

Workplace Health and Safety Queensland

SAFETY ALERT**Counterweights on mobile plant**

The purpose of this safety alert is to:

- Inform people about the potential hazard of falling counterweights when fitting or removing counterweights on mobile plant.
- Provide guidance on design, fitting and training issues to reduce the risk of anybody being injured or killed by falling counterweights on mobile plant during fitting or removal.

Background

Recently in Brisbane a worker was killed when a 10.5 tonne counterweight fell from the back of a mobile drilling rig. It is understood an attempt was being made to remove the counterweight whilst the plant was being prepared for transport.

Photograph 1 shows the rear of the pile driver with the 10 tonne counterweight on the ground.

Recommended control measures

The fitting and removal of counterweights can be a high risk operation and there are many hazards that need to be adequately controlled.

Design issues

Counterweights should be designed so that a person is never required to be under or next to the counterweight during fitting or removal of the counterweight (i.e. in the potential fall zone).

The use of a crane and lifting gear to stabilize the counterweight while workers are located in the potential fall zone of the counterweight is *unacceptable*. No person(s) should be in this zone due to the high risk of the activity. Cranes should only have vertical loads applied to the crane hook.



Photograph 1: rear of the drilling rig showing 10 tonne counterweight on the ground.

The following three typical examples describe reasonable methods of attaching counterweights to mobile plant:

1. The counterweight sits in a cradle on the plant and is unable to fall off the plant when all pins and bolts are removed. The counterweight has to be lifted up and out of the cradle for removal.
2. The counterweight is provided with pins on the top of the counterweight that can be easily accessed without the need for the worker to be in the potential fall zone. The counterweight may need to be suspended from another crane so that the pins can be readily removed. In this case the load is stable and cannot fall backwards or sideways. The person removing the pins will require a safe system of access.

3. The counterweights are either fitted or removed by a lifting device on the crane that does not require persons to be in the potential fall zone. When the counterweights are lifted into position a locking device secures the counterweights in place without the need for persons to be in the potential fall zone.

Safe work procedures

Safe work procedures for the fitting or removal of counterweights should be documented by the plant manufacturer. The procedures should never require a person to be under or next to the counterweight during the fitting or removal of the counterweight. The procedures should preferably include step-by-step photographs or diagrams that can be readily understood. The procedures should not make general statements that are impractical to comply with.

Worker qualifications and experience

Workers involved in the fitting or removal of counterweights on cranes are required to hold a high risk work licence as an Intermediate Rigger. It is advisable for workers involved in the fitting or removal of counterweights on other mobile plant to also hold this qualification. Workers involved in

the fitting or removal of counterweights should also be experienced in this activity or be adequately trained and supervised by an experienced person until they are considered to be competent.

Further information

Further information on the safe use of mobile plant is included in the:

- *Mobile Crane Code of Practice 2006*
- *Plant Code of Practice 2005.*

For more information visit

www.worksafe.qld.gov.au or call the Workplace Health and Safety Infoline on 1300 369 915.

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