



SUB-COMMITTEE ON FIRE PROTECTION
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REPORT TO THE MARITIME SAFETY COMMITTEE

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1 GENERAL

Introduction

1.1 The Sub-Committee held its fiftieth session from 9 to 13 January 2006 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	KENYA
ANGOLA	LATVIA
ARGENTINA	LIBERIA
AUSTRALIA	LITHUANIA
BAHAMAS	MALTA
BELGIUM	MARSHALL ISLANDS
BOLIVIA	MEXICO
BRAZIL	MOROCCO
CANADA	NETHERLANDS
CHILE	NIGERIA
CHINA	NORWAY
CROATIA	PANAMA
CUBA	PERU
CYPRUS	PHILIPPINES
DEMOCRATIC REPUBLIC OF THE CONGO	POLAND
DENMARK	REPUBLIC OF KOREA
DOMINICA	ROMANIA
EGYPT	RUSSIAN FEDERATION
FINLAND	SINGAPORE
FRANCE	SPAIN
GERMANY	SWEDEN
GREECE	TURKEY
ICELAND	TUVALU
INDONESIA	UKRAINE
IRAN (ISLAMIC REPUBLIC OF)	UNITED KINGDOM
ITALY	UNITED STATES
JAPAN	URUGUAY
	VENEZUELA

and the following Associate Member of IMO:

HONG KONG, CHINA

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

INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS (ICFTU)
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)
OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATION (IFSMA)

INTERNATIONAL LIFESAVING APPLIANCES MANUFACTURERS'
ASSOCIATION (ILAMA)
INTERNATIONAL ASSOCIATION OF INDEPENDENT TANKER OWNERS
(INTERTANKO)
INTERNATIONAL COUNCIL OF CRUISE LINES (ICCL)
THE ROYAL INSTITUTION OF NAVAL ARCHITECTS (RINA)

Secretary-General's opening address

1.4 In welcoming the participants, the Secretary-General referred to the fact that the Sub-Committee has met at its fiftieth session and, in marking this golden jubilee occasion, he recalled that the first session of the Sub-Committee was held at the old Headquarters of the then Inter-Governmental Maritime Consultative Organization (IMCO), in Chancery House, from 14 to 18 December 1964, more than 41 years ago, when there was a total of 42 participants only. He stated that Members should be pleased at the progress the Sub-Committee has since made, not only in the number of Member Governments and international organizations participating in its work, but also in the quantity and, more importantly, the quality of the output of the Sub-Committee, which has contributed significantly to the achievement of the objectives of the Organization.

The Secretary-General emphasized that over these years, there had been many advances in the field of fire protection engineering and in the regulations which incorporate fire safety technologies, drills and fire-fighting operations and practices on board ships. He highlighted, in particular, automatic sprinklers, inert gas systems, fire detection systems, machinery space fire-extinguishing systems, automated safety control systems, new non-combustible materials and enhanced personal protection for fire-fighters, as few examples and noted that the ships and the seafarers that sail them now have a host of new technologies, which their predecessors could only have dreamed of, to both prevent and quickly mitigate fires when they occur. Thanks to the work of the Sub-Committee, numerous fire test procedures and performance standards have been developed to ensure that emerging technologies are up to the task, which has significantly contributed to enhanced fire safety at sea.

The Secretary-General took the opportunity to pay a special tribute to the Chairmen and Vice-Chairmen of the Sub-Committee and the working group Chairmen for their invaluable contribution to the success of the Sub-Committee and, in particular, to its Chairmen: Mr. Audige (France), Mr. Fribert (Denmark), Mr. Hareide (Norway), Mr. Victory (United Kingdom), Dr. Basso (Italy), Mr. Van der Wouden (Netherlands), Mr. Kerlin (United States), Mr. Weightman (Liberia), Captain Jahnke (Sweden), Ms. Murtagh (United States), Mr. Yoshida (Japan) and the current Chairman, to all of them for leading the Sub-Committee so ably over the last 41 years of its existence. He also praised and thanked the Sub-Committee's Secretaries, Mr. Sasamura, Mr. Jens, Mr. Cipolla, Mr. Kobylinski and Mr. Cygan and, more recently, Mr. Sekimizu and Mr. Westwood-Booth; and now Mrs. Allnutt for their painstaking and dedicated services to the Sub-Committee since its establishment.

Turning to the important items on the agenda, the Secretary-General recalled that, in the context of its work on passenger ship safety, the MSC had assigned various tasks of the highest importance, including matters related to the safe area concept and increased survivability, and is still awaiting advice on these most vital aspects of this initiative. He highlighted that ensuring that passenger ship safety standards are high enough to adequately serve, not only today's, but also future challenges is vital and the Sub-Committee's contribution to the Committee's proactive work in this area is of the utmost importance. The Secretary-General, therefore, urged

the Sub-Committee to work hard this week to provide the Committee with the expert advice it needs on the issues that fall within the Sub-Committee's competence.

Referring to the Sub-Committee's work on the comprehensive review of the performance testing and approval standards for fire safety systems, as referred to in the revised SOLAS chapter II-2, the FSS and FTP Codes, the Secretary-General stressed that the completion of this work was essential to ensure the smooth implementation of the revised SOLAS chapter II-2 and for the harmonization of the many performance standards related to fire safety systems. He also referred to the work on the comprehensive review of the FTP Code, to commence at this session, as the work which is essential to updating the various fire test standards and accommodating developments in fire protection technologies.

The Secretary-General observed that at this session, unusually, various issues related to life-saving appliances would be considered by the Sub-Committee and highlighted that the MSC, in view of the very heavy workload of the DE Sub-Committee, had decided to transfer some of its items, including measures to prevent accidents with lifeboats, compatibility of life-saving appliances and test standards for extended service intervals of inflatable liferafts, to the Sub-Committee's agenda. He expressed his confidence that the Sub-Committee would accomplish the tasks satisfactorily and would, in addition, assist the Committee in the future consideration of a more flexible application of the agenda management procedure.

In concluding, the Secretary-General mentioned the theme for this year's World Maritime Day is "Technical Co-operation: IMO's response to the 2005 World Summit", with special emphasis on the maritime needs of Africa. He pointed out that this important theme has given the Organization an opportunity to contribute to the fulfilment of the Millennium Development Goals set by the United Nations in 2000 and reaffirmed at the 2005 World Summit, as the community's response to identified new needs and challenges presented by the fact that hundreds of millions of people are left defenceless against hunger, disease and environmental degradation, even though the means to support them are available. He emphasized that maritime activity has a key role to play in meeting these goals and already provides the mechanism to support economic development being an important source of invisible income to many developing countries.

Chairman's remarks

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

Adoption of the agenda and related matters

1.6 The Sub-Committee adopted the agenda (FP 50/1) and agreed to be guided in its work, in general, by the annotations contained in document FP 50/1/1. The agenda, as adopted, with the list of documents considered under each agenda item, is set out in document FP 50/INF.7.

2 DECISIONS OF OTHER IMO BODIES

General

2.1 The Sub-Committee noted the decisions and comments pertaining to its work made by COMSAR 9, DE 48, FSI 13, BLG 9, MSC 80, C 94, NAV 51, MEPC 53, SLF 48 and DSC 10, as reported in documents FP 50/2 and FP 50/2/1, and A 24, as reported orally by the Secretariat, and took them into account in its deliberations when dealing with relevant agenda items.

Consideration of proposals for new work programme items

2.2 The Sub-Committee noted that MSC 80, in considering the Committee's method of work relating to the consideration of proposals for new work programme items, had decided that a decision to include a new item in a sub-committee's work programme does not mean that the Committee agreed with the technical aspects of the proposal. If it is decided to include the item in a sub-committee's work programme, detailed consideration of the technical aspects of the proposal and the development of appropriate requirements and recommendations should be left to the sub-committee concerned.

Study on incidents of explosions on chemical and product carriers

2.3 The Sub-Committee noted that MSC 80 had invited the Inter-Industry Working Group (IIWG) established to study the reported incidents of explosions on chemical and product carriers, to submit its interim report to FP 50, STW 37, DE 49 and BLG 10, under their relevant continuous work programme items related to the analysis of casualties and instructed the aforementioned Sub-Committees to submit their consequent comments on the IIWG's interim report to MSC 81, as appropriate (see also paragraph 12.6).

Life-saving appliances

2.4 The Sub-Committee noted that, in view of the need to reduce the workload of DE 49, MSC 80 had agreed to move, on an *ad hoc* basis for 2006 only, the following items of the provisional agenda for DE 49 to the provisional agenda for FP 50:

- .1 measures to prevent accidents with lifeboats;
- .2 compatibility of life-saving appliances;
- .3 inconsistencies in IMO instruments regarding requirements for life-saving appliances;
- .4 test standards for extended service intervals of inflatable liferafts; and
- .5 amendments to resolution A.761(18).

3 PASSENGER SHIP SAFETY

General

3.1 The Sub-Committee recalled that, at FP 48, it had prepared draft amendments to SOLAS chapter II-2 and the FSS Code related to safety areas, essential systems and on-board safety centres, taking into account the instructions of MSC 78 and MSC 79, and having re-established the Correspondence Group on Passenger Ship Safety with the terms of reference set out in paragraph 3.37 of document FP 49/17, had instructed it to submit a report to FP 50.

3.2 The Sub-Committee noted that MSC 80 (FP 50/3), in considering the outcome of the Drafting Group on Passenger Ship Safety (MSC 80/WP.11 and Corr.1 and Add.1/Rev.1), had, *inter alia*:

- .1 in considering the outcomes of STW 36, FP 49, COMSAR 9 and DE 48 for matters related to the work on passenger ship safety, had agreed to a revised work plan, which is set out in the annex to document FP 50/3;
- .2 in considering matters related to the “3-hour timeframe for habitability”, had agreed that, when a casualty exceeds its design threshold for return to port, the ship should still remain viable for at least 3 hours to allow for a safe and orderly evacuation and abandonment; and
- .3 had instructed the FP and SLF Sub-Committees to prepare an additional casualty scenario, for design purposes, to support the aforementioned goal, taking into account the definitions of “casualty threshold” and “time for orderly evacuation and abandonment” prepared at MSC 80.

Report of the correspondence group

3.3 Having considered the report of the Correspondence Group on Passenger Ship Safety (FP 50/3/1) and relevant comments by Australia (FP 50/3/2) and Canada (FP 50/INF.2), the Sub-Committee approved the report in general and took action as indicated in paragraphs 3.4 to 3.9.

On-board safety centres

3.4 Following consideration of annex 1 to document FP 50/3/1, containing draft requirements for on-board safety centres, the Sub-Committee agreed, from the outset, that draft SOLAS regulation II-2/22 (On-board safety centres) should only apply to new passenger ships.

3.5 With regard to how the regulation II-2/22 should be applied, in general, the Sub-Committee noted the views expressed during the discussion that:

- .1 the differences between on-board safety centres and central control stations should be clarified;
- .2 a purpose statement should be developed to be in line with the format of the revised SOLAS chapter II-2;
- .3 the new regulation should clearly specify its application and, in particular, which fire safety-related systems should be controlled and/or monitored from the station (i.e., whether doors to restricted areas should only be monitored or whether they should be both controlled and monitored); and
- .4 a backup location should be established in the event the safety centre is lost due to a casualty, taking into account paragraph 2 of annex 1 to document FP 50/3/1,

and instructed the working group to further consider the above matters in detail with a view towards finalization of the draft amendments for safety centres at this session.

Fire detection and alarm systems

3.6 The Sub-Committee considered the draft amendments to SOLAS regulation II-2/7 (Detection and alarm) for passenger ships to install fixed fire detection and fire alarm system which are capable of remotely and individually identifying each detector and manually operated call point, as contained in annex 4 to document FP 50/3/1, and, having noted that some of the

draft regulations may duplicate existing regulations, instructed the working group to further consider the correspondence group's proposal in detail.

Safe return to port

3.7 The Sub-Committee considered the draft amendments to SOLAS chapter II-2 for safe return to port and safe areas, as set out in annex 3 to document FP 50/3/1, and, having noted that two versions were prepared for consideration of the aforementioned amendments, agreed to use version 2 as a basis for matters related to the safe return to port.

3.8 Having recalled that the above draft amendments were prepared to meet the Committee's guiding philosophy and strategic goals for matters related to increased survivability, the Sub-Committee agreed that a statement of purpose should be developed for draft SOLAS regulation II-2/21 to ensure that the new regulation, if adopted, is in line with the format of the revised SOLAS chapter II-2 and instructed the working group to finalize the draft amendments for matters related to safe return to port at this session.

Time for orderly evacuation and abandonment

3.9 The Sub-Committee considered the draft amendments for matters related to the time for orderly evacuation and abandonment, as set out in annex 3 (version 1) to document FP 50/3/1, together with document FP 50/3/2 (Australia), providing comments on main vertical zones and secondary fire scenarios, and, having noted the views that:

- .1 the second casualty scenario should assume the loss of one main vertical zone (MVZ), taking into that SOLAS chapter II-2 is based on the MVZ concept;
- .2 consideration should be given to whether standard(s) for "A-120" class divisions need to be established for MVZ boundaries and for the protection of life-saving appliances to ensure the fire integrity of the ship throughout the evacuation and abandonment period; and
- .3 a comprehensive risk-based approach may be needed to accomplish this task, which should include developing clear guidance on the start time and extent of damage,

instructed the working group to finalize the draft amendments related to the time for orderly evacuation and abandonment at this session.

Establishment of the working group

3.10 Recognizing the necessity to finalize work on this item and recalling its relevant decisions at FP 49, the Sub-Committee re-established the Working Group on Passenger Ship Safety and, taking into account the comments and decisions made in plenary and the report of the correspondence group (FP 50/3/1), instructed it to:

- .1 finalize draft amendments to SOLAS chapter II-2 relevant to on-board safety centres, based on the text set out in annex 1 to document FP 50/3/1;
- .2 finalize draft amendments to SOLAS chapter II-2 and the FSS Code relevant to fixed fire detection and alarm systems, based on the text set out in annex 4 to document FP 50/3/1;

- .3 finalize draft amendments to SOLAS chapter II-2 relevant to matters related to safe return to port, safe areas and essential systems, which should include the development of appropriate application provisions, based on the text set out in annex 3 to document FP 50/3/1;
- .4 finalize draft amendments to SOLAS chapter II-2 relevant to matters related to the “time for orderly evacuation and abandonment” based on the text set out in annex 3 to document FP 50/3/1, taking into account document FP 50/3/2 and the instruction of MSC 80 (FP 50/3) to develop a second fire scenario; and
- .5 finalize draft amendments to SOLAS chapter II-2 for matters related to prevention of fires on board passenger ships, taking into account the comments in annex 5 to document FP 50/3/1.

Report of the working group

3.11 Having received the report of the working group (FP 50/WP.1 and Add.1), the Sub-Committee approved it in general and took action as outlined hereunder.

Draft amendments to SOLAS chapter II-2 relevant to on-board safety centres

3.12 Having considered the group’s decisions as outlined in paragraphs 4 to 12 of document FP 50/WP.1, the Sub-Committee agreed, in principle, to draft amendments to SOLAS chapter II-2 for on-board safety centres (new SOLAS regulations II-2/3.52 and 22), as set out in paragraphs 1 and 14 of annex 1, for submission to the Committee for consideration with a view to approval and subsequent adoption.

3.13 With regard to the above draft regulation II-2/22, the Sub-Committee invited the Committee and, in particular its *ad hoc* working group to be established on this matter, to note that square brackets have been placed around paragraph 6 of the draft regulation II-2/22 with a view towards finalization at MSC 81.

Draft amendments to SOLAS chapter II-2 and the FSS Code relevant to fixed fire detection and alarm systems

3.14 The Sub-Committee, having noted the group’s decision in paragraph 13 of document FP 50/WP.1, agreed to draft amendments to SOLAS regulation II-2/7 and chapter 9 of the FSS Code, as set out in paragraphs 2, 3, 14 and 16 of annex 1, for submission to the Committee for consideration with a view to approval and subsequent adoption.

Draft amendments to SOLAS chapter II-2 relevant to matters related to safe return to port, safe areas and essential systems

3.15 In considering the draft amendments to SOLAS chapter II-2 relevant to safe return to port and safe area, contained in annex 3 to document FP 50/3/1, the Sub-Committee noted that the group made further amendments to the text prepared by the correspondence group (FP 50/3/1).

3.16 In considering discussion on the application of the safe return to port concept, the Sub-Committee noted that the definition for *short international voyage* is only given in regulation III/3.22 and, therefore, endorsed the group’s decision to prepare a similar definition for inclusion in SOLAS chapter II-2 since the above term is used in the new regulations.

3.17 While agreeing with the definition of safe area in the context of fire, as proposed by the correspondence group and noting that a similar definition had been developed by the SLF Sub-Committee in the context of flooding (SLF 48/21, paragraph 6.19.1) and to enhance its ease of use, the Sub-Committee approved the following combined definition:

“51 *Safe area* in the context of a casualty is, from the perspective of habitability, any area which will not be flooded or which is outside the main vertical zone(s) in which a fire has occurred such that it can safely accommodate all persons onboard to protect them from hazards to life and health and provide them with basic services.”

3.18 The Sub-Committee instructed the Secretariat to inform SLF 49 and its correspondence group on this matter accordingly and invited the Committee to consider the new combined definition from the holistic point of view.

3.19 Having considered the group’s decisions as outlined in paragraphs 14 to 20 of document FP 50/WP.1, the Sub-Committee agreed, in principle, to draft amendments to SOLAS chapter II-2 for safe return to port, as set out in paragraphs 1 and 14 of annex 1, for submission to the Committee for consideration with a view to approval and subsequent adoption.

3.20 The delegation of Japan expressed a view that an application provision for draft new regulation II-2/21 should also be used for the applicable provision for draft regulation II-2/22.

3.21 The delegation of the United Kingdom expressed a view that the above draft regulations provided, in general, an appropriate solution to enable larger vessels on long international voyages to return to port under their own power after a limited fire. However, they remained concerned that ships on short international voyages and those of three or less main vertical zones, have been excluded from the concept of “the ship as its own best lifeboat” since the new regulations make no provisions for such vessels. Moreover, there seems to be no appreciation of the possibility that a ship should remain a safe platform on which passengers can await rescue, even if the vessel is not able to return to port under its own power. Therefore, the United Kingdom delegation proposed that, without delaying the work already agreed for ships on long international voyages, the target completion date for this item should be extended for the development of appropriate standards for the smaller vessels and those on short international voyages, together with the issue of provision of a safe area when the ship is not able to return to port under its own power.

3.22 The delegations of Germany, Norway and Sweden reserved their position on the approval of draft regulation II-2/21 and expressed the view that ships engaged in short international voyages should not be exempted from the requirements for safe return to port.

Draft amendments to SOLAS chapter II-2 relevant to matters related to the time for orderly evacuation and abandonment

3.23 In considering matters related to the time for orderly evacuation and abandonment, taking into account the correspondence group report (FP 50/3/1) and the decisions made at MSC 80 in this respect (FP 50/3), the Sub-Committee endorsed the group’s view that by using the available techniques, it would be possible, although complicated, to determine how a fire grows under a predetermined fire scenario. However, due to the lack of harmonized criteria for the application of fire risk analysis, such assessments would lead to differing results.

3.24 The Sub-Committee noted the views expressed by a minority of the working group that, rather than setting deterministic requirements to attempt to support the 3-hour timeframe

approved by MSC 80 as the time necessary for orderly evacuation and abandonment, it would be preferable to inform the Committee that further studies are needed on the matter.

3.25 Notwithstanding the above view, the Sub-Committee agreed that deterministic requirements should be developed on the basis of the principles approved by MSC 80 such that, if the casualty threshold is exceeded, sufficient time for the safe and orderly abandonment of the ship will be available.

3.26 Having considered the group's decisions as outlined in paragraphs 4 to 8 of document FP 50/WP.1/Add.1, the Sub-Committee agreed, in principle, to draft amendments to SOLAS chapter II-2 for time for orderly evacuation and abandonment, as set out in paragraph 14 of annex 1 for submission to the Committee for consideration with a view to approval and subsequent adoption.

3.27 The delegation of Norway reserved its position on the approval of draft regulation II-2/21.6 and stated that it does not support the development of deterministic requirements for the 3-hour timeframe for orderly evacuation and abandonment. In their view, the development of deterministic requirements was not the intention of MSC 80 when instructing the Sub-Committee to develop criteria for orderly evacuation and abandonment and that such deterministic requirements do not support a holistic approach to this issue.

Development of draft amendments to SOLAS chapter II-2 for matters related to the prevention of fires

3.28 The Sub-Committee, having noted the group's decisions in paragraphs 12 to 19 in document FP 50/WP.1/Add.1, agreed, in principle, to draft amendments to SOLAS chapter II-2, as set out in paragraphs 4 to 13 of annex 1, for submission to the Committee for consideration with a view to approval and subsequent adoption.

Completion of the item

3.29 Having considered the above issues, the Sub-Committee invited MSC 81 to delete this item from its work programme since the work on this matter has been completed.

4 PERFORMANCE TESTING AND APPROVAL STANDARDS FOR FIRE SAFETY SYSTEMS

Background

4.1 The Sub-Committee recalled that, at FP 49, it had continued work on the short-term tasks set out in annex 5 to document FP 49/WP.2 and finalized the draft amendments to chapter 5 of the International Code for Fire Safety Systems (FSS Code) and the revision of MSC/Circ.668, as amended by MSC/Circ.728, which were both approved at MSC 80.

4.2 The Sub-Committee also recalled that FP 49 had established a Correspondence Group on Performance Testing and Approval Standards for Fire Safety Systems with the terms of reference, as indicated in paragraph 4.26 of document FP 49/17, and instructed the group to submit a report to FP 50.

4.3 The Sub-Committee had for its consideration under this agenda item documents submitted by China (FP 50/4/3), Finland and Sweden (FP 50/4/4), Germany (FP 50/4/1 and FP 50/4/2) and the United States (FP 50/4).

Report of the correspondence group

4.4 The Sub-Committee considered the report of the aforementioned Correspondence Group on Performance Testing and Approval Standards for Fire Safety Systems (FP 50/4) together with the documents referred to in paragraph 4.3 and, having approved it in general, took action as outlined in paragraphs 4.5 to 4.9.

Draft amendments to the FSS Code

4.5 The Sub-Committee considered the draft amendments to the FSS Code prepared by the correspondence group (FP 50/4) together with document FP 50/4/1 (Germany) and, having decided to forward the draft amendments to chapters 4 and 7 of the Code to the working group for finalization, agreed that matters related to the discharge times of carbon dioxide fire-extinguishing systems in cargo spaces, as proposed by Germany, should be further considered by the working group with a view towards providing guidance on how best to proceed on this issue (see also paragraphs 4.17 to 4.19).

Approval of equivalent sprinkler systems

4.6 The Sub-Committee considered the technical proposals on the revision of the Revised Guidelines for approval of sprinkler systems equivalent to that referred to in SOLAS regulation II-2/12 (resolution A.800(19)), prepared by the correspondence group (FP 50/4), together with documents FP 50/4/3 (China) and FP 50/4/4 (Finland and Sweden) and, having agreed that the definitions in the Revised Guidelines should be retained in the revision of the Revised Guidelines, instructed the working group to further consider the aforementioned proposals in detail with a view towards finalization of the work on the revision of the Revised Guidelines at this session (see also paragraph 4.15).

Maintenance and inspections of fixed CO₂ fire-extinguishing systems

4.7 In considering the draft Guidelines for the maintenance and inspection of fixed carbon dioxide systems, prepared by the correspondence group (FP 50/4, annex 1), the Sub-Committee agreed to delete the square brackets in paragraphs 6.1 and 6.2 of the draft Guidelines related to the inspection intervals for passenger and cargo ships, bearing in mind that the working group would consider other aspects of the draft Guidelines in detail (see also paragraphs 4.21 and 4.22).

Other issues

4.8 In considering the safety of CO₂ and other gases used for fixed fire-extinguishing systems for engine-rooms, the delegation of the United Kingdom, supported by the observer from ICS, expressed the opinion that the safety and environmental benefits of CO₂ alternatives were not clear and that ship operators should continue to be able to select their preferred fire extinguishing agent on the basis of their technical merits.

4.9 The Sub-Committee considered the remaining issues identified in paragraph 22 of the correspondence group's report and agreed that the working group should consider them in detail and advise the Sub-Committee accordingly, taking into account the priorities listed in annex 5 to document FP 49/WP.2 (see also paragraphs 4.16, 4.20, 4.23 and 4.24).

Equivalent installations for fixed automatic sprinkler systems

4.10 The Sub-Committee considered document FP 50/4/2, wherein Germany, recalling the SOLAS requirements regarding the installation of sprinkler systems on all passenger ships by 1 October 2005 in accordance with SOLAS regulation II-2/1.2.2.4, referred to SLS.14/Circ.244 and suggested to discuss equivalency of the following equipment in lieu of the sprinkler system on an existing ship:

- .1 additional two transportable powder fire extinguishers (50 kilograms each); and
- .2 fire patrol equipped with portable two-way radio/telephone apparatus (regulation II-2/7.8.1).

4.11 Following the discussion of the above matter, the Sub-Committee noted the view expressed by the delegation of Japan, which was supported by others, that portable fire equipment should not be considered an acceptable equivalent for a fixed automatic sprinkler system.

4.12 In this context, the Sub-Committee noted that provisions of SOLAS regulations I/4 (Exemptions) and I/5 (Equivalents) should be properly applied for cases of exemptions and equivalents, but did not take any further action with regard to the matter.

Establishment of the working group

4.13 Recalling its relevant decision at FP 49 regarding a working group, the Sub-Committee, recognizing the necessity to make progress on this item, established the Working Group on Performance Testing and Approval Standards and, taking into account the comments and decisions made in plenary and the report of the correspondence group (FP 50/4), instructed it to:

- .1 consider the revisions to the Revised Guidelines for approval of sprinkler systems equivalent to that referred to in SOLAS regulation II-2/12 (resolution A.800(19)), set out in annex 3 to document FP 50/4, taking into account document FP 50/4/4;
- .2 consider the revision to the Guidelines for the approval of fixed aerosol fire-extinguishing systems equivalent to fixed gas fire-extinguishing systems, as referred to in SOLAS 74, for machinery spaces (MSC/Circ.1007), set out in annex 7 to document FP 50/4;
- .3 consider the draft amendments to the FSS Code, set out in annexes 5 and 6 to document FP 50/4 and the proposals contained in document FP 50/4/1 and make recommendations, as appropriate;
- .4 consider the revisions to the Revised Guidelines for the approval of equivalent fixed gas fire-extinguishing systems, as referred to in SOLAS 74, for machinery spaces and cargo pump-rooms (MSC/Circ.848), set out in annex 2 to document FP 50/4;
- .5 consider the draft guidelines for maintenance and inspections of fixed CO₂ systems, set out in annex 1 to document FP 50/4 and make recommendations as appropriate;
- .6 consider matters related to fixed high-expansion foam systems, taking into account annex 4 to document FP 50/4, and make recommendations as appropriate;

- .7 further consider the draft revisions to the Guidelines for the approval of fixed water-based local application fire-fighting systems for use in category A machinery spaces (MSC/Circ.913), set out in annex 8 to document FP 50/4 and make recommendations as appropriate;
- .8 further consider matters related to fixed pressure water-spraying and water-mist fire-extinguishing systems (documents FP 50/4 and FP 50/4/3) and make recommendations as appropriate;
- .9 update the action plan contained in annex 5 to document FP 49/WP.2, taking into account the progress made to date, and prepare a revised action plan identifying the priorities, timeframes and objectives for each priority category; and
- .10 consider whether there is a need to establish a correspondence group and, if so, to prepare the draft terms of reference of the group, for consideration by the Sub-Committee.

Report of the working group

4.14 Having received the report of the working group (part 1) (FP 50/WP.2), the Sub-Committee, having noted that part 2 of the report would be submitted by the Chairman of the group to FP 51, approved part 1 of the report in general and took action as outlined hereunder.

Approval of equivalent sprinkler systems (resolution A.800(19))

4.15 Having considered the outcome of the group on the issue, in particular regarding the redundancy of pumps, the necessity of the atrium deluge system as well as a detailed examination on the test procedure, the Sub-Committee agreed to the modifications to annex 3 to document FP 50/4 reflecting proposals in document FP 50/4/4, as set out in annex 1 to document FP 50/WP.2, with a view to taking them into account when preparing a single instrument containing all relevant performance testing and approval standards.

Approval of fixed aerosol fire-extinguishing systems (MSC/Circ.1007)

4.16 The Sub-Committee, having considered the outcome of the group on the issue, agreed that the matter should be further considered by the correspondence group (see paragraph 4.27.1).

Revision of paragraph 3.2 of chapter 4 of the FSS Code (Portable foam applicators)

4.17 The Sub-Committee, having considered the outcome of the group on the issue, agreed to the draft amendments to chapter 4 of the FSS Code, as set out in annex 2, for submission to MSC 81 for approval with a view to subsequent adoption.

Revision of chapter 6 of the FSS Code

4.18 The Sub-Committee, recognizing the need for possible improvements of fixed low-expansion foam systems described in chapter 6 of the FSS Code, also agreed to the draft amendments to chapter 6 of the FSS Code, as set out in annex 2, for submission to MSC 81 for approval with a view to subsequent adoption.

Fixed pressure water-spraying fire-extinguishing systems (revision of chapter 7 of the FSS Code)

4.19 The Sub-Committee, having considered the outcome of the group on the issue, agreed to option 1 i.e., that the characteristics of fixed pressure water-spraying nozzles should be subjected to the same performance criteria to those of water mist nozzles. Consequently, the Sub-Committee agreed to draft amendments to chapter 7 of the FSS Code, as set out in annex 2, for submission to MSC 81 for approval with a view to subsequent adoption.

Approval of equivalent fixed gas fire-extinguishing systems for machinery spaces and cargo pump-rooms (MSC/Circ.848)

4.20 Having considered the outcome of the group on the issue, the Sub-Committee agreed to the draft amendments to the Revised Guidelines for the 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 3 to document FP 50/WP.2, with a view to taking them into account when preparing a single instrument containing all relevant testing and approval standards.

Maintenance and inspections of fixed CO₂ fire-extinguishing systems

4.21 The Sub-Committee, having considered the outcome of the group on the issue, in particular on re-fill timing of cylinders, agreed to the draft guidelines for maintenance and inspections of fixed CO₂ systems, as set out in annex 4 to document FP 50/WP.2, with a view to taking them into account when preparing a single instrument containing all relevant testing and approval standards. While reviewing this information, the Sub-Committee, noting that there may be numerous ships fitted with total flooding carbon dioxide systems installed prior to 1 October 1994 that are not required to have two separate controls for releasing the gas into the protected space as required by paragraph 2.2.2 of chapter 5 of the FSS Code, and systems of this design can be released by a single intended or inadvertent action, noted that such installations may present an unacceptable level of safety in light of current design practices.

4.22 While the draft guidelines currently permit inspections for verifying the content of CO₂ in the cylinders, checking the hydrostatic test date and blowing air through the CO₂ discharge pipes to be carried out by competent crewmembers, some delegations proposed that these inspections should only be performed by trained specialists. The Sub-Committee did not agree with those views.

Approval of fixed water-based local application fire-fighting systems (MSC/Circ.913)

4.23 The Sub-Committee, having considered the outcome of the group on the issue, agreed to the draft amendments to the Guidelines for the approval of fixed water-based local application fire-fighting systems for use in category A machinery spaces (MSC/Circ.913), as set out in annex 5 to document FP 50/WP.2, with a view to taking them into account when preparing a single instrument containing all relevant performance testing and approval standards.

Fixed pressure water-spraying fire-extinguishing systems and water mist fire-extinguishing systems for vehicle decks, ro-ro spaces and special category spaces (resolution A.123(V) and MSC/Circ.914)

4.24 The Sub-Committee exchanged preliminary views on fixed pressure water-based fire-extinguishing systems for vehicle decks, ro-ro spaces and special category spaces (resolution A.123(V) and MSC/Circ.914) and agreed to further consider the matter in the correspondence group (see paragraph 4.27.3).

Action plan

4.25 The Sub-Committee updated the action plan contained in annex 5 to document FP 49/WP.2, taking into account the progress made to date, and prepared the revised action plan identifying the priorities, timeframes and objectives for each priority category, as set out in annex 6 to document FP 50/WP.2.

Procedure for changes to agreed amendments

4.26 Having considered the above issues, the Sub-Committee decided that with regard to the draft amendments to the guidelines set out in annexes 1, 3, 4 and 5 of document FP 50/WP.2, any further proposed amendments which are not included in the aforementioned annexes should first be approved by the Committee for their inclusion in this work. Notwithstanding the above decision, the Sub-Committee agreed that any consequential alterations or editorial changes that are necessary for harmonization purposes should not be regarded as newly proposed amendments and, as such, approval by the Committee is not necessary.

Establishment of a correspondence group

4.27 Taking into account progress being made during this session, the Sub-Committee decided to re-establish the Correspondence Group on Performance Testing and Approval Standards, under the co-ordination of the United States*, to progress the work on this issue and agreed to the following terms of reference:

The correspondence group, taking into account all relevant information contained in documents FP 50/4, FP 50/4/1, FP 50/4/3 and FP 50/4/4 and the outcome of discussion outlined in document FP 50/WP.2, should:

- .1 further consider the revisions to the Guidelines for the approval of fixed aerosol fire-extinguishing systems equivalent to fixed gas fire-extinguishing systems, as referred to in SOLAS 74, for machinery spaces (MSC/Circ.1007), based on annex 7 to document FP 50/4, harmonizing the matters relating to toxicity with those agreed in the amendments to the Revised Guidelines for the approval of equivalent fixed gas fire-extinguishing systems, as referred to in SOLAS 74, for machinery spaces and cargo pump-rooms (MSC/Circ.848);
- .2 further consider the draft Guidelines for fixed high-expansion foam using inside air, taking into account documents FP 49/4/2, FP 49/4/4, FP 49/INF.4, FP 50/4 (annex 4) and part 2 of the group's report from FP 50;
- .3 prepare relevant amendments to Guidelines for the approval of alternative fixed water-based fire-fighting systems for special category spaces (resolution A.123(V))

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and MSC/Circ.914) for water mist fire-extinguishing systems and fixed pressure water-spraying fire-extinguishing systems for vehicle space, ro-ro space and special category space extinguishing systems;

- .4 commence consideration of medium-term priority systems, including cargo space extinguishing systems, taking into account document FP 50/4/1;
- .5 consider the safety of CO₂ fire-extinguishing systems installed before 1 October 1994, taking into account MSC/Circ.1099, and advise the Sub-Committee accordingly;
- .6 commence consideration of the functional objectives and requirements for class III engine-room water-mist fire protection protocol; and
- .7 submit a report to FP 51.

5 RECOMMENDATION ON EVACUATION ANALYSIS FOR NEW AND EXISTING PASSENGER SHIPS

5.1 The Sub-Committee recalled that FP 47, noting that MSC 75, in approving the Interim Guidelines on evacuation analyses for new and existing passenger ships (MSC/Circ.1033), encouraged Member Governments to collect and submit to the Sub-Committee any information and data resulting from research and development activities, full-scale tests and findings on human behaviour which may be relevant for the necessary future upgrading of the present Interim Guidelines, had agreed to keep this matter on its work programme, taking into account that the two methods of evacuation analysis provided in the Interim Guidelines still needed to be validated.

5.2 The Sub-Committee also recalled that FP 49 had established a Correspondence Group on Evacuation Analyses for New and Existing Passenger Ships to progress the work on this matter intersessionally and, having approved the terms of reference set out in paragraph 10.3 of document FP 49/17, instructed the group to submit a report to FP 50.

Report of the correspondence group

5.3 The Sub-Committee considered the report of the Correspondence Group on Evacuation Analyses for New and Existing Passenger Ships (FP 50/5/1) together with document FP 50/5 (Germany). Having approved the report in general, the Sub-Committee, while agreeing that matters concerning the safe area concept should not be finalized until the related draft amendments to SOLAS chapter II-2 had been approved by the Committee, decided that at this session, draft revisions to the Interim Guidelines on evacuation analyses for new and existing passenger ships (MSC/Circ.1033) should be prepared, so that progress can be made on this item at FP 51. In this context, the Sub-Committee agreed that the simplified evacuation analysis should be retained in the Guidelines.

Establishment of a drafting group

5.4 Recalling its decision at FP 49 regarding the need to establish a working group at this session and the decision of MSC 80 to reduce the workload of DE 49 by transferring several agenda items to FP 50, the Sub-Committee, recognizing the necessity to make progress on this item, established the Drafting Group on Evacuation Analyses for New and Existing Passenger Ships and, taking into account its decision that the matter should be progressed intersessionally by a correspondence group and the comments and other decisions made in plenary, instructed the group to:

- .1 prepare the draft modifications to the Interim Guidelines (MSC/Circ.1033), taking into account the comments and decisions made in plenary, the report of the correspondence group (FP 50/5/1) and document FP 50/5 (Germany); and
- .2 prepare the draft terms of reference for the correspondence group for consideration by the Sub-Committee.

Report of the drafting group

5.5 Having received the report of the drafting group (FP 50/WP.4), the Sub-Committee approved it in general and took action as outlined hereunder.

Amendments to the Interim Guidelines

5.6 The Sub-Committee briefly discussed the draft amendments to the Interim Guidelines on evacuation analyses for new and existing passenger ships (MSC/Circ.1033), set out in the annex to document FP 50/WP.4, and agreed to refer them to the correspondence group for detailed consideration (see paragraph 5.7.2). In this regard, the delegation of Australia expressed the view that the third sentence in paragraph 1 of annex 1, on the use of simplified method, should be further strengthened in the draft text prepared by the group.

Establishment of a correspondence group

5.7 Following the above decision, the Sub-Committee established the Correspondence Group on Recommendation on Evacuation Analysis for New and Existing Passenger Ships, under the co-ordination of Japan*, with the following terms of reference:

- .1 to consider the response time distribution based on the research data to be published (EU project: FIRE-EXIT);
- .2 to prepare draft amendments to the Interim Guidelines on evacuation analyses for new and existing passenger ships (MSC/Circ.1033), based on the annex to document FP 50/WP.4, taking into account the outcome of MSC 81 on matters related to safe areas in the context of passenger ship safety; and
- .3 to submit a report to FP 51.

Target completion date

5.8 In view of the above developments, the Sub-Committee invited the Committee to extend the target completion date of the item to 2008.

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6 DEVELOPMENT OF PROVISIONS FOR GAS-FUELLED SHIPS

6.1 The Sub-Committee recalled that MSC 78 had instructed the BLG, DE (co-ordinator) and FP Sub-Committees to develop appropriate draft Guidelines for gas-fuelled ships with a view to establishing an international standard for the installation and operation of internal combustion engine installations using gas as fuel in all types of ships other than LNG carriers.

6.2 The Sub-Committee, at FP 49, considered document MSC 78/24/8 (Norway) outlining the framework of provisions for gas-fuelled ships and was informed by the delegation of Norway that it would submit a document containing draft fire safety provisions to FP 50 for consideration.

6.3 Having been informed that DE 48 had agreed, in principle, that the provisions to be developed should not only consider natural gas, but also other potential gas fuels such as hydrogen and propane, the Sub-Committee noted that this matter would be further considered at a later stage.

6.4 The Sub-Committee had for its consideration under this agenda item documents submitted by:

- .1 Norway (FP 50/6), containing draft proposals for fire-related provisions for gas-fuelled ships; and
- .2 Germany (FP 50/6/1), commenting on document FP 50/6, in particular proposing to consider delaying any final decision on proposed requirements until next time when the comprehensive draft code will be available and to take only preliminary decisions.

6.5 In considering the above documents and the views expressed to delay work on this matter until BLG 10 had considered the report of its Correspondence Group on Development of Provisions for Gas-Fuelled Ships (BLG 10/6), the Sub-Committee agreed to invite Member Governments and international organizations to submit comments and proposals to FP 51, which should take into account the outcomes of DE 49 and BLG 10 on this matter.

6.6 The Sub-Committee requested the Secretariat to inform the DE and BLG Sub-Committees of the above outcome.

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

7.1 The Sub-Committee recalled that MSC 79 had agreed to a new work programme item to develop measures to prevent fire in engine-rooms and cargo pump-rooms with a view to providing practical and comprehensive engine-room and cargo pump-room fire safety guidelines for shipbuilders, ship operators, recognized organizations and Administrations.

7.2 The Sub-Committee noted that, at FP 49, it had considered documents FP 49/16, FP 49/16/4 and FP 49/INF.6 (Republic of Korea) proposing that guidelines be developed on measures to prevent fire in engine-rooms and cargo pump-rooms and invited Member Governments to submit comments and proposals to FP 50.

7.3 Noting that no documents were submitted under this agenda item, the Sub-Committee further considered documents FP 49/16, FP 49/16/4 and FP 49/INF.6 (Republic of Korea) with a view on how best to proceed on this issue and agreed that a correspondence group should be established to progress the work on this matter intersessionally.

Establishment of the correspondence group

7.4 Following the above decision, the Sub-Committee established the Correspondence Group on Measures to Prevent Fire in Engine-Rooms and Cargo Pump-Rooms, under the co-ordination of the Republic of Korea*, with the following terms of reference:

- .1 to develop the draft Guidelines on measures to prevent fire in engine-rooms and cargo pump-rooms, taking into account documents FP 48/3/1, FP 48/3/2, FP 49/16/4, FP 49/INF.6, FP 49/16 (Republic of Korea) and comments made during FP 50;
- .2 to consider, with a view towards consolidation and inclusion, any existing MSC circulars addressing fire safety and prevention measures for engine-rooms and cargo pump-rooms; and
- .3 to submit a report to FP 51.

8 REVIEW OF THE SPS CODE

8.1 The Sub-Committee recalled that, at FP 49, it had agreed to commence work on the review of the fire protection-related provisions in chapter 6 of the Code of Safety for Special Purpose Ships (SPS Code) in order to reflect the many SOLAS amendments that entered into force since the Code was adopted in 1983, in co-operation with the COMSAR, DE (co-ordinator), DSC, NAV and SLF Sub-Committees.

8.2 Having noted document FP 50/8 (Secretariat), providing excerpts of the fire protection-related provisions of the SPS Code, and that no comments and proposal had been submitted to this session on the item, the Sub-Committee discussed, in general, the course of action to be taken to finalize the work on this item at FP 51.

8.3 The Sub-Committee noted the views expressed by several delegations on the need for caution before reaching any firm conclusions, bearing in mind that document DE 49/12 (Norway) proposed several amendments to sections 1.2 and 1.3 of the SPS Code that may have a direct bearing on the work to be undertaken on the fire protection-related provisions of the Code. Taking the above concerns into account, the Sub-Committee invited Members Governments and international organizations to submit comments and proposals to FP 51, having due regard to the outcome of DE 49.

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

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9 AMENDMENTS TO RESOLUTION A.754(18) RELATING TO PERFORMANCE CRITERIA FOR FIRE DOORS

9.1 The Sub-Committee recalled that, at FP 49, it had considered document FP 49/7 (France), proposing to revise resolution A.754(18) to allow for the testing of performance criteria at the threshold of ship doors without reducing the level of safety, and, following a detailed discussion of the issue, prepared draft amendments to part 3 of the Code, as set out in document FP 49/WP.7, for consideration at this session.

9.2 The Sub-Committee considered document FP 50/9 (Japan), providing comments on the proposals submitted by France (FP 49/7) for amendments to the Recommendation on fire resistance tests for “A”, “B” and “F” class divisions (resolution A.754(18)) and, having noted a number of differing views on the gap for door clearance between the leaf and the sill, decided that document FP 50/9 needed further consideration.

9.3 In considering how best to proceed on this matter, the Sub-Committee, taking into account the new work to be undertaken for the comprehensive review of the FTP Code, decided to forward documents FP 50/9 and FP 49/WP.7 to the Correspondence Group on the Comprehensive Review of the FTP Code, established under agenda item 10, for further consideration (see also paragraph 10.6.4).

9.4 The Sub-Committee invited the Committee to delete this item from its work programme since the matter will be incorporated into the work on the comprehensive review of the FTP Code.

10 COMPREHENSIVE REVIEW OF THE FIRE TEST PROCEDURES CODE

10.1 The Sub-Committee recalled that MSC 80, following consideration of document MSC 80/21/5 in which Japan proposed to review and revise, as necessary, the FTP Code with a view to enhancing its user-friendliness and providing more uniform application of the Code, with the inclusion of appropriate interpretations approved by the Committee; updating the references to ISO fire test standards; and accommodating developments in fire protection technologies, had agreed to include, in the Sub-Committee’s work programme and the provisional agenda for FP 50, a high priority item on “Comprehensive review on the Fire Test Procedures Code”, with a target completion date of 2008.

10.2 It was also recalled that, at FP 49, in considering document FP 49/6 (France) proposing amendments to the procedure for the preparation of specimens of sealants and mastics for the surface flammability tests specified in resolution A.653(16), the Sub-Committee had agreed to incorporate this work, proposed by France, into the new work item on a comprehensive review of the FTP Code, which was approved by MSC 80.

10.3 The Sub-Committee had for its consideration under this agenda item documents submitted by:

- .1 Norway (FP 50/10), proposing modifications to the Guidelines for the application of plastic pipes on ships (resolution A.753(18));
- .2 Japan (FP 50/10/1 and Add.1, FP 50/10/2, FP 50/10/3, FP 50/10/4 and FP 50/INF.5), addressing various aspects of the work to be undertaken as part of the comprehensive review of the FTP Code;

- .3 France (FP 50/10/5), proposing amendments to the smoke and toxicity provisions of the Code and related test standards referred to therein; and
- .4 the United States (FP 50/10/6), commenting on documents FP 50/10/1, FP 50/10/1/Add.1, FP 50/10/2, FP 50/10/3 and FP 50/10/4.

10.4 In considering document FP 50/10 (Norway), the Sub-Committee did not agree to the proposal by Norway to make the Guidelines for the application of plastic pipes on ships (resolution A.753(18)) applicable to all synthetic pipes in lieu of just rigid plastic pipes.

10.5 The Sub-Committee considered document FP 50/10/6 (United States) and supported the view of the United States that substantial improvements to the FTP Code are necessary. In this regard, the Sub-Committee agreed that the existing structure of the FTP Code and related fire test procedures should be reviewed with the view to directly incorporate the various resolutions into the appropriate parts of annex 1 to the FTP Code rather than referring to the related fire test procedures.

10.6 Having briefly discussed the above documents with a view towards deciding on how best to proceed, the Sub-Committee agreed that the above documents should be further considered in detail by a correspondence group, taking into account the volume and complexity of the work to be undertaken and the restructuring proposed in document FP 50/10/6. To this end, the Sub-Committee also agreed to establish a working group at FP 51 to consider the correspondence group's report.

10.7 In considering the technical aspects of the work, the Sub-Committee recognized that a number of ISO standards are referred to in the Code and, having agreed to invite ISO/TC 92 to participate in the comprehensive review of the FTP Code, thereby making available their special expertise and knowledge on fire test issues, instructed the Secretariat to communicate with the aforementioned organization accordingly seeking their contribution.

Establishment of a correspondence group

10.8 Following the above decisions, the Sub-Committee established the Correspondence Group on the Comprehensive Review of the FTP Code, under the co-ordination of Japan*, and instructed the group, taking into account the comments made in plenary, to:

- .1 develop a draft text of the revised FTP Code, which should incorporate relevant fire test procedures, as a single comprehensive code, taking into account documents FP 50/10/1, FP 50/10/1/Add.1, FP 50/10/2, FP 50/10/3, FP 50/10/4, FP 50/10/5 and FP 50/10/6, and comments made at FP 50;

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- .2 examine the relevant ISO and other industry consensus standards which are referred to in the existing FTP Code and which may have been updated in co-operation with ISO/TC 92;
- .3 consider document FP 50/10 and the comments made at FP 50;
- .4 consider documents FP 49/WP.7 and FP 50/9, containing proposed amendments to resolution A.754(18) relating to performance criteria for fire doors, taking into account the comments made at FP 50;
- .5 consider the matters regarding flammability test for mastics and sealants proposed by France at FP 48 (document FP 48/15) and FP 49 (document FP 49/6) and advise the Sub-Committee accordingly; and
- .6 submit a report to FP 51.

11 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS

General

11.1 The Sub-Committee recalled that MSC 78, in order to expedite the consideration of the IACS unified interpretations being submitted on a continuous basis, had decided that IACS should submit them directly, as appropriate, to the sub-committees concerned and, in this regard, the Committee agreed to retain, on a continuous basis, the item on “Consideration of IACS unified interpretations” in the work programme of the Sub-Committee, rather than assigning it a target completion date.

11.2 The Sub-Committee also recalled that MSC 80 had agreed to refer document MSC 80/12/2, containing IACS views on matters related to A-60 front insulation of tankers, to the Sub-Committee for further consideration.

Clarification for applying SOLAS regulation II-2/4.5.2.3

11.3 The Sub-Committee considered IACS unified interpretation (FP 50/11, part B), addressing the inconsistency when applying SOLAS regulation II-2/4.5.2.3 in conjunction with SOLAS regulations II-2/4.5.2.1 and II-2/9.2.4.2.5, and noted that the aforementioned regulations require “A-60” class windows to be installed in “A-0” class exterior boundaries of superstructures and deckhouses. In considering how to rectify this inconsistency, the Sub-Committee agreed that it could not simply be resolved by means of interpretation since the aforementioned regulations were clear.

11.4 Therefore, the Sub-Committee agreed that the drafting group should prepare relevant recommendations and a justification for amending SOLAS chapter II-2 with a view to removing the inconsistency when applying regulation II-2/4.5.2.3 in conjunction with regulations II-2/4.5.2.1 and II-2/9.2.4.2.5, taking into account the Guidelines on the organization and method of work (MSC/Circ.1099-MEPC/Circ.366) (see paragraphs 11.13 to 11.15).

Protection of the exterior boundaries of superstructures and deckhouses

11.5 The Sub-Committee considered document FP 50/11/1 (IACS), requesting clarification on the application of SOLAS regulations II-2/9.2.4 and II-2/9.3.1, and agreed with the view of IACS that SOLAS regulation II-2/9.3.1 applied to all penetrations at the exterior boundaries of

superstructures and deckhouses which, according to SOLAS regulation II-2/9.2.4.2.5, are required to be “A-60” class insulated. The Sub-Committee, therefore, agreed to prepare an appropriate unified interpretation (see paragraph 11.13).

Fire safety of paint lockers on cargo ships

11.6 The Sub-Committee considered IACS Unified Interpretation SC 201 (FP 50/11/2), permitting paint lockers to be located above the cargo block provided that the measures indicated in IACS Unified Interpretation SC 201 are met, and expressed the view that there was no justification for this interpretation since the SOLAS requirements were clear on this issue.

Emergency fire pumps in cargo ships

11.7 In considering document FP 50/11/3 (IACS) providing comments on IACS Unified Interpretation (SC 178) on Emergency fire pumps in cargo ships (MSC 78/22/1, annex 13), the Sub-Committee agreed that more detailed consideration was needed to resolve this matter and invited Member Governments and international organizations to submit comments and proposals to FP 51.

Application of SOLAS regulations II-2/3.34, 9.2.4.2.5, 10.7.1.4 and 19.3.2

11.8 The Sub-Committee considered IACS Unified Interpretation SC 79 (FP 50/11/4), SC 16 and SC 197 (FP 50/11/5, annexes 1 and 2) and SC 174 (MSC 80/12/2 and MSC 78/22/1) and agreed to prepare a relevant unified interpretation (see paragraph 11.13).

11.9 At the request of the observer from IACS, the Sub-Committee agreed to forward IACS Unified Interpretations SC 198 (FP 50/11/5, annex 3) and SC 200 (FP 50/11/5, annex 4) to the Working Group on Performance Testing and Approval Standards for Fire Safety Systems established under agenda item 4 (see paragraph 4.13).

Application of SOLAS regulations II-2/5.3 and II-2/6.2

11.10 In considering document FP 50/11/6 (IACS), on matters related to the application to cargo ships of interpretations to SOLAS regulations II-2/5.3 and II-2/6.2, as contained in MSC/Circ.1120, the Sub-Committee decided that this matter needed further consideration and invited Member Governments and international organizations to submit comments and proposals to FP 51.

Establishment of a drafting group

11.11 Following the above discussions, the Sub-Committee established the Drafting Group on IACS Unified Interpretations and, taking into account the comments made and decisions taken in plenary, instructed it to:

- .1 prepare the draft text of unified interpretations, based on documents FP 50/11 (part A), FP 50/11/1, FP 50/11/4, FP 50/11/5 and MSC 80/12/2; and
- .2 prepare relevant recommendations and a justification for amending SOLAS chapter II-2 with a view to removing the inconsistency when applying regulation II-2/4.5.2.3 in conjunction with regulations II-2/4.5.2.1 and II-2/9.2.4.2.5.

Report of the drafting group

11.12 Having received the report of the drafting group (FP 50/WP.7), the Sub-Committee approved it in general and took action as outlined hereunder.

Unified interpretations of SOLAS chapter II-2 and the FTP Code

11.13 The Sub-Committee agreed to the draft MSC circular on Unified interpretations to SOLAS chapter II-2 and the fire test procedures referred to in the FTP Code, set out in annex 3, for submission to MSC 81 for approval.

Justification for the proposal of a new work programme item

11.14 The Sub-Committee agreed (see also paragraphs 11.15 and 11.16 below) to a justification for a new work programme item to amend SOLAS chapter II-2 for removing the inconsistency when applying regulation II-2/4.5.2.3 in conjunction with regulations II-2/4.5.2.1 and II 2/9.2.4.2.5, taking into account the Guidelines on the organization and method of work (MSC/Circ.1099), as set out in annex 4, for consideration by the Committee.

Draft amendment to SOLAS chapter II-2 and draft MSC circular

11.15 Notwithstanding paragraph 11.14 above, the Sub-Committee also prepared a draft amendment to SOLAS regulation II-2/4, should the Committee prefer to amend SOLAS chapter II-2 at MSC 81 in lieu of approving the aforementioned new work programme item referred to in paragraph 11.14, as follows:

“The following text is added at the end of regulation II-2/4.5.2.3:

“except that “A-0” class standard is acceptable for windows and sidescuttles outside the limit specified in regulation II-2/9.2.4.2.5.””

11.16 The Sub-Committee further agreed, should the Committee decide to approve the above draft SOLAS amendment with a view to adoption at MSC 82, to prepare a draft MSC circular on Early application of amendment to SOLAS chapter II-2, as set out in annex 5, to invite SOLAS Contracting Governments to:

- .1 apply the above proposed amendment to SOLAS chapter II-2 to ships flying their flags, pending its formal entry-into-force; and
- .2 accept ships flying the flags of other States, constructed and equipped in accordance with the 1974 SOLAS Convention and the above proposed amendment,

taking into account that it would be of benefit to the industry and other interested parties.

12 ANALYSIS OF FIRE CASUALTY RECORDS

12.1 The Sub-Committee recalled that MSC 80 had endorsed the decision of STW 36 to refer results of casualty analysis of the **Spirit of Tasmania** to the Sub-Committee for further consideration.

12.2 The Sub-Committee recalled also that, at FP 49, the delegation of France had informed the Sub-Committee that it had submitted the full investigation report on the explosion aboard the chemical tanker **Chassiron** to the Organization and, in this regard, the Sub-Committee had noted that the investigation findings would be forwarded to the permanent Correspondence Group on Casualty Analysis, which operates under the auspices of the FSI Sub-Committee.

12.3 The Sub-Committee noted that the chemical tanker **Chassiron** fell into the class of chemical tankers that are not covered by the inert gas requirements of the SOLAS Convention and that an Inter-Industry Working Group had been established to look into the safety aspects with a view to preventing such accidents in the future.

Casualty analysis of the “Spirit of Tasmania”

12.4 The Sub-Committee considered document FP 50/12 (Secretariat), containing an excerpt of the **Spirit of Tasmania** casualty analysis conducted by the FSI Sub-Committee, and noted that the fire started in the photography room due to a faulty electrical wire being covered by stacks of photographs. In particular, the Sub-Committee noted views expressed that casualty was 5 years ago and that the fire protection-related recommendations were already adequately addressed in SOLAS chapter II-2. Therefore, the Sub-Committee decided to take no action on this matter.

12.5 The Sub-Committee requested the Secretariat to inform the STW and FSI Sub-Committees of the above outcome.

Report of the Inter-Industry Working Group

12.6 The Sub-Committee noted the oral statement by the observer from ICS that the Inter-Industry Working Group, which was established to study incidents of fires and explosions on chemical and product tankers, could not finalize its report in time for consideration at FP 50 and would forward the report, including its recommendations, directly to MSC 81. To this end, the Sub-Committee was informed that joint documents have been submitted to STW 37, DE 49 and BLG 10 by CEFIC, IACS, IAPH, ICS, INTERTANKO, IPTA and OCIMF to update the aforementioned sub-committees on the status of the report.

Statement by the delegation of France

12.7 The Sub-Committee noted the statement by the delegation of France, regretting that the report of the Inter-Industry Working Group was not submitted in time for consideration by the Sub-Committee.

13 MEASURES TO PREVENT ACCIDENTS WITH LIFEBOATS

13.1 The Sub-Committee, having noted that MSC 80 had, in view of the heavy work load of the DE Sub-Committee, transferred this item from the provisional agenda of DE 49 to that of FP 50, recalled that DE 48 had established the LSA Correspondence Group to deal with various tasks concerning this agenda item and agenda item 15 (Inconsistencies in IMO instruments regarding requirements for life-saving appliances).

13.2 The Sub-Committee noted that DE 48 had agreed with regard to the work plan to prevent accidents with lifeboats, in particular concerning launching, davit design, location of launching appliances and use of lifeboats in emergency situations, and that these issues should be further considered at DE 49, and had invited submissions with concrete proposals from Member

Governments and international organizations to that session. The establishment of a working group to deal with all outstanding matters concerning lifeboats was envisaged.

Consolidation of various IMO circulars concerning safety of lifeboats and drills

13.3 The Sub-Committee considered document FP 50/13 (Australia), providing information on a recent focused inspection campaign in relation to lifeboat launching arrangements and lifeboat drills, carried out by Australia and proposing that the provisions of the various IMO circulars concerning safety of lifeboats and drills should be consolidated into a single document and should be made mandatory under the SOLAS Convention and/or the ISM Code.

13.4 The Sub-Committee noted in this connection that one of the terms of reference of the LSA Correspondence Group was “to consider the possibility of consolidating the various MSC circulars dealing with lifeboat issues and advise the Sub-Committee accordingly”. The correspondence group had considered the matter (FP 50/13/3, paragraph 13) and was divided on whether such a consolidated circular was necessary at present, but noted that the desirability of consolidation of the various circulars on the subject to better serve the mariner could be considered at a later stage.

13.5 There was general agreement with the Australian proposals and the Sub-Committee instructed the LSA Working Group to further consider them and advise the Sub-Committee on how best to proceed (see also paragraphs 13.16 to 13.19).

SOLAS requirements for launching of free-fall lifeboats during abandon ship drills

13.6 The Sub-Committee considered document FP 50/13/1 (Sweden), proposing an amendment to SOLAS regulation III/19.3.3.4 to align the requirement for launching of free-fall lifeboats during abandon ship drills with the new SOLAS regulation III/19.3.3.3 concerning abandon ship drills with lifeboats under davits, and document FP 50/13/4 (ICS), supporting the Swedish proposal.

13.7 The Sub-Committee noted, in this connection, that STW 36 had agreed that Administrations should be permitted to accept that during drills all free-fall lifeboats, irrespective of their launching heights, be launched by falls in lieu of free-fall launching, provided that a simulated free-fall launch is conducted at least every six months in accordance with the Organization’s guidelines. STW 36 was aware that this advice was in conflict with the existing provisions of SOLAS regulation III/19.3.3.4 and had, therefore, invited the Committee to instruct the DE Sub-Committee to consider the need to amend the SOLAS Convention when addressing this issue. MSC 80 had endorsed this view of the STW Sub-Committee.

13.8 The Sub-Committee generally agreed with the Swedish proposal and instructed the LSA Working Group to finalize the draft amendment to SOLAS regulation III/19.3.3.4 on the basis of the text proposed in the annex to document FP 50/13/1, taking into account the comments and proposals made in plenary (see also paragraphs 13.15 and 13.20).

Tests on lifeboat release mechanisms

13.9 The Sub-Committee noted document FP 50/INF.4 (Canada), presenting results from tests carried out on lifeboat release mechanisms in order to investigate possible causes for their failure, paying special attention to the force that the release cables experience under various loading conditions and hook stability and identifying the release cables as a critical structural part of some hook systems. The Sub-Committee instructed the LSA Working Group to take this information into account in its deliberations.

Research project into the safety of lifeboats and their launching systems

13.10 The Sub-Committee noted document FP 50/INF.6 (United Kingdom), giving a status report on a research project into the safety of lifeboats and their launching systems currently being carried out in the United Kingdom in response to concerns raised by the Committee regarding the unacceptable level of injuries and fatalities attributed directly to the use of current lifeboat arrangements. The Sub-Committee instructed the LSA Working Group to take this information into account in its deliberations.

Report of the correspondence group

13.11 The Sub-Committee considered part 1 of the report of the correspondence group (FP 50/13/2), and the annexed draft MSC circular on Guidelines for the development of operation and maintenance manuals for lifeboats and, after introduction in the draft Guidelines of some editorial improvements by the Secretariat, agreed to the draft MSC circular on Guidelines for developing operation and maintenance manuals for lifeboat systems, as set out in annex 6, for submission to MSC 81 for approval.

13.12 The Sub-Committee then considered part 3 of the report of the correspondence group (FP 50/13/3), noting that part 2 (FP 50/15/1) had been considered under agenda item 15, and took the following action:

- .1 regarding the proposed amendment to SOLAS regulation III/20.11.2.2 (paragraph 3 of the group's report) concerning lifeboat on-load release gear, the Sub-Committee agreed to the proposal in general;
- .2 regarding the proposed amendments to paragraphs 2.5 and 2.6 of the appendix of the annex to MSC/Circ.1093 (paragraphs 3 and 4 of the group's report) concerning lifeboat on-load release gear, the Sub-Committee agreed that draft amendments to the circular should be developed;
- .3 regarding the proposed amendment to the wording "the maximum working load of the winch" in paragraph 3.2 in the appendix of the annex to MSC/Circ.1093, the Sub-Committee agreed that amendments to the circular and related amendments to SOLAS chapter III and resolution MSC.81(70) should be prepared;
- .4 regarding the additional discussion items proposed by the group (paragraph 9 of the group's report), i.e.:
 - .1 the addition of a new 200% static overload test for each release gear including its installation in the boat for each new boat before delivery as a safer alternative to the davit brake test; and
 - .2 the application of the requirement for the "overload winch brake test" not only to lifeboat systems but also to all survival craft systems including davit launched liferaft systems,

the Sub-Committee agreed that they should be further considered;

- .5 regarding the failure of on-load release gear of lifeboats (paragraphs 10 to 12 of the group's report), the Sub-Committee agreed that a relevant update to MSC/Circ.1049 should be developed; and

- .6 regarding the issue of launching of free-fall lifeboats, irrespective of launch height, by falls in lieu of free-fall launching during drills (paragraph 14 of the group's report), the Sub-Committee agreed that further guidance in the matter was needed.

Establishment of the working group

13.13 The Sub-Committee agreed to establish the Working Group on Life-Saving Appliances and instructed it, taking into account the documents submitted under the agenda item and comments and proposals made in plenary, to:

- .1 consider whether the provisions of the various IMO circulars concerning safety of lifeboats and drills should be consolidated into a single document and should be made mandatory under the SOLAS Convention and/or the ISM Code, taking into account document FP 50/13, and advise the Sub-Committee accordingly;
- .2 finalize the draft amendment to SOLAS regulation III/19.3.3.4 concerning the launching of free-fall lifeboats during abandon ship drills, on the basis of the text proposed in the annex to document FP 50/13/1;
- .3 finalize the proposed amendment to SOLAS regulation III/20.11.2.2 concerning lifeboat on-load release gear prepared by the correspondence group (paragraph 3 of document FP 50/13/3);
- .4 finalize the draft text of amendments to MSC/Circ.1093 prepared by the correspondence group (paragraphs 3 and 4 of document FP 50/13/3);
- .5 finalize the draft text of amendments to MSC/Circ.1093 and the related amendments to SOLAS chapter III and resolution MSC.81(70) concerning the maximum working load of the winch, on the basis of the text prepared by the correspondence group (paragraph 8 of document FP 50/13/3);
- .6 consider the additional discussion items proposed by the correspondence group (paragraph 9 of document FP 50/13/3) and advise the Sub-Committee accordingly;
- .7 develop an update to MSC/Circ.1049 regarding the failure of on-load release gear of lifeboats (paragraphs 10 to 12 of document FP 50/13/3); and
- .8 consider the development of additional guidance concerning simulated launching of free-fall lifeboats (paragraph 14 of document FP 50/13/3) and advise the Sub-Committee accordingly.

Report of the working group

13.14 Having received the report of the working group (FP 50/WP.3 and Add.1), the Sub-Committee approved it in general and took action as outlined in the following paragraphs.

Draft amendment to SOLAS regulation III/19.3.3.4 concerning the launching of free-fall lifeboats during abandon ship drills

13.15 The Sub-Committee considered the draft amendment to SOLAS regulation III/19.3.3.4 concerning the launching of free-fall lifeboats during abandon ship drills, prepared by the group on the basis of the text proposed in the annex to document FP 50/13/1 (Sweden) and agreed on a draft text of amendments, as set out in annex 9 (see also paragraph 15.5).

Consolidation into a single document of the various IMO circulars concerning safety of lifeboats and drills

13.16 The Sub-Committee considered whether the provisions of the various IMO circulars concerning safety of lifeboats and drills should be consolidated into a single document and should be made mandatory under the SOLAS Convention and/or the ISM Code, taking into account the proposals in document FP 50/13 (Australia), and agreed that the latter matter should be referred to the FSI and STW Sub-Committees for their information and action as appropriate.

13.17 The Sub-Committee considered that a consolidated circular would be more useful for mariners than the current multiple circulars and agreed to the draft MSC circular on Measures to prevent accidents with lifeboats, consolidating MSC/Circ.1049, MSC/Circ.1093, MSC/Circ.1136 and MSC/Circ.1137, as set out in annex 7, for submission to MSC 81 for approval. The Sub-Committee also discussed whether and how the provisions of MSC/Circ.1093 should be made mandatory and agreed that a decision on the matter should be deferred until after the amendments to SOLAS regulation III/20, adopted by resolution MSC.152(78), which reference MSC/Circ.1093, enter into force on 1 July 2006.

13.18 The Sub-Committee noted that the draft amendments to MSC/Circ.1093, the update to MSC/Circ.1049 and the additional guidance concerning simulated launching of free-fall lifeboats had been taken into account when preparing the above consolidated circular. Furthermore, following the inclusion of several amendments, the Sub-Committee considered that the contents of MSC/Circ.1137 as now incorporated in the consolidated circular adequately address the simulated free-fall launching procedure.

13.19 Regarding the Australian proposals in document DE 48/5/4, which were discussed by the correspondence group (FP 50/13/3), the Sub-Committee agreed that although a means to allow lifeboat manufacturers to contact all shipowners and operators of ships fitted with their equipment would be potentially useful, the establishment and maintenance of such a system would be a large long-term project and that coverage of existing ships, in particular, would be problematic. The Sub-Committee agreed that interested Member Governments should submit relevant proposals to the Committee. In reviewing the other proposals by Australia, the Sub-Committee considered that they were adequately covered in the new consolidated draft MSC circular.

Free-fall launching

13.20 Having considered MSC/Circ.1115 on Prevention of accidents in high free-fall launching of lifeboats, the Sub-Committee, noting that it will expire on 25 May 2006, considered that its provisions had been superseded by the new draft SOLAS regulation III/19.3.3.4 (see paragraph 13.15). At the same time, the Sub-Committee agreed that Administrations should be urged to effect early implementation of the draft SOLAS regulation III/19.3.3.4, i.e. prior to its entry into force, and agreed to the draft MSC circular on Early implementation of draft SOLAS regulation III/19.3.3.4, as set out in annex 8, for submission to MSC 81 for approval.

Amendment to SOLAS regulation III/20.11.2.2 concerning lifeboat on-load release gear

13.21 The Sub-Committee considered the proposed amendment to SOLAS regulation III/20.11.2.2 concerning lifeboat on-load release gear, prepared by the correspondence group (paragraph 3 of document FP 50/13/3), and included relevant provisions in the draft amendments to SOLAS regulation III/20 contained in annex 9 (see also paragraph 15.5).

Additional discussion items proposed by the correspondence group

13.22 The Sub-Committee considered the additional discussion items proposed by the correspondence group (paragraph 9 of document FP 50/13/3), i.e. new 200% static overload test for each release gear including its installation in the boat for each new boat before delivery as a safer alternative to the davit brake test, and the application of the requirement for the “overload winch brake test” not only to lifeboat systems but also to all survival craft systems including davit launched liferaft systems. The Sub-Committee agreed to include relevant provisions in the amendments to the Revised Recommendation on testing of LSA (resolution MSC.81(70)), as shown in annex 11 and the draft amendments to SOLAS regulations III/20.11.2 and III/20.11.3 as shown in annex 9 (see also paragraph 15.5).

Remaining issues under the agenda item

13.23 The Sub-Committee noted that, although it had made significant improvements to the requirements for on-load release mechanisms in the LSA Code, there was still research and development in progress to improve the test procedures for this equipment. The Sub-Committee also noted that there was still a need, as cited in MSC/Circ.1115 and in the research report presented to the working group by Norway during the meeting, for improvements to free-fall lifeboat launching and seating arrangements, particularly from high-launch heights. Accordingly, the Sub-Committee agreed to request the Committee to extend the target completion date for the item, in the DE Sub-Committee’s work programme, to 2008 and to invite Member Governments and international organizations to make appropriate submissions to DE 50. The Secretariat was requested to inform DE 49 of the aforementioned extension of the target completion date for the item.

14 COMPATIBILITY OF LIFE-SAVING APPLIANCES

14.1 The Sub-Committee, having noted that MSC 80 had, in view of the heavy work load of the DE Sub-Committee, transferred this item from the provisional agenda of DE 49 to that of FP 50, recalled that DE 48 had ascertained that there were three main issues to be discussed under the item, namely compatibility of immersion suits and lifejackets; compatibility of immersion suits and lifeboat access and capacity; and compatibility of lifejackets and MES. DE 48, recognizing that the real problem was not the relation of lifeboat capacity and immersion suits, but rather the increased weight and size of seafarers and passengers, had agreed to consider the matter further at DE 49 and invited Member Governments and international organizations to submit concrete proposals for amendments to relevant IMO instruments.

14.2 The Sub-Committee had for its consideration documents FP 50/14 and FP 50/INF.3 (Canada) and FP 50/14/1 (United Kingdom), proposing that the mass of an average person in the LSA Code be increased from the current value of 75 kg based on a statistical data analysis. Canada proposed an increase to 90 kg, while the United Kingdom advocated an increase to not less than 80 kg.

14.3 Following discussion, which showed general support for the proposal, the Sub-Committee agreed that changing the average weight would have an impact on other provisions in the LSA Code, including lifeboat capacity. The statistical data available, however, did not allow a thorough analysis of the issue.

14.4 In considering discussion on the above issue, the delegation of Japan informed the Sub-Committee that it had conducted trials on compatibility of immersion suits and lifeboats in late 2005 and expressed its intention to submit the report to the relevant sub-committee in due course.

14.5 The Sub-Committee, therefore, agreed to recommend to the Committee an extension of the target completion date of the item to 2008 to enable further consideration of the matter by the DE Sub-Committee. Member Governments and international organizations were invited to submit to DE 50 relevant proposals and also any statistical information, especially giving the weights of people fully clothed and equipped, available. The Sub-Committee instructed the Secretariat to inform DE 49 accordingly.

15 INCONSISTENCIES IN IMO INSTRUMENTS REGARDING REQUIREMENTS FOR LIFE-SAVING APPLIANCES

15.1 The Sub-Committee, having noted that MSC 80 had, in view of the heavy work load of the DE Sub-Committee, transferred this item from the provisional agenda of DE 49 to that of FP 50, recalled that DE 48 had instructed its LSA Correspondence Group to prepare amendments to SOLAS chapter III, the LSA Code, the Revised Recommendation on testing of LSA (resolution MSC.81(70)) and the Standardized LSA evaluation and test report forms (MSC/Circ.980 and addenda) in order to address inconsistencies in IMO instruments regarding provisions for life-saving appliances.

15.2 The Sub-Committee further recalled that DE 48 had considered possible consequential amendments to SOLAS regulation III/21.1 concerning relaxation from the life-saving requirements for passenger ships engaged in short international voyages and had agreed that the concept should be retained and appropriate amendments to SOLAS regulation III/21.1 should be developed. Consequently, DE 48 instructed the LSA Correspondence Group to consider the matter further and report to DE 49. In this connection, the Sub-Committee noted document FP 50/15 (Secretariat), giving background information on the matter.

15.3 The Sub-Committee considered part 2 of the report of the correspondence group (FP 50/15/1), containing proposed draft amendments to SOLAS chapter III, the LSA Code and the Revised Recommendation on testing of life-saving appliances and referred them to the LSA Working Group, established under agenda item 13, for finalization.

15.4 The Sub-Committee noted that the draft amendments referred to in paragraph 15.2 above included amendments to SOLAS regulation II-1/6.2.4 concerning relaxation from the life-saving requirements for passenger ships engaged in short international voyages. With regard to the term “reduced degree of hazard” and the application of the B/5 value to the subdivision standards in SOLAS chapter II-1, the Sub-Committee noted the views of the correspondence group and agreed that the matter should be referred to the DE Sub-Committee for further consideration and action as appropriate. The Sub-Committee also requested the Secretariat to inform the SLF Sub-Committee of this decision.

Report of the working group

15.5 Having considered the part of the report of the working group dealing with the agenda item (FP 50/WP.3 and Add.1, paragraph 8), the Sub-Committee agreed to the draft amendments to SOLAS chapter III (see also paragraphs 13.15, 13.21 and 13.22) the LSA Code and the Revised Recommendation on testing of LSA (see also paragraph 13.22), as set out in annexes 9, 10 and 11, respectively.

15.6 Noting that some of the proposed draft amendments to the LSA Code (draft amendments to paragraphs 2.2.1.16, 2.3.1.1 and 2.3.1.5) are modifying earlier draft amendments to the LSA Code already approved by MSC 80 and scheduled for adoption at MSC 81, the Sub-Committee invited the Committee to consider the proposed modifications to the approved draft amendments when adopting the draft amendments to the LSA Code.

15.7 Regarding the definition of “unfavourable conditions of trim and list” agreed for inclusion in SOLAS regulation III/3, the Sub-Committee considered that, in view of the limited experience with the new probabilistic damage stability provisions in SOLAS chapter II-1, the definition should be reviewed by SLF 49 so that their comments can be taken into account when the SOLAS amendments prepared at this session are considered for adoption at MSC 82 provided they were approved at MSC 81.

15.8 The Sub-Committee considered that work on the item has been completed and agreed to recommend to the Committee its deletion from the work programme of the DE Sub-Committee.

16 TEST STANDARDS FOR EXTENDED SERVICE INTERVALS OF INFLATABLE LIFERAFTS

16.1 The Sub-Committee, having noted that MSC 80 had, in view of the heavy work load of the DE Sub-Committee, transferred this item from the provisional agenda of DE 49 to that of FP 50, recalled that DE 48 had considered document DE 48/20/1 (Denmark), informing of a Danish project for the development of test standards for extended service intervals of inflatable liferafts and containing in the annex a relevant work plan, and agreed to await the progress report on the Danish project and eventual proposals resulting from it for further consideration at DE 50.

16.2 The Sub-Committee had for its consideration documents FP 50/16 and FP 50/17 (Denmark), containing a proposed test standard for approving extended service intervals of inflatable liferafts for inclusion in the Revised Recommendation on testing of life-saving appliances (resolution MSC.81(70)) and ensuing amendments to SOLAS chapter III, the LSA Code and the Recommendation on conditions for the approval of servicing stations for inflatable liferafts (resolution A.761(18)). The Sub-Committee noted, in this connection, that document FP 50/17, although issued under agenda item 17, needed to be considered together with document FP 50/16 under this agenda item since the amendments to resolution A.761(18) proposed in the document only refer to test standards for extended service intervals for inflatable liferafts, taking into account that agenda item 17 deals with amendments to resolution A.761(18) concerning checks of the use-by date of certain provisions in inflatable liferafts only.

16.3 The Sub-Committee noted the proposed amendments to:

- .1 resolution MSC.81(70) – Revised Recommendation on testing of life-saving appliances (annex 3 to document FP 50/16);
- .2 regulation 20 of SOLAS chapter III (annex 1 to document FP 50/16);

- .3 section 4 of the LSA Code (annex 2 to document FP 50/16); and
- .4 resolution A.761(18) – Recommendation on conditions for the approval of servicing stations for inflatable liferafts (annex to document FP 50/17),

and agreed that they should be finalized at DE 50, when the Danish results regarding the proposed shock/vibration test would be available.

16.4 The Sub-Committee also agreed that harmonization of approval and service requirements was necessary and invited Member Governments and international organizations to submit appropriate proposals to DE 50.

17 AMENDMENTS TO RESOLUTION A.761(18)

17.1 The Sub-Committee, having noted that MSC 80 had, in view of the heavy work load of the DE Sub-Committee, transferred this item from the provisional agenda of DE 49 to that of FP 50, recalled that MSC 78 had considered a proposal by Italy (MSC 78/24/7) to amend resolution A.761(18) on Recommendation on conditions for the approval of servicing stations for inflatable liferafts to require that some important provisions like medicines, food and water rations are checked to ensure that they are in good condition and that items with a use-by date are suitable for use until the next due date of servicing. Subsequently, MSC 78 included in the DE Sub-Committee's work programme a high priority item on "Amendments to resolution A.761(18)". DE 48 noted document DE 48/20 (Italy) on the subject for further consideration at DE 49.

17.2 Recalling that document FP 50/17 had already been dealt with under agenda item 16, the Sub-Committee considered document DE 48/20 (Italy), proposing to substitute paragraph 5.11 of the Recommendation on conditions for the approval of servicing stations for inflatable liferafts (resolution A.761(18)) with the following text:

"All items of equipment should be checked to ensure that they are in good condition and that dated items are suitable for use until the next due date of servicing.",

effectively reinstating paragraph 2.11 of the Recommendation contained in the annex to resolution A.693(17), which had been revoked by resolution A.761(18).

17.3 A brief discussion indicated that there was no majority support for the proposals and the Sub-Committee agreed that no further action on the item was necessary.

17.4 The Sub-Committee considered that work on the item had thus been finalized and agreed to recommend to the Committee its deletion from the work programme of the DE Sub-Committee.

18 WORK PROGRAMME AND AGENDA FOR FP 51

Terms of reference of the Sub-Committee

18.1 The Sub-Committee noted that MSC 80 and MEPC 53 had approved the revised terms of reference of the Sub-Committee, as set out in annex 12, and that the sub-committees had been instructed to periodically review their terms of reference to ensure that they accurately reflect the work being carried out.

Work programme and provisional agenda for FP 51

18.2 The Sub-Committee revised its work programme (FP 50/WP.5) based on that approved by MSC 80 (FP 50/2) and, taking into account the progress made during this session, prepared a draft revised work programme and draft provisional agenda for FP 51. While reviewing the work programme, the Sub-Committee agreed to invite the Committee to:

- .1 delete the following work programme items, as work on them has been completed:
 - .1.1 item H.1 – Passenger ship safety; and
 - .1.2 item H.3 – Amendments to resolution A.754(18) relating to performance criteria for fire doors;
- .2 extend the target completion date of the following work programme item:
 - .2.1 item H.5 – Recommendation on evacuation analysis for new and existing passenger ships, to 2008;
- .3 include the following new item in the Sub-Committee's work programme:
 - .3.1 item H.7 – Protection of exterior boundaries of superstructures and deckhouses, with a target completion date of 2007^{*}; and
- .4 renumber the work programme items accordingly.

18.3 The Committee was invited to approve the draft revised work programme and draft provisional agenda for FP 51, as set out in annex 13.

Arrangements for the next session

18.4 The Sub-Committee agreed to establish at its next session working groups on the following subjects:

- .1 recommendation on evacuation analysis for new and existing passenger ships;
- .2 performance testing and approval standards for fire safety systems; and
- .3 comprehensive review of the Fire Test Procedures Code.

18.5 As agreed under various agenda items, the Sub-Committee established correspondence groups on the following subjects, due to report to FP 51:

- .1 recommendation on evacuation analysis for new and existing passenger ships;
- .2 performance testing and approval standards for fire safety systems;

* This item need not be included in the Sub-Committee's work programme if the Committee agrees to amendment SOLAS regulation II-2/4 at MSC 81 (see paragraphs 11.5 and 21.1.5).

- .3 comprehensive review of the Fire Test Procedures Code; and
- .4 measures to prevent fires in engine-rooms and cargo pump-rooms.

18.6 The Sub-Committee noted that its fifty-first session had been tentatively scheduled to take place from 5 to 9 February 2007, at a venue to be announced in due course.

19 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2007

19.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mr. J.C. Cubisino (Argentina) as Chairman and Mr. C. Abbate (Italy) as Vice-Chairman, both for 2007.

20 ANY OTHER BUSINESS

Clarification on the applicability of SOLAS regulation II-2/20.6.2

20.1 The Sub-Committee considered document FP 50/20 (IACS), which addressed matters related to the applicability of SOLAS regulation II-2/20.6.2 to cargo holds of ships where vehicles, with fuel in their tanks, are stowed in open or closed containers, and was of the opinion that it was not the intent of SOLAS regulation II-2/20.6.2 to require cargo holds in ships, loaded with vehicles with fuel in their tanks and stowed in open or closed containers, to be provided with portable fire-fighting appliances based on the reasons provided in paragraph 2 of the aforementioned document.

Unified interpretation of SOLAS regulations II-2/10.8.1 and II-2/10.9 and the FSS Code, chapter 14, paragraph 2.1.1

20.2 The Sub-Committee considered document FP 50/20/1 (Sweden), proposing that a unified interpretation of the definition of cargo tank area in respect of SOLAS regulation II-2/10.8.1 – Fixed deck foam fire-extinguishing systems be developed, and decided to consider this matter further at FP 51. To this end, the Sub-Committee invited Members Governments and international organizations to submit their comments and proposals to FP 51.

Test laboratories recognized by the Administrations

20.3 The Secretariat informed the Sub-Committee that the latest annual FP circular on Test laboratories recognized by the Administrations had been published as FP/Circ.30 on 4 January 2006.

Halon banking and reception facilities

20.4 The Sub-Committee noted information provided by the Secretariat that the latest annual FP circular on Halon banking and reception facilities had been published as FP/Circ.31 on 4 January 2006.

Expressions of appreciation

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

- Captain Eduardo Castro Rivas (Argentina) (on transfer)
- Captain Carlos Rios Varela (Chile) (on transfer)
- Mr. Hu Jinglu (China) (on transfer)
- Captain Nikolaos Nesteroulis (Greece) (on transfer)
- Mr. Mathew Lee (Singapore) (on transfer)
- Mr. Tom Allan (United Kingdom) (on retirement).

21 ACTION REQUESTED OF THE COMMITTEE

21.1 The Maritime Safety Committee is invited to:

- .1 consider the outcome of the Sub-Committee on matters related to passenger ship safety, including the draft amendments to SOLAS chapter II-2 and the FSS Code and take action as appropriate (paragraphs 3.1 to 3.28 and annex 1);
- .2 approve the draft amendment to the International Code for Fire Safety Systems (FSS Code) with a view to subsequent adoption (paragraphs 4.17 to 4.19 and annex 2);
- .3 note the progress made on matters related to the review of the Interim Guidelines on evacuation analyses for new and existing passenger ships (MSC/Circ.1033) (paragraphs 5.6 to 5.8);
- .4 approve the draft MSC circular on Unified interpretations to SOLAS chapter II-2 and the fire test procedures referred to in the FTP Code (paragraph 11.13 and annex 3);
- .5 consider the recommendation of the Sub-Committee to amend SOLAS chapter II-2 to ensure consistent application of regulations II-2/4 and II-2/9 and a justification for a new work programme item and take action as appropriate, taking into account the proposal referred to subparagraph .6 below (paragraph 11.14 and annex 4);
- .6 approve, subject to the appropriate decision on the matter referred to in subparagraph .5 above, the proposed draft amendment to SOLAS regulation II-2/4.5.2.3 for adoption at MSC 82 and the draft MSC circular on Early application of amendment to SOLAS chapter II-2 (paragraphs 11.15 and 11.16 and annex 5);
- .7 approve the draft MSC circular on Guidelines for developing operation and maintenance manuals for lifeboat systems (paragraph 13.11 and annex 6);
- .8 note that the Sub-Committee referred to the FSI and STW Sub-Committees the issue of whether the applicable provisions of the MSC circular referred to in subparagraph .9 below should be made mandatory under the SOLAS Convention and/or the ISM Code, for information and appropriate action (paragraph 13.16);

- .9 approve the draft MSC circular on Measures to prevent accidents with lifeboats (paragraph 13.17 and annex 7);
- .10 approve the draft MSC circular on Early implementation of draft SOLAS regulation III/19.3.3.4 (paragraph 13.20 and annex 8);
- .11 approve the draft amendments to SOLAS chapter III, with a view to subsequent adoption (paragraph 15.5 and annex 9);
- .12 approve the draft amendments to the LSA Code, with a view to subsequent adoption (paragraph 15.5 and annex 10);
- .13 approve the draft amendments to the Revised Recommendation on testing of life-saving appliances (resolution MSC.81(70)), with a view to subsequent adoption (paragraph 15.5 and annex 11);
- .14 consider the proposed modifications to the draft amendments to the LSA Code, which were approved by MSC 80 for adoption at MSC 81, and take action as appropriate (paragraph 15.6 and paragraphs 3, 4 and 5 of annex 10);
- .15 consider the Sub-Committee's recommendations regarding the life-saving appliances related items of the work programme of the DE Sub-Committee and take action as appropriate (paragraphs 13.23, 14.4, 15.8 and 17.4);
- .16 approve the draft revised work programme of the Sub-Committee and the draft provisional agenda for FP 51 (paragraphs 18.2 and 18.3 and annex 13); and
- .17 approve the report in general.

ANNEX 1

DRAFT AMENDMENTS TO SOLAS CHAPTER II-2 AND THE FSS CODE FOR MATTERS RELATED TO PASSENGER SHIP SAFETY

DRAFT AMENDMENTS TO SOLAS CHAPTER II-2

CHAPTER II-2 CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Regulation 3 – Definitions

- 1 The following new paragraphs 51 to 53 are added after the existing paragraph 50:

“51 *Safe area in the context of a fire casualty* is, from perspective of habitability, any area outside the main vertical zone(s) in which a fire has occurred such that it can safely accommodate all persons onboard to protect them from hazards to life or health and provide them with basic services.

[51 *Safe area in the context of a casualty* is, from the perspective of habitability, any area which will not be flooded or which is outside the main vertical zone(s) in which a fire has occurred such that it can safely accommodate all persons onboard to protect them from hazards to life or health and provide them with basic services.]

52 *Safety centre* is a control station or a segregated part thereof dedicated to management of emergency situations. Safety systems control and/or monitoring is an integral part of the safety centre.

53 *Short international voyage* means a short international voyage as defined in regulation III/3.22.*”

Regulation 7 – Detection and alarm

- 2 The following new paragraph 2.4 is added after the existing paragraph 2.3:

“2.4 A fixed fire detection and fire alarm system for passenger ships shall be capable of remotely and individually identifying each detector and manually operated call point.”

- 3 In paragraphs 5.2 and 5.3.1, the following new text is added at the end of the paragraphs:

“Detectors fitted in cabins, when activated, shall also be capable of emitting, or cause to be emitted, an audible alarm within the space where they are located.”

* This definition can be deleted if it is decided to not include this term in draft SOLAS regulation II-2/22.

Regulation 8 – Control of smoke spread

- 4 In paragraph 2, the following new text is added at the end of the paragraph:

“The ventilation system serving safety centres may be derived from the ventilation system serving the navigating bridge, unless located in an adjacent main fire zone.”

Regulation 9 – Containment of fire

- 5 The following new paragraph 2.2.6 is added after the existing paragraph 2.2.5:

“2.2.6 *Protection of atriums*

2.2.6.1 Atriums shall be within enclosures formed of “A” class divisions having a fire rating determined in accordance with the tables for decks in paragraphs 2.2.3 or 2.2.4.

2.2.6.2 Decks separating spaces within atriums shall have a fire rating determined in accordance with the tables for decks in paragraphs 2.2.3 or 2.2.4.”

- 6 In paragraph 2.2.3.2.2 (7), the words “Sale shops” are deleted.

- 7 In paragraph 2.2.3.2.2 (8), the words “Sale shops” are added.

- 8 In the notes for tables 9.3 and 9.4, the following sentence is added at the end of subscript “c”:

“No fire rating is required for those partitions separating the navigating bridge and the safety centre when the latter is within the navigating bridge.”

- 9 The existing paragraph 7.5.1, the first paragraph is numbered as paragraph 7.5.1.1 and the following new paragraph 7.5.1.2 is added:

“7.5.1.2 Ranges for cooking equipment installed on open decks shall conform to paragraph 7.5.1.1, as applicable, when passing through accommodation spaces or spaces containing combustible materials.”

- 10 The following new paragraph 7.6 is added after the existing paragraph 7.5:

“7.6 *Ventilation systems for main laundries*

Exhaust ducts from main laundries shall be fitted with:

- .1 filters readily removable for cleaning purposes;
- .2 a fire damper located in the lower end of the duct which is automatically and remotely operated;
- .3 remote-control arrangements for shutting off the exhaust fans and supply fans from within the space, for operating the fire damper mentioned in paragraph 7.6.2; and
- .4 suitably located hatches for inspection and cleaning.”

Regulation 10 – Fire fighting

11 In the first sentence of paragraph 10.6.4, between the words “equipment” and “shall”, the words “installed in enclosed spaces or on open decks” are added.

Regulation 13 – Means of escape

12 In paragraph 3.2.3, the words “public spaces” in the third sentence are deleted and the following new sentence is added before the fourth sentence:

“Public spaces may also have direct access to stairway enclosures except for the backstage of a theatre.”

13 The following new paragraph 3.2.5.3 is added after the existing paragraph 3.2.5.2:

“3.2.5.3 Evacuation guidance systems alternative to the escape route lighting system specified in paragraph 3.2.5.1 shall be approved by the Administration based on the guidelines developed by the Organization*.”

14 The following new regulations 21 and 22 are inserted after existing regulation 20:

“Regulation 21

Casualty threshold, safe return to port and safe areas

1 Application

Passenger ships engaged in international voyages other than short international voyages having more than three main vertical zones and constructed on or after [date of entry into force] shall comply with the provisions of this regulation.

2 Purpose

The purpose of this regulation is to establish design criteria for the ship’s safe return to port under its own propulsion after a casualty that does not exceed the casualty threshold stipulated in the context of a fire and also provides functional requirements and performance standards for safe areas.

3 Casualty threshold

The casualty threshold in the context of a fire includes:

- .1 loss of space of origin up to the nearest “A” class boundaries, which may be a part of the space of origin, if the space of origin is protected by a fixed fire extinguishing system; or
- .2 loss of the space of origin and adjacent spaces up to the nearest “A” class boundaries, which are not part of the space of origin.

* Refer to the Functional requirements and performance standards for the assessment of evacuation guidance systems (MSC/Circ.1167) and the Interim guidelines for the testing, approval and maintenance of evacuation guidance systems used as an alternative to low-location lighting systems (MSC/Circ.1168).

4 Safe return to port

When the fire damage does not exceed the casualty threshold indicated in regulation II-2/21, the ship shall be capable of returning to port while providing a safe area as defined in regulation II-2/3. To be deemed capable of returning to port, the following systems shall remain operational in the remaining part of the ship not affected by fire:

- .1 propulsion;
- .2 steering systems and steering-control systems;
- .3 navigational systems;
- .4 systems for fill, transfer and service of fuel oil;
- .5 internal communication (between bridge and engineering spaces and as required for passenger and crew notification and mustering);
- .6 external communication;
- .7 fire main system;
- .8 fixed fire-extinguishing systems;
- .9 fire and smoke detection system;
- .10 bilge and ballast system;
- .11 power-operated watertight and semi-watertight doors;
- .12 [other systems integral to damage control efforts; and]
- .13 systems intended to support the “safe area” as indicated in regulation 5.1.2.

5 Safe area(s)

5.1 Functional requirements:

- .1 the safe area(s) shall generally be internal space(s); however, the use of an external space as a safe area may be allowed by the Administration taking into account any restriction due to the area of operation and relevant expected environmental conditions;
- .2 the safe area(s) shall provide all occupants with the following basic services to ensure that the health of the passengers and crew is maintained:
 - .1 sanitation;
 - .2 water;
 - .3 food;
 - .4 alternate space for medical care;
 - .5 shelter from the weather;
 - .6 means of preventing heat stress and hypothermia;
 - .7 light; and
 - .8 ventilation;
- .3 Ventilation design shall reduce the risk that smoke and hot gases could affect the use of the safe area(s); and
- .4 means of access to life saving appliances shall be provided from each area identified or used as a safe area taking into account that a main vertical zone may not be available for internal transit.

5.2 Performance standards:

Alternate space for medical care shall conform to a standard acceptable to the Administration or published by an internationally recognized organization.*

6 Systems to remain capable of operation if the casualty threshold is exceeded

6.1 Purpose

The purpose of this regulation is to provide design criteria for systems required to remain operational for supporting the orderly evacuation and abandonment of a ship, if the casualty threshold, as defined in regulation II-2/21.3, is exceeded.

6.2 Systems

6.2.1 The following systems shall be so arranged and segregated as to remain operational in case any one of the main vertical zones is unserviceable due to fire:

- .1 fire main;
- .2 internal communications (in support of fire-fighting and as required for passenger and crew notification and evacuation);
- .3 means of external communications;
- .4 bilge systems for removal of fire-fighting water; and
- .5 lighting along escape routes, at assembly stations and at embarkation stations of life saving appliances.

6.2.2 The above systems shall be capable of operation for at least 3 hours based on the assumption of no damage outside of unserviceable main vertical zones. These systems are not required to remain operational within the unserviceable main vertical zones.

6.2.3 Cabling and piping within a trunk insulated to the A-60 standard shall be deemed to remain intact and serviceable while passing through the unserviceable main vertical zone for the purposes of regulation 4.2.1. An equivalent degree of protection for cabling and piping may be approved by the Administration.

Regulation 22

Safety centre on passenger ships

1 Application

Passenger ships constructed on or after [date of entry into force] shall have on board a safety centre complying with the provisions of this regulation.

* Refer to the Guidance on the establishment of medical and sanitation related programmes for passenger ships (MSC/Circ.1129).

2 Purpose

The purpose of this regulation is to provide details on safety centres.

3 Location and arrangement

The safety centre shall be located in a position within or adjacent, and having direct access to the navigating bridge, and shall be arranged so that the management of emergencies could be performed without distracting watch officers from their navigational duties.

4 Lay-out and ergonomic design

The lay-out and ergonomic design of the safety centre shall conform to the guidelines developed by the Organization* as appropriate.

5 Communications

Means of communication between the central control station, the navigating bridge, engine control room, the storage room(s) for fire extinguishing system(s) and fire equipment lockers shall be provided. This means of communication shall have priority over all other communication systems on board.

[6 Control and monitoring of safety systems

Notwithstanding the requirements set out elsewhere in the Convention, the appropriate functionality of the following safety systems shall also be controlled/operated/monitored from the safety centre:

- .1 all powered ventilation systems;
- .2 fire doors;
- .3 general emergency alarm system;
- .4 public address system;
- .5 electrically powered evacuation guidance systems;
- .6 watertight and semi-watertight doors;
- .7 indicators for shell doors, loading doors and other closing appliances;
- .8 water leakage of inner/outer bow doors, stern doors and any other shell door;
- .9 television surveillance system (CCTV);
- .10 fire detection and alarm system;
- .11 fixed fire-fighting local application system(s);
- .12 sprinkler and equivalent systems;
- .13 water-based systems for machinery spaces;
- .14 alarm to summon the crew;
- .15 fire dampers, where a centralized control is provided;
- .16 atrium smoke extraction system;
- .17 [flooding detection systems]; and
- .18 fire pumps and emergency fire pumps.]”

* Refer to guidelines to be developed by the Organization.

**DRAFT AMENDMENTS TO THE INTERNATIONAL CODE FOR
FIRE SAFETY SYSTEMS (FSS CODE)**

Chapter 9 – Fixed fire detection and fire alarm systems

- 15 Add the following new paragraph after existing paragraph 2.1.4:

“2.1.5 In passenger ships, the fixed fire detection and fire alarm system shall be capable of remotely and individually identifying each detector and manually operated call point.”

- 16 The existing text of paragraph 2.4.1.4 is replaced by the following:

“2.4.1.4 A section of fire detectors and manually operated call points shall not be situated in more than one main vertical zone.”

ANNEX 2

DRAFT AMENDMENTS TO THE INTERNATIONAL CODE FOR FIRE SAFETY SYSTEMS (FSS CODE)

CHAPTER 4 – FIRE EXTINGUISHERS

Section 3 – Engineering specifications

- 1 The existing paragraph 3.2 is replaced by the following:

“3.2 Portable foam applicators

A portable foam applicator unit shall consist of a foam nozzle/branch pipe, either of a self inducing type or in combination with a separate inductor, capable of being connected to the fire main by a fire hose, together with a portable tank containing at least 20 l of foam concentrate and at least one spare tank of foam concentrate of the same capacity.

3.2.1 System performance

3.2.1.1 The nozzle/branch pipe and inductor shall be capable of producing effective foam suitable for extinguishing an oil fire, at a foam solution flow rate of at least 200 l/min at the nominal pressure in the fire main.

3.2.1.2 The foam concentrate shall be approved by the Administration based on guidelines developed by the Organization*.

3.2.1.3 The values of the foam expansion and drainage time of the foam produced by the portable foam applicator unit shall not differ more than $\pm 10\%$ of that determined in 3.2.1.2.

3.2.1.4 The portable foam applicator unit shall be designed to withstand clogging, ambient temperature changes, vibration, humidity, shock, impact and corrosion normally encountered on ships.”

CHAPTER 6 – FIXED FOAM FIRE-EXTINGUISHING SYSTEMS

Section 2 – Engineering specifications

- 2 The existing text of paragraph 2.3.1.2 is replaced by the following:

“2.3.1.2 The system shall be capable of discharging through fixed discharge outlets in no more than 5 minutes, a quantity of foam sufficient to produce an effective foam blanket over the largest single area over which oil fuel is liable to spread.”

* Refer to the Guidelines for the performance and testing criteria and surveys of low-expansion foam concentrates for fixed fire-extinguishing systems (MSC/Circ.582/Corr.1).

CHAPTER 7 – FIXED PRESSURE WATER-SPRAYING AND WATER-MIST FIRE-EXTINGUISHING SYSTEMS

Section 2 – Engineering specifications

3 The existing section 2 is replaced by the following:

“2.1 Fixed pressure water-spraying fire-extinguishing systems

Fixed-pressure water-spraying fire-extinguishing systems for machinery spaces and cargo pump-rooms shall be approved by the Administration based on the guidelines developed by the Organization*.

2.2 Equivalent water-mist fire-extinguishing systems

Water-mist fire-extinguishing systems for machinery spaces and cargo pump-rooms shall be approved by the Administration based on the guidelines developed by the Organization*.”

* Refer to the Revised Guidelines for the approval of equivalent water-based fire-extinguishing systems for machinery spaces and cargo pump-rooms (MSC/Circ.1165).

ANNEX 3**DRAFT MSC CIRCULAR****UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2 AND FIRE TEST
PROCEDURES REFERRED TO IN THE FTP CODE**

1 The Maritime Safety Committee, at its [eighty-first session (10 to 19 May 2006)], with a view to providing more specific guidance for vague expressions which are open to different interpretations contained in IMO instruments, approved the unified interpretations of SOLAS chapter II-2 and the fire test procedures referred to in the FTP Code prepared by the Sub-Committee on Fire Protection at its fiftieth session, as set out in the annex.

2 Member Governments are invited to use the annexed unified interpretations as guidance when applying relevant provisions of SOLAS chapter II-2 and the fire test procedures referred to in the FTP Code to fire protection construction, installation, arrangements and equipment to be installed on board ships on or after [*date of approval of the circular*] and to bring the unified interpretations to the attention of all parties concerned.

ANNEX

UNIFIED INTERPRETATIONS OF SOLAS CHAPTER II-2 AND THE FIRE TEST PROCEDURES REFERRED TO IN THE FTP CODE

Regulation II-2/3.34 – Definition for *oil fuel unit*

Oil fuel unit includes any equipment used for the preparation and delivery of oil fuel, heated or not, to boilers (including inert gas generators) and engines (including gas turbines) at a pressure of more than 0.18 N/mm². Oil fuel transfer pumps are not considered as oil fuel units.

Regulation II-2/9.2.4.2.5

For the portions which face the cargo area, the “A-60” class insulation should be provided up to the underside of the deck of the navigation bridge.

Regulation II-2/9.3.1 – Penetrations in fire-resistive divisions and prevention of heat transmission

This regulation should be applied to all penetrations at the exterior boundaries of superstructures and deckhouses which, according to SOLAS regulation II-2/9.2.4.2.5, are required to be “A-60” class insulated.

Regulation II-2/10.7.1.4 – Fixed gas fire-extinguishing systems for general cargo

- 1 Non-combustible cargoes, such as materials listed in paragraph 1 of Annex 2 of the FTP Code, need not be mentioned on exemption certificates issued under regulation II-2/10.7.1.4.
- 2 The document of compliance with regulation II-2/19 may not permit more cargoes than indicated in the list of cargoes attached to the exemption certificate issued under regulation II-2/10.7.1.4.

Regulation II-2/19.3.2 – Sources of ignition

- 1 Reference should be made to IEC 60092-506 standard, Special features – Ships carrying specific dangerous goods and materials hazardous only in bulk.
- 2 For pipes having open ends (e.g., ventilation and bilge pipes, etc.) in a hazardous area, the pipe itself should be classified as a “hazardous area”. See IEC 60092-506 table B1, item B.
- 3 Enclosed spaces (e.g., pipe tunnels, bilge pump-rooms, etc.) containing such pipes with equipment such as flanges, valves, pumps, etc., should be regarded as an extended hazardous area, unless provided with overpressure in accordance with IEC 60092-506 clause 7.

Resolution A.754(18) – Fire resistant windows in tankers

Windows to be fitted at the forward bulkhead of accommodation block on tankers should correspond to prototype subjected to the “A” class standard fire test with the fire against its external side (i.e. the side which, after the installation on board, will be exposed to the weather). The insulation of the bulkhead used along with the window’s specimen shall be fitted on the unexposed face of the structural core.

ANNEX 4

JUSTIFICATION FOR PROPOSED NEW WORK PROGRAMME ITEM (in accordance with MSC/Circ.1099 – MEPC/Circ.366)

PROPOSED AMENDMENT TO SOLAS CHAPTER II-2 RELATED TO THE PROTECTION OF EXTERIOR BOUNDARIES OF SUPERSTRUCTURES AND DECKHOUSES

1 Scope of the proposal

- .1 Examine and recommend amendments to SOLAS chapter II-2 to remove the inconsistency when applying regulation II-2/4.5.2.3 in conjunction with regulations II-2/4.5.2.1 and II-2/9.2.4.2.5.
- .2 Consider the issues raised in document FP 50/11 (IACS) regarding the requirement for windows and sidescuttles fitted within area “A” boundaries.

2 Compelling need

A new work programme item is necessary to enable the Sub-Committee to amend SOLAS chapter II-2 to remove the inconsistency for applying regulation II-2/4.5.2.3 in conjunction with regulations II-2/4.5.2.1 and II-2/9.2.4.2.5. This will change the existing requirement that results in “A-60” windows being installed in “A-0” bulkheads.

3 Analysis of the issues involved, having regard to the costs to the maritime industry and global legislative and administrative burdens

The purpose of this effort would be primarily to ensure consistent application of the existing requirements so that they are uniformly applied by Administrations, and not to impose new ones, so the costs to the maritime industry are anticipated to be minimal. The administrative burdens to the Organization and to Member States are anticipated to be minimal as well.

4 Benefits

Administrations and recognized organizations acting on their behalf will apply the aforementioned requirements in a uniform manner and ship owners and builders will benefit by being provided with consistent and unambiguous requirements. It will also assist port State control officers by providing clear guidance on the application of the requirements.

5 Priority and target completion date

This matter should have a high priority since the issues have been an ongoing cause of concern for Administrations, recognized organizations and manufacturers. It is expected that only one session will be needed to properly deal with this matter.

6 Specific indication of the action required

In addition to the actions highlighted in paragraph 1, an MSC circular should be issued to inform the parties concerned that action is being taken to clarify the matter, if the Committee agrees that SOLAS regulation II-2/4.5.2.3 should be amended.

7 Remarks on the criteria for general acceptance

- .1 Is the subject of the proposal within the scope of IMO's objectives? Yes.
- .2 Do adequate industry standards exist? No, this is a matter of clarification of existing IMO instruments.
- .3 Do the benefits justify the proposed action? Yes.

8 Identification of which subsidiary bodies are essential to complete the work

The work should be able to be accomplished by the Sub-Committee on Fire Protection exclusively.

ANNEX 5**DRAFT MSC CIRCULAR****EARLY APPLICATION OF AMENDMENT TO SOLAS CHAPTER II-2**

1 The Maritime Safety Committee, at its [eighty-first session (10 to 19 May 2006)], approved, in principle, the following proposed amendment to SOLAS regulation II-2/4.5.2.3, to remove the inconsistency when applying regulation II-2/4.5.2.3 in conjunction with regulations II-2/4.5.2.1 and II-2/9.2.4.2.5, with a view to its adoption by [MSC 82]:

“The following text is added at the end of regulation II-2/4.5.2.3:

“except that “A-0” class standard is acceptable for windows and sidescuttles outside the area specified in regulation II-2/9.2.4.2.5.””

2 Considering that early implementation of the above proposed amendment would be of benefit to the industry and other interested parties, the Committee invited Contracting Governments to the 1974 SOLAS Convention to:

- .1 apply the above proposed amendment to SOLAS chapter II-2, referred to in paragraph 1 above, to ships flying their flags, pending its formal entry-into-force; and
- .2 accept ships flying the flags of other States, constructed and equipped in accordance with the 1974 SOLAS Convention and the above proposed amendment.

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

ANNEX 6**DRAFT MSC CIRCULAR****GUIDELINES FOR DEVELOPING OPERATION AND MAINTENANCE
MANUALS FOR LIFEBOAT SYSTEMS**

1 The Maritime Safety Committee, at its [eighty-first session (10 to 19 May 2006)], taking into account the number of casualties with lifeboat systems, further recognizing the need to improve manuals for operation and maintenance of lifeboat systems, and having considered proposals by the fiftieth session of the Sub-Committee on Fire Protection, approved the Guidelines for developing operation and maintenance manuals for lifeboat systems, as set out in the annex.

2 Member Governments are invited to bring the annexed Guidelines to all the parties concerned for their application, as appropriate.

GUIDELINES FOR DEVELOPING OPERATION AND MAINTENANCE MANUALS FOR LIFEBOAT SYSTEMS

1 Scope and purpose of the guidelines

Seafarers often change ships and sometimes are not familiar with the lifeboats on their ships. Casualties with lifeboat systems are often caused by poor understanding of the lifeboat systems, especially release gear systems. User-friendliness of manuals for lifeboat systems is, therefore, important to help prevent casualties.

The purpose of these guidelines is to encourage development of user-friendly manuals for operation and maintenance of lifeboat systems including launching appliances. These manuals should be easy to understand. The guidelines demonstrate the appropriate level of detail and use of illustrations in explaining the safe use of critical systems. Manufacturers of lifeboats and launching/recovery appliances are invited to make manuals easy to understand, taking into account these guidelines. The use of video materials in conjunction with printed manuals can be an effective tool for mariners who may not be inclined to read a manual.

These guidelines are not applicable to the emergency instructions required by regulation III/8, operating instructions such as posters and signs required by regulation III/9 of SOLAS Convention, or other brief instructions for operation of lifeboats.

These guidelines are for the manuals to be carried on ships for use by seafarers, and accordingly the section on weekly and monthly inspection and maintenance do not refer to detailed maintenance/repair work. Detailed maintenance/repair work should be conducted by the manufacturer's representative or a person appropriately trained and certified by the manufacturer for the work in accordance with MSC/Circ.1093.

2 Collaboration of manufacturers of the lifeboat and the launching appliance

A manual for a lifeboat system including launching appliance should be developed under the collaboration of manufacturers of the lifeboat and the launching appliance and preferably be single document rather than separated. As a minimum, use of different words for the same gear/parts of the lifeboat system should be eliminated by the collaboration of manufacturers of the lifeboat and the launching appliance to prevent misunderstanding by seafarers. Hereafter, this guideline assumes a manual for a lifeboat system includes the launching appliance as a minimum, but separate lifeboat, release gear, and launching appliance manuals may be effective if adequately co-ordinated and using like manner of presentation per these guidelines.

3 Contents of a manual for a lifeboat system

3.1 Items to be included

An operation and maintenance manual for a lifeboat system, as a minimum, should include the following items:

- .1 overview and specification of the lifeboat system;
- .2 explanation of the structure and working principle of major parts of the lifeboat system including release gear systems;

- .3 operation of the lifeboat system; and
- .4 routine inspection and maintenance of the lifeboat system.

3.2 Organization, description and layout of manual

3.2.1 Outline

It is recommended that a manual for a lifeboat system be developed with the following major divisions:

- 1 General description of the whole lifeboat system.
- 2 Method of checking proper closure of release hooks.
- 3 Launching operation.
- 4 Recovery operation.
- 5 On-load/off-load release gear.
- 6 Inspection and maintenance.

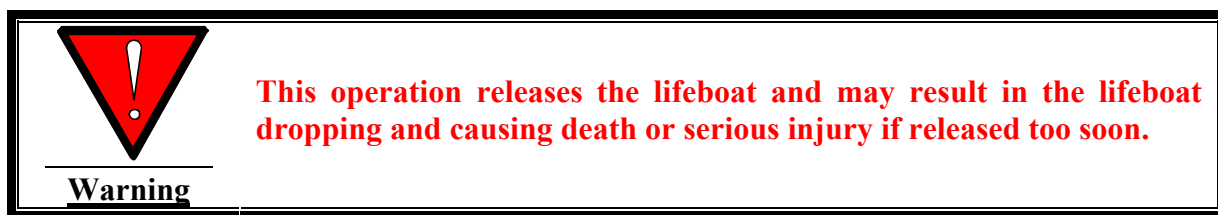
3.2.2 Explanation of major components and their function

The structure and working principle of the lifeboat's major components, in particular the on-load/off-load release gear, should be explained using figures and preferably three-dimensional perspectives. In addition, the operation of the release gear should be described sequentially, using short phrases written in the active voice.

3.2.3 Operation of lifeboat system including release gear systems

Operation of the lifeboat system should be described using the following elements:

- .1 flow of the operation should be explained;
- .2 detail of operation should be explained with figures. Operation and relevant movement of the parts of the release gear should be described with illustrations/photos, preferably using annotations and arrows to show direction of movement; and
- .3 hazards, precautions and notes should be identified with symbols specific to the level of risk. As an example of the various levels of risk and the appropriate associated symbols, the following are recommended:
 - .1 For the highest level of risk, such as in the explanation of "on-load release operation", the following symbol (red background) should be used with a warning statement similar to the following:



Note: International standard symbols (ISO 3864-1 and ISO 7010) are recommended where appropriate, but since marine use is excluded from the scope of these standards, and they fail to indicate different levels of risk, the “graduated” symbols are recommended.

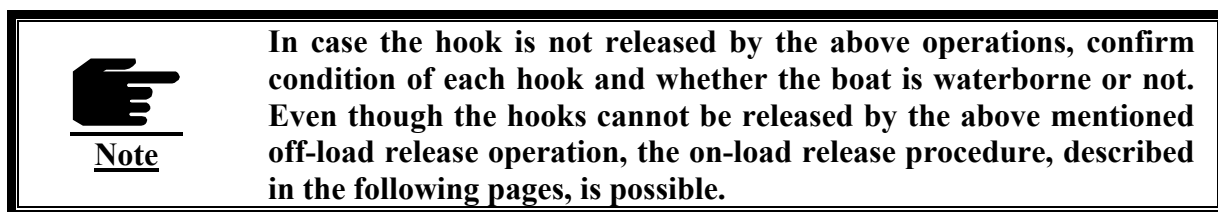
- .2 For the second highest level of risk, such as in the explanation of “davitt arm stop release operation”, the following symbol (yellow background) should be used with a caution statement similar to the following:



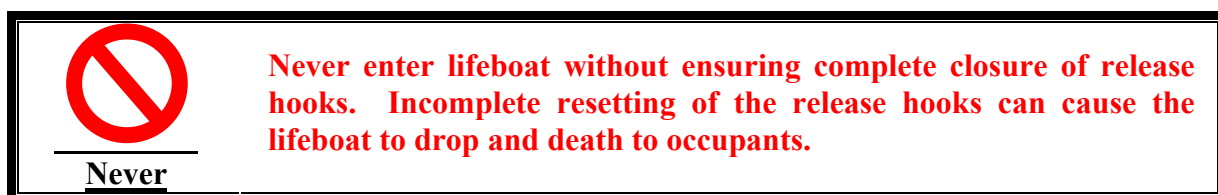
- .3 For less critical mandatory instructions the following symbol (blue background) should be used with appropriate instruction:



- .4 Important notes may be emphasized with symbol and style of instructions similar to the following:



- .5 Prohibited actions should use the following symbol (coloured red) and style of instruction:



3.2.4 Inspection and maintenance

The items for weekly and monthly inspection/maintenance and other inspection/maintenance should each be explained separately.

4 Improvement of user-friendliness of a manual

4.1 Use of figures/photographs

Figures, preferably coloured ones, or photographs should be used as far as practicable to make manuals easy to understand.

4.2 Use of standard wording

The following standard wordings should be used to explain lifeboat systems where provided, and for each of applicable items illustrations should be provided to show the items and its location in the lifeboat or on the ship. The use of alternate terms for variety should be avoided except to further define or clarify a term so that the reader never has to guess what item or system is being discussed.

- .1 Davit/winch:
 - .1 Auto releasing gripe
 - .2 Davit arm
 - .3 Davit arm stop
 - .4 Davit remote control wire handle
 - .5 Frame
 - .6 Maintenance (hanging off) pendant attachment points, if provided
 - .7 Manual gripe, if provided
 - .8 Remote control wire
 - .9 Winch manual brake safety pin
 - .10 Winch hand crank handle
 - .11 Winch centrifugal or lowering brake
 - .12 Winch hand brake or stop brake lever
- .2 Freefall:
 - .1 Roller or sliding pad
 - .2 Sea lashing rope
 - .3 Emergency release device
- .3 Release gear:
 - .1 Hook control cable
 - .2 Hook retainer (lock piece)
 - .3 Hydrostatic interlock
 - .4 Hydrostatic interlock lever, if provided
 - .5 Interlock ("mechanical protection" of on-load release)
 - .6 Maintenance (hanging off) pendant attachment points, if provided
 - .7 On-load release
 - .8 Release handle

- .9 Release handle “closed (locked)” and “open” positions
- .10 Release handle “safety pin”
- .11 Release hook (hook unit) (fore and aft hooks)
- .12 Reset lever, if provided
- .13 Safety latch (keeper)

- .4 Suspension:
 - .1 Foul weather recovery strops
 - .2 Suspension block
 - .3 Suspension link (lifting ring)

- .5 “Officer in charge” of lifeboat

5 Example of an operation and maintenance manual for a lifeboat system

An example of an operation and maintenance manual for a fire-protected lifeboat system is attached in the following pages just for reference. It demonstrates the suitable level of detail that should be expected for manuals. It should be noted that lifeboat systems are different from each other and some specifications in the example manual are not applicable to lifeboat systems of other types. The example attached at appendix is a model manual which is recommended as an example for developing specific manuals for lifeboat systems launched by falls, but the same general principles should be used for manuals for freefall lifeboat systems.

APPENDIX

Example operation and maintenance manual for a lifeboat system *

Table of contents

- 1 General
- 2 Method of checking proper closure of release hooks
- 3 Launching operation
 - 3.1 Preparation before launching
 - 3.2 Setting painter
 - 3.3 Release of safety pin for winch hand brake lever
 - 3.4 Release of davit arm stop
 - 3.5 Boarding the lifeboat
 - 3.6 Launching procedure
 - 3.7 Release gear operation
 - 3.8 Painter release and lifeboat operation
- 4 Recovery operation
 - 4.1 Resetting procedure of release hook
 - 4.2 Recovery procedure
 - 4.3 Stowage procedure
- 5 On-load/off-load release gear system
 - 5.1 General
 - 5.2 Fore and aft hook units
 - 5.3 Release handle unit
 - 5.4 Hydrostatic interlock unit
- 6 Inspection and maintenance
 - 6.1 General precautions
 - 6.2 Inspection and maintenance of lifeboat and release gear system
 - 6.3 Inspection and maintenance of launching appliances (davits and winches)

* Of a lifeboat being launched using falls and a winch, hereinafter referred to as a lifeboat.

1 General

The lifeboats are stored on the boat davits on both sides of the ship. In case of emergency, the crew can board the lifeboat and escaped with the lifeboat directly from its stowage position.

The launching appliance consists of a boat davit (davit arm, frame, platform, falls, suspension block, and gripes/lashing device) and a boat winch (reduction gears, hand brake and centrifugal brake).

Swinging out and lowering of the lifeboat can be controlled both from the inside of the lifeboat and at the ship's deck. The lowering speed of the lifeboat can be controlled by operating the remote control wire inside the lifeboat or by operating the remote control lever on the ship's deck. Moreover, it is possible to suspend the lowering operation of the lifeboat at any height.

Recovery of the lifeboat is performed by operating the boat winch with the push-button switch box. When the davit arm reaches a prescribed position, the boat winch is automatically stopped by the limit switch. After the activation of the limit switch, the boat winch is operated manually to wind up the lifeboat to its stowage position. The boat winch is provided with a safety device to prevent the reverse operation of the manual handle.

The lifeboat is equipped with on-load/off-load release gear which complies with the requirements of the IMO Life-Saving Appliances (LSA) Code. The release gear system is equipped with a hydrostatic interlock system so that it will normally not release the hooks until the boat is waterborne.

To avoid possible injury or death, read this manual carefully before using the boat davit, the boat winch, and the on-load/off-load release gear.

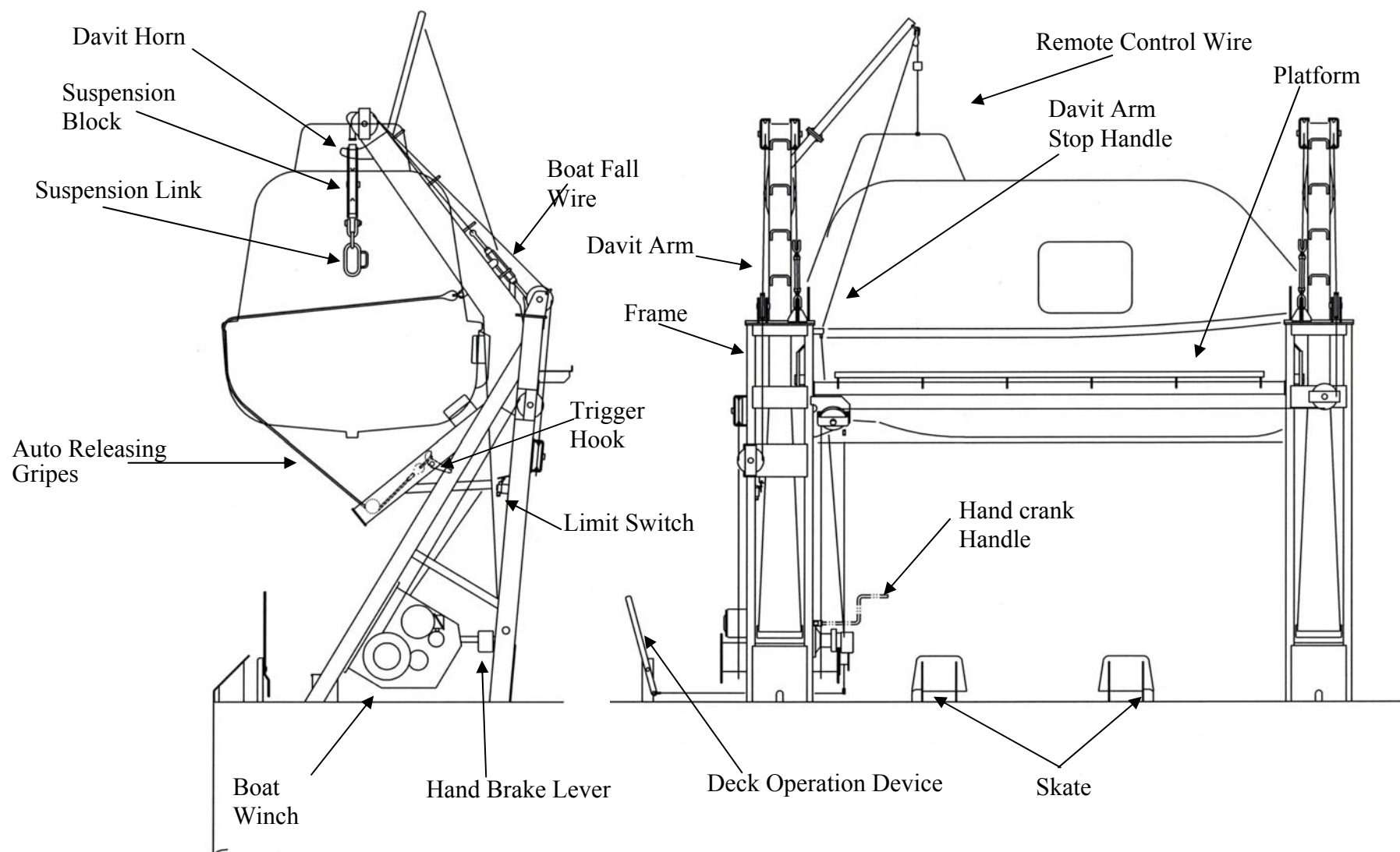


Fig. 1.1 Lifeboat davit arrangement

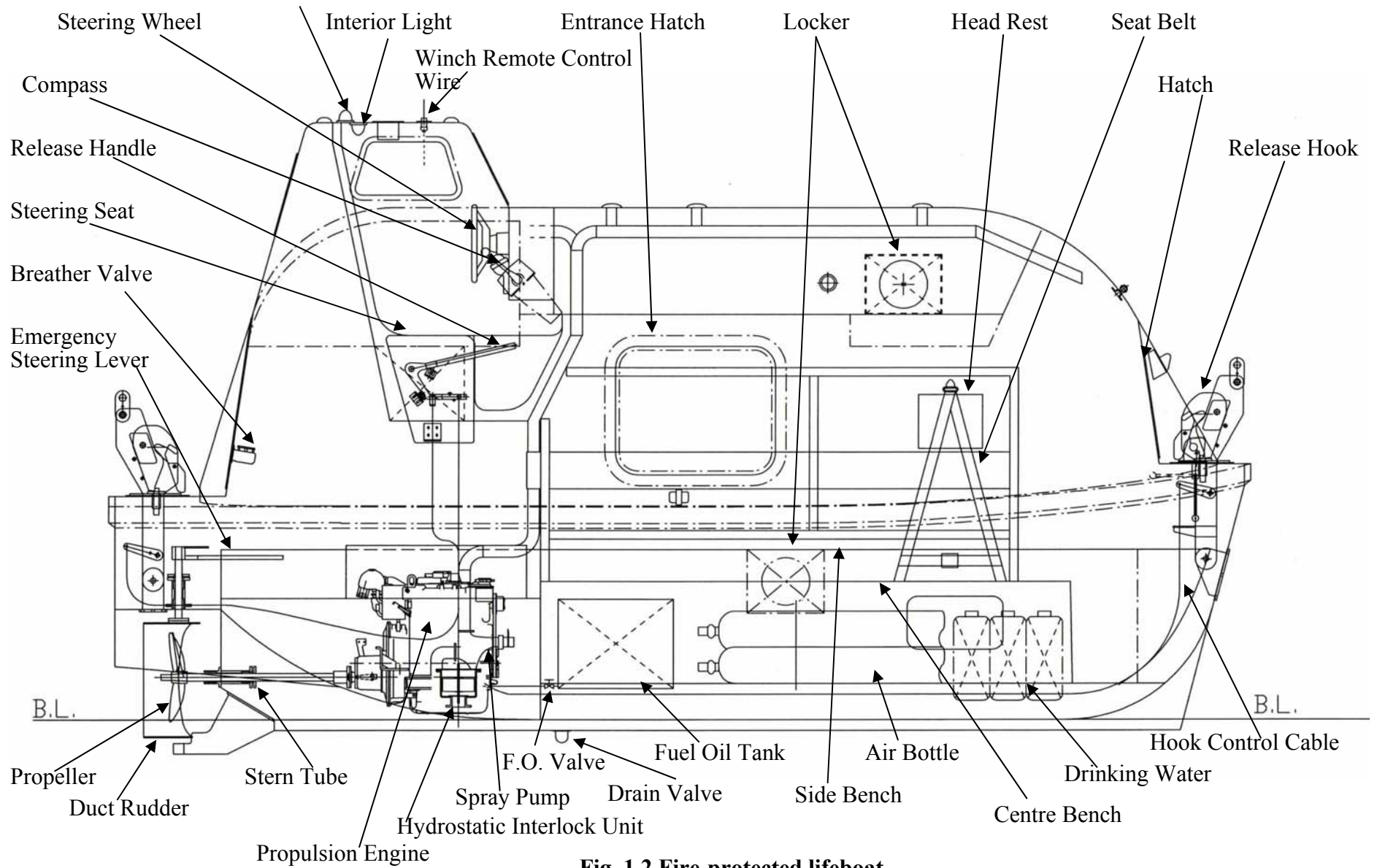
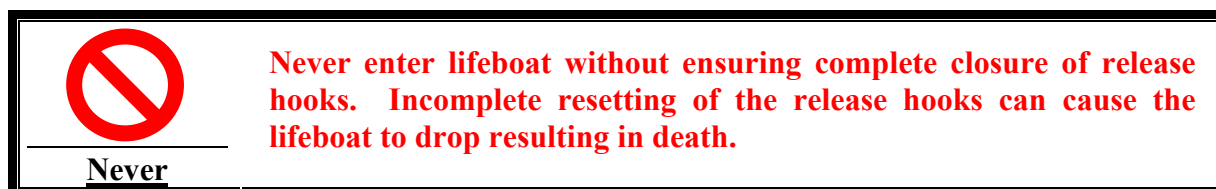


Fig. 1.2 Fire-protected lifeboat

2 Method of checking proper closure of release hooks

2.1 Safe use and operation of lifeboats during drills and inspection and maintenance is dependent on knowing that the release gear is properly reset.



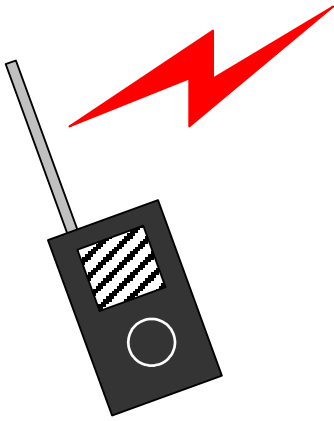
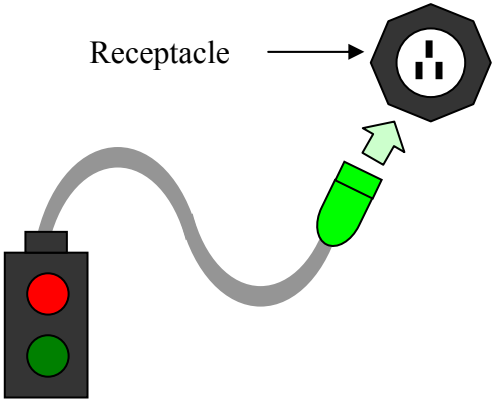
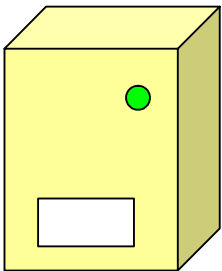
2.2 Purpose of on-load release. The IMO LSA Code requires, among other things, that the lifeboat be fitted with “*on-load release capability which will release the lifeboat with a load on the hooks. The release mechanism shall be so designed that crew members in the lifeboat can clearly observe when the release mechanism is properly and completely reset and ready for lifting. . . .*” On-load release is needed for launching when there is a current, when the ship is making way, or potentially if there are waves which cause the hydrostatic interlock to only release intermittently. On-load release also allows an empty or fully loaded boat to drop from any height, which can kill or seriously injure the occupants. Therefore it is critical to know that the release gear is properly reset and the release handle secured.

2.3 Ensuring release hook closure. The first thing to check whenever entering the lifeboat when it is (or will be) supported by the falls is properly reset as follows:

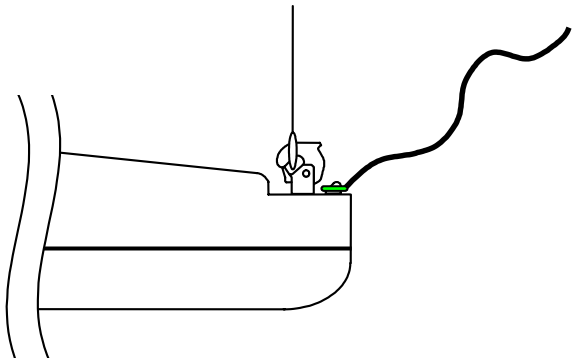
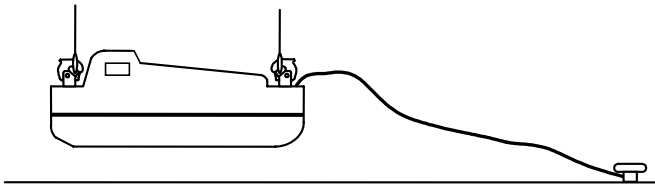
No.	Operation Guide	Schematic Diagram
(1)	Check that the reset lever on each hook is horizontal and in contact with its stop. <Activity in the lifeboat>	
(2)	Check that the release handle is in the closed (locked) position and safety pin is installed. <Activity in the lifeboat>	

3 Launching operation

3.1 Preparation before launching

No.	Operation Guide	Schematic Diagram
(1)	Prepare transceivers, and confirm the communication condition. <Activity on the ship>	
(2)	<In case of drill> Connect the push-button switch for recovering to the receptacle. <Activity on the ship>	
(3)	<In case of drill> Turn on the power switch of start panel.  <u>Detach the cable for the storage battery charge.</u> <Activity on the ship>	
(4)	Don life jackets. <Activity on the ship>	

3.2 Setting of painter

No.	Operation Guide	Schematic Diagram
(1)	Confirm the connection of the painter on the painter release device of the lifeboat. <Activity on the lifeboat>	
(2)	Confirm the connection of the painter as far forward as practicable inboard of the falls but outboard of everything else. <Activity on the ship>	

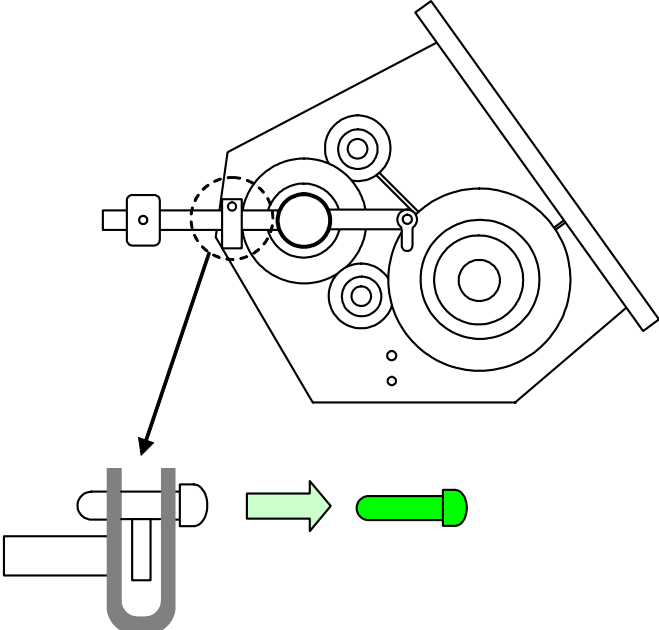


Caution

Ensure the painter is lead as far forward as practicable inboard of the lifeboat falls but outboard of everything else. Failure to do so will result in severe difficulties clearing the vessel during abandonment.

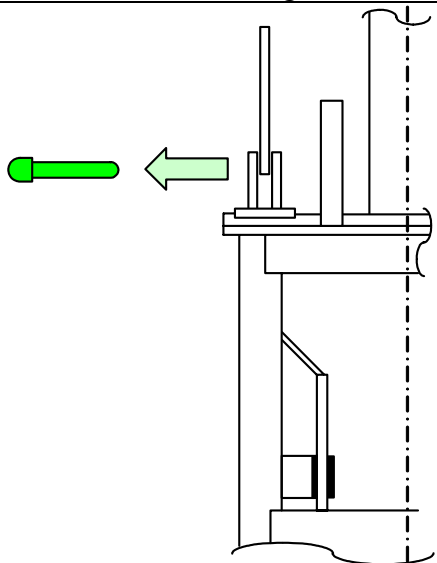
3.3 Release of safety pin (if fitted) for winch hand brake lever

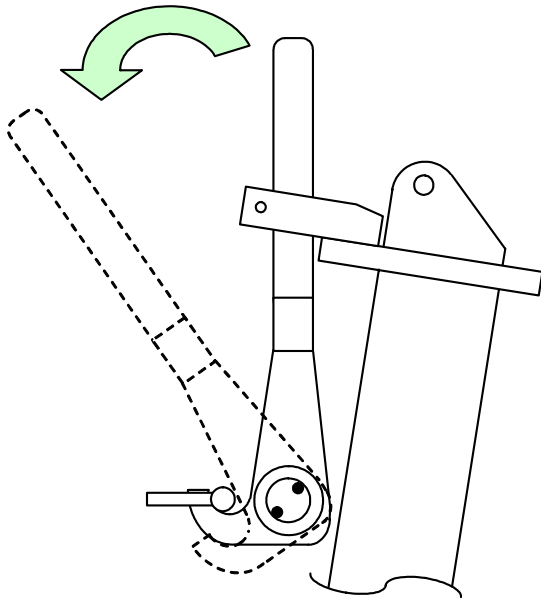
 Caution	The safety pin of the winch hand brake should not be pulled out until the completion of the preparation described in paragraphs 3.1 and 3.2.
---	---

No.	Operation Guide	Schematic Diagram
(1)	Pull out the safety pin (if fitted). <Activity on the ship>	

3.4 Release of davit arm stopper

Go up to the platform of the davit system (platform for boarding the lifeboat).

No.	Operation Guide	Schematic Diagram
(1)	Wind the boat fall manually to take off the slack. Pull out the safety pin of the davit arm stop, if fitted. <Activity on the ship> Note: Safety pins are generally intended only for use during maintenance or in port.	

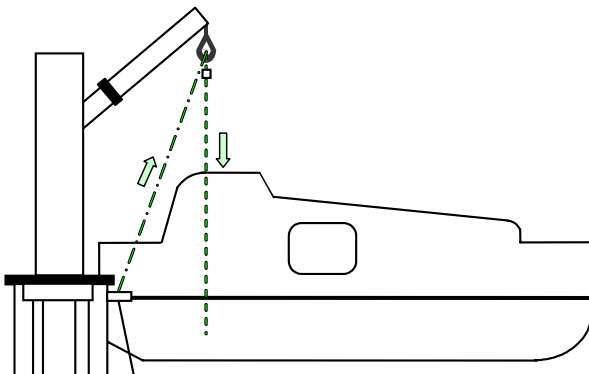
No.	Operation Guide	Schematic Diagram
(2)	Release the davit arm stop by operating the handle. <Activity on the ship>	

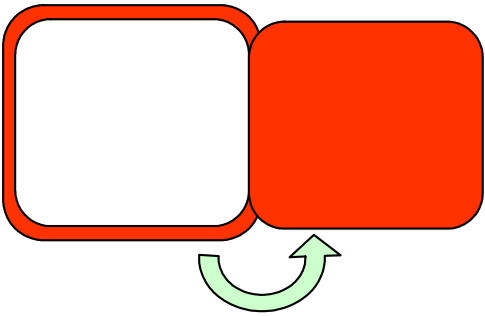
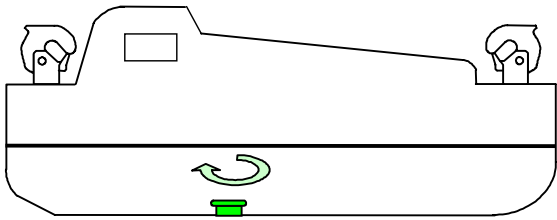
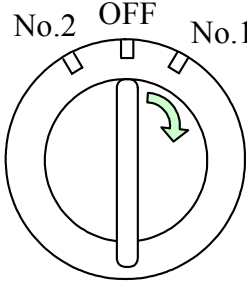
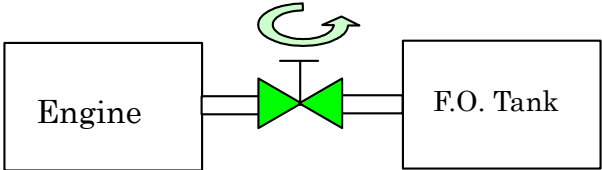
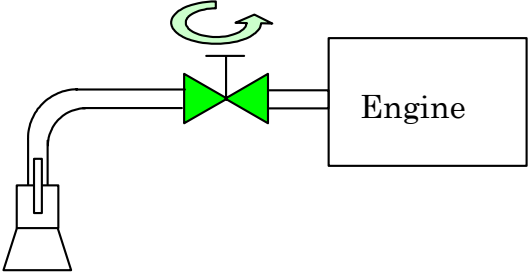


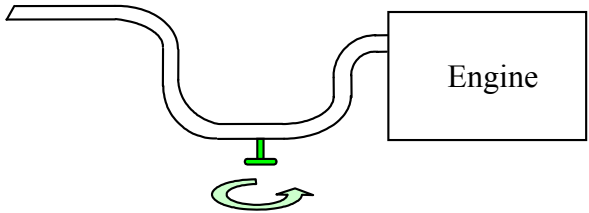
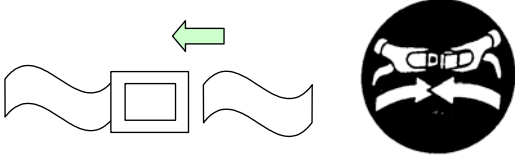
Caution

The handle should be fully operated to prevent the davit arm stop from being caught with the lock device.

3.5 Boarding the lifeboat

No.	Operation Guide	Schematic Diagram
(1)	Confirm that the remote control wire is drawn into the lifeboat. <Activity on the ship>	

No.	Operation Guide	Schematic Diagram
(2)	Open the lifeboat boarding door and board the lifeboat. <Activity on the ship> and <Activity in the lifeboat>	
(3)	Ensure the bottom plug is fitted and tight. <Activity in the lifeboat>	
(4)	Turn on the power supply switch. <Activity in the lifeboat>	
(5)	Open the fuel oil valve. <Activity in the lifeboat>	
(6)	Confirm that the cooling seawater valve is open. <Activity in the lifeboat>	

No.	Operation Guide	Schematic Diagram
(7)	Close the drain valve on exhaust pipe. <Activity in the lifeboat>	
(8)	Fasten seatbelt. <Activity in the lifeboat>	



Caution

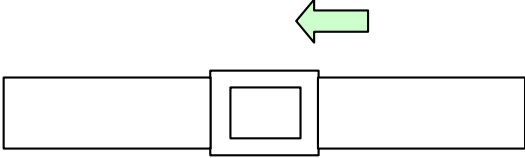
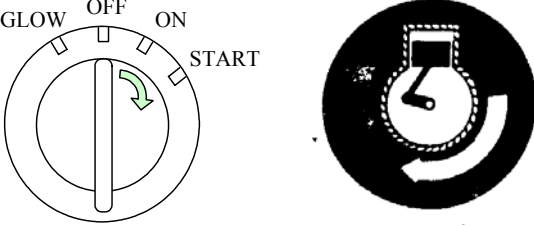
Seating positions of persons should be carefully selected to maintain a good trim of the lifeboat.

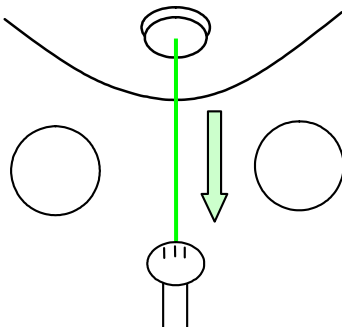


Warning

If the seat belt is not fastened, serious injury or death may occur.

3.6 Launching procedure

No.	Operation Guide	Schematic Diagram
(1)	Confirm that all crew boarded in the lifeboat are seated and their seatbelts are fastened. <Activity in the lifeboat>	
(2)	Start engine. <Activity in the lifeboat>	

No.	Operation Guide	Schematic Diagram
(3)	Pull down the winch remote control wire. <Activity in the lifeboat>	



Caution

- Ensure that no gripe or lashing is tangled around the fore and aft hooks.
- Pull down the remote control wire gently and slowly during swinging out of the lifeboat.
- Only pull down the remote control wire fully to lower the boat after swing out is complete.
- The helmsman must tell the crew to standby for splashdown when the lifeboat reaches the vicinity of the water surface.



Warning

- When using remote control gear from within the boat never wind the cord or wire around fingers, hand or wrist as this may result in the cutting off of fingers/hand.
- Do not stop the swinging out operation at deck position. Stopping shakes the lifeboat and may cause casualties.
- A rapid swing out may cause dangerous impact on the boat when the davit arm reaches the deck position.
- Inching operation shakes the lifeboat and is dangerous.



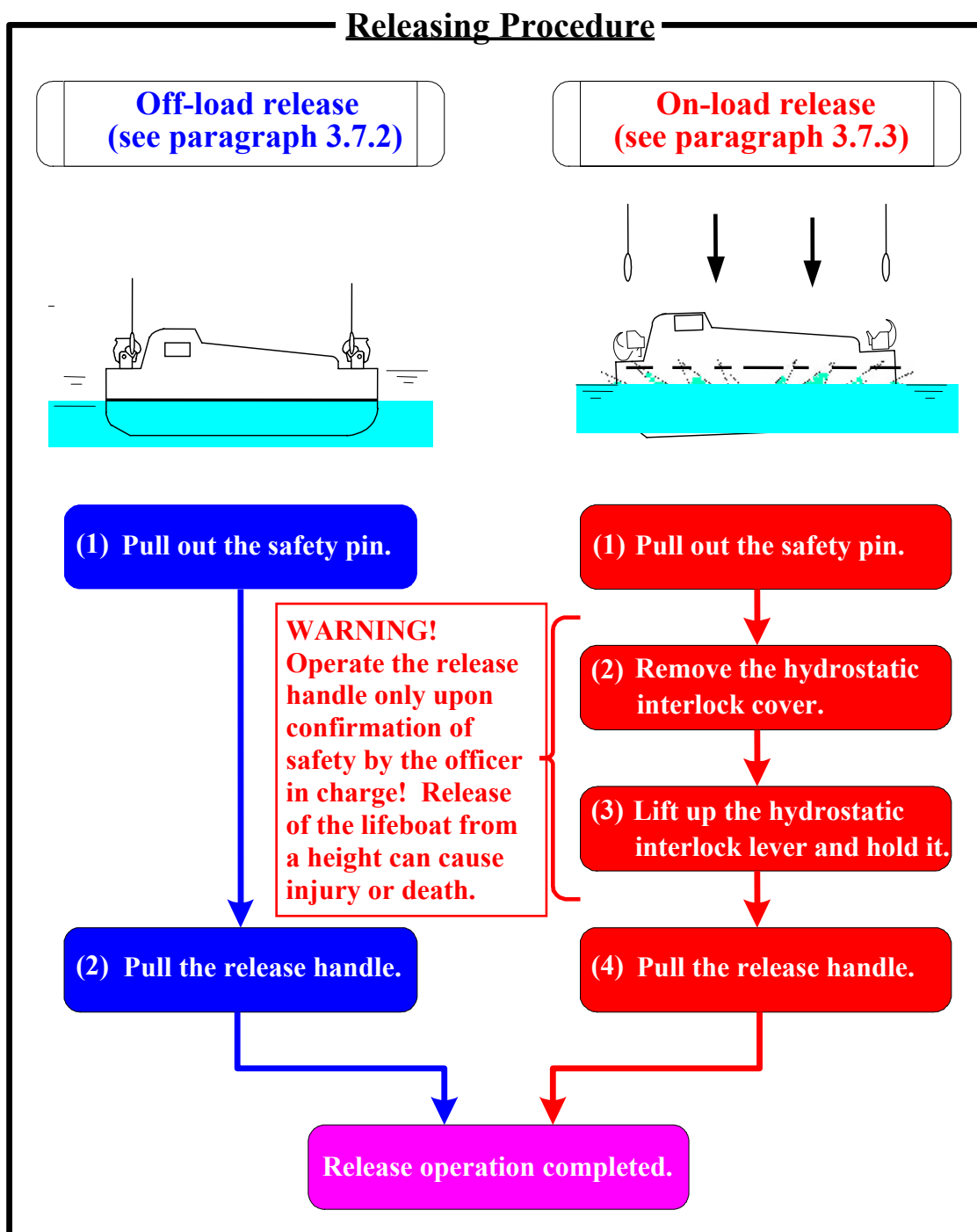
Note

During lifeboat drills, the above mentioned procedures may not be applicable because the lowering operation may be controlled from the ship's deck using the deck operation device.

3.7 Release gear operation

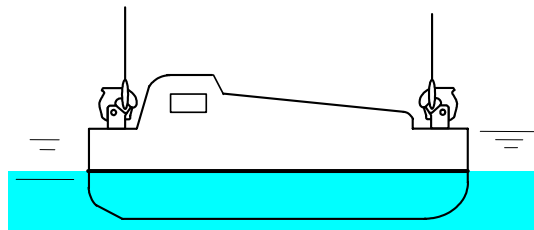
3.7.1 Releasing procedure

A flow chart of the off-load and on-load releasing procedures is shown in the following figure.



3.7.2 Off-load release

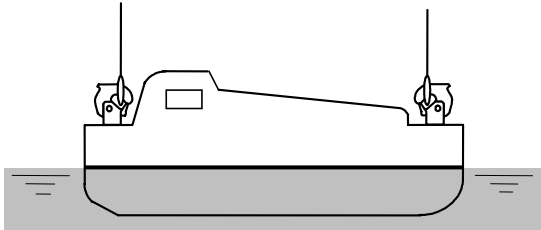
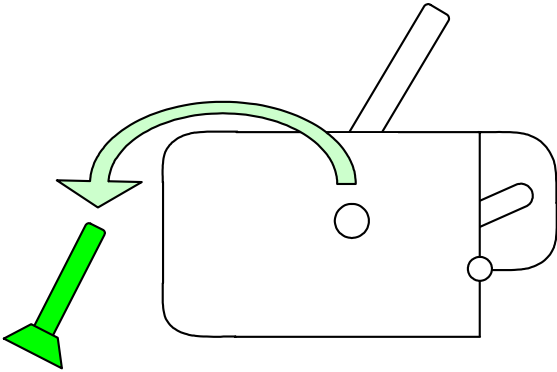
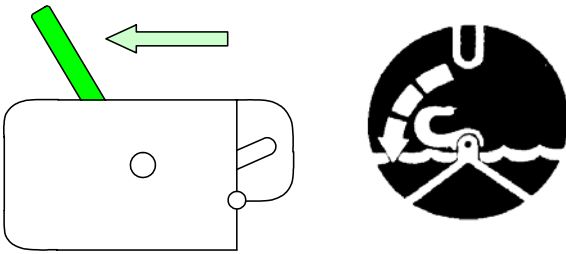
This operation is the normal method of launch and release and is conducted when the lifeboat is fully waterborne.



Caution

Confirm the following before the operation:

- The lifeboat is fully waterborne.
- The engine is started.
- All crew are in their seats with their seatbelts fastened.

No.	Operation Guide	Schematic Diagram
(1)	Confirm that the lifeboat is waterborne. <Activity in the lifeboat>	
(2)	Pull out the release handle safety pin. <Activity in the lifeboat>	
(3)	Pull the release handle to the fully open position by one action. <Activity in the lifeboat>	

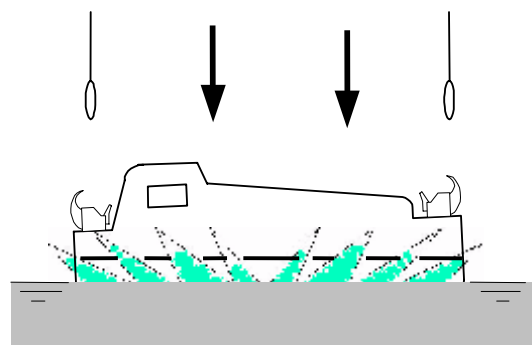


Note

In a case where the hook is not released by the above operations, confirm condition of each hook and whether the boat is waterborne or not. Even though the hooks cannot be released by the off-load release operation described above, on-load release procedure, described in the following pages, is possible.

3.7.3 On-load release

This operation is conducted when the lifeboat is not fully waterborne.





Warning

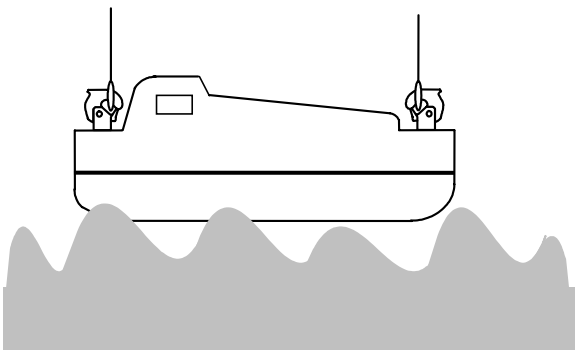
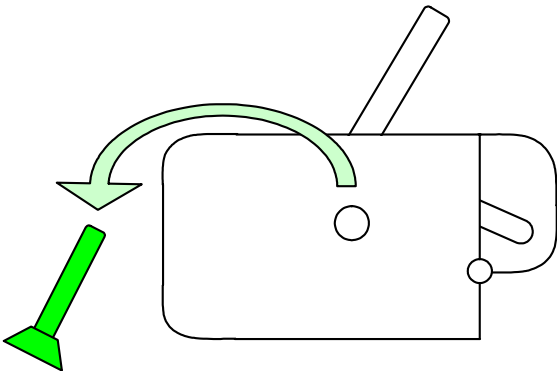
- Pay due precautions and conduct the on-load release operation in accordance with orders of the officer in charge.
- Operation of the release handle upon insufficient confirmation of safety may result in death or injury due to dropping the lifeboat in the water from a height.

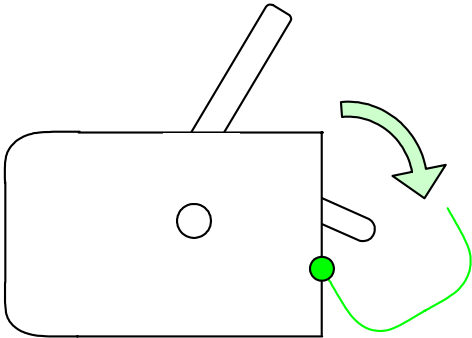
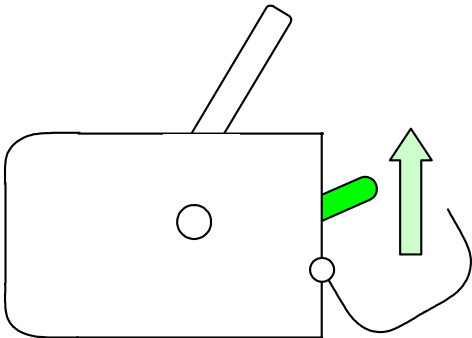
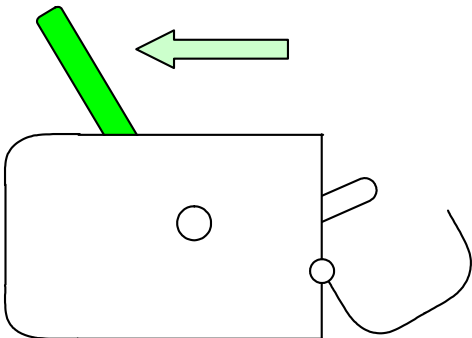


Caution

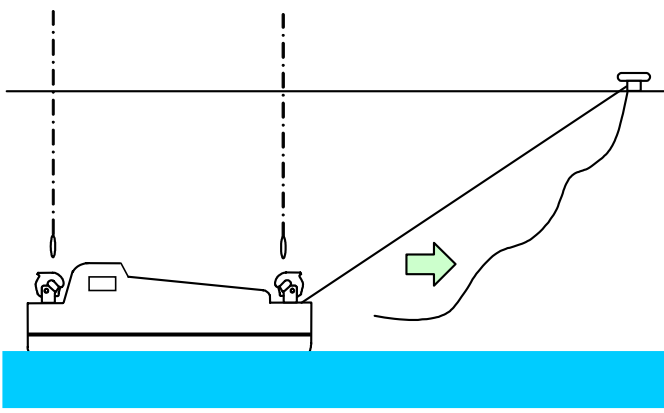
Confirm the following before the operation.

- The lifeboat is as close as possible to the water surface.
- The engine is started.
- All crew are in their seats with their seatbelts fastened.

No.	Operation Guide	Schematic Diagram
(1)	Confirm that the lifeboat is as close as possible to the water surface, but that the hydrostatic interlock is not triggered. <Activity in the lifeboat>	
(2)	Pull out the release handle safety pin. <Activity in the lifeboat>	

No.	Operation Guide	Schematic Diagram
(3)	Open the hydrostatic interlock cover.  Unlock the latch of the interlock cover. <Activity in the lifeboat>	
(4)	Lift the hydrostatic interlock lever fully and hold it. <Activity in the lifeboat>	
(5)	Pull the release handle to the fully open position by one action. <Activity in the lifeboat>	

3.8 Painter release and lifeboat operation

No.	Operation Guide	Schematic Diagram
(1)	Release the painter. <Activity in the lifeboat>	
(2)	Lifeboat operation Ahead, astern, turning, spray, lighting of interior light and canopy light, and other performances. <Activity in the lifeboat>	



Caution

- Do not operate the steering gear to turn the lifeboat while the painter is connected.
- The lifeboat should get clear of the ship promptly when the painter has been released.

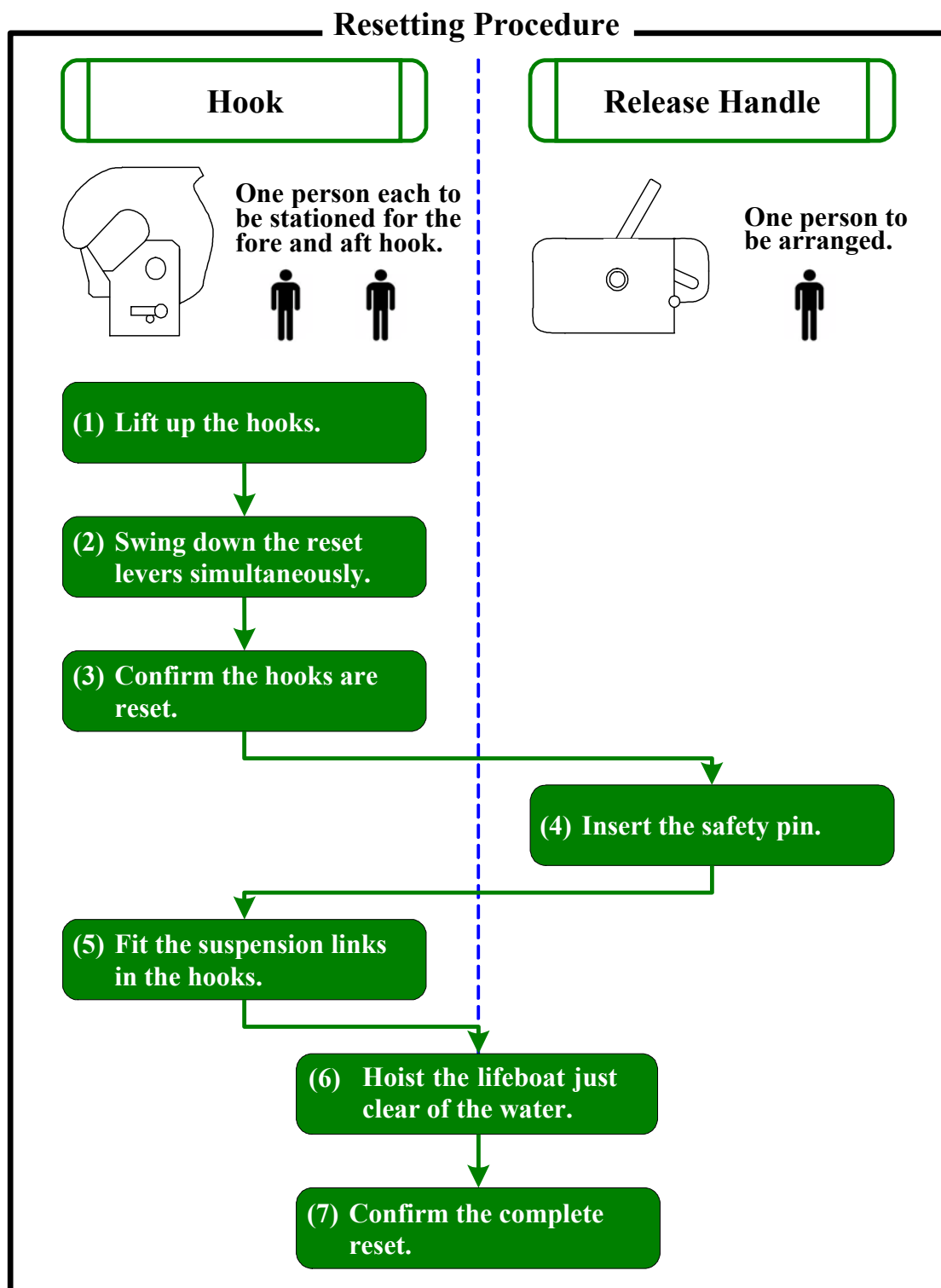
4 Recovery operation

Outline of the resetting procedures is shown in the following figure.



- Incomplete resetting may result in death or serious injury due to dropping of the lifeboat in the water from a height.**

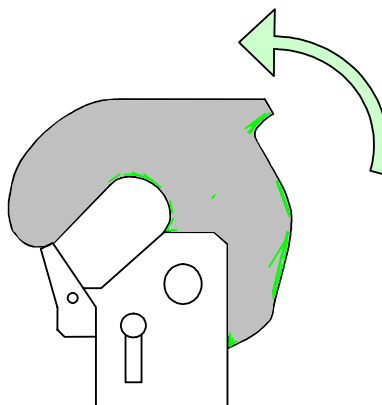
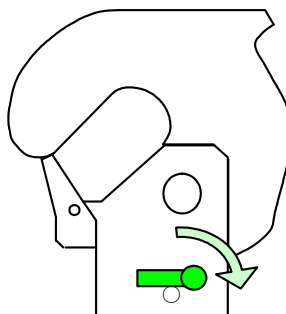
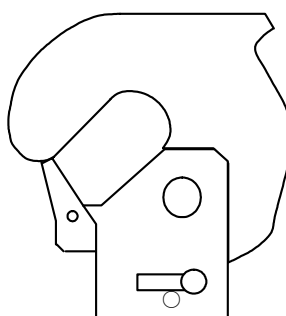
Warning

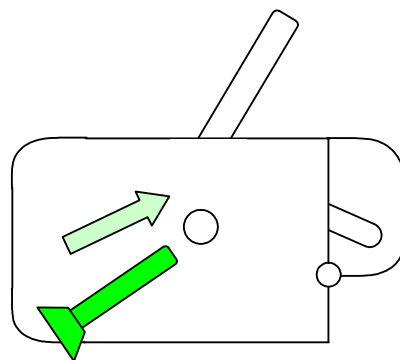


4.1 Resetting procedure of release hook

The resetting procedure is to be in accordance with the following steps.

 Note	At least three people are required for the resetting of the hooks.
--	--

No.	Operation Guide	Schematic Diagram		
(1)	Lift the fore and aft hooks and hold them closed. <table><tr><td></td><td><u>A strong effort may be required to lift the hook and force the internal lock piece to engage.</u></td></tr></table> <Activity in the lifeboat>		<u>A strong effort may be required to lift the hook and force the internal lock piece to engage.</u>	
	<u>A strong effort may be required to lift the hook and force the internal lock piece to engage.</u>			
(2)	Simultaneously swing down the reset levers on both fore and aft hooks in one continuous action to contact with the stop. <table><tr><td></td><td><u>The release handle returns to its closed (locked) position automatically when the reset levers are swung down.</u></td></tr></table> <Activity in the lifeboat>		<u>The release handle returns to its closed (locked) position automatically when the reset levers are swung down.</u>	
	<u>The release handle returns to its closed (locked) position automatically when the reset levers are swung down.</u>			
(3)	Confirm the fore and aft hooks are in the normal reset positions. <table><tr><td></td><td><u>Make sure that the reset lever is in contact with the stop.</u></td></tr></table> <Activity in the lifeboat>		<u>Make sure that the reset lever is in contact with the stop.</u>	
	<u>Make sure that the reset lever is in contact with the stop.</u>			

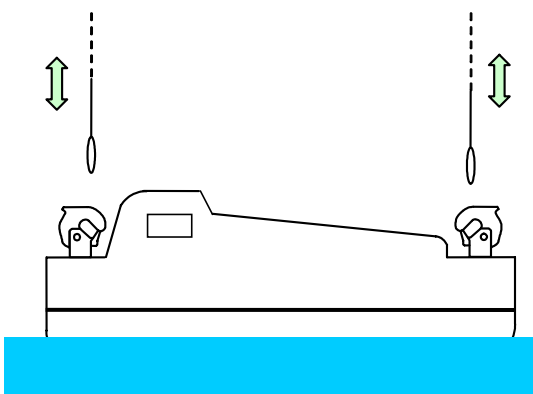
No.	Operation Guide	Schematic Diagram		
(4)	Make sure that the release handle is in the closed (locked) position and insert the safety pin. <table><tr><td></td><td><u>If the release handle is not in its closed (locked) position, it is not possible to insert the safety pin.</u></td></tr></table> <Activity in the lifeboat>		<u>If the release handle is not in its closed (locked) position, it is not possible to insert the safety pin.</u>	
	<u>If the release handle is not in its closed (locked) position, it is not possible to insert the safety pin.</u>			

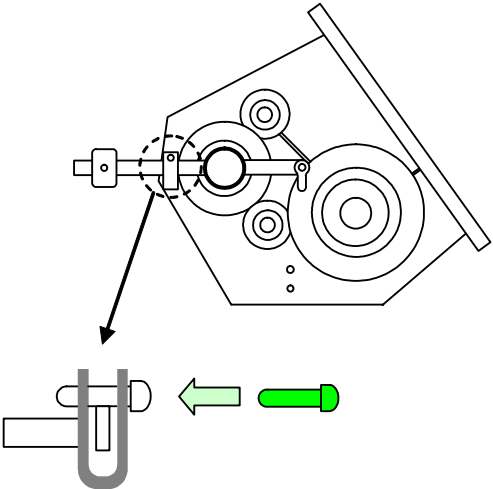
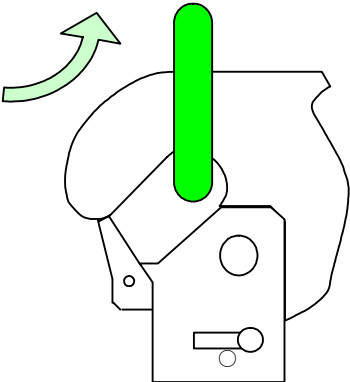
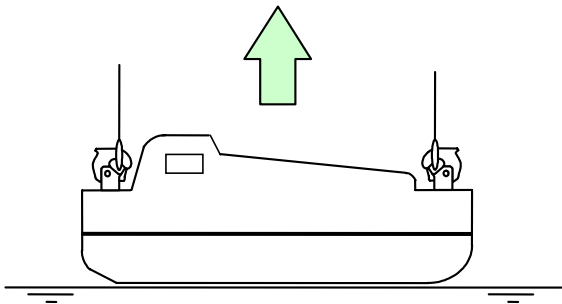
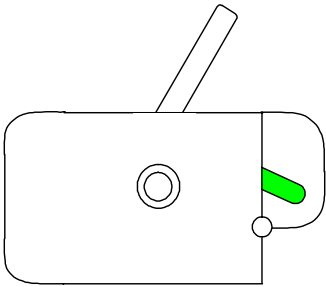
4.2 Recovery procedure

The recovery procedure is to be in accordance with the following steps only after completing the release gear resetting.

 Warning	- Great care must be exercised in reconnecting the hooks that hands and fingers are kept clear. - Failure to confirm proper resetting or to follow all steps below may result in death or serious injury due to dropping the lifeboat in water from a height.
--	--

4.2.1 Connection of the suspension link

No.	Operation Guide	Schematic Diagram
(1)	Manoeuvre the lifeboat to come under boat falls.	
(2)	Adjust the heights of the suspension links by raising or lowering the boat falls. <Activity on the ship> and <Activity in the lifeboat> under good communication.	

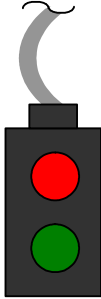
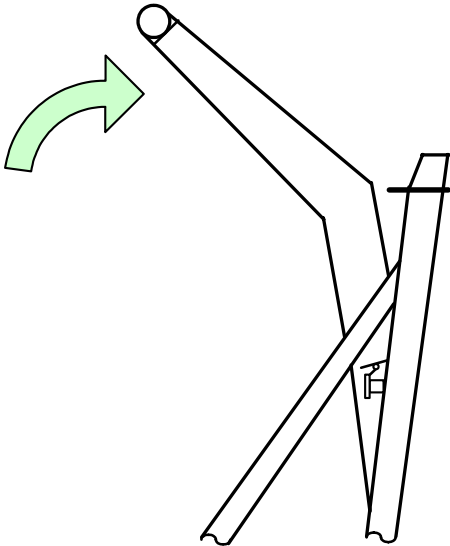
No.	Operation Guide	Schematic Diagram
(3)	Insert the safety pin of the boat winch handbrake. <Activity on the ship>	
(4)	Connect the suspension links of the davit simultaneously to both, fore and aft hooks. <Activity in the lifeboat>	
(5)	Hoist the lifeboat just clear of the water and stop hoisting.  Confirm that the fore and aft hooks are properly connected. <Activity on the ship> and <Activity in the lifeboat>	
(6)	Confirm that the hydrostatic interlock lever has moved to the “locked” position for the lifeboat not being waterborne. <Activity in the lifeboat>	
(7)	Where the resetting is incomplete, return to the first step.	

Do not conduct recovery operation of the lifeboat unless the above procedures are fully completed.

	✓ Do not connect the suspension link of the davit to the hooks until reset of the hooks has been fully completed. It is dangerous to connect the suspension link during the resetting operation of the hook and results an incomplete reset. ✓ In case of using recovery strops, it is required to connect the bottom link of the strops instead of the suspension link to the hooks.
<u>Caution</u>	

	✓ Both hooks should be connected simultaneously to prevent damage due to excessive load on one hook. ✓ If only one hook is connected, the lifeboat may be suspended by the single hook due to wave action resulting in injury or death.
<u>Warning</u>	

4.2.2 Hoisting the lifeboat

No.	Operation Guide	Schematic Diagram
(1)	Hoist the lifeboat by operating the winch using the push-button switch following the instruction by the officer in charge. <Activity on the ship>	
(2)	Hoist the lifeboat until the winch is stopped by the limit switch. <Activity on the ship>	



Caution

- The boat winch stops automatically when the davit arm strikes the limit switch.
- Where the limit switch of boat winch does not work correctly, the winch operator should manually stop the hoisting operation immediately.

No.	Operation Guide	Schematic Diagram
(3)	Disembark from the lifeboat. <Activity on the ship> and <Activity in the lifeboat>	

4.3 Stowage procedure



Note

Position **two persons** on davit platform to watch for proper stowage.

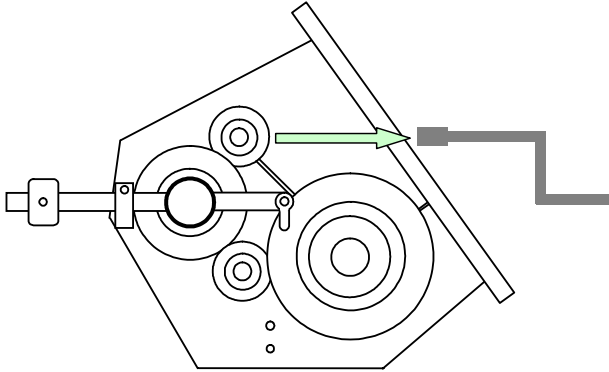
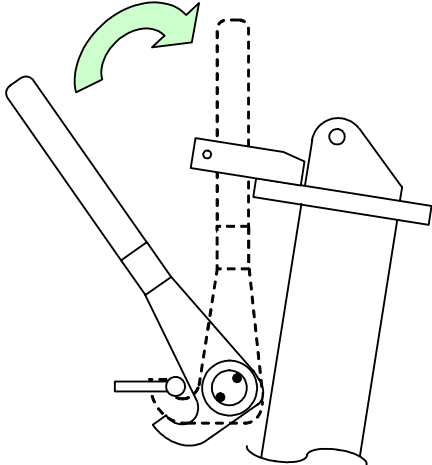
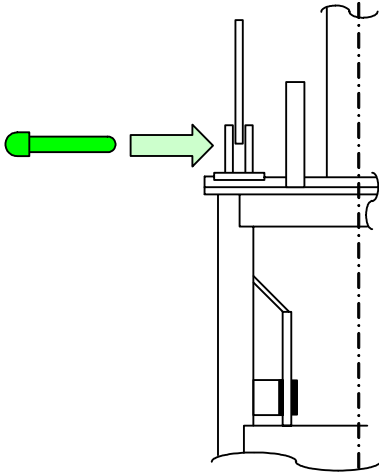
No.	Operation Guide	Schematic Diagram
(1)	Hoist the davit arm manually. <Activity on the ship>	
(2)	Confirm that the davit arm is in contact with the stop on platform. <Activity on the ship>	

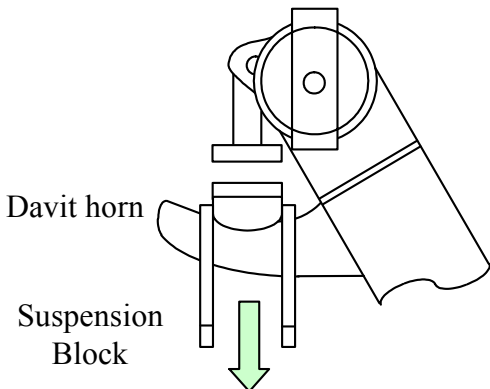


Caution

- Each person on the platform should signal to the winch operator just when the davit arm reaches the stop on the frame.
- Confirm that the davit arm and the stops are in contact fore and aft.

 Warning	• Stop the hoisting operation immediately when the signal from the watchman is received. • Over hoisting by manual operation may have serious consequences due to damage of the boat fall and the davit.
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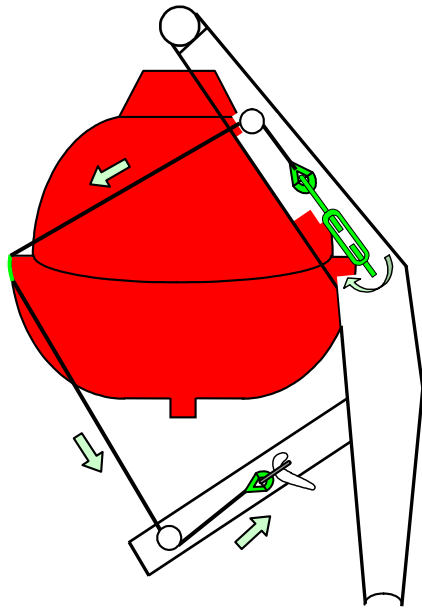
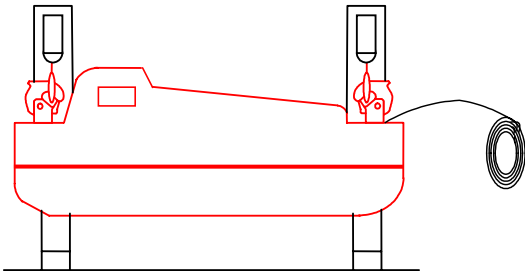
No.	Operation Guide	Schematic Diagram
(3)	Detach the manual hoisting handle. <Activity on the ship>	
(4)	Set the davit arm stop immediately. <Activity on the ship>	
(5)	Insert the safety pin to the davit arm stop handle. <Activity on the ship> Note: Safety pins are generally intended only for use during maintenance or in port.	

No.	Operation Guide	Schematic Diagram
(6)	Lower the suspension block on the davit horn by releasing the handbrake of the winch. <Activity on the ship>	 Davit horn Suspension Block



- If the suspension blocks are not on the davit horn, the boat falls remain in tension during sea going and the load may cause damage to the boat falls.**

Warning

No.	Operation Guide	Schematic Diagram
(7)	Install and tighten the auto release gripe, if fitted.  Tighten the auto release gripe rope with the turnbuckle. <Activity on the ship>	
(8)	Connect the painter to the painter release hook on the bow of lifeboat. <Activity on the ship>	

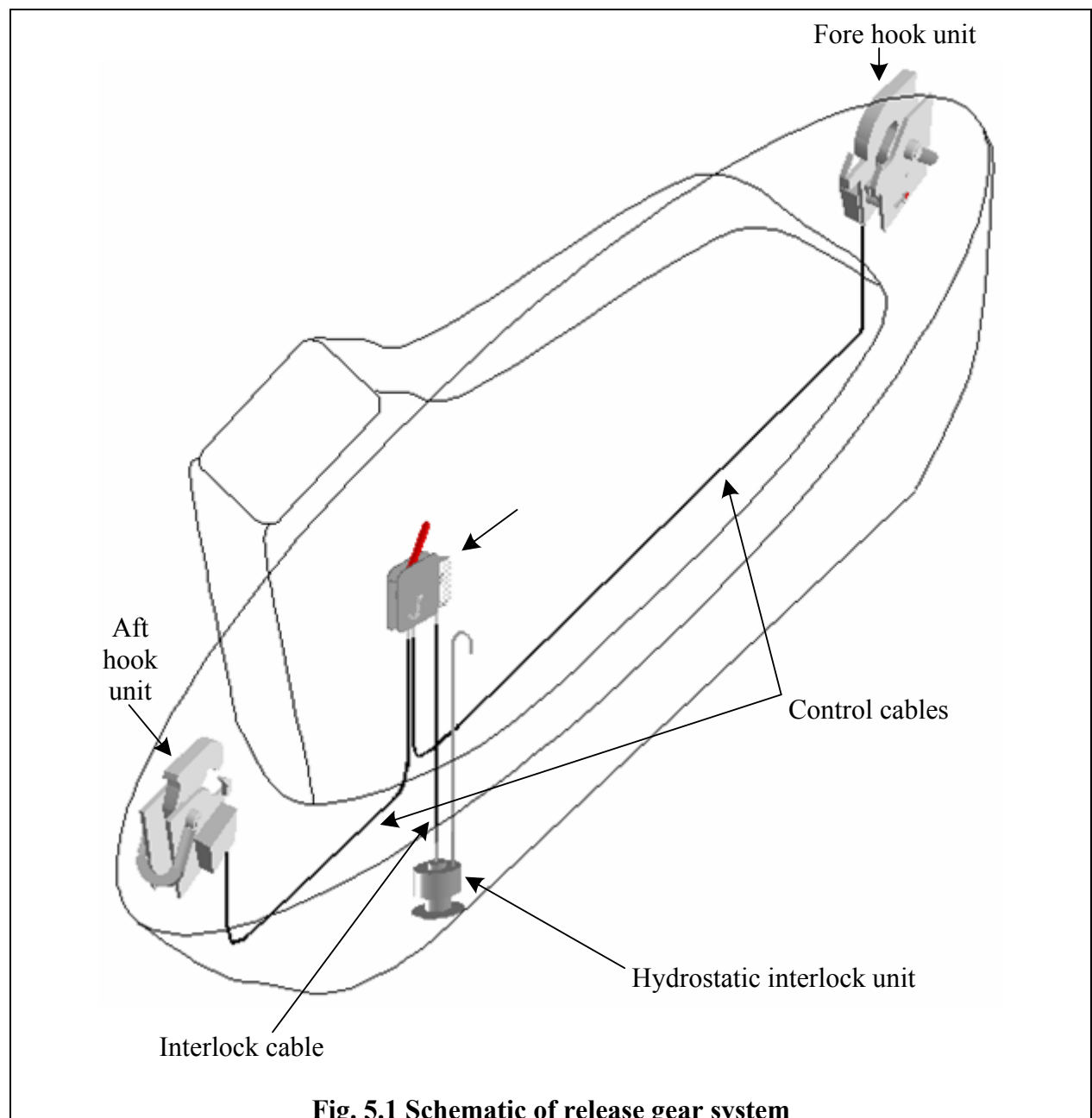
5 On-load/off-load release gear system

5.1 General

This section 5 is a description of the details of the release gear system. Read this section carefully for safe operation. This release gear system consists of fore and aft hooks, a release handle near the steering console, a hydrostatic unit and the associated cables. (See Fig. 5.1.)

The releasing operation of the hooks is conducted at the release handle near the steering console through the control cables terminating at the fore and aft hooks. The interlock system including the hydrostatic interlock unit is provided to prevent the release of the hooks when the boat is not waterborne.

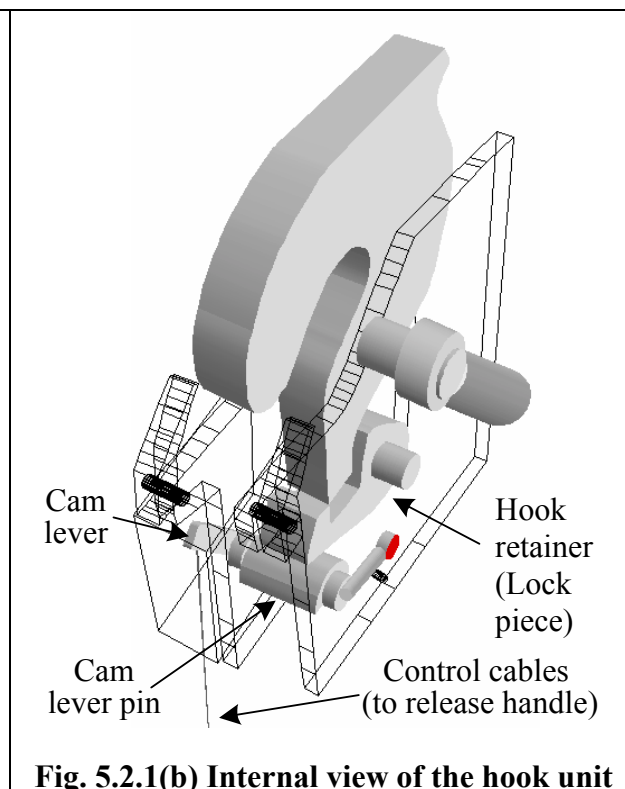
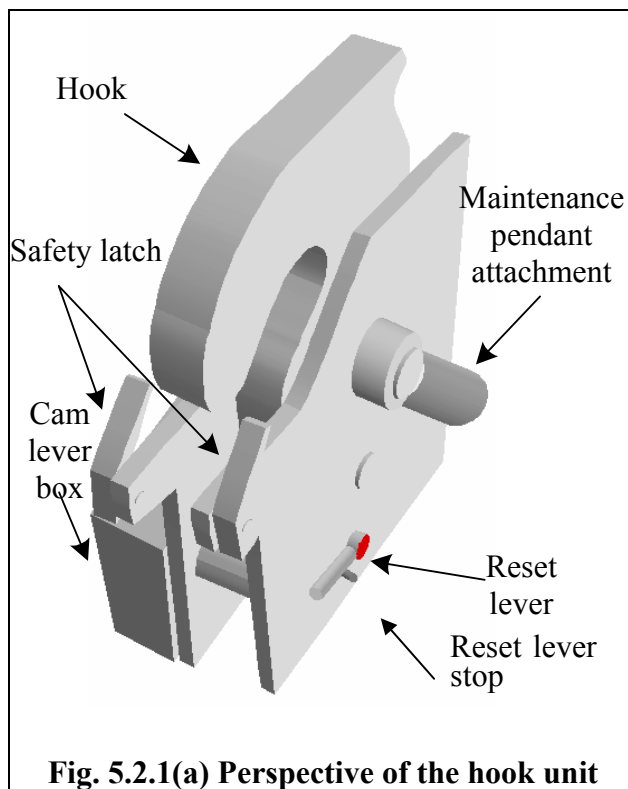
The system also has an on-load release function which makes it possible to over-ride the interlock by the hydrostatic unit. Incorrect on-load release operation may cause fatalities and due precautions should be taken for this operation.



5.2 Fore and aft hook units

5.2.1 Structure and parts names

The structure and parts names of the fore and aft hooks are shown in Fig. 5.2.1(a) and (b). The fore and aft hooks are generally identical except for the direction of installation.



5.2.2 Releasing

When the release handle near the steering console is pulled, the cam lever pin is turned by the control cable and the lock piece is then made free. Finally the hook is turned and released. (See Fig. 5.2.2.)

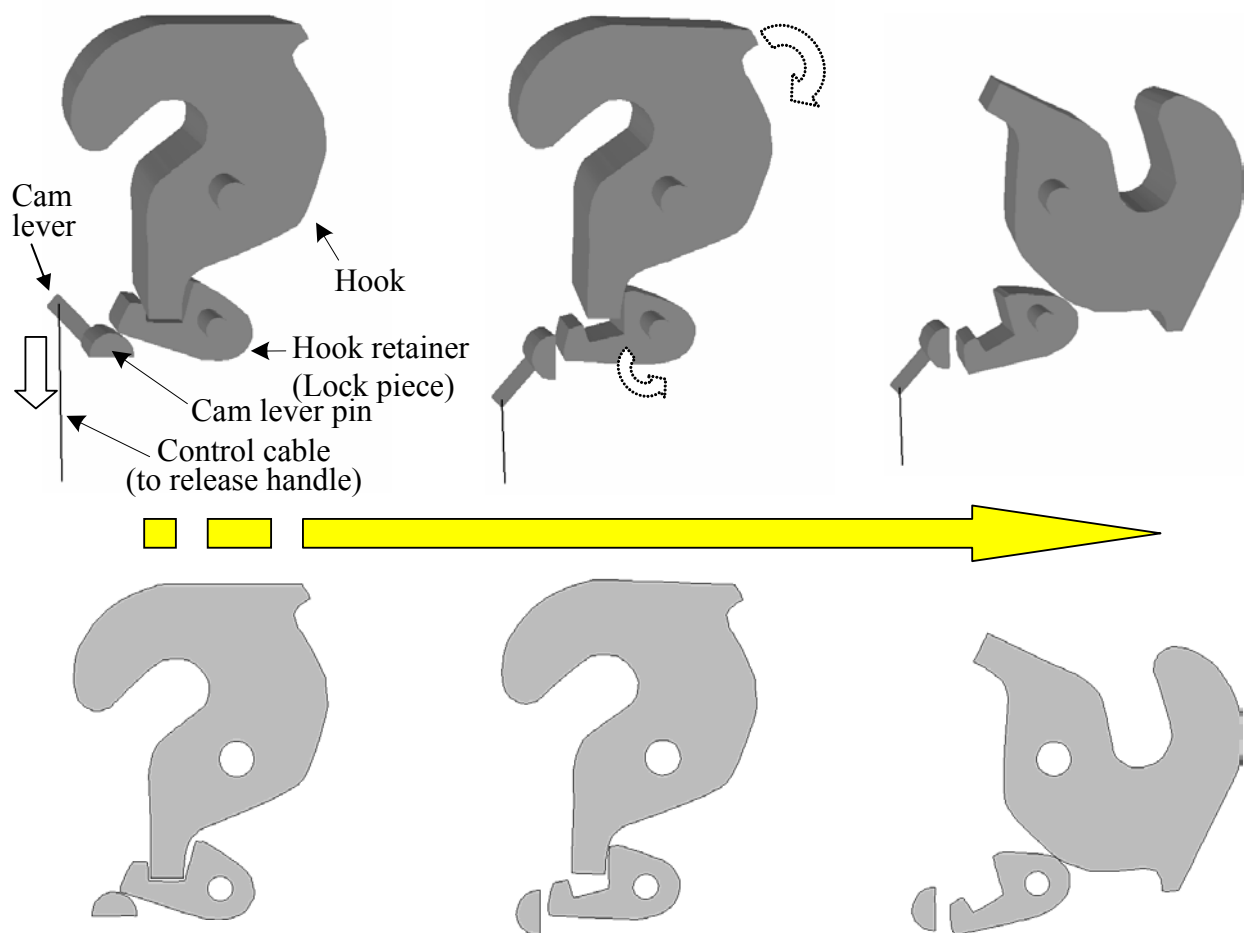


Fig. 5.2.2 Release principle of the hook unit

5.2.3 Resetting

After the resetting of hooks, the posture of each hook is held by the lock piece and the lock piece is locked by the cam lever pin with the reset lever. To ensure the proper resetting of the fore and aft hooks, the procedures described in paragraph 4.1 should be followed. The fore and aft reset levers must be operated simultaneously. After simultaneous resetting of the hooks, the release handle near the steering console also returns to the closed position. (See Fig. 5.2.3.)

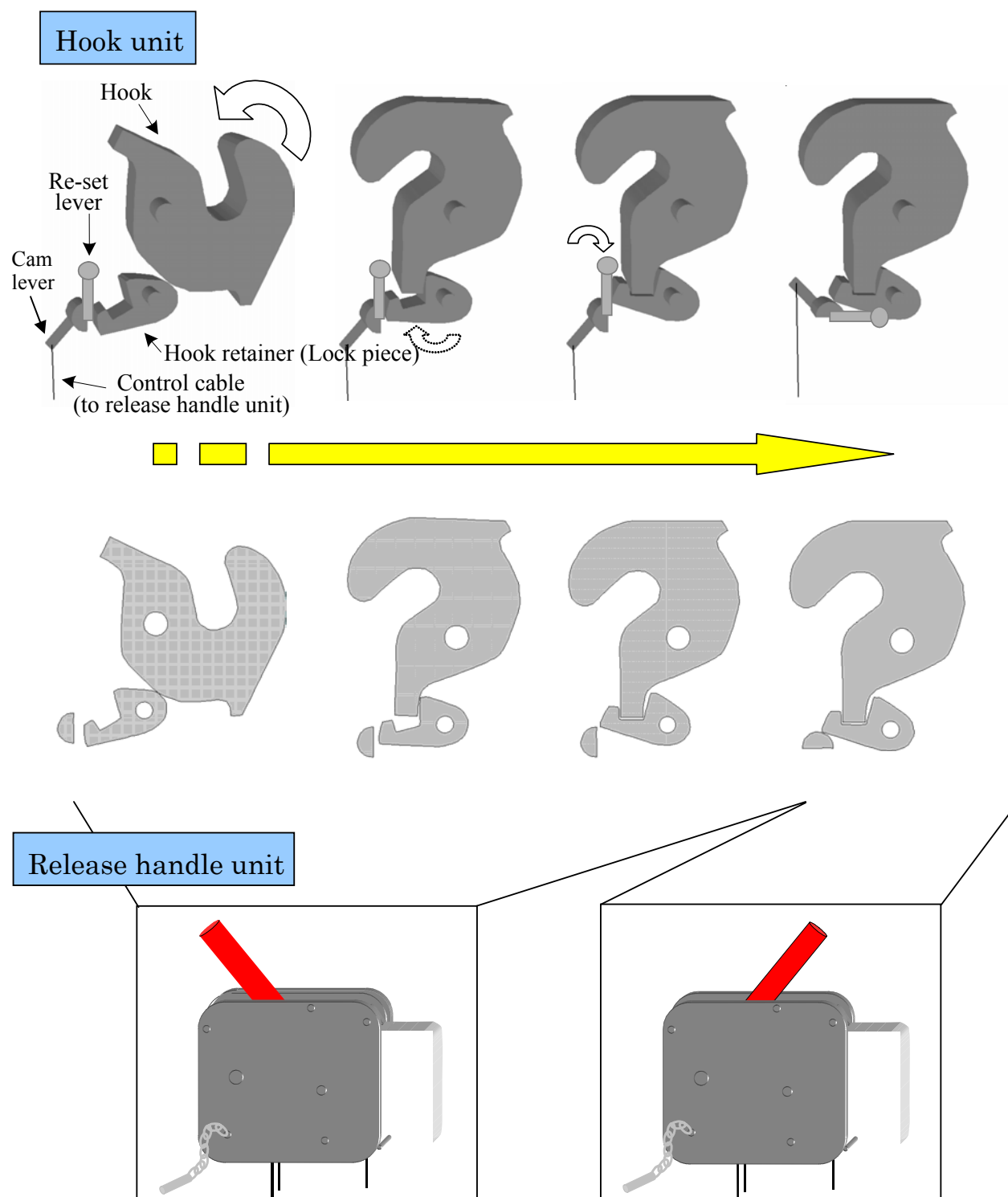
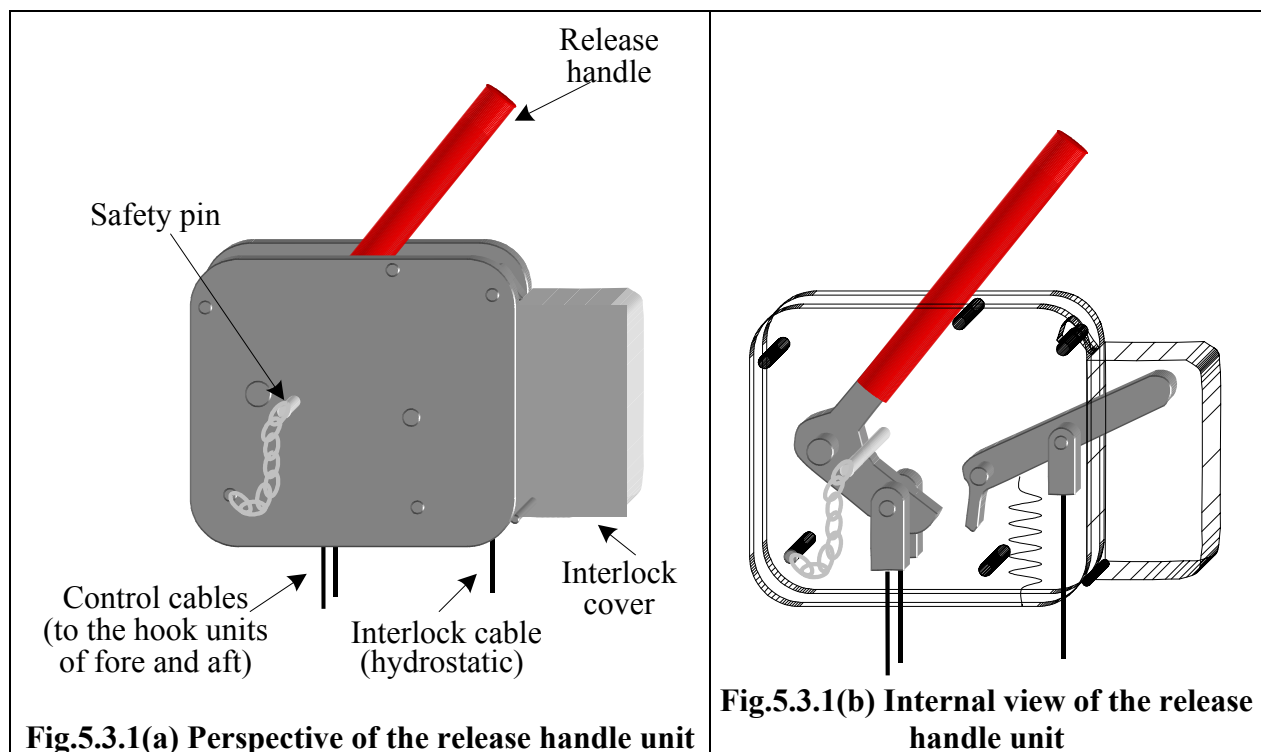


Fig. 5.2.3 Reset principle of the hook unit

5.3 Release handle unit

5.3.1 Structure and parts names

The structure and parts names of the release handle are shown in Figures 5.3.1(a) and (b).



5.3.2 Operation

When the lifeboat is fully waterborne, the lifeboat can be released by removing the safety pin and then pulling the release handle fully and quickly to the open position (off-load release). The lifeboat can also be released by the same operation of the release handle even though the lifeboat is not fully waterborne, by opening the interlock cover and lifting up the interlock lever. This over-rides the interlock function of the hydrostatic interlock unit (on-load release).

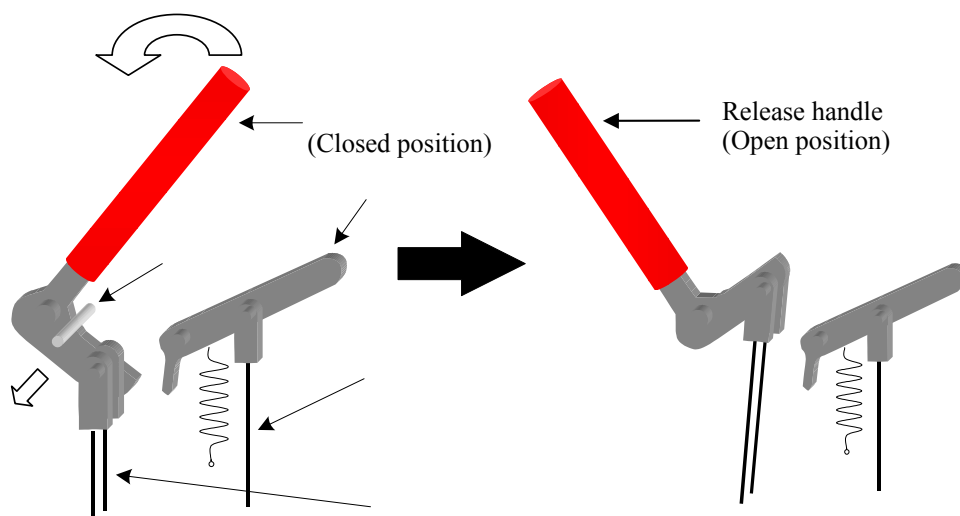
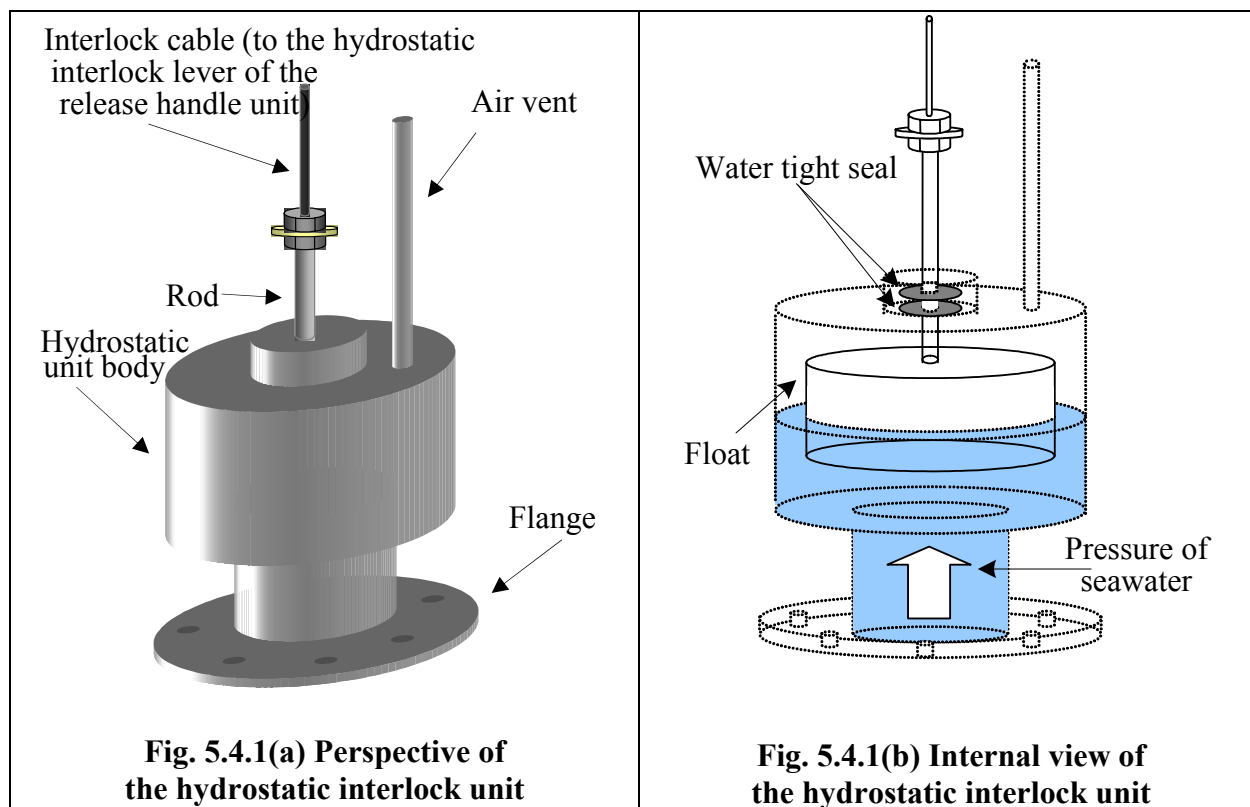


Fig. 5.3.2 Operation procedure of the release handle

5.4 Hydrostatic interlock unit

5.4.1 Structure and parts name

Structure and parts names of the hydrostatic interlock unit are shown in Fig. 5.4.1(a) and (b).



5.4.2 Operation

When the lifeboat is fully waterborne, the hydrostatic interlock unit pushes up the interlock lever through the interlock cable by the water lifting the float and thus allowing the release handle to be operated. Contrary to this, operation of the release handle is not allowed by the hydrostatic interlock unit when the lifeboat is not fully waterborne.

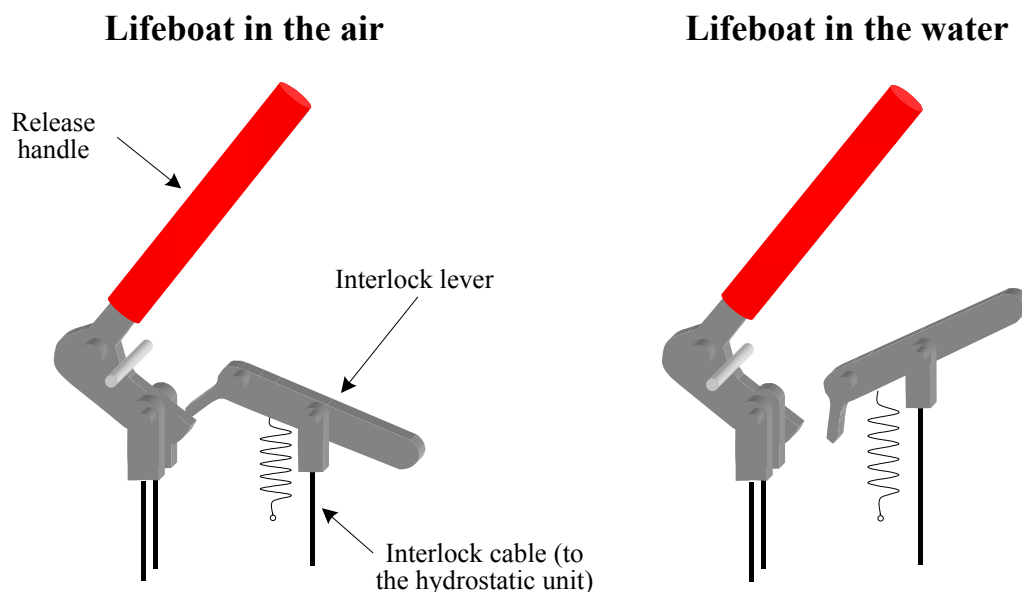


Fig. 5.4.2 Schematic diagram of the interlock

6 Inspection and maintenance

6.1 General precautions

SOLAS regulation III/20 requires that all life-saving appliances shall be in working order and ready for immediate use before the ship leaves port and at all times during the voyage. Lifeboats, launching appliances and release gear are required by SOLAS regulation III/20 to be inspected weekly and monthly according to the instructions for on-board maintenance complying with the requirements of SOLAS regulation III/36. Also MSC/Circ.1093 describes more detailed procedures for periodic servicing and maintenance of lifeboats, launching appliances and release gear.

This manual includes only the weekly and monthly inspection and maintenance, which are conducted on board under the direct supervision of a senior ship's officer.

6.2 Inspection and maintenance of lifeboat and release gear system

6.2.1 Inspection and maintenance plan

Lifeboats should be inspected and maintained weekly and monthly in accordance with the following tables. The tables list the items to be checked, the method of inspection, the procedures to be followed, and the frequency at which the items are to be attended to.

Table 6.2.1.1 covers the basic lifeboat (including release gear).

Table 6.2.1.2 covers the lifeboat engine.

Table 6.2.1.3 covers the electric parts.

Table 6.2.1.4 covers the lifeboat equipment.

Table 6.2.1.1 Inspection procedure and maintenance plan for boat

Items		Method	Inspection procedure	Maintenance plan	
				Weekly	Monthly
Outside hull		Visual	Inspect for deformation or other defects. Inspect for peeling or any damage of retro-reflective material.	X	X
Outside canopy		Visual	Inspect for deformation or other defects.	X	X
Buoyant lifeline		Visual	Inspect for any damage.	X	X
Foldable canopy ^{*1}		Visual	Inspect for any damage to canopy.	X	X
Inside boat	GRP	Visual	Inspect for deformation or other defects.	X	X
	Wood	Visual	Inspect for crack or rot.	X	X
	Metal	Visual	Inspect for corrosion.	X	X
Drain valve		Visual	Inspect for any damage.	X	X
Release gear		Visual	Check resetting condition. Remove any dirt on moving parts.	X	X
Painter release device		Visual	Check resetting condition. Remove any dirt on moving parts.	X	X
All hatches		Visual Operation	Inspect for easy operation and good condition of gasket.	X	X
Window		Visual	Inspect for any crack on glass. Clean both sides of glass.		X
Steering gear	Visual	Visual	Inspect for any damage of rudder, tiller and emergency tiller.	X	X
	Operation	Operation	Inspect for good operation of main steering and connecting emergency tiller.	X	X
Stern tube		Visual	Inspect gasket and check for leakage of seawater.	*2	*2
Propeller and guard		Visual	Inspect for any damage.	X	X
Breather valve		Operation	Inspect operation of valve.		X
Water spray system	Clutch V-belt	Visual	Inspect for proper tension of V-belt. Inspect for any damage of belt.		X
		Operation	Inspect for proper operation.		X
	Spray pipe	Visual	Inspect for corrosion or any damage.		X
	Spray nozzle	Visual	Remove any deposit.		X
Air support system	High pressure pipe	Visual	Inspect for any damage.		X
	Regulator	Visual	Inspect for any damage.		X
	Air cylinder	Visual	Inspect for corrosion or any damage.		X

Note 1: Applicable only to partially enclosed lifeboats.
2: When waterborne.

Table 6.2.1.2 Inspection procedure and maintenance plan for engine

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Engine	Visual	Check in good condition.		X
	Operation	Start and operate the engine. Check operation of throttle. Check operation of clutch.	X	X
Lubricating oil	Visual	Check an amount of oil.		X
	Visual	Check viscosity of oil with finger and ensure it's not dirty.		X
Fuel oil tank	Visual	Check securing condition of the tank (corrosion or leakage and connecting parts). Check an amount of fuel oil.		X
Fuel oil pipe	Visual	Check any leakage on connecting parts.		X
Water cooler	Visual	Check an amount of fresh water.		X
Cooling water pipe	Visual	Check any leakage on pipe.		X
Starter switch	Operation	Check operating properly.	X	X
Glow lamp	Operation	Check light on when pre-heating.	X	X
Tachometer	Operation	Check proper indication of revolution.	X	X
Oil pressure warning lamp, Charge lamp	Operation	Check proper light on or light off condition.	X	X
Stop wire	Operation	Stop the engine.	X	X

Table 6.2.1.3 Inspection procedure and maintenance plan for electric parts

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Battery	Visual	Check lead wire.		X
	Measure	Measure voltage of battery. When voltage is low, charge battery.		X
Inside lamp	Operation	Check light on.		X
Canopy lamp	Operation	Check light on.		X
Search light	Operation	Check light on.		X
Electric wiring	Visual	Check any defects on wiring.		X

Table 6.2.1.4 Inspection procedure and maintenance plan for lifeboat equipment

Check for condition, quantity and expiry date where applicable

No.	Items	Maintenance plan	
		Weekly	Monthly
1	Oars		X
2	Thole pins or crutches		X
3	Boat hooks		X
4	Buoyant bailer		X
5	Buckets		X
6	Survival manual	X	X
7	Compass		X
8	Sea-anchor		X
9	Painters		X
10	Hatchets		X
11	Watertight receptacle and fresh water		X
12	Dipper with lanyard		X
13	Graduated drinking vessel		X
14	Food ration in watertight container		X
15	Rocket parachute flare		X
16	Hand flare		X
17	Buoyant smoke signal		X
18	Waterproof electric torch		X
19	One daylight signalling mirror		X
20	One copy of life-saving signals	X	X
21	One whistle		X
22	A first-aid kit		X
23	Anti-seasickness medicine		X
24	One seasickness bag for each person		X
25	A jack knife		X
26	Three tin openers		X
27	Two buoyant rescue quoits		X
28	A manual pump	X	X
29	One set of fishing tackle		X
30	Portable fire-extinguishing equipment		X
31	A radar reflector		X
32	Thermal protective aids		X
33	Compartments for storage		X
34	A means for collecting rainwater		X
35	A boarding ladder		X
36	Seat belts		X
37	Instructions of immediate action	X	X
38	Water resistant instructions	X	X

6.2.2 On board maintenance procedures

6.2.2.1 General

As a result of inspection, any defective parts should be repaired in accordance with following procedures. Any shortage of quantity should be supplemented to the correct number. Defective parts other than the following should be recorded along with their details and ordered for maintenance and repair by the manufacturers.

6.2.2.2 Boat

6.2.2.2.1 Rust on metal parts

Give anti-rusting treatment according to degree of damage, or replace if significantly wasted.

6.2.2.2.2 Damage of fabric

Repair fabric products by same material according to degree of damage.

6.2.2.2.3 Gasket

Repair with adhesive sealant according to degree of damage.

6.2.2.2.4 Drain valve

Remove any dirt and check correct operation.

6.2.2.2.5 Water spray system

Remove any deposit from spray nozzles. Tighten up pipe connecting parts when any leakage was noted. Adjust to proper tension on V-belt.

6.2.2.3 Engine

6.2.2.3.1 Oil coating and filling

When any rust exists, remove rust and coat with machine oil. Rotating parts should be filled with lubricating oil.

6.2.2.3.2 Operating test

An operational test of the engine should be carried out on board the ship and in the afloat condition after launching at an appropriate opportunity to check the running condition. After the operational test, ensure that the valves for the cooling water line are opened and flushed with fresh water and drained completely.

6.2.2.4 Electric parts

6.2.2.4.1 Battery

Fill up battery with electrolyte if level is below the designated position. Tighten up electric terminal if it is loose.

6.3 Inspection and maintenance of launching appliances (davits and winches)

6.3.1 Inspection and maintenance plan

Launching appliances should be inspected and maintained weekly and monthly in accordance with the following tables. The tables list the items to be checked, the method of inspection, the procedure to be followed, and the frequency at which the items are to be attended to.

Table 6.3.1.1 covers the davit.

Table 6.3.1.2 covers the winch.

Table 6.3.1.3 covers the electric parts.

Table 6.3.1.1 Inspection procedure and maintenance plan for davit

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Frame	Visual	Check corrosion, deformation and depression.	X	X
Davit arms	Visual	Check corrosion, deformation and depression.	X	X
	Operation	Moving out from stowed position.	X	
	Operation	Turning out from stowed position.		X
Sheave, suspension block	Visual	Check wear and corrosion.		X
	Operation	Check moving condition.	X	X
	Lubricate	Lubricate/grease.		X
Hinge pin, sheave pin	Lubricate	Lubricate/grease.		X
Davit arm stopper and trigger hook	Visual	Check wear and corrosion.	X	X
	Operation	Check moving condition.	X	X
	Lubricate	Lubricate/grease.		X
Boat fall, Turn buckle	Visual	Check wear, breakage of wire and corrosion.		X
	Lubricate	Lubricate/grease.		X
	Turn ends	Turn ends of boat fall (2.5 years).		
	Replacing	Replacing boat fall (5 years).		
Lashing wire rope	Visual	Check wear, corrosion and looseness.	X	X
Deck operation device	Operation	Check moving condition.		X
	Lubricate	Lubricate/grease.		X
Remote control wire	Visual	Check wear and corrosion.	X	X
	Operation	Check moving condition.		X
	Lubricate	Lubricate/grease.		X
Boat chock	Visual	Check wear and corrosion.	X	X

Table 6.3.1.2 Inspection procedure and maintenance plan for winch

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Gear box, gear, bearing, oil seal	Visual	Check level and deterioration of lubricating oil.		X
	Operation	Check unusual noise.		X
Brake system, Centrifugal brake	Visual	Check corrosion or any defects.	X	X
Wire end cotter	Visual	Check looseness.		X
Brake lever	Visual	Check corrosion or any defects.	X	X
	Operation	Check operating condition.	X	X
Speed change lever	Lubricate	Lubricate/grease.	X	X

Table 6.3.1.3 Inspection procedure and maintenance plan for electric parts

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Electric motor	Visual	Check wiring.	X	X
	Operation	Check normal operation.		X
Limit switch	Visual	Check wiring.	X	X
	Operation	Check normal operation.		X
	Lubricate	Lubricate/grease.		X
Push-button switch box and cable	Visual	Check wiring and other defects.	X	X
	Operation	Check normal operation.		X
Start panel	Visual	Check wiring and other defects.	X	X
	Operation	Check normal operation.		X

6.3.2 On board maintenance procedure

6.3.2.1 General

As a result of inspection, any defective parts should be repaired in accordance with following procedures. Any shortage of quantity should be supplemented to correct number. Defective parts other than the followings should be recorded along with their details and ordered for maintenance and repair by the manufacturers.

6.3.2.2 Wire rope

6.3.2.2.1 Wire ropes should be changed in the following cases:

- .1 break of elemental wire was observed;
- .2 7% reduction of nominal diameter was observed;
- .3 kink or looseness of ply was observed; or
- .4 erosion/corrosion was observed.

6.3.2.2.2 Check fixing condition of wire ropes.

6.3.2.2.3 Change the boat falls within an appropriate period.

6.3.2.2.4 Adjust the length of boat falls as necessary so that the clearances between the davit arm and davit arm stopper at fore and aft are almost the same.

6.3.2.2.5 Ensure that material and diameter of suspension links are as specified by the release gear manufacturer.

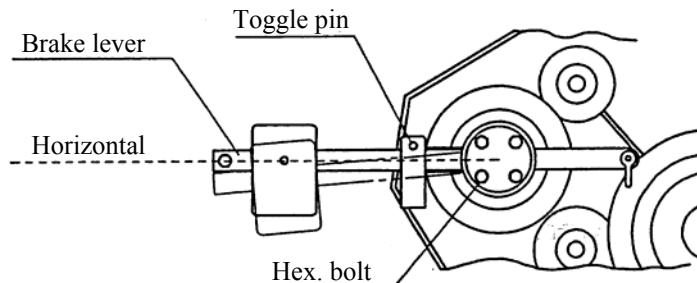
6.3.2.3 Boat winch

6.3.2.3.1 Prior to commencement of the maintenance work for the winch, the boat should be secured to prevent movement.

6.3.2.3.2 Oil should be checked and changed if discoloured. In case that oil level is low, oil should be added until the its surface comes to the designated level in the oil gauge.

6.3.2.3.3 Surfaces of each gear inside the gear box should be checked. In case that a defect is found on a surface of gear, the gear box should be replaced or repaired.

6.3.2.3.4 In case that the angle of brake lever has dropped due to abrasion of the brake lining, the angle of the brake lever should be adjusted by loosening the bolts, adjusting the angle and tightening the bolts again.



6.3.2.4 Greasing

6.3.2.4.1 Lubrication is essential for the function of the davit and winch and regular checking is necessary. Greasing also should be regularly conducted. For appropriate greasing, the detailed structure of the davit and winch and the functions of their parts should be understood.

6.3.2.4.2 All grease nipples of the davit should be greased at least once a month.

6.3.2.4.3 Gear oil inside the boat winch should regularly be checked regarding amount, change of colour and mixture of moisture.

6.3.2.4.4 Wire rope oil/grease should be regularly checked to prevent loss of oil/grease. Wire rope should be oiled or greased every two months in general.

ANNEX 7

DRAFT MSC CIRCULAR

MEASURES TO PREVENT ACCIDENTS WITH LIFEBOATS

1 The Maritime Safety Committee, [at its eighty-first session (10 to 19 May 2006)], recalled that at its seventy-fifth session (15 to 24 May 2002), it had considered the issue of the unacceptably high number of accidents with lifeboats in which crew were being injured, sometimes fatally, while participating in lifeboat drills and/or inspections, and noted that most accidents fell under the following categories:

- .1 failure of on-load release mechanism;
- .2 inadvertent operation of on-load release mechanism;
- .3 inadequate maintenance of lifeboats, davits and launching equipment;
- .4 communication failures;
- .5 lack of familiarity with lifeboats, davits, equipment and associated controls;
- .6 unsafe practices during lifeboat drills and inspections; and
- .7 design faults other than on-load release mechanisms.

2 Pending further consideration of the problem, the Committee approved MSC/Circ.1049 on Accidents with lifeboats, to draw the attention of manufacturers, shipowners, crews and classification societies to the personal injury and loss of life that may follow inadequate attention to the design, construction, maintenance and operation of lifeboats, davits and associated equipment and urged all concerned to take necessary action to prevent further accidents with lifeboats. It invited Member Governments to:

- .1 bring the circular to the attention of their maritime Administrations, relevant industry organizations, manufacturers, shipowners, crews and classification societies;
- .2 take the necessary action to prevent further accidents with lifeboats pending the development of appropriate IMO guidance;
- .3 ensure that:
 - .3.1 on-load release equipment used on ships flying their flag is in full compliance with the requirements of paragraphs 4.4.7.6.2.2 to 4.4.7.6.5 of the LSA Code;
 - .3.2 all appropriate documentation for the maintenance and adjustment of lifeboats, launching appliances and associated equipment is available on board;

- .3.3 personnel undertaking inspections, maintenance and adjustment of lifeboats, launching appliances and associated equipment are fully trained and familiar with these duties;
 - .3.4 maintenance of lifeboats, launching appliances and associated equipment is carried out in accordance with approved established procedures;
 - .3.5 lifeboat drills are conducted in accordance with SOLAS regulation III/19.3.3 for the purpose of ensuring that ship's personnel will be able to safely embark and launch the lifeboats in an emergency;
 - .3.6 the principles of safety and health at work apply to drills as well;
 - .3.7 personnel undertaking maintenance and repair activities are appropriately qualified;
 - .3.8 hanging-off pennants should only be used for maintenance purposes and not during training exercises;
 - .3.9 all tests required for the design and approval of life-saving appliances are conducted rigorously, according to the guidelines developed by the Organization, in order to identify and rectify any design faults at an early stage;
 - .3.10 the equipment is easily accessible for inspections and maintenance and is proven durable in harsh operational conditions, in addition to withstanding prototype tests; and
 - .3.11 the approving authorities or bodies pay close attention to proper workmanship and state-of-the-art possibilities when assessing equipment for approval; and
- .4 encourage shipowners, when undertaking maintenance and repair activities, to employ qualified personnel, preferably certified by the manufacturer.

3 Member Governments were further invited, while enforcing the provisions of SOLAS regulation IX/4.3, to ensure that the above issues are addressed through the Safety Management System of the company, as appropriate.

4 The Committee further recalled that, at its seventy-seventh session (28 May to 6 June 2003), recognizing the experience gained since the approval of the Guidelines on inspection and maintenance of lifeboat on-load release gear (MSC/Circ.614) at its sixty-second session (24 to 28 May 1993), and that the implementation of expanded and improved guidelines could contribute towards a reduction of the incidence of accidents with lifeboats, it had approved the Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear (MSC/Circ.1093), superseding MSC/Circ.614. Taking into account subsequent amendments to SOLAS chapter III and the LSA Code, and having considered proposals by the fiftieth session of the Sub-Committee on Fire Protection, the Committee approved amendments to the Guidelines as set out in annex 1. The Committee further noted that the guidance developed for lifeboats could also apply to the periodic servicing and maintenance of liferafts, rescue boats and fast rescue boats and their launching appliances and on-load release gear.

5 The Committee further recalled that, at its seventy-ninth session (1 to 10 December 2004), it had endorsed the intention of the Sub-Committee on Ship Design and Equipment, in co-operation with the Sub-Committee on Standards of Training and Watchkeeping, to develop further IMO guidance as envisioned in MSC/Circ.1049, and accordingly, approved the Guidance on safety during abandon ship drills using lifeboats (MSC/Circ.1136), as set out in annex 2. The Committee further recalled that the Guidance developed for lifeboats has relevance, in general, for emergency drills with other life-saving systems and should be taken into account when such drills are conducted. In connection with MSC/Circ.1136, and recognizing the need to provide a basic outline of essential steps to safely carry out simulated launching of free-fall lifeboats in accordance with SOLAS regulation III/19.3.3.4, and having considered proposals by the forty-seventh session of the Sub-Committee on Design and Equipment, the Committee further approved the Guidelines for simulated launching of free-fall lifeboats (MSC/Circ.1137), as set out in the appendix to annex 2.

6 Having considered the need to update several of the circulars discussed above, and having considered proposals by the fiftieth session of the Sub-Committee on Fire Protection to consolidate the numerous circulars on the subject of measures to prevent accidents with lifeboats in order to better serve the mariner, the Committee approved the annexed Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear (annex 1) and Guidelines on safety during abandon ship drills using lifeboats (annex 2).

7 Member Governments are invited to give effect to the annexed Guidelines as soon as possible and to bring them to the attention of shipowners, ship operators, ship-vetting organizations, ship personnel, surveyors, manufacturers and all others concerned with the inspection and maintenance of lifeboats, liferafts, rescue boats and fast rescue boats and their launching appliances and on-load release gear.

8 This circular supersedes MSC/Circ.1049, MSC/Circ.1093, MSC/Circ.1136 and MSC/Circ.1137.

ANNEX 1

GUIDELINES FOR PERIODIC SERVICING AND MAINTENANCE OF LIFEBOATS, LAUNCHING APPLIANCES AND ON-LOAD RELEASE GEAR

General

1 The objective of these Guidelines is to establish a uniform, safe and documented performance of periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear.

2 These Guidelines relate to the application of the ISM Code to periodic servicing and maintenance of lifeboat arrangements and should therefore be reflected in procedures developed for a ship under that Code.

3 The general principle in these Guidelines may also be applied for the periodic servicing and maintenance of liferafts, rescue boats and fast rescue boats and their launching appliances and release gear.

4 Detailed guidance regarding some procedures covered by these Guidelines is provided in the appendix.

SOLAS regulations

5 These Guidelines relate to the requirements contained in:

- .1 SOLAS regulation III/20 – Operational readiness, maintenance and inspections; and
- .2 SOLAS regulation III/36 – Instructions for on-board maintenance.

Responsibility

6 The company* is responsible for servicing and maintenance onboard its ships in accordance with SOLAS regulation III/20 and for the establishment and implementation of health, safety and environment (HSE) procedures covering all activities during servicing and maintenance.

7 The personnel carrying out servicing and maintenance are responsible for the performance of the work as authorized in accordance with the system specified in paragraph 10.

8 The above personnel are also responsible for complying with HSE instructions and procedures.

9 Where satisfied with an organization's ability to carry out these functions, the Administration may authorize such organization and its personnel to perform the functions of the manufacturer and manufacturer's certified personnel as assigned under these Guidelines, if manufacturer certified facilities are not available.

* For the purpose of these Guidelines, company is as defined in SOLAS regulation IX/1.2.

Authorization

10 Where these Guidelines require certification of servicing personnel, such certification should be issued by the manufacturer in accordance with an established system for training and authorization.

Qualification levels

11 Weekly and monthly inspections, and routine maintenance as defined by the manufacturer, should be conducted under the direct supervision of a senior ship's officer in accordance with the instructions provided by the manufacturer.

12 All other inspections, servicing and repair should be conducted by the manufacturer's representative or a person appropriately trained and certified by the manufacturer for the work to be done.

Reports and records

13 All reports and checklists should be correctly filled out and signed by the person who carries out the inspection and maintenance work and should also be signed by the company's representative or the ship's master.

14 Records of inspections, servicing, repairs and maintenance should be updated and filed onboard the ship.

15 When repairs, thorough servicing and annual servicing are completed, a statement confirming that the lifeboat arrangements remain fit for purpose should be issued by the manufacturer's representative or by the person certified by the manufacturer for the work.

APPENDIX

SPECIFIC PROCEDURES FOR MAINTENANCE AND SERVICING

1 GENERAL

1.1 Any inspection, servicing and repair should be carried out according to the system for inspection and services developed by the manufacturer.

1.2 A full set of maintenance manuals and associated documentation issued by the manufacturer should be available on board for use in all operations involved in the inspection, maintenance, adjustment and re-setting of the lifeboat and associated equipment, such as davits and release gear.

1.3 The manufacturer's system for inspection and services should include the following items as a minimum.

2 ANNUAL THOROUGH EXAMINATION

2.1 As items listed in checklists for the weekly/monthly inspections also form the first part of the annual thorough examination, when carrying out this examination the inspection of these items should be performed by the ship's crew in the presence of the manufacturer's representative or a person appropriately trained and certified by the manufacturer for the work to be done.

2.2 Inspection and maintenance records of inspections and routine maintenance carried out by the ship's crew and the applicable certificates for the launching appliances and equipment should be available.

2.3 Repairs and replacement of parts should be carried out in accordance with the manufacturer's requirements and standards.

Lifeboats

2.4 The following items should be examined and checked for satisfactory condition and operation:

- .1 condition of lifeboat structure including fixed and loose equipment;
- .2 engine and propulsion system;
- .3 sprinkler system, where fitted;
- .4 air supply system, where fitted;
- .5 manoeuvring system;
- .6 power supply system; and
- .7 bailing system.

Release gear

2.5 The following should be examined for satisfactory condition and operation after the annual winch brake test with the empty boat, as required by paragraph 3.1:

- .1 operation of devices for activation of release gear;
- .2 excessive free play (tolerances);
- .3 hydrostatic interlock system, where fitted;
- .4 cables for control and release; and
- .5 hook fastening.

Notes:

- 1 The setting and maintenance of release gear are critical operations with regard to maintaining the safe operation of the lifeboat and the safety of personnel in the lifeboat. All inspection and maintenance operations on this equipment should therefore be carried out with the utmost care.
- 2 No maintenance or adjustment of the release gear should be undertaken while the hooks are under load.
- 3 Hanging-off pennants may be used for this purpose but should not remain connected at other times, such as when the lifeboat is normally stowed and during training exercises.
- 4 The release gear is to be examined prior to its operational test. The release gear is to be re-examined after its operational test and the dynamic winch brake test. Special consideration should be given to ensure that no damage has occurred during the winch brake test, especially the hook fastening.

2.6 Operational test of on-load release function:

- .1 position the lifeboat partially into the water such that the mass of the boat is substantially supported by the falls and the hydrostatic interlock system, where fitted, is not triggered;
- .2 operate the on-load release gear;
- .3 reset the on-load release gear; and
- .4 examine the release gear and hook fastening to ensure that the hook is completely reset and no damage has occurred.

2.7 Operational test of off-load release function:

- .1 position the lifeboat fully waterborne;
- .2 operate the off-load release gear;
- .3 reset the on-load release gear; and
- .4 recover the lifeboat to the stowed position and prepare for operational readiness.

Note:

Prior to hoisting, check that the release gear is completely and properly reset. The final turning-in of the lifeboat should be done without any persons on board.

2.8 Operational test of free-fall lifeboat release function:

- .1 engage the simulated launching arrangements as specified in the manufacturer's operating instructions;
- .2 the operator should be properly seated and secured in the seat location from which the release mechanism is to be operated;
- .3 operate the release mechanism to release the lifeboat;
- .4 reset the lifeboat in the stowed configuration;
- .5 repeat procedures .2 to .4 above, using the back-up release mechanism, when applicable.
- .6 remove the simulated launching arrangements; and
- .7 verify that the lifeboat is in the ready to launch stowed configuration.

Davit

2.9 The following items should be examined for satisfactory condition and operation:

- .1 davit structure, in particular with regard to corrosion, misalignments, deformations and excessive free play;
- .2 wires and sheaves, possible damages such as kinks and corrosion;
- .3 lubrication of wires, sheaves and moving parts;
- .4 functioning of limit switches;
- .5 stored power systems; and
- .6 hydraulic systems.

Winch

2.10 The following items should be examined for satisfactory condition and operation:

- .1 open and inspect brake mechanism;
- .2 replace brake pads, if necessary;
- .3 remote control system;
- .4 power supply system; and
- .5 winch foundation.

3 DYNAMIC WINCH BRAKE TEST

3.1 Annual operational testing should preferably be done by lowering the empty boat. When the boat has reached its maximum lowering speed and before the boat enters the water, the brake should be abruptly applied.

3.2 The five-year operational test should be done by lowering the boat loaded to a proof load equal to 1.1 times the weight of the survival craft or rescue boat and its full complement of persons and equipment, or equivalent load. When the boat has reached its maximum lowering speed and before the boat enters the water, the brake should be abruptly applied.

3.3 Following these tests, the brake pads and stressed structural parts should be re-inspected.

Note:

In loading the boat for this test, precautions should be taken to ensure that the stability of the boat is not adversely affected by free surface effects or the raising of the centre of gravity.

4 OVERHAUL OF ON-LOAD RELEASE GEAR

Overhaul of on-load release gear includes:

- .1 dismantling of hook release units;
- .2 examination with regard to tolerances and design requirements;
- .3 adjustment of release gear system after assembly;
- .4 operational test as per above and with a load according to SOLAS regulation III/20.11.2.3; and
- .5 examination of vital parts with regard to defects and cracks.

Note:

Non-destructive examination (NDE) techniques, such as dye penetrants (DPE), may be suitable.

ANNEX 2

GUIDELINES ON SAFETY DURING ABANDON SHIP DRILLS USING LIFEBOATS

1 GENERAL

1.1 Introduction

1.1.1 It is essential that seafarers are familiar with the life-saving systems on board their ships and that they have confidence that the systems provided for their safety will work and will be effective in an emergency. Frequent periodic shipboard drills are necessary to achieve this.

1.1.2 Crew training is an important component of drills. As a supplement to initial shore side training, on board training will familiarize crew members with the ship systems and the associated procedures for use, operation and drills. On these occasions, the objective is to develop appropriate crew competencies, enabling effective and safe utilization of the equipment required by the 1974 SOLAS Convention. The time limits set out in SOLAS for ship abandonment should be considered as a secondary objective when conducting drills.

1.2 Drill frequency

Experience has shown that holding frequent drills furthers the goals of making the crew familiar with the life-saving systems on board their ships and increasing their confidence that the systems will work and will be effective in an emergency. Drills give the crew opportunity to gain experience in the use of the safety equipment and in co-operation. The ability to cope with an emergency and handle the situation, if the ship needs to be abandoned, needs to be well rehearsed. However, frequent crew changes sometimes make it difficult to assure that all on board have had the opportunity to participate in drills if only the minimum required drills are conducted. Therefore, consideration needs to be given to scheduling drills as necessary to ensure all on board have an early opportunity to become familiar with the systems on board.

1.3 Drills must be safe

1.3.1 Abandon ship drills should be planned, organized and performed so that the recognized risks are minimized and in accordance with relevant shipboard requirements of occupational safety and health.

1.3.2 Drills provide an opportunity to verify that the life-saving system is working and that all associated equipment is in place and in good working order, ready for use.

1.3.3 Before conducting drills, it should be checked that the lifeboat and its safety equipment have been maintained in accordance with the manufacturer's instructions, as well as noting all the precautionary measures necessary. Abnormal conditions of wear and tear or corrosion should be reported to the responsible officer immediately.

1.4 Emphasis on learning

Drills should be conducted with an emphasis on learning and be viewed as a learning experience, not just as a task to meet a regulatory requirement to conduct drills. Whether they are emergency drills required by SOLAS or additional special drills conducted to enhance the competence of the

crew members, they should be carried out at safe speed. During drills, care should be taken to ensure that everybody familiarizes themselves with their duties and with the equipment. If necessary, pauses should be made during the drills to explain especially difficult elements. The experience of the crew is an important factor in determining how fast a drill or certain drill elements should be carried out.

1.5 Planning and organizing drills

1.5.1 The 1974 SOLAS Convention requires that drills shall, as far as practicable, be conducted as if there was an actual emergency.* This means that the entire drill should, as far as possible, be carried out. The point is that, at the same time, it should be ensured that the drill can be carried out in such a way that it is safe in every respect. Consequently, elements of the drill that may involve unnecessary risks need special attention or may be excluded from the drill.

1.5.2 In preparing for a drill, those responsible should review the manufacturer's instruction manual to assure that a planned drill is conducted properly. Those responsible for the drill should assure that the crew is familiar with the guidance provided in the life-saving system instruction manual.

1.5.3 Lessons learned in the course of a drill should be documented and made a part of follow-up shipboard training discussions and planning the next drill session.

1.5.4 The lowering of a boat with its full complement of persons is an example of an element of a drill that may, depending on the circumstances, involve an unnecessary risk. Such drills should only be carried out if special precautions are observed.

2 ABANDON SHIP DRILLS

2.1 Introduction

It is important that the crew who operate safety equipment on board are familiar with the functioning and operation of such equipment. The 1974 SOLAS Convention requires that sufficiently detailed manufacturers' training manuals and instructions be carried on board, which should be easily understood by the crew. Such manufacturers' manuals and instructions should be accessible for everyone on board and observed and followed closely during drills.

2.2 Guidance to the shipowner

2.2.1 The shipowner should ensure that new safety equipment on board the company's ships has been approved and installed in accordance with the provisions of the 1974 SOLAS Convention and the International Life-Saving Appliances (LSA) Code.

2.2.2 Procedures for holding safe drills should be included in the Safety Management System (SMS) of the shipping companies. Detailed procedures for elements of drills that involve a special risk should be evident from workplace assessments adjusted to the relevant life-saving appliance.

* Refer to SOLAS regulation III/19.3.1.

2.2.3 Personnel carrying out maintenance and repair work on lifeboats should be qualified accordingly.*

2.3 Lifeboats lowered by means of falls

2.3.1 During drills, those responsible should be alert for potentially dangerous conditions and situations and should bring them to the attention of the responsible person for appropriate action. Feedback and improvement recommendations to the shipowner, the Administration and the system manufacturer are important elements of the marine safety system.

2.3.2 Before placing persons onboard a lifeboat, it is recommended that the boat first be lowered and recovered without persons on board to ascertain that the arrangement functions correctly. The boat should then be lowered into the water with only the number of persons on board necessary to operate the boat.

2.3.3 To prevent lashings or gripes from getting entangled, proper release should be checked before swinging out the davit.

2.4 Free-fall lifeboats

2.4.1 The monthly drills with free-fall lifeboats should be carried out according to the manufacturer's instructions, so that the persons who are to enter the boat in an emergency are trained to embark the boat, to take their seats in a correct way and to use the safety belts; and also are instructed on how to act during launching into the sea.

2.4.2 When the lifeboat is free-fall launched as part of a drill, this should be carried out with the minimum personnel required to manoeuvre the boat in the water and to recover it. The recovery operation should be carried out with special attention, bearing in mind the high risk level of this operation. Where permitted by SOLAS, simulated launching should be carried out in accordance with the manufacturer's instructions, taking due note of the Guidelines for simulated launching of free-fall lifeboats at appendix.

* Refer to the Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear (see annex 1).

APPENDIX

GUIDELINES FOR SIMULATED LAUNCHING OF FREE-FALL LIFEBOATS

1 Definition

Simulated launching is a means of training the crew in the free-fall release procedure of free-fall lifeboats and in verifying the satisfactory function of the free-fall release system without allowing the lifeboat to fall into the sea.

2 Purpose and scope

The purpose of these Guidelines is to provide a basic outline of essential steps to safely carry out simulated launching. These Guidelines are general; the lifeboat manufacturer's instruction manual should always be consulted before conducting simulated launching. Simulated launching should only be carried out with lifeboats and launching appliances designed to accommodate it, and for which the manufacturer has provided instructions. Simulated launching should be carried out under the supervision of a responsible person who should be an officer experienced in such procedures.

3 Typical simulated launching sequence

3.1 Check equipment and documentation to ensure that all components of the lifeboat and launching appliance are in good operational condition.

3.2 Ensure that the restraining device(s) provided by the manufacturer for simulated launching are installed and secure and that the free-fall release mechanism is fully and correctly engaged.

3.3 Establish and maintain good communication between the assigned operating crew and the responsible person.

3.4 Disengage lashings, gripes, etc. installed to secure the lifeboat for sea or for maintenance, except those required for simulated free-fall.

3.5 Participating crew board the lifeboat and fasten their seatbelts under the supervision of the responsible person.

3.6 All crew, except the assigned operating crew, disembark the lifeboat. The assigned operating crew fully prepares the lifeboat for free-fall launch and secures themselves in their seats for the release operation.

3.7 The assigned operating crew activates the release mechanism when instructed by the responsible person. Ensure that the release mechanism operates satisfactorily and, if applicable, the lifeboat travels down the ramp to the distance specified in the manufacturer's instructions.

3.8 Resecure the lifeboat to its stowed position, using the means provided by the manufacturer and ensure that the free-fall release mechanism is fully and correctly engaged.

3.9 Repeat procedures from 3.7 above, using the back-up release mechanism when applicable.

3.10 The assigned operating crew disembarks the lifeboat.

3.11 Ensure that the lifeboat is returned to its normal stowed condition. Remove any restraining and/or recovery devices used only for the simulated launch procedure.

ANNEX 8**DRAFT MSC CIRCULAR****EARLY IMPLEMENTATION OF DRAFT SOLAS REGULATION III/19.3.3.4**

1 The Maritime Safety Committee, [at its eighty-first session (10 to 19 May 2006)], approved a draft amendment to SOLAS regulation III/19.3.3.4 concerning provisions for the launch of free-fall lifeboats during abandon ship drills, as follows:

“19.3.3.4 In the case of a lifeboat arranged for free-fall launching, at least once every three months during an abandon ship drill the crew shall board the lifeboat, properly secure themselves in their seats and commence the launch procedure up to but not including the actual release of the lifeboat (i.e., the release hook shall not be released). The lifeboat shall then either be free-fall launched with only the required operating crew on board, or lowered into the water by means of the secondary means of launching without the operating crew on board, and then manoeuvred in the water by the operating crew. At intervals of not more than six months, the lifeboat shall either be launched by free-fall with only the operating crew on board, or simulated launching shall be carried out in accordance with the guidelines developed by the Organization.*

* Refer to MSC/Circ.1137 on Guidelines for simulated launching of free-fall lifeboats [or its successor].”

2 In view of the expiration of MSC/Circ.1115, which addressed free-fall launching from high launch heights, and in order to improve the safety of abandon ship drills involving free-fall lifeboats, and recognizing that considerable time will pass before the amendment will enter into force, the Committee urges Member Governments to give the amended regulation early effect, pending its formal entry into force.

3 Member Governments are also invited to accept ships flying the flags of other States conducting drills in accordance with the 1974 SOLAS Convention and the above proposed amendment.

ANNEX 9

DRAFT AMENDMENTS TO SOLAS CHAPTER III

Regulation 3 – Definitions

- 1 A new paragraph 25 is added as follows:

“25 *Unfavourable conditions of trim and list* is trim of up to 10° and list of up to 20° either way; or alternatively, the worst combination of maximum trim and list angles for a ship in the intact and, if applicable, damaged stability condition which contributes to the attained index according to regulation II-1/7 if this is less.”

Regulation 6 – Communications

- 2 Paragraph 4.3 is replaced with the following:

“4.3 The general emergency alarm system shall be audible throughout all the accommodation and normal crew working spaces. On passenger ships the system shall also be audible on all open decks.”

Regulation 11 – Survival craft muster and embarkation arrangements

- 3 In the first sentence of paragraph 7, the word “unfavourable” is replaced with the word “all” and the unit “°” is inserted after the terms “10” and “20”.

Regulation 13 – Stowage of survival craft

- 4 Subparagraph .2 in paragraph 1 is replaced with the following:

“.2 as near the water surface as is safe and practicable and, in the case of a survival craft other than a liferaft intended for throw over board launching, in such a position that the survival craft in the embarkation position is not less than 2 m above the waterline with the ship in the fully loaded condition under unfavourable conditions of trim and list, or to the angle at which the edge of the ship’s uppermost complete deck exposed to weather and sea becomes submerged, whichever is less;”

- 5 A new subparagraph .6 is added to paragraph 1 as follows:

“.6 in the case of a free-fall lifeboat, so that the greatest distance measured from the still water surface to the lowest point on the lifeboat when the lifeboat is in the launch configuration under unfavourable conditions of trim and list in the lightest seagoing condition does not exceed the certification height of the lifeboat.”

Regulation 14 – Stowage of rescue boats

6 The words “, and if the inflated type, in a fully inflated condition at all times” are added at the end of paragraph 14.1.

Regulation 15 – Stowage of marine evacuation systems

7 The following sentence is added at the beginning of paragraph 1:

“Each marine evacuation system shall be stowed in such a position that it remains usable in its designed manner under unfavourable conditions of trim and list.”

Regulation 16 – Survival craft launching and recovery arrangements

8 Subparagraph .2 of paragraph 1 is amended to read as follows:

“.2 boarded from a position on deck less than 4.5 m above the waterline in the lightest seagoing condition and which are stowed for launching directly from the stowed position under unfavourable conditions of trim and list; or”

9 Subparagraph .4 of paragraph 1 is amended to read as follows:

“.4 carried in excess of the survival craft for 200% of the total number of persons on board the ship, and are stowed for launching directly from the stowed position under unfavourable conditions of trim and list; or”

10 Subparagraph .5 of paragraph 1 is amended to read as follows:

“.5 provided for use in conjunction with a marine evacuation system, complying with the requirements of paragraph 6.2 of the Code and stowed for launching directly from the stowed position under unfavourable conditions of trim and list.”

11 Paragraph 6 is amended to read as follows:

“6 Falls, where used, shall be long enough for the survival craft to reach the water with the ship in its lightest seagoing condition, under unfavourable conditions of trim and list.”

12 Paragraph 10 is amended to read as follows:

“10 If partially enclosed lifeboats complying with the requirements of paragraph 4.5 of the Code are carried, a davit span shall be provided, fitted with not less than two lifelines of sufficient length to reach the water with the ship in its lightest seagoing condition, under unfavourable conditions of trim and list.”

Regulation 19 – Emergency training and drills

- 13 Paragraph 3.3.4 is replaced with the following:

“3.3.4 In the case of a lifeboat arranged for free-fall launching, at least once every three months during an abandon ship drill the crew shall board the lifeboat, properly secure themselves in their seats and commence the launch procedure up to but not including the actual release of the lifeboat (i.e., the release hook shall not be released). The lifeboat shall then either be free-fall launched with only the required operating crew on board, or lowered into the water by means of the secondary means of launching without the operating crew on board, and then manoeuvred in the water by the operating crew. At intervals of not more than six months, the lifeboat shall either be launched by free-fall with only the operating crew on board, or simulated launching shall be carried out in accordance with the guidelines developed by the Organization.*

* Refer to MSC/Circ.1137 on Guidelines for simulated launching of free-fall lifeboats [or its successor].”

Regulation 20 – Operational readiness, maintenance and inspections

- 14 Paragraphs 4.1 and 4.2 are replaced with the following:

“Falls used in launching shall be inspected periodically* with special regard for areas passing through sheaves, and renewed when necessary due to deterioration of the falls or at intervals of not more than 5 years, whichever is the earlier.

* Refer to MSC/Circ.1093 [or successor].”

- 15 In the third sentence of paragraph 6.2, the words “it should be run for such period as prescribed in the manufacturer’s handbook” are replaced with the words “a suitable water supply may be provided”.

- 16 The heading of paragraph 8 is amended to read as follows:

“8 Servicing of inflatable liferafts, inflatable lifejackets, and marine evacuation systems, and maintenance and repair of inflated rescue boats”

- 17 The second sentence of paragraph 11.1.3 is amended to read as follows:

“The load to be applied shall be the mass of the survival craft or rescue boat without persons on board, except that, at intervals not exceeding five years, the test shall be carried out with a proof load equal to 1.1 times the weight of the survival craft or rescue boat and its full complement of persons and equipment.”

- 18 The chapeau of paragraph 11.2 is amended to read as follows:

“11.2 Lifeboat or rescue boat on-load release gear, including free-fall lifeboat release systems, shall be:”

19 The word “lifeboat” in the first sentence of paragraph 11.2.3 is replaced with the word “boat”.

20 The following new paragraph 11.3 is added to the regulation:

“11.3 Davit-launched liferaft automatic release hooks shall be:

- .1 maintained in accordance with instructions for on-board maintenance as required by regulation 36;
- .2 subject to a thorough examination and operational test during the annual surveys required by regulations I/7 and I/8 by properly trained personnel familiar with the system; and
- .3 operationally tested under a load of 1.1 times the total mass of the liferaft when loaded with its full complement of persons and equipment whenever the automatic release hook is overhauled. Such over-hauling and test shall be carried out at least once every five years.*

*
Refer to the Recommendation on testing of life-saving appliances adopted by the Organization by resolution A.689(17). For life-saving appliances installed on board on or after 1 July 1999, refer to the Revised Recommendations on testing of life-saving appliances adopted by the Maritime Safety Committee of the Organization by resolution MSC.81(70).”

Regulation 21 – Survival craft and rescue boats

21 The chapeau of paragraph 1.2 is replaced with the following:

“1.2 Passenger ships engaged on short international voyages shall carry:”

22 Paragraph 1.3 is deleted.

23 Paragraph 2.3 is amended to read as follows:

“2.3 A lifeboat may be accepted as a rescue boat provided that it and its launching and recovery arrangements also comply with the requirements for a rescue boat.”

24 The words “and complying with the special standards of subdivision prescribed by regulation II-1/6.5” in paragraph 3.2 are deleted.

Regulation 31 – Survival craft and rescue boats

25 Subparagraph .2 of paragraph 1.1 is amended to read as follows:

“.2 in addition, one or more inflatable or rigid liferafts, complying with the requirements of section 4.2 or 4.3 of the Code, of a mass of less than 185 kg and stowed in a position providing for easy side-to-side transfer at a single open deck level, and of such aggregate capacity as will accommodate the total number of persons on board. If the liferaft or liferafts are not of a mass of less than 185 kg and stowed in a position providing for easy side-to-side transfer at a single open deck level, the total capacity available on each side shall be sufficient to accommodate the total number of persons on board.”

26 Subparagraph .2 of paragraph 1.3 is amended to read as follows:

“.2 unless the liferafts required by paragraph 1.3.1 are of a mass of less than 185 kg and stowed in a position providing for easy side-to-side transfer at a single open deck level, additional liferafts shall be provided so that the total capacity available on each side will accommodate 150% of the total number of persons on board;”

27 Subparagraph .4 of paragraph 1.3 is amended to read as follows:

“.4 in the event of any one survival craft being lost or rendered unserviceable, there shall be sufficient survival craft available for use on each side, including any which are of a mass of less than 185 kg and stowed in a position providing for easy side-to-side transfer at a single open deck level, to accommodate the total number of persons on board.”

28 The second sentence of paragraph 2 is replaced with the following:

“A lifeboat may be accepted as a rescue boat, provided that it and its launching and recovery arrangements also comply with the requirements for a rescue boat.”

Regulation 32 – Personal life-saving appliances

29 In the first sentence of paragraph 3.2, the words “, of an appropriate size,” are inserted between the words “Code” and “shall”.

30 In paragraph 3.3, the words “of an appropriate size” are inserted between the words “suits” and “shall”.

Regulation 35 – Training manual and on-board training aids

31 A new paragraph 5 is added as follows:

“5 The training manual shall be written in the working language of the ship.”

ANNEX 10

DRAFT AMENDMENTS TO THE LSA CODE

CHAPTER I – GENERAL

1.1 Definitions

1 Paragraph 1.1.8 is deleted and the existing paragraphs 1.1.9, 1.1.10 and 1.1.11 are renumbered as 1.1.8, 1.1.9 and 1.1.10 respectively.

1.2 General requirements for life-saving appliances

2 The following sentence is added at the end of paragraph 1.2.3:

“In the case of pyrotechnic lifesaving appliances, the date of expiry shall be indelibly marked on the product by the manufacturer.”

2.2 Lifejackets

3* In paragraph 2.2.1.16, the words “line or other” are inserted between the words “buoyant” and “means”.

2.3 Immersion suits

4* Subparagraph .1 of paragraph 2.3.1.1 is amended to read as follows:

“.1 it can be unpacked and donned without assistance within 2 min, taking into account donning of any associated clothing, donning of a lifejacket if the immersion suit is to be worn in conjunction with a lifejacket, and inflation of orally inflatable chambers if fitted;*

* Refer to paragraph 3.1.3 of the Recommendation on Testing of Life-saving Appliances adopted by the Organization by resolution MSC 81(70).”

5* In paragraph 2.3.1.5, the words “line or other” are inserted between the words “buoyant” and “means”.

CHAPTER IV – SURVIVAL CRAFT

4.1 General requirements for liferafts

6 In paragraph 4.1.2.2, the words “required to be stowed in a position providing” are replaced with the word “intended”.

* These draft amendments have been referred to MSC 81 for consideration as modifications to earlier approved draft amendments to the LSA Code, scheduled for adoption at MSC 81.

- 7 The first sentence of paragraph 4.1.3.3 is amended to read as follows:

“A manually controlled exterior light shall be fitted to the uppermost portion of the liferaft canopy or structure.”

- 8 The first and second sentence of paragraph 4.1.3.4 are amended to read as follows:

“A manually controlled interior light shall be fitted inside the liferaft capable of continuous operation for a period of at least 12 h. It shall light automatically when the canopy is erected and shall produce an arithmetic mean luminous intensity of not less than 0.5 cd when measured over the entire upper hemisphere to permit reading of survival and equipment instructions.”

- 9 Subparagraphs .18 and .19 of paragraph 4.1.5.1 are replaced with the following:

“.18 a food ration consisting of not less than 10,000 kJ (2,400 kcal) for each person the liferaft is permitted to accommodate. These rations shall be palatable, edible throughout the marked life, and packed in a manner which can be readily divided and easily opened taking into account immersion suit gloved hands.

Note: A typical suitable composition is:

Ration unit: 500-550 g
Energy: Minimum 10,000 kJ
Moisture: Maximum 5%
Salt (NaCl): Maximum 0.2%
Carbohydrates: 60-70% weight = 50-60% energy
Fat: 18-23% weight = 33-43% energy
Protein: 6-10% weight = 5-8% energy

The rations shall be packed in tins (cans) or vacuum packed in a flexible packaging material with a negligible vapour transmission rate ($<0.1\text{g/m}^2$ per 24 hours at $23^\circ\text{C}/85\%$ relative humidity when tested in accordance with an appropriate national or international standard). Flexible packaging materials shall be further protected by outer packaging if needed to prevent holes and damage to the food ration and other items as result of sharp edges. The packaging shall be clearly marked with date of packing and date of expiry, the production lot number, the content in the package and instructions for use. Food rations complying with the requirements of an international standard acceptable to the Organization* are acceptable in compliance with these requirements;

.19 1.5 l of fresh water for each person the liferaft is permitted to accommodate, of which either 0.5 l per person may be replaced by a de-salting apparatus capable of producing an equal amount of fresh water in 2 days or 1 l per person may be replaced by a manually powered reverse osmosis desalinators, as described in paragraph 4.4.7.5, capable of producing an equal amount of fresh water in 2 days. The water shall satisfy suitable international requirements for chemical and microbiological content, and shall be packed in sealed watertight containers that are of corrosion resistant material or are treated to be corrosion resistant. Flexible packaging materials, if used, shall have a negligible vapour transmission rate ($<0.1\text{g/m}^2$ per 24 hours at $23^\circ\text{C} / 85\%$ relative humidity when tested in accordance

with an appropriate national or international standard), except that individually packaged portions within a larger container need not meet this vapour transmission requirement. Each water container shall have a method of spill proof reclosure, except for individually packaged portions of less than 125 ml. Each container shall be clearly marked with date of packing and date of expiry, the production lot number, the quantity of water in the container, and instructions for consumption. The containers shall be easy to open, taking into account immersion suit gloved hands. Water for emergency drinking complying with the requirements of an international standard acceptable to the Organization* is acceptable in compliance with these requirements;

* Refer to the recommendations of the International Organization for Standardization, in particular publication ISO 18813 *Ships and marine technology – Survival equipment for survival craft and rescue boats.*”

4.2 Inflatable liferafts

10 The following new sentence is inserted between the second and third sentence of paragraph 4.2.2.3:

“The inflation system, including any relief valves installed in compliance with paragraph 4.2.2.4, shall comply with the requirements of an international standard acceptable to the Organization* .

* Refer to the recommendations of the International Organization for Standardization, in particular publication ISO 15738 *Ships and marine technology – Gas inflation systems for inflatable life-saving appliances.*”

11 The first sentence of paragraph 4.2.4.1 is amended to read as follows:

“At least one entrance shall be fitted with a boarding ramp, capable of supporting a person weighing 100 kg sitting or kneeling and not holding onto any other part of the liferaft, to enable persons to board the liferaft from the sea.”

12 A new subparagraph .8 is inserted in paragraph 4.2.6.3 and the existing subparagraphs .8 and .9 are renumbered as .9 and .10 respectively:

“.8 mass of the packed liferaft, if greater than 185 kg;”

4.3 Rigid liferafts

13 The first sentence of paragraph 4.3.4.1 is amended to read as follows:

“At least one entrance shall be fitted with a boarding ramp, capable of supporting a person weighing 100 kg sitting or kneeling and not holding onto any other part of the liferaft, to enable persons to board the liferaft from the sea.”

4.4 General requirements for lifeboats

14 In paragraph 4.4.1.1, the words “, and are capable of being safely launched under all conditions of trim of up to 10° and list of up to 20° either way” are added at the end of the first sentence.

15 Paragraph 4.4.1.2 is amended to read as follows:

“4.4.1.2 Each lifeboat shall be fitted with a permanently affixed approval plate, endorsed by the Administration or its representative, containing at least the following items:

- manufacturer’s name and address;
- lifeboat model and serial number;
- month and year of manufacture;
- number of persons the lifeboat is approved to carry; and
- the approval information required under paragraph 1.2.2.9.

Each production lifeboat shall be provided with a certificate or declaration of conformity which, in addition to the above items, specifies:

- number of the certificate of approval;
- material of hull construction, in such detail as to ensure that compatibility problems in repair should not occur;
- total mass fully equipped and fully manned;
- the measured towing force of the lifeboat; and
- statement of approval as to sections 4.5, 4.6, 4.7, 4.8 or 4.9.”

16 In paragraph 4.4.3.1, in the first sentence, the word “rapidly” is deleted and the words “in not more than 10 min from the time the instruction to board is given” are added at the end.

17 In the first sentence of paragraph 4.4.6.8, the words “a 25-person liferaft” are replaced with the words “the largest liferaft carried on the ship”.

18 Paragraph 4.4.7.6 is replaced with the following:

“4.4.7.6 Every lifeboat to be launched by a fall or falls, except a free-fall lifeboat, shall be fitted with a release mechanism complying with the following requirements subject to subparagraph .9 below:

- .1 the mechanism shall be so arranged that all hooks are released simultaneously;

- .2 the mechanism shall have two release capabilities: normal (off-load) release capability and on-load release capability:
 - .2.1 normal (off-load) release capability shall release the lifeboat when it is waterborne or when there is no load on the hooks, and not require manual separation of the lifting ring or shackle from the jaw of the hook; and
 - .2.2 on-load release capability shall release the lifeboat with a load on the hooks. This release shall be so arranged as to release the lifeboat under any conditions of loading from no load with the lifeboat waterborne to a load of 1.1 times the total mass of the lifeboat when loaded with its full complement of persons and equipment. This release capability shall be adequately protected against accidental or premature use. Adequate protection shall include special mechanical protection not normally required for offload release, in addition to a danger sign. To prevent a premature on-load release, on-load operation of the release mechanism should require a deliberate and sustained action by the operator;
- .3 to prevent an accidental release during recovery of the boat, unless the hook is completely reset, either the hook shall not be able to support any load, or the handle or safety pins shall not be able to be returned to the reset (closed) position without excessive force. Additional danger signs shall be posted at each hook station to alert crew members to the proper method of resetting;
- .4 the release mechanism shall be so designed and installed that crew members from inside the lifeboat can clearly determine when the system is ready for lifting by:
 - .4.1 directly observing that the movable hook portion or the hook portion that locks the movable hook portion in place is properly and completely reset at each hook; or
 - .4.2 observing a non-adjustable indicator that confirms that the mechanism that locks the movable hook portion in place is properly and completely reset at each hook; or
 - .4.3 easily operating a mechanical indicator that confirms that the mechanism that locks the movable hook in place is properly and completely reset at each hook;
- .5 clear operating instructions shall be provided with a suitably worded warning notice using colour coding, pictograms, and/or symbols as necessary for clarity. If colour coding is used, green shall indicate a properly reset hook and red shall indicate danger of improper or incorrect setting;

- .6 the release control shall be clearly marked in a colour that contrasts with its surroundings;
- .7 means shall be provided for hanging-off the lifeboat to free the release mechanism for maintenance;
- .8 the fixed structural connections of the release mechanism in the lifeboat shall be designed with a calculated factor of safety of 6 based on the ultimate strength of the materials used, and the mass of the lifeboat when loaded with its full complement of persons, fuel, and equipment, assuming the mass of the lifeboat is equally distributed between the falls, except that the factor of safety for the hanging-off arrangement may be based upon the mass of the lifeboat when loaded with its full complement of fuel and equipment plus 1,000 kg; and
- .9 where a single fall and hook system is used for launching a lifeboat or rescue boat in combination with a suitable painter, the requirements of paragraphs 4.4.7.6.2 and 4.4.7.6.3 need not be applicable; in such an arrangement a single capability to release the lifeboat or rescue boat, only when it is fully waterborne, will be adequate.”

19 The following new paragraph 4.4.7.7 is inserted after paragraph 4.4.7.6 and existing paragraphs 4.4.7.7 to 4.4.7.12 are renumbered as 4.4.7.8 to 4.4.7.13 respectively:

“4.4.7.7 Notwithstanding the requirements of paragraph 4.4.7.6.9, for a fast rescue boat or other single point suspension craft launched by means of an appliance fitted with an automatic high-speed tensioning device, the release mechanism shall be provided with on-load release capability.”

20 In the first sentence of renumbered paragraph 4.4.7.11 (previously 4.4.7.10), the word “lamp” is replaced with the word “exterior light”.

21 The existing text of the renumbered paragraph 4.4.7.12 (previously 4.4.7.11) is replaced with the following:

“4.4.7.12 A manually controlled interior light shall be fitted inside the lifeboat capable of continuous operation for a period of at least 12 h. It shall produce an arithmetic mean luminous intensity of not less than 0.5 cd when measured over the entire upper hemisphere to permit reading of survival and equipment instructions; however, oil lamps shall not be permitted for this purpose.”

22 In paragraph 4.4.8.9, the words “as described in paragraph 4.1.5.1.19” are inserted between the words “fresh water” and “for each person”.

4.5 Partially enclosed lifeboats

23 Paragraph 4.5.3 is replaced with the following:

“4.5.3 The interior of the lifeboat shall be of a light colour which does not cause discomfort to the occupants.”

4.6 Totally enclosed lifeboats

24 In paragraph 4.6.2.8, the word “light” is inserted before the second word “colour”.

4.7 Free-fall lifeboats

25 Paragraph 4.7.3.3 is deleted.

CHAPTER V – RESCUE BOATS

5.1 Rescue boats

26 In the first sentence of paragraph 5.1.1.1, the words “, excluding paragraph 4.4.6.8,” are inserted between the words “4.4.7.4 inclusive” and “and 4.4.7.6” and the references “4.4.7.6, 4.4.7.7, 4.4.7.9, 4.4.7.10” are replaced with “4.4.7.8, 4.4.7.10, 4.4.7.11, 4.4.7.12”.

27 At the end of the first sentence of paragraph 5.1.1.3.2, the words “all wearing immersion suits, and lifejackets if required” are added.

28 Paragraph 5.1.1.6 is replaced with the following:

“5.1.1.6 Every rescue boat shall be provided with sufficient fuel, suitable for use throughout the temperature range expected in the area in which the ship operates, and be capable of manoeuvring at a speed of at least 6 knots and maintaining that speed, for a period of at least 4 h when loaded with its full complement of persons and equipment.”

29 A new paragraph 5.1.1.12 is added after existing paragraph 5.1.1.11:

“5.1.1.12 Every rescue boat shall be so arranged that an adequate view forward, aft, and to both sides is provided from the control and steering position for safe launching and manoeuvring, and in particular with regard to visibility of areas and crew members essential to man-overboard retrieval and marshalling of survival craft.”

30 Paragraph 5.1.3.11 is deleted.

31 A new section 5.1.4 as follows is added after existing section 5.1.3:

“5.1.4 *Additional requirements for fast rescue boats*

5.1.4.1 Fast rescue boats shall be so constructed as to capable of being safely launched and retrieved under adverse weather and sea conditions.

5.1.4.2 Except as provided by this section, all fast rescue boats shall comply with the requirements of section 5.1, except for paragraphs 4.4.1.5.3, 4.4.1.6, 4.4.7.2, 5.1.1.6 and 5.1.1.10.

5.1.4.3 Notwithstanding paragraph 5.1.1.3.1, fast rescue boats shall have a hull length of not less than 6 m and not more than 8.5 m, including inflated structures or fixed fenders.

5.1.4.4 Fast rescue boats shall be provided with sufficient fuel, suitable for use throughout the temperature range expected in the area in which the ship operates, and be capable of manoeuvring for a period of at least 4 h at a speed of at least 20 knots in calm water with a crew of 3 persons and at least 8 knots when loaded with its full complement of persons and equipment.

5.1.4.5 Fast rescue boats shall be self-righting, or capable of being readily righted by not more than two of their crew.

5.1.4.6 Fast rescue boats shall be self-bailing or be capable of being rapidly cleared of water.

5.1.4.7 Fast rescue boats shall be steered by a wheel at the helmsman's position remote from the tiller. An emergency steering system providing direct control of the rudder, water jet, or outboard motor shall also be provided.

5.1.4.8 Engines in fast rescue boats shall stop automatically or be stopped by the helmsman's emergency release switch should the rescue boat capsize. When the rescue boat has righted, each engine or motor shall be capable of being restarted provided that the helmsman's emergency release, if fitted, has been reset. The design of the fuel and lubricating systems shall prevent the loss of more than 250 ml of fuel or lubricating oil from the propulsion system should the rescue boat capsize.

5.1.4.9 Fast rescue boats shall, if possible, be equipped with an easily and safely operated fixed single-point suspension arrangement or equivalent.

5.1.4.10 A rigid fast rescue boat shall be constructed in such a way that, when suspended by its lifting point it is of sufficient strength to withstand a load of 4 times the mass of its full complement of persons and equipment without residual deflection upon removal of the load.

5.1.4.11 The normal equipment of a fast rescue boat shall include a hands-free and watertight VHF radiocommunication set."

CHAPTER VI – LAUNCHING AND EMBARKATION APPLIANCES

6.1 Launching and embarkation appliances

32 In paragraph 6.1.1.5, the word "factory" is inserted before the words "static proof load" and the word "on" between the words "load" and "test" is deleted.

33 A new paragraph 6.1.1.11 as follows is added after existing paragraph 6.1.1.10:

"6.1.1.11 Rescue boat launching appliances shall be provided with foul weather recovery strops for recovery where heavy fall blocks constitute a danger."

34 In paragraph 6.1.2.12, the words "or a mechanism activated by the operator" are replaced with the words "either on deck or in the survival craft or rescue boat".

35 The following new paragraph 6.1.2.13 is added after existing paragraph 6.1.2.12:

“6.1.2.13 A lifeboat launching appliance shall be provided with means for hanging-off the lifeboat to free the on-load release mechanism for maintenance.”

36 The following new section 6.1.7 is added after existing section 6.1.6:

“6.1.7 *Launching appliances for fast rescue boats*

6.1.7.1 Every fast rescue boat launching appliance shall comply with the requirements of paragraphs 6.1.1 and 6.1.2 except 6.1.2.10 and, in addition, shall comply with the requirements of this paragraph.

6.1.7.2 The launching appliance shall be fitted with a device to dampen the forces due to interaction with the waves when the fast rescue boat is launched or recovered. The device shall include a flexible element to soften shock forces and a damping element to minimize oscillations.

6.1.7.3 The winch shall be fitted with an automatic high-speed tensioning device which prevents the wire from going slack in all sea state conditions in which the fast rescue boat is intended to operate.

6.1.7.4 The winch brake shall have a gradual action. When the fast rescue boat is lowered at full speed and the brake is applied sharply, the additional dynamic force induced in the wire due to retardation shall not exceed 0.5 times the working load of the launching appliance.

6.1.7.5 The lowering speed for a fast rescue boat with its full complement of persons and equipment shall not exceed 1 m/s. Notwithstanding the requirements of paragraph 6.1.1.9, a fast rescue boat launching appliance shall be capable of hoisting the fast rescue boat with 6 persons and its full complement of equipment at a speed of not less than 0.8 m/s. The appliance shall also be capable of lifting the rescue boat with the maximum number of persons that can be accommodated in it as calculated in accordance with paragraph 4.4.2.

6.1.7.6 At least three turns of wire shall remain on the winch after the fast rescue boat is lowered to the sea with the ship in its lightest seagoing condition, against unfavourable conditions of trim and list.”

6.2 Marine evacuation systems

37 Subparagraph .2 of paragraph 6.2.2.1.5 is replaced with the following:

“.2 in the case of a passenger ship, a maximum of 55° under unfavourable conditions of trim and list;”

38 The following new subparagraph .6 of paragraph 6.2.2.1 is added and existing paragraphs 6.2.2.1.6 to 6.2.2.1.9 are renumbered as 6.2.2.1.7 to 6.2.2.1.10 respectively:

- “6 in the case of being fitted with a vertical passage, such that the system shall be:
- .1 operational in its designed manner under unfavourable conditions of trim and list; and
 - .2 if equipped with integrated liferafts, it shall be provided with an option of independent release of the liferafts.”

CHAPTER VII – OTHER LIFE-SAVING APPLIANCES

7.2 General alarm and public address system

- 39 The third sentence of paragraph 7.2.1.1 is deleted.
- 40 The second sentence of paragraph 7.2.1.2 is deleted.

FOOTNOTES TO BE ADDED TO SOLAS CHAPTER III

- 1 The following footnote is added at the end of paragraph 4.4.1.4:
- “* Refer to the Guidelines on fire test procedures for acceptance of fire-retardant materials for the construction of lifeboats (MSC/Circ.1006).”
- 2 The following footnote is added at the end of the first sentence of paragraph 4.4.6.9:
- “* Refer to the Guidelines on fire test procedures for acceptance of fire-retardant materials for the construction of lifeboats (MSC/Circ.1006).”

ANNEX 11

**DRAFT AMENDMENTS TO THE REVISED RECOMMENDATION ON TESTING OF
LIFE-SAVING APPLIANCES (RESOLUTION MSC.81(70))
(AS AMENDED BY RESOLUTION MSC.200(80))**

PART 1 – PROTOTYPE TESTS FOR LIFE-SAVING APPLIANCES

1 LIFEBOUOYS

- 1 Paragraph 1.3 is replaced with the following:

“1.3 Drop test

Each lifebuoy should be suspended from its upper edge via a release device so that the lower edge of the lifebuoy is at the height at which it is intended to be stowed on ships in their lightest seagoing condition, or 30 m, whichever is the greater, and dropped into the water without suffering damage. In addition, one lifebuoy should be suspended from its upper edge via a release device so that the lower edge of the lifebuoy is at a height of 2 m, and dropped three times onto a concrete floor, without suffering damage.”

2 LIFEJACKETS

- 2 The following words are added at the end of paragraph 2.10.1.1:

“Each lifejacket should then be subjected to the tests in paragraphs 2.2, 2.3 and 2.5. A lifejacket that has been inflated automatically with one compartment uninflated should be subjected to the test in paragraph 2.2 and the test repeated as many times as necessary to perform the test once with each compartment in the uninflated condition. For the fire test in paragraph 2.3, one lifejacket should be inflated and one uninflated.”

- 3 In paragraph 2.10.4.6.2, the term “1°” is replaced with the term “5°”.

- 4 In paragraph 2.10.4.7.2, the word “sprays” is replaced with the words “spray nozzles” and the words “a pressure of 0.3 kPa – 0.4 kPa,” are deleted.

3 IMMERSION SUITS, ANTI-EXPOSURE SUITS AND THERMAL PROTECTIVE AIDS

- 5 In paragraph 3.1.3, second sentence, the words “inflate any orally inflated chambers if fitted, and don” are inserted between the words “clothing,” and “and a lifejacket” and the word “and” before the words “a lifejacket” is deleted.

- 6 In paragraph 3.1.4, first sentence, the words “a reasonable time” are replaced with the words “5 minutes”.

7 In paragraph 3.1.7, the following new sentence is inserted between the existing first and second sentences:

“For a buoyant insulated immersion suit worn without a lifejacket, an auxiliary means of buoyancy such as an orally inflated bladder behind the wearer’s head may be used to obtain this freeboard, provided that the freeboard obtained without the auxiliary means of buoyancy is at least 50 mm.”

8 In paragraph 3.3.2, the word “conductivity” is replaced with the word “conductance” and the term “0.25 W/(m K)” is replaced with the term “7,800 W/(m² K)”.

4 PYROTECHNICS - ROCKET PARACHUTE FLARES, HAND FLARES AND BUOYANT SMOKE SIGNALS

9 In paragraphs 4.2.2 and 4.2.3, the words “at that temperature” are replaced with the words “immediately upon removal from the cold chamber”.

10 Paragraph 4.6.2 is replaced with the following:

“4.6.2 Laboratory testing of the flare material should establish that it will burn uniformly with an average luminous intensity of not less than 30,000 cd and that the colour of the flame is a vivid red with CIE co-ordinates $x = 0.61$ to 0.69 and $y = 0.3$ to 0.39 , or computed from these co-ordinates: a wavelength of $608 \text{ nm} \pm 11 \text{ nm}$.”

11 Paragraph 4.7.2 is replaced with the following:

“4.7.2 Laboratory testing of the flare material should establish that it will burn with an average luminous intensity of at least 15,000 cd and that the colour of the flame is vivid red with CIE co-ordinates $x = 0.61$ to 0.69 and $y = 0.3$ to 0.39 , or computed from these co-ordinates: a wavelength of $608 \text{ nm} \pm 11 \text{ nm}$.”

12 Paragraph 4.8.3 is replaced with the following and the existing footnote is deleted:

“4.8.3 The smoke density and colour of the smoke signal should be determined by laboratory testing conducted at a water temperature of +20°C to +25°C as follows:

- .1 The smoke should be blown through an apparatus consisting of a 190 mm diameter duct with a fan capable of producing an entrance air flow of $18.4 \text{ m}^3/\text{min}$. By means of a light source with at least 10cd on one side of the tunnel and a photoelectric cell on the other side the density of the passing smoke should be recorded. If the photocell picks up the total emitted light from the light source then the smoke density is zero percent which means that no smoke is passing through the tunnel. The smoke density is then considered to be 100% when the photocell is not able to pick up any light of the light source through the passing smoke in the tunnel. From the amount of light which the photocell is able to pick up the smoke density should be calculated. Before each measurement the light intensity of the 100% value should be checked. Each measurement should be recorded.

- .2 The colour of the orange smoke should be evaluated by means of visual comparison, in daylight, to a colour comparison chart containing the range of acceptable orange colours. The colour comparison chart should have a gloss or matte finish, and consist of a series of at least five orange colour chips, covering the range from reddish orange (Munsell notation 8.75 YR 6/14) to yellowish orange (Munsell notation 5 YR MAX) in gradual steps of hue, chroma, and lightness. The colour chips should be secured adjacent to one another, in order of progression from reddish orange to yellowish orange, and extend on at least one side to the edge of the chart. Each colour chip should be at least 50 mm x 100 mm in size.

Note: A typical acceptable progression would be 8.75 YR 6/14; 10 R 6/14; 1.25 YR 6/14; 3.75 YR MAX; 5 YR MAX.

Note: ASTM D1535-97 specifies a method to convert between Munsell notation and CIE co-ordinates.”

5 LIFERAFTS – RIGID AND INFLATABLE

- 13 The third sentence of paragraph 5.12 is replaced with the following:

“The accumulation of water inside the liferaft should not exceed 4 l.”

- 14 Paragraph 5.17.8 is replaced with the following:

“5.17.8 The measurement of pressure drop due to leakage can be started when it has been assumed that compartment material has completed stretching due to the inflation pressure and achieved equilibrium.”

- 15 In paragraph 5.17.13.2.2.10.1, the words “100 g weight should not be lifted” are replaced with the words “fabric shall exhibit no blocking”.

- 16 In paragraph 5.17.13.2.2.10.2, the words “the temperature of test should be 70°± 2°C and” are deleted.

6 LIFEBOATS

- 17 In paragraph 6.4.3, the words “remainder of the” are inserted between the words “The” and “weights” in the second sentence and the following new sentence is inserted between the existing first and second sentence:

“Included in this loading should be a weight of 100 kg loaded in one of each type of seat installed in the lifeboat.”

- 18 Paragraph 6.8.2 is replaced with the following:

“6.8.2 Weights representing persons who would be in the water when the lifeboat is flooded (water level more than 500 mm above the seat pan) may be omitted. Weights representing persons who would not be in the water when the lifeboat is flooded (water level less than 500 mm above seat pan) should be placed in the normal seating positions of such persons with their centre of gravity approximately 300 mm above the seat pan.

Weights representing persons who would be partly submerged in the water when the lifeboat is flooded (water level between 0 and 500 mm above the seat pan) should additionally have an approximate density of 1 kg/dm³ (for example water ballast containers) to represent a volume similar to a human body.”

- 19 Subparagraph .1 of paragraph 6.9.4 is replaced with the following:

“.1 a force equal to 25% of the safe working load of the hook should be applied to the hook in the lengthwise direction of the boat at an angle of 45° to the vertical. This test should be conducted in the aftward as well as the forward direction;”

- 20 Subparagraph .3 of paragraph 6.9.4 is replaced with the following:

“.3 a force equal to the safe working load of the hook should be applied to the hook in a direction half-way between the positions of tests 1 and 2 (i.e., 45° to the longitudinal axis of the boat in plan view) at an angle of 33° to the vertical. This test should be conducted in four positions.

There should be no damage to the hook as a result of this test, and in the case of a waterborne test, there should be no damage to the lifeboat or its equipment.”

- 21 Paragraph 6.10.1 is replaced with the following:

“6.10.1 The lifeboat should be loaded with weights equal to the mass of its equipment and the number of persons for which the lifeboat is to be approved. The engine should be started and the lifeboat manoeuvred for a period of at least 4 h to demonstrate satisfactory operation. The lifeboat should be run at a speed of not less than 6 knots for a period which is sufficient to ascertain the fuel consumption and to establish that the fuel tank has the required capacity. The maximum towing force of the lifeboat should be determined. This information should be used to determine the largest fully loaded liferaft the lifeboat can tow at 2 knots. The fitting designated for towing other craft should be secured to a stationary object by a tow rope. The engine should be operated ahead at full speed for a period of at least 2 minutes, and the towing force measured and recorded. There should be no damage to the towing fitting or its supporting structure. The maximum towing force of the lifeboat should be recorded on the type approval certificate.”

- 22 Paragraph 6.15 is replaced with the following:

“6.15 Air supply test for lifeboats with a self-contained air support system

All entrances and openings of the lifeboat should be closed, and the air supply to the inside of the lifeboat turned on to the design air pressure. The engine should then be run at revolutions necessary to achieve full speed with the fully loaded boat including all persons and with the sprinkler system in use for a period of 5 min, stopped for 30 s, then restarted for a total running time of 10 min. During this time the atmospheric pressure within the enclosure should be continuously monitored to ascertain that a small positive air pressure is maintained within the lifeboat and to confirm that noxious gases cannot enter. The internal air pressure should never fall below the outside atmospheric pressure nor should it exceed outside atmospheric pressure by more than 20 hPa during the test. It should be ascertained, by starting the engine with air supply turned off, that when the air

supply is depleted, automatic means are activated to prevent a dangerous underpressure of more than 20 hPa being developed within the lifeboat.”

7 RESCUE BOATS AND FAST RESCUE BOATS

23 Paragraph 7.1.2 is replaced with the following:

“7.1.2 The maximum towing force of the rescue boat should be determined. This information should be used to determine the largest fully loaded liferaft the rescue boat can tow at two knots. The fitting designated for towing other craft should be secured to a stationary object by a tow rope. The engine should be operated ahead at full speed for a period of at least 2 min., and the towing force measured and recorded. There should be no damage to the towing fitting or its supporting structure. The maximum towing force of the rescue boat should be recorded on the type approval certificate.”

24 In paragraph 7.1.3, in the second sentence, the words “on a stretcher of similar dimensions to those shown in figure 4” are inserted between the words “lie down” and “and the others” and the following figure is inserted after the paragraph:

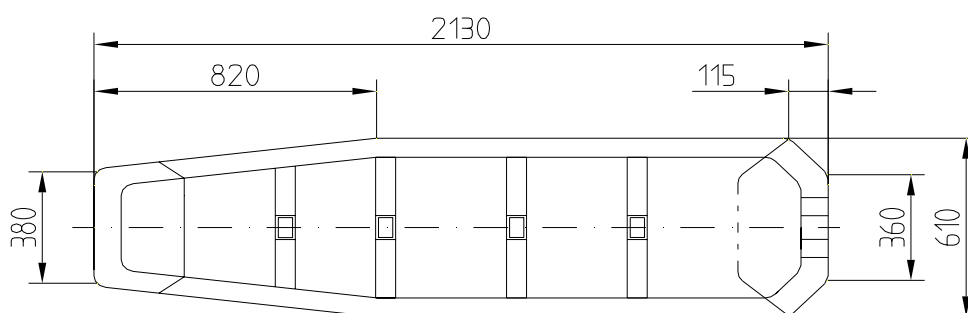


Figure 4 – Stretcher dimensions

25 In paragraph 7.1.7, the word “rigid” in the first sentence is deleted and the following text is added at the end of the paragraph:

“In the case of fast rescue boats which are not self-righting, the engine should be running in neutral position and, after stopping automatically or by the helmsman’s emergency release switch when inverted, it should be easily restarted and run for 30 min after the rescue boat has returned to the upright position. For rescue boats with inboard engines, the test without engine and fuel is not applicable.”

26 In the chapeau of paragraph 7.2.14, the words “to the satisfaction of the Administration” are replaced with the following:

“and comply with the requirements of an international standard acceptable to the Organization*:

* Refer to the recommendations of the International Organization for Standardization, in particular publication ISO 15372 *Ships and marine technology – Inflatable rescue boats – Coated fabrics for inflatable chambers.*”

- 27 The following text is added at the end of paragraph 7.4.1:

“In the case of open fast rescue boats, the self-righting test should only be done in the light condition, and 6.14.1.1, 6.14.3, 6.14.4, and 6.14.5 are not applicable. With regard to 6.14.2, a boat fitted with a helmsman’s emergency release switch should be considered to be arranged to stop automatically when inverted.”

- 28 The following new paragraph 7.7.11 is added after existing paragraph 7.7.10:

“Engine inversion test (for engines destined for fast rescue boats only)”

7.7.11 The engine and its fuel tank should be mounted on a frame that is arranged to rotate about an axis equivalent to the longitudinal axis of the boat at the height of the boat transom. The propeller should be in a water basin to the height of the cavitation plate. The engine should then be subjected to the test procedure specified in paragraphs 6.14.7.1 through 6.14.7.13, and then dismantled for examination. With regard to 6.14.7.9, the engine should be stopped automatically or by the helmsman’s emergency release switch when inverted. During these tests, the engine should not overheat or fail to operate or leak more than 250 ml of oil during any one inversion. When examined after being dismantled the engine should show no evidence of overheating or excessive wear.”

8 LAUNCHING AND EMBARKATION APPLIANCES

- 29 In paragraph 8.1.1, the following new sentence is inserted between the existing fifth and sixth sentence:

“The launching ramp and its connection to the release mechanism should be subjected to a static proof load of 2.2 times the maximum working load.”

10 POSITION-INDICATING LIGHTS FOR LIFE-SAVING APPLIANCES

- 30 In the first sentence of paragraph 10.1.2, the word “sea-activated” is replaced with the words “seawater cell”.

- 31 In the first sentence of paragraph 10.1.3, the word “dry-activated” is replaced with the words “dry cell” and the last sentence is replaced with the following:

“The interior lights should provide an arithmetic mean luminous intensity of not less than 0.5 cd when measured over the entire upper hemisphere to permit reading of survival instructions and equipment instructions for a period of not less than 12 h.”

- 32 Paragraph 10.3.3 is replaced with the following:

“10.3.3 One light attached to a lifejacket should be subjected to a drop test from 4.5 m as prescribed in 2.8.8. The light should not suffer damage, should not be dislodged from the lifejacket and should be switched on and seen to be illuminated and conspicuous whilst the test subject is still in the water.”

- 33 In paragraph 10.4.7, the words “IEC 945: 3rd edition (Nov.1996)” are replaced with the words “IEC 60945: 4th edition (Aug. 2002)” in the two places they appear.

11 HYDROSTATIC RELEASE UNITS

34 The following new subparagraph .6 is added after paragraph 11.2.5:

“**.6** *Solar radiation test*

One unit should be subjected to a solar radiation test to IEC 60945: 4th edition (Aug. 2002), paragraph 8.10.

Note: The solar radiation test may be waived where the manufacturer is able to produce evidence that the materials employed will satisfy the test, i.e. UV stabilized.”

PART 2 – PRODUCTION AND INSTALLATION TESTS

5 SURVIVAL CRAFT

35 The following new paragraph 5.3.4 is added after existing paragraph 5.3.3:

“5.3.4 The connection of each release gear which is fixed to the boat should be subjected to a load equal to the weight of the boat with its full complement of persons and equipment (or two times the weight of the boat in the case of single fall systems). There should be no damage to the release gear or its connection to the boat.”

6 LAUNCHING AND STOWAGE ARRANGEMENTS

36 In paragraph 6.1.1, the following new sentence is inserted between the existing first and second sentences:

“For a free-fall lifeboat launching appliance, each launching ramp and its connection to the release mechanism should be tested with a static load of 2.2 times the working load.”

37 The heading “Installation tests” is inserted after paragraph 6.1.1.

38 The last sentence of paragraph 6.1.3 is replaced with the following:

“A person should then board the survival craft or rescue boat and perform a test of the launching operation from within the boat.”

APPENDIX 1 – ADULT REFERENCE TEST DEVICE (RTD) DESIGN AND CONSTRUCTION

39 In paragraph 2.1.3, the figure “155.6” is replaced with the figure “149”.

40 In the appendix of Appendix 1, in the second row of table 1, the figures “103.5”, “46.5” and “150” are replaced with the figures “103”, “46” and “149” respectively.

41 In the appendix of Appendix 1, in the second row of table 2, the figures “17.75”, “51.75” and “18.5” are replaced with the figures “17.5”, “51.5” and “18” respectively, in all places they appear.

ANNEX 12**REVISED TERMS OF REFERENCE OF THE SUB-COMMITTEE**

1 Under the direct instructions of the Maritime Safety Committee and as may be requested by the Marine Environment Protection Committee, the Sub-Committee on Fire Protection (FP) will consider matters related to the following subjects, including the development of any necessary amendments to relevant conventions and other mandatory and non-mandatory instruments, as well as the preparation of new mandatory and non-mandatory instruments, guidelines and recommendations, for consideration by the Committees, as appropriate, including the role of such measures for the protection of the marine environment:

- .1 fire safety and evacuation of all types of ships, vessels and craft covered by IMO instruments, taking into account the human element aspect;
- .2 testing and approval of fire safety systems, equipment, constructions and materials; and
- .3 analysis of fire casualty and incident records.

2 The conventions and other mandatory instruments referred to above include, as a minimum:

- .1 1974 SOLAS Convention (chapter II-2) and the 1988 Protocol relating thereto;
- .2 International Code for Application of Fire Test Procedures (FTP Code); and
- .3 International Code for Fire Safety Systems (FSS Code).

3 The non-mandatory instruments, which the Sub-Committee may be called upon to review, include, as a minimum:

- .1 any recommendations and guidelines relevant to fire safety and evacuation.

ANNEX 13

**PROPOSED REVISED WORK PROGRAMME OF THE SUB-COMMITTEE AND
PROVISIONAL AGENDA FOR FP 51**

PROPOSED REVISED WORK PROGRAMME OF THE SUB-COMMITTEE

		Target completion date/number of sessions needed for completion	Reference
1	Analysis of fire casualty records	Continuous	MSC 75/24, paragraph 22.18; FP 50/21, section 12
2	Consideration of IACS unified interpretations	Continuous	MSC 78/26, paragraph 22.12; FP 50/21, section 11
H.1	Passenger ship safety	2006	MSC 74/24, paragraph 21.4; FP 49/17, section 3
H.2 H.1	Performance testing and approval standards for fire safety systems	2009	MSC 74/24, paragraph 21.12; FP 50/21, section 4
H.3	Amendments to resolution A.754(18) relating to performance criteria for fire doors	2006	MSC 77/26, paragraph 23.12; FP 49/17, section 7
H.4 H.2	Comprehensive review on the Fire Test Procedures Code	2008	MSC 80/24, paragraph 21.11; FP 50/21, section 10
H.5 H.3	Recommendation on evacuation analysis for new and existing passenger ships	2006 2008	MSC 73/21, paragraph 4.16; FP 50/21, section 5
H.6 H.4	Review of the SPS Code (co-ordinated by DE)	2007	MSC 78/26, paragraph 24.9; FP 50/21, section 8
H.7 H.5	Development of provisions for gas-fuelled ships (co-ordinated by DE)	2007	MSC 78/26, paragraph 24.19; FP 50/21, section 6
H.8 H.6	Measures to prevent fires in engine-rooms and cargo pump-rooms	2009	MSC 79/23, paragraph 20.11; FP 50/21, section 7

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- Notes:**
- 1 "H" means a high priority item and "L" means a low priority item. However, within the high and low priority groups, items have not been listed in any order of priority.
 - 2 The struck-out text indicates proposed deletions and the shaded text shows proposed additions or changes.
 - 3 Items printed in bold letters have been selected for the provisional agenda for FP 51.

		Target completion date/number of sessions needed for completion	Reference
[H.7]	Protection of exterior boundaries of superstructures and deckhouses*	2007	FP 50/21, paragraph 11.14]
L.1	Smoke control and ventilation	2 sessions	FP 39/19, section 9; FP 46/16, section 4

* If the Committee decides to approve the proposed amendments to SOLAS regulation II-2/4.5.2.3, the item need not be included in the work programme and provisional agenda for FP 51 (see paragraph 11.15).

PROPOSED PROVISIONAL AGENDA FOR FP 51^{*}

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Performance testing and approval standards for fire safety systems
 - 4 Comprehensive review of the Fire Test Procedures Code
 - 5 Recommendation on evacuation analysis for new and existing passenger ships
 - 6 Review of the SPS Code
 - 7 Development of provisions for gas-fuelled ships
 - 8 Measures to prevent fires in engine-rooms and cargo pump-rooms
 - 9 Consideration of IACS unified interpretations
 - 10 Analysis of fire casualty records
 - [11 Protection of exterior boundaries of superstructures and deckhouses]^{**}
 - 12 Work programme and agenda for FP 52
 - 13 Election of Chairman and Vice-Chairman for 2008
 - 14 Any other business
 - 15 Report to the Maritime Safety Committee
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^{*} Agenda item numbers do not necessarily indicate priority.

^{**} Item can be deleted if MSC 81 approves the proposed amendments to SOLAS regulation II-2/4.5.2.3.