



Following developments at the IMO in 1986, it became obligatory for hooks fitted in conventional lifeboats to have on-load release mechanisms. These enable a ship to release the lifeboat, even if weight remains on the hook and falls.

### 3.3 2001 – Investigation into Accidents involving Lifeboats and their Launching Systems

#### OFF-LOAD

Off-load release capability ensures that the survival craft can only be released when it is on water and there is no weight on the hooks. This means that it is not strictly possible to accidentally release the lifeboat from height.

#### ON-LOAD

On-load release capability allows the survival craft to be released while at sea when weight is on the hooks, even when the craft is not fully immersed. This means it can be released during an emergency. Therefore, it is possible for the craft to be accidentally released from height. The use of the on-load method in a drill is potentially dangerous and the system should be designed to protect against the risk of accidental use.

Since its establishment in 1989, the UK's Marine Accident Investigation Branch (MAIB) has received a number of reports about seafarers being injured or killed in accidents involving lifeboats.

By 2001, MAIB inspectors had become increasingly concerned at the high number of accidents involving ships' lifeboat launching systems. This led them

to conclude that there were some fundamental problems with these systems, as the reports suggested that anyone using a lifeboat, whether in a drill or actual abandonment, ran the risk of being injured or even killed.

The MAIB conducted a thorough review of past lifeboat accidents to identify where the problems might lie. The study set out to achieve 5 objectives:

- To draw the industry's attention to the number of accidents that had occurred since 1989
- to ensure that lessons were not forgotten
- to identify the common factors that led to those accidents
- to review the risks associated with lifeboat launching systems by examining common problems encountered
- to make recommendations that would contribute to improving safety at sea.

The database that the MAIB had accumulated over the 10-year period since it was formed indicated that lifeboats and their launching systems had cost the lives of 12 seafarers, with a further 87 seafarers having been injured. The accidents all occurred during training exercises or testing, with experienced and qualified seafarers either performing or supervising the operations. They also found that those who use lifeboats are exposed to the greatest risk during embarkation and recovery.

### **The investigation found that:**

- There were some fundamental weaknesses in lifeboat launch systems
- a root cause of many of the accidents was the over-complicated design of the lifeboat launch system and its component parts
- training, repair and maintenance procedures fell short of what was necessary
- there were extensive problems with manufacture, construction, maintenance and operation of these systems
- it raised the, potentially controversial, question as to whether lifeboats were necessary in the modern age.

To put these accidents in perspective, a search was also made by the MAIB into all other fatal accidents that did not involve lifeboats and their launching systems over the same 10-year period. The results showed that the lives of 73 seafarers were lost from all other accident types on board ship. The search also showed that the number of lives lost in accidents involving lifeboats was the same as the number lost in each of the two main causes of death to seafarers, ie entering confined spaces and falls overboard. All three incident types resulted in 12 deaths in the same period.

## MAIB's recommendations

The MAIB recommended that the IMO should undertake a study of the value, need and desirability of lifeboats, and that such a study should embrace all reported incidents and accidents from around the world. If it concluded that lifeboat launching systems were necessary, the study should be extended to formulate requirements that embrace common operating procedures. They recommended that systems should be capable of being operated and readily understood by people with minimum training and experience and, above all, be able to be used for training and deployment both reliably and safely.

The impact of the MAIB study, along with submissions from other member states, led to the issue of lifeboats being discussed in detail on the agenda of the Maritime Safety Committee of the IMO.

### 3.4 2002 – High Number of Accidents with Lifeboats Discussed at MSC

The Maritime Safety Committee (MSC), at its 75<sup>th</sup> session in May 2002, considered the issue of the unacceptably high number of accidents with lifeboats in which crew were injured, sometimes fatally, while participating in lifeboat drills and/or inspections. Pending further consideration of the problem, the Committee wished 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.

In addition, Member Governments were invited to:

- Bring the details of MSC/Circ.1049 'ACCIDENTS WITH LIFEBOATS' to the attention of their maritime Administrations, relevant industry organisations, manufacturers, shipowners, crews and Classification Societies
- take the necessary action to prevent further accidents with lifeboats pending the development of appropriate IMO guidance.

### 3.5 2006 – Improvement to Manuals Required to Address Lifeboat Release Gear Concerns

The MSC, at its 81<sup>st</sup> session in May 2006, while taking into account the number of casualties with lifeboat systems and recognising the need to improve manuals for operation and maintenance of lifeboat systems, approved the Guidelines for developing operation and maintenance manuals for lifeboat systems. It had been recognised that:

- Seafarers often change ships and sometimes are not familiar with the lifeboats on their ships

- casualties are often caused by poor understanding of the lifeboat systems, particularly release gear systems
- user friendliness of manuals for lifeboat systems is, therefore, important to help prevent casualties.

These were referenced in MSC.1/Circ.1205 – Guidelines for developing operation and maintenance manuals for lifeboat systems.

In addition at the 81<sup>st</sup> session, the IMO issued Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear, which were contained in MSC/Circ.1093.

The objective of these Guidelines was to establish a uniform, safe and documented performance of periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear. It was emphasised that these Guidelines relate to the application of the ISM Code concerning periodic servicing and maintenance of lifeboat arrangements and should, therefore, be reflected in procedures developed for a ship under that Code.

These were referenced in MSC.1/Circ.1206 – Measures to prevent accidents with lifeboats.

### **3.6**      **2008 – ‘Survival Craft’ Booklet**

While recognising that the IMO, together with industry organisations representing the broad spectrum of manufacturers and users, were actively developing revised design criteria for survival craft, and with a view that this work would take time to complete and implement within the industry, in October 2008 OCIMF released ‘*Survival Craft – A Seafarer’s Guide*’. This guide was to assist seafarers with the safe operation and maintenance of survival craft and to help bridge the gap by recommending measures that are applicable to existing systems and their safe operation.



### 3.7 2009 – Use of Fall Preventer Devices (FPDs)

In 2009, the 86<sup>th</sup> session of the IMO's MSC approved Guidelines for the fitting and use of fall preventer devices (FPDs). It was emphasised that FPDs are only to be considered as an interim risk mitigation measure, are only to be used in connection with existing on-load release hooks and that wires or chains should not be used as FPDs as they do not absorb shock loads. FPDs are to be used at the discretion of the Master, pending the wide implementation of improved hook designs with enhanced safety features.

It was further recognised that a number of the current designs of on-load release hooks are designed to open under the lifeboat's own weight and often need to be held closed by the operating mechanism, with the result 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.

These are referenced in Guidelines for the fitting and use of fall preventer devices (FPDs), MSC.1/Circ.1327, 11 June 2009.

*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.*

### 3.8 2009 – Port State Control (PSC)

Between 1 September and 30 November 2009, a Concentrated Inspection Campaign (CIC) on lifeboat launching arrangements was conducted jointly by the Paris MoU and the Tokyo MoU.

- The 27 member authorities of the Paris MoU carried out 5,749 inspections
- preliminary results from the Paris MoU inspections show that 1 out of every 5 inspections revealed CIC-related deficiencies
- during the 3-month period, 246 ships were detained, and 30% of those detentions were for CIC-related deficiencies.

The PSC Committee submitted their findings to the IMO's Flag State Implementation (FSI) Sub-Committee, which met in July 2010.

### 3.9 2010 – Sub-Committee on Ship Design and Equipment (DE) Agrees Guidelines to Replace Unsafe Lifeboat Release Mechanisms

At the 53<sup>rd</sup> session of the IMO's Sub-Committee on Ship Design and Equipment (DE), draft guidelines were agreed for replacement of unsafe lifeboat release mechanisms.

These Guidelines for evaluation and replacement of lifeboat on-load release mechanisms ensure release mechanisms for lifeboats are replaced with those complying with new, stricter safety standards, in order to reduce the number of accidents involving lifeboats, particularly during drills or inspection.

The Guidelines were submitted to MSC 87 for approval and adoption into the International Life-Saving Appliance (LSA) Code and the Recommendation on Testing of LSA, which require safer design of on-load release mechanisms, as well as a related draft amendment to the International Convention for the Safety of Life at Sea (SOLAS), Chapter III, Life Saving Appliances, which will require lifeboat on-load release mechanisms not complying with the new LSA Code requirements to be replaced no later than the next scheduled dry-docking of the ship following entry into force of the SOLAS amendments.

### 3.10 2011 – Amendments to SOLAS, LSA Code and New Guidance

#### Summary

The MSC met at its 89<sup>th</sup> session in 2011 and the IMO Guidelines (from MSC 87) for evaluation and replacement of lifeboat on-load release mechanisms were approved to become mandatory, contained within MSC.1/Circ.1392. These were the release mechanisms referred to in SOLAS Regulation III/1.5, following the recommendations made by the Sub-Committee on Ship Design and Equipment (DE) at its 53<sup>rd</sup> session in February 2010.

The Committee adopted Resolution MSC.317(89), introducing new requirements under SOLAS Regulation III/1.5 for Lifeboat Release and Retrieval Systems (LRRS). The requirements apply to on-load release mechanisms installed on all types of ships, ie both new and existing cargo and passenger ships.

The Committee also adopted Resolution MSC.320(89) and 321(89). These contain amendments to the Life Saving Appliances (LSA) Code requirements and for the testing and approval of LRRS.

#### Design review

Administrations, or Recognised Organisations acting on their behalf, were required to review the designs of all existing on-load release mechanisms