

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

Proposed February 18, 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) Engineering controls or work procedures 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- (5) Repealed (BC Reg. 420/2004).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. It does not address other requirements under section 20.13 of the *OHS Regulation* such as design and engineering certifications, which must be complied with as well.

Before (*effective date to be inserted if regulatory change is made*) the *OHS Regulation* required the employer in all cases to contact the Board to obtain the prior approval of the Board when using a thrust-out crane landing platform that had a lower capacity than that of the crane loading the platform.

Building design and improvements to crane capacity have 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 and therefore the amendment established by section 20.13(3.1) focuses on ensuring the platform, whatever its capacity, can be safely loaded by implementing appropriate control measures. Further, the scope of the regulation has been broadened to include consideration of all potential hazards arising from the use of thrust-out crane landing platforms.

To ensure safe operations on the platform, consideration must be given to the combined loads placed on the platform manually and by the crane, the load distribution and stability, as well as safe access for workers connecting and detaching the rigging from the load.

A system of nine control measures acceptable to the Board is outlined below. The system requires the fulfillment of the responsibilities by the prime contractor as discussed in this guideline. It includes three options for determining the weights of loads, and two types of engineering controls that may be used to ensure the weight of a single load placed on a platform by a crane does not exceed the capacity of the platform.

### Responsibilities of the prime contractor

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 when loads are to be landed on such platforms by a crane. 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 (typically the formwork contractor) 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.

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. Any new employer using the platform is also required to ensure its safe use.

### Control system

The system for controlling the risks when using thrust-out crane landing platforms includes assigning responsibilities to affected workers, ensuring rated loads 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. Fulfillment of responsibilities of crane operator:** The crane operator is responsible for ensuring that the weight of any load to be landed on the thrust-out platform does not exceed the platform capacity.
- 2. Fulfillment of 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 loads 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 on-site:** This can be done by posting the written procedures on a bulletin board and maintaining it in legible condition, or by other effective means.

**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. 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 overload a thrust-out crane landing platform.

- Use of a crane for which the rated capacity at the radius for placing loads on a thrust-out crane landing 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 landing 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.

**Other control systems**

A person who wishes to use a control system not described in this guideline is required to have the acceptability of that system, before it is implemented, affirmed in writing by the Board.