



Safety Advice 19-2008 (NZ)

Trainee Line Mechanic - 7 meter fall from tree

Event summary

A work party comprising two line mechanics, one as supervisor, and two trainee line mechanics was engaged in service line HV and LV pole hardware replacement and pole installation, under access permit. At a stage where the major part of the work was completed, more conductor material was needed to fully complete the task. The supervisor handed over charge of the workplace to the second line mechanic with instructions to complete LV connection work and to complete pole bracing earthworks for the newly installed pole, while the supervisor departed the site to pick up the additional conductor material. The second line mechanic (now in charge) and one of the trainees proceeded with the remaining LV connection, and the remaining trainee proceeded with the pole bracing work about 50 meters away. This trainee had not been instructed to carry out any work beyond the pole bracing earthwork; however this trainee completed the assigned task and then on his own initiative decided to clear local tree growth that would obviously intrude on the service line space once the overall job was completed. The line mechanic in charge 50 metres away was unaware of these developments. The trainee proceeded to climb the tree using his pole strap on linemans belt around the cut branch stumps for work positioning, progressively moving the pole strap to other cut stumps as he went. As he leaned out to cut branches from an adjacent tree his work restraint failed, allowing him to fall 7 meters and sustaining a broken tibia, left leg.

This incident had potential for fatal consequences or other permanent serious harm effects.

The trainee was not competent in the tree work activity he undertook on his own initiative.

Investigation findings

The subsequent investigation identified the following key causes:

- Failure to maintain an adequate level of supervision over a trainee line mechanic in terms of situational awareness by the line mechanic temporarily in charge and positive direction of the trainee's work activities;
- Potential pole strap fall restraint failure due to belt shackle and Dee ring roll-out, or pole strap fall from a branch stump anchor point during a work position change. (But note that the fall restraint equipment did not meet the accepted practice for tree work by climbers in terms of the Approved Code of Practice for Safety in Tree Work Part 1: Arboriculture.)

The above case illustrates the potential serious consequences of inadequate trainee supervision.

- Readers are reminded of the importance of closely managing the activities of trainees (SM-EI 1.401 g), including that trainees know and conform to the requirements of SM-EI 1.401 f.i. and ii – obligations on employees regarding work beyond their current competency.
- The EEA Guideline for the Purchase of Harnesses and Lanyards For Use When Climbing and Working on Transmission Towers describes acceptable characteristics of Dee rings and snap hooks. (This June 2002 publication will be reviewed for inclusion of relevant parts into a future revision of the EEA Guide for the Use of Personal Fall Arrest Systems).
- Attached: Employers note to its employees on Dee ring roll-out hazards.

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Employers note to its employees

Hazards using Pole Straps

Potential hazards listed below should be noted in the use of the hooks connecting pole straps to a belt or harness.

Latch may not close or may not lock:

- due to weakened spring
- when caught on clothing
- due to corrosion or other contamination, which prevents free movement
- due to bent latch, which prevents free movement.

Roll-Out may occur:

- on some double acting hooks. A twisted lanyard or pole strap may cause the connecting D-ring to rest on and load the latch. If pressure is accidentally applied on the locking lever, the latch will open and release the connector.

Recommendations

- Before each use hooks should be checked for correct operation
- If hook does not close and lock the mechanism may be partially jammed, bent or the spring weakened. Unless cleaning rectifies the problem the hook should not be used
- Loose clothing should be avoided as it may become entangled in the hook and prevent closure
- Visual check should be made to ensure that the hooks are closed fully and they are not tangled in clothing before entrusting your weight to the belts
- Check, by twisting the connecting device to and fro, that an accidental uncoupling or "roll-out" cannot occur owing to the snap hook latch being depressed by side of the D-ring

Roll out Demonstrated in Photos



The pole strap is twisted so that the "D" attachment can push against the operating latch.



A small amount of pressure is applied allowing the safety latch to open (a twisted strap can exert enough pressure against the operating latch).



The "D" section of the safety belt can now slide out of the safety latch leaving the user of the belt unattached to the structure or tree.