IMCA Safety Flash 13/11

November 2011

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 Near Miss: Dropped Taut Wire Clump Weight

A member has reported an incident in which a winch wire parted and a taut wire clump weight was dropped onto the seabed during diving operations. The incident occurred when a vessel was engaged in flow line flushing. Owing to a change in wind direction and a forecast of poor weather, it had been agreed to alter the heading of the vessel.

At the time of the incident two divers were in the water and positioned aft and to starboard of the diving bell, and the starboard taut wire was deployed and active as a dynamic positioning (DP) reference. Just before the heading alteration the starboard clump weight was lifted 20m clear of the seabed and closely monitored by remotely operated vehicles (ROVs). The heading alteration was carried out and the ROV inspected the seabed where the starboard clump weight would land, to check it was clear to land back on the seabed. The seabed at this location was not clear and therefore the decision was made to deploy the port taut wire instead, because the seabed on the port side appeared to be clear of obstruction. The port clump weight was lowered to 100m above the seabed, in preparation for landing.

The ROV continued to monitor the starboard clump weight and identified an area under it suitable for landing. The starboard taut wire was then deployed and taken back into the DP system, and the port taut wire and clump weight recovered to the surface. During recovery, as the port taut wire was being slewed inboard, the wire parted and the clump weight (315kg) fell straight downward, well away from the divers working on the seabed, and landed clear of any subsea assets.

Clump weights landed on seabed

An investigation revealed the following:

- A worn wire guide with sharp edges caused unnoticed damage to the taut wire, resulting in the wire parting;
- Procedures for protecting divers and subsea assets from dropped objects were properly followed and this prevented a potentially much more serious incident.

The following preventative actions were taken:

- The existing starboard taut wire was replaced in its entirety in case further damage had been sustained;
- The damaged wire guide was assessed and temporary repairs were undertaken. A complete new unit would be fitted at the next opportunity (dry dock);
- There would be a review of relevant inspection and maintenance routines.

The following lessons were learnt:

- The 30° dropped object cone employed during the deployment and recovery of loads to and from the surface ensured that the divers were not in a location where they may have been struck by the falling clump weight;
- Loads falling out of control through the water column have a tendency to deviate from a vertical fall. Depending on the shape of the falling load, the water depth, and currents and tides, they can land within a dropped object cone of between 6° and 30° from the vertical;
- Tubular loads have a tendency to deviate even further from the vertical, up to 45°;
- The oversight and checking (by ROV) of the clump weight landing locations prevented any potential damage to subsea infrastructure;
- Taut wires are normally lowered from the surface at the start of DP operations before diving operations start, and recovered to surface after diving and DP operations come to an end. When recovering them to surface during diving operations they should be treated as potential dropped objects which can affect divers, and divers should be clear of the area at these times.

2 LTI: Thumb Injury

A member has reported an incident in which a member of the crew sustained a lost time injury (LTI) to his thumb. The incident occurred when a vessel's marine engineering team was conducting a water leak repair on part of one of the main engines during a vessel transit. The repair involved the removal of the piston and connecting rod arrangement, as well as the removal of the cylinder liner, to allow for cleaning and re-sealing. Whilst removing the piston and connecting rod, the injured person had his hands inside the engine crank case to stabilise the bottom of the connecting rod and prevent it causing damage as it passed the bottom of the cylinder liner.

The removal of the piston was accomplished using a 1Te chain block attached to the piston crown. At this stage of the operation, the injured person was on the starboard side of the engine and all the other team members were on the port side with various other duties. Communication was by means of hand signals: owing to the high noise levels in the engine room, clear verbal communication was not possible.

As another crew member started hauling up on the chain block, lifting the piston and connecting rod, the injured person found his left thumb trapped between the bottom of the cylinder liner and the bottom of the connecting rod. He motioned with his free hand to lower the load which allowed his injured thumb to be released. He then reported to the medic where, following a medical examination, he was subsequently medevaced ashore.

Although this task was not viewed as routine maintenance, it had taken place many times before. The team consisted of four experienced members including the 2nd engineer, a rating and two fitters. The injured person was the supervisor for the shift during the maintenance task. A permit to work (PTW) and risk assessment had been completed for this task and all crew members involved had been present for the toolbox talk before it was started.

Position of the injured person at the time of the incident (re-enactment)

Following investigation, the company identified the following causes:

- Lack of organisation
  - This meant that the injured person was the supervisor but also ended up taking a hands-on role in the operation. As the injured party was the team leader, and also taking a key part in the operation, this reduced the level of co-ordination of the task and its associated hazards;
- Lack of hazard awareness and risk perception
  - Though existing controls and safety management systems were followed, they failed to identify and allow clear communication of the potential hazards involved in this operation
  - The risk assessment did not readily recognise the potential for pinch points or dropped loads during this task;
- Poor communication in noisy engine room environment
  - Control and co-ordination of the task was reduced due to the difficulty in clear communication
  - This lack of control and co-ordination during the operation allowed the load to be moved while the injured person had his hands on the connecting rod
  - The crew member controlling the load by means of the chain block had no clear line of sight to the injured person whose hands were inside the engine;
- Incorrect positioning of hands
  - The injured person's thumb was in the pinch point during movement of the load.

The following actions were taken:

- Review relevant task related risk assessments to ensure all associated and potential hazards are clearly identified and recorded;
- Ensure all lifting equipment is correctly rated and inspected for the intended task prior to use;
- Communicate the importance of toolbox talks and safe working practices to ensure key hazards are identified, discussed and addressed.

3 Near Miss: Winch Wire Parted and Crane Block Dropped into Small Boat

A member has reported an incident in which a crane winch wire parted and caused a crane block to fall 13m into a small boat. The incident occurred during the recovery of a small boat used by divers. When the small boat had been lifted approximately 0.5m above the water, the winch wire parted approximately 13m from its working end (the end made fast to the head of the jib). As a result, the block fell down into the boat and missed a crewman by a metre or so. There were no injuries or damage. However, this near miss incident can be regarded as potentially catastrophic.

Crane block landed in small boat

Parted winch wire

An investigation revealed the following:

- The winch or fall wire parted approximately 13m from its (working) end due to lack of appropriate maintenance and the absence of a thorough inspection regime.

The following lessons were drawn from the incident:

- Personnel should not be in small boats during launch and recovery;
- There is no substitute for thorough and exhaustive maintenance and inspection regimes, especially those pertaining to lifting equipment;
- Insufficient attention and importance had been given to the condition of a wire which was regularly (partially) lowered into the sea during routine operations.

The following recommendations were made:

- If wires are required to be lowered into the water, then those lengths of wire which have been submerged should be thoroughly washed with fresh water ('freshed-off') on a daily basis after completion of work;
- A review of the type of grease/protective coating applied to the wires should be undertaken in order to confirm its suitability for protection of wires which become submerged on routine basis (reference to the crane manufacturer's manual might be of value in this regard);
- Additional inspection regimes should be considered to allow for the fact that parts of the fall wire are exposed to complete submersion from time to time;
- Personnel should not be in the small boat at the time of lowering or recovery, unless it is absolutely essential and then only providing suitable and stringent control measures have been put in place.

4 Fall Protection Product Recall

The Marine Safety Forum has published Safety Flash 11-35 regarding the recall of certain fall protection products by 3M. The products recalled are the G-Series retractable lanyards.

The report can be downloaded from www.marinesafetyforum.org/upload-files//notices/msf-safety-flash-11.35.pdf

The manufacturer's original product recall upon which the MSF safety flash is based can be found at www.3m.com/FallProtection

5 Failure of Rescue Boat Release Mechanism

The Marine Safety Forum has published Safety Flash 11-36 regarding the failure of a rescue boat release mechanism. During a routine launch of the rescue boat whilst at sea, the painter released early causing the towing forces normally absorbed by the painter to shift onto the fall wire once the boat was waterborne. This resulted in the rescue boat capsizing. It is possible that the early release of the painter was due to a failure in the painter release mechanism.

Further investigation is ongoing.

Further information can be found from www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-11.36.pdf

6 Person Injured by Parts Ejected Under Pressure

The US Department of the Interior Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) has published the following safety flash regarding the rupture of a water pressure tank bladder. An employee suffered facial injuries when a fitting he was removing was ejected under pressure.

Further information can be found from www.gomr.boemre.gov/homepg/offshore/safety/safealt/SA_297.pdf

7 Fatal Diving Incident

The Danish Maritime Authority Investigation Board has produced a report regarding a recent fatality which occurred during diving operations. The fatality occurred when a diver was working underwater at approximately 41 metres, and his air supply was cut off due to an unintended squeezing of his umbilical.

Further information is available at www.dmaib.com/Ulykkesrapporter/MAERSK_TENDER_24072010.pdf