Spot The Safety Violation: Know Your Load Limits

Several factors resulted in this crane collapse. Can you figure out what they were?

If used properly, lifting devices such as cranes and hoists can safely move heavy materials around a worksite. But if used improperly, these devices can pose a serious safety threat to workers and others, especially if they topple over.

This picture from the Health and Safety Executive in the UK (HSE) shows an 80-tonne crane that overturned, causing its extended 50 metre jib to fall across the worksite and narrowly miss workers and a nearby road.

The HSE investigated the incident and identified several safety violations that resulted in the collapse, including:

- Poor communication between the company that supplied the crane and the contractor as to the responsibilities of each (both pleaded guilty to safety violations and were fined);
- The weight of the materials being lifted and ground conditions weren't passed on to the workers involved. As a result, the crane was overloaded and operated on poor ground; and
- Under industry standards, a competent person should've been appointed to plan the lift, draw up a written lift plan and communicate it to those involved in the work.

Similar incidents have happened in Canada. For example, a 22-year-old worker in BC was crushed when his crane toppled over as he tried to lift more weight than his machine could handle.

Don't Overload Lifting Devices

One of the most important tips for safely operating lifting devices is to make sure that the equipment isn't overloaded. Lifting devices have specified load capacities, which are the maximum amount they can safely lift. Under the OHS regulations, you should generally post this information on the devices.

In addition, many types of these devices come with load charts that show the rated load capacity for the equipment for all permitted uses and working positions. You should also ensure that load charts are available to the workers operating such equipment.

Train the operators of lifting devices on the load capacity and load charts and how to calculate the weight of the load to be lifted. Ensure that they have the information necessary to accurately determine the load's *total* weight, which includes the weight of:

- The load itself;
- The hook and block; and
- Any slings or other lifting attachments.

For more information on safely using lifting devices, see MACHINERY & EQUIPMENT: 7 Key Elements of the Lifting Device Requirements, which includes links to an overhead crane lift calculation form and a tower crane weekly and monthly inspection form.