SWP (9) SUSPENDED WORK PLATFORMS (MAN-BASKETS)

The below noted safe work practices for suspended work platforms have been based around BC WSBC OHS Regulations. Always consult the work jurisdiction’s OHS Regulations prior to commencing work with a suspended work platform, as many work jurisdictions have different regulations and guidelines that pertain to their usage.

A “Suspended Work Platform” (otherwise known as a personnel lifting unit or man basket) is a personnel platform which is raised, lowered or held in working position by the hoisting line of a crane or hoist, or is attached to a crane boom. (Workers do not have direct control of the suspended platform – the crane operator does!)

CRANE WORK WITH A SUSPENDED WORK PLATFORM (MAN BASKET) IS CONSIDERED A CRITICAL LIFT.

- Before workers use a platform suspended from a crane, a trial lift must be performed. A trial lift with the unloaded platform, from the location where workers enter the platform to all locations to which workers will be hoisted, must be done prior to placing workers on the platform.
- The purpose of the trial lift is to ensure the integrity of the crane, ground stability and any unforeseen hazards/obstacles. This lift will also determine that all work locations can be reached without contacting obstructions, that all controls function properly, and that the all-up weight indicated on the data plate remains within 50% of the crane or hoist rating throughout the range of intended operation.

NOTE: Trial lifts may need to be repeated if the crane is set up differently from the original position or if there is a change in the original lifting plan.

A Trial Lift will consist of the Operator, crew and/or Supervisory Personnel:

- Ensuring the proper set-up of the crane for the basket (according to the Canadian Standards association)
- Ensuring the man basket is connected to the hook in a safe and proper procedure
- Connecting a suitable test weight (to simulate the work load of the basket) to the basket
- Lift the basket by means of the secondary support 1 metre off the ground to verify integrity of the platform and the secondary support. The procedures should be repeated for the primary support.
- Lifting the basket with test weight through all manoeuvres and positions that the basket will/is to be placed prior to lifting personnel.
- When there is no two-blocking prevention device or warning signal on the crane.

- Prior to each usage, the work platform and its rigging must be inspected by a qualified person. A worker must not be hoisted in a work platform until all deficiencies have been corrected. If broken, bent, or heavily corroded structural
members, or fractured welds or otherwise defective connections are found, the platform must be taken out of service for repair and must be re-certified by a professional engineer. A platform must be re-certified by a professional engineer if structural modifications are made, or components are welded to the structural members of the platform.

- **Workers on a platform suspended from a crane must wear personal fall protection equipment**, including a full body harness and shock-absorbing lanyard (no more than 5ft in length), secured to a designated anchorage point. Single or multiple anchorages must have an ultimate breaking strength of at least 8 kN (1800 lb.) for each lanyard attached.
- **When a work platform is suspended from a crane, workers must follow all related safe work practices and job procedures**: crane operation, rigging, hoisting, and signaling, as well as those related to the work to be done from the platform.
- Tools and materials should be kept at a minimum when in the man basket.
- Do not miss-use suspended platforms – rescue baskets are strictly for rescues!
- Suspended platforms can be incorporated into Emergency Response Plans or Fall Protection Written Work Plans.
- If a suspended work platform is working above or below another or a portion of a suspended work platform, instructions from a professional engineer must be kept readily available on site.

### (A) Design and Construction

- Crane supported work platforms must be designed by a professional engineer. Drawings and specifications must be provided and kept available for the duration of the service life of the platform.
- A specified design live load of not less than 1.1 kN (250 lb) per occupant must be used. If the platform is designed for transporting injured workers, it must be designed for a minimum 3.5 kN (800 lb) capacity.
- A data plate (aka placard) displaying the following information must be permanently affixed to the platform:
  - (a) names of the engineer or other qualified person certifying the platform, and the fabricator of the platform,
  - (b) identification which correlates the platform to the relevant design drawings,
  - (c) date of manufacture,
  - (d) rated capacity,
  - (e) minimum rated capacity required for the crane or hoist,
  - (f) number of occupants for which the platform was designed,
  - (g) all-up weight (weight of platform and rigging plus rated capacity), and
  - (h) a statement that the platform conforms to WCB Standards.
• Crane supported work platforms must be constructed according to drawings and specifications by qualified welders, or welds must be inspected and certified by an engineer.

• Man baskets must be fixed with sufficient numbers of fixed supports for lanyards and be clearly identified.

• Basket guardrails must be able to withstand 225lbs of force in any direction.

• The perimeter of work platforms must have standard guardrails complete with intermediate rail and toe board.

(B) Rigging

• When a fiber, wire rope or chain bridle sling is used to connect a crane supported platform to the hoisting line, each bridle leg must be connected to a master link or shackle in a manner that ensures the load is distributed amongst the bridle legs.

• All supporting hooks or shackles must be equipped with a safety latch, or must be a type that can be closed and locked, to prevent dislodgment. All eyes in fiber or wire rope slings must be fabricated with thimbles.

• The rigging slings and fittings must be permanent attachments to the platform and must not be used for other load lifting purposes.

• Do not use synthetic slings!!

• The design factor for slings carrying persons has gone from 5 to 10! Ensure all rigging and hardware is suitable for using.

(C) Anchorage

Anchorages for workers on platforms suspended from cranes may be above the load hook or on the platform, as outlined below.

• Anchors must have a strength of 1,800lbs.

• A lifeline anchorage above the load hook may consist of an appropriate eye welded to the load block of the crane providing the modification to the block is certified by a professional engineer or approved by the load block manufacturer. A wire rope sling may be connected to the eye on the load block, and lanyards may be snapped onto the lower eye of the sling. Where a single part line is used, lanyards may be snapped onto the hoisting line above the load hook, or onto a sling connected to the hoisting line above the load hook. The anchorage strength requirement applies only to the local attachment, not the overall lifting capacity of the crane or hoist.

• If a platform is suspended from a crane or hoist and anchorages are provided on the platform, an additional safety sling, designed to a safety factor of 10 based on the all-up weight of the occupied platform, must be interposed between the platform (i.e. the master link) and an anchorage above the load hook that will prevent the platform from falling more than 15 cm (6 in.) if the platform becomes dislodged from the hook.
(D) Crane Requirements and Operation

- Folding boom trucks may not be used to suspend man baskets, unless the manufacturers’ manual states/written permission from manufacturer that it can be done.
- There must be a communication system with the operator at all times.
- The all-up weight of the suspended platform must not exceed 50% of the manufacturer’s rated capacity of the crane or hoist at the radius at which the lift will be made.
- A qualified operator must operate the crane or hoist and must remain at the controls while workers occupy the crane supported work platform.
- Crane Operator must not get out of the crane while workers are suspended in a man-basket.
- Cranes must not travel while supporting a platform occupied by workers.
- A secondary hoisting line and rigging should be removed, or set in such a way that it will not tangle or endanger workers on the platform, and prevent safe operation of the crane.
- Boom must be equipped with a failsafe device system and devices to prevent the boom from free falling or unintentional lowering or retracting.
- Platforms must be suspended from cranes having telescoping or fixed booms and from rigging only capable of lowering under power. Use only winches with power down capabilities for suspending work platforms.
- A crane or hoist used to suspend a work platform on the load line must have a device (anti two block) to prevent two-blocking if the equipment has a telescoping boom, or a device to warn the operator of impending two-blocking if the crane has a fixed length boom.
- In the event the crane is carrying out other work where the two-block prevention/warning device has been removed (i.e. conventional pile driving) a special safe job procedure must be developed and followed by the crew, in order for them to continue using the suspended work platform without an two block prevention device. Refer to the Safe Job Procedure in this Manual called *Two Blocking Prevention Procedure for Pile Driving and Similar Operations / Use of a Suspended Work Platform (BC Only)*

- Additional Information – Rescue Baskets:
  - The design load for a rescue man basket must be at least 800lbs.
  - Do not use the rescue man basket for regular work! The rescue baskets have been specifically designed for rescue purposes, not for working.
  - A data plate (aka placard) displaying the following information must be permanently affixed to the platform:
    (a) names of the engineer or other qualified person certifying the platform, and the
fabricator of the platform,
(b) identification which correlates the platform to the relevant design drawings,
(c) date of manufacture,
(d) rated capacity,
(e) minimum rated capacity required for the crane or hoist,
(f) number of occupants for which the platform was designed,
(g) all-up weight (weight of platform and rigging plus rated capacity), and
(h) a statement that the platform conforms to WCB Standards

- Drawings for Rescue Man Baskets must be readily available on site from Supervisory Personnel
- These baskets and their rigging should be inspected daily to ensure they are in good working order in the event of an emergency.