IMCA Safety Flash 04/10

July 2010

These flashes summarise key safety matters and incidents, allowing wider dissemination of lessons learnt from them. The information below has been provided in good faith by members and should be reviewed individually by recipients, who will determine its relevance to their own operations.

The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat (imca@imca-int.com) to your internal distribution list for safety alerts and/or manually submitting information on specific incidents you consider may be relevant. All information will be anonymised or sanitised, as appropriate.

A number of other organisations issue safety flashes and similar documents which may be of interest to IMCA members. Where these are particularly relevant, these may be summarised or highlighted here. Links to known relevant websites are provided at www.imca-int.com/links Additional links should be submitted to webmaster@imca-int.com

1 Person Injured by Mooring Lines

A member has reported an incident in which a person was hit by a wire of a warping winch, causing bruises to both legs. On the port side of a crane barge a hopper barge was moored with a spring and two winch wires. During the loading of the hopper barge, the winch wire crawled up along the bollard (see A on Figures 1 and 2).

During this process an employee wanted to transfer on foot from the hopper barge to the crane barge and stepped over the winch wire, whilst conducting a conversation on a mobile phone, at a point between A and B. At that instant, the winch wire jumped over the bollard (see red arrow) and hit the person's legs. The person fell over and was able to grab the railing of the crane barge, which prevented a fall between the crane barge and the hopper barge.

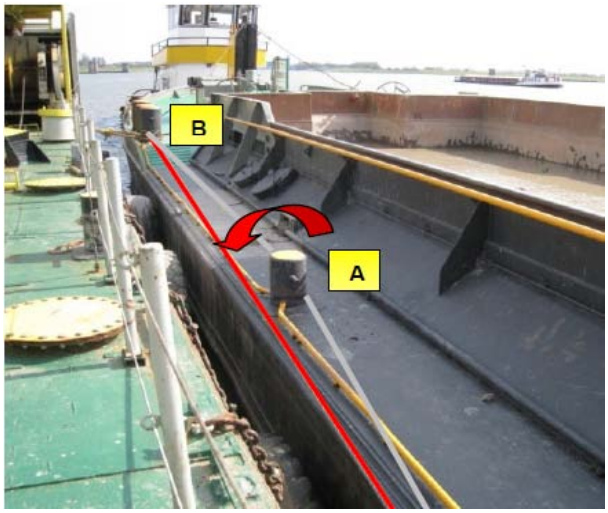

Figure 1 - Hopper barge seen from crane barge (mooring line shown in grey and red)

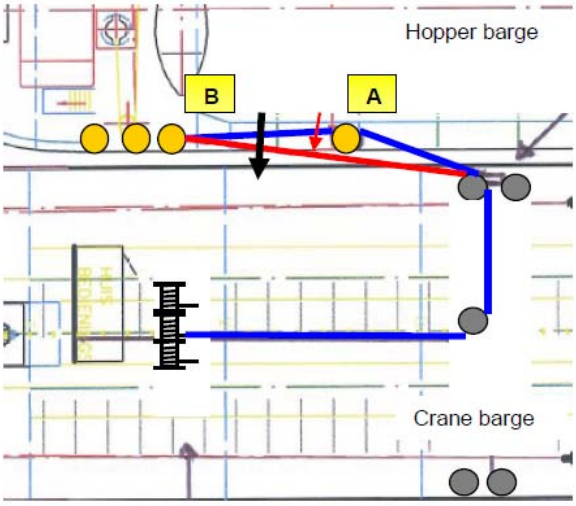

Figure 2 - Plan view of mooring operation (mooring line shown in blue and red)

The following lessons were drawn from this incident:

- Personnel should remain alert and watch their surroundings at all times when working on deck;
- Do not use mobile telephones while embarking/disembarking;
- Connect the winch wire only via bollard A (rather than via bollards A and B) to guarantee it is secured and cannot slip over;
- Transfer between vessels moored alongside one another should be conducted in a safe and controlled manner;
- Ensure safe walkways on deck are properly marked;
- Do not stand in loops of wires and ropes.

Further information on personnel transfer between vessels, and between vessel and the dockside, can be found in IMCA SEL 025 - *Guidance on the transfer of personnel to and from offshore vessels.*

2 Falling Object

A member has reported an incident in which a large piece of equipment fell over 20 metres to the deck. A top section of an antenna, approximately 4m in length and weighing around 3.5 kg, fell 24m to the main deck. No one was in the vicinity at the time, however, this incident had the potential to result in a fatality.

While the vessel was in transit a bang was heard above the bridge and immediately after, a long white pole was seen falling past the bridge window. The pole came to rest on A deck, after first hitting B deck (3.5m above A deck). On inspection it was found that the pole was the top section of the non-directional beacon (NDB) whip antenna.

It was discovered the threaded connection on the end of the section that fell was undamaged and was not corroded. The connection consisted of a threaded inner which screwed on to the lower section of the antenna; this was then retained by 2 grub screws. These were found to have come loose.

There was no evidence of any mitigation against the effects of vibration on these grub screws, such as anti vibration washers or *'loctite'*. Investigation suggested that vibration over the period since the antenna was last removed (approx 2 ½ years) had caused the grub screws to come loose and the top section of the antenna was able to unscrew against gravity.

Figure 3 - Area from which antenna part fell

Following investigation, the following lessons and conclusions were drawn from the incident:

- The location of the antenna connection was not readily accessible and, as such, limited routine inspection had been undertaken;
- The potential for the mast to vibrate loose was not recognised during installation, resulting in a failure to mitigate the effects of vibration;
- Securing of masts and antennas should be checked with additional and/or secondary securing measures implemented where required.

3 Serious Shortcomings with Life Raft Hydrostatic Release Units

The Swedish Transport Agency's Maritime Department has identified shortcomings in a certain make of hydrostatic release unit.

Members can find further information about these shortcomings by following this link:

http://www.transportstyrelsen.se/en/Shipping/Accidents--Near-Misses/Safety-alert1/

4 Failure of Life-Rafts During Servicing

A member has reported an incident in which four life rafts sent ashore for annual servicing had to be condemned and replaced. The rafts had been serviced by a sub-contractor in the previous year and no defects were noted. Subsequently it was found that that sub-contractor had lost its license and certification as a life rafting testing station.

Figure 4 - Images of damaged life rafts

The following defects were discovered:

- The four rafts were found to be suffering from water ingress and corrosion;
- Severe oxidation was found on 20% of the buoyancy chambers, moderate oxidation on 10% of the total area and 35% of the canopy;
- On one raft the protective cover was missing from the inflation cylinder valve and the inflation tube was highly oxidised;
- When the International Maritime Organization (IMO) inflation test was carried out, leaks were observed and the buoyancy chambers burst near the connections of the survival pack and connections to the inflation cylinders;

The rafts would not have worked in the event of an emergency, potentially leaving the vessel crew with no means of escape.

The following recommendations were made:

- All life-saving equipment should be inspected closely following shore-side servicing to verify that the servicing indicated has been properly and thoroughly carried out. Some clear pointers to assist in this process could be:
  - Life raft sealing bands show signs of having been replaced
  - Evidence of talcum powder on exposed runner of life rafts indicates that the raft was opened and additional talcum powder was applied during repacking
  - Service labels updated on life raft wallet.

5 CO_2 Systems Safety Pins

The UK Marine Safety Forum (MSF) has published the enclosed safety flash concerning the safety pins used for transporting and disabling CO_2 cylinders.

6 Failure of Fixed High Expansion Foam System

The UK Marine Accident Investigation Branch (MAIB) has published the enclosed safety flash regarding the failure of a fixed high expansion foam system to extinguish a fire on board a passenger ferry.

The full report is attached to this safety flash, but the incident is summarised here:

As part of the fire-fighting effort, the fixed total flooding system (high expansion foam) was activated but did not extinguish the fire. Although all of the foam solution in the system was deployed into the auxiliary engine room, no foam was produced. The fire burned fiercely for over one hour before it was extinguished by the ship's crew. There were no injuries.

Marine Safety Forum – Safety Flash 10/12

Issued: 11th May 2010

Subject: CO2 Systems Safety Pins

Incident

During an annual certification of critical equipment on a vessel, a contractor identified the safety pins used for transporting and disabling the system on the CO2 Cylinders had not been removed from the valves. This matter was brought to the attention of the Master on the bridge who subsequently removed the pins and informed the company via an incident report form for the identified near miss (see attached photo).

Safety pins in position. These MUST be removed for the system to function

Findings

- The CO2 system is inoperable whilst the pins are in position.
- The pins are normally installed in the cylinder as a safety device during the transportation installation and testing phases. They must be removed to commission the system.
- The deficiency had not been identified in the vessel critical safety equipment inspections.
- This specific deficiency had not been identified in the audits carried out on board.

Recommendations

- Every vessel master to immediately attend the CO2 room and personally ensure the vessel has a fully operational system and that no safety pins have been left in the valves. Verification of the check and location of the pins (in or out) when inspected to be forwarded to QHSE as soon as the inspection is completed.
- All vessel masters are immediately requested to arrange a safety moment on the bridge to highlight the importance of reporting deficiencies so we can ensure the vessels are safe.
- Crew are encouraged to constantly search for hazards and deficiencies, reporting them via the hazard report system. If the hazard is identified as high risk, the master is to complete a near miss report and forward to vessel management for action.
- This near miss is a timely reminder for everyone to be attentive to safety, diligent in the inspections, complete PMS and fire rounds and make sure all deficiencies are reported. The more eyes we have looking the safer our working environment will be.

Think First-Think Safety

Take care and make every day a safe day

MAIB SAFETY BULLETIN 2/2010

Failure of fixed high expansion foam system to extinguish fire on board the passenger ferry *Oscar Wilde*

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Mountbatten House
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Southampton
SO15 2JU

MAIB

MARINE ACCIDENT INVESTIGATION BRANCH

MAIB SAFETY BULLETIN 2/2010

This document, containing safety lessons, has been produced for marine safety purposes only, on the basis of information available to date.

The Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 provide for the Chief Inspector of Marine Accidents to make recommendations at any time during the course of an investigation if, in his opinion, it is necessary or desirable to do so.

Stephen Meyer
Chief Inspector of Marine Accidents

NOTE

This bulletin is not written with litigation in mind and, pursuant to Regulation 13(9) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005, shall not be admissible in any judicial proceedings whose purpose, or one of whose purposes, is to apportion liability or blame.

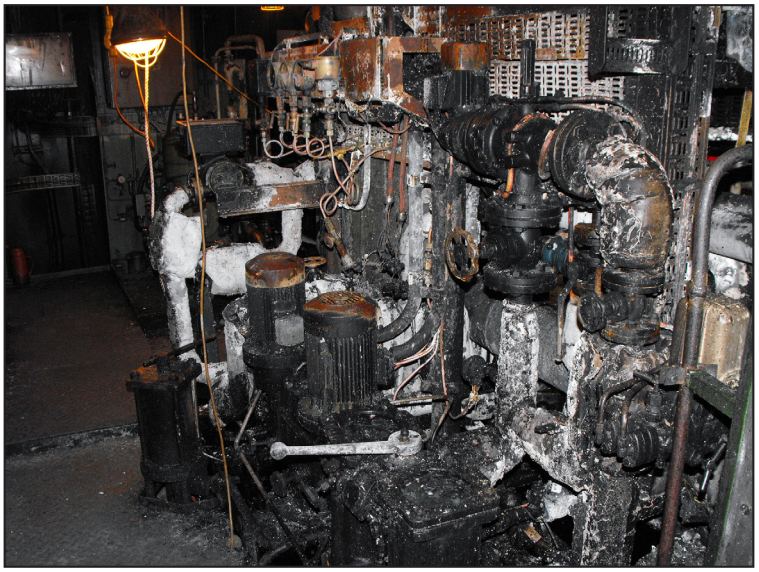
This bulletin is also available on our website: www.maib.gov.uk

Press Enquiries: 020 7944 3231/3387; Out of hours: 020 7944 4292
Public Enquiries: 0300 330 3000

BACKGROUND

At approximately 1912 (UTC) on 2 February 2010, a fire broke out in the auxiliary machinery space on board the roll-on roll-off cruise ferry *Oscar Wilde*. The ferry had just sailed from Falmouth, UK after completing her annual docking. The seat of the fire was in way of a diesel alternator fuel supply module **(Figure 1)** and quickly spread across the compartment.

Figure 1



As part of the fire-fighting effort, the fixed total flooding system (high expansion foam) was activated but did not extinguish the fire. Although all of the foam solution in the system was deployed into the auxiliary engine room, no foam was produced. The fire burned fiercely for over 1 hour before it was extinguished by the ship's crew.

The fire is being investigated by the Marine Accident Investigation Branch and The Bahamas Maritime Authority.

ANALYSIS

The high expansion foam system was installed in 2002 and was designed to generate foam using the atmosphere from within the machinery compartment. The system was type-approved and had been maintained and tested in accordance with the manufacturer's instructions and current IMO guidance. It had been blown through with air in April 2009 and tested to the satisfaction of a Classification Society/Flag state surveyor during the dry docking. However, technical investigation has identified that:

- 80% of the foam generator nozzles within the auxiliary engine room were blocked by debris **(Figure 2)** and about 50% of the nozzles in the other protected spaces on board were also clogged.

Figure 2

- The distribution pipework for the foam solution contained debris and was corroded **(Figure 3)**.

Figure 3

- There were several sections of the system's distribution pipes in which water and/or foam solution could have been trapped following the testing of the system **(Figure 4)**.

Figure 4

The debris found in the nozzles and piping is most likely to have been rust and scale that had built up in sections of pipe in which water and/or foam solution had previously been trapped. This debris would then have been distributed along the pipes and into the nozzles during the annual blow through tests and when the system was operated. The resulting blockages were sufficient to prevent the aspiration of the foam solution.

ACTION TAKEN

Compliance with IMO guidance on the installation and testing of this system did not prevent its failure. Therefore, The Bahamas Maritime Authority (BMA) will bring to the attention of the International Maritime Organization (IMO) sub-committee on fire protection (FP) in April 2010, the need to urgently review current requirements for the installation and testing of the distribution piping of high expansion foam systems using inside air with regard to:

- The inspection of nozzles following blow through tests
- The elimination of potential liquid traps
- Consideration of the need to flush systems with fresh water periodically

The BMA aims to ensure that any resulting changes to the guidance are approved by the IMO's Maritime Safety Committee (MSC) in December 2010. The Maritime and Coastguard Agency (MCA) has agreed to support Bahamas in its actions at both FP and MSC.

RECOMMENDATION

S109/2010 Owners of ships fitted with high expansion foam systems utilising the atmosphere from within a protected space are recommended to urgently:

- Remove and inspect all foam generator nozzles to ensure they are free from debris.
- Inspect sections of distribution piping in which water or foam solution might collect and to fit drains where appropriate.

Owners, operators or manufacturers that find system nozzles to be blocked or identify corrosion within distribution pipes are requested to inform the MAIB by e-mail (maib@dft.gsi.gov.uk) using the title 'Foam Systems' and include the names of the vessel and the system manufacturer, and the date and place of installation. This information is for internal use only and will be treated in the strictest confidence.

Issued March 2010