SAFE CRANE OPERATIONS THROUGH PROPER TRAINING

Serious incidents or close calls could occur in crane operations if:

- A crane overturns
- A crane or its load touches an energized overhead wire
- A load drops on workers or is swung into them.

These types of potential incidents can be the result of outdated or inadequate training. Without proper qualifications and instruction, a worker may

- Fail to inspect or use a crane properly
- Fail to test the overload protection devices for accuracy
- Fail to assess the work area around the crane correctly
- Not know the weight of the load or the capacity of the crane
- Not receive or understand the correct instructions from the signaller.

It's also important that safe work procedures be followed on the site. Proper training, including criteria such as learning objectives as established by the Ministry of Training, Colleges and Universities (MTCU), is essential for preventing incidents.

In addition to training, crane operators need to be familiar with the equipment they will be operating and the type of site-specific hazards they will be facing.

Training requirements

Effective training for worker safety would include instruction in both theory and practice. Workers must also be tested on their knowledge to ensure that they understand the instruction they have received.

Theory instruction should include topics such as crane types and components, basic hydraulics, operator responsibilities, load charts, overload protection systems, and basic crane safety.

Practical training should include instruction on site-specific hazards and how to control them, inspecting a crane before use, installing manual boom extensions, calculating load weights, and operation and maintenance procedures.

Under the *Ontario College of Trades and Apprenticeship Act*, a worker who operates a crane or similar hoisting device with a capacity of more than 16,000 pounds (8 tons) must have a Hoisting Engineer certificate of qualification under the Ontario College of Trades. For hoisting devices with a capacity of 16,000 pounds or less, an operator must have written proof of training in the safe operation of a crane. IHSA's *Mobile Crane Operator 0-8 Ton* course meets this training requirement.

It is important to be aware that training documents among crane operators can vary. That is because in Ontario, MTCU has a voluntary 0-8 ton crane standard called P930030. Since it is voluntary, not all training providers meet this standard.

Refresher training

Although there is no legal requirement for crane operators to take refresher training under the *Occupational Health and Safety Act* (OHSA), it's good practice for employers to require refresher training in order to keep up with changing technology, equipment, best practices, etc.

The OHSA requires employers to "take every precaution reasonable in the circumstances for the protection of a worker". Refresher training would be considered part of such a precaution. Training should be provided in order to keep workers safe, not just to meet a legal requirement.

Operator familiarization or retraining may be appropriate in the following situations:

- New technology/equipment has become available.
- An unfamiliar type of crane is used.
- The equipment is modified or updated.
- An operator is seen operating a crane improperly.
- An incident occurs while the crane is being used.
- Retraining is required under the employer's health and safety program.
- An on-site contractor requires retraining.
- The Ministry of Labour sends an operator for retraining.

Training, which may include familiarization as required, is essential for making sure that operations on the worksite follow the best safety practices. That's not just a safety practice required by Ontario law, but also one that will help to keep operators, workers, and the public safe from crane-related injuries and prevent property damage.

How IHSA can help

IHSA offers a number of effective training courses related to mobile crane operations:

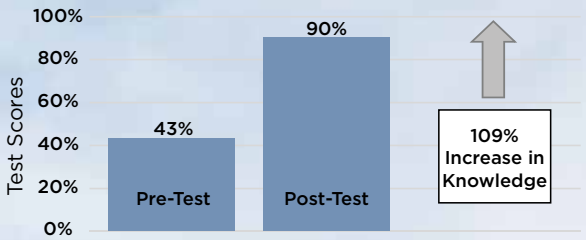
- Mobile Crane Operator 0-8 Ton (3-day and 5-day programs)
- Hoisting and Rigging—Basic Safety Training
- Hydraulic Aerial Equipment
- Hydraulic Material—Handling Aerial Devices
- Occupational Health and Safety Act
- Signaller and Traffic Control Person
- Working at Heights—Fundamentals of Fall Prevention.

To evaluate the effectiveness of its programs, IHSA measures the participants' knowledge before and after they take the course. A 2017 evaluation of 460 participants in IHSA's *Hoisting and Rigging* program found that participant knowledge had improved by 109%—the average mark was 43% on the pre-test and 90% on the final test.

Some of the areas that showed the most improvement were:

- Knowing when a wire rope should be taken out of service and destroyed
- Knowing the type of chain used for hoisting a load overhead
- Knowing the percentage of rope strength that U-bolt clips can hold.

Participant Knowledge Increase in IHSA's *Hoisting and Rigging* Course



93% said the training was relevant to their work

97% said the instructor was effective