



The Nautical Institute Mariners' Alerting and Reporting Scheme

MARS Report No 218 December 2010

Providing learning through confidential reports – an international cooperative scheme for improving safety

MARS 201064

Wrong location of forward liferaft

I recently observed that a vessel had its forward inflatable liferaft located on the main deck abreast of no. 1 hatch, starboard side, next to the ship's side railing. The spare bower anchor was secured on the narrow cross-deck area between the forecabin bulkhead and no. 1 hatch, which meant that carrying the liferaft to the port side would have been very difficult in an emergency. At its chosen location, the liferaft was also exposed to wind and sea and, especially in loaded condition, it could easily get damaged or washed overboard. To avoid this, the crew reported that they stowed the liferaft inside the forepeak store at sea, so making it even more difficult to deploy it in emergencies. The same temporary stowage location was used whenever the vessel was berthed starboard side alongside to avoid the liferaft getting damaged during cargo operations. Frequent manhandling and storing an inflatable liferaft without a proper storage rack increases the risk of damage.

Due to the above practical difficulties, I suggested to the master that after obtaining approval from class, a permanent arrangement be made for locating the liferaft in the cross deck area between nos 1 and 2 hatches.

I would suggest that a vessel's management, flag state and classification society should work together and ensure that the location of the forward liferaft is both safe and practical.

MARS 201065

Gangway fall wire parted

Arriving for a canal transit, the vessel had rigged the starboard accommodation ladder to facilitate the transfer of immigration, customs personnel, agents, ship chandlers etc and to embark canal pilots. All these transfers were safely executed, after which the crew started heaving up the ladder in order to secure it in its recess in preparation for the first lock. When the ladder was hoisted to the upper deck level and it was being flipped inboard under power, the fall wire rope parted about two metres from its inboard end thimble eye, in the way of the outrigger's outboard guide sheave. The gangway fell down and hung vertically along the ship's side. Fortunately, no one was injured. The fallen gangway was recovered and secured, and the parted wire was renewed with a new spare. As a precaution, the port

gangway's fall wire rope was thoroughly inspected and was found to be deformed at the same corresponding section. This wire was also renewed and a satisfactory hoisting and static load test on both port and starboard accommodation ladders was undertaken.

Investigation of the incident showed no evidence of breach of either company procedures or statutory regulations; however there was non-compliance with the guidance as given in the Chapter 18.6 of the Code of Safe Working Practice, which requires periodical maintenance of the equipment for means of access.

Root cause/contributory factors

1. Company procedures do not give specific guidance on how to carry out periodical maintenance/status control of the accommodation ladders, including the wire falls, other than stating that the inspection should be carried out by a responsible person;
2. Company procedures require a control over the condition of the accommodation ladders every time they are put in service, however these do not include a specific requirement for an effective control over the condition of the wire falls;
3. Although the visual inspection was done in accordance with company requirements, considering the position where the wire parted (see Figures 1 to 3, p18), we have to assume that due to difficulty of access, this particular part of the wire fall was neither thoroughly maintained nor inspected, although overall greasing of the wire falls was carried out monthly and recorded in the monthly maintenance reports.

Corrective/preventative actions

1. Fall wires were renewed on both accommodation ladders and thereafter they were closely inspected and successfully tested under load;
2. Safety officers will be duly trained on how to carry out safety inspection on board the vessels;
3. Company quality, safety and environmental (QSE) manual is being revised to include specific instructions/guidance on how and when to carry out inspections;
4. The safety officer inspection checklist has been amended with specific requirements over the control of the condition of all wire falls;
5. Inspection guidance to also include instructions related to components/parts that are not easily accessible, to ensure that their condition is properly verified;
6. Incident report circulated to the fleet. Masters have been

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instructed to include discussion about this incident at the next monthly QSE committee meeting minutes;

7. Analysis of this incident has been included in the agenda of future company seminars;

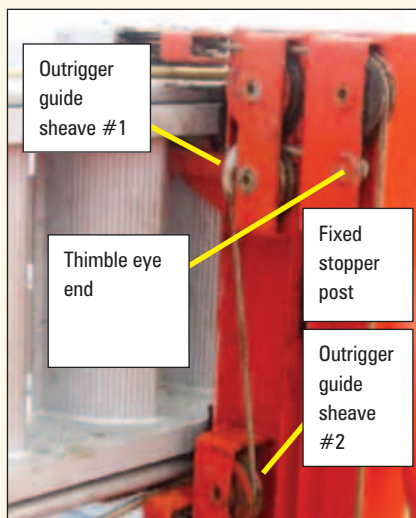
8. Vessels have been instructed to inspect fall wires and safely carry out both hoisting and static load tests of accommodation ladders immediately, report results and forward evidence of the condition status to the company;

9. Company's safety inspection check list has been upgraded in order to include specific instructions for the attending superintendent.

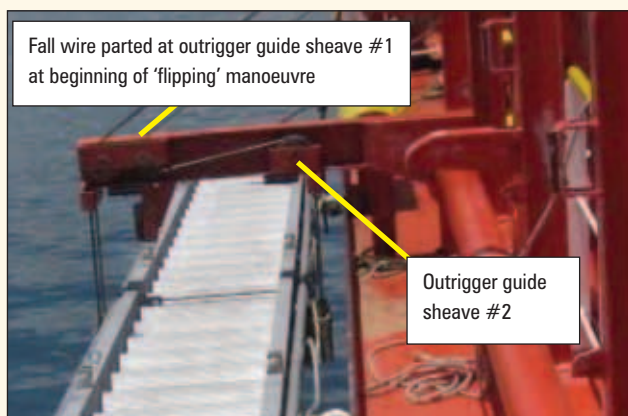
Lessons learnt

1. Incidents are not necessarily more likely on older vessels. In this case, the vessel was less than two years old and the parted fall wire was manufactured about 27 months before its failure;

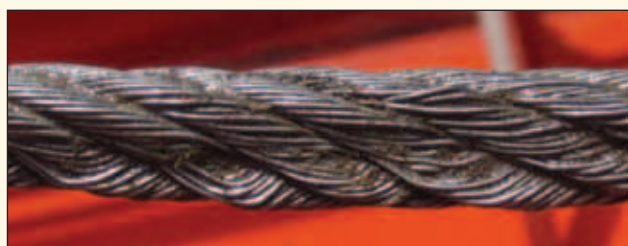
2. Components and parts of equipment that are not readily accessible must be inspected and maintained with particular care as they may deteriorate faster than the rest of the system.



◀ Figure 1: Stowed gangway with outrigger housed against stopper post



▲ Figure 2: Gangway being hoisted, approaching 'flipping' point, when the system will be subjected to maximum stresses



▲ Figure 3: Port gangway wire fall showing deformation

Editor's note: In this arrangement, the wire fall will have permanent high stress-points on the sections in way of the sheaves when the winch begins flipping the gangway and outrigger together. This perhaps explains why the fall wire parted precisely at that time and location. Apart from the strain at these points, constant exposure to wind and sea and difficult access can prevent proper inspection and maintenance of the wire fall. A dry pivot bearing of outrigger can also impose additional load, so proper greasing and lubrication of all moving parts is important.

Finally, inadvertent over-tightening of gangway (and lifeboat) wire falls during stowage can impose excessive loads for long periods on the system.

It is not clear in the report if the gangway hoisting system was fitted with an operational limit switch. Such a safety device will ensure that during final stowing, the power is cut off before the system is overstressed due to operator error. The final tightening of wire falls must be always done manually and only efficient sea lashings must bear the dynamic loads at sea.

It is also suggested that the makers of the accommodation ladder and the wire falls be informed of the incident, with a request for a recalculation of maximum stress in the system. If appropriate, a larger diameter wire for the falls may have to be used. This will require the replacement of all sheaves as well.

MARS 201066

Bunker tanker truck damaged by falling cargo

The vessel was discharging a cargo of steel plates with shore cranes alongside a quay. A bunker truck which had supplied bunkers to the vessel the previous evening remained parked alongside the vessel throughout the night. Its exit was blocked by the discharged cargo which remained uncleared from the wharf. At about midnight, a wire sling belonging to the stevedoring company, which was in use to discharge the steel plates, parted, and the falling steel plate fell on to the quay, striking the bunker truck, but fortunately causing only a small dent. (If the impact had been more direct, the steel plate could have pierced the tank, and also provided the energy to ignite the flammable mixture of fuel vapour and air which would have formed within the truck's empty tanks – Editor.)

On being informed, the master and OOW arrived at the scene. There was no sign that anybody had been injured and the dent damage on the truck was superficial. The master noted a protest and requested the agent and stevedore to come on board to sign it; but when they eventually arrived, some nine hours after the incident, they ignored the note, saying there was no injury or damage. However, later that evening, the bunker company representative boarded the vessel and requested the master to sign a letter of responsibility for alleged injury to the driver and damaged truck. With support coming from the representatives of the stevedoring company, charterer, P&I club, the master stated that the vessel could not be held responsible for the incident, and accordingly, he refused to sign it.

Root cause/contributory factors

1. Lack of coordination between ship's staff, stevedores and bunker supplier, relating to the initial positioning of the bunker truck;
2. Failure on the part of the stevedores to clear discharged cargo from the wharf;
3. Poor condition of the wire rope sling being used for discharge of steel plates;
4. Lack of safety awareness and poor safety standards on the part of stevedores and bunker suppliers;
5. Unsatisfactory watchkeeping and supervisory standards by ship staff.

Corrective actions

1. Bunker truck was removed from the quay after the incident;
2. Stevedores replaced the wire slings with chain slings;
3. Master summoned the local P&I club representative;
4. Ship's staff instructed the stevedores to be more safety conscious and ensure no person or vehicle to come directly under the cargo hook at any time.

Preventative actions/recommendations

1. The master held a safety meeting and discussed this incident in detail. The ship's staff were reminded to report all unsafe acts by stevedores immediately to C/O and master. If required, cargo work can be suspended until safety is restored by stevedores;
2. During cargo operations, more stringent deck watches to be maintained with proper supervision of cargo operations;
3. Management to be informed immediately whenever an incident/accident occurs, even if it appears that vessel is not liable, in order to obtain immediate guidance;
4. P&I club representative should be summoned immediately after an incident/accident occurs;
5. Report shared with the industry.

MARS 201067

Burn injury from incinerator flashback

On one of our vessels, the fourth engineer suffered burn injuries while operating the incinerator. When burning sludge along with garbage, he noticed that the flame visible through the sight glass was not good enough and felt that he should add some engine room waste, comprising oily jute and rags, to increase the flame. While the incinerator was still in operation, he opened the door to admit more waste for burning. A flashback from the combustion space caused burns on face, hair, hands and legs.

Even though the vessel was at sea, he was fortunate, since the burns were of second degree and restricted to small areas of his body. With the help of radio medical advice and treatment on board, he made a fast recovery although his injuries have left permanent scars on the face and affected limbs.

Lessons learnt

All engineers who operate incinerators and boilers must be fully aware of the venting requirements before and after firing the burner, and the possibility of flashback from the furnace space when opening the door.

MARS 201068

Fire due to improper oxy-acetylene rig

On one of our vessels, a fire occurred in the masthouse where oxygen and acetylene cylinders were stored. Hot work was being carried out on the windlass drum, which required intensive heating. For this purpose, the engineers had arranged two gas torches in tandem, connecting them in parallel from the same pair of gas cylinders by temporarily fitting non-standard 'tee joints' at the regulator valves. At some time, during the hot work, it was decided to use one gas torch to carry out brazing repair work on the other torch while it was still connected to the pressurised gas hoses. Flashback from the torch being heated travelled through the hoses up to the masthouse, rupturing the hoses at the regulator valve connections and causing a fire inside. Fortunately, the backfire arrestors on the regulators prevented a major explosion of the cylinders.

Corrective/preventative actions

Ships' crews in the fleet instructed to:

1. Comply with manufacturers' specifications for flashback arrestors to be fitted on hoses at the torch and for backfire arrestors at the cylinder valve regulators;
2. Strictly avoid carrying out unauthorised modifications to hot work equipment;
3. Never attempt repairs on pressurised oxy-acetylene equipment. All maintenance to be done only after safely dismantling components and strictly as per makers' service manual.

MARS 201069

Burn injury from faulty oxy-acetylene equipment

A crew member was preparing to carry out a gas welding operation. However, soon after the torch was ignited, the acetylene hose came off the gas torch and a flame erupted from the open hose end, burning his left hand and forearm.

Results of investigation

1. The pressure setting for the oxygen and acetylene was correct for the operation;
2. The hose and equipment were visually inspected prior to the operation of the equipment;
3. It appears that due to unnoticed damage to the acetylene hose at the crimped terminal on the torch, it parted at the connector;
4. The injured person did not wear designated welding gloves for the operation;
5. The injured person's boiler suit sleeves were rolled down for the operation.

Corrective/preventative actions

1. All vessels are to discuss the above incident at their next safety meeting;
2. Whenever hot work is being carried out, all correct PPE for the operation is to be worn in accordance with the risk assessment and the company PPE matrix;
3. Before a gas welding operation is carried out, all equipment and connections are to be checked and verified they are in safe condition;
4. A tool box meeting is to be held prior to the job, to ensure that all personnel involved in the job are well aware of the hazards involved and procedures to be complied with.

Feedback

MARS 201024

Hand injury during crane maintenance

The resulting injury noted in report 201024 is highly unlikely to have been avoided by the corrective/preventative actions described. While I agree with these actions, surely a heavy hammer coming into accidental contact with an unprotected hand will not be prevented by any number of

risk assessments, hazard hints or planning, except the use of a suitable tool to hold the stock which the seaman held? Once again, it seems that everyone is trying to eliminate risk completely which surely in never going to be achievable?

■ **Editor's note:** Had a proper risk assessment (a commonly used technique is illustrated in the MCA publication *Code of Safe Working Practices*) and a tool box meeting been conducted before commencing the task, one of the hazards identified would have been that of a 'heavy hammer coming in accidental contact with an unprotected hand'. Consequently, the person in charge would have been compelled to take appropriate control measures, as in this case, both the quantum of risk (heavy hammer striking hand) and the severity of such a strike (serious injury) would have been unacceptably high. While it is true that risk can never be eliminated completely in many cases, the goal should be to reduce risk to 'as low as reasonably practicable' (ALARP), ideally to a tolerable or negligible level. It is always prudent for ship's crews to preserve evidence of having conducted proper risk assessment and this is already a requirement under most international/national safety regulations, industry guidelines, P&I club advice and company procedures.

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MARS is strictly confidential and can help so many – please contribute.

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