ST. VINCENT AND THE GRENADINES

MARITIME ADMINISTRATION

CIRCULAR N° PSC 026

PROCEDURE FOR CONDUCTING OPERATIONAL FIRE, ABANDON SHIP AND DAMAGE CONTROL DRILLS DURING A PORT STATE CONTROL INSPECTION

TO: SHIPOWNERS & SHIPS' OPERATORS & MANAGERS
SURVEYORS TO FLAG STATE ADMINISTRATION
CLASSIFICATION SOCIETIES

APPLICABLE TO: ALL SHIPS SUBJECT TO PORT STATE CONTROL'S INSPECTIONS
ENTRY INTO FORCE: DATE OF THE PRESENT CIRCULAR

Monaco, 20th February 2009

The attached **FSI 17/7/8 dated 8th December 2008** – **HARMONIZATION OF PORT STATE CONTROL ACTIVITIES** – details the procedure for conducting operational fire, abandon ship and damage control drills during a port State control inspection.

INTERNATIONAL MARITIME ORGANIZATION

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SUB-COMMITTEE ON FLAG STATE IMPLEMENTATION
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HARMONIZATION OF PORT STATE CONTROL ACTIVITIES

Procedures for conducting operational fire, abandon ship and damage control drills during a port State control inspection

Submitted by the Paris MoU

SUMMARY

Executive summary:	Annexed to this document are the procedures for conducting operational fire, abandon ship and damage control drills during a port State control inspection
Strategic direction:	1
High-level action:	1.1.2
Planned output:	1.1.2.3
Action to be taken:	Paragraph 3
Related documents:	None

Introduction

1 A Paris MoU Task Force was tasked by the Paris MoU Port State Control Committee (PSCC) to develop procedures for conducting operational fire, abandon ship and damage control drills during a port State control inspection

2 The attached procedures for conducting operational fire, abandon ship and damage control drills during a port State control inspection were adopted by PSCC 41, at its last meeting in Greece, with the ability to revisit them at a later date.

Action requested of the Sub-Committee

3 The Sub-Committee is invited to note the information provided.

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ANNEX

CONDUCTING OPERATIONAL FIRE, ABANDON SHIP AND DAMAGE CONTROL DRILLS DURING A PORT STATE CONTROL INSPECTION

1. Introduction

1.1 It is essential that seafarers are familiar with the life-saving and fire-fighting equipment on board their ships, and that they have confidence that the systems provided for their safety will work efficiently and effectively in an emergency.

1.2 Experience has shown that holding frequent drills improves the familiarity of the crew with life-saving and fire-fighting equipment on board their ships. Drills give ships crew the opportunity to gain experience and confidence in the use of safety equipment and work in co-operation with each other. The PSCO should request to see records of drills carried out as per the requirement of the on board safety Management System.

1.3 During a port State control inspection the attending Port State Control Officer (PSCO) may establish "clear grounds" for doubting the ability of the crew to carry out their emergency duties (see Sections 2.2 and 2.3) or receive information from legitimate interested parties regarding the crews' ability. In such cases an operational drill should be conducted.

1.4 It is essential that PSCOs witness operational drills that are conducted in a consistent manner, that achieve the minimum required standard (see Section 3) and that is understood by all relevant bodies that may be involved with the vessel such as flag States, Recognized Organizations, owner/operators and port States.

1.5 PSCOs should bear in mind the security level of the ship. For example, a ship at security level 2 may have additional doors locked which may impede access to the scene of the incident. The PSCO should monitor this during the drill.

1.6 The main purpose of these instructions is to provide guidance to PSCOs in setting a drill scenario, witnessing the drill and finally assessing the standard of the drill. It is important to emphasize that the PSCO is not looking for an exceptional drill, particularly on cargo ships. The main points to be satisfied are:

1.6.1 In the event of a shipboard emergency can the crew organize themselves into an effective team to tackle the emergency?

1.6.2 Can they communicate effectively?

1.6.3 Is the master in control and is information flowing to/from the command centre?

1.6.4 In the event of the situation getting out of hand can the crew safely abandon the ship?

It is important that when setting the scenario the PSCO clearly explains to the master exactly what is required and expected during the drill, bearing in mind there may be language difficulties. PSCOs should not be intimidating, not interfere during the drill nor offer advice, which on occasions is tempting, they should stand back and observe only,

making appropriate notes. It is important to emphasize that the PSCO's role is not to teach or train but to witness.

2. Background information

2.1 The Paris Memorandum of Understanding on Port State Control (Paris MoU) gives two conditions where operational drills could be witnessed:

a. Paris MoU Annex 1 Section 5 – Whenever there are clear grounds for believing, that the condition of a ship or its equipment or crew does not substantially meet the relevant requirements of a Convention, a more detailed inspection shall be carried out, including further checking of compliance with on board operational requirements.

b. Paris MoU Annex 1 Section 8 – Expanded inspections require the lowering of one seaside lifeboat to the water for ships in general and a fire drill on a passenger ship.

2.2 Examples of "clear grounds" are given in Section 4 of Annex 1 of the Paris MoU. (See annex 1)

2.3 In addition to the examples of "clear grounds" given in Section 4 of Annex 1 of the Paris MoU (see annex 1). Clear grounds found during an initial inspection which may warrant an operational drill could be but are not limited to the following:

a. Muster List does not conform to SOLAS regulation III/8 (see annex 2).

b. Random questioning of the crew going about their normal duties reveals:

- a lack of knowledge of what their emergency duties are
- a lack of knowledge of the use of emergency equipment that they should be reasonably familiar with
- key members of crew are unable to communicate with each other.

c. Inspection of logbooks/records reveals that drills have not been carried out as required by SOLAS regulation III/19 (see annex 3) or as required by the Safety Management System.

d. There is evidence that the crew have not been trained in accordance with SOLAS regulation III/19 (see annex 3).

e. Serious deficiencies in the LSA or Fire-fighting Equipment.

f. For passenger ships – the absence of a decision support system as required by SOLAS regulation III/29 (see annex 4).

g. Crew unfamiliar with Life-saving training Manual, Fire-fighting Training Manual and Fire Safety Operational Booklet.

3. Minimum required standard

3.1 When assessing whether operational requirements are complied with, PSCOs should exercise their professional judgement to determine whether the operational proficiency of the crew as a whole is of sufficient level to allow the ship to sail without danger to the ship or persons on board, or presenting an unreasonable threat of harm to the marine environment.

3.2 When assessing the crew's ability to conduct an operational drill, the mandatory minimum requirements for familiarization and basic safety training for seafarers, as stated in STCW 78/95, shall be used as a benchmark.

3.3 See annexes 5 to 8 for a summary of minimum requirements for familiarization and basic safety training in accordance with STCW 78/95.

4. Planning and organizing drills

4.1 Operational drills should be planned, organized and performed in accordance with relevant shipboard requirements so that the recognized risks are minimized. The onboard SMS should detail this.

4.2 The PSCO must not request any operational tests or impose physical demands which, in the judgement of the master, could jeopardize the safety of the ship, crew, passengers, or cargo.

4.3 When requesting operational drills, the PSCO should ensure, as far as possible, no interference with normal shipboard operations, such as loading and unloading of cargo or ballast, which is being carried out under the responsibility of the master, nor should the PSCO require the demonstration of any operational aspect which could unnecessarily delay the ship.

4.4 Drills should be carried out at a safe speed. PSCOs should not expect to see operational drills conducted in real time. During drills, care should be taken to ensure that everybody familiarizes themselves with their duties and with the equipment. If necessary, drills should be stopped if the PSCO considers that the crew are carrying out unsafe practices or if there is a real emergency.

4.5 The PSCO should devise the emergency scenario on which the drill will be based in conjunction with the master. The onboard SMS could be consulted. Experience has shown that the best assessment is achieved when the PSCO devises and controls the scenario (in collaboration with the master), since there is then an element of uncertainty on the part of the ship's officers as to how a drill will progress and is more realistic to the actual onboard situation facing crew members in a critical situation.

4.6 Depending on the extent of the operational exercise it should be decided whether one or more PSCOs should attend the vessel. With a large cargo ship or with a ship carrying large numbers of crew and passengers it is not reasonable to expect one person to adequately comment upon all areas of an emergency exercise. A more practical solution would be to employ a team of two or three observers, each monitoring certain aspects of

the drill. Objectives will need to be agreed before hand, and a collective opinion formed through discussion at the end of the exercise. Use of several people rather than one overcomes much of the difficulty associated with the subjective assessment. It is appreciated that more than one PSCO is not always available and consideration could be given to using other, suitably briefed, personnel such as experienced administrative staff, members of the emergency services such as the Fire Brigade or Maritime Rescue Coordination Centre (MRCC) staff.

4.7 It is essential that meetings are held between the PSCOs and key members of the ship's personnel before and after the exercise. An initial briefing should be used to explain in general terms how the drill will be conducted and should also enable the ship's staff to recognize the PSCOs who are witnessing the drill, it is recommended that all PSCOs witnessing the drill wear high visibility waistcoats to distinguish them from crew members.

4.8 Effective communications amongst the PSCOs themselves and between the PSCOs and crew is essential to enable the drill to be effectively divided into stages, e.g., Stage I Incident, Stage II Fire Drill, Stage III Abandon Ship Drill.

4.9 Language difficulty between the PSCO and non-English speaking crews can make it difficult to put across the intentions for the conduct of the exercise. Care needs to be exercised when an unsatisfactory drill takes place, this is to ensure differentiation between the crew possibly failing to understand the attending PSCO's intention and failure through lack of crew competence.

4.10 A final de-brief meeting should identify any shortcomings and if appropriate where the drill did not meet the required standard.

5. Standard scenario

5.1 A suggested standard scenario, which could be adapted to various types of vessel, consists of four phases:

a. Incident Stage – A fire report or alarm received on the bridge and acted upon by an incident party.

b. Fire Alarm – The incident progresses to a major fire which requires the ship to deploy fire, boundary cooling, evacuation and closing down parties.

c. Muster – Personnel should be mustered at some time to be determined by the master, lifeboats should be prepared.

d. Abandon Ship – The fire fighters should withdraw and the crew abandon ship. Lifeboats/rafts should be lowered and sent away.

5.2 The starting point of the scenario needs to be first established. High risk locations include main and ancillary engine machinery, galley spaces. Alternatively, electrical sources such as switchboard rooms or cabling runs in deckheads could be considered. If the ship carries Dangerous Goods a simulated fire involving these would test knowledge of recommended emergency procedures.

6. Muster list

6.1 The PSCO may determine if the crew members are aware of their duties indicated in the muster list, that they are familiar with the duties assigned to them and are aware of the locations where they should perform their duties, this is done by asking the crew relevant questions. This could be done prior to the drill or during the drill, for instance questioning of stairway guides on a passenger ship.

6.2 To determine whether the muster list is up to date, the PSCO may require an up-to-date crew list.

6.3 The PSCO should ensure that muster lists (SOLAS regulation III/37) are exhibited in conspicuous places throughout the ship, including the navigational bridge, the engine-room and the crew accommodation spaces. When determining if the muster list is in accordance with the regulations, the PSCO may verify whether:

a. the muster list shows the duties assigned to the different members of the crew;

b. the muster list specifies which officers are assigned to ensure that life-saving and fire-fighting equipment is maintained in good condition and ready for immediate use;

c. the muster list specifies the substitutes for key persons who may become disabled, taking into account that different emergencies may call for different actions;

d. the muster list shows the duties assigned to the crew members in relation to passengers in the case of emergency;

e. the format of the muster list used on passenger ships is approved.

6.4 The PSCO may determine that the duties of assigned crew members manning the survival craft are in accordance with the requirements of SOLAS and should verify that a deck officer or certificated person is placed in charge of each survival craft to be used. A second-in-command should also be nominated in the case of lifeboats.
Note, however, that the flag State, having due regard to the nature of voyage, the number of persons on board and the characteristics of the ship, may permit a person practised in the handling and operation of liferafts to be placed in charge of liferafts in lieu of persons qualified above.

7. Communication – passenger and cargo vessels

7.1 The PSCO may determine if the key crew members are able to communicate with each other, and with passengers as appropriate, in such a way that the safe operation of the ship is not impaired, especially in emergency situations.

7.2 Key crew members could be but are not limited to:

a. Bridge Team including GMDSS operators who must also be able to communicate with the shore and other vessels
b. Fire Parties
c. Damage Control Parties
d. Boat Preparation Parties
e. Passenger Muster Personnel on passenger ships.

7.3 The PSCO should verify the working language(s) of the vessel.

7.4 The PSCO should also verify that the key crew members are able to understand each other during the port State control inspection or drills.

7.5 The crew members assigned to assist passengers should be able to give the necessary information to the passengers in case of an emergency.

7.6 The PSCO may determine if UHF or VHF hand held radios are being used and that the crew are familiar with their use and that they are aware of reception dead zones and areas and what alternative communication methods are available. (Sound powered phones, etc.).

8. Command

8.1 PSCOs should establish that there are sufficient personnel on the bridge to make decisions, navigate the ship as necessary and deal with the considerable amount of communication that is likely.

8.2 A frequently neglected aspect of emergency drills is communication with the shore. When a ship is in difficulty it is likely that shore-based organizations will be involved and it follows that these should be alerted as soon as possible. The crew's lack of familiarity with shore-based organizations and the shore-based organizations' lack of familiarity with the shipboard organization means that difficulties can occur in mounting a coherent response to an emergency. For large cargo ships and passenger ships it is recommended that PSCOs make use of Maritime Rescue Coordination Centre (MRCC) facilities during operational drills. The ability of the local Search and Rescue (SAR) centre to participate and a working channel over which communication for the purpose of the exercise can be passed should be agreed beforehand (by reference to the SAR plan). Experience has shown that this is of benefit to both parties in promoting familiarity with the procedures.

9. Fire drills

9.1 The PSCO may witness a fire drill carried out by the crew assigned to the duties specified on the muster list and in the ship's own procedures. After consultation with the master of the vessel, one or more specific locations of the ship may be selected for a simulated fire. A crew member may be sent to the location(s) to activate a fire alarm system or use other means to give the alarm. The crew may also make use of Fire Safety Operational Booklet and ship's own procedures under ISM.

9.2 Whichever location is selected it would be expected that the ship's fire plan is examined to find a suitable location from which the fire may spread in as many directions as possible, having regard to the structural fire protection and ventilation arrangements.

9.3 Consideration needs to be given to testing the ship's response for control of smoke, this is potentially as important as the ability to fight the fire given that the smoke will penetrate far more areas than the fire and will result in greater casualties. Realism is of vital importance to the exercise and the use of a smoke generator is a useful aid. It is not advocated that Administrations purchase their own smoke generators but most passenger ships will have a smoke generator on board for training purposes. Cards identifying "hot spots", heavy/light smoke are of some benefit if a smoke generator is not available. Another method is to simulate the effects of smoke is by masking part or all of the BA masks. This should be done with care and in slow time. The PSCO at the scene needs to make clear the exact situation regarding the smoke penetration.

9.4 If agreed with the master, casualties should also be simulated both in the immediate area of the fire and in cabins, the latter will test the cabin search organization of the ship. Great care must be taken if crew members are used as stretcher cases. The use of weighted dummies is just as realistic without the risk of injury.

9.5 At the location of the fire the PSCO should describe the fire indication to the crew member and observe how the report of fire is relayed to the bridge or damage control centre. At this point most passenger ships will sound the crew alarm to summon the fire-fighting parties to their stations.

9.6 The PSCO may observe how the fire-fighting team leader, fire-fighting team members and fire-fighting team assistants are performing the actual fire-fighting operation. The PSCO should observe the fire-fighting party arriving on the scene, breaking out their equipment and fighting the simulated fire. Team leaders should be giving orders as appropriate to their crews and passing the word back to the bridge or damage control centre on the conditions. The fire-fighting crews should be observed for proper donning and use of their equipment. The PSCO should make sure that all the gear is complete. Merely mustering the crew with their gear is not acceptable.

9.7 If a scenario is developed where by the emergency generator is put on load and will be used to supply power to the fire pumps, consideration needs to be given as to whether the crew are over optimistic in the number of hoses deployed. Checks should also be made that the crew are familiar with the location and operation of isolation valves, sprinkler control stations, remote closing devices including watertight doors and establishing emergency lighting.

9.8 Crew response to personnel injuries can be checked by selecting a crew member as a simulated casualty. Where possible a PSCO should be in the same area as the casualty, in order to observe how the search team is performing its task of search and rescue. The PSCO should observe how the word is passed and the response of stretcher and medical teams. Handling a stretcher properly through narrow passageways, doors and stairways is difficult and takes practice.

9.9 The drill should, as far as practicable, be made as realistic as possible to simulate an actual emergency.

9.10 Those crew members assigned to other duties related to a fire drill, such as the manning of the emergency generators, the CO_2 room, the sprinkler and emergency fire pumps, should also be involved in the drill. The PSCO may ask these crew members to explain their duties and, if possible, to demonstrate their familiarity.

9.11 Where possible, one PSCO should be on the bridge to observe how the master is controlling the drill.

9.12 Crew members on cargo ships should be familiar with the location of fire-fighting and safety equipment and all means of escape.

9.13 On passenger ships, special attention should be paid to the duties of those crew members assigned to the closing of manually operated doors and fire dampers. These closing devices should be operated by the responsible persons in the areas of the simulated fire(s) during the drill. Crew members not assigned to the fire-fighting teams are generally assigned to locations throughout the passenger accommodation to assist in passenger evacuation. These crew members should be asked to explain their duties and the meaning of the various emergency signals and asked to point out the two means of escape from the area, and where the passengers are to report. Crew members assigned to assist passengers should be able to communicate at least enough information to direct a passenger to the proper muster and embarkation stations. It is important to ascertain the procedure for evacuating disabled passengers.

10. Damage Control Drills

10.1 Fire fighting is not the only area which should be examined. Damage control is equally important. Damage Control Plans should be available on all passenger ships irrespective of year of build and cargo ships built after 1 February 1992.

10.2 The crew's knowledge of the Damage Control Plan, including their knowledge of cross-flooding arrangements, convention valve location, local/remote operation of the watertight doors, etc., should be tested. Their assessment of the effect on stability of large quantities of water in a damaged compartment should be assessed along with the countermeasures taken to minimize the effects.

10.3 The PSCO may determine if the officers of the ship are aware of the contents of the damage control booklet which should be available to them, or of the damage control plan. The officers may be asked to explain the action to be taken in various damage conditions.

10.4 For vessels carrying liquid or noxious cargoes, methods to minimize the effects of pollution following collision damage could be assessed including the resultant effects on trim and stability.

10.5 The relevant officers may also be asked to explain about the boundaries of the watertight compartments, the openings therein with the means of closure and position of any controls thereof and the arrangements for the correction of any list due to flooding.

10.6 The relevant officers should have a sound knowledge of the effect of trim and stability of their ship in the event of damage to and consequent flooding of a compartment and counter-measures to be taken.

10.7 On passenger ships the PSCO should determine if a damage control plan is provided and whether the crew members are familiar with their duties and the proper use of the ship's installations and equipment for damage control purposes.

11. Abandon ship drills – cargo ships

11.1 In order for the PSCO to satisfy themselves that the lifeboat, its launching arrangements and competence of the crew the crew should demonstrate the following as part of an abandon ship drill:

a. Lower the boat to the water (Note the lowering of the boat must be at the master's discretion depending on weather and tidal conditions, etc.)

b. Release the hooks

c. Take the boat away.

11.2 Care needs to be taken when requiring a ship to lower lifeboats. The number of persons inside the lifeboats during launching for the purpose of a drill shall be at the master's discretion. It is now acceptable to allow lifeboats to be lowered without an operating crew being inside. However, the attending PSCO must satisfy themselves that the hooks can be released and the boat taken away. If a lifeboat is lowered without any operating crew inside then it is acceptable to do a dynamic test of the davit brakes whilst the lifeboat is being lowered. A dynamic brake test comprises letting the lifeboat descend at constant speed then dropping the brake arm to impose a sudden load, this should be repeated three times. A dynamic brake test of the brake must **not** be carried out when operational crew are in the lifeboat whilst it is being lowered. The PSCO should also ask to see the five-yearly load test certificate.

11.3 If it is intended for the crew to embark the lifeboat using the embarkation ladder the attending PSCO should be satisfied that the ladder is in a suitable condition and aware of the difficulties that can be encountered when using ladders such as trim and list of ship. If there is any doubt the ladders should be deployed to check for length and condition.

11.4 If the embarkation ladders are not in a satisfactory condition or the master does not wish to use them, it will be necessary to initially launch the lifeboat with no operating crew inside, if this is done satisfactorily the lifeboat should be recovered and the launched for a second time with the operating crew who can demonstrate the use of the hooks and take the lifeboat away. Prior to recovering lifeboats to the davit it is recommended that, after securing the hooks, the lifeboat is raised one metre and left in this position for a short period of time, e.g., five minutes prior to recovering the vessel to the davits to ensure that the hook release mechanism has reset.

11.5 If boats are fitted with "on load" release hooks prior to releasing the hooks the lifeboat should be fully waterborne; the hydrostatic interlock system, where fitted, should be triggered prior to releasing the hooks manually.

11.6 The effectiveness of the bowsing and tricing-in arrangements needs to be confirmed. When assessing whether the bowsing-in arrangements are suitable the PSCO should bear in mind that the bowsing equipment should be suitable for use with a fully loaded lifeboat with the vessel having an adverse list of 15°.

11.7 For vessel built after 1986, SOLAS regulation III/31.1 (see annex 11) requires that all lifeboats on cargo ships shall be so designed that they can be boarded and launched directly from the stowed position and that davit-launched liferafts can be boarded and launched from a position immediately adjacent to the stowed position. In light of the recent IMO Guidelines on Safety During Abandon Ship Drills using Lifeboats whilst undertaking abandon ship drills as part of a port State control inspection, the emphasis shall be put on the words "shall be so designed" and as such the attending PSCO should satisfy themselves that the remote wires for the launching required in regulation 33.1 are in good condition and the crew are able to operate them, however it is not necessary to launch the boat fully loaded from the stowed position using the remote wires.

11.8 Free-fall lifeboats should not be free-fall launched as part of an operational drill. Simulated launching of free-fall lifeboats in accordance with Part 3 of MSC.1/Circ.1206 on Measures to Prevent Accidents with Lifeboats may be an alternative to full launching (see annex 9).

11.9 SOLAS regulation III/7.2.4 says "Lifejackets selected for free-fall lifeboats, and the manner in which they are carried or worn, shall not interfere with entry into the lifeboat, occupant safety or operation of the lifeboat." This should be checked as there is a risk of neck injuries when free-fall boats are launched. Space may be an issue if lifejackets are carried, rather than worn. Some administrations require inflatable lifejackets for use with free-fall boats on ships built since 1998.

11.10 On cargo ships, it is required that lifeboats and davit-launched liferafts are capable of being launched within a period of 10 minutes. For the purpose of an inspection it is not necessary for the crew to launch the lifeboats within 10 minutes, the preparation of the lifeboats and the launching process should be a controlled and safe procedure whereby the attending PSCO should be able to assess the proficiency of the crew and the likelihood that they are capable of launching the davit-launched lifeboats and liferafts within 10 minutes.

12. Abandon ship drills – passenger ships

12.1 Reference is made to MSC.1/Circ.1206 on Measures to Prevent Accidents with Lifeboats (see annex 9). (Note that MSC.1/Circ.1206 is not yet compulsory – outcome of MSC 82).

12.2 After consultation with the master, the PSCO may require an abandon ship drill for one or more survival craft. The essence of this drill is that the survival craft are manned and operated by the crew members assigned to them on the muster list. If possible the PSCO should include the rescue boat(s) in the abandon ship drill. SOLAS chapter III gives specific requirements on abandon ship training and drills.

12.3 The drill should, as far as practicable, be conducted as if there were an actual emergency. 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, and elements of the drill that may involve unnecessary risk will need special attention or may be excluded from the drill. For example, lowering a boat with its full complement of persons is an example of an element of a drill that may, depending on the circumstances, involve unnecessary risk. Such drills should only be carried out if special precautions are observed.

12.4 The abandon ship drill should include:

a. summoning of crew (and passengers) to the muster station(s) with the required alarm and ensuring that they are aware of the order to abandon ship as specified in the muster list;

b. reporting to the stations and preparing for the duties described in the muster list;

c. checking that crew (and passengers) are suitably dressed;

d. checking that lifejackets are correctly donned;

e. lowering of at least one lifeboat after the necessary preparation for launching;

f. starting and operating the lifeboat engine; and

g. operation of the davits used for launching liferafts.

12.5 Care needs to be taken when requiring a ship to lower lifeboats. The number of persons inside the lifeboats during launching for the purpose of a drill should be at the master's discretion. It is now acceptable to allow lifeboats to be lowered without an operating crew being inside. The purpose of this is to reduce the risk of accidents during launching and recovery, however this must be balanced out with the risk of embarking/disembarking the boat whilst it is in the water, if the boat is to be taken away and run. If the lifeboat lowered during the drill is not the rescue boat, the rescue boat should be lowered as well, taking into account that it is boarded and launched in the shortest possible time. The PSCO should ensure that crew members are familiar with the duties assigned to them during abandon ship operations and that the crew member in charge of the survival craft has complete knowledge of the operation and equipment of the survival craft.

12.6 Each survival craft should be stowed in a state of continuous readiness so that two crew members can carry out preparations for embarking.

12.7 On passenger ships, it is required that lifeboats and davit-launched liferafts are capable of being launched within a period of 30 minutes. For the purpose of an inspection it is not necessary for the crew to launch the lifeboats within 30 minutes, the preparation of the lifeboats and the launching process should be a controlled and safe procedure whereby the attending PSCO should be able to assess the proficiency of the crew and the likelihood that they are capable of launching the davit-launched lifeboats and liferafts within 30 minutes.

12.8 If a sequential lowering of lifeboats is specified on the muster list this should be known by all and should be capable of being demonstrated.

12.9 SOLAS regulation III/10 (see annex 10) requires that a deck officer or certified person shall be in charge of each survival craft, a second in command shall also be nominated. At each liferaft davit or liferaft launching position one person has to be similarly qualified. The PSCO should check these qualifications and confirm the ability of each person to perform their role, including the starting and operating of the lifeboat engine, and the operation of davits. It should be noted that the flag State, having due regard to the nature of voyage, the number of persons on board and the characteristics of the ship, may permit person practised in the handling and operation of liferafts to be placed in charge of liferafts in lieu of persons qualified above.

12.10 For passenger vessels with Marine Evacuation System (MES) these obviously cannot be deployed, thus only a simulation can be undertaken to ensure the crew are familiar with the operation.

13. Witnessing drills

13.1 Gauging that the drill is of the required standard is highly subjective. Deficiencies in hardware are generally easy to identify and report on but identifying and reporting significant procedural deficiencies is far more difficult. If a drill is very good or very bad, these tend to be self-evident and more readily lend themselves to reporting. It is the drills which lie on the borderline between acceptable or unacceptable which provide the greatest difficulty.

13.2 To resolve this problem a PSCO needs to have clearly in his own mind a list of assessment objectives based on the three principles of command, control and communication.

13.3 As the drill progresses, areas of concern or of failure are noted against each of these objectives. At the end of the exercise a judgment as to whether or not the drill is acceptable should be based on these observations. It is of considerable importance to make notes to support and justify the PSCO's actions.

13.4 Having assessed the extent to which operational requirements are complied with, the PSCO should then exercise their professional judgement to determine whether the operational proficiency of the crew as a whole is of sufficient level to allow the ship to sail without danger to the ship or persons on board, or presenting an unreasonable threat of harm to the marine environment.

13.5 When witnessing a drill, the PSCO should seek:

a. Confirmation that the crew follow what is required of them by the muster list.

b. Confirmation that there are sufficient personnel assigned to the various parties to cope with the duties given to them.

c. Confirmation that there is an effective means of communication between the party, the party leader and the Bridge and that relevant information is being passed bi-directionally.

d. Confirmation of the efficiency of the crew working as a team. This would be based on questioning of personnel and observation of their actions. The response times should be noted of the various parties in assembling at their stations. The reaction of the parties to unplanned events should also be noted.

e. Confirmation that key members of the crew are able to understand each other.

f. Confirmation of the efficiency of the equipment used, for example:

- that the fire alarms are audible and efficient
- that the fire doors close as required
- that items of personal fire-fighting equipment appear well maintained.

g. Confirmation that the response time was considered fast enough, considering the size of the ship and the locations of fire, personnel and fire-fighting equipment.

13.6 In the case of evacuation or abandon ship drills:

a. Confirmation that the escape arrangements for passengers/crew from lower decks are adequate, that the assembly or muster stations are clearly indicated, that the crew are familiar with the layout of the ship and are able to respond to changes in circumstances, for example, directing passengers so as to avoid a smoke-filled area.

b. Confirmation that the boat lowering party is proficient and that boats are lowered and ready for embarkation with ancillary equipment deployed.

c. Confirmation that the evacuation was carried out in a reasonable time, but without unnecessary risk to drill participants. Benchmark times from SOLAS should be:

- 10 minutes to prepare a lifeboat, or rescue boat or launch the first davit-launched liferaft.
- 30 minutes to abandon a passenger ship.

14. Evaluation and reporting

14.1 Two Aide-Memoires have been provided for use by the PSCOs to assist with the planning and organization of operational drills.

a. Annex 12 Operational Drills Aide-Memoire for Cargo Ships.

b. Annex 13 Operational Drills Aide-Memoire for Passenger Ships.

14.2 If in the professional judgement of the PSCO(s) the operational drill witnessed does not meet with the required minimum level then the corrective action must be taken. See annex 15 for a summary of deficiency codes relating to Operational Drills.

14.3 Deficiency relating to operational drills are raised against the Series 2000 Codes – SOLAS-related operational drills. In addition, a deficiency should also be raised against Section 8 of the ISM Code – Emergency Preparedness (Code 2540), using an action taken Code 18 – within three months when the Series 2000 deficiency is non-detainable deficiency and Code 19 – Major Non Conformity when the Series 2000 deficiency is detainable.

14.4 If the conduct of the drill is in the professional judgment of the PSCO(s) is so poor that it warrants detention it is recommended that in addition to completing the relevant Report of Inspection and Detention Notice the PSCO should complete a Drill Report for an Unsatisfactory Drill (see annex 14). This report should be completed using the assessment and status definitions described in the report. In turn the report should be left on board with the master and a copy faxed with the Notice of Detention and Report of Inspection to the relevant interested parties. The purpose of the report is to give a clear indication of the problem areas identified during the operational drill to those parties involved with rectifying the deficiencies.

15. Training Providers

15.1 Port State Control Officers should not recommend training providers to masters, Owner/operators or Agents.

If it appears that the drill is totally unsatisfactory and additional training may be required it should be left to the decision/discretion of the vessel's master or Company DPA or Company Superintendent.

16. References

1. The Paris Memorandum of Understanding on Port State Control
2. SOLAS Convention 1974 as amended
3. STCW Convention 1978 as amended in 1995
4. Procedures for Port State Control resolution A.787(19) as amended by resolution A.882(21)
5. Port State Control Committee Instruction – Operational Control on Ferries & Passenger Ships
6. MSC.1/Circ.1206 dated 26 May 2006 – Measures to Prevent Accidents with Lifeboats

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ANNEX 1

ANNEXES TO "CONDUCTING OPERATIONAL FIRE, ABANDON SHIP AND DAMAGE CONTROL DRILLS DURING A PORT STATE CONTROL INSPECTION"

Paris Memorandum of Understanding on Port State Control – Annex 1

Section 4 – Examples of "CLEAR GROUNDS" for a more detailed inspection

In applying 3.1 (ships of non-parties) of the Memorandum, "clear grounds" which warrant a more detailed inspection include the following:

.1 the ship has been identified as a priority case for inspection, under section 1.1 and sections 1.2.3, 1.2.4, 1.2.5b, 1.2.5.c, and 1.2.8 of this Annex (see Annex 1a);

.2 during examination of the certificates and documents referred to in section 2 of this Annex, inaccuracies have been revealed or the documents have not been properly kept or updated;

.3 indications that the relevant crew members are unable to communicate appropriately with each other, or with other persons on board, or that the ship is unable to communicate with the shore-based authorities either in a common language or in the language of those authorities;

.4 evidence of cargo and other operations not being conducted safely or in accordance with IMO guidelines;

.5 failure of the master of an oil tanker to produce the record of the oil discharge monitoring and control system for the last ballast voyage;

.6 absence of an up-to-date muster list, or crew members not aware of their duties in the event of fire or an order to abandon the ship;

.7 the emission of false distress alerts not followed by proper cancellation procedures;

.8 the absence of principal equipment or arrangements required by the conventions;

.9 evidence from the port State control officer's general impressions and observations that serious hull or structural deterioration or deficiencies exist that may place at risk the structural, watertight or weather tight integrity of the ship;

.10 excessively unsanitary conditions on board the ship;

.11 information or evidence that the master or crew is not familiar with essential shipboard operations relating to the safety of ships or the prevention of pollution, or that such operations have not been carried out;

.12 the absence of a table of shipboard working arrangements or records of hours of work or rest of seafarers (see ILO180).

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ANNEX 2

SOLAS CHAPTER III REGULATION 8

SOLAS chapter III – Life-saving appliances and arrangements
Part B - Requirements for ships

Regulation 8 – Muster list and emergency instructions

1 This regulation applies to all ships.

2 Clear instructions to be followed in the event of an emergency shall be provided for every person on board. In the case of passenger ships these instructions shall be drawn up in the language or languages required by the ship's flag State and in the English language.

3 Muster lists and emergency instructions complying with the requirements of regulation 37 shall be exhibited in conspicuous places throughout the ship including the navigation bridge, engine-room and crew accommodation spaces.

4 Illustrations and instructions in appropriate languages shall be posted in passenger cabins and be conspicuously displayed at muster stations and other passenger spaces to inform passengers of:

.1 their muster station;

.2 the essential actions they must take in an emergency; and

.3 the method of donning lifejackets.

* * *

ANNEX 3

SOLAS CHAPTER III REGULATION 19

SOLAS chapter III – Life-saving appliances and arrangements
Part B – Requirements for ships and life-saving appliances (Section 1 – Passenger Ships and Cargo Ships)

Regulation 19 – Emergency training and drills

1 This regulation applies to all ships.

2 Familiarity with safety installations and practice musters.

2.1 Every crew member with assigned emergency duties shall be familiar with these duties before the voyage begins.

2.2 On a ship engaged on a voyage where passengers are scheduled to be on board for more than 24 h, musters of the passengers shall take place within 24 h after their embarkation. Passengers shall be instructed in the use of the lifejackets and the action to take in an emergency.

2.3 Whenever new passengers embark, a passenger safety briefing shall be given immediately before sailing, or immediately after sailing. The briefing shall include the instructions required by regulations 8.2 and 8.4, and shall be made by means of an announcement, in one or more languages likely to be understood by the passengers. The announcement shall be made on the ship's public address system, or by other equivalent means likely to be heard at least by the passengers who have not yet heard it during the voyage. The briefing may be included in the muster required by paragraph 2.2 if the muster is held immediately upon departure. Information cards or posters or video programmes displayed on ships video displays may be used to supplement the briefing, but may not be used to replace the announcement.

3 Drills

3.1 Drills shall, as far as practicable, be conducted as if there were an actual emergency.

3.2 Every crew member shall participate in at least one abandon ship drill and one fire drill every month. The drills of the crew shall take place within 24 h of the ship leaving a port if more than 25% of the crew have not participated in abandon ship and fire drills on board that particular ship in the previous month. When a ship enters service for the first time, after modification of a major character or when a new crew is engaged, these drills shall be held before sailing. The Administration may accept other arrangements that are at least equivalent for those classes of ships for which this is impracticable.

3.3 *Abandon ship drill*

3.3.1 Each abandon ship drill shall include:

.1 summoning of passengers and crew to muster stations with the alarm required by regulation 6.4.2 followed by drill announcement on the public address or other communication system and ensuring that they are made aware of the order to abandon ship;

.2 reporting to stations and preparing for the duties described in the muster list;

.3 checking that passengers and crew are suitably dressed;

.4 checking that lifejackets are correctly donned;

.5 lowering of at least one lifeboat after any necessary preparation for launching;

.6 starting and operating the lifeboat engine;

.7 operation of davits used for launching liferafts;

.8 a mock search and rescue of passengers trapped in their staterooms; and

.9 instruction in the use of radio life-saving appliances.

3.3.2 Different lifeboats shall, as far as practicable, be lowered in compliance with the requirements of paragraph 3.3.1.5 at successive drills.

3.3.3 Except as provided in paragraphs 3.3.4 and 3.3.5, each lifeboat shall be launched, and manoeuvred in the water by its assigned operating crew, at least once every three months during an abandon ship drill.

3.3.4 Lowering into the water, rather than launching of a lifeboat arranged for free-fall launching, is acceptable where free-fall launching is impracticable provided the lifeboat is free-fall launched with its assigned operating crew aboard and manoeuvred in the water at least once every six months. However, in cases where it is impracticable, the Administration may extend this period to 12 months provided that arrangements are made for simulated launching which will take place at intervals of not more than six months.

3.3.5 The Administration may allow ships operating on short international voyages not to launch the lifeboats on one side if their berthing arrangements in port and their trading patterns do not permit launching of lifeboats on that side. However, all such lifeboats shall be lowered at least once every three months and launched at least annually.

3.3.6 As far as is reasonable and practicable, rescue boats other than lifeboats which are also rescue boats, shall be launched each month with their assigned crew aboard and manoeuvred in the water. In all cases this requirement shall be complied with at least once every three months.

3.3.7 If lifeboat and rescue boat launching drills are carried out with the ship making headway, such drills shall, because of the dangers involved, be practised in sheltered waters only and under the supervision of an officer experienced in such drills[*].

3.3.8 If a ship is fitted with marine evacuation systems, drills shall include exercising of the procedures required for the deployment of such a system up to the point immediately preceding actual deployment of the system. This aspect of drills should be augmented by regular instruction using the onboard training aids required by regulation 35.4. Additionally every system party member shall, as far as practicable, be further trained by participation in a full deployment of a similar system into water, either on board a ship or ashore, at intervals of not longer than

two years, but in no case longer than three years. This training can be associated with the deployments required by regulation 20.8.2.

3.3.9 Emergency lighting for mustering and abandonment shall be tested at each abandon ship drill.

3.4 *Fire drills*

3.4.1 Fire drills should be planned in such a way that due consideration is given to regular practice in the various emergencies that may occur depending on the type of ships and the cargo.

3.4.2 Each fire drill shall include:

.1 reporting to stations and preparing for the duties described in the muster list required by regulation 8;

.2 starting of a fire pump, using at least the two required jets of water to show that the system is in proper working order;

.3 checking of fireman's outfit and other personal rescue equipment;

.4 checking of relevant communication equipment;

.5 checking the operation of watertight doors, fire doors, fire dampers and main inlets and outlets of ventilation systems in the drill area; and

.6 checking the necessary arrangements for subsequent abandoning of the ship.

3.4.3 The equipment used during drills shall immediately be brought back to its fully operational condition and any faults and defects discovered during the drills shall be remedied as soon as possible.

4 Onboard training and instructions

4.1 Onboard training in the use of the ship's life-saving appliances, including survival craft equipment, and in the use of the ship's fire-extinguishing appliances shall be given as soon as possible but not later than two weeks after a crew member joins the ship. However, if the crew member is on a regularly scheduled rotating assignment to the ship, such training shall be given not later than two weeks after the time of first joining the ship. Instructions in the use of the ship's fire-extinguishing appliances, life-saving appliances, and in survival at sea shall be given at the same interval as the drills. Individual instruction may cover different parts of the ship's life-saving and fire-extinguishing appliances, but all the ship's life-saving and fire-extinguishing appliances shall be covered within any period of two months.

4.2 Every crew member shall be given instructions which shall include but not necessarily be limited to:

.1 operation and use of the ship's inflatable liferafts;

.2 problems of hypothermia, first-aid treatment for hypothermia and other appropriate first-aid procedures;

.3 special instructions necessary for use of the ship's life-saving appliances in severe weather and severe sea conditions; and

.4 operation and use of fire-extinguishing appliances.

4.3 Onboard training in the use of davit-launched liferafts shall take place at intervals of not more than four months on every ship fitted with such appliances. Whenever practicable this shall include the inflation and lowering of a liferaft. This liferaft may be a special liferaft intended for training purposes only, which is not part of the ship's life-saving equipment; such a special liferaft shall be conspicuously marked.

5 Records

The date when musters are held, details of abandon ship drills and fire drills, drills of other life-saving appliances and on board training shall be recorded in such log-book as may be prescribed by the Administration. If a full muster, drill or training session is not held at the appointed time, an entry shall be made in the log-book stating the circumstances and the extent of the muster, drill or training session held.

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* Refer to the Guidelines on training for the purpose of launching lifeboats and rescue boats from ships making headway through the water adopted by the Organization by resolution A.624(15). (back)

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ANNEX 4

SOLAS CHAPTER III REGULATION 29

SOLAS chapter III – Life-saving appliances and arrangements
Part B – Requirements for ships and life-saving appliances (Section II – Passenger Ships (Additional requirements))

Regulation 29 - Decision support system for masters of passenger ships

1 This regulation applies to all passenger ships. Passenger ships constructed before 1 July 1997 shall comply with the requirements of this regulation not later than the date of the first periodical survey after 1 July 1999.

2 In all passenger ships, a decision support system for emergency management shall be provided on the navigation bridge.

3 The system shall, as a minimum, consist of a printed emergency plan or plans*. All foreseeable emergency situations shall be identified in the emergency plan or plans, including, but not limited to, the following main groups of emergencies:

.1 fire;

.2 damage to ship;

.3 pollution;

.4 unlawful acts threatening the safety of the ship and the security of its passengers and crew;

.5 personnel accidents;

.6 cargo-related accidents; and

.7 emergency assistance to other ships.

4 The emergency procedures established in the emergency plan or plans shall provide decision support to masters for handling any combination of emergency situations.

5 The emergency plan or plans shall have a uniform structure and be easy to use.

Where applicable, the actual loading condition as calculated for the passenger ship's voyage stability shall be used for damage control purposes.

6 In addition to the printed emergency plan or plans, the Administration may also accept the use of a computer-based decision support system on the navigation bridge which provides all the information contained in the emergency plan or plans, procedures, checklists, etc., which is able to present a list of recommended actions to be carried out in foreseeable emergencies.

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* Refer to the Guidelines for a structure of an integrated system of contingency planning for shipboard emergencies adopted by the Organization by resolution A.852(20). (back)

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ANNEX 5

MINIMUM STANDARD FOR BASIC SAFETY TRAINING

When assessing the crew's ability to conduct an operational drill the mandatory minimum requirements for familiarization and basic safety training for seafarers as stated in STCW 75/98 shall be used as a benchmark.

In summary:

All persons employed or engaged on a seagoing ship other than passengers should be able to:

a. communicate with other persons on board on elementary safety matters
b. understand safety information, symbols, signs and alarm signals
c. know what to do if a person falls overboard
d. know what to do if smoke is detected
e. know what to do if the fire or abandon ship alarm is sounded
f. identify muster and embarkation stations
g. identify emergency escape routes
h. locate and don lifejackets
i. raise the emergency alarm
j. have basic knowledge of the use of portable fire extinguishers
k. take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance
l. close and open the fire, weathertight and watertight doors fitted, in particular those for hull openings.

Seafarers employed or engaged in any capacity on board ship as part of the ship's compliment with designated safety or pollution prevention duties shall before being assigned duties:

a. receive appropriate approved basic training or instruction in:

- personal survival techniques
- fire prevention and fire fighting
- elementary first aid
- personal safety and social responsibilities

b. be required to provide evidence of having achieved the required standard of competence to undertake the tasks, duties and responsibilities described in STCW Tables A-VI/1-1 to 1-4.

Seafarers designated to control fire-fighting operations shall have successfully completed advanced training techniques for fire-fighting, with particular emphasis on organization, tactics and command, and shall be required to demonstrate competence to undertake these tasks duties and responsibilities as described in STCW A-VI/3, Table A-VI/3.

Seafarers designated to provide medical first aid on board ship shall be required to demonstrate the competence to undertake the tasks, duties and responsibilities as listed in STCW A-VI/4, table A-VI/4-1. The level of knowledge shall be sufficient to enable the seafarer to take immediate effective action in the case of accidents or illness likely to occur on board ship.

Seafarers designated to take charge of medical care on board ship shall be required to demonstrate the competence to undertake the task, duties and responsibilities listed in STCW Section A-VI/4, Table A-VI/4-2. The level of knowledge shall be sufficient to enable the designated seafarer to take immediate effective action in the case of accidents or illness likely to occur on board ship.

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ANNEX 6

STCW A-VI/1-1 AND TABLES A-VI/1-1 TO 1-4

Section A-VI/1

Mandatory minimum requirements for familiarization and basic safety training and instruction for all seafarers

Familiarization training

1 Before being assigned to shipboard duties, all persons employed or engaged on a seagoing ship other than passengers, shall receive approved familiarization training in personal survival techniques or receive sufficient information and instruction, taking account of the guidance given in part B, to be able to:

.1 communicate with other persons on board on elementary safety matters and understand safety information symbols, signs and alarm signals;

.2 know what to do if:

.2.1 a person falls overboard,
.2.2 fire or smoke is detected, or
.2.3 the fire or abandon ship alarm is sounded;

.3 identify muster and embarkation stations and emergency escape routes;

.4 locate and don lifejackets;

.5 raise the alarm and have basic knowledge of the use of portable fire extinguishers;

.6 take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board; and

.7 close and open the fire, weathertight and watertight doors fitted in the particular ship other than those for hull openings.

Basic training see note 1

2 Seafarers employed or engaged in any capacity on board ship on the business of that ship as part of the ship's complement with designated safety or pollution-prevention duties in the operation of the ship shall, before being assigned to any shipboard duties:

.1 receive appropriate approved basic training or instruction in:

.1.1 personal survival techniques as set out in table A-VI/1-1,
.1.2 fire prevention and fire-fighting as set out in table A-VI/1-2,
.1.3 elementary first aid as set out in table A-VI/1-3, and
.1.4 personal safety and social responsibilities as set out in table A-VI/1-4.

.2 be required to provide evidence of having achieved the required standard of competence to undertake the tasks, duties and responsibilities listed in column 1 [Competence] of tables A-VI/1-1, A-VI/1-2, A-VI/1-3 and A-VI/1-4 within the previous five years through:

.2.1 demonstration of competence, in accordance with the methods and the criteria for evaluating competence tabulated in columns 3 [Methods] and 4 [Criteria] of those tables; and

.2.2 examination or continuous assessment as part of an approved training programme in the subjects listed in column 2 [Knowledge] of those tables.

3 The Administration may, in respect of ships other than passenger ships of more than 500 gross tonnage engaged on international voyages and tankers, if it considers that a ship's size and the length or character of its voyage are such as to render the application of the full requirements of this section unreasonable or impracticable, exempt to that extent the seafarers on such a ship or class of ships from some of the requirements, bearing in mind the safety of people on board, the ship and property and the protection of the marine environment.

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Notes:

1 The following IMO Model Courses may assist in the preparation of courses:

IMO Model Course 1.19 – *Personal Survival Techniques*
IMO Model Course 1.20 – *Basic Fire Fighting*
IMO Model Course 1.13 – *Elementary First Aid*
IMO Model Course 1.21 – *Personal Safety and Social Responsibility*

Table A-VI/1-1

Specification of minimum standard of competence in personal survival techniques

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Survive at sea in the event of ship abandonment	Types of emergency situations which may occur, such as collision, fire, foundering Types of life-saving appliances normally carried on ships Equipment in survival craft Location of personal life-saving appliances Principles concerning survival, including: .1 value of training and drills .2 personal protective clothing and equipment .3 need to be ready for any emergency .4 actions to be taken when called to survival craft stations .5 actions to be taken when required to abandon ship .6 actions to be taken when in the water .7 actions to be taken aboard a survival craft .8 main dangers to survivors	Assessment of evidence obtained from approved instruction or during attendance at an approved course or approved in-service experience and examination, including practical demonstration of competence to: .1 don a lifejacket .2 don and use an immersion suit .3 safely jump from a height into the water .4 right an inverted liferaft while wearing a lifejacket .5 swim while wearing a lifejacket .6 keep afloat without a lifejacket .7 board a survival craft from ship and water while wearing a lifejacket .8 take initial actions on boarding survival craft to enhance chance of survival .9 stream a drogue or sea-anchor .10 operate survival craft equipment .11 operate location devices, including radio equipment	Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures The timing and sequence of individual actions are appropriate to the prevailing circumstance and conditions and minimize potential dangers and threats to survival Method of boarding survival craft is appropriate and avoids dangers to other survivors Initial actions after leaving the ship and procedures and actions in water minimize threats to survival

Table A-VI/1-2

Specification of minimum standard of competence in fire prevention and fire fighting

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Minimize the risk of fire and maintain a state of readiness to respond to emergency situations involving fire Fight and extinguish fires	Shipboard fire-fighting organization Location of fire-fighting appliances and emergency escape routes The elements of fire and explosion (the fire triangle) Types and sources of ignition Flammable materials, fire hazards and spread of fire The need for constant vigilance Actions to be taken on board ship Fire and smoke detection and automatic alarm systems Classification of fire and applicable extinguishing agents Fire-fighting equipment and its location on board Instruction in: .1 fixed installations .2 firefighter's outfits .3 personal equipment .4 fire-fighting appliances and equipment .5 fire-fighting methods .6 fire-fighting agents .7 fire-fighting procedures .8 use of breathing apparatus for fighting fires and effecting rescues	Assessment of evidence obtained from approved instruction or during attendance at an approved course or approved in-service experience and examination, including practical demonstration in spaces which provide realistic training conditions (e.g., simulated shipboard conditions) and, whenever possible and practical, in darkness, of the ability to .1 use various types of portable fire extinguishers .2 use self-contained breathing apparatus .3 extinguish smaller fires, e.g., electrical fires, oil fires, propane fires .4 extinguish extensive fires with water, using jet and spray nozzles .5 extinguish fires with foam, powder or any other suitable chemical agent .6 enter and pass through, with lifeline but without breathing apparatus, a compartment into which high-expansion foam has been injected .7 fight fire in smoke-filled enclosed spaces wearing self-contained breathing apparatus .8 extinguish fire with water fog or any other suitable fire-fighting agent in an accommodation room or simulated engine-room with fire and heavy smoke .9 extinguish oil fire with fog applicator and spray nozzles, dry chemical powder or foam applicators .10 effect a rescue in a smoke-filled space wearing breathing apparatus	Initial actions on becoming aware of an emergency conform with accepted practices and procedures Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures Clothing and equipment are appropriate to the nature of the fire-fighting operations The timing and sequence of individual actions are appropriate to the prevailing circumstance and conditions Extinguishment of fire is achieved using appropriate procedures, techniques and fire-fighting agents Breathing apparatus procedures and techniques comply with accepted practices and procedures

Table A-VI/1-3

Specification of minimum standard of competence in elementary first aid

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Take immediate action upon encountering an accident or other medical emergency	Assessment of needs of casualties and threats to own safety Appreciation of body structure and functions Understanding of immediate measures to be taken in cases of emergency, including the ability to: .1 position casualty .2 apply resuscitation techniques .3 control bleeding .4 apply appropriate measure of basic shock treatment .5 apply appropriate measures in event of burns and scalds, including accidents caused by electric current .6 rescue and transport a casualty .7 improvise bandages and use materials in emergency kit	Assessment of evidence obtained from approved instruction or during attendance at an approved course	The manner and timing of raising the alarm is appropriate to the circumstances of the accident or medical emergency The identification of the probable cause, nature and extent of injuries is prompt and complete and the priority and sequence of actions is proportional to any potential threat to life Risk of further harm to self and casualty is minimized at all times

Table A-VI/1-4

Specification of minimum standard of competence in personal safety and social responsibilities

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Comply with emergency procedures	Types of emergency which may occur, such as collision, fire, foundering Knowledge of shipboard contingency plans for response to emergencies Emergency signals and specific duties allocated to crew members in the muster list; muster stations; correct use of personal safety equipment Actions to take on discovering potential emergency, including fire, collision, foundering and ingress of water into the ship Action to take on hearing emergency alarm signals Value of training and drills Knowledge of escape routes and internal communication and alarm systems	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Initial action on becoming aware of an emergency conforms to established emergency procedures Information given on raising alarm is prompt, accurate, complete and clear
Take precautions to prevent the pollution of the environment	Effects of operational or accidental pollution of the marine environment Basic environmental protection procedures	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Organized procedures designed to safeguard the marine environment at all times
Observe safe working practices	Importance of adhering to safe working practices at all times Safety and protective devices available to protect against potential hazards aboard ship Precautions to be taken prior to entering enclosed spaces Familiarization with international measures concerning accident prevention and occupational health	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times
Understand orders and be understood in relation to shipboard duties	Ability to understand orders and to communicate with others in relation to shipboard duties	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Communications are clear and effective at all times

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Contribute to effective human relationships on board ship	Importance of maintaining good human and working relationships aboard ship Social responsibilities; employment conditions; individual rights and obligations; dangers of drug and alcohol abuse	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Expected standards of work and behaviour are observed at all times

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ANNEX 7

STCW A-VI/3 AND TABLE A-VI/3

Section A-VI/3
Mandatory minimum training in advanced fire fighting

Standard of competence

1 Seafarers designated to control fire-fighting operations shall have successfully completed advanced training in techniques for fighting fire, with particular emphasis on organization, tactics and command, and shall be required to demonstrate competence to undertake the tasks, duties and responsibilities listed in column 1 [Competence] of table A-VI/3.

2 The level of knowledge and understanding of the subjects listed in column 2 [Knowledge] of table A-VI/3 shall be sufficient for the effective control of fire-fighting operations on board ship. see note 1

3 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take account of the guidance given in part B of this Code.

4 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence within the previous five years, in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 [Methods] and 4 [Criteria] of table A-VI/3.

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Note:

1 IMO Model Course 2.03 – *Advanced Fire Fighting* may be of assistance in the preparation of courses.

Table A-VI/3

Specification of minimum standard of competence in advanced fire fighting

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Control fire-fighting operations aboard ships	Fire-fighting procedures at sea and in port with particular emphasis on organization, tactics and command Use of water for fire-extinguishing, the effect on ship stability, precautions and corrective procedures Communication and coordination during fire-fighting operations Ventilation control, including smoke extractor Control of fuel and electrical systems Fire-fighting process hazards (dry distillation, chemical reactions, boiler uptake fires, etc.) Fire fighting involving dangerous goods Fire precautions and hazards associated with the storage and handling of material, (paints, etc.) Management and control of injured persons Procedures for co-ordination with shore-based fire-fighters	Practical exercises and instruction conducted under approved and truly realistic training conditions (e.g., simulated shipboard conditions) and whenever possible and practical, in darkness	Actions taken to control fires are based on a full and accurate assessment of the incident, using all available sources of information The order of priority, timing and sequence of actions are appropriate to the overall requirements of the incident and to minimize damage and potential damage to the ship, injuries to personnel and impairment of the operational effectiveness of the ship Transmission of information is prompt, accurate, complete and clear Personal safety during fire control activities is safeguarded at all times
Organize and train fire parties	Preparation of contingency plans Composition and allocation of personnel to fire parties Strategies and tactics for control of fires in various parts of the ship	Practical exercises and instruction conducted under approved and truly realistic training conditions, e.g., simulated shipboard conditions	Composition and organization of fire control parties, ensure the prompt and effective implementation of emergency plans and procedures
Inspect and service fire-detection and extinguishing systems and equipment	Fire-detection systems; fixed fire-extinguishing systems; portable and mobile fire-extinguishing equipment including appliances, pumps and rescue, salvage, life-support, personal protective and communication equipment Requirements for statutory and classification surveys	Practical exercises using approved equipment and systems in a realistic training environment	Operational effectiveness of all fire-detection and extinguishing systems and equipment is maintained at all times in accordance with performance specifications and legislative requirements

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Investigate and compile reports on incidents involving fire	Assessment of cause of incidents involving fire	Practical exercises in a realistic training environment	Causes of fire are identified and the effectiveness of counter-measures is evaluated

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ANNEX 8

STCW A-V1/4 AND TABLES A-VI/4-1AND 4-2

Section A-VI/4

Mandatory minimum requirements related to medical first aid and medical care

Standard of competence for seafarers designated to provide medical first aid on board ship

1 Every seafarer who is designated to provide medical first aid on board ship shall be required to demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 [Competence] of table A-VI/4-1.

2 The level of knowledge of the subjects listed in column 2 [Knowledge] of table A-VI/4-1 shall be sufficient to enable the designated seafarer to take immediate effective action in the case of accidents or illness likely to occur on board ship. see note 1

3 Every candidate for certification under the provisions of regulation VI/4, paragraph 1 shall be required to provide evidence that the required standard of competence has been achieved in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 [Methods] and 4 [Criteria] of table A-VI/4-1.

Standard of competence for seafarers designated to take charge of medical care on board ship

4 Every seafarer who is designated to take charge of medical care on board ship shall be required to demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 [Competence] of table A-VI/4-2.

5 The level of knowledge of the subjects listed in column 2 [Knowledge] of table A-VI/4-2 shall be sufficient to enable the designated seafarer to take immediate effective action in the case of accidents or illness likely to occur on board ship. see note 2

6 Every candidate for certification under the provisions of regulation VI/4, paragraph 2 shall be required to provide evidence that the required standard of competence has been achieved in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 [Methods] and 4 [Criteria] of table A-VI/4-2.

_____

Notes:

1 IMO Model Course 1.14 – *Medical First Aid* may be of assistance in the preparation of courses.

2 IMO Model Course 1.15 – *Medical Care* may be of assistance in the preparation of courses.

Table A-VI/4-1

Specification of minimum standard of proficiency in medical first aid

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Apply immediate first aid in the event of accident or illness on board	First-aid kit Body structure and function Toxicological hazards on board, including use of the *Medical First Aid Guide for Use in Accidents involving Dangerous Goods (MFAG)* or its national equivalent Examination of casualty or patient Spinal injuries Burns, scalds and effects of heat and cold Fractures, dislocations and muscular injuries Medical care of rescued persons Radio medical advice Pharmacology Sterilization Cardiac arrest, drowning and asphyxia	Assessment of evidence obtained from practical instruction	The identification of probable cause, nature and extent of injuries is prompt, complete and conforms to current first-aid practice Risk of harm to self and others is minimized at all times Treatment of injuries and the patient's condition is appropriate, conforms to recognized first-aid practice and international guidelines

Table A/VI/4-2

Specification of minimum standard of proficiency for persons in charge of medical care on board ship

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Providing medical care to the sick and injured while they remain on board	Care of casualty including: .1 head and spinal injuries .2 injuries of ear, nose, throat and eyes .3 external and internal bleeding .4 burns, scalds and frostbite .5 fractures, dislocations and muscle injuries .6 wounds, wound healing and infection .7 pain relief .8 techniques of sewing and clamping .9 management of acute abdominal conditions .10 minor surgical treatment .11 dressing and bandaging Aspects of nursing .1 general principles .2 nursing care Diseases, including: .1 medical conditions and emergencies .2 sexually transmitted diseases .3 tropical and infectious diseases Alcohol and drug abuse Dental care Gynaecology, pregnancy and childbirth Medical care of rescued persons Death at sea Hygiene Disease prevention, including: .1 disinfection, .2 disinfestation, de-ratting vaccinations Keeping records and copies of applicable regulations: .1 keeping medical records .2 international and national maritime medical regulations	Assessment of evidence obtained from practical instruction and demonstration Where practicable, approved practical experience at a hospital or similar establishment	Identification of symptoms is based on the concepts of clinical examination and medical history Protection against infection and spread of diseases is complete and effective Personal attitude is calm, confident and reassuring Treatment of injury or condition is appropriate and conforms to accepted medical practice and relevant national and international medical guides The dosage and application of drugs and medication complies with manufacturers' recommendations and accepted medical practice The significance of changes in patient's condition is promptly recognized

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Participate in coordinated schemes for medical assistance to ships	External assistance, including: .1 radio medical advice .2 transportation of the ill and injured, including .3 helicopter evacuation medical care of sick seafarers involving co-operation with port health authorities or out-patient wards in port		Clinical examination procedures are complete and comply with instructions received The method and preparation for evacuation is in accordance with recognized procedures and is designed to maximize the welfare of the patient Procedures for seeking radio medical advice conform to established practice and recommendations

* * *

ANNEX 9

INTERNATIONAL MARITIME ORGANIZATION
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IMO

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Ref. T4/4.01

MSC.1/Circ.1206
26 May 2006

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.

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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 onboard maintenance.

Responsibility

6 The company* is responsible for servicing and maintenance on board 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.

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

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.

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 onb oard 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 issubstantially 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, onboard 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.

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* 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 on board 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 10

SOLAS CHAPTER III REGULATION 10

SOLAS chapter III – Life-saving appliances and arrangements
Part B – Requirements for ships and life-saving appliances (Section 1 – Passenger Ships and Cargo Ships)

Regulation 10 – Manning of survival craft and supervision

1 This regulation applies to all ships.

2 There shall be a sufficient number of trained persons on board for mustering and assisting untrained persons.

3 There shall be a sufficient number of crew members, who may be deck officers or certificated persons, on board for operating the survival craft and launching arrangements required for abandonment by the total number of persons on board.

4 A deck officer or certificated person shall be placed in charge of each survival craft to be used. However, the Administration, having due regard to the nature of the voyage, the number of persons on board and the characteristics of the ship, may permit persons practised in the handling and operation of liferafts to be placed in charge of liferafts in lieu of persons qualified as above. A second-in-command shall also be nominated in the case of lifeboats.

5 The person in charge of the survival craft shall have a list of the survival craft crew and shall see that the crew under his command are acquainted with their duties. In lifeboats the second-in-command shall also have a list of the lifeboat crew.

6 Every motorized survival craft shall have a person assigned who is capable of operating the engine and carrying out minor adjustments.

7 The master shall ensure the equitable distribution of persons referred to in paragraphs 2, 3 and 4 among the ship's survival craft.

* * *

ANNEX 11

SOLAS CHAPTER III REGULATION 31

SOLAS chapter III – Life-saving appliances and arrangements
Part B – Requirements for ships and life-saving appliances (Section III – Cargo Ships (Additional requirements))

Regulation 31 - Survival craft and rescue boats

1 Survival craft

1.1 Cargo ships shall carry:

.1 one or more totally enclosed lifeboats complying with the requirements of section 4.6 of the Code of such aggregate capacity on each side of the ship as will accommodate the total number of persons on board; and

.2 in addition, one or more inflatable or rigid liferafts, complying with the requirements of section 4.2 or 4.3 of the Code, 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 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.

1.2 In lieu of meeting the requirements of paragraph 1.1, cargo ships may carry:

.1 one or more free-fall lifeboats, complying with the requirements of section 4.7 of the Code, capable of being free-fall launched over the stern of the ship of such aggregate capacity as will accommodate the total number of persons on board; and

.2 in addition, one or more inflatable or rigid liferafts complying with the requirements of section 4.2 or 4.3 of the Code, on each side of the ship, of such aggregate capacity as will accommodate the total number of persons on board. The liferafts on at least one side of the ship shall be served by launching appliances.

1.3 In lieu of meeting the requirements of paragraph 1.1 or 1.2, cargo ships of less than 85m in length other than oil tankers, chemical tankers and gas carriers, may comply with the following:

.1 they shall carry on each side of the ship, one or more inflatable or rigid liferafts complying with the requirements of section 4.2 or 4.3 of the Code and of such aggregate capacity as will accommodate the total number of persons on board;

.2 unless the liferafts required by paragraph 1.3.1 are 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;

.3 if the rescue boat required by paragraph 2 is also a totally enclosed lifeboat complying with the requirements of section 4.6 of the Code, it may be included in the aggregate capacity required by paragraph 1.3.1, provided that the total capacity available on either side of the ship is at least 150% of the total number of persons on board; and

.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 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.

1.4 Cargo ships where the horizontal distance from the extreme end of the stem or stern of the ship to the nearest end of the closest survival craft is more than 100 m shall carry, in addition to the liferafts required by paragraphs 1.1.2 and 1.2.2, a liferaft stowed as far forward or aft, or one as far forward and another as far aft, as is reasonable and practicable. Such liferaft or liferafts may be securely fastened so as to permit manual release and need not be of the type which can be launched from an approved launching device.

1.5 With the exception of the survival craft referred to in regulation 16.1.1, all survival craft required to provide for abandonment by the total number of persons on board shall be capable of being launched with their full complement of persons and equipment within a period of 10 min from the time the abandon ship signal is given.

1.6 Chemical tankers and gas carriers carrying cargoes emitting toxic vapours or gases* shall carry, in lieu of totally enclosed lifeboats complying with the requirements of section 4.6 of the Code, lifeboats with a self-contained air support system complying with the requirements of section 4.8 of the Code.

1.7 Oil tankers, chemical tankers and gas carriers carrying cargoes having a flashpoint not exceeding 60°C (closed-cup test) shall carry, in lieu of totally enclosed lifeboats complying with the requirements of section 4.6 of the Code, fire-protected lifeboats complying with the requirements of section 4.9 of the Code.

1.8 Notwithstanding the requirements of paragraph 1.1, bulk carriers as defined in regulation IX/1.6 constructed on or after 1 July 2006 shall comply with the requirements of paragraph 1.2.

2 Rescue boats

Cargo ships shall carry at least one rescue boat complying with the requirements of section 5.1 of the Code. A lifeboat may be accepted as a rescue boat, provided that it also complies with the requirements for a rescue boat.

3 In addition to their lifeboats, all cargo ships constructed before 1 July 1986 shall carry:

.1 one or more liferafts capable of being launched on either side of the ship and of such aggregate capacity as will accommodate the total number of persons on board. The liferaft or liferafts shall be equipped with a lashing or an equivalent means of securing the liferaft which will automatically release it from a sinking ship; and

.2 where the horizontal distance from the extreme end of the stem or stern of the ship to the nearest end of the closest survival craft is more than 100 m, in addition to the liferafts required by paragraph 3.1, a liferaft stowed as far forward or aft, or one as far forward and another as far aft, as is reasonable and practicable. Notwithstanding the requirements of paragraph 3.1, such liferaft or liferafts may be securely fastened so as to permit manual release.

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* Refer to the products for which emergency escape respiratory protection is required in chapter 17 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), adopted by the Maritime Safety Committee by resolution MSC.4(48), as amended, and in chapter 19 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), adopted by the Maritime Safety Committee by resolution MSC.5(48), as amended. (back)

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ANNEX 12

OPERATIONAL DRILLS AIDE-MEMOIRE FOR CARGO SHIPS

	DAMAGE CONTROL PLAN (applicable to cargo ships built after 1 February 1992)	Y	N	REMARKS
1.	Is the Fire Control Plan posted in a prominent position?			
2.	Is the Muster List posted in a prominent position?			
3.	Was the crew aware of their duties as indicated in the Muster List?			
4.	Is emergency training and drills recorded in the logbook?			
5.	Is the crew able to communicate and understand each other?			
6.	During the fire drill did the crew demonstrate that they were able to undertake their duties and use the fire-fighting equipment properly? (including proper donning of equipment, use of appropriate access, tending of fire hoses, etc.)			
7.	Was the fire-fighting equipment complete?			
8.	Was the reporting of the fire to the bridge satisfactory?			
9.	Did the crew on the bridge take the appropriate decisions, navigate the ship as necessary and undertake the necessary communication?			
10.	Were the crew aware of the order to abandon ship?			
11.	During the abandon ship drill did the crew demonstrate that they were able to undertake their duties and use the life saving appliances properly?			
12.	Were the lifejackets donned correctly and were the crew aware of the location of immersion suits?			
13.	Was at least one lifeboat lowered to the water after the necessary preparation was done and found acceptable?			
14.	Was the davit found to be operating satisfactorily?			
15.	Was the lifeboat engine operated properly?			
16.	Did the appropriate crew members have knowledge of the operation of the lifeboat and its equipment?			

	DAMAGE CONTROL PLAN (applicable to cargo ships built after 1 February 1992)	Y	N	REMARKS
17.	Is a damage control plan or booklet provided?			
18.	Are the crew members familiar with their duties and the proper use of the ships installations and equipment for damage control purposes?			
19.	Are the officers aware of the contents of the damage control plan/booklet?			
20.	Can the officers explain the actions to be taken in various damage conditions?			
21.	Are the officers knowledgeable in respect of watertight bulkheads and the openings therein with the means of closures and position of any controls?			

DESCRIPTION OF SCENARIO FOLLOWED:

REMARKS:

Date: _____ Surveyor: _____

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ANNEX 13

OPERATIONAL DRILLS AIDE-MEMOIRE FOR PASSENGER SHIPS

	MUSTER LIST	Y	N	REMARKS
1.	Are crew members aware of their duties indicated in the muster list?			
2.	Are the muster lists exhibited in conspicuous places through out the ship including the bridge, the engine-room and the crew accommodation spaces?			
3.	Is it verified that the muster list:			
3.1	Shows the duties assigned to the different crew members?			
3.2	Specifies which officers are assigned to ensure that LSA & FFE are maintained in good condition and ready for immediate use?			
3.3	Specifies the substitutes for key persons who may become disabled?			
3.4	Shows the duties assigned to crew members in relation to passengers in case of emergency?			
3.5	Is the format of the muster list approved?			
3.6	Is the muster list up-to-date?			
3.7	Is it in conformity with the crew list and/or the Safe Manning Document?			
3.8	Are duties assigned to crew members manning survival craft in accordance with SOLAS & STCW?			
3.9	Are boat and raft commander and second in command specified?			
3.10	Are crew members familiar with their duties and aware of the location where to perform their duties?			
3.11	Are operation g instructions found satisfactory? Ref SOLAS regulation III/9.2.1			
3.12	Are symbols used to indicate the location of LSA & FFE in accordance with IMO resolutionA.760(18)? Ref SOLAS regulation III/9.2.3			

	COMMUNICATION	Y	N	REMARKS
1.	Are key crew members able to communicate with each other in emergency situations?			
2.	Which languages are the working language?			
3.	Are key crew members able to understand each other during inspection or drills?			
4.	Is emergency training and drills recorded in the logbook?			
For passenger vessels				
5.	Are crew members assigned and able to assist passengers in case of an emergency and able to give them the necessary information?			
6.	Are the crew members able to communicate with the passengers in emergency situations?			

	FIRE CONTROL PLAN	Y	N	REMARKS
1.	Is a fire control plan or booklet provided?			
2.	Are the crew members familiar with the information given in the control plan or booklet?			
3.	Are the fire control plans permanently exhibited or is the booklet supplied to each officer?			
4.	Is one copy of the fire control plan readily available in an accessible position?			
5.	Are the crew (especially those who are assigned to duties on the muster list) aware of the content of the fire control plan/booklet?			
6.	Are the crew aware of what o do in the case of a fire?			
7.	Are the officers in charge of the ship familiar with the fire boundaries and the means of access to the different compartments?			

	FIRE DRILLS	Y	N	REMARKS
1.	Are the crew members familiar with their duties and the proper use of the ships installations and equipment?			
2.	Was a fire drill witnessed?			
3.	Which location was selected for a simulated fire?			
4.	How was the fire alarm activated?			
5.	Was the reporting of the fire (from the location to the bridge or damage control centre) satisfactory?			
6.	When and how was the crew alarm sounded?			
7.	Was the performance of the fire-fighting parties acceptable?			

	FIRE DRILLS – continued	Y	N	REMARKS
8.	Were the team leaders orders and reporting to the bridge and/or damage control centre?			
9.	Was the donning and use of equipment acceptable?			
10.	Was the fire-fighting equipment complete?			
11.	Were the medical teams taking care of injured persons in a satisfactory manner?			
12.	Was the use of stretchers through narrow passageways, doors, stairways etc found acceptable?			
13.	Was the drill conducted as an actual emergency?			
14.	Was the manning and operation of the emergency generator, the CO_2 room, the sprinkler and emergency fire pumps acceptable?			
15.	Was the operation of manually operated fire doors and fire dampers satisfactory?			
For passenger vessels:				
16.	Are crew members assigned to assist passengers able to explain their duties, the meaning of various emergency signals, point out the two means of escape from the area and where the passengers are to report?			
17.	Are crew members assigned to assist passengers able to communicate at least enough information to direct a passenger to the proper muster and embarkation stations?			

	DAMAGE CONTROL PLAN (applicable to passenger ships and cargo ships built after 1 February 1992)	Y	N	REMARKS
1.	Is a damage control plan or booklet provided?			
2.	Are the crew members familiar with their duties and the proper use of the ships installations and equipment for damage control purposes?			
3.	Are the officers aware of the contents of the damage control plan/booklet?			
4.	Can the officers explain the actions to be taken in various damage conditions?			
5.	Are the officers knowledgeable in respect of watertight bulkheads and the openings therein with the means of closures and position of any controls?			
6.	Can officers explain arrangements for the correction of any list due to flooding?			
7.	Do the officers have a sound knowledge of the effect of trim and stability in case of damage to and the consequent flooding of a compartment and the countermeasures to be taken?			

	ABANDON SHIP DRILLS	Y	N	REMARKS
1.	Are the crew members familiar with their duties and the proper use of the ships installation and equipment?			
2.	Was an abandon ship drill witnessed?			
3.	Are the survival craft manned and operated by the assigned crew members?			
4.	Where applicable, was the rescue boat included in the drill?			
5.	Was the drill conducted as an actual emergency?			
6.	Were the crew summoned to the muster station(s) with the required alarm?			
7.	Was it ensured that the crew are aware of the order to abandon ship, as specified in the muster list?			
8.	Were the crew members suitable dressed?			
9.	Were the lifejackets correctly donned?			
10.	Was at least one lifeboat lowered after the necessary preparations for launching was done and found acceptable?			
11.	Was starting and operating the lifeboat engine(s) carried out satisfactorily?			
12.	Was operation of the davits used for launching liferafts acceptable?			
13.	Was the emergency lighting tested in way of areas of mustering and abandonment?			
14.	Are crew members familiar with the duties assigned to them during abandon ship operation?			
15.	Have the crew members in charge of a survival craft complete knowledge of operation and equipment of craft?			
16.	Were two crew members able to carry out preparations for embarking and launching of each survival craft in less than 5 minutes?			
17.	Does the equipment and crew performance indicate that abandoning can take place in 10 minutes?			
For passenger vessels:				
18.	Was a mock search held for missing passengers?			
19.	Was instructions given to passengers on how to use LSA?			

	ABANDON SHIP DRILLS –continued	Y	N	REMARKS
20.	Were two crew members able to carry out preparations for embarking and launching of each survival craft in less than 5 minutes?			
21.	Does the equipment and crew performance indicate that abandoning can take place in 30 minutes?			

DESCRIPTION OF SCENARIO FOLLOWED:

REMARKS:

Date: _____ Surveyor: _____

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ANNEX 14

DRILL REPORT FOR AN UNSATISFACTORY DRILL/DETENTION

Name of Ship:	
IMO Number:	**Flag:**
Ship Type:	**Date:**
PSCO's:	
Scenario:	
Muster List Correctness, adequacy and familiarity of crew with duties and responsibilities	
Command & Control Effectiveness of communication between ship's personnel and ship-shore, decision making, team working, reaction times	
Firefighting/Damage Control General effectiveness of the exercise, crew's knowledge of the damage control plan, awareness of counter-measures to minimize damage	
Handling of Casualty Adequacy and condition of medical equipment, familiarity with casualty handling procedures	
Equipment General condition, familiarity of the crew with the equipment	

Other	
Comments	
Strengths/Weaknesses	

* * *

ANNEX 15

DEFICIENCY CODES FOR OPERATIONAL DRILL

Code	Defective Item	Nature of Defect	Action Taken	Convention Reference
2000 SOLAS RELATED OPERATIONAL DEFICIENCIES				
2010	Muster List	Missing, incomplete, not updated, not readable, not approved, not posted, lack of familiarity	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99 - Other	Res. A.787(19)/C3.5.4-8 S74-1/CIII/R37
2015	Communication	Lack of communication, no working language	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	Res. A.787(19)/ C3.5.9-11
2020	Fire Drills	Lack of control, lack of communication, lack of training, insufficient frequency, lack of knowledge	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	Res. A.787(19)/ C3.5.13-17
2025	Abandon Ship Drills	Lack of control, lack of communication, lack of training, insufficient frequency, lack of knowledge	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	Res. A.787(19)/ C3.5.18-24
2030	Damage Control Plan	Missing, incomplete, not updated, not readable, wrong information, lack of familiarity, lack of training	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	Res. A.787(19)/ C3.5.25-29
2035	Fire Control Plan	Missing, incomplete, not updated, not readable, wrong information, lack of familiarity, lack of training	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	Res. A.787(19)/ C3.5.30-33
2040	Bridge Operation	Lack of training, lack of familiarity	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	Res. A.787(19)/ C3.5.34-37
2041	Operation of GMDSS Equipment	Lack of qualified persons, lack of familiarity	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	S74/CIV/R16
2070	Operations of fire protection systems	Lack of training, lack of familiarity, not as required	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	S74-23/CII-2/R14
2071	Maintenance of Fire Protection Systems	Incomplete, not approved, not as required	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	S74-23/CII-2/R14
2080	Operation of Live Saving Appliances	Lack of training, lack of familiarity, not as required	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	S74-23/CIII/R20
2081	Maintenance of life saving appliances	Incomplete, not approved, not as required	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	S74-23/CIII/R20
2090	Evaluation of Crew Peformance	Lack of training, lack of familiarity, lack of information	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	S74-23/CII-2/R15.2.2.3
2099	Other (SOLAS operational)	Other	10 – Rectified/ 16 – Within 14 days/ 17 – Before Departure/ 30 – Detained/ 55 – Flag Consulted/ 99	
2500 ISM RELATED DEFICIENCIES				
2540	Emergency Preparedness	Missing, Incomplete, Insufficient documentation, Not according to SMS	18 – Within 3 months/ 19 – Major Non-Conformity/ 30 – Detained/ 55 – Flag Consulted	ISMC/S8