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## **GUIDELINES FOR THE FITTING AND USE OF FALL PREVENTER DEVICES (FPDs)**

- 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.
- 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.
- 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.

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## ANNEX

### GUIDELINES FOR THE FITTING AND USE OF FALL PREVENTER DEVICES (FPDs)

#### 1 Background

1.1 In 1986, on-load release hooks for lifeboats and rescue boats were made mandatory in the SOLAS Convention, in response to Norway's worst offshore accident in March 1980, when the **Alexander Kielland** platform in the North Sea Ekofisk field capsized, killing 123 of the 212 persons on board. These then new SOLAS requirements were considered an important step forward in lifeboat design.

1.2 Some deaths in that accident were attributed to the fact that the lifeboat had no means of release when its weight was on the hook and falls. Therefore, on-load release systems were seen to offer benefits.

1.3 Since the IMO requirements for all ships to be fitted with on-load release systems came into force, there have been a number of serious accidents during drills and servicing.

1.4 Many of these accidents were attributed to either lack of maintenance, poor design or inadequate training. Failures of equipment can result in the premature opening of the on-load hook mechanism, causing the lifeboat to fall from the davits unexpectedly, even with three safety interlocks provided for in the design.

1.5 A number of current designs of on-load release hooks are designed to open under the effect of the lifeboat's own weight and often need to be held closed by the operating mechanism. This means that any defects or faults in the operating mechanism, errors by the crew or incorrect resetting of the hook after being previously operated, can result in premature release.

1.6 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 accidental release of the on-load hook. However, FPDs should not be regarded as a substitute for a safe on-load release mechanism.

#### 2 Design and operation of FPDs

##### 2.1 *Locking pins*

The following points should be considered when utilizing locking pins as FPDs:

- .1 existing on-load release hooks fitted to ships should **not** be modified by drilling to provide a locking pin insertion point, unless approved by the Administration in accordance with paragraph 4, as this may significantly reduce the strength of the hook;
- .2 locking pins should have clear operational instructions located near the insertion point of the locking pin and be colour coded so that it is clear where the pins are to be inserted;

- .3 locking pins should be designed so that they cannot be inadvertently inserted in the wrong place;
- .4 locking pins should be confirmed to be in place prior to turning out the lifeboat and during descent to the water;
- .5 strict procedures, including a warning notice at the release handle, should be in place to ensure that the locking pin is removed before the release mechanism is activated. The handle of the locking pin should be coloured red or a suitable contrasting safety colour and prominently marked with a warning that it must be removed before activating the release mechanism;
- .6 the removal of the pin should be achievable quickly and easily without posing any risk to the operating crew designated to carry out the task once the lifeboat has reached the water;
- .7 if the removal of the pins requires opening of the lifeboat hatch it should be readily achievable by the operating crew at each device from within the craft;
- .8 once the on-load release hooks have been connected to recover the lifeboat, the locking pins should be re-inserted before the boat is hoisted clear of the water. The locking pins should be designed so that they do not interfere with either the lifting or re-stowing of the lifeboat into the davits; and
- .9 where provided, fall preventer locking pins should not be used for any other purpose and should be fitted to the lifeboat at all times.

## **2.2 *Strops or slings***

Wires or chains should not be used as FPDs, as they do not absorb shock loads. The following points should be considered when synthetic strops or slings are used as FPDs:

- .1 where FPDs are synthetic strops or slings and no modifications are required to the lifeboat, the on-load release hook or launching equipment, a functional test should be carried out. The functional test should demonstrate, to the satisfaction of the Administration, that the equipment performs without interfering in the operation of the lifeboat or launching equipment. Strops or slings should be of resilient fibre in construction;
- .2 the strops or slings should be issued with an appropriate certificate documenting a tensile strength which provides for a factor of safety of at least six, based on the total weight of the lifeboat when loaded with its full complement of persons and equipment. The strops or slings should be inspected before use and thoroughly inspected by ship's crew every six months. The material of the strop or sling should be rot-proof, corrosion-resistant, not be unduly affected by seawater, oil or fungal attack, and UV resistant. The strops or slings should be permanently marked with the date of entry into service;

- .3 strict procedures, including a warning notice at the release handle, should be in place to ensure that the strops or slings are removed before the release mechanism is activated;
- .4 the attachment point of the strop or sling to the on-load release hook and the davit falls block should be clearly marked and designed so that any connection device such as shackles cannot be connected to either the wrong part of the block or the wrong part of the on-load release hook;
- .5 the release of the strops or slings should be achievable quickly and easily without posing any risk to the operating crew designated to carry out the task once the lifeboat has reached the water. If the release of the strops or slings requires opening of the lifeboat hatch it should be readily achievable by the operating crew at each device from within the craft. Once detached, the strops or slings should not interfere with the operation of the on-load release gear or the propeller;
- .6 once the on-load release hooks have been connected to recover the lifeboat, the strops or slings should be reattached to the lifeboat before the boat is hoisted clear of the water. The strops or slings should be designed so that they do not interfere with either the lifting or re-stowing of the lifeboat into the davits;
- .7 a strop or sling used as an FPD should be sized and arranged to allow the transfer of load from the hook mechanism to the strop with minimal movement (drop) of the boat in the event of a release mechanism failure. Should a fall preventer strop or sling be subject to an unintentional dynamic shock loading, then the strop or sling should be replaced and the associated attachment points inspected. In such cases, the Administration should be informed as soon as possible and the master should provide a full report of the circumstances of the incident; and
- .8 where provided, fall preventer strops or slings should not be used for any other purpose and should be fitted to the lifeboat at all times.

### **3 Drills, testing, inspections and maintenance of lifeboats and launching appliances**

3.1 The ship's master or the officer in charge of any lifeboat lowering or lifting operation should ensure that, where provided, lifeboat FPDs are properly in place before commencing any drill, testing, inspection or maintenance where persons are in the lifeboat.

3.2 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.

3.3 Those conducting training drills and drafting ISM Code procedures should take into account that with certain types of ship such as oil, gas or chemical tankers it may not be possible to use an FPD in an abandon ship situation where the release mechanism of the device is not inside the lifeboat. In such cases, the master should take this into account when considering application of paragraphs 2.1.9 or 2.2.8. Where a different procedure is followed during routine drills compared with an abandon ship situation, this should be clearly described in the ISM Code documentation and training manual.

**4 Modification of existing approved on-load hooks already fitted to a ship to incorporate FPDs**

The shipowner or original equipment manufacturer should contact the Administration for approval before any modification, such as modifying existing lifeboats and hooks for oil and chemical tankers so that FPDs can be released from within the lifeboat, is made to a hook, lifeboat or davit to accommodate the use of FPDs. Any retesting of any equipment should be agreed and witnessed by the Administration or a recognized organization appointed by them and documented in the relevant approval file.

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