

Focus on Fall Preventer Devices (FPD)

1. Preface ¹⁾

There are regular accidents during routine lifeboat drills and maintenance. Personnel in the lifeboats at the time often suffer injury and even death. There were many causes for these accidents, not just the failure of the release function of on-load release hooks. In the early 2000's, the international shipping industry associations and UK government thus analyzed lifeboat accidents and reported its results. The report dealt with new design criteria for on-load release hooks and training, testing and maintenance procedures on vessels. One of the objects of the report was to prevent a lifeboat inadvertently falling from a ship. As a result, amendments to SOLAS III/1.5 (Resolution MSC.317(89)) were adopted at the 89th session of the Maritime Safety Committee (MSC 89) of the International Maritime Organisation (IMO) in May 2011. Therefore, the lifeboat release and the retrieval systems (LRRS) must comply with LSA Code IV amended by Res. MSC. 320(89) not later than the next scheduled dry-docking after 1 July 2014, and not later than 1 July 2019. Additionally, Fall Preventer Devices (FPDs) may be required until such time as the said devices have undergone the necessary design review and performance test, and have been either confirmed compliant with the relevant requirements of the revised LSA Code or replaced with compliant devices. In case that a Flag State Administration requires FPDs to be employed, the FPDs (Picture 2) shall be approved by an Administration or a Recognised Organization in accordance with IMO circular MSC.1/Circ.1327.



Picture1 Lifeboat



Picture2 FPD

(Quoted 2012 ClassNK Technical Seminar (fall))

However, defects are still being found in FPDs during PSC vessel inspections and condition surveys. We would like to discuss the defects and how to prevent similar accidents in the future.

2. Detailed studies on life boat accidents ²⁾³⁾

In the early 2000's, international shipping industry associations and the UK government analysed lifeboat accidents and reported the results.

At first, international shipping industry associations such OCIMF (Oil Companies International Marine Forum, INTERTANKO (International Association of Independent Tanker Owners), and SIGTTO (Society of International Gas Tanker and Terminal Operators) made statistical comprehensive studies to find the causes of lifeboat accidents in which personnel were killed and injured

in the boat during routine drills and maintenance work. Then, they found that equipment failure was the most common cause and that release mechanism was the piece of equipment to fail most frequently. The following matters were all considered to be contributory factors in such casualties.

- (1) Design failure
- (2) Lack of maintenance
- (3) Failure of correct procedures
- (4) Lack of proper training

In addition, in 2006 the UK Marine Accident Investigation Branch (MAIB) identified that the design requirements of the on-load release hooks were unstable & unsafe, and so proposed that an additional safer design had to be developed in DE50 of IMO.

3. Recent studies ⁴⁾

In April 2015, the “Safety Digest” , issued by the UK’ s Marine Accident Investigation Branch (MAIB), in order to promote within the marine community the learning of lessons arising from a variety of accidents, drew attention to the serious failure of a lifeboat release mechanism during a drill that caused injury to a seafarer.

- (1) To be effective, risk assessments must cover all aspects of an operation and, where appropriate, should be supported by a ‘standard operating procedure’ . These must be utilised for each operation to which they pertain.
- (2) Launching routines should form part of the maintenance schedule and include a thorough inspection of all associated equipment.
- (3) Launching instructions should be reviewed to ensure that communications between the OIC and release and retrieval system operators are effective.

4. Defects found at Inspection / Survey

At a PSC (Port State Control) Inspection or our condition survey, the following items are found defective.

- (1) Case 1
 - Both life boats have Fall preventer devices (FPD) installed in accordance with IMO regulations. However, no training or maintenance was going on at time of the inspection.
- (2) Case 2
 - Both life boats have FPD installed in accordance with IMO regulations. However, no procedure for abandon ship situation had been followed.

5. Guidelines for the fitting and use of Fall Preventer Devices under IMO ¹⁾

A “Fall Preventer Device” (FPD) can be used to minimize the risk of injury or death by providing a secondary alternate load path in the event of failure of the on-load hook or its release mechanism or of the accidental release of the on-load hook.

The guidelines for the fitting and use of Fall Preventer Devices (IMO MSC.1/Circ.1327) prescribe the following matters

- (1) various design requirements relating to both function and performance
- (2) Lifeboat FPDs are properly in place before commencing any drill, testing, inspection or maintenance where persons are in the lifeboat.

(3) The ship's operating crew should be familiar with the operation of the FPD fitted to the lifeboat on their ship. The procedure to be followed should be contained in the ISM Code documentation and the ship's training manual.

6. Application requirements. Examples of the employment of FPDs, as provided by flag states ¹⁾ On the home page of their website, Class NK shows the application requirements on the employment of FPDs employment from some flag states under the heading "News of Lifeboat Release and Retrieval Systems".





Here are some examples :

(1) Panama : issued "Merchant Marine Circular MMC-250"

- FPDs should be employed as an interim risk mitigation measure for each existing lifeboat release and retrieval system until the system meets the requirements stated in the MSC.1/Circ.1392, Paragraph 6.1 to 6.5; and at the master's discretion.
- FPDs shall be approved by a Recognized Organization in accordance with IMO MSC.1/Circ.1327.

(2) Liberia: issued "Marine Notice SAF-005 Rev.06/12"

- FPDs shall be employed for each existing lifeboat release and retrieval system until the system meets the requirements stated in the MSC.1/Circ.1392, Paragraph 6.1 to 6.5; and at the master's discretion.
- FPDs shall be designed, installed, inspected, and utilised in accordance with IMO MSC.1/Circ.1327.

 <p>INTERNATIONAL MARITIME ORGANIZATION 4 ALBERT EMBANKMENT LONDON SE1 7SR Telephone: 020 7781 9011 Fax: 020 7781 9250</p>	 <p>PANAMA MARITIME AUTHORITY MERCHANT MARINE CIRCULAR MMC-250</p>	 <p>MARINE GUIDANCE NOTE MGN 445 (M+F)</p>	 <p>THE REPUBLIC OF LIBERIA LIBERIA MARITIME AUTHORITY SAF-005 Rev. 06/12</p>
<p>Ref: T43.01</p> <p>GUIDELINES FOR THE FITTING AND USE OF FALL PREVENTER DEVICES (FPDs)</p> <p>1 The Maritime Safety Committee, at its eighty-sixth session (27 May to 5 June 2009), approved the Guidelines for the fitting and use of fall preventer devices (FPDs), set out in the annex, following the recommendations made by the Sub-Committee on Ship Design and Equipment, at its fifty-second session.</p> <p>2 The use of FPDs should be considered as an interim risk mitigation measure, only to be used in connection with existing on-load release hooks, at the discretion of the master, pending the wide implementation of improved hook designs with enhanced safety features.</p> <p>3 Member Governments are invited to use the annexed Guidelines when approving the use of fall preventer devices (FPDs), and to bring them to the attention of all parties concerned.</p> <p>***</p>	<p>MSC.1/Circ.1327 11 June 2009</p> <p>To: Ship-owners/Charterers, Company Security Officers, Legal Representatives of Panamanian Flagged Vessels, Panamanian Merchant Marine Consulates and Recognized Organizations (ROs).</p> <p>Subject: Lifeboat Release and Retrieval Systems</p> <p>Reference: Dorsal Law No. 5, SOLAS 74 as amended, Resolution MSC.117 (93), Resolutions MSC.239 (86), Resolution MSC.231 (89), Circular MSC.1/Circ.1392, Circular MSC.1/Circ.1393</p> <p>1. The purpose of this Merchant Marine Circular is to inform all parties concerned with Panamanian flag ships about MSC.1/Circ.1327 as well as the amendments to Regulation 83.5 of SOLAS and to LSA Code Chapter IV-A.4.7.6, regarding lifeboat on-load release mechanisms.</p> <p>2. Amendments to Regulation 83.5 of SOLAS and to LSA Code Chapter IV-A.4.7.6, as set out in Annex 1, entered into force on 1 January 2010. These amendments require that all ships constructed on or after 1 July 2014, the lifeboat on-load release mechanism, meets the new LSA Code requirements.</p> <p>3.1 Ships constructed before 1 July 2014 (existing ships) fitted with lifeboat on-load release mechanisms, shall meet the requirements of LSA Code A.4.7.6.2 as set out in Annex 1, as amended by Resolution MSC.231 (89) after the first scheduled dry-docking after 1 July 2014 but not later than 1 July 2019.</p> <p>3.2 The Administration should take the greatest care that, all types of existing lifeboat on-load release and retrieval systems design shall be assessed, and the performance not warranted by an Administration as fit, a Recognized Organization before 1 July 2017 in accordance with MSC.1/Circ.1327. Efforts to do so, shall result into the release and retrieval system to be considered as non-compliant and required to be replaced by a new lifeboat release and retrieval system, within the time above mentioned (after the first scheduled dry-docking after 1 July 2014 but not later than 1 July 2019).</p>	<p>Lifeboats: Fitting of 'Fall Preventer Devices' to Reduce the Danger of Accidental On-load Hook Release</p> <p>Notice to all Shipowners, Masters, Deck Officers, Manufacturers of lifeboats and launching appliances and Training establishments.</p> <p>This notice replaces MSN 308 (M+F)</p> <p>Summary</p> <ul style="list-style-type: none"> • New requirements from the International Maritime Organization (IMO), have introduced standards for all Lifeboat Release and Retrieval Systems (LRRS), including those installed on existing ships. • Existing systems that do not comply with the revised LSA Code as per SOLAS 80/15, must be replaced by the first scheduled dry-docking after 1 July 2014, and not later than 1 July 2019. • The MCA strongly urges that all LR vessels fitted with lifeboat on-load release systems should be equipped with fall preventer devices (FPDs) pending the evaluation of the systems for compliance with the requirements of the revised LSA Code. • This notice is only applicable to dark-launched lifeboats fitted with on-load release hooks. FPDs should be fitted in accordance with MSC.1/Circ.1327. Guidelines for the fitting and use of fall preventer devices (FPDs). 	<p>To: ALL SHIPOWNERS, OPERATORS, MASTERS AND OFFICERS OF MERCHANT SHIPS, AGENTS AND RECOGNIZED ORGANIZATIONS</p> <p>Subject: Lifeboat and Survival Craft, Servicing and Maintenance</p> <p>Reference: (a) Maritime Regulation 138 (b) Maritime Regulation 18.296 (5) (c) SOLAS 1974, as amended, Chapter III (d) LSA Code, as amended (e) IMO Resolution MSC.117 (93), as amended (f) IMO Resolution MSC.231 (89) (g) MSC.1/Circ.1327 (h) MSC.1/Circ.1392 (i) MSC.1/Circ.1393 (j) MSC.1/Circ.1395</p> <p>Approved: Marine Notice SAF-005, dated 06/12</p> <p>FOR INFO: This Notice addresses a number of issues and requests involving Lifeboat Appliances and Survival Craft and launching appliances aboard Liberian flag vessels which have been presented to the Office of the Deputy Commissioner for interpretation and clarification of its policy.</p>

(3) UK : issued "Marine Guidance Note MGN445 (M+F)"

- The MCA strongly urges that all UK vessels fitted with lifeboat on-load release systems should be equipped with FPDs pending the evaluation of the systems for compliance with the requirements of the revised LSA Code.
- FPDs should be fitted in accordance with IMO MSC.1/Circ.1327.
- In addition, following matters are stipulated
 - Procedures for use, inspection and maintenance are to be available and documented in the ship's Safety Management System (SMS) and training documents.
 - Decisions relating to the fitting and use of FPDs should be documented in the vessel's SMS and training manual.
 - The professional judgement of the Master is necessary in deciding the occasions and circumstances when FPDs are used.
- The FPD manufacturer's limitations for use should be taken into account when making this decision.

- Where a different procedure is followed during routine drills compared with an abandon ship situation, this should be clearly described.

7. Operating examples of shipping companies

The following are examples of how shipping companies manage the use, training, and maintenance of FPDs in terms of their vessel's SMS and training manual.

(1) Case 1

Whether the lifeboat release and the retrieval systems (LRRS) comply with LSA Code IV amended by Res. MSC. 320(89), or not, as a measure of precaution there are cases where FPD is employed as part of the company's safety policy.

In such case, along with the employment of the FPD, the use, training, and maintenance of FPDs are described in their vessel's SMS and training manual as follows.

Example① FPDs must be disconnected immediately after the drill and stored safely.

Example② FPDs must not be used in a real emergency situation.

Example③ The disconnection procedure of FPDs must also include simple method in case of an emergency situation arising.

(2) Case 2

Depending on Flag state's requirements or the specification of FPDs, there are some FPDs which stay connected all the time. With such FPDs, the procedure of disconnection and training for this procedure must be described clearly in the ship's SMS and training manuals.

8. Conclusion

Maintenance, operation and training & drills are very important as regards lifesaving appliances. We would recommend that you review your standards of the lifeboat release and the retrieval systems. If it is necessary for you to use a FDP, please ensure that it complies with the instructions and guidelines of IMO and your Flag State. Finally, ensure that procedures for use, training, emergency operation, and maintenance of FPDs are all established under the vessel's SMS and training manuals and implemented effectively.

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