PREVENTIVE MAINTENANCE AUDIT · CANADA & USA

CSA B167 Preventive Maintenance Audit Checklist

A field-ready self-audit drawn from CSA B167, CMAA 70/74 and ASME B30.2. Score your existing PM program before an insurance renewal, regulator audit or capital request.

ADVICE FROM SOMEONE WHO DOESN'T SELL THE ANSWER.
Your crane supplier sells their product line. We recommend the right option — from any OEM.

Facility		Auditor	
Crane / asset ID		CMAA class	
Capacity (t)		Date	

Mark the frequency at which each item is actually performed and verified: F frequent · M monthly · Q quarterly · A annual. Anything you cannot mark is a program gap.

1. Program & Documentation

Checklist item	F	M	Q	A
Written PM program exists and references CSA B167 Part 6.				
CMAA service class assigned to every crane in the fleet.				
OEM manuals on file for each crane, hoist and drive.				
PM frequencies match OEM instructions and service-class duty cycle.				
PM procedures, forms and pass/fail criteria are documented.				
Inspection records retained per CSA B167 minimums (life of asset).				
Deficiency-tracking system with severity, owner and due date.				
Annual management review of program KPIs and closure rates.				

2. Structural

Checklist item	F	M	Q	A
Bridge girders, end trucks and welds — visual inspection for cracks, distortion, corrosion.				
Runway rails and beam alignment within CMAA tolerance.				
Bolted connections torque-checked and marked.				
Bumpers and end stops present, secure and undamaged.				
Walkways, handrails and access ladders compliant.				
Load block, hook and hook nut inspected for wear / deformation.				

3. Mechanical

Checklist item	F	M	Q	A
Wire rope inspected per ASME B30.30 / manufacturer discard criteria.				
Rope reeving, dead-end and drum anchorage verified.				
Sheaves and drum grooves — wear, scoring, corrosion.				
Gearboxes — oil level, condition (sample analysis), leaks.				
Couplings, brakes and brake pads — wear, adjustment, dust.				
Wheels and wheel bearings — flat spots, flange wear, temperature.				
Trolley traverse, bridge travel, hoist mechanism — noise, vibration.				

4. Electrical

Checklist item	F	M	Q	A
Main and hoist disconnects labelled, lockable and operational.				
Conductor bar / festoon condition, alignment, brush wear.				
Control panel — clean, sealed, thermal scan within limits.				
Cables and strain reliefs — no chafing, cracking, hot spots.				

Checklist item	F	M	Q	A
Grounding and bonding continuity verified.				
VFDs / contactors — fault log reviewed, firmware documented.				
E-stop and safety-circuit function test.				

5. Safety Devices & Function Tests

Checklist item	F	M	Q	A
Upper-limit switch (block-up) function test — pass/fail.				
Lower-limit switch (if fitted) function test.				
Overload / load-limit device calibrated within 12 months.				
Anti-collision, anti-sway or zone-limiting devices function-tested.				
Warning devices — horn, strobe, motion lights — operational.				
Load brake / mechanical load brake holding test with rated load.				
Hoist and bridge brakes — dynamic stopping-distance test.				

6. Operator & Rigging Interface

Checklist item	F	M	Q	A
Pendant / radio controls — labelled, directional-correct, e-stop working.				
Load charts / capacity plates legible and matched to configuration.				
Rigging locker — slings, shackles, below-the-hook devices tagged and in date.				
Operator qualification records current per provincial / OSHA requirements.				
Pre-shift inspection form used and retained.				

7. Environment & Housekeeping

Checklist item	F	M	Q	A
Runway free of stored material, tools or obstructions.				
Lighting at runway and floor operator station adequate.				
Corrosion / contamination controls appropriate to environment (mill, mine, marine, food).				
Fire protection and hot-work clearances around crane maintained.				

Scoring & next steps

Interpreting your audit

Count the unmarked items per section. Any section with more than 20% unmarked items is a program gap that will surface in a regulator audit, an insurance survey or after a lost-time incident. Structural, safety-device and electrical gaps carry the highest severity — address those first.

What to do with the results

- Prioritise deficiencies by severity: safety-critical → regulatory → reliability → cosmetic.
- Assign each open item an owner, target date and closure evidence requirement.
- Reconcile PM frequencies against actual duty cycle (CMAA Class A–F).
- Rebuild PM procedures where the same finding recurs across cranes.
- Schedule a 12-month re-audit and track closure rate as a program KPI.

Want this audit done independently?

Crane Advisory Group is an independent overhead crane and material handling consultancy with 15+ years in the crane industry. We sell no cranes, parts or service contracts — so what you get back is a recommendation, not a quote.

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This checklist is provided for internal self-audit purposes only. It is not a compliance certification and is not a substitute for a qualified inspection performed under CSA B167 and the legislation that applies in your jurisdiction.
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