

# CERTIFICATION NEEDED MORE THAN EVER



The accident happened so suddenly! Without warning the crane just collapsed, sending the load crashing through the structure it was intended to sit on. The aftermath of the accident was three workers dead and several others seriously injured. No one had ever imagined in their wildest dreams that something as terrible as this could ever happen at their work place.

Even though very heavy, the lift being made was not unusual in any way. Everyone, including the operator, had previously made similar if not identical lifts. The operator stated that he simply lifted the load about 40 feet (12m) into the air, swung over the side and was in the process of booming the load into place when the accident occurred. Everyone agreed that when the load was first lifted the crane had plenty of capacity. There was absolutely no hint of a problem. The crane had been set up properly with all outriggers fully extended and firmly set. In fact, one of the workers assigned to watch the outriggers on the opposite side persistently stated that the crane never got light—that the outriggers never came off the ground before the crane collapsed and turned over.

However, an in-depth investigation revealed a totally different set of facts:

- Even though the outriggers never lifted off the ground, the crane was found to be overloaded by more than 5 tons when the structural failure occurred.
- The operator had misinterpreted the load chart and consequently thought the crane had adequate capacity.
- The operator had never received any formal training, specifically on how to interpret load charts correctly.
- Perhaps most important was the fact that nothing



was done before the accident to verify that the operator possessed the required knowledge and practical skills necessary to operate the crane safely.

To make a lift it takes typically more than one person interfacing with the crane, so when an accident happens it is rare that the blame would be placed on a single individual. However, from the standpoint of accident prevention, it is evident that this accident would never have occurred had the employer properly trained and certified the crane operator, for it is the operator who is responsible for determining the crane's capacity.

## OSHA GETS SERIOUS

Crane Operator Certification, a subject of much discussion over the last few years looks like its time has finally come. In conjunction with the Specialized Carriers & Rigging Association, OSHA appears ready to mandate just such a programme. What it will entail, and how it will be set up — no one yet knows for sure. But, there is one thing for certain, the legislation of a Crane Operator Certification programme will without question have a tremendous impact on our industry. Whether it will be

Few states currently regulate who may or may not operate cranes in the US. James Headly\* reviews current attitudes and calls for a radical rethink

*\*James Headly is director of the Crane Institute of America and specializes in crane training and crane operator certification. Headly is a former crane operator and holds a BS degree in Education.*



positive or negative, we will just have to wait and see — the jury is still out.

The need for a good crane operator certification programme is not something that is new. The need to verify an operator's qualifications before assigning him the responsibility of a crane has always existed. However, the need has escalated through the years and is greater now than ever before.

## CRANES HAVE CHANGED

The reasons for certifying crane operators are numerous, but perhaps the greatest reason is that cranes have changed dramatically through the years. We are simply not dealing with the same cranes today that we dealt with in years past.

Older cranes were simple machines and in relation to their capacities were very large and heavy. Booms were short. Load ratings were based primarily on tipping and you didn't have to worry much about a structural failure. Load charts were rather simple and contained only a minimal amount of technical information. Knowing the weight of loads was not seen as that important, since operators could easily determine how much the crane could lift by relying on the outriggers coming up. Operator training was almost non-existent and the training that was available covered mostly excavators not cranes. Determining if an operator was qualified was easy. If he operated the crane in a smooth manner, got the job done and didn't scare anybody — he appeared qualified!

As industry and construction progressed there was a need for cranes to be more versatile, have higher capacities and longer booms. Yet, at the same time road restrictions, size and other considerations required that cranes be lighter in weight. Then something happened that would have a dramatic and lasting effect on the craning industry. Hydraulic cranes began to emerge and evolve.

Being self-contained and possessing a telescoping boom, hydraulic cranes were more versatile and mobile than lattice boom cranes and therefore gained quick popularity. Even companies who had never before owned and operated cranes found that they were indispensable to their operation. This crane would pick and carry its own load, could easily be manoeuvred into tight places and at the same time carry a manual section, an extension and a jib which could be erected at a moment's notice. It appeared so easy to operate. You couldn't drop the load. The boom wouldn't fall and, like a car, some models even had a steering wheel in the operator's cab. Therefore, to many companies the hydraulic crane was thought of as a very simple machine and became a tool for all workers to use.

However, in reality hydraulic cranes are not the simple machines most people perceive them to be. They are very complicated, sophisticated and technically oriented pieces of equipment. Capable of multiple configurations their load charts can be very complex, with capacities based totally on structural strength and not on tipping as was the case with



some older cranes. In other words, if a crane operator relies on the outriggers coming up to determine if he can handle the load, some part of the crane is likely to incur structural damage or total collapse before tipping occurs. This is exactly what happened in the crane accident described earlier.

But, hydraulic cranes are not the only type of cranes to become more complex. All cranes have changed and become more complicated through the years. Utilising a variety of attachments, booms have become much longer. Capacities are much higher and modern cranes do not have the built in safety factors that once accompanied older cranes.

Some people see this as a problem. Others think that modern crane design has led to an increase in accidents. However, the crane is not the problem. What we have today is a marvellous piece of lifting equipment designed to utilize its full lifting potential.

## "RULE OF THUMB"

The main problem, and a problem that now faces our industry, is the way cranes are currently being operated. Instead of relying on precise calculations, crane operators are still operating by rule of thumb. They are still relying on their feel of the machine to tell them when the crane has reached its limit. Being required to operate the crane without adequate training and qualifications, operators have been left with no other choice. This is a sad commentary on our industry, but the fact is that as cranes have changed and become more technical, crane operators just have not kept pace.

This is precisely why the formation of a good crane operator certification programme is so crucial. For if properly developed a good certification programme would establish and ensure that minimum training requirements had been met. And through the administration of physical, written and practical examinations identify any problem areas which could keep the operator from operating safely.

However, crane operator certification should not be looked upon as a cure-all for crane accidents, but rather to ensure that one link in the chain of people involved in the lift is adequately qualified to safely perform his assigned tasks. □



## PROPOSED CRANE OPERATOR TRAINING AND CERTIFICATION MODEL

- Identification of components
- Technical data
- Pre-operational inspection
- Load charts
- Assembly and disassembly
- Set up
- Safe operating procedures
- Responsibilities
- Basic rigging
- Applicable safety standards
- Hand signals