



Mines Safety Bulletin No. 114

Subject: Compliance requirements for multi-purpose mobile plant

Date: 22 September 2014

Background

Purpose-built mobile cranes and mobile elevating work platforms (MEWPs) are designed, manufactured, tested, approved and maintained for a single purpose.

Telescopic handler machines (THMs), integrated tool carriers (ITCs) and other multi-purpose mobile plant can potentially be configured with jib attachments for lifting suspended loads or work platform attachments for lifting personnel.

Multi-purpose mobile plant presents additional issues for duty holders to ensure that they fully comply with the requirements of the *Mines Safety and Inspection Act 1994* (the Act) and Mines Safety and Inspection Regulations 1995 (the regulations).

The Department of Mines and Petroleum's current interpretation of duty holders obligations is outlined in articles in *Resources Safety Matters* magazine published in September 2013 and January 2014.

This mines safety bulletin provides duty holders with further information on:

- what the Department considers as enforceable in terms of compliance with the regulations
- the Department's policy and approach to enforcement.

Summary of hazard

Typically, incidents with multi-purpose mobile plant involve one or more of the following factors:

- interaction of moving machinery with personnel (e.g. crushing, shearing, entanglement, impacts)
- machine instability, particularly while under load (e.g. roll-over, overloading)
- loss of control of the load (e.g. attachments disengaging)
- release of high-pressure hydraulic fluids (e.g. failure of hoses or fittings)
- equipment fires (e.g. engine, hydraulics, electrical)
- contact with fixed structures
- contact with live electrical conductors (e.g. overhead power lines, cable trays, conduits)
- training and competency issues (e.g. operator errors)
- quality of job preparation (e.g. machine prestart checks, job hazard analysis, selection of fit-for-purpose machine).

By ensuring that machinery fully complies with the relevant Australian standards, duty holders should achieve the minimum required with regard to the "engineering" part of the "heirachy of control". In most situations, but not necessarily all, this should ensure the equipment is fit for purpose. However, to ensure a safe working environment, duty holders must also address the need for safe systems of work (procedures) and competent personnel.

Contributory factors

Non-compliant THMs and ITCs continue to be observed at some Western Australian mining operations. There also appears to be general confusion and uncertainty regarding the Department's minimum requirements for a variety of reasons.

- The current legislation from 1994 and 1995 does not adequately address these classes of equipment. When the Act and regulations were being drafted, such equipment was relatively rare in the Western Australian mining industry.
- Indiscriminate and uncontrolled use of underground loader and bogger buckets as work platforms in the 1990s led to Mines Safety Bulletin No. 17 in April 1996. The bulletin promoted the use of purpose-designed elevating work platforms that comply with Australian Standard AS 1418.10 *Cranes, hoists and winches - Mobile elevating work platforms* but still allowed earthmoving buckets to be modified as work platforms under limited circumstances. The bulletin was withdrawn in 2013 since it no longer represented what was considered to be practicable.
- AS 2359.1 *Powered industrial trucks - General requirements* includes a definition for multipurpose machines but does not specify any requirements for them. Some duty holders have interpreted this reference to imply that THMs should be regulated as "duty of care" type plant rather than classified plant.
- The definition of a crane in the regulations excludes earthmoving equipment. Some duty holders have interpreted this reference to imply that an ITC fitted with a jib should be regulated as "duty of care" type plant rather than classified plant.
- AS 1418.8 *Cranes, hoists and winches - Special purpose appliances* allows earthmoving equipment to be used for lifting freely suspended loads, with or without a jib attachment, as a "secondary function" under limited circumstances. However, some duty holders have interpreted this loosely and use ITCs for routine crane operations, which is not the intent.
- In the past, fully compliant multi-purpose mobile plant and attachments were not readily available and therefore it was not considered practicable to fully comply. As technology has improved and new products have become commercially available, full compliance is now considered to be practicable in most circumstances.

Actions required

Mining operations operating multi-purpose mobile plant, whether permanently located on site or itinerant, are encouraged to adopt the following approach.

- Conduct a compliance audit of existing multi-purpose mobile plant, determine any gaps in compliance and develop a plan and schedule to move towards full compliance.
- Where the audit has determined that equipment does not fully comply, conduct an appropriate risk assessment to determine which interim controls can be put into effect to protect personnel from potential harm until full compliance is achieved.
- Review and, if necessary, update classified plant management systems and procedures to ensure that all multi-purpose mobile plant used at the mine is fully compliant if it is intended to be used with crane or elevating work platform type attachments.

As a minimum, the following criteria should be included in the compliance audit to ensure compliance with regulatory provisions.

Telescopic handler machines (THMs)

- All THMs manufactured after October 2007 must comply with AS 1418.19. Such machines must include a compliance plate and be provided with sufficient documentation to demonstrate compliance.
- THMs that can slew more than 5 degrees must comply with AS 1418.5 *Cranes, hoists and winches - Mobile cranes (EN 13000:2010, MOD)* as well as AS 1418.19.
- Any attachments used with THMs, including jibs and work platforms, must comply with the requirements of AS 1418.19 and be approved for use by the original equipment manufacturer (OEM) for the particular model of THM.
- THMs used to support work platform attachments must comply with AS 1418.10.
- When a THM is to support a work platform attachment, if the boom length is, or can be, greater than 11 metres then a WP class high risk work licence is required to operate. Furthermore, the regulations require the machine to be managed as registered classified plant. The requirements of AS 2550.10 *Cranes, hoists and winches - Safe use - Mobile elevating work platforms* should also apply.
- When a THM is used to support a jib for lifting suspended loads, if the rated capacity is greater than 3 tonnes then a CN class high risk work licence is required. Furthermore, if the rated capacity is greater than 10 tonnes, the regulations require the machine to be managed as registered classified plant. The requirements of AS2550.5 *Cranes, hoists and winches - Safe use - Mobile cranes* should also apply.

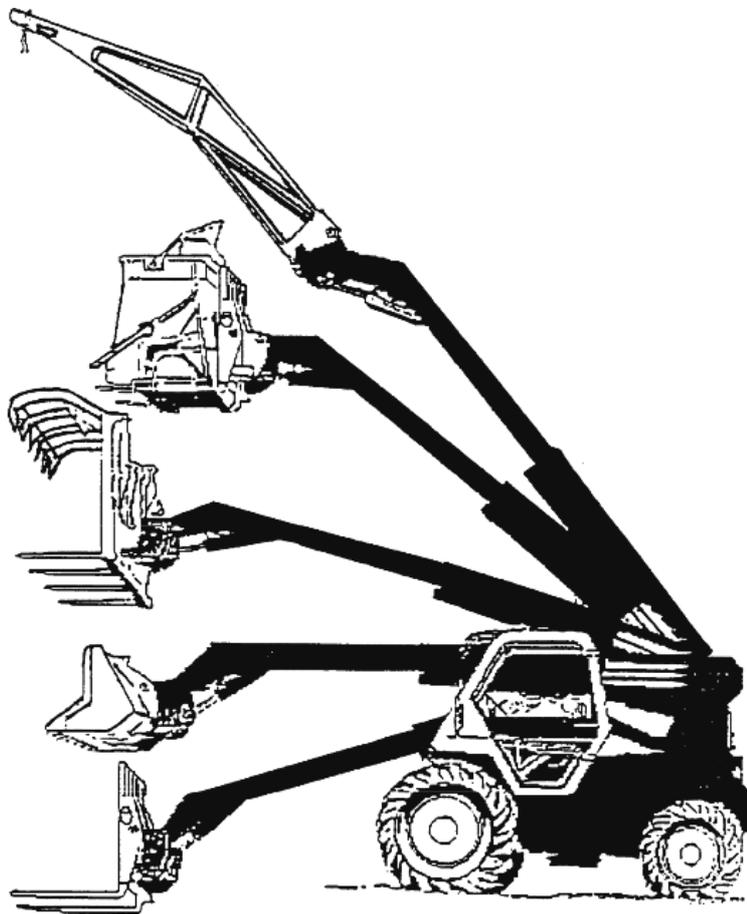
Integrated tool carriers (ITCs)

- Any attachments used with an ITC must be approved for use by the OEM for the particular model of ITC.
- ITCs used to support jib attachments for lifting freely suspended loads must comply with AS 1418.8.
- ITCs and earthmoving equipment should only be used for lifting freely suspended loads under limited circumstances (see AS 1418.8, clause 5.1). For routine crane operations, a purpose-built mobile crane complying with AS 1418.5 should be used.
- When an ITC is used to lift freely suspended loads, if the rated capacity is greater than 3 tonnes then a CN class high risk work licence is required to operate. Furthermore, if the rated capacity is greater than 10 tonnes, the regulations require the machine to be managed as registered classified plant. The requirements of AS 2550.5 should also apply.
- When an ITC is used to support a work platform attachment, it must comply with AS 1418.10.
- When an ITC is used to support a work platform attachment, if the boom length is greater than 11 metres then a WP class high risk work licence is required to operate. Furthermore, the regulations require the machine to be managed as registered classified plant if the platform movement is more than 2.4 metres. The requirements of AS 2550.10 should also apply.

- CN HRW licence if rated lifting capacity > 3 tonnes
- Registration of plant if rated lifting capacity is > 10 tonnes
- Duty of care applies if rated lifting capacity ≤ 10 tonnes
- Verification of competency

- WP HRW licence and registration of plant if boom length ≥ 11 metres
- Duty of care applies if boom length < 11 metres
- Verification of competency

- No HRW licence
- Duty of care applies
- Verification of competency



High risk work licence and other requirements for operators of telescopic handlers

Further information

Resources Safety Matters magazine, www.dmp.wa.gov.au/ResourcesSafety

- Vol. 1 No. 3, September 2013, pages 30-31
- Vol. 2 No. 1, January 2014, pages 39-41

Australian Standards, www.standards.org.au

- AS 1418.5:2002 *Cranes, hoists and winches - Mobile cranes*
- AS 1418.8:2008 *Cranes, hoists and winches - Special purpose appliances*
- AS 1418.10:2011 *Cranes, hoists and winches - Mobile elevating work platforms*
- AS 1418.19:2007 *Cranes, hoists and winches - Telescopic handlers*
- AS 2550.5:2002 *Cranes, hoists and winches - Safe use - Mobile cranes*
- AS 2550.10:2006 *Cranes, hoist and winches - Safe use - Mobile elevating work platforms*

Telescopic Handler Association of Australia, www.tsha.com.au

- Information sheets on a variety of topics

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