Level Up, Own Your Lift
Self-Planned Inspections

WHAT IS THE "LEVEL UP, OWN YOUR LIFT" SELF-PLANNED INSPECTION PROCESS?

The "Level Up, Own Your Lift" inspection program is a self planned inspection process for worksites that use cranes (mobile self-erect and tower) to measure your responsible persons'/parties' compliance with crane safety.

BC crane safety is constructing crane-process-specific self-planned inspection questions and support materials for:

- *Prime contractors*
- *Crane employers*
- *Crane owners*
- *Crane supervisors*
- *Crane operators*

Crane Operator Qualification Questions

BC Crane Safety is providing these self-planned inspection questions to educate crane stakeholders for a better understanding of their health and safety responsibilities to comply with WorkSafeBC's Occupational Health and Safety Regulation and relevant CSA standards.

This set of questions has been developed in conjunction with WorkSafeBC's Crane/Mobile Equipment Team. It is recommended that crane employers and owners refer to these questions to improve their company or site safety management systems.

Plan – Responsibilities Questions

Questions – Crane Operator	Validation
1. Describe the employer's system for hiring, assessing, and evaluating their crane operators. **WCA21, OHSR 14.34**	☐ Complete ☐ Incomplete
2. Describe the employer's system for development of provisional operators through the process to full scope certification. **OHSR 14.34**	☐ Complete ☐ Incomplete
3. Is the crane operator a provisional or full scope operator? **OHSR 14.43.1**	☐ Provisional ☐ Full Scope

4. How long has the operator been running cranes? Describe this experience. **OHSR 14.34, CSA Z248 – 8.2.2.2**	☐ Complete ☐ Incomplete
5. A tower crane operator shall have hearing and visual acuity, corrected or uncorrected, that is adequate for the specific operation. **CSA Z248 - 8.2.3**	☐ Yes ☐ No

Do – Site Operations Questions

Questions – Owner's Logbook/Record	Validation
6. Is the operator aware that they shall be responsible for those operations under their direct control? The operator shall not perform any lifts that the operator deems unsafe. **OHSR 3.12, 14.35, 14.38 CSA Z248 - 8.3.1.1**	☐ Yes ☐ No
7. Does the operator understand the information in the equipment manufacturer's operating manual and safety decals, including: emergency procedures; understanding the limitations of the equipment (e.g., slopes, terrain, loads, extensions); understanding the applicable requirements of the Regulation? The manufacturer's operating manual must be available to the tower crane operator; the operator must be familiar with the operating manual and operating specifications for and with equipment and its proper care. If adjustments or repairs are necessary, the operator shall report the condition promptly to the appointed person and shall also notify the next operator. **OHRS 3.10, 14.12, G.14.34(a), CSA Z248 -8.3.1.2**	☐ Complete ☐ Incomplete

WHAT IS THE PLANNED INSPECTION ABOUT?

The self-planned inspection uses these questions to conduct a consistent and responsibility-driven inspection of the crane-related parties on the worksite.

HOW MANY TYPES OF SELF-PLANNED INSPECTIONS ARE THERE?

There are five types of inspections including:

- *Crane Employer/Site Inspections*
- *Provisional Operator Supervisor Checks*
- *Preventive Maintenance Inspections*
- *Crane Operator Qualification Checks*

Inspection/Check Questions are available for download on the BC Crane Safety website.

Check – Crane Operations Questions

Questions – Crane Operations	Validation
8. Can the operator recognize worksite potential hazards, including overhead, underground, other trades in proximity, pedestrians, and mobile traffic? **OHSR 19.24, G14.34(b)**	☐ Complete ☐ Incomplete
9. Did the operator participate in the assembly of the crane, and understand the assembly process in accordance with the manufacturer's instructions and specifications? The tower crane operator should be present during erection, repair, climbing, or telescoping operations. **G.14.34(c), CSA Z 248 - 8.3.1.4**	☐ Complete ☐ Incomplete
10. Does the operator know, understand, and properly use the load charts of actual lifting components installed and the crane configuration for crane on this worksite? **OHSR 4.8, G.14.34(e), G.14.34(k)**	☐ Complete ☐ Incomplete
11. Is the operator competent in selecting, configuring, and using the control panel, computer and limiting device functions of the actual machine components installed? **G.14.34(f)**	☐ Complete ☐ Incomplete

Check – Pre-shift Operations Questions

Questions – Pre-shift Operations	Validation
12. What is the crane capacity? Is the load chart available? **OHSR 4.7, CSA Z248 - 4.7.3**	☐ Complete ☐ Incomplete
13. Is this crane in 2-part or 4-part line? How does this affect the daily limit device testing process? **OSHR 14.35**	Make, model
14. Does the tower crane operator inspect the crane prior to start of shift? **OHSR 14.12, 14.35, CSA Z248 - 8.3.2.1**	☐ Yes ☐ No

15. Does the operator participate in daily or weekly planning meetings? How are they made aware of schedule and upcoming deliveries? **OHSR 4.1**	☐ Yes ☐ No
16. Does the crane operator test all controls and safety devices at start of new shift (line pull limit switch may be tested at initial set up/as specified by crane manufacturer). If any controls/safety devices do not operate properly, they must be adjusted or repaired before operations begin. **OHSR 4.10, 4.12,14.35, 14.37, CSA Z248 - 8.3.2.1**	☐ Yes ☐ No
17. Is the operator inspecting equipment components (pre-operational checks/regular periodic inspections), performing minor maintenance, as/at intervals required by manufacturer's specifications, applicable Standard or by the employer? **OHSR 14.34 (g) G.14.34(h), CSA Z248 - 8.3.2.1**	☐ Yes ☐ No
18. Is the operator (or others) carrying out daily, weekly, and monthly crane maintenance? **CSAZ248 - 6.4.4, 6.4.5, 6.4.6**	☐ Yes ☐ No
19. Is the operator provided with time to carry out required maintenance? **WCA 22, OHSR 3.12**	☐ Yes ☐ No
20. Is the operator maintaining equipment logbook on pre-shift inspections/safety checks, entering observed defects, operating difficulties maintenance required, reporting repairs to employer? **G.14.34(h), CSA Z248 - 8.3.2.1**	☐ Yes ☐ No

Check – Daily Limit / Start of Shift Questions

Questions – Tests / Inspections	Validation
21. Can the operator describe manufacturer's instructions for carrying out daily limit (load) test? **OHSR 14.81(2)**	☐ Complete ☐ Incomplete
22. Can the operator describe the daily pre-shift limit device (load) testing process? (Tip hoist moment, trolley in, trolley moment, trolley out, maximum load, high-speed up, hoist up, hoist down. Is it set for grade or subgrade?) **OHSR 14.81, CSA Z248 – 6.4.4.1**	☐ Complete ☐ Incomplete
23. Can the operator carry out start of shift device tests (manufacturer's/engineering's instructions or CSA Z248-6.3.3process)? **OHSR 14.81(2), G.14.34**	☐ Yes ☐ No
24. Can the operator describe the daily inspection requirements for this crane? (All wedges in slab openings in place/tight; all guy lines/connections, if used, acceptable; mast & anchor bolts; all limit switches (except line pull limit switch); signal lights; audio and visual indicators, and brakes are functioning properly; load hoist and boom hoist ropes according to Clause 6.5; grounding connections and rail clamps, if used, daily or each time their application is made. **CSA Z248 – 6.4.4.1**	☐ Complete ☐ Incomplete

Check – Weekly / Monthly Questions

Questions – Operator Knowledge / Work	Validation
25. Does the operator understand the requirement to carry out weekly inspections? (Structural pins and keepers, trolley rollers, tracks, slewing rings, and rollers, gear shaft and belt drives, sheaves, bushings, and pins, guy ropes, pendant lines, cable clips, thimbles, and ferrules, jib backstops (boom stops), all rope attachments, walkways, handrails, and ladders, locations in structure where water accumulation could cause damage (water is drained), and tie-ins to slabs or other bracing systems where used.) **CSA Z248 – 6.4.5**	☐ Complete ☐ Incomplete
26. Can the operator describe the daily pre-shift limit device (load) testing process? (Tip hoist moment, trolley out, trolley moment, trolley out, maximum load, high-speed up, hoist up, hoist down. Is it set for grade or subgrade?) **CSA Z248 – 6.4.4.1**	☐ Complete ☐ Incomplete

Check – Other Tests / Shutdown Questions

Questions – Inspections	Validation
27. Does the operator carry out other shift tests? (All clearances/alignments are in order, gearing & and moving parts are engaged properly, each controller switch/control devices, limit switches, protective devices operating satisfactorily, circuits, interlocks, and sequences of operation in accordance with the manufacturer's specs, audio device near the base of travelling cranes operates when required and each crane motion operates according to manufacturer's specs.) **CSA Z248 – 6.3.2**	☐ Complete ☐ Incomplete
28. Does the operator understand the requirements to complete the operator's log to include all testing, inspections, and maintenance, as well as all incidents of misadventure, rope inspection and maintenance? **OHSR14.34(h), CSA Z248 – 6.2.3**	☐ Yes ☐ No
29. How does the operator inspect and maintain the wire ropes (load line, trolley lines)? **OHSR 14.13, CSA Z248 - 6.4.6**	☐ Complete ☐ Incomplete
30. How does the operator inspect the brakes? **CSA Z248 - 6.4.6**	☐ Complete ☐ Incomplete
31. How does the operator set the crane into weathervane? **OHSR 14.92, CSA Z248- 8.11.2.1**	☐ Complete ☐ Incomplete
32. If the crane has anti-collision or range limiting device, how is regular testing of the device accomplished? **OHSR 14.81, CSA Z248 6.3.2**	☐ Complete ☐ Incomplete
33. Does the device change the way the crane is operated? **OHSR 14.81**	☐ Yes ☐ No
34. Does the operator understand the set parameters of the device? **OHSR 14.81**	☐ Yes ☐ No
35. What is the process at this site for inspection and storage of rigging equipment? **OSHR 15.2**	☐ Complete ☐ Incomplete

Check – Shutdown Questions

Questions – Inspections	Validation
36. Does the operator have an understanding of using hand signals and radio protocol for hoisting operations? Crane operator shall have a general knowledge of relevant safety codes and standards applicable to crane operation and a general knowledge of the crane's operation. **OHSR G.14.34(j), CSA Z248 - 8.2.2.5**	☐ Yes ☐ No
37. Does the operator have the ability to calculate (as necessary) and understand lift plans? OHSR G.14.34(k)	☐ Yes ☐ No
38. Can the operator describe the process for shutting down and securing the equipment when it is unattended? **OHSR G.14.34(m)**	☐ Complete ☐ Incomplete
39. Does the operator understand and has the operator reviewed and signed the site- specific, maintenance fall protection plan? **OHSR 11.2(6), CSA Z248 - 4.25.4**	☐ Yes ☐ No

Act – Post Inspection Discussion

Continuous Improvement Next Steps

During the post inspection discussion, please encourage the worksite representatives to act on the key learnings or areas of improvement.

If unsure, help them to identify 1-2 measures that need to/must be corrected, changed, eliminated or modified to improve worker and worksite safety.

The Act stage of the Plan-Do-Check-Act process is where the worksite representative/superintendent implements an improved baseline of operations and remeasures implementation to ensure improvements/corrections. By

PLAN, DO, CHECK & ACT

BC Crane Safety's Level Up Self-Planned Inspections are education and awareness materials for crane stakeholders to us an informed approach to inspections as part of a safety management system focusing on worksite monitoring and continuous improvement.

measuring implementation i.e., identifying a lower level of risk, reducing hazard severity/frequency, the worksite is taking positive action towards improved health and safety.

Workers Compensation OHSR – Excerpts

Standards – OHSR 14.2(6)

A tower, hammerhead crane or self erecting tower crane must meet the requirements of CSA Standard Z248-2004, Code for Tower Cranes.

Inspection, maintenance and repair – OHSR 14.13

(1) Each crane and hoist must be inspected and maintained at a frequency and to the extent required to ensure that every component is capable of carrying out its original design function with an adequate margin of safety.

(2) A crane or hoist must not be used until any condition that could endanger workers is remedied.

(3) Any repair to load bearing components of a crane or hoist must be certified by a professional engineer or the original equipment manufacturer as having returned the component to a condition capable of carrying out its original design function with an adequate margin of safety.

(4) Maintenance or repair of a crane or hoist must be done by or under the direct supervision of a qualified person.

Inspection and maintenance records – OHSR 14.14

Records of inspection and maintenance meeting the requirements of Part 4 (General Conditions) must be kept by the equipment operator and other persons inspecting and maintaining the equipment, for

(a) a crane or hoist with a rated capacity of 900 kg (2 000 lbs) or more,

(b) a crane or hoist used to support a worker,

(c) a tower crane.

Manuals and records – OHSR 14.79

The following documents respecting operation, inspection, maintenance and

WCB OHSR EXCERPTS

Included are some of the relevant parts of the Occupational Health and Safety Regulation (OHSR) on crane employer and site responsibilities

repair of a tower crane must be kept at the workplace where and while the crane is erected:

(a) the portions of the manufacturer's manual or engineer's instructions required by section 14.12(3);

(b) all records dated from the date of structural certification under section 14.77, including those specified in section 14.75(5);

(c) in the case of a self erecting tower crane, all records dated from the date of the last certification of the crane.

Limit devices – OHSR 14.81

(1) A tower crane must have automatic travel limit switches and automatic overload prevention devices that prevent overloading at any trolley position, the load block from travelling beyond the highest allowable position specified by the manufacturer and the trolley from travelling beyond the allowable limit specified by the manufacturer.

FOR MORE INFORMATION

For more crane safety-related information, including operator certification, contact BC Association for Crane Safety (BC Crane Safety).

Where can I find more information about crane safety?

Check the BC Crane Safety website at www.bccranesafety.ca