



## Worker struck by load after articulating boom crane “two-blocks”

A worker was struck and injured when the load line on an articulating boom crane broke and the crane’s load fell about 6 metres (20 feet) to the ground. The load line broke because the crane “two-blocked,” meaning that its travelling lower block (the hook block) and its stationary upper block (the tip sheave) came into contact. This contact can put extreme stress on the load line and other parts of a crane.

Two-blocking can happen for various reasons. In this case, the crane was fitted with a winch on the underside of its boom. The crane operator extended the boom to place the load, but did not spool the load line off the winch’s drum at the same time. This caused the crane’s travelling lower block (the hook block) to rise and contact its stationary upper block (the tip sheave). When the crane operator continued to extend the boom after this two-blocking occurred, the load line broke. The crane lacked the required two-blocking damage-prevention feature, which would have stopped this from happening. When a crane two-blocks, a two-blocking damage-prevention feature will stall whatever actions the crane is performing so that the load applied by those actions doesn’t damage the crane’s machinery or load line.

### Safe work practices:

- Ensure that articulating boom cranes that are equipped with a winch are also equipped with a feature to prevent damage from two-blocking, as required by *ANSI Standard ANSI/ASME B30.22-2005, Articulating Boom Cranes*.
- Ensure that cranes are inspected, tested, repaired, and maintained according to the manufacturer’s instructions, the Occupational Health and Safety Regulation, and the applicable standards.
- Ensure that workers are familiar with the manufacturer’s manual or an engineer’s instructions for the cranes they operate.
- Establish and enforce written safe work procedures for rigging and lifting loads:
  - Avoid passing loads over workers.
  - Warn workers not to stand or walk under loads.
  - If passing a load over workers can’t be avoided, warn workers of the danger before moving the load.
- Provide workers with the information, training, and supervision necessary to ensure their health and safety when working with or around cranes.

