



Crane Accidents from NIs – Tower Cranes

A Notice of Incidents (NI) is a preliminary report of an accident that WorkSafeBC Prevention 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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2004	2005	2006 Preliminary
9	19	15
Date of Accident : 2004 Feb		
A load of 22 (4'x8') sheets of plywood dislodged from the chains slings during a lift. The materials fell approximately 55 ft to grade after the load struck a perimeter rebar column as it was being lowered by the tower crane.		
Date of Accident : 2004 Feb		
The loadline on a tower crane broke, dropping a loaded concrete bucket (6000lbs) approximately 15 feet to grade.		
Date of Accident : 2004.12.01		
An unloaded tower crane jib end contacted the loaded sling chains of another overhead tower crane.		
Date of Accident : 2004 -Feb		
The wire rope slings of a tower crane contacted the 25 kV line when the operator swung the crane boom over the adjacent power lines.		
Date of Accident : 2004 -Mar		
A gang-form panel that was being moved by the tower crane contacted the Sky lift (fly form lifting device) causing the sky-lift to fall off the working level of the hi-rise.		
Date of Accident : 2004-Apr		
A tower crane loadline unspooled from the drum and fell onto a 69-kV power line.		
Date of Accident : 2004-May		
In the process of assembling a 30' tower crane climbing frame on uneven ground, the weight of the jacking components placed on one side of the frame pulled it over with 2 workers on the structure.		
Date of Accident : 2004-Jul		Rigging Accident
A load of 2 gang panels (35 feet by 8 feet, approx. 6,000 lb.) fell 90 feet to the street below.		

Date of Accident : 2004-Dec

The load of one crane hit the load line of a second crane.

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.

<p>Date of Accident : 2005-Sep</p> <p>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.</p>
<p>Date of Accident : 2005-Oct</p> <p>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.</p>
<p>Date of Accident : 2005-Oct</p> <p>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.</p>
<p>Date of Accident : 2005-Nov</p> <p>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.</p>
<p>Date of Accident : 2005-Nov</p> <p>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.</p>
<p>Date of Accident : 2005-Nov</p> <p style="text-align: right;">Rigging Accident</p> <p>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.</p>
<p>Date of Accident : 2005-Dec</p> <p>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.</p>
<p>Date of Accident : 2006-Jan</p> <p>During load limit device tests, the concrete test blocks of a tower crane inadvertently swung into a building.</p>
<p>Date of Accident : 2006-Jan</p> <p>One anchor bolt broke on a tower crane's mast.</p>
<p>Date of Accident : 2006-Feb</p> <p>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.</p>
<p>Date of Accident : 2006-Feb</p> <p>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.</p>

<p>Date of Accident : 2006-Feb</p> <p>A tower crane was hoisting a 7,200 pound test block to check the limit switch when the hoisting chain attached to the block failed. The force of the shock load launched the separately attached 600-pound 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.</p>
<p>Date of Accident : 2006-Apr</p> <p>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.</p>
<p>Date of Accident : 2006-Apr</p> <p>A tower crane contacted a 12.5-kV powerline</p>
<p>Date of Accident : 2006-Apr</p> <p>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.</p>
<p>Date of Accident : 2006-May</p> <p>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.</p>
<p>Date of Accident : 2006-Aug</p> <p>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 made at the insulator on the pole.</p>
<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>

Date of Accident : 2006-Nov

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.

Date of Accident : 2006 Dec

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.

**Self-erecting Tower Cranes**

2004	2005	2006 Preliminary
8	4	11
Date of Accident : 2004-Jan		
A self erecting crane contacted a 7200 Volt energized electrical line, with a chain sling.		
Date of Accident : 2004-Feb		
An unloaded self-erect crane jib end contacted the loaded sling chains of another overhead tower crane,		
Date of Accident : 2004-June		
Portions of the mast and jib sections failed while the jib of a self erecting tower crane was being lowered.		
Date of Accident : 2004-July		
The upper mast section of a self-erecting tower crane failed during the erection process.		
Date of Accident : 2004-Aug		
The dead end of the hoist line of a tower crane became detached from the tip of the jib. This caused the unloaded block to fall to the ground, narrowly missing a worker.		
Date of Accident : 2004-Aug		
The jib of a self-erecting tower crane failed structurally while it was being erected by the manufacturer's crane technician. One jib section was twisted approximately 180 degrees. Two tip sections were partially unpinned and came to rest nearly parallel to the mast.		
Date of Accident : 2004-Sep		
The upper mast section of a self-erecting tower crane was observed to be leaning backwards. A latch pin was found to be sheared off at the base of the tower section that was leaning.		
Date of Accident : 2004-Dec		
A mobile crane hit the jib of a self-erect crane.		
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.

Date of Accident : 2006-Aug

While hoisting a garbage box, the boom of a self-erecting crane buckled and collapsed to the ground.

Date of Accident : 2006-Sept

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.

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.

Date of Accident : 2006-Oct

A self-erecting crane was shock loaded when the lifting points on a panel failed.

Date of Accident : 2006-Oct

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.

Date of Accident : 2006-Nov

During slewing operations, the jib of a self-erecting tower crane failed. The jib and load dropped to the ground.

Date of Accident : 2006-Nov

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.