

CSI Country Wide Case Study Safety Strategy Discussion

Construction Safety Investigator



Instructions

The objective of this tool is to provide field supervisors with information to proactively engage workers and discuss safety related concerns that they may encounter. Safety discussions should not be limited to the subject above and should pertain to the activities that workers will be involved in that may have the potential for safety related exposures.

Case Day:

July 6, 2005

Accident Type:

Crawler Crane Accident

Relevant laws, rules and codes may include:

1926.550 (a)(1), 1926.550 (a)(5)

Case:

A Manitowoc 222 crawler crane with 205 ft. of main boom and 140 ft. of luffing jib operated by a temporary replacement crane operator was in the process of simultaneously raising the luffing jib and the main boom from its stowed position at ground level. During this procedure, the cables snapped resulting in the boom and jib section falling backward across and over the building site.

Accident Detail:

The project's regular crane operator lowered the boom and jib to the ground at the end of each day to protect it from high winds during the night.

The crane was equipped with a limit-bypass switch that allows the crane to exceed recommended operating position during assembling or storage. Instead of depressing the cranes limit-bypass switch as required by the manufacture, the operator wedged a penny in the limit-bypass switch to hold it in position. According to the OSHA report, he apparently did so to lower the boom and jib at the same time.

The replacement operator started up the crane the morning of July 5th and noticed that the crane's computer was not working properly. He contacted the crane supplier to explain the problem and was informed the computer needed to be reset and was walked through the process.

The operator experienced the computer problem again 15 minutes later and on his own decided to reinsert the penny in the limit-bypass switch to resolve the problem. He operated the crane in this manner for the day. At the end of the day, he lowered the boom and jib to the ground and called back the crane supplier and informed him of the problem. The crane supplier indicated they would send out a technician the next morning to inspect.

OSHA's report indicated conflicting testimony between the contractor and the crane supplier. The crane supplier representative stated he told the crane operator not to run the crane. The crane operator stated he told the contractor superintendent of the computer problem but the superintendent asked him to operate the crane to "just make three lifts."

On July 6, the next day, the replacement operator began to raise the boom and the jib from its position at ground level when the boom failure occurred. The replacement operator stated he made the lifts "to keep people off his butt and to keep the job going, and that the superintendent kept pushing him to get the job done."

Reconstructive Safety Evaluation:

- What are some of the possible causes of the accident being discussed?
- What actions could have been taken that might have prevented this accident from occurring?

Accident Scene Conclusion:

Investigation indicated that the equipment operating manual clearly stated that for a successful lift, the operator should depress the limit-bypass switch and operate either the main boom or the jib until the crane was within its normal operating limits, but not to operate both at the same time.

The maneuver requires the operator to hold down the limit-bypass switch with one hand and operate either the boom or the jib with the other. If for any reason he moved the boom or jib outside safety parameters, the crane's computer was supposed to automatically shut it down.

Preventive Safety Measures Include:

- Operate any and all equipment as per manufacturer requirements.
- Any deviation from the equipment operating manual should not be done without written approval from the manufacturer.
- Cranes should be operated by licensed or certified operators qualified to operate that specific piece of equipment.
- Job Safety Task Analysis (JSTA) must be established to address task at hand, reviewed by qualified personal and then discussed with crew member involved in the task.
- Inspect cranes on a daily basis to ensure it is in proper working order.
- If a new operator is assigned to a crane make sure he/she is familiar with crane and does not have issues in running the crane.
- Never instruct a worker to perform a task that he/she has brought to your attention he/she feels is a danger to their safety or the safety of others.

