A DROPPED MANCAGE – CRANE ACCIDENT

Description

A Man cage attached to a 50 tonne crane, free fell about 10 metres until the crane driver applied the winch brake to arrest the fall.

Two employees were in the man cage at the time and suffered significant injuries.

They had been attaching hand railing to the top of a silo and were in the process of being lowered to the ground.

The Crane driver had previously applied the slew brake via a lever to prevent the crane from slewing due to the windy conditions.

In the process of lowering the man cage, the crane driver went to release the slew brake via a lever on his right-hand side.

In front of the slew brake lever there are two levers controlling the crane free fall mode, one for the main hook and one for the auxiliary hook.

Both the free fall levers have a manually applied latch to prevent accidental movement of the levers.

The crane driver was watching the man cage and rigger while reaching for the slew brake lever.

Instead of grabbing the slew brake lever he reached forward approximately 150mm and operated the free fall control lever.

The manual latch was not in place and the lever was moved, allowing the auxiliary hook and man cage to free fall.

The driver realised almost instantly that the man cage was free falling and activated the footbrake, which arrested the man cage after falling about 10 metres.

When the man cage stopped, one employee sustained severe facial lacerations and the other sustained leg injuries.

Direct and indirect causes of the accident

- The crane driver had set the manual latch for the free fall control lever in the incorrect position
- The free fall latch was not fail safe, it required vigilance from the operator to ensure that the latch was in the correct position.
- The free fall latch did not have any alarm or require another function to be conducted by the operator to disengage the latch and operate the free fall lever.
- The crane driver did not look at the lever he wanted to operate. His duties require him to watch the man cage and the rigger in such situations.
- A crane with free fall capacity was used to lift a man cage, contrary to company procedure Quote" *No Personnel Box is to be used on a crane hoist line that has a free fall only capability, and in no circumstances, is a Personnel Box to be used in a free fall situation"*
- There was no man cage permit issued by the Supervisor to use the Personnel Box.
- The copy of the procedure held in the crane was out of date, it was Rev 2 and did not contain any mention of personal lift boxes and free fall limitations

Discussion

History

There had been four free fall incidents recorded for this project.

- Action had previously been taken to disable the free fall capability on the Manitowoc cranes auxiliary line because of a free fall incident.

Free Fall Capability

The free fall capability and method of free fall activation was examined on several cranes after the accident.

- Some hydraulic cranes have a permanent physical blocking device installed to prevent the movement of the free fall control lever.
- Most of the hydraulic cranes possessed a free fall capacity, which is controlled by manually activating buttons and latches.
- The modern cranes require several actions to be deliberately taken to engage the free fall capability.

- The crane driver must remember if the free fall latch device is engaged or not, if this is forgotten a significant hazard exists.

Crane Operators

- The crane drivers indicated that the use of free fall was rare, and, in some cases, they preferred not to have the facility as they may forget that the free fall control has not been engaged.
- They were also concerned that drivers inexperienced in operating a particular type of crane may inadvertently make an error regarding activating the free fall control.

Immediate Actions Taken

- Disable the capacity of cranes to operate in a free fall mode and ensure cranes coming onto the project meet this requirement
- Train and ensure personnel are competent in the understanding and application of the latest revision of the procedure, especially regarding man cage permits and crane and rigging procedures
- A standard man cage permit is now used across the project.
- There are two documents relating to site craneage which cover the same topics but set different standards. These documents were reviewed and combined into one document.

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