



Crane Accidents from NIs – Tower Cranes

A Notice of Incidents (NI) is a preliminary report of an accident that WorkSafeBC officers respond to. The NI is based on information obtained as soon as possible after the accident, but before an investigation into causes has been completed. It is intended to provide employers and workers with timely information regarding the type of accidents occurring within industry.

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2005	2006	2007	2008 to Sept 08
19	15	19	19
Date of Accident : 2005-Mar A tower crane was lowering a gang form weighing approximately 6,000 pounds when the ends of one of the wire rope fabricated slings slipped through the cable clips, causing one end of the form to fall approximately 5 feet (to the concrete slab). The load then shifted to the remaining sling, causing it to fail in the same manner. The gang form came to rest on the concrete slab.			
Date of Accident : 2005-Mar A loaded bucket of concrete (approximately 8,800 pounds) was being hoisted out of the pit when the hook assembly on the tower crane load block failed. The load fell, narrowly missing two workers.			
Date of Accident : 2005-Apr The lower of two tower cranes swung its jib into the work area of the higher crane, which was lowering a load into position. The lower crane jib contacted the load line of the upper crane.			
Date of Accident : 2005-May The hook block assembly of an unloaded tower crane contacted the underside of the counterweight on an adjacent static tower crane.			
Date of Accident : 2005-May			Rigging Accident
A tower crane was lifting a wooden tool box. The box came loose from the rigging chains and fell 55 feet to the ground.			
Date of Accident : 2005-Jun The jib of the lower tower crane contacted the load line of the higher tower crane.			
Date of Accident : 2005-Jul A rigger was caught between a metal refuse bin and a crane-suspended wooden box of debris that was being emptied into the bin.			
Date of Accident : 2005-Aug For the second time in one month, when a tower crane operator attempted to change gears, the load block and most of the load line fell to the slab below, narrowly missing several workers.			
Date of Accident : 2005-Aug The jib of a lower tower crane contacted the load line of an upper tower crane.			

Date of Accident : 2005-Aug	
As a tower crane operator attempted to change gears, the load block and most of the load line fell to the slab below, narrowly missing several workers.	
Date of Accident : 2005-Aug	
A tower crane's rigging chains, which were suspended from the load block hook, contacted an overhead 12-kV power line.	
Date of Accident : 2005-Sep	
A disassembled tower crane was in a storage yard. A forklift was being used to reposition the apex of the crane on elevated dunnage when the apex shifted outward and struck the rigger. The rigger was positioned between the dunnage and the jib of a second crane located directly behind him, leaving him no escape path.	
Date of Accident : 2005-Sep	
The hoisting line of a tower crane contacted a 60-kV energized power line at the same time the hook block assembly contacted a 12-kV energized power line.	
Date of Accident : 2005-Oct	
A load of door frames was being hoisted by a tower crane in a blind lift without the assistance of a signal person. The load struck the thrust-out platform and fell 110 feet to the ground below, narrowly missing workers.	
Date of Accident : 2005-Oct	
A tower crane was positioning to pick a gang form from an A-frame. The chain sling inadvertently lifted a corner of the gang form, causing it to slide and fall. The rigger was pinned against an adjacent A-frame.	
Date of Accident : 2005-Nov	
When a tower crane operator attempted to manually change the transmission gears, the hoisting block, rigging, and remainder of load line fell 50 feet to the ground below.	
Date of Accident : 2005-Nov	
A tower crane operator was maneuvering the rigging and load block in an area proximal to the low-voltage (600 volts) site power supply line while attempting to lift a stack of steel shores. The load block contacted the power line, creating a loud explosion and arc flash.	
Date of Accident : 2005-Nov	Rigging Accident
A load of formwork gang panels weighing approximately 8,000 pounds was rigged incorrectly. As the tower crane hoisted the load, one side of the rigging failed. The load fell approximately 4 feet to the ground below, causing shock loading of the tower crane.	
Date of Accident : 2005-Dec	
A tower crane's rigging chains, suspended from the load block hook, entered the limits of approach and contacted an overhead 12-kV power line.	
Date of Accident : 2006-Jan	
During load limit device tests, the concrete test blocks of a tower crane inadvertently swung into a building.	
Date of Accident : 2006-Jan	
One anchor bolt broke on a tower crane's mast.	

Date of Accident : 2006-Feb

A tower crane hoisted a bundle of steel studs to a 6th-floor exterior window opening using a below-the-hook high-rise lifting device. Worker's on level 6 cut the steel bands wrapped around the bundle of steel studs while the bundle was still in the lifting slings. The unsecured steel studs slipped out of the lifting device and fell onto energized high-voltage power lines parked vehicles, and the street below.

Date of Accident : 2006-Feb

The operator of a tower crane, who was not qualified to perform electrical/mechanical repairs, tried to repair the controls. He pulled the energized panel switch to "Off," then used a rubber-handled screw driver to try to secure a loose wire. When the screw driver contacted a live busbar, the operator sustained electrical flash burns.

Date of Accident : 2006-Feb

A tower crane was hoisting a 7,200 was hoisting a 7,2000 pound test block to check the limit switch when the hoisting chain attached to the block failed. Failed. The force of the shock load launched the separately attached 600-ound trip test block an undetermined distance into the air, endangering the rigger. Preliminary investigation indicates that the chain used to hoist the test block was incorrectly positioned in a chain shortener link, shearing the 3/8 inch chain link.

Date of Accident : 2006-Apr

When a tower crane lost power, it also lost control and operator could not raise the load block or trolley in. The crane was slewing (turning) at the time and the brake did come on but not in time to stop the rigging attached to the load block from contact in high-voltage power lines.

Date of Accident : 2006-Apr

A tower crane contacted a 12.5-kV powerline

Date of Accident : 2006-Apr

A worker was knocked off a flatbed trailer while unloading a 12-foot crane jib section. The worker landed in an adjacent 9-foot excavation.

Date of Accident : 2006-May

A tower crane was attempting to lift an exterior corner gang-form panel from level 11. The panel was supported by brackets attached to the concrete wall. When the panel was released from the brackets, it swung away from the wall. The panel was too heavy for the gear that the hoist motor was in and tower crane overload limit switch activated. As the crane was now unable to hoist the load, the operator attempted to lower the gang-panel to the ground. The operator could not control the descent of the load because the brake was insufficient for the combined weight and speed for the gear. The operator hit the stop button, but the gang-panel contacted the roof of the person-hoist and the 3rd storey.

Date of Accident : 2006-Aug

A tower crane was making a blind lift on one side of a building between the flag line and the material hoist. The crane operator was being directed by the rigger. The bottom 12 inches of the crane's lifting chains contacted the inboard conductor of a 12 kV power system. Contact was mad at the insulator on the pole.

<p>Date of Accident : 2006-Sept</p> <p>The hoist-up limit switch and the operator's controls of a tower crane failed to function. As a result, the block contacted the trolley, breaking the hoist line and dropping the block to the ground.</p>
<p>Date of Accident : 2006-Oct</p> <p>A load of roofing material (1900 pounds) was being hoisted by a tower crane. The load came off the forks, fell approximately 100 feet, and brushed the arm and leg of a young worker at grade.</p>
<p>Date of Accident : 2006-Nov</p> <p>A tower crane was lifting a small concrete form. The wire rope lifting sling had inadvertently been embedded in the concrete wall. The crane pulled on the sling until the sling broke, severely shock loading the crane and damaging it.</p>
<p>Date of Accident : 2006-Nov</p> <p>A tower crane had deposited a load of bundles of mechanical pipe and ready rod on a landing platform on the 34th floor. As it lifted its load line, one eye of the inboard wire rope sling that had not been attached to the load line hook caught on one end of the load. Several bundles fell to a catch platform on level 25, and some pieces bounced off the platform and landed in the storage yard at grade.</p>
<p>Date of Accident : 2006 Dec</p> <p>A tower crane's load block contacted and hooked the flag line (the line that visually warns the crane operator of the presence of nearby overhead high-voltage power lines). As the crane swung away, the flag line released from the hook and sprang back past centre, contacting the 25-kV line.</p>
<p>Date of Accident : 2007-Jan</p> <p>A tower crane swung its load line into the boom of a lower tower crane. The upper crane operator was not aware that the lower crane was operating.</p>
<p>Date of Accident : 2007-Jan</p> <p>The rigging chains of a tower crane contacted an energized 12-kV power line.</p>
<p>Date of Accident : 2007-Jan</p> <p>As a tower crane was lowering a load, its hoist line contacted a 12.5-kV power line.</p>
<p>Date of Accident : 2007-Mar</p> <p>The hoist line of an upper tower crane contacted the jib of a lower tower crane. The operator of the upper crane had not contacted the operator of the lower crane to let him know he would be swinging into the overlap area.</p>
<p>Date of Accident : 2007-May</p> <p>A bucket loaded with concrete to be poured into a wall form was suspended from a tower crane. When the bucket was in position, three workers tried to manoeuvre it to pour the concrete. The bucket suddenly dropped a few feet, pinning one worker against the formwork. WorkSafeBC engineers found that the bucket's descent was caused by system failure of the crane, which had been incorrectly erected.</p>
<p>Date of Accident : 2007-May</p> <p>As a tower crane was removing an elevator core panel, the rigging (chain shortener) failed, causing the tower crane to be shock loaded.</p>

Date of Accident : 2007-May
The lower 6 inches of the rigging chains of a tower crane contacted a 12-kV power line.
Date of Accident : 2007-May
As a crane was lowering a lift of roofing materials (300 pounds) from the roof to the ground, its load line contacted a 14.4-kV power line.
Date of Accident : 2007-Jun
When a tower crane swung, its jib contacted the boom of a mobile crane on an adjacent construction site.
Date of Accident : 2007-Jul
A tower crane was hoisting a bundle of reinforcing steel bars (rebar) from a flat deck truck. As the bundle was hoisted, one end of it became caught under another load of rebar on the truck. The opposite end of the hoisted rebar bundle swung out over an adjacent roadway and struck a passing motor vehicle. Fortunately, no one was injured.
Date of Accident : 2007-Jul
A tower crane's load line failed while lifting a 9x9 gang form panel. The gang form panel was approximately 9 feet above the 22nd floor slab when the line failed. The panel, load block, and approximately 45 feet of line landed on the slab.
Date of Accident : 2007-Aug
A tower crane was two-blocked. The upper limit device had not been installed and adjusted in accordance with the manufacturer's specifications and instructions.
Date of Accident : 2007-Aug
A tower crane two-blocked while attempting to change from a 2-part line to a 4-part line.
Date of Accident : 2007-Sep
A tower crane was moving a manufactured gang-form panel (24 feet x 15 feet) when the rigging on the panel failed. The panel fell 12 feet to the ground.
Date of Accident : 2007-Oct
As a tower crane was lowering equipment to street level, its load line contacted an energized cable for transit vehicles.
Date of Accident : 2007-Oct
The jib of a tower crane was allowed to partially slew (swing/rotate) during the jacking stage of the crane's disassembly. This is of concern because while the tower is jacked (to remove a section of mast), the centre of gravity shifts from the centre of the tower to the centre of the jack, nearer to the edge of the tower. Rotation of the jib during this maneuvers upsets the balance and could cause the jib to fall from the tower.
Date of Accident : 2007-Dec
A tower crane was offloading a rebar delivery from a flatbed trailer. A swinging bundle of rebar struck a worker on the trailer, who then fell to the ground.
Date of Accident : 2007-Dec
A tower crane's rigging became entangled with an on-site power pole and the

associated guarding. Before the rigging was clear of the obstruction, the operator swung the crane. The rigging contacted the 25-kV power line.

Date of Accident : 2007-Dec

Young worker (ages 15-24)
Less than 6 months' experience at this task

A young worker was attempting to remove a wooden block-out plug (in the concrete floor) for the interior tower crane electrical service line. The worker was using a pry bar and hammer to remove the plug when he inadvertently contacted the 600-volt line.

Date of Accident : 2008-Jan

Young worker (ages 15-24)
More than 2 years' experience at this task

A tower crane was being used to dump a garbage box into a bin. The crane contacted a 7.5-kV transformer. A young worker who was in the bin rigging the load sustained an electric shock.

Date of Accident : 2008-Jan

An I-beam weighing 14.5 tons was rigged at grade level using two separate synthetic slings choked to the I-beam. Abrasion protectors were used. The slings were attached to the load hook of the tower crane, and the I-beam was raised to an adjacent roof to control and place the beam with a tag line. The choker slings were then rigged at different lengths so that the lower part of the beam could be seated on the angled plate on top of the column. As the workers on the roof were receiving the load, the longer choker sling started to slip. This sling eventually severed, and the end of the I-beam fell onto the roof. The crane operator was able to lower the other end of the I-beam onto the roof.

Date of Accident : 2008-Feb

The load line of a tower crane contacted one of the high voltage disconnects of the 12V overhead power system.

Date of Accident : 2008-Feb

A concrete pump was placing concrete on the sixth floor of a residential high-rise building under construction. The boom of the concrete pump collided with the counter-jib (rear horizontal machinery arm) of a tower crane.

Date of Accident : 2008-Mar

The controls of a tower crane failed, causing the hook and block assembly to contact the underside of the jib and break the hoist line. The hook and block assembly, weighing approximately 700 pounds, fell approximately 80 feet to the roadway below.

Date of Accident : 2008-Mar

As a tower crane was slewing, its jib contacted the boom of a mobile crane. The tower crane operator had not been notified that the mobile crane was in his air space.

Date of Accident : 2008-Apr

The jib of a tower crane contacted the hoist line of a second tower crane.

Date of Accident : 2008-Apr

During the daily inspection of a 220-foot-high tower crane, it was noted that three spring clips had been removed from the pins holding the tieback supports of the crane. One of these pins had started to work loose and was within an inch of becoming dislodged. The removal of the clips is being investigated by

<p>police.</p>
<p>Date of Accident : 2008-Apr</p> <p>During construction of a 3-storey building, a crane was left to slew (weathervane) at the end of a shift. The crane block was about 60 feet out on the jib and 20 feet down. A 20-foot set of rigging chains had been left hanging from the block. The crane slewed and the rigging contacted a 12-kV power line across the road from the site.</p>
<p>Date of Accident : 2008-May</p> <p>The jib of a lower tower crane contacted the hoist line of a higher tower crane.</p>
<p>Date of Accident : 2008-Jun</p> <p>A tower crane was unloading reinforcing steel from a flatbed truck on a busy street, close to energized low-voltage electrical transit feeder lines. The load of steel was rigged at two ends. As the load was lifted, it shifted and the rigging chains contacted a transit feeder line. The line was guarded, but the chains contacted an exposed part.</p>
<p>Date of Accident : 2008-Jun</p> <p>The roof of an external personnel hoist car struck the underside of a tower crane's boom. The hoist operator was bringing it to a stop at the top floor of the building when the incident occurred. The previous day, the tower crane had been lowered four sections in preparation for final dismantling.</p>
<p>Date of Accident : 2008-Jul</p> <p>The welds on two separate horizontal members of a tower crane's mast section failed.</p>
<p>Date of Accident : 2008-Aug</p> <p>A rough-terrain crane had its boom deployed in the radius of an overhead tower crane. When the tower crane's boom moved into the quadrant of the rough-terrain crane, the two booms made contact.</p>
<p>Date of Accident : 2008-Aug</p> <p>As a tower crane was landing a load of construction materials during a thunderstorm, a lightning flash produced an induced electrical current. When the rigger grabbed the load chain, he sustained an electric shock.</p>
<p>Date of Accident : 2008-Aug</p> <p>A lower tower crane contacted the load being moved by a higher tower crane.</p>
<p>Date of Accident : 2008-Aug</p> <p>The load line of one tower crane contacted the jib of a second tower crane several times in a two-day period. The tower crane operators and riggers did not report these crane contacts to their managers.</p>
<p>Date of Accident : 2008-Sep</p> <p>The securing device on a tower crane's hoisting drum failed, causing the hoist line to spool off the drum. The work platform suspended from the hook, with a worker on it, dropped to grade (about 45 feet).</p>
<p>Date of Accident : 2008-Sep</p> <p>An electrical fire occurred in the slip ring of a tower crane. The two workers who extinguished the fire were treated for smoke inhalation.</p>

**Self-erecting Tower Cranes**

2005	2006	2007	2008 to Sept 08
4	11	6	4
Date of Accident : 2005-Mar			
The last link of the jib (boom section) of a self-erecting tower crane was being extended horizontally when a gust of wind may have twisted the jib, causing it to fold.			
Date of Accident : 2005-Aug			
A tower crane was relocating a piece of equipment that exceeded the weight the crane could lift at that radius on the jib. The crane collapsed onto the roof of the five-storey construction project.			
Date of Accident : 2005-Sep			
Several rolls of roofing material fell from a pallet while being raised by a tower crane.			
Date of Accident : 2005-Sep			
Workers were disassembling a self-erecting tower crane for removal from the site. The jib and mast had been folded and stored, but the truck was unable to get under the tow pin of the crane because of backfill in the area. As workers lifted the crane with a telescopic boom forklift, the crane tipped over and a counterweight crushed a worker's leg.			
Date of Accident : 2006-Jan			
A self-erecting remote-controlled tower crane was sitting idle at a construction site. The wind caused the crane boom to slew towards power lines. A piece of guarding on the 14-kv line had fallen off; as the boom passed over the unguarded line, a chain sling hanging off the hook of the block contacted the unguarded portion of the line.			
Date of Accident : 2006-Jan			
A loaded garbage bucket hoisted by a self-erecting crane contacted a 12-kV overhead power line.			
Date of Accident : 2006-Feb			
A load suspended from a self-erecting crane contacted a 7200-volt overhead power line.			
Date of Accident : 2006-Apr			
The load line of a self-erecting crane contacted an overhead 120-volt secondary service line.			
Date of Accident : 2006-Jul			
The operator of a self-erecting tower crane had picked up a bucket containing 1 metre of concrete. The trolley stopped moving and then began an uncontrolled movement back along the tilted jib towards the mast of the crane. The operator grounded the load, causing minor damage to the wooden pad but preventing the load from hitting the crane pads or mast. An inspection of the crane found that the coupler between the trolley gearbox and trolley drum had failed.			

<p>Date of Accident : 2006-Aug</p> <p>While hoisting a garbage box, the boom of a self-erecting crane buckled and collapsed to the ground.</p>
<p>Date of Accident : 2006-Sept</p> <p>A self-erecting tower crane picked up the 2525-kg test block and trolleyed the block out on the jib approximately 15 metres. The trolley stopped moving, then began an uncontrolled movement back towards the mast of the crane. The operator grounded the moving load approximately 5 metres from the crane base, causing shock loading of the crane.</p> <p>Inspection found that the coupler between the trolley gearbox and trolley drum had failed. This caused the load to travel down towards the crane mast (the jib is tilted up by design). This was the recent failure of this type of cast coupler on this crane.</p>
<p>Date of Accident : 2006-Oct</p> <p>A self-erecting crane was shock loaded when the lifting points on a panel failed.</p>
<p>Date of Accident : 2006-Oct</p> <p>A worker fell approximately 30 feet from the third floor of a residential construction project. He was knocked through a guardrail by a garbage box being relocated using a remote-controlled self-erecting crane.</p>
<p>Date of Accident : 2006-Nov</p> <p>During slewing operations, the jib of a self-erecting tower crane failed. The jib and load dropped to the ground.</p>
<p>Date of Accident : 2006-Nov</p> <p>The trolley of a self-erecting tower crane came off the rails when it passed a previously damaged section of the boom. The trolley and load - a concrete bucket - fell to the ground while a worker was holding the bucket.</p>
<p>Date of Accident : 2007-Nov</p> <p>A 45-ton self-erecting tower crane was performing the maximum load test when the test blocks, crane load-block, and load line suddenly dropped and fell to the ground.</p>
<p>Date of Accident : 2007-May</p> <p>The boom of a self-erecting tower crane contacted the boom of a mobile crane on an adjacent construction site. The two sites, separated by a common roadway, are under construction by two separate companies.</p>
<p>Date of Accident : 2007-Aug</p> <p>The rigging chains of a self-erecting tower crane contacted overhead transit trolley lines.</p>
<p>Date of Accident : 2007-Sep</p> <p>A self-erecting tower crane was working near high-voltage power lines without a safety watcher to monitor the crane's movement. The load line contacted the unguarded power line and was completely severed, causing the load block to fall to street level. It narrowly missed the crane operator, who was operating the pendant controls.</p>

Date of Accident : 2007-Nov

At a highrise construction site, a new self-erecting crane was being installed. The crane's supplier was assisted by a worker who was not trained to operate a crane. As the worker swung the crane's jib, the load line contacted a 14.4-kV power line. The electrical charge travelled to ground through the pads of the crane.

Date of Accident : 2007-Nov

A concrete pumper truck was setting up for a concrete pour when the site's self-erecting tower crane swung into the area to perform a lift. The boom of the crane and the boom of the pumper truck collided.

Date of Accident : 2008-Mar

As a self-erecting tower crane was being disassembled, the erection cable inside the mast came off the sheave and was damaged.

Date of Accident : 2008-Mar

The securing pin on the hoist winch drum of a self-erecting tower crane failed. The hoist line spooled off the drum, and the hoist line, hook and block assembly, and load fell to the ground.

Date of Accident : 2008-May

The cable of a self-erecting tower crane contacted a 14.4-kV overhead power line.

Date of Accident : 2008-Aug

A crane operator had rigged a load consisting of two 19-foot steel columns. When the load was suspended about 10 feet off the ground, the operator shut down the crane, using the remote control device. The operator then climbed a stairwell to the top of the building, from where he saw the crane slewing in a southwest direction. Using the remote control, the operator could not stop the crane but was able to lift the load. The crane came to rest 180 degrees from its starting point.