

### *Proposed guideline: G20.13(3.1) Ensuring loads do not exceed the capacity of thrust-out platforms*

Proposed June 15, 2005

Section 20.13 of the *OHS Regulation* states:

- (1) A professional engineer must certify each thrust-out crane landing platform and certify that the building structure can adequately support loads to be imposed by use of the platform.
- (2) Thrust-out crane landing platform drawings and certification must be available on site when the platform is in place.
- (3) The rated capacity of a thrust-out crane landing platform must be clearly marked on the platform and not be exceeded.
- (3.1) Control measures acceptable to the Board must be implemented to ensure all loads placed on a thrust-out crane landing platform**
  - (a) are safely supported, and**
  - (b) can be safely attached to and detached from the rigging.**
- (4) Thrust-out platform decking and supporting members must be designed to safely support any concentrated loads that may be landed.
- (5) Repealed (BC Reg. 420/2004).

This guideline describes the measures the Board considers acceptable under section 20.13(3.1), to ensure all loads placed on a thrust-out crane landing platform are safely supported and can be safely attached to and detached from the rigging.

Under the regulatory amendment to section 20.13(3.1), effective *(insert effective date if amendment is made)* if a person uses control measures as outlined in this guideline, the person will be deemed to be using measures acceptable to the Board. If a person wishes to use a control system not described in this guideline, an application would need to be made to the Board, and the acceptability of that system affirmed in writing by the Board, before such a system is implemented.

Building design and improvements to crane capacity have generally made it impracticable to install thrust-out crane landing platforms that have capacities equal to or greater than the crane capacity. The normal practice has become to use thrust-out crane landing platforms with lower capacity than the crane. Section 20.13(3.1) focuses on ensuring that platforms, whatever their capacity, are safely loaded by implementing appropriate control measures.

To ensure safe operations on the platform, consideration must be given not just to individual loads placed on the platform by the crane. Other considerations include loads manually placed on the platform, combined loads placed manually and by the crane, load distribution and stability, as well as safe access for workers connecting and detaching the rigging from the load. The control measures outlined in this guideline involve work procedures or work procedures combined with engineering controls.

A system of nine control measures acceptable to the Board is outlined below. The effective implementation of the system requires the fulfillment of the responsibilities by the prime contractor and the employer. The guideline provides three options for determining the weights of loads, and

discusses two types of engineering controls that may be used as part of the system to ensure that platforms are not overloaded.

### **Responsibilities of the prime contractor and employers**

The prime contractor, consistent with their responsibilities under section 118 of the *Workers Compensation Act*, is responsible for ensuring that a control system, including appropriate supervision, is in place to prevent thrust-out platforms from being overloaded. That responsibility involves doing everything that is reasonably practicable to establish and maintain the system to ensure worker safety, and ensuring that the activities of employers, workers and other persons at the workplace are coordinated. It is reasonably practicable for the prime contractor to ensure that a control system for thrust-out platforms as described in this guideline is established and maintained.

The employer who arranges for the thrust-out platform to be brought on-site and used must also ensure the safe use of the platform, consistent with their responsibilities under section 115(1) of the *Workers Compensation Act* to protect their workers and any other workers present at the workplace where that employer's work is being carried out. This is typically the formwork contractor.

If another employer wishes to use the thrust-out platform, or if the formwork contractor leaves the site, the ongoing responsibilities of the prime contractor are the key to worker safety, both to ensure the activities of new employers are properly coordinated and that the necessary steps are taken to ensure the safe use of the platform.

### **Control system**

The system for controlling the risks when using thrust-out crane landing platforms includes assigning responsibilities to affected workers, ensuring the rated capacities of platforms are marked and known, ensuring the weights of all loads to be placed on the platform are known, ensuring the platform size is compatible with the loads to be placed on the platform and a system of supervision is in place. The control system will include the following:

- 1. Responsibilities of crane operator:** The crane operator has responsibilities that include ensuring that the weight of any load to be landed on the thrust-out platform does not exceed the platform capacity.
- 2. Responsibilities of riggers:** Riggers are responsible for determining weights of loads to be lifted and communicating the weights to the crane operator, as provided under options A, B or C below. Riggers are to be designated by a responsible authority on-site, and should be qualified to perform their duties by reason of training, education, experience or a combination. Riggers are responsible for ensuring only loads that can be safely attached or detached from the rigging are placed on the platform.
- 3. Ensuring rated capacities of platforms are known:** Each thrust-out landing platform must be clearly marked with its rated capacity in accordance with section 20.13(3) of the *OHS Regulation*. The rated capacities of the thrust-out landing platforms are to be made known to the crane operator, to the rigger, and to any other affected person, such as the worker who is monitoring the accumulated loads on thrust-out platforms. An effective means should be in place to ensure these persons can access the information on the rated capacity without delay.

4. **Ensuring an effective means for determining the weights of loads to be lifted by a crane:** There are three acceptable options in this guideline for determining the weights of loads: A) an administrative option in which a list of expected weights of loads is used, B) a load cell on the crane, and C) use of a load weighing device on-site. These options are explained in more detail at the end of this list of control measures.
5. **Ensuring an effective means for determining the weights of loads to be placed manually on the platform:** The weights of materials or equipment manually placed on the platform will be determined before they are placed. The weights may be determined by calculation, by reference to appropriate documents, or by weighing the load.
6. **Monitoring the total load placed on the platform:** A person will be responsible to ensure cumulative loads placed on the platform do not exceed the rated capacity and that the loads are evenly distributed.
7. **Ensuring there is adequate space on the platform:** The platform area must be sufficient to allow all loads to be placed such that they will be stable. Generally this will require the loads to fit within the periphery of the platform. Riggers must have sufficient room to access rigging points on the load.
8. **Ensuring an effective system of supervision in place:** Supervision is to be provided to ensure the required work procedures are followed.
9. **Ensuring the procedures are made known to all affected workers:** This can be done by posting the written procedures on a bulletin board and advising affected workers of them, or by other effective means. Posted procedures need to be kept in legible condition.

### Options for determining the weights of loads under element #4 of the control system

**A. Administrative option:** For this option to be acceptable to the WCB all the following measures will be in place:

- A list of the weights of items to be placed on the platform will be available.
- The list will include all the equipment, materials, and other items expected to be placed and will provide the weights for each.
- If a garbage box is to be used, the all-up weight of the garbage box will be included in the list. The all-up weight for a garbage box is its dead weight (that is, weight when empty) combined with its rated capacity. For example, if the dead weight of a garbage box is 600 pounds and the garbage box is rated for 4,000 pounds, the list must show the all-up weight for the box, which is 4,600 pounds;
- The list is to be provided to the crane operator, to the rigger, and to any other necessary person, and posted at each platform.
- The rigger is responsible for ensuring the bundled loads are in accordance with the supplied list (number of pieces, size, length, etc.). In the case of loads manually placed on the platform, the person placing the load on the platform is responsible for ensuring bundled loads are in accordance with the supplied list.
- If an item to be lifted is not on the list, the weight must be determined before it is placed on the platform. In the case of lifted loads, the rigger is responsible to determine the weight of the item and communicate the weight to the crane operator. If there are repeat lifts of such an item, the list will be updated to include it. If the rigger does not know the weight of a load or cannot with substantial certainty estimate it, then the load is not to be lifted.

- B. Load cell on the crane:** Under this option, the employer responsible for the crane is to ensure there is an electronic load cell that registers the weight of each load being lifted and displays it to the operator at the controls. Administratively, this is the least complex system, as the crane operator will know the weights directly. There is no need for the rigger to advise the operator of weight information, except when an operator requests an advance estimate before the lift.
- C. Load weighing device on-site:** This option involves the use of a weighing device separate from the crane. The device is to be used whenever the rigger and crane operator do not have advance information on the weight of a load to be lifted. If the weight displayed by the device cannot be directly observed by the crane operator, it is the responsibility of the rigger to ensure that the weight is communicated to the crane operator.

### **Engineering controls for limiting the load placed on a platform by a crane**

Either of the following two engineering controls may be used to help ensure that a single load placed by a crane does not exceed the rated capacity of a thrust-out platform.

- Use of a crane for which the rated capacity at the radius for placing loads on the thrust-out platform does not exceed the rated capacity of the platform.
- Adjustment of overload limit switches to effectively reduce the lifting capability of the crane so that it does not exceed the rated capacity of the thrust-out platform.

If such controls are used, the overall control system must still ensure that the platform is not overloaded in circumstances such as multiple loads placed by a crane on the platform, and manual placement of loads on it. In addition, the platform must have adequate space for loads.