

These flashes summarise key safety matters and incidents, allowing wider dissemination of lessons learned 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

I Serious Injury in Towing Operation

Keyword: Towing

We have received a report of an incident where three men working on the aft deck of a tug were seriously injured.

The vessel had connected to a rig and was moving to a position from the rig, paying out tow wires as it did so. A team consisting of a mate and two able seamen was in safe position on the vessel waiting to fit the stop wire. When the vessel was approximately 150m from the rig, the men, led by the mate, went onto the deck to fit the stop wire, as they had observed that the tow wire was slack and that the guiding pins were up. They did this in contravention of the operating instructions, which required that the captain give permission for the crew to go onto deck – he had not done so. The vessel had not reached its final position and the captain was still paying out wire and manoeuvring the ship. The captain did not see the three men and continued to operate the ship as if they were not there. The tow wire tensioned up and this, coupled with the stern of the ship moving to port, led to the tow wire jumping the guiding pin and seriously injuring the men.

The master had not held a toolbox talk with his crew to highlight the risks of the job prior to commencement of the work.

The vessel had been hired to assist in the positioning of the rig, in line with company procedures, and the ship fulfilled the requirements with respect to physical capability, manoeuvring and the provision of a safety wire or other similar device.

The company carried out an investigation and identified the following points as 'what went wrong':

- ◆ Critical Factors
 - The crew had moved into an area of danger without permission to do so;
 - The captain had not known that they were there and continued to move the vessel.
- ◆ Immediate Causes:
 - Violation by the supervisor;
 - Violation by the individual;
 - Inadequate equipment – the bridge layout did not allow the captain to see the aft deck while manoeuvring the vessel.
- ◆ System Cause:
 - Poor judgement;
 - Inadequate reinforcement of critical behaviours;
 - Inadequate leadership;
 - Inadequate safety meetings;
 - Inadequate enforcement of the procedures;
 - Inadequate identification of worksite/job hazards.

The following actions for the tug boat operator were identified:

- ◆ Ensure knowledge of the safety management system throughout the organisation;
- ◆ Introduce signage on the vessel reinforcing the requirement not to go aft without the master's permission;
- ◆ Consider a 'time out for safety' system;
- ◆ Fully review and risk-assess procedures for connecting a towline on deck.

The tug boat operator is reviewing its procedures on 'stop' or 'Gob' wires and has undertaken to implement any technical or procedural improvements promptly.

The following actions were identified for the contracting company:

- ◆ In the relevant operating area, ban the indiscriminate use of stop wire mechanism in anchor handling/tug operations without appropriate caution with immediate effect until a study of the tow-wire control mechanism has been completed (see below);
- ◆ Conduct a global study on the use and safety of stop wires and closed pins in anchor handling/tug work with recommendations within a four month period;
- ◆ Create a more detailed structured vessel spot hire process for relevant areas including clarity on accountability for boat acceptability and confirmation of toolbox talks between master and crew.

The key messages from this incident were identified as:

- ◆ Ensure toolbox talks and risk assessments are carried out for all tasks, including routine ones, to reinforce procedures;
- ◆ Ensure communication systems are clear and are used during jobs;
- ◆ To ensure safer operation of all spot hire vessels, a more detailed and structured selection process is needed including a study of the stop wire.

2 Diver Struck by Lifting Frame while Installing Concrete Mattresses

Keywords:

IMCA has received details of an incident which occurred offshore during concrete mattress installation. Divers were positioning the mattresses in approximately 37 feet of water.

As a diver confirmed that the last mattress in a spread was centred over the proper location, he called for the crane to lower the load. When the initial weight of the mattress was off the handling frame, an unexpected vessel motion caused by swell forced the frame to move towards the diver and into the side of his helmet. The diver's helmet was penetrated above and below the diver's left ear by a piece of angle iron protruding from the middle of the mattress installation frame on the opposite end from the release lever.

The diver had been bending over, attempting to move the mattress into position, with his right arm resting on two previously installed mats behind him. The protruding piece of angle iron was one of several remnants of reflector mounting brackets that had inadvertently been left in place from a previous job.

Besides the damage to the diver's helmet, the diver received a bruise to his shoulder/forearm when he was caught between the swinging mattress frame and the previously installed mattresses. Had the piece of angle iron further penetrated the diver's helmet, or had the diver's head turned in a different direction, the incident could have resulted in a fatality.



This near miss demonstrates that, regardless of how often a task has been performed in the past, or on a given worksite, or by a very experienced diver, lowering of loads must always take account of vessel heave effects. This incident was further complicated by the fact that the mattress installation load was a 'two tier one' – essentially one load (the mattress) slung

under the other (the installation frame). When the first load landed, the other would still be free, and likely to be heaving in unison with the ship. It could possibly rotate and be above or close to the diver.

As the diver had, as a matter of necessity, to focus on the correct positioning of the mattress, it would have been difficult for him 'to keep an eye' on the handling frame. This would not be helped by the fact that, as the mattress dropped into position, it would stir silt and impair in-water visibility.

The investigation also identified the failure to recognise and assess the hazards associated with the protruding angle iron by the diving crew during mobilisation for the project. However it must be borne in mind that even a 'smooth' frame could have stuck the diver causing injury. The following actions resulted:

- ◆ The mattress manufacturer/owner was contacted and permission given to cut the angle iron protrusions from the mattress installation frame;
- ◆ Further, the mattress manufacturer/owner involved has stated its intention to remove all non-standard protrusions from its installation frames before they are re-let for subsequent use and asked lessees to assist in this. It notes that the welding of brackets can assist in easing installation procedures, through the use of pingers, transponders, ROV grabber holes, etc., but notes that the safety of divers and ROVs is paramount to be considered above any and all other considerations, with heightened awareness of the dangers leading to this action. Members should review their own procedures to ensure such hazards are considered and addressed;
- ◆ An 'all hands safety stand-down' was performed, with the incident thoroughly reviewed prior to work recommencing;
- ◆ The incident was investigated and lessons learned shared internally through the company and wider through the industry, including dissemination by IMCA.

The following key points have also been stressed by the company involved:

- ◆ Hazard identification risk assessments and resultant task plans should address the hazards associated with the deployments of mattresses and a reliable and acceptable means of control provided;
- ◆ The importance of not working under suspended loads;
- ◆ The need to risk-assess weather and environmental conditions, both imminent and predicted, for mat laying operations;
- ◆ The need to monitor changes in weather and environmental conditions by bridge and deck crews;
- ◆ The need to ensure handling/deployment frames are safe to work around and do not present hazards to either divers or surface personnel.

3 Late Onset of Decompression Illness (DCI)

IMCA has received a safety notice which provides a good reminder on the subject of decompression illness (DCI).

A company has reported that, following an air dive, a diver developed a pain in his arm more than seven hours after decompression. Due to the length of time between the dive and the complaint appearing, it was assumed not to be diving-related and painkiller medicine was administered.

On worsening, two hours later, the diver was recompressed, but his condition did not markedly improve. It is believed that the period of non-recompression allowed the gas bubble(s) in his tissues to expand and cause internal lesions before dissipating. Thus the later therapeutic treatments, designed to dissolve the offending 'bubbles', were unsuccessful, as they could not provide relief for existing physical lesions.

The company has reminded its personnel that whenever a diver reports complaints which appear consistent with type I and/or type II symptoms, even up to 48 hours following an air or nitrox dive, the divers must be recompressed immediately, in accordance with company DCI treatment procedures. This should take place immediately – before or in parallel with contacting the diving doctor. If the case is DCI, correct action will have been taken. If it is not a DCI, therapeutic recompression will not make things worse.