IMCA Safety Flash 05/06

April 2006

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

1 Flash Fire in Field Joint Coating Station

A member has reported the occurrence of a flash fire onboard a pipelay vessel. A fusion bonded epoxy (FBE) powder used in the pipeline coating process escaped from a coating machine and came into contact with a naked flame. The flame travelled in this cloud of powder towards the coating machine and set this machine on fire. One crew member was standing next to the machine and sustained small first and second degree burns to the left face, neck and forearm.

The company's investigation revealed the following:

- insufficient extraction and sealing on the FBE machine used resulted in FBE dust releases upon each opening of the machine;
- coating repair in the vicinity of the machine required the use of a burning torch;
- the area was relatively open and the ignited dust "only" resulted in a flash fire. In a more congested area, it could have formed a dust explosion with associated damage from explosion overpressure;
- other types of dust (e.g. from grinding) could pose a similar hazard if brought in contact with a naked flame.

The company made the following recommendations:

- Immediately report excessive FBE powder releases from coating machines and undertake any necessary repairs immediately;
- ensure there are no naked flames or smoking in the areas where flammable dust is gathered;
- never clean equipment containing flammable dust by means of air blower – use an explosion proof vacuum cleaner.
- never disconnect FBE hoses from the machine to use them for spraying FBE; use only approved equipment for spraying FBE;
- clean the area at the earliest possible opportunity.

2 Burns Caused by Release of Steam and Boiling Water from Overheated Pump

A member has reported an injury caused by boiling water from an overheated centrifugal pump. During filling and pigging operations, a high volume centrifugal pump overheated due to the motion of the pump impeller. This caused the water in the pump casing to flash to steam, increasing the pressure in the pump casing and suction hose. The pressure caused the suction hose at the pump inlet to separate violently from the suction hose fitting, spraying steam and boiling water over a worker stood nearby. The worker received second degree burns to his legs.

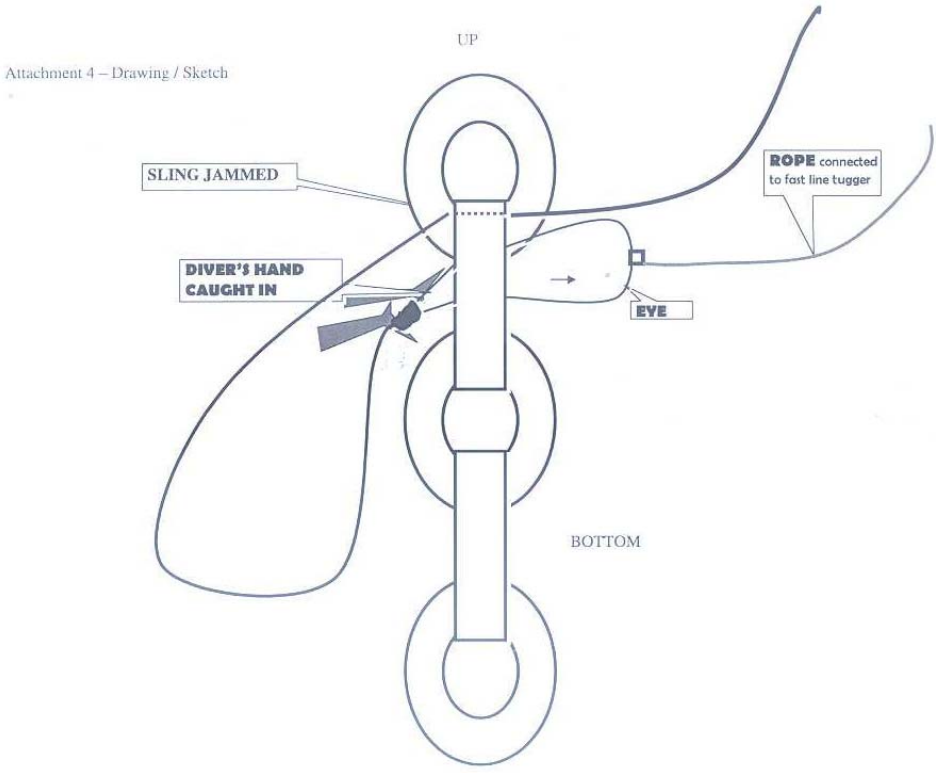
The company has recommended that all operations using high volume centrifugal pumps should evaluate the procedures and piping systems in use, and ensure that they are 'fit for purpose', to prevent a reoccurrence of this type of incident.

3 Hand Injury Sustained by Diver

A member has reported an incident in which a diver sustained an injury to his hand. The incident occurring during diving operations that were part of the installation of mooring chains for a catenary anchor leg mooring (CALM) buoy.

In an attempt to free a bight of a fouled transfer sling from its pinch point between two mooring chain links, the free hanging eye of the jammed wire rope was secured to a soft line for passing through the link and back to the surface crew on the buoy (see diagram). The intention was for the soft line to be hauled up, with the wire rope to follow. Once the eye had been pulled up to the chain it became necessary for the diver to reduce the diameter of the eye in order for it to pass through the link. Whilst the diver was working to accomplish this, the soft line which had previously been hauled by the riggers on the buoy was attached to a fast tugger winch on the vessel crane in preparation to assist in freeing the sling. The diver was not informed that this change had taken place.

After readying the eye for passage through the chain link, the diver gave the instruction to come up on the soft line. As he was in the process of manipulating the eye 90 degrees to ease its passage, it suddenly shot through and pinned his wrist against the chain. The diver immediately requested slack, but after a few seconds of increasing pressure on his wrist he opted to cut the soft line and free himself. After he returned to the surface, examination of his wrist on the vessel indicated no traumatic internal damage. The diver was sent ashore for x-rays to rule out fractures. He has since returned to work after a period of recuperation.



The company noted the following:

- The reaction by the diver and the response by the deck crews, dive team/standby diver and vessel medics was immediate and well executed;
- A thirty minute 'safety stand down' was ordered and took place;

- Although the diver's hand was in 'the wrong place', it was noted that he had not been informed of the transfer of the soft line to the crane;
- An identical jamming of the transfer sling had occurred without incident on the previous dive. A suggestion had been made after the prior incident to use a shackle to mitigate the chances of a repetition of the incident, but this had not been seen as necessary at that time;
- The video footage of the incident was not removed as evidence and had been subsequently taped over;
- Though a task risk analysis (TRA) had been performed, which had addressed rigging hazards and the need for good communications, a number of people involved in a supervisory role in the operation had not taken part.

The company has made the following recommendations and instigated the following actions:

- An alternate method for rigging the transfer sling, using a shackle, is to be used for future tasks;
- A checklist is to be created for post-diving incident events to ensure that such items as the video recording and other evidence are gathered and secured properly. Ongoing upgrade to DVD and HDD recordings will help alleviate the shortcomings of the VCR method;
- There is to be a review of communications between vessel management and divers to ensure gaps and delays are reduced;
- Supervisory training in the management of change process is to be conducted to ensure the awareness, documentation and communication of task hazards to all involved with the job.
- The use of a shackle on the mooring chain when performing this task is to be appropriately documented as formal procedure.

4 Isolation of Fuel Tanks

IMCA has been advised of a near-miss accident that occurred during a fuel transfer operation. Whilst the vessel was in dry dock, fuel was accidentally transferred into a tank in which hot work was planned. As a result, around 7m3 of marine diesel oil was spilled onto the dock via an opening in the tank and the hull of the vessel. No people were working on the dock at the time, nor were there personnel inside or in the vicinity of the tank.

The situation occurred with a lock-out/tag-out procedure and a permit to work both in place. Such systems should have functioned as barriers against the unintended flow of fuel in an open tank.

After investigation of the incident, the company decided to change the isolation requirements for entry into a fuel tank. It made the following recommendations:

- When access to a fuel tank is required for maintenance or cleaning activities, all fuel inlets should be blind flanged;
- Isolation by means of blind flanges should be reflected on the permit to work;
- Isolation tags should be logged, using the drawings of the fuel system as guidance;
- Information on the status of open tanks should be known in the engine control room and on the bridge;
- All isolation points for each tank should be identified and known.