargoes, was necessary, and agreed to invite the STW Sub-Committee to reconsider document STW/ISWG 1/5/12 in the context of the revision of the STCW Convention, in particular the draft amendments to chapter V proposed in the document so that enhanced training regarding tank entry and cargo operating procedures could be included in the revision. In this connection, the Sub-Committee noted that relevant training and experience of surveyors and other shore personnel may also need to be considered.

5.17 The Sub-Committee noted that guidance from the industry regarding the entry into enclosed spaces was readily available, such as the information contained in the International Safety Guide for Oil Tankers and Terminals (ISGOTT) by ICS/OCIMF/IAPH, the Tanker Safety Guide (Chemicals) by ICS and the Guidelines on safety management systems for hot work and entry into enclosed spaces by OCIMF, but was not always complied with, and agreed that such industry guidance should be taken into account in the further work. In this context, the Sub-Committee noted that the Recommendation for safe operation of tankers, developed by Japan (FP 53/5/4), could also assist in preventing fire and explosions on tankers. In this connection, the Sub-Committee noted information on asphyxiation incidents issued by various industry bodies.

5.18 The Sub-Committee also noted that, in the tank-related fire and explosions investigated by the IIWG (MSC 81/8/1), failure to follow established procedures was observed in a significant number of incidents, and that some delegations had pointed out that the objective should be to reduce the number of tank entries but that, at the same time, it would appear that commercial pressure was leading to an increase in tank inspections, thereby raising the number of entries.

Technical measures to prevent fires and explosions

5.19 The Sub-Committee agreed that the fitting of appropriate inert gas systems (IGS) to new oil tankers below 20,000 dwt and new chemical tankers carrying low-flash cargoes would minimize the risk of fires and explosions. The Sub-Committee recognized, however, that it was pointed out that the benefits of such fitting should outweigh any negative effects of the introduction of IG systems, such as increased fuel consumption; increased CO_2 emissions; increased building costs; increased complexity of procedures; and possible increase of the risk associated with tank entries.

5.20 The Sub-Committee noted that the majority of the group had agreed that a lower size limit should be set for new oil tankers to which the IGS requirement would apply, and had also felt that it may be appropriate to apply the same size limit to chemical tankers, but that, however, other delegations had been of the view that any new requirements should not be subject to a size limit. The Sub-Committee also noted that views in the group had been divided at which dwt value the cut-off should be set, taking into account the two FSA studies by Japan and Norway, and that some delegations had been proposing a lower limit of 4,000 dwt, 6,000 dwt or 8,000 dwt. Noting that the group had not reached agreement in the matter, the Sub-Committee agreed that the lower size limit for new tankers, to which the requirement of fitting IGS would apply, needed to be further considered.

5.21 The observer from OCIMF stated that requirements should be in line with the principle of the SOLAS Convention and that there should be no other lower limit to the size of new tankers to which the requirements for inert gas apply other than that established in SOLAS, i.e. 500 gross tonnage, indicating that, for example, the requirement for inert gas in the IGC Code applies to all gas carriers above 500 gross tonnage. They further stated that they knew that fitting of IGS to new tankers below 20,000 tonnes deadweight would minimize the risk of fires and explosions; that it was technically feasible to install inert gas systems on all new build tankers, regardless of

size, and that no one had disagreed with this point; and that there had been over 30 years of experience with inert gas in the tanker industry.

5.22 The Sub-Committee noted the views that the size limit should be settled after MEPC 59 has agreed on the "oil spill cost per unit volume" threshold (CATS value) which would enable a proper analysis of the cost-benefit ratio of the introduction of inert gas to tankers as described above.

New oil tankers

5.23 The Sub-Committee agreed that new oil tankers of below 20,000 tonnes deadweight but equal to or greater than [8,000] [6,000] [4,000] dwt should be fitted with inert gas systems, recognizing that such requirements could be introduced by suitably modifying the provisions of SOLAS regulation II-2/4.5.5.

New chemical tankers

5.24 The Sub-Committee agreed that requirements should be developed for the application of inert gas systems to new chemical tankers, and that, since chemical tankers presented much more complex problems than oil tankers, separate requirements may need to be developed to cover them, which would necessarily also include modifications to SOLAS regulation II-2/4.5.5.2.

5.25 The delegation of the Bahamas, supported by the observers of ITF, IAPH, OCIMF and INTERTANKO, stated their opinion that, taking into account the risks involved in the carriage of low-flash point cargoes, the same carriage requirements should apply to new oil tankers and new chemical tankers.

Extension of the work programme item

5.26 The Sub-Committee agreed that further intensive debate on the issue for two more sessions of the Sub-Committee is necessary and, consequently, invited the Committee to extend the target completion date of the work programme item to 2011.

5.27 The Sub-Committee invited Members and international organizations to submit proposals for concrete amendments to relevant IMO instruments and any other information regarding the matter to FP 54 and agreed that a working group should be established at that session to consider such proposals and any other information submitted.

6 FIRE RESISTANCE OF VENTILATION DUCTS

6.1 The Sub-Committee recalled that, at MSC 83, the Committee, having considered document MSC 83/25/11 (Denmark), had agreed to expand the Sub-Committee's existing work programme item on "Fire resistance of ventilation ducts" to cover all SOLAS regulations for ventilation systems and agreed to extend the target completion date to 2009.

6.2 The Sub-Committee also recalled that, at FP 52, it had agreed to the draft amendments to SOLAS regulation II-2/9.7 on matters related to fire resistance of ventilation ducts, which were approved by MSC 84 and subsequently adopted by MSC 85, by means of resolution MSC.269(85). In this context, the aforementioned amendments apply to new ships only.

6.3 Following consideration of documents:

.1 FP 53/6 (United States), containing proposed amendments to SOLAS regulation II-2/9.7, in order to clarify and harmonize the SOLAS ventilation system requirements. The proposed amendments address the problem by requiring automatic fire dampers for all ventilation duct penetrations of "A" class divisions; and

.2 FP 53/INF.5 (Republic of Korea), containing the results of tests, which were carried out in order to observe the behaviour of the ventilation duct and carbon dioxide gas when the carbon dioxide fire-extinguishing system is activated,

the Sub-Committee agreed with the proposed amendments to SOLAS regulation II-2/9.7, in general, noting the view of several delegations that more detailed consideration was necessary. In this context, the Sub-Committee agreed with the views expressed that the fitting of automatic fire dampers in "A" class divisions would be very costly for passenger ships and would not substantially improve safety.

6.4 In light of the above and noting that the amendments to SOLAS regulation II-2/9.7, adopted at MSC 85 (resolution MSC.269(85)) are not expected to enter into force until 1 July 2010, the Sub-Committee invited Member Governments and international organizations to submit proposals to FP 54 and invited MSC 86 to extend the target completion date of this item to 2010.

7 GUIDELINES FOR DRAINAGE SYSTEMS IN CLOSED VEHICLE AND RO-RO SPACES AND SPECIAL CATEGORY SPACES

General

7.1 The Sub-Committee recalled that at MSC 83 the Committee had considered documents MSC 83/25/2 (Egypt) and MSC 83/3/2 (Denmark, Norway and Sweden), proposing to improve the drainage of fire-fighting water from the vehicle decks of ro-ro ships, and acknowledged the need to take urgent action on the matter in light of the tragic loss of life caused by the sinking of the passenger ferry **Al-Salam Boccaccio 98**.

7.2 It was also recalled that MSC 83 had approved draft amendments to SOLAS regulations II-1/35-1 and II-2/20 to address the drainage of special category and ro-ro spaces to prevent accumulation of water on the vehicle deck of ro-ro ships, for adoption at MSC 84. Subsequently, the amendments to SOLAS regulation II-2/20 were adopted by means of resolution MSC.256(84) on 16 May 2008, and are expected to enter into force on 1 January 2010.

7.3 The Sub-Committee noted that MSC 83, having approved draft amendments to SOLAS chapters II-1 and II-2, agreed that the appropriate Guidelines should be developed to assist Administrations in the implementation of the new amendments and decided to include, in the work programmes of the FP and SLF Sub-Committees and the provisional agenda for SLF 51, a high-priority item on "Guidelines for drainage systems in closed vehicle and ro-ro spaces and special category spaces", with a target completion date of 2009.

7.4 The Sub-Committee also noted that FP 52, as instructed by MSC 83, had given the matter preliminarily consideration, and decided to instruct the Correspondence Group on Performance Testing and Approval Standards for Fire Safety Systems to further develop the Guidelines with a view to finalization at FP 53 (FP 52/21, paragraph 18.11).

Outcome of MSC 84

7.5 The Sub-Committee recalled that at MSC 84, the Committee, in noting that the new SOLAS regulation II-1/35-1, adopted at MSC 80 (resolution MSC.194(80)), is expected to enter into force on 1 January 2009, recognized that, procedurally, the proposed amendments to regulation II-1/35-1 could not be adopted at that session. Subsequently, MSC 84 agreed to adopt the proposed amendments to regulation II-1/35-1 at a future session after the entry into force of regulation II-1/35-1.

Outcome of SLF 51

7.6 The Sub-Committee noted that SLF 51 had considered the specifications for the drainage capacity and the "scupper grating" construction, as proposed in document MSC 83/3/2 (Denmark, Norway and Sweden), and had agreed that:

.1 the drainage from enclosed ro-ro spaces or special category spaces should be of such capacity that two-thirds of the scuppers, freeing ports, etc., on the starboard or port side are capable of draining off a quantity of water originating from both sprinkler pumps and fire pumps, taking into account a list of 1° for ships with a breadth of 20 m or more and 2° for ships with a breadth below 20 m and a trim forward or aft of 0.5°; and

.2 scuppers on ro-ro decks should be provided, over the outlet grate, with a removable grille with vertical bars, to prevent large obstacles from blocking the drain. The grille may be placed obliquely against the side of the ship. The grille should have a height of at least 1 m above the deck and should have a free flow area of at least 0.4 m^2, while the distance between the individual bars should be not more than 25 mm.

7.7 The Sub-Committee also noted that SLF 51, having recognized that there is no meeting in 2009 and that the amendments to SOLAS regulation II-2/20 are expected to enter into force on 1 January 2010, invited Member Governments and international organizations to contribute to the correspondence group established by FP 52 on this issue and requested the Secretariat to inform FP 53 of the above outcome.

Report of the correspondence group

7.8 The Sub-Committee considered the report of the Correspondence Group on Performance Testing and Approval Standards for Fire Safety Systems on matters related to this item (FP 53/7) and, having approved it in general, instructed the Working Group on Performance Testing and Approval Standards for Fire Safety Systems, established under agenda item 3 (Performance Testing and Approval Standards for Fire Safety Systems), to finalize the draft Guidelines (FP 53/7, annex), taking into account comments made in plenary.

[**Report of the working group**

7.9 Having received the part of the report of the working group (FP 53/WP.1) relating to this item, the Sub-Committee took action as outlined hereunder.

Guidelines for the drainage of fire-fighting water from the vehicle decks of ro-ro ships

7.10 The Sub-Committee noted that the group had finalized the draft Guidelines for the drainage of fire-fighting water from vehicle and ro-ro spaces and special category spaces for passenger and cargo ships, based on the annex to document FP 53/7, and in particular that, with regard to the use of direct overboard drains above the bulkhead deck, the group had considered that the 5º heel requirement for immersion of the bulkhead deck may not be a suitable value to use for conditions of severe listing but determined that this same consideration may affect a variety of casualty scenarios on ro-ro ships. In this regard, the Sub-Committee, having decided that the use of direct overboard drains above the bulkhead deck in accordance with SOLAS regulation II-1/35-1 should be accepted, invited the SLF Sub-Committee to re-examine the provisions of paragraphs 2.6.1 and 2.6.2 of the regulation from a holistic viewpoint to determine the validity of the 5º heel breakpoint on modern ro-ro ships.

7.11 Subsequently, the Sub-Committee agreed to the draft Guidelines for the drainage of fire-fighting water from vehicle and ro-ro spaces and special category spaces for passenger and cargo ships and the associated draft MSC circular, as set out in annex …, for submission to MSC 86 for approval.]

8 CLARIFICATION OF SOLAS CHAPTER II-2 REQUIREMENTS REGARDING INTERRELATION BETWEEN CENTRAL CONTROL STATION AND SAFETY CENTRE

General

8.1 The Sub-Committee recalled that, at FP 52, it had agreed to refer the matter of the clarification of SOLAS chapter II-2 requirements regarding interrelation between central control station and safety centre to the Working Group on Review of Fire Safety of External Areas on Passenger Ships for further consideration, taking into account document FP 52/14 (Argentina) and decisions made in plenary.

8.2 It was also recalled that, at FP 52, the Sub-Committee had established the Correspondence Group on Clarification of SOLAS chapter II-2 Requirements Regarding Interrelation between Central Control Station and Safety Centre with the terms of reference, set out in paragraph 14.5 of document FP 52/21, and instructed it to submit a report to FP 53.

Report of the correspondence group

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

.1 concurred that the functionality of the safety centre systems in accordance with SOLAS regulation II-2/23.4 should remain, under all circumstances, in order to efficiently manage any envisaged emergency situation from the safety centre without distracting the navigation bridge team;

.2 noted the draft onboard functional safety centre requirements;

.3 noted the group's discussion concerning the concept and meaning of the term "continuously manned" and the functional requirements for manning a safety centre;

.4 noted the proposed interpretations of "continuously manned safety centre";

.5 noted the diagrams provided to indicate which arrangements of the safety centre may or may not be considered to be part of the bridge;

.6 concurred with the group's views that regulations other than those referred to in the terms of reference should be reviewed for inclusion of various functions within the safety centre either as a requirement or as a recommended practice;

.7 noted the discussion regarding the use of Information Technology Systems (computers) in providing the required system functionality in the safety centre and in other locations and concurred that such systems would be useful; and

.8 noted that the correspondence group considers that the work on this item is not complete and that the annexes to this document are in draft form only.

Establishment of the drafting group

8.4 Having considered the above issues and recalling its relevant decision at FP 52 regarding a drafting group, the Sub-Committee established the Drafting Group on Clarification of SOLAS chapter II-2 regarding the Interrelation between Central Control Station and Safety Centres and, taking into account the comments and decisions made in plenary, instructed it to:

.1 prepare draft clarifications of SOLAS chapter II-2 requirements regarding interrelation between central control station and safety centre based on document FP 53/8; and

.2 prepare the terms of reference for the correspondence group for consideration by the Sub-Committee.

8.5 The Sub-Committee recalled that the group was also instructed, under agenda item 18 (Explanatory notes for the application of the safe return to port requirements), to prepare the draft Explanatory notes based on document FP 53/18/1 for consideration by the correspondence group to be established on the matter (see paragraph 18….).

[**Report of the drafting group**

8.6 Having received the report of the drafting group (FP 53/WP.7), the Sub-Committee approved it in general and took action as outlined hereunder.

8.7 The Sub-Committee noted that the group, on the basis of document FP 53/8, had made further progress on the preparation of draft clarifications of SOLAS chapter II-2 requirements regarding interrelation between central control stations and safety centres, which are set out in annex 1 to document FP 53/WP.7.

8.8 The Sub-Committee, having noted the opinion of the group that the correspondence group to be established should be informed of the outcome of the work currently carried out by the NAV Sub-Committee under its work item on "Development of guidelines for IBS, including performance systems for bridge alert management", agreed to request the Secretariat to keep the Sub-Committee informed accordingly.

8.9 Having considered the above issues and recognizing the necessity to make progress on this item, the Sub-Committee decided to instruct the correspondence group established under agenda item 18 (Explanatory notes for application of the safe return to port requirements), to further consider annex 1 of document FP 53/WP.7, together with the comments contained in document FP 53/8, and prepare the final draft clarification for the consideration of FP 54, taking into account:

.1 the interrelation between central control stations and safety centres, in particular when the latter are manned;

.2 the hierarchy of control between continuously manned central control stations and safety centres; and

.3 the individual systems listed under SOLAS regulation II-2/23.6 so as to identify to what extent the requirements in respect to alarm, control, monitoring and power supply are related to the navigation bridge, continuously manned control stations and safety centres,

with a view to finalization at FP 54 (see also paragraph 18…).]

9 RECOMMENDATION ON EVACUATION ANALYSIS FOR NEW AND EXISTING PASSENGER SHIPS

General

9.1 The Sub-Committee noted that MSC 83 had approved the Guidelines for evacuation analysis for new and existing passenger ships, which were disseminated by means of MSC.1/Circ.1238 and, having considered document MSC 83/8/2 (Germany), proposing that the item related to the aforementioned Guidelines be retained in the Sub-Committee's work programme so that unresolved issues could still be further considered by the Sub-Committee, had agreed to retain the item on the Sub-Committee's work programme and had included it in the provisional agenda for FP 52.

9.2 It was recalled that at FP 52, the Sub-Committee had noted the proposal by Germany (FP 52/19/1) to develop a mandatory requirement to perform an evacuation analysis at an early stage of design for passenger ships other than ro-ro passenger ships, and the assumptions that the evacuation analysis should assume that passengers proceed according to the evacuation procedures for the ship, and agreed that more time was necessary to collect relevant data on the issue before evacuation analysis guidelines be considered for mandatory application.

9.3 The Sub-Committee noted that FP 52, having decided not to establish a correspondence group on this item, had agreed to invite the Committee to extend the target completion date of the item to 2010 and invited Member Governments and international organizations to submit relevant comments and proposals to FP 53.

9.4 Following consideration of documents:

.1 FP 53/9 (Germany and Sweden), further considering unresolved issues pertaining to this agenda item, proposing one additional scenario for evacuation analysis at an early stage of design and suggesting to pursue the mandatory status of the evacuation analysis at an early stage of design also for passenger ships other than ro-ro passenger ships; and

.2 FP 53/9/1 (United States), recommending that the Sub-Committee further consider the establishment of uniform life safety criteria for evacuation routes, to be used in fire modelling carried out in conjunction with the Guidelines for evacuation analysis for new and existing passenger ships (MSC.1/Circ.1238) and the Guidelines on alternative design and arrangements for fire safety (MSC/Circ.1002). Additionally, it is considered that the assumption that evacuation routes remain fully available should be re-evaluated, taking into account the new scenarios created by the passenger ship safety initiatives for evacuation to safe areas and safe return to port,

the Sub-Committee agreed that a correspondence group should be established to develop alternative scenarios and to discuss the mandatory nature of the Guidelines for evacuation analysis for new and existing passenger ships (MSC.1/Circ.1238), taking into account that the Guidelines are a design tool. The Sub-Committee also agreed that the proposal by the United States (FP 53/9/1) should be further considered by the aforementioned group.

9.5 Subsequently, the Sub-Committee agreed to establish the Correspondence Group on Evacuation Analysis for New and Existing Passenger Ships, under the co-ordination of Germany*, to progress the work on this issue and instructed the group, taking into account the relevant information contained in documents FP 53/9 and FP 53/9/1, to:

.1 discuss a mandatory requirement for applying MSC/Circ.1238 to all passenger ships, and if appropriate, prepare draft amendments to the Guidelines;

.2 further consider alternative scenarios for evacuation analysis at an early stage of design, based on the proposals contained in document FP 53/9;

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.3 further consider the establishment of uniform life safety criteria for evacuation routes, to be used in fire modelling carried out in conjunction with the Guidelines for evacuation analysis for new and existing passenger ships (MSC.1/Circ.1238) and the Guidelines on alternative design and arrangements for fire safety (MSC/Circ.1002); and

.4 submit a report to FP 54.

10 MEASURES TO PREVENT FIRES IN ENGINE-ROOMS AND CARGO PUMP-ROOMS

General

10.1 The Sub-Committee recalled that, at FP 52, the Sub-Committee had agreed that the draft Guidelines for measures to prevent fires in engine-rooms and cargo pump-rooms should only apply to new ships and that parts V (Pump-rooms and other spaces adjacent to cargo tanks), VI (Ergonomic arrangement) and VII (Human element) of the draft Guidelines should be deleted.

10.2 The Sub-Committee also recalled that FP 52, recognizing the necessity to make progress on this item and its relevant decision at FP 51, had established the Drafting Group on Measures to Prevent Fire in Engine-Rooms and Cargo Pump-Rooms (FP 51/19, paragraphs 8.9 and 8.10).

10.3 It was further recalled that, at FP 52, the Sub-Committee, having noted the progress made on the draft Guidelines, decided not to re-establish the correspondence group on the item and invited Member Governments and international organizations to submit comments and proposals to FP 53, taking into account the latest draft text contained in the annex to document FP 52/WP.6.

10.4 The Sub-Committee had for its consideration under this agenda item the following documents:

.1 FP 53/10 (IACS), proposing amendments to the draft Guidelines (FP 52/WP.6, annex) in order to improve the text;

.2 FP 53/10/1 (Republic of Korea, United Kingdom and IMarEST), proposing a comprehensive revised text of the draft Guidelines (FP 52/WP.6, annex);

.3 FP 53/10/2 (Republic of Korea), proposing that approval standards for anti-splash tape, which is generally used to protect the spray and splash from pressurized flammable oil piping systems, should be established in order to improve fire safety in the ship's engine-rooms; and

.4 FP 53/INF.6 (Republic of Korea), presenting detailed test results of the anti-splash tape.

Guidelines for measures to prevent fires in engine-rooms and cargo pump-rooms

10.5 The Sub-Committee considered the draft Guidelines for measures to prevent fires in engine-rooms and cargo pump-rooms, contained in the annex to document FP 53/10/1, together with document FP 53/10 and, having decided to incorporate the modifications proposed by IACS, agreed to the draft Guidelines for measures to prevent fires in engine-rooms and cargo pump-rooms and the associated draft MSC circular, as set out in annex …, for submission to MSC 86 for approval.

Approval standards for anti-splash tape

10.6 In considering matters related to the approval standards for anti-splash tape, the Sub-Committee noted the information provided in documents FP 53/10/2 and FP 53/INF.6 (Republic of Korea) and, having agreed that the matters were outside the scope of this work programme item, invited the interested Member Governments and international organizations to submit a proposal for a new work programme item to the Committee in accordance with the Guidelines on the organization and method of work (MSC-MEPC.1/Circ.2).

Completion of the item

10.7 The Sub-Committee considered that the work on the item had been completed and invited the Committee to delete this item from its work programme.

11 DEVELOPMENT OF PROVISIONS FOR GAS-FUELLED SHIPS

General

11.1 The Sub-Committee recalled that FP 52 established the Correspondence Group on Development of Provisions for Gas-Fuelled Ships with the terms of reference, set out in paragraph 11.4 of document FP 52/21, and instructed the group to submit a report to this session of the Sub-Committee.

11.2 It was noted that, at FP 52, the Sub-Committee had agreed to establish a drafting group at this session, with a view to finalizing the draft Interim Guidelines on safety for gas-fuelled engine installations in ships.

Report of the correspondence group

11.3 The Sub-Committee, having considered the report of the Correspondence Group on Development of Provisions for Gas-Fuelled Ships (FP 53/11), agreed to chapters II (section 2.10) and III of the draft Interim Guidelines relating to fire protection, with minor modifications, for referral to the BLG Sub-Committee for coordination purposes.

11.4 Subsequently, the Sub-Committee requested the Secretariat to inform BLG 13 of the above outcome and agreed to invite the Committee to delete this item from its work programme.

12 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS

General

12.1 The Sub-Committee recalled that FP 52, in considering document FP 52/12/1 (Secretariat) on the outcome of SLF 50 with regard to the revised IACS Unified Interpretation SC 178 on Emergency fire pumps in cargo ships, had noted that the SLF Sub-Committee had considered the revised IACS UI SC 178 for matters under their purview, and had agreed that the combination of heave and pitch, as well as heave and roll, contained in the unified interpretation were acceptable. Notwithstanding the above, FP 52 noted the views of several delegations that the unified interpretation contained construction issues that should be further addressed in detail and agreed that further consideration was needed to resolve this matter. The Sub-Committee, therefore, invited Member Governments and international organizations to submit comments and proposals on this matter to FP 53.

12.2 The Sub-Committee also recalled that, at FP 52, in considering document FP 52/12/6 (China), providing comments and proposals on document FP 51/9/8 (IACS), which discussed the application of SOLAS regulations II-2/9.2.2.4.2.2 and II-2/9.6.3 relative to closed and open ro-ro spaces on passenger ships carrying not more than 36 passengers and, having noted the views by some delegations that the proposals constituted draft amendments to SOLAS regulation II-2/9.6 which are outside the scope of this work, invited Member Governments and international organizations to submit proposals to the Committee in accordance with the Guidelines on the organization and method of work.

12.3 It was further recalled that, at FP 52, the Sub-Committee, in considering the report of the Correspondence Group on Measures to Prevent Fires in Engine-Rooms and Cargo Pump-Rooms (FP 52/6) on:

.1 clarification of SOLAS regulation II-2/4.2.2.3.2, on matters related to forward tank position, proposed by IACS (FP 51/8/3); and

.2 interpretation of SOLAS regulation II-2/4.5.1.1, with regard to pump-rooms intended solely for ballast transfer or fuel oil transfer (FP 51/9/10),

had agreed that further consideration was needed to resolve the above issues. The Sub-Committee, therefore, invited Member Governments and international organizations to submit comments and proposals on the aforementioned matters to FP 53.

12.4 The Sub-Committee noted that document FP 53/12/4 (IACS) was forwarded to the working group established under agenda item 3 (Performance testing and approval standards for fire safety systems) for consideration (see paragraph 3.28).

Fire detection and fire alarm systems in control stations

12.5 In considering document FP 53/12 (IACS), seeking clarification on the application of SOLAS regulation II-2/7.5.5 on control stations, as it is considered unclear which, if any, of the three protection methods (IC, IIC, IIIC) should be used in a control station, as control stations are not specified in any of the aforementioned methods, the Sub-Committee agreed that the three protection methods required fixed fire detectors and fire alarm systems to be installed in control

stations. In this context, the observer of IACS informed the Sub-Committee that they intend to submit an IACS UI on this matter to FP 54.

Ventilation system, electrical equipment and wiring and fire extinction for ro-ro spaces

12.6 The Sub-Committee considered a proposal by IACS (FP 53/12/1) for an interpretation of SOLAS regulation II-2/3.41, on the definition of ro-ro spaces, and interpretation on the application of regulation II-2/20, which in their view is not applicable to cargo spaces of a multi-purpose dry cargo ship, which is equipped for carriage of ro-ro cargo and the transport of trailers and vehicles without any fuel in their tanks and are towed on board by a suitable means during loading/unloading processes in the port, and did not agree with the interpretation since, in the view of the Sub-Committee, SOLAS regulation II-2/3.41 is appropriate to all possible cases.

Precaution against ignition of flammable vapours in closed vehicle spaces, closed ro-ro spaces and special category spaces

12.7 In considering document FP 53/12/2 (IACS), containing updates to two IACS unified interpretations (UI SC42 and UI SC43) related to the implementation of SOLAS regulation II-2/20.3, the Sub-Committee, having recognized that these interpretations were already addressed in MSC/Circ.1120 and that they may need to be revised in conjunction with MSC/Circ.1120, invited IACS to submit a document on this matter to FP 54.

Emergency fire pumps on cargo ships

12.8 The Sub-Committee considered document FP 53/12/3 (IACS), proposing modification to IACS Unified Interpretation SC 178 (FP 51/9/9, annex), taking into account the comments at FP 52 that the unified interpretation contained construction issues that should be further addressed in detail, agreed that an appropriate unified interpretation should be developed.

12.9 Having considered a proposal by the Secretariat (document FP 53/WP.8), the Sub-Committee agreed to the draft Unified interpretations of the FSS Code and the associated draft MSC circular, set out in annex …, for submission to MSC 86 for approval.

Clarification of SOLAS regulation II-2/4.2.2.3.2

12.10 In considering the clarification of SOLAS regulation II-2/4.2.2.3.2 on matters related to forward tank position, as proposed by IACS (FP 51/8/3), the Sub-Committee recalled that the Correspondence Group on Measures to Prevent Fires in Engine-Rooms and Cargo Pump-Rooms

(FP 52/6) had prepared a provision on the matter within the draft Guidelines on measures to prevent fires in engine-rooms and cargo pump-rooms and that FP 52 had decided to delete the aforementioned provision so that it could be considered as a separate matter. The Sub-Committee agreed to the draft interpretations of SOLAS chapter II-2 and the associated draft MSC circular, set out in annex …, for submission to MSC 86 for approval.

Pump-rooms intended solely for ballast transfer

12.11 In considering an interpretation of SOLAS regulation II-2/4.5.1.1 (FP 51/9/10), with regard to pump-rooms intended solely for ballast transfer or fuel oil transfer, the Sub-Committee agreed that SOLAS regulation II-2/4.5.1.1 stipulated the placing of a space between the cargo tanks and the machinery spaces to prevent, in case of failure in the bulkhead, the ignition of gases originating from the liquid in those tanks ("one out of two principle"). Furthermore, SOLAS regulation II-2/4.5.10 provides safety measures to prevent the event of ignition in the space placed between the engine-room and the cargo tanks (usually the cargo pump-room). The interpretation proposed in document FP 51/9/10 would mean going back to the "one out of two principle" as if there was filtering from the tanks to the space (even when the space only contains ballast or fuel transfer pumps) and the ignition of the gases could still happen because of a failure, for example, in electric equipment or in another ignition source located in the space. In light of the above, the Sub-Committee could not agree with the proposed interpretation.

13 FIXED HYDROCARBON GAS DETECTION SYSTEMS ON DOUBLE-HULL OIL TANKERS

General

13.1 The Sub-Committee recalled that at FP 51, having considered document MSC 82/21/12 (Austria, *et al*), the Sub-Committee agreed to instruct the Correspondence Group Measures to Prevent Fires in Engine-Rooms and Cargo-Pump Rooms to consider the proposal contained in the aforementioned document and to submit the results to FP 52.

13.2 The Sub-Committee also recalled that at FP 52, the Sub-Committee established the Correspondence Group on Fixed Hydrocarbon Gas Detection Systems on Double Hull Oil Tankers and approved terms of reference, as set out in paragraph 13.7 of document FP 52/21, and instructed the group to submit a report to FP 53.

13.3 It was further recalled that MSC 84, having considered document MSC 84/22/7 (France, Finland and Germany), agreed to expand the existing high-priority item on "Fixed hydrocarbon gas detection systems on double-hull oil tankers" in the work programme of the Sub-Committee to consider also means to avoid explosions in double spaces of double-hull oil tankers after gas detection, in cooperation with the BLG Sub-Committee as necessary and when requested by the FP Sub-Committee, and extended the target completion date of the expanded item to 2010.

Report of the correspondence group

13.4 In considering the report of the Correspondence Group on Fixed Hydrocarbon Gas Detection Systems on Double Hull Oil Tankers, the Sub-Committee approved it in general and took action as outlined hereunder.

13.5 The Sub-Committee agreed that fixed hydrocarbon gas detection systems should be required to be installed in ballast tanks and void spaces adjacent to cargo tanks located outside the oil tanker's cargo block area, such as forepeak tanks.

Draft amendments to SOLAS regulation II-2/4.5.7

13.6 Following an in depth discussion, taking into account the urgent need expressed by various delegations to progress with the matter, the Sub-Committee decided to delete the square brackets in paragraph 5.7.3.1 of the draft amendments to SOLAS regulation II-2/4.5.7, and keep the text. Subsequently, the Sub-Committee agreed the to the draft amendments to SOLAS regulation II-2/4.5.7 regarding gas measurement and detection, as set out in annex …, for submission to MSC 86 for approval with a view to adoption.

Proposed new chapter 16 of the FSS Code

Number and location of sampling points

13.7 In considering whether the proposed new chapter 16 of the FSS Code should require a minimum number of sampling points for each space or that this should be determined through an assessment methodology which needs to be further developed as part of Guidelines to be developed by the Organization, for the design, construction and testing of fixed hydrocarbon gas detection systems, the Sub-Committee agreed that the draft new chapter 16 should require

minimum two sampling points and that the words “large spaces” in paragraph 2.2.1.3 of the draft text was a vague sentence and agreed to a minor modification to resolve this matter.

13.8 In light of the above, the Sub-Committee agreed that the proposed new chapter 16 of the FSS Code should define the positioning of the sampling points as follows:

.1 that the upper gas sampling point should not be located lower than 1 m from the tank top; and

.2 that the position of the lower located gas sampling point should be above the height of the girder of bottom shell plating but at least 0.5 m from the bottom of the tank.

Maximum hydrocarbon gas concentration limit

13.9 The Sub-Committee decided that the maximum limit of hydrocarbon gas concentration at which the gas analysing unit should automatically shut down and at the maximum hydrocarbon gas concentration limit in the ballast/void spaces at which the alarms should be initiated in the cargo control room, navigating bridge and at the analysing unit, should be set at 30% of the lower flammable limit (LFL).

Maintenance, calibration and operational verifications

13.10 In considering whether guidelines for the maintenance, the calibration and operational verifications of the fixed hydrocarbon gas detection systems should be contained in the proposed new chapter 16 of the FSS Code, the Sub-Committee agreed that the draft new chapter 16 should not contain the guidelines, and noted that additional guidance may be required.

Proposed new chapter 16 of the FSS Code

13.11 In light of the above decisions, the Sub-Committee agreed to the draft new chapter 16 of the FSS Code on matters related to fixed hydrocarbon gas detection systems, set out in annex …, for submission to MSC 86 for approval with a view to adoption.

Other matters

13.12 The Sub-Committee noted that the correspondence group did not have the time to consider the following additional issues raised during its deliberations:

.1 should an alarm for fault condition be required?

.2 are both methods of measurement (point and open path detectors) allowed?

.3 is there any point detector system not allowed?

.4 is the response time necessary to be established?

and agreed to include the aforementioned issues in the terms of reference of the correspondence group.

Establishment of the correspondence group

13.13 Having considered the above issues, the Sub-Committee established the Correspondence Group on Fixed Hydrocarbon Gas Detection Systems on Double-Hull Oil Tankers, under the co-ordination of …*, and instructed it, taking into account the comments and decisions made in plenary, to:

.1 further consider the issues contained in the report of the correspondence group established at FP 52 (FP 53/13, paragraphs 22 and 23);

.2 develop the Guidelines for the design, construction and testing of fixed hydrocarbon gas detection system;

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.3 further consider the matter of inerting double-hull spaces, or others appropriate actions after detection of hydrocarbon gas, based on document MSC 84/22/7, and advise the Sub-Committee accordingly; and

.4 submit a report to FP 54.