

## A 20-year anniversary – The loss of lives in lifeboats with on-load release hooks

Lifeboats are designed to save lives, but over the years too many seafarers have died or been seriously injured during routine safety exercises in davit-suspended boats fitted with on-load release hooks. Gard News has a look at the problem.<sup>1</sup>

The ship that can not sink is yet to be constructed, so vessels need to be fitted with life-saving appliances, for the safety of crew and passengers. In the early days of sailing vessels, such means would be the work boats of the ship or any floating object to hang on to. The risks a seaman faced were well known and in coastal communities it was not an unexpected fate to end one's life at sea.

Passenger ships represented a particular challenge. The terrible TITANIC accident in 1912 is the one we remember, but it was not at all the first major one. In the 19th century emigrants on transatlantic passages lost their lives in the thousands. But the loss of over 1,500 lives out of 2,000 on board the huge, modern and luxurious vessel "that could not sink" and the shock to realise that the vessel only had lifeboat capacity for half the people on board, put the safety of passengers on the agenda. The Convention on Safety of Lives at Sea (SOLAS) was adopted in 1914 as the first international regulations

on the subject and regulated that there should be means of rescue for everyone on board. Due to the First World War, however, it took some time for these first international regulations to take effect. Further SOLAS revisions of 1929, 1948, 1960 and 1974 plus amendments thereafter have strengthened the regulations for life-saving means, requiring both lifeboats and life rafts on board.

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For the safety of lives, the regulators have always considered the lifeboats to be the most important and the life rafts more as a supplement. Among seamen, however, for

many years there has been a lack of confidence in lifeboats, which have been seen as rather difficult and dangerous to launch. There has been a need and a requirement for lifeboat exercises in which all members of the crew had to participate.

Actually, lifeboats did not evolve very fast from the types on board the TITANIC and for a long time remained as open, wooden boats suspended in davits. Glass fibre-reinforced polyester took over as a building material and one out of two boats also got an engine. It was not seen as necessary to have an expensive motor in both the port and starboard boat, as one could tow the other. Covered lifeboats were first required by the SOLAS amendments of 1983 and became mandatory for ships built after 1st July 1986. From then on, shipwrecked

<sup>1</sup> See also articles "Totally enclosed lifeboats" and "Lifeboat accidents" in Gard News issue No. 146.

seamen leaving a tanker on fire and those to face the North Atlantic in winter or dehydration under a tropical sun stood a better chance to survive. As the vessels grew larger, so did the lifeboats and the distance from the boat deck to the sea level.

Easy to operate gravity davits had long been introduced, but one problem remained from the old days: the difficulty of releasing the lifeboat hooks in a sea swell, and preferably both hooks at the same time. Many seamen have suffered bruises to the head, and broken fingers were not uncommon, in a fight with the heavy blocks. Some release systems were therefore introduced by manufacturers, making it possible to let go of both davit falls simultaneously, by a wire or rod pull from one location of the boat. That made the seaman's life easier during lifeboat exercises, but in heavy seas the release of both hooks at the same time was still very difficult.

#### **An accident to remember**

On 27th March 1980, the Norwegian accommodation rig ALEXANDER KIELLAND capsized in bad weather in the Ekofisk oilfield of the North Sea, having lost one of its five legs. 123 people died – a shock for the Norwegian nation and for anyone involved in oil exploration. The rig was equipped with seven lifeboats of enclosed type, each of 50-man capacity. Four boats were lowered, but could not be released from the heavily listing rig, as they did not become fully waterborne. After the tragedy, a commission was established to examine the circumstances of the accident and also to evaluate the life-saving means and to advise on improvements. The commission

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recommended that work to find a solution to the problem of the release mechanism of lifeboat hooks should be accelerated, and introduced a suggestion: “... it may seem natural to recommend only to approve of hooks that can be released under load...”. Such release systems already existed and the

commission also pointed to the fact that there had been accidents with such systems, for instance a life-saving capsule had fallen from the ALPHA platform, with several people being killed. All pros and cons considered, Norwegian authorities ended up deciding in favour of “on-load” release hooks for lifeboats of ships and oil rigs.

#### **A requirement for on-load release**

In 1983 SOLAS Chapter III was amended to require ships built after 1st July 1986 to be equipped with a hook-disengaging gear capable of being operated both on- and off-load. Since then a large number of lifeboats with on-load release gear has been involved in accidental release, mainly during lifeboat exercises, and a large number of seamen has died or been seriously injured for life. These accidents are well known, having been reported in numerous articles in newspapers all around the world. Flag states, seamen's unions, class societies, lifeboat manufacturers and P&I Clubs have issued warnings, and organisations such as the IMO, the Oil Companies International Marine Forum (OCIMF), the International Chamber of Shipping, Intertanko and the Nautical Institute, just to mention a few, have voiced their concern.

It is sad to note that the human mind has not yet managed to design a fail-safe system for launching a traditional davit-suspended lifeboat from a sinking vessel. The fact is that while people on board the TITANIC died because they did not have lifeboats, crews of modern vessels have died because they had them and were required to exercise in them. Let us look at some of the problems involved.

#### **The lack of statistical records**

No one knows how many lifeboats have accidentally fallen down, how many lives have been lost and how many people have been injured as a result. This is because many ships may not report such incidents to the flag state and the flag states are not required to report them to the IMO or to any other international body. National authorities of traditional seafaring nations may require their ships to report accidents, but when viewing their annual reports, it is not always clear what happened in a lifeboat accident and whether on-load release gear was involved. In addition to accidents with lifeboats on board ships, it should not be forgotten that there have also been several

accidents on board oil rigs, but there are no reliable figures available for them either.

Serious personal injury or death of a seaman will normally end up in the records of a P&I Club. However, even P&I Clubs are not able to provide exact figures, because the Clubs have different systems to register such accidents (for instance, they may be registered under “Lifeboat”, “Lifesaving appliances”, “Injury”, “Death”, “Fall”, etc.) and Clubs do not report these accidents to any central agency for a total count.

*“The accidental release of a lifeboat usually happens during exercise or when maintenance work is being carried out.”*

The accidental release of a lifeboat usually happens during exercise or when maintenance work is being carried out. In most cases one hook releases first, and the boat may swing like a pendulum. The second hook may release or be torn out of the deck. If there are people on board they will sometimes escape unharmed by just falling into the sea and then being rescued. Although very close to a fatal accident, such near-misses may not be reported at all. It is perhaps natural to try to avoid negative publicity in such cases.

As on-load release hooks are a SOLAS requirement for vessels built after 1st July 1986, there is now a 20-year history to look back upon. The deaths resulting from these accidents may certainly run into several hundreds and the injuries even more. If proper statistical information had been available, these accidents may not have been allowed to continue.

#### **Gard's records from 1992 to 2004**

From 1992 up to and including 2004 Gard recorded 32 cases of accidental release of lifeboats with on-load release gear, where at least one hook released, often followed by a release or breaking loose of the other. Five cases were without injury to people (there are certainly many more, but these five have been reported because they involved P&I claims), the others caused 12 deaths and injury to 74 people. Among the people injured there were several very

serious cases of head and spine injury, some causing paralysis or possibly leading to death at a later stage. There were also a few cases where members' vessels have picked up drifting lifeboats at sea – boats which had obviously fallen from the ships they belonged to.

Considering the sizable Gard fleet, the number of accidents is not particularly large compared to other accidents involving people working on board ships. They do not present simply a question of loss prevention in the sense of reducing costs, but they raise first and foremost a moral issue, because the accidents happened to people who were required to exercise in lifeboats – boats meant to save, not endanger, their lives. The three cases reported on pages 10 and 11 of this issue of Gard News illustrate the tragedy

of these unacceptable accidents. Older cases have been deliberately selected because of the sensitive nature of these accidents.

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#### The causes of the accidents

The SOLAS amendment which came into force in 1986 required lifeboats to have a mechanism of normal release capability when the boat is waterborne without any load on the hooks and, in addition, to have

an on-load release arrangement capable of releasing the boat hooks when suspending the full load of boat and a full complement of persons and equipment. The on-load release solved an important problem, namely the difficulties of releasing a waterborne boat from both hooks in a sea swell, allowing the boat to get speedily away from the shipside. It would also provide the crew with a possibility to release the boat from the hooks if it for some reason became suspended in mid-air. As mentioned earlier, the concept of lifeboats had not changed much until the requirements for fully covered boats and an on-load release capability were introduced. Seamen, used to launching conventional boats by easily-understood systems, quite common from ship to ship, were now introduced to systems which needed study of manuals and working

## Twenty years of warnings and accidents

Due to the many on-load release accidents, there has been no lack of attention to the problem, no lack of in-depth investigations by good flag state administrations and no lack of coverage in the press. But still the accidents have continued to happen and seafarers' lack of confidence in lifeboats has grown. Following is a far-from-complete list of papers that have been issued on the subject over the years, unfortunately without success in stopping the accidents.

1981. The official report of the ALEXANDER KIELLAND accident recommended to accelerate work for improved release mechanisms in lifeboats, but also warned of accidents that had happened with on-load release gear.

1986. Hazards of on-load mechanisms were highlighted in UK Merchant Shipping Notice M1248.

1991. The Norwegian Maritime Directorate issued a circular on the accidents with on-load release hooks.

1994. The Thistle Education and Consultancy Co. Ltd, Glasgow College of Nautical Studies carried out a study of the lifeboat release mechanisms for UK MSA.

1994. Oil Companies International Marine Forum (OCIMF) published a "Lifeboat Incident Survey – 2000", with a non-comprehensive list of 89 incidents, of which 26 were related to lifeboat disengaging gear.

1995. Seaways, the journal of the Nautical Institute, presented three articles on lifeboat release mechanisms by the senior lecturer of Glasgow College of Nautical Studies, highlighting the problems leading to accidental release.

2001. The United Kingdom Marine Accident Investigation Branch (MAIB) presented a safety study for UK and non-UK vessels inspected by them from 1989 to 2000 and found that accidents with lifeboats and launching gear represented 16 per cent of total lives lost on merchant vessels. They had registered 12 deaths and 87 people injured during training and testing of lifeboats. Quote: "...the MAIB suggests that anyone using a lifeboat, be it in a drill or a genuine evacuation, runs the risk of being injured or even killed".

2001. Intertanko, in conjunction with ICS (International Chamber of Shipping), OCIMF and SIGTTO (Society of International Gas Tanker & Terminal Operators) raised the matter of lifeboat accidents with the IMO sub-committee on ship design and equipment.

2002. IMO Maritime Safety Committee (MSC) stated in circular MSC 1049 that the number of accidents in lifeboats during lifeboat drills and inspections was

unacceptably high and invited member governments to take action.

2003. Cayman Islands Shipping Registry issued a circular based upon the MAIB study of 2001, stating: "Nobody should be in the lifeboat during lowering or hoisting back to the stowed position".

2003. IMO issued MSC circular 1093, "Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear".

2003. The Australian Transport Safety Bureau (ATSB) addressed lifeboat accidents in a safety bulletin. Quote: "Most lifeboat accidents have occurred during training drills, the purpose of which is to increase the confidence and competence of seafarers when handling lifeboats. Regrettably, that purpose is not always being met. There is increasing worldwide concern at the number of deaths and injuries that have resulted from lifeboat accidents and for the safety of seafarers when lifeboats are being used".

2003. The Norwegian Maritime Directorate issued circulars on how to reduce the risk of accidents during lifeboat exercises. Their record showed five deaths on board Norwegian-flagged vessels during the years 1989-2001.

2004. The Australian Transport Safety Bureau issued an in-depth report on the death of two people and three seriously wounded in a lifeboat accident. Over the years Australia has issued several good investigation reports on such accidents.

2005. The New Zealand Branch of the Nautical Institute issued a "Lifeboat lowering questionnaire".

2005. Study of accidents between 1992 and 2004 reported to Gard revealed 32 incidents, 74 injured, 12 deaths.

2006. Amendments to SOLAS Chapter III, adopted in MSC 78, on "Training Servicing and Maintenance of Life Saving Appliances" in force from 1st July 2006.

mechanisms, systems that could fail without detailed maintenance and which had no allowance for human error.

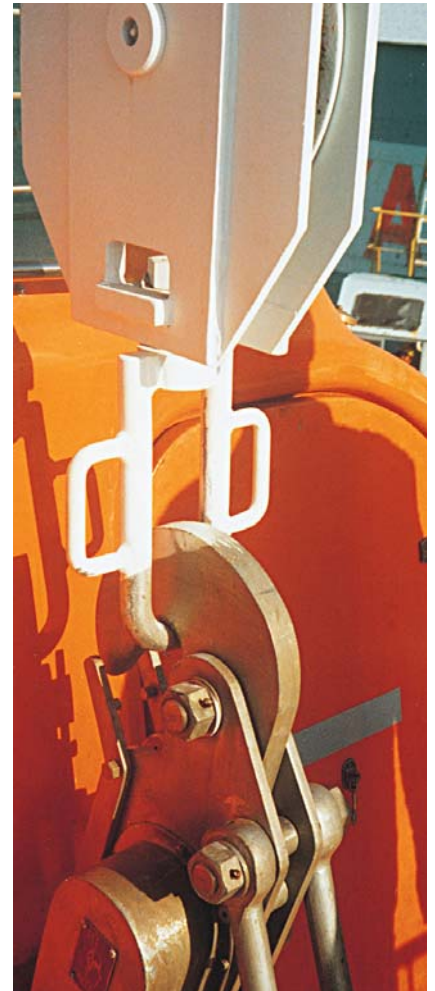
Looking back at the many accidents that have been experienced, it may be regretted that there was no requirement for lifeboat producers to come up with one standard system. Instead they were all free to develop their own solutions to comply with the requirement for an off-load/on-load release hook. IMO regulations require all boats on board the same vessel to have the same release mechanisms, but a seaman trained in one system on board one ship may soon be on board another ship with a different one, and with no knowledge of the system.

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Of all the different release systems that have been available for some time, there is probably none without an accident. Some systems may be more vulnerable to lack of

maintenance and human error than others, but in this article we can not go into a detailed examination of each type and their pros and cons. The systems normally have a wire pull from a central position to the hooks forward and aft, the pulling rod can not be activated without removal of a safety device and without the boat being waterborne (most systems have a membrane device, activated by the hydrostatic pressure of the boat being in the water, to provide such safety). In order to allow release of a non-waterborne boat, this device can be activated manually from within the boat. There is a safety glass or lid on this safety device, so one must think twice before using it. In several accidents it has been found that this safety glass/lid, which often is of a rather weak construction, was missing. Thus the safety device protecting against an unauthorised on-load drop can be very easily tampered with by the inattentive crew member.

The release wire pulling rod is normally located at the steering position, as are the operational devices of the engine. There are cases of tests of the engine of a davit-stowed lifeboat when a crew member is asked to place the engine in reverse, and then pulls the release rod of the hooks instead of the clutch lever of the motor. Release handles placed on a common control panel for the engine have been pulled in some cases instead of the speed lever.



**An on-load release hook, which was brand new and of solid construction when it released accidentally.**



**This lifeboat released itself from a vessel, fortunately without anybody on board. It was found on a coral reef two weeks later.**

Some degree of human error is involved in most of the accidents, but often so is lack of maintenance. Pulling cables have to be correctly fixed and adjusted, the membrane of the hydraulic safety device has to be regularly checked and replaced and the parts of the hook assembly must be clear of salt deposits, and tolerances of hook systems have to be checked. Many accidents have happened due to incorrect resetting of the release system and the parts of the hook assembly. The boat may then fall during the hoisting, or it may be stowed with a latent problem and fall during the next lowering if all parts are not correctly in place. Normally, one should not be able to put safety pins in place to secure a release lever in safe position unless all hook parts have been correctly reset, but there are cases of strong men and wrong tools combined with ill-adjusted wires and wear of parts which explain some of the accidents.

It is often seen, both from accident investigation reports and during condition surveys of older vessels, that there may be a lack of clear and easy-to-understand instructions on board on how the hook systems work. In some cases the instructions in the maintenance manuals are not the

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same as the instructions placard in the lifeboat, and some manufacturers complicate their instructions by placing both instructions for release and resetting the hook system on the same placard, and possibly even in two languages. In an emergency situation and under poor light conditions, it is easy to make a mistake unless the crew member is fully trained on the system. In order to enlighten the crew on how the hook assembly works, it may be

a good idea to place on board each vessel a plexiglass model of the hook, like lifeboat manufacturers have for training at their premises.

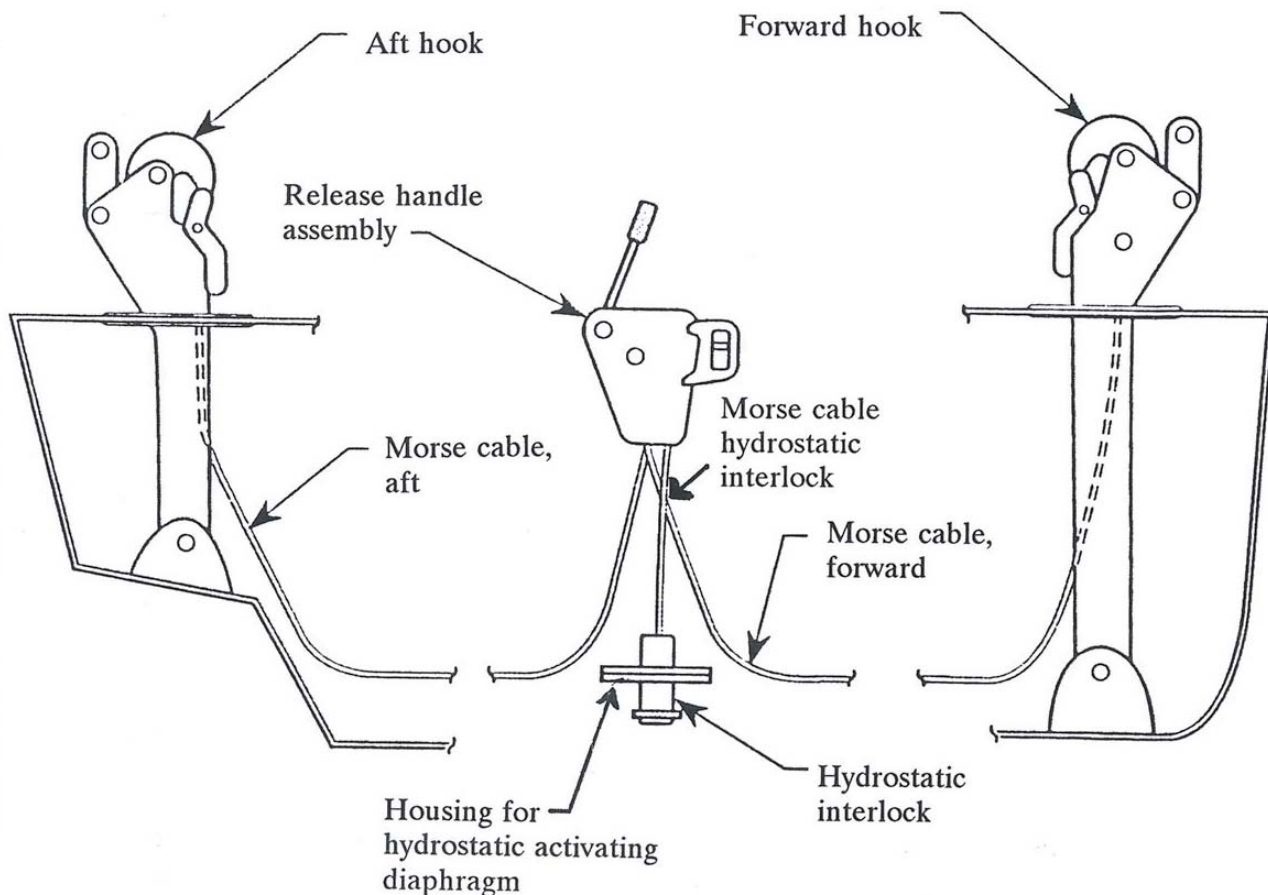
Several accidents have also happened during inspections by port state control, US Coast Guard or class surveyors. They may have asked to see the boats being launched, being released from the hooks and even dropped from just above the water. During such inspections it is important for the officer of the ship to know that he is the one in charge of the operation and not the surveyor. The surveyor should make his requirements clear prior to the exercise and it should be agreed to and planned by the ship’s staff. During the exercise the ship’s officer should maintain his authority. In one case when the vessel was requested to drop the boat, three men, including the surveyor, injured their backs and the glass fibre-reinforced seats of the boat fractured. The drop was estimated to have been less than three feet and there was confusion about the roles of the surveyor and the ship’s officer.

**An end to the problem?**

The IMO issued MSC Circular 1093 in June 2003, giving important guidelines on periodical servicing and maintenance of lifeboats. By Resolution MSC 152 (78) in May 2004 these were adopted as changes in SOLAS Chapter III and entered into force on 1st July 2006.

*“Several accidents have also happened during inspections by port state control, US Coast Guard or class surveyors.”*

Weekly and monthly inspections of lifeboat gear are now to be carried out following detailed requirements and recorded in a log book on board. An annual thorough examination and operational test of the on-load release gear by the manufacturer’s representative or a person appropriately trained and certified by the manufacturer must also be carried out.



Release mechanism general assembly (courtesy of MAIB).

## Image not available

**During investigation of an incident it became apparent that the safety pin had not been fitted to the release handle and it was suggested that one of the crew members on board might have thought that the handle was the clutch of the lifeboat engine.**

An important change in the regulations is that the previous requirement for the assigned operating crew to be on board the lifeboat during launch at drills has been removed.<sup>2</sup> As a result, the lifeboat may now be boarded at water level after it has been lowered, and subsequently the crew may disembark before the empty boat is retrieved to its stowed position. This avoids risk to people arising from the boat being dropped inadvertently from a height during launch or recovery.

As the implementation process would take some time, and in the interest of the safety of seafarers, the IMO Maritime Safety Committee in its 79th session in December 2004 approved early implementation of this part of the regulations. No doubt this has reduced the number of accidents in drills since then, but it can be questioned whether crews will be fully prepared for an emergency launching of lifeboats.

Hopefully, the involvement of the manufacturers will solve the problems caused by lack of maintenance. The manufacturer's representative is likely to order the necessary parts for replacement and the release gears will be working well. More than ever it is, however, necessary to train the crew in the operation of

the release systems, because the manufacturer's representative is not

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likely to be on board in a real emergency. Some lifeboat manufacturers have started to provide training at their own facilities, for crew and persons to be approved for the annual maintenance and testing. A major Norwegian-based lifeboat producer has developed a web-based computer program to help shipowners, managers and service personnel to keep track of service and maintenance of lifeboats and is also offering full maintenance-management for the shipowner's fleet of lifeboats. The

advantage is that the lifeboat manufacturer will have the full history of maintenance available, and will be able to plan replacements and provide service personnel from the closest service station.

It is hoped that the new SOLAS regulations will solve the problem of lifeboat accidents. To achieve this, shipowners and managers must invest in the training of their crews, crew members must be disciplined in the operation of davit-suspended lifeboats and the manufacturers must take their new tasks conscientiously and use only well-trained and qualified people. Last but not least, classification societies must ensure that the regulations for servicing, inspection and testing are properly attended to by qualified people, before issuing the relevant Cargo Ship Safety Equipment Certificate or Passenger Ship Safety Certificate to the vessel.

The impact of the SOLAS amendments on lifeboat accidents remains to be seen, so now is a critical time to collect statistical data. Should the accidental releases of davit-suspended lifeboats with on-load release hooks continue, there should be no more room for considering what to do. If lives are still lost in the launching of lifeboats, the on-load release systems will have to be banned and only off-load release systems allowed.

### Lifeboat accidents

The cases reported on the following pages illustrate the tragedy of lifeboat accidents. ■

<sup>2</sup> The amended SOLAS III 19.3.3.3 reads: "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 every three months during an abandon ship drill." Section 3.3.4 contains special provisions for free-fall lifeboats and section 3.3.5 contains other exceptions.

## Have your say

Do you believe the SOLAS amendments in force from July 2006 will prevent lifeboat accidents? Send your opinion to [gardnewseditor@gard.no](mailto:gardnewseditor@gard.no) and be part of the debate.

## The end of a musical career

Most on-load release accidents happen on board cargo vessels, but there have also been accidents with lifeboats in cruise vessels.

Regulations require certified lifeboat men in the boats of passenger vessels, so these may be better trained in the launching of lifeboats. That may be an advantage, but the disadvantage is that with a limited number of real seamen on board a cruise vessel, the cooks, the waiters and the casino cashiers also have to serve as lifeboat men in the boats, while the able-bodied seamen drive the lifeboat winches from the embarkation deck. Often the task requiring a skilled seaman is not the launching of the boats, but picking them up again, after having reset the on-load release mechanisms correctly.

*“During the drill 12 men entered one of the lifeboats, and before any attempt was made to lower the boat, both lifeboat hooks released simultaneously and the boat fell about six metres into the water below.”*

In 1994 a general fire drill and lifeboat exercise was held on board a member's cruise vessel. The vessel had starboard side to quay, so the two boats on port side were to be lowered to the water. The boats were stored on deck 5 and customarily lowered to deck 3, where a gate in the railing allowed for embarkation. During the drill 12 men entered one of the lifeboats, and before any attempt was made to lower the boat, both lifeboat hooks released simultaneously and the boat fell about six metres into the water below. As both hooks released simultaneously, one may suspect that someone had pulled the release lever. There were, however, three safety devices

to unlock in order to be able to do just that: a hydraulic safety device, opened by water pressure to a membrane once the boat enters the water, a retaining pin which must be removed to be able to pull the release lever disengaging the hooks by a wire pull, and the release lever must be lifted upwards first, in order to be used. One of the crew members admitted that he had removed the retaining pin on the release lever, but he had not pulled the lever.

The case therefore remained unsolved.

A common factor in many unsolved cases is that there are often several persons on board, not all trained and not all alert to the dangers of the release system. People tend to examine things while inside the boat, including parts of the disengaging gear. The hydraulic safety device, for instance, may be unlocked manually from within the boat, before the boat is waterborne. Such manual operation is for emergencies only, and the device is protected by a glass plate or lid, needing to be unscrewed to operate. The idea behind the possibility of short-cutting the hydrostatic device was that if people were trapped within a boat not reaching the water, they should be able to release the boat and take their chances at a drop. The victims of the ALEXANDER KIELLAND accident may have benefited from such a possibility, but later accidents have shown that even if a boat is dropped less than one metre, the passengers are likely to sustain serious back injuries. Seats of lifeboats have cracked in way of passengers even at drops from such limited height. Drops from deck level have resulted in the engine going through the bottom of the boat, so the forces involved are considerable. The IMO's Life-

Saving Appliances Code (LSA Code) requires that a fully-loaded lifeboat must be able to withstand a drop of 3 metres, but that is for the sake of the boat's strength, not a concern for the people on board, who would risk injury and death at such a drop. Modern lifeboats are large and heavy, and the wide, flat bottom hull results in great slamming forces if dropped to the sea.

*“Later accidents have shown that even if a boat is dropped less than one metre, the passengers are likely to sustain serious back injuries.”*

Although no one was killed, this lifeboat accident became Gard's most expensive one. All 12 persons within the boat were injured and hospitalised. Their jobs on board the ship illustrate the fact that in cruise vessels there may not be enough able-bodied seamen to man all lifeboats in an emergency, so other staff on board have to receive training on how to man the boats. They included a third engineer (in charge of the boat), one second officer (who belonged to another boat) and two AB seamen. The other injured were the vessel's electrician, the chief cook, two waiters, the laundry master, one stewardess and the musician, all of whom may have had less experience in the launching of lifeboats and on-load release hooks. The musician, who provided musical entertainment in the ship's dining hall, ended up in a wheelchair with a crushed spinal column. A sad end to a musical career at the age of 44. ■

## Twelve men in a boat

**The worst accident registered by Gard in terms of lives lost in lifeboat incidents took place in 1992.**

The vessel, a general cargo vessel, was alongside the quay and the Captain rang the alarm for a mustering of the crew and a launching of the starboard lifeboat. The chief officer was in charge of the drill and, after making the boat ready and lowering it to the embarkation deck, 12 crew members entered the boat and the winch brake was lifted to lower the boat in a controlled manner to the sea. Having been lowered just a foot or so, the aft hook of the lifeboat released by itself, the boat swung as a pendulum on the forward fall, then the forward hook also gave way due to the strain and the lifeboat fell into the sea upside down. Almost the full remaining crew witnessed the accident from the embarkation deck. While the boat drifted towards the forward end of the vessel, the chief officer and two crew members went into the sea, lowered by the vessel's forward crane, to help the people trapped inside

the lifeboat. After the boat was lifted clear of the water, they could assist in opening the escape hatch and getting their comrades out. Six men died in this accident and the other six were injured, one of them very seriously. The Captain stated that the lifeboat drill was a monthly routine, using either the port or the starboard boat, as required by SOLAS at the time. As some of the crew members had just signed on, it was of importance on this occasion to have them taking part in a full lifeboat drill.

The vessel was flying the flag of Cayman Islands and an investigation was carried out by the United Kingdom Marine Accident Investigation Branch (MAIB). They found that the unintentional release of the on-load hooks took place due to the release mechanism being defective and thus having been prevented from being properly reset in the locked position the last time the boat had been used, which had been two months earlier. The defects were said to be due to lack of maintenance and to a lack of understanding of the safe operation of the

mechanism. But it had been possible to place the hook release lever in secured position and to hoist the boat back up, so no-one had suspected anything was wrong.

It is now 14 years since this accident took place, but quotes from the subsequent MAIB report still make a very valid statement:

*"Poor maintenance and lack of training and knowledge have been significant common causal factors in a series of fatal accidents involving the inadvertent release of various types of "on-load" release hooks. It is considered that the designs of these hooks are complicated and ambiguous requiring a high degree of specialised skills, not normally associated with ships' crews, in order to ensure that the mechanisms are properly maintained and serviced. For this reason and the fact that they are exposed to the harsh conditions of a marine environment, their continued use should be questioned."*

Indeed, following 20 years of malfunctions of on-load release hooks, their continued use should really be questioned. ■

## A fatal rescue operation

**It is relatively rare for lifeboats to be used in emergencies, so the accidents with the on-load release systems happen almost always during exercises. But there have been accidents during emergency use of lifeboats, and the following case is not easy to forget, although it happened in 1996, ten years ago.**

A member's vessel, an LPG carrier, received a mayday message from a disabled vessel with an engine-room fire. Stopping half a mile off, the vessel was informed that the fire had been extinguished, but three crew members were badly burned and the master requested urgent assistance in evacuating the injured for treatment ashore. The starboard lifeboat of the member's vessel was launched, manned by six persons, the chief officer being in charge. At 2300 hours the lifeboat returned with the injured seamen and the recovery of

the boat commenced. The boat was first just lifted clear of the water to check that it was hanging properly, thereafter the hoisting operation continued. The chief officer left the boat at the first deck level, in order to assist the deck crew with the recovery of the boat. Just a minute later the boat reached the stowage position and was almost hoisted to the davit limit switches when both the forward and the aft hooks released. The lifeboat then dropped, hit the rail of the ship and turned over sideways and fell into the water upside down. It is believed that only one of the persons on board had the lap belt fastened during the recovery of the lifeboat, so one can imagine the seriousness of the situation for the others falling around. The lifeboat was not a self-righting one and started to drift off. It took almost two hours to recover the boat and get it alongside the ship. In the middle of the night, in open sea,

the assisting crew then had to cut holes in the upturned boat to reach the victims inside. It was a very strenuous ordeal and the crew had to take turns due to exhaustion, until 0330 hours. From the member's vessel the third mate, the third engineer, the bosun and an oiler all died in this accident, while another oiler was injured. Of the persons taken off the fire-stricken vessels, the chief engineer died and two crew members were injured. The lifeboat became a total wreck. The on-load release hooks installed in the lifeboat were of the Shigi type, and not at all well maintained. It is believed that the safety pin of the release lever had not been put in place when resetting the mechanism, and that an occupant of the boat may have moved towards the hatch opening, ready to leave at the embarkation platform, and may have inadvertently knocked the release lever into the open position. ■