January 2014 www.nautinst.org

Seaways

The International Journal of The Nautical Institute

Sharing the seas

Explaining shipping to the shore p8

The Nautical Institute

Mariners' Alerting and Reporting Scheme

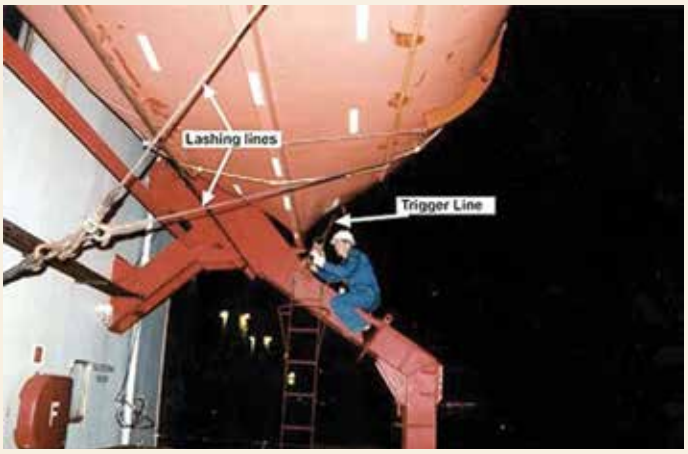
MARS Report No. 255 January 2014

MARS 201401

Fatigue and dangerous conditions lead to fatality

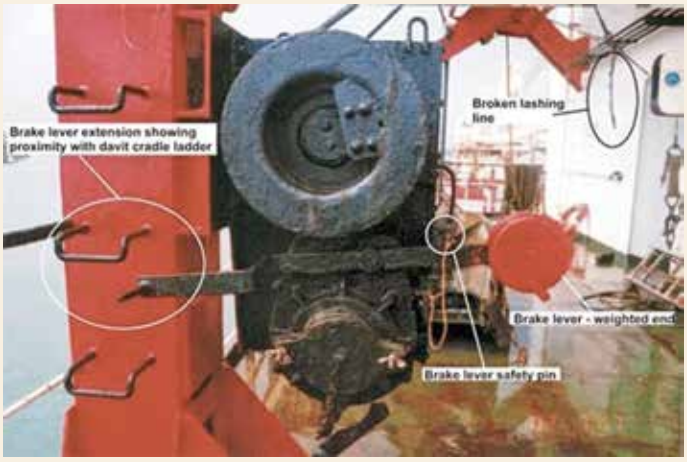
Edited from official Canadian Transportation Safety Board report M02L0061

➔ While underway but not yet in open sea, the bosun was instructed to properly secure the port lifeboat for sea. He called on a seaman to help him with the work. By the time the seaman arrived at the lifeboat station the bosun had already begun the task. The bosun was sitting astride the forward davit cradle, close to the underside of the lifeboat, trying to secure the forward trigger line to the trigger mechanism on the cradle (see photo). The seaman climbed the aft cradle ladder and attempted to do the same with the aft trigger line. When the seaman realised there was not enough slack in the line to permit the connection, he descended the ladder with the intention of lengthening the turnbuckle at the other end. Shortly after reaching the deck he heard a noise; he then saw the lifeboat sliding down the cradle of the roller gravity davits.



The noise also alerted the ship's electrician who was nearby. Both the electrician and the seaman rushed to the lifeboat davit winch and applied the brake. The lifeboat stopped descending but not before hitting the bosun, sending him backwards. He clung to the trigger line momentarily, but lost his grip and fell overboard into the water 15 metres below. 'Man overboard' was quickly communicated to the bridge where the OOW, a helmsman and a pilot were navigating the vessel. The pilot immediately put the engine to dead slow ahead, but the confined area of the channel prevented a turning or full astern manoeuvre. The pilot also released the port smoke buoy, but this fell into the partially deployed port lifeboat. The Master arrived on the bridge and released the starboard smoke buoy. Another life ring was also thrown into the water, and persons on deck could see the bosun apparently swimming some 20 metres from one of the buoys; however, they lost sight of him within minutes. Five days later, the bosun's body was recovered approximately 10 miles from the site of the accident.

It was observed during the course of the investigation that the outboard end of the brake lever (opposite the weighted end) was



extended such that the handle was near the vessel's side to enable the person who controlled the brake, by pushing down, to view the lowering of the lifeboat. The handle was in very close proximity to the second rung of the aft cradle ladder (6 cm below and 5 cm away, see photo above).

Although a manufacturer's instruction manual for the davit and its equipment was found on board, the lowering and hoisting instructions were of a general nature. They did not include specific safe working practices or details on the harbour pin and trigger line arrangements.

During the course of the investigation it was also discovered that the bosun had participated in various operations prior to the accident, so that during the previous 24-hour period he had been off duty for only about four hours. Other facts collected during the investigation showed that the vessel was operating with fewer deck ratings than specified in the Minimum Safe Manning (MSM) Certificate. This possibly contributed to the bosun's fatigue, as the same amount of deck work had to be performed with fewer persons.

Investigation findings

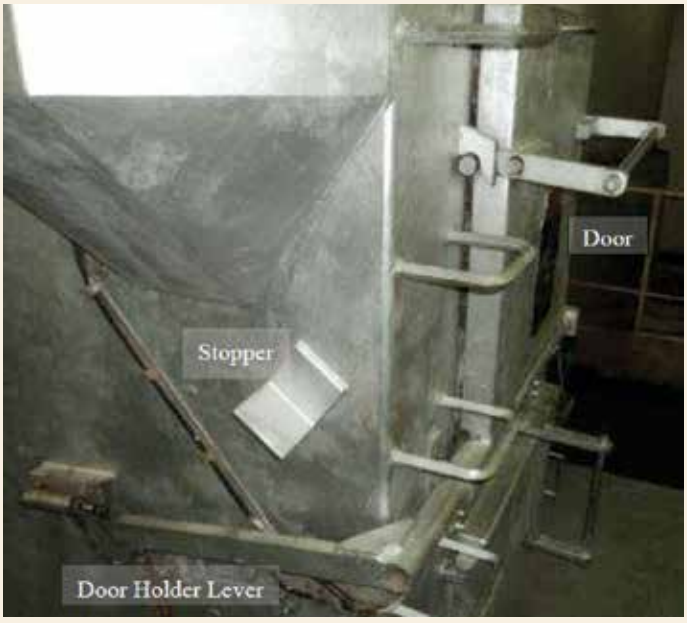
1. The 12 mm gap between the safety pin and its brake release lever, and the less-than-adequate maintenance on the brake-lever mechanism, contributed to the unexpected release of the lifeboat down the davit cradle.
2. The wire rope used as the lashing line was in a severe state of corrosion and well beyond a serviceable state.
3. The davit cradle ladder rungs were located in very close proximity to the faulty winch brake lever, and as the seaman descended the aft davit cradle, he probably stepped on the winch brake lever extension, instead of the ladder rung, and released the lifeboat.
4. The ladder rungs only provided vertical access at the extreme outboard end of the davit cradle, compelling personnel to place themselves in a dangerous position on the inclined portion of the davit roller track when securing the lifeboat.
5. With the davit winch brake disengaged, the corroded lashing line failed to hold the weight of the port gravity davits and the suspended lifeboat, allowing the assembly to slide down the davit cradle, knocking the bosun overboard.

6 The vessel was operating with fewer than the minimum number of deck ratings required by the MSM certificate. Additionally, the practice of assigning ratings to duties other than those described in the MSM certificate undermines the criteria under which the MSM was issued.
7 In the 24 hours preceding the accident, the bosun only had four hours off duty; his judgment, reaction time and alertness would have been adversely affected by fatigue.

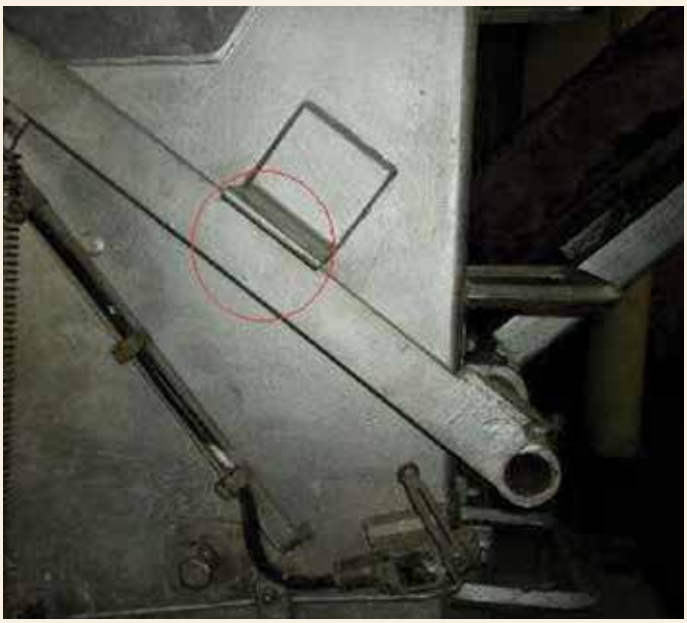
MARS 201402

Incinerator door deals a crushing blow

➔ An engineer attempted to open the incinerator door while underway. His thumb was trapped and crushed between the door holder lever and the stopper plate (see photo). He was quickly transferred to the ship's hospital and first aid was administered. The victim was disembarked and at the hospital a fracture of the thumb was diagnosed and orthopaedic surgery was necessary.



Incinerator with door closed



With door open, red circle indicates where crushing ensued

There were no reported difficulties in opening the door, and it is not known why the engineer placed his left hand at the indicated location. The engineer had two prior contracts with the same ship so he was familiar with this incinerator unit. However, the day before the incident there had been an unexpected engine room Unmanned Machinery Space (UMS) suspension. Due to this UMS suspension he had to stand watches in the engine room and as a consequence had inadequate rest for the period leading up to the accident.

Direct causes

1 Inappropriate handling of the equipment.
2 Improper decision-making and lack of judgement.
3 Fatigue due to violation of resting hours the previous day without adequate compensatory rest.

Also, it appears the risks involved were not taken into consideration. Since the duties of operating the incinerator were considered 'routine', no risk assessment had been done on the task. Therefore, the company also found the following:

Contributing factors

4 Inappropriate management of engine staff.
5 Inadequate training and familiarisation.
6 Lack of a risk assessment on the use and handling of the incinerator.

■ **Editor's note:** The company is to be congratulated for such a thorough report. It should be noted that the first two direct causes are in fact probably due to the third factor – fatigue. Fatigue has been said to be the equivalent of working while under the influence of alcohol, as both judgement and reaction time are impaired. In this case, the unexpected UMS suspension meant more work and less rest for the engineer. When unplanned extra work is incurred, mariners are encouraged to make every attempt to recuperate their needed rest hours to avoid unexpected negative consequences.

MARS 201403

Fire in the hold

As edited from ATSB official report 293

➔ In preparation for hot work by shore workers the crew placed three fire hoses, two dry-powder fire extinguishers and a number of fire blankets in the hold. As gas-cutting began no fire watch had been established at the hot work site(s) inside the cargo hold. A tarpaulin cover caught fire, and the shore workers raised the alarm. None of the ship's crew were in the hold and there was no attempt to use a fire extinguisher or the other fire-fighting equipment that had been prepared. The chief mate saw smoke coming from number one cargo

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hold. He too raised the alarm, alerting the ship's Master via handheld radio. The Master immediately went to the vessel's bridge and notified the authorities ashore. He also notified the ship's local agent before leaving the bridge to co-ordinate the fire-fighting on deck. Both of the ship's fire pumps had now been started.

The chief mate entered the cargo hold with a fire extinguisher but once in the lower hold he saw the tarpaulin was well alight and generating dense smoke, so he quickly exited the cargo hold. The vessel's crew were standing by on the main deck with pressurised fire hoses. Shortly thereafter the fire burnt through the oxy-acetylene hoses that had been left on the tween deck; the acetylene ignited, resulting in a fire ball and dense black smoke. The Master ordered the crew to spray water on the cargo adjacent to the fire and to check that the oxygen and acetylene cylinders had been turned off.

Soon after the alarm had been raised the ship's crew were fighting the fire with fire hoses and boundary cooling. Shortly thereafter several harbour tugs also joined in boundary cooling. With the assistance of shore fire-fighters the fire was extinguished and the ship's crew began checking compartments adjacent to number one hold for hot spots and fire risk. No hot spots were found and a fire watch covering the hold and adjacent compartments was established.

Lessons learned

In carrying out the hot work on board the vessel, neither the ship's crew nor the shore personnel properly considered or mitigated the risk of fire. Not all of the precautions listed on the ship's hot work permit were taken, nor was the permit completed properly. Similarly, not all of the measures listed on the shore gang's job safety analysis were taken.

Additionally, no tool box meeting was held to discuss the work and risks, define roles and responsibilities and the action to take in case of a fire. As a result of inadequate risk assessments, there was no fire watch, none of the ship's crew was at the hot work site and the shore personnel did not have a clear understanding of the action to take in case of a fire. Consequently, action to fight the fire with a fire extinguisher and other fire-fighting equipment was not taken immediately, resulting in a larger fire that took longer to contain.

■ **Editor's note:** Procedures are in place to prevent accidents and reduce negative consequences but time and again we see a lack of procedural integrity that leads to unwanted events. If you start to see procedural rigour slipping it may be time for a reassessment and crew meeting to remind all of the importance of following procedures.

MARS 201404

Bridge life ring self-releases

➔ After a rough sea passage the vessel entered harbour and dropped anchor. As this manoeuvre was being completed it was noticed that the starboard man overboard (MOB) life ring had fallen into the sea thus bringing with it the MOB smoke float.

It was found that the securing pin of the life-ring was able to loosen on its own and back off from the as-installed condition. It would appear that the rather light construction of the pin allowed it, through vibration and vessel movement, to move to a point where it self-released.

Lessons learned

1. Both pins were modified in order to reduce the vibration effect and keep the pin functionality adequate.
2. All fleet vessels were instructed to check related pins and proceed with the modification (as photos) in order to avoid further losses of MOBs.

Before

After

MARS 201405

Pins found in wiping rags

➔ It has recently been reported that sewing pins have been found in orders of wiping rags received from various suppliers in Europe. It is not known if this is an anomaly or if there is a systemic risk, but readers are encouraged to spread the word and to take the appropriate precautions when handling wiping rags.

MARS 201406

Fall from pilot ladder

➔ A pilot ladder was securely rigged by the ship's staff and inspected by the duty OOW; the ship's freeboard at the time was 7.60 metres. The main deck, including the pilot ladder, was well illuminated by the deck flood lights and the bridge wing lights. While disembarking via the pilot ladder one of the port officials slipped and fell onto the pilot boat. She was immediately taken ashore to seek medical attention. It was later reported that the victim had suffered a broken leg.

The vessel investigation found no inherent unsafe condition related to procedures, the pilot ladder or the environment. However, the report found that the use of a safety harness and fall prevention rope for personnel who are using the pilot ladder would reduce the risk of falling in the future.

■ **Editor's note:** Pilot ladder accidents and incidents are more common than we would like to think. Pilots and other personnel using these ladders are exposed to falling in the water or onto the deck of the pilot boat, with the attending consequences. Obviously, wearing a life vest should be second nature when using a pilot ladder and most persons do. For some reason, fall arrest equipment has never been seriously considered for persons using a pilot ladder even though heights may reach over 8 metres. Maybe it should be.

Reports from pilots about any unsafe boarding configurations or practices they come across would be appreciated.

MARS: You can make a difference.

You can save a life, prevent injury and contribute to a more effective shipping community.

Everyone makes mistakes or has – or sees – near misses. By contributing reports to MARS, you can help others learn from your experiences. Reports concerning navigation, cargo, engineering, ISM management, mooring, leadership, design, training or any other aspect of operations are welcome, as are alerts and reports even when there has been no incident. The freely accessible database (http://www.nautinst.org/mars/) is fully searchable and can be used by the entire shipping community as a very effective risk assessment, loss prevention and work planning tool and also as a training aid.

Reports will be carefully edited to preserve confidentiality or will remain unpublished if this is not possible.

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The Nautical Institute gratefully acknowledges sponsorship provided by:

American Bureau of Shipping, AR Brink & Associates, Britannia P&I Club, Cargill, Class NK, Constellation Marine Services, DNV, Gard, IHS Fairplay *Safety at Sea International*, International Institute of Marine Surveying, Lairdside Maritime Centre, Norwegian Hull Club, London Offshore Consultants, MOL Tankship Management (Europe) Ltd, North of England P&I Club, Sail Training International, Shipowners Club, The Marine Society and Sea Cadets, The Swedish Club, UK Hydrographic Office, West of England P&I Club.

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