

WEATHER AND WIND

Thunder is the stop. The lower wind number wins. Do not count to 30.

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PURPOSE

Stop the lift when wind, lightning, ice or visibility take the plan away. Lightning: Environment Canada - if you hear thunder you are in range. The 30/30 first number is not a reason to keep lifting.

SCOPE

All crane and rigging operations outdoors under this program, and indoors where wind through a bay matters. Tower: 14.92 and 14.93 on top of the manufacturer. Electrical earthing and lightning-protection hardware are the owner's Technical Safety BC electrical work - not this SWP.

This document is the method - the steps. Hazards and residual risk for the same work are in the JHA library. A procedure is not a hazard analysis.

LIGHTNING - STOP. THUNDER IS THE TRIGGER. DO NOT COUNT TO 30.

TRIGGER	ACTION
Thunder heard, or lightning seen	Stop the lift. Land. Manufacturer shutdown. Shelter. Do not wait for a 30-second count.
30 minutes after the last rumble	Resume clock. Then inspect. Manufacturer weather limits still apply.
Strike, or suspected strike, on the crane	Misadventure. Crane down until a professional engineer certifies it. 14.16.1.

FLASH-TO-BANG - CITE ONLY. SOUND ~300 m/s. NOT A REASON TO KEEP LIFTING.

SECONDS AFTER FLASH	~DISTANCE	STOP
Thunder - any rumble	Striking distance	ECCC: if you hear it, you are in range. Stop.
10 s	~3 km	Already too close.
30 s	~10 km	Old 30/30 first number. Environment Canada dropped it in 2010. Do not wait for this.

TOWER CRANE WIND AND COLD - PART 14. OEM STILL WINS IF LOWER.

RULE	REG
Anemometer on the crown, apex or cab. Readout at the controls.	14.92(1)(2)
Stop when a load cannot be handled safely because of wind.	14.92(3)
No manufacturer wind number: 50 km/h, or less if the load is a sail.	14.92(4)
Erect, operate or dismantle only at or below the manufacturer upper limit.	14.92(6)
Stop below -18 degC, or as the manufacturer or engineer specifies.	14.93

PROCEDURE

01 LIMITS IN THE BRIEF

Manufacturer and plan. The lower wind number is the number. Tower: anemometer readable at the controls (14.92). Shelter named. Lightning abort said. If the crew cannot repeat it, the brief failed.

02 MEASURE

Use a real reading, not a vibe. Account for load sail - a panel is not a block. Tower with no OEM wind number: 50 km/h, or less if the load cannot be handled safely (14.92(3)(4)).

03 LIGHTNING

Thunder or lightning: stop. Land the load if it can be done without a second incident. Manufacturer out-of-service / weathervane. People off the machine and off the load. Shelter - fully enclosed building with wiring and plumbing, or a hard-top metal vehicle. Cab of a crane is not the plan. If the operator cannot get down before the storm: stay in the cab, hands off metal, nobody on the ground touches the crane, the line or the load. Resume only 30 minutes after the last rumble, then inspect. Do not count flash-to-bang to 30 before stopping. Environment Canada dropped that in 2010.

04 ICE, SNOW, COLD

Clear the crane as the manufacturer requires. A load with a snow cap has a different weight and a different sail. Tower: stop below -18 degC unless the manufacturer or engineer says otherwise (14.93).

05 AFTER A STRIKE

Treat it as a misadventure (14.16.1). Crane down. Professional engineer inspects and certifies before anyone hooks a load. Electrical installation is the owner - Technical Safety BC Electrical Safety Regulation if the supply or earthing took the hit. This procedure does not restart to see if the LMI still works.

06 STOP

When the number is hit, land or shut down. Argument is not a control. Visibility gone: 14.48 - radios or stop.

RESPONSIBILITIES

THIS PROGRAM

The published method for the work. Stop-work is named in it. It does not own the site.

SUPERVISOR

Confirms the plan, the crew, the zone and the stop criteria. Owns whether the hook moves.

CRANE OPERATOR

Runs only the machine they are competent on, to the chart, after inspection. Stops on an unclear signal or a broken plan.

RIGGER

Selects, inspects and applies the hitch. Does not guess weight, centre of gravity or angle.

SIGNALPERSON

One set of hands on the crane. Holds the zone. STOP means stop.

WORKER

Works to this program and to site rules - whichever is stricter. Uses the three rights. Reports damaged gear.

REQUIRED COMPETENCY

Operator who will believe the anemometer over the superintendent

Can say the lightning abort: thunder, land, shelter, 30 minutes after the last rumble

EQUIPMENT

A way to know the wind

Manufacturer weather limits

Shelter named in the brief - building or hard-top vehicle

PPE

Hard hat

CSA-grade footwear

High-visibility clothing

Eye protection

Task-rated gloves

Hearing protection where required

Fall protection where the work exposes a fall

PROHIBITED PRACTICES

"We'll sneak this one in" over the wind limit
Raising a boom into a thunderstorm to finish the day
Waiting for a 30-second flash-to-bang before stopping
Using the crane as shelter when a building or vehicle is available
Touching the crane, the load or the line during thunder
Restarting after a strike without 14.16.1 certification

EMERGENCY RESPONSE

Thunder during a lift: land if it can be done without a second incident. People off. Shelter. Do not gather under the crane. First aid if anyone is hit - lightning victims carry no charge. 911. Notify the site and the employer.

DOCUMENTATION

FLHA
Wind number in the brief
Manufacturer weather pages
14.16.1 engineer letter if struck

REFERENCES

Workers Compensation Act s. 21 - known or reasonably foreseeable hazards; instruction and supervision
OHS Regulation (B.C. Reg. 296/97, in force 15 Apr 1998) Part 3 - OHS program, instruction, inspections
OHS Regulation Part 4 s. 4.13 - risk assessment where rescue or evacuation may arise
OHS Regulation Part 8 - PPE; headwear CSA Z94.1-05 or Z94.1-15
OHS Regulation Part 11 - fall protection
OHS Regulation Part 14 - Cranes and Hoists
14.2(5) - CSA Z150-1998, or ASME B30.5-2004, or ASME B30.22-2005 (articulating boom)
14.2(6) - CSA Z248-2004 for tower, hammerhead and self-erecting tower cranes
14.35 pre-use inspection 14.36 load weight 14.42.1 critical lift 14.44 loads over work areas 14.45 unattended loads
14.47-14.49 signals
OHS Regulation Part 15 - Rigging
Manufacturer load chart, manual and configuration limits
Site lift plan, FLHA and site rules where stricter
Environment and Climate Change Canada - When thunder roars, go indoors. If you hear thunder you are within striking distance. Wait at least 30 minutes after the last rumble.
ECCC dropped the first 30 of the 30/30 rule in 2010. People waited until a 30-second flash-to-bang. That is too late. Do not count to 30 before stopping.
CCOHS Weather - Lightning. ~300 m per second flash-to-bang. No safe place outdoors. Fully enclosed building with wiring and plumbing, or a hard-top metal vehicle.
Workers Compensation Act s. 21 - known or reasonably foreseeable hazards. Lightning on a crane is foreseeable.
OHS Regulation 14.2 - operate as specified by the manufacturer or a professional engineer.
14.12 - manufacturer's manual reasonably accessible. Weather shutdown as that manual.
14.16.1 - misadventure includes any circumstance that may impair safe operation. A lightning strike is that. Crane down until a professional engineer certifies it.
14.34(2) - operator familiar with operating instructions. 14.37.1 - full control while the equipment is in use.
14.48 - atmospheric conditions that make hand signals hazardous. Radios or stop.
14.92 - tower anemometer, stop for wind, 50 km/h if the manufacturer is silent. 14.93 - stop below -18 degC unless the manufacturer or engineer says otherwise.
14.2(5) CSA Z150-1998 / ASME B30.5-2004. 14.2(6) CSA Z248-2004 for tower, hammerhead and self-erect.
Technical Safety BC - Electrical Safety Regulation and BC Electrical Code. Power supply, earthing and lightning-protection hardware on the electrical installation belong to the owner. TSBC does not publish a 30/30 crane rule.

LINKS

JHA - WEATHER AND WIND - PROVEN-JHA-015 -> /safety/jha/weather-and-wind
ECCC - WHEN THUNDER ROARS, GO INDOORS ->

<https://www.canada.ca/en/environment-climate-change/services/lightning/safety/overview.html>

CCOHS - WEATHER, LIGHTNING -> https://www.ccohs.ca/oshanswers/safety_haz/weather/lightning.html

WORKSAFEBC - PART 14 CRANES AND HOISTS ->

<https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-14-crane-s-and-hoists>

TECHNICAL SAFETY BC -> <https://www.technicalsaftybc.ca/>