

Compliance audit report: 10-year major inspections of mobile and tower cranes

Queensland
May – November 2008

Introduction

Between May and November 2008 Workplace Health and Safety Queensland (WHSQ) undertook a state-wide audit on 10-year major inspections for mobile and tower cranes.

In 2006 the *Workplace Health and Safety Regulation 1997* (Regulation) was amended to require mandatory 10-year major inspections for all tower cranes and registrable mobile cranes (i.e. those of more than 10 tonnes maximum capacity). The Regulation requires the involvement of a professional engineer to oversee and sign off the inspection process. The inspection report is relied upon by the owner to provide the owner's statement with registration on, among other things, the safety of the crane and the crane having been maintained satisfactorily.

Major crane inspections have been recommended by Australian Standards for many years. However, compliance with the major inspection guidelines in Australian Standards, prior to the introduction of the Regulation changes, has been limited. Due to the increasing age of mobile and tower cranes, and the high level of potential risk with this plant, it was considered necessary to mandate major inspections for registrable mobile and tower cranes in Queensland.

How big is the issue?

Considering that more than 1900 mobile cranes and in excess of 200 tower cranes are registered with WHSQ, the magnitude of the 10-year major inspection requirement is significant. It is estimated that at the time of introduction of the mandatory requirement for major inspections on 1 February 2007, approximately 50 per cent of all mobile and tower cranes in Queensland were more than 10 years old. While the introduction of the requirement led to replacement of many older cranes with brand new ones, a significant number of older cranes required major inspections.

On average the cost of a major 10-year inspection is considerable (\$80,000) due to the need to strip down and repair or replace critical parts of the crane. Guidance on minimum benchmarks for the 10-year major inspection is highlighted in both the *Mobile Crane Code of Practice 2006* and the *Tower Crane Code of Practice 2006*. Both these Codes provide guidance based on sound engineering practice and direct the crane repairer to the crane manufacturer's instructions.

Over the 18 months leading up to the audit WHSQ consulted with and provided written guidance for both the crane industry and engineers on minimum benchmarks and content for the quality of 10-year major inspection reports.

The audit itself

The audit was designed to see whether the 10-year major inspections were of an acceptable safety standard and consistent throughout the mobile and tower crane industries. Typically a 10-year major inspection report should be a comprehensive document with a full rationalisation for work done and include test results, engineering certification, photographic evidence, manufacturer's instructions and verification of actual work done.

The 2008 audit involved auditing technical inspection reports for 139 mobile and tower cranes across Queensland. Of the reports audited approximately 70 per cent referred to mobile cranes and 30 per cent to tower cranes. Reports were selected for a variety of mobile and tower crane types from a selection of crane owners around Queensland. In about 20 per cent of the reports checked, a WHSQ inspector visited the site to inspect the crane in an effort to seek confirmation that the inspection work had been carried out to a reasonable standard.

Depending on the quality and content of the report, and the condition of the crane, inspectors used a variety of consultation methods to request and obtain additional information on the major inspection. Where the crane was in an unsafe condition the inspector was required to take appropriate enforcement action.

In addition to audit of reports, WHSQ inspectors checked on cranes where the crane registration had been allowed to lapse by the crane owner. This had occurred for 61 cranes audited across the state.

What were the results of the campaign?

Results of audit of 10-year major inspection reports

A breakdown of the results received for the 139 cranes audited is shown below in table 1:

Number of cranes that received satisfactory major inspection	122 cranes
Number of cranes with unsatisfactory major inspection	17 cranes
Additional information required	70 reports
Inspector enforcement action required ¹	28 cranes

Table 1 Compliance audit report results – Major inspections for mobile and tower cranes

Approximately 88 per cent of the cranes audited received a major inspection to an acceptable benchmark – this is a relatively high proportion and reflects well on the co-operation of the crane industry to comply with the major inspection requirement. However, the fact that additional information was required by the inspector for about 50 per cent of reports indicates that there is room for improvement in the quality of documentation. Information on the quality of reports is further illustrated in Diagram 1.

Note¹: The number of cranes requiring enforcement action is greater than the number of cranes where the major inspection was unsatisfactory. This is due to the fact that an inspector can use enforcement action to obtain additional safety documentation or may identify a safety item requiring remedy that is not part of the major inspection (i.e. a damaged hoist rope where the damage has occurred after the major inspection).

Quality of 10-year major inspection reports

The quality rating is based on a number of factors including the following:

- a clear list of work undertaken on the crane
- the work and maintenance history of the crane
- technical rationalisation for the scope of work carried out on the crane
- the inclusion of maintenance information from the crane manufacturer
- photographic and other documentary evidence of the extent of strip down of the crane, and
- information provided in the engineer's inspection certificate.

Diagram 1 below shows more than half of the reports were of a satisfactory nature, with approximately one quarter either being rated as "comprehensive" or "very good". In identifying that the quality of reports requires some improvement, it should be noted that the quality of the reports has progressively improved since the major inspection requirement was introduced in mid-2006.

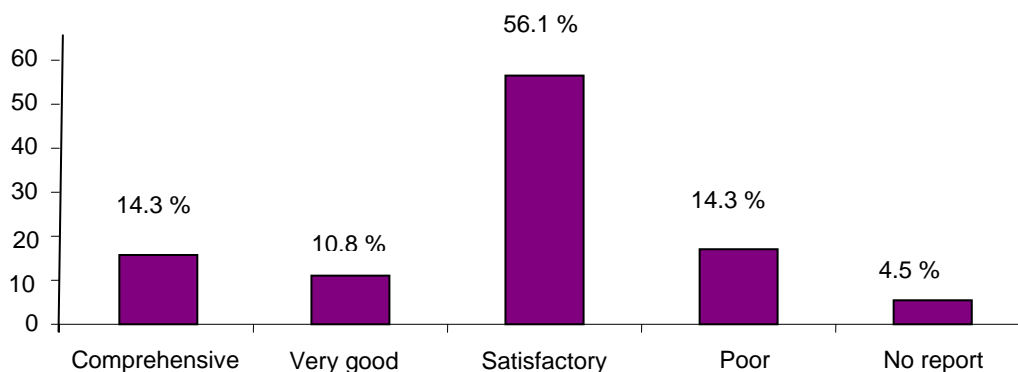


Diagram 1 Compliance audit report results – Quality of 10-year major inspection reports for mobile and tower cranes

Lapsed registrations

Of the lapsed registrations for 61 cranes, inspectors identified that in a large number of cases the crane had been sold or the crane was in a dismantled condition awaiting completion of its major inspection. In 12 cases it was found that there was a strong likelihood that the crane owner was operating the crane without the crane being registered with WHSQ. In these cases the crane owner was issued with a Prohibition Notice, prohibiting use of the plant for lifting duties. The prohibition applies until the crane registration is renewed and a 10-year major inspection has been carried out.

Where to from here?

The audit results demonstrate that there has been a high level of compliance with the 10-year major inspection requirement in Queensland. This is a very good reflection of the mobile and tower crane industries and demonstrates the importance of legislation in improving the safety of high risk plant. The results also illustrate that while the quality of some major inspection documentation is of a high standard, there is still a need to improve the quality of documentation.

The results of the 2008 audit showed that 12 per cent of major crane inspections undertaken were not to an acceptable standard. Enforcement action was necessary for the owners of these cranes. In addition the audit highlighted that there is a small percentage of crane owners who were not adequately maintaining their cranes.

In 2009 WHSQ will revisit the mobile and tower crane industries to carry out a follow-up audit to monitor the safety performance. WHSQ will visit crane owners who have been identified as poor safety performers during the 2008 audit, to determine if improvements have been made.

The 2009 crane audit will be a limited audit and will focus on the quality of documentation and general safe work systems of mobile and tower cranes.

For more information

For more information on mobile and tower cranes visit www.worksafe.qld.gov.au or call Workplace Health and Safety Infoline on 1300 369 915.

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