



INFORMATION BULLETIN

Passenger Ropeway Work Carrier and Machine Guarding Safety – Procedure Review

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This information bulletin is being issued by the BC Safety Authority to warn Passenger Ropeway Contractors of potentially unsafe conditions arising from work carrier operations and removal of machine guarding. Two incidents have occurred in the passenger ropeway industry that has prompted the dissemination of this information in the interest of preventing reoccurrences of these dangerous situations.

Work Carrier Safety Incident

Two passenger ropeway maintenance mechanics were conducting routine tower equipment maintenance on a surface t-bar tower from a work carrier. At the tower where the incident took place both mechanics were on the tower head. Once the maintenance tasks were completed the first mechanic detached his lanyard from the tower climbed back onto the work carrier. Then the second mechanic climbed back onto the work carrier and notified the lift operator at the drive station that they were ready for a move to the next tower. The operator requested a confirmation for "power on" from the personnel in the work carrier and the mechanic that was on the radio indicated an "all clear" but did not realize that he forgot to unlatch his fall arrest lanyard from the tower. The lift operator energised the t-bar at the slowest speed and as the work carrier moved away from the tower the mechanic realised his lanyard was still attached to the tower. The mechanic called for a stop but by the time the stop was initiated it was too late and he was pulled out of the work carrier. As the mechanic came out of the work carrier he became entangled with the equipment on the carrier which in turn put a bending force on the carrier to the point where the hanger arm failed. The platform section of the work carrier fell to the ground with the second mechanic who sustained serious non-life threatening injuries from an approximate 6 meter fall. The mechanic who was pulled from the tower was able to unclip his lanyard and climb down to assist his injured co-worker.

Findings and Actions Taken

An investigation undertaken by WorkSafe found that the existing work carrier procedures that were in use by the personnel involved did not require an equipment check. There were no requirements in the procedure to verify that all tools and equipment were clear of the tower or that personnel check one another's equipment prior to requesting "power on" for their next move. As a result the procedures were updated to reflect the following questions added to the lift operator line work log and radio procedures:

- Tools and Rigging Clear?
- Lanyards Clear?
- Crew in lower deck? (as applicable)
- Upper deck in lower position? (as applicable)

In addition the revised procedures require that personnel double check their individual safety condition as well as the safety condition of one another.

A secondary finding of the investigation found that the work carrier involved in the incident was not approved by the manufacturer and nor was the design reviewed by a professional engineer licensed in British Columbia as required by CAN/CSA Z98. As a result, the ski area reviewed all work carriers to determine compliance and took action where necessary.

Machine Guarding Incident

Two passenger ropeway mechanics were conducting a de-icing procedure at the tail drum end of a passenger conveyor. In order to perform this procedure the machine covers had to be removed in order to spray de-icing solution on the belt and equipment. The less experienced mechanic who was involved in the incident noticed some large chunks of ice accumulating on the belt and reached in to remove them while the machine was still running. As a result, his hand was caught in the tail drum and he received a serious fracture to his forearm. The second mechanic who was involved was able to activate an emergency stop to shutdown the conveyor and prevent further injury.

Findings and Actions Taken

An investigation into this incident by WorkSafe is ongoing. Covers that protect this area had to be removed to conduct the work. The ski area involved did hold regular safety meetings where the de-icing procedure were communicated several times and required that at no time could a mechanic place their hands in the area of the moving equipment. The manufacturer's manual indicated that specific localized machine guarding is not supplied; however it stated that local OHS regulations should be consulted to determine guarding requirements.

The above two incidents are unfortunate but they do create opportunities for the entire industry to learn from and take steps prevent future occurrences. BCSA would like to remind passenger ropeway contractors to regularly review their safety policies and procedures that are required to be in place as per CAN/CSA Z98-07 and WorkSafe regulations. All work carrier safety procedures should be developed to reflect a check for equipment and worker safety prior to energising any passenger ropeway or conveyor system. We also remind you that any work carrier in use must meet the current standard so we ask that you review your work carriers for compliance and take the appropriate steps where necessary. Where it is absolutely necessary to remove guarding on energised systems an administrative control must be in place to ensure that safety levels are maintained.

If you have any questions or concerns regarding this information bulletin please do not hesitate to contact your Safety Officer or the undersigned.

A handwritten signature in black ink, appearing to read "Jason Gill".

Jason Gill
Provincial Safety Manager – Passenger Ropeways and Amusement Devices

References:

Safety Standards Act
Elevating Devices Safety Regulation
Safety Standards General Regulation
Safety Standards Act Repeal and Transitional Provisions Regulations

For more information on the British Columbia Safety Authority, please visit our web site at:
www.safetyauthority.ca