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## Part 39 Tree Care Operations

### Highlights

This Part applies to arboriculture activities that involve pruning, repairing, maintaining or removing trees or cutting brush if a worker works at height and depends on the tree for support.

- Section 793 requires employers to develop and implement safe work practices and procedures. (Section 8 of the *OHS Regulation* requires that the procedures be in writing and available to workers.)
- Section 794 allows workers to use a work positioning system when it is not reasonably practicable to comply with the fall protection requirements of section 139.
- Section 795 requires, at a minimum, that workers using a work-positioning system use a sit harness approved to one of the listed sit harness standards. “Approved” means that the harness meets one of the listed standards and bears the approval or certification mark of a nationally accredited third-party testing organization. A manufacturer’s self-declaration of compliance *is not* acceptable. A full body harness approved to one of the other listed standards *is* acceptable.
- Section 796 allows employers and workers to use knots in place of rope grabs.

### Requirements

#### Section 792 Application

This Part applies to arboriculture activities that involve pruning, repairing, maintaining or removing trees or cutting brush if a worker works at height and depends on the tree for support. For consistency with the fall protection limits of Part 9, Fall Protection, “work at height” means that

- (a) a worker may fall 3 metres or more, or
- (b) a worker falling a lesser distance is subject to an unusual risk of injury.

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Situations involving an “unusual risk of injury” may include work performed above moving water, operating machinery, retaining walls, objects onto which a worker could be impaled, etc. The resulting injury may be worse than an injury from landing on a solid, flat surface.

These criteria and this Part only applies to situations in which the worker depends on the tree for support. This typically involves the use of ropes, connecting hardware, harnesses, and accessories. For workers performing tree care activities out of an elevated work platform or similar equipment, the requirements of Part 9 must be met.

Readers must keep in mind that other requirements of the OHS Code apply to tree care operations, not just this Part. For example:

- (1) connecting components such as carabiners must meet the requirements of subsection 143 and life safety rope must meet the requirements of section 147. The nature of tree care work – seamlessly and constantly switching from work positioning to fall protection to work positioning – requires a high level of safety. These requirements therefore apply even though the worker’s rigging is used as a fall protection system for only brief periods of time during work at height;
- (2) sections 225 through 227 deal with work in and around overhead power lines. The stated safe limit of approach distances must be respected;
- (3) section 234 states requirements for protective headwear. Because of the nature of the work, tree care workers will almost always require headwear that incorporates lateral impact protection. Readers are referred to the explanation to section 234 for a discussion of headwear protection; and
- (4) section 242 deals with the need for employers to ensure that where there is a possibility of injury, a worker wears appropriate hand, arm, leg or body protective equipment. In the case of tree care activities, chain saws are used widely and therefore appropriate chain saw pants need to be worn.

Many other requirements throughout the OHS Code similarly apply to tree care operations.

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## Section 793 Safe work practices

### Subsection 793(1)

An employer is required to develop and implement safe work practices and procedures. Section 8 of the *OHS Regulation* requires that the procedures be in writing and available to workers. More specifically, the safe work practices and procedures must include:

- (a) *an assessment of hazards at the work site* – this hazard assessment is key to performing work safely and is a mandatory requirement of the OHS Code. Employers must assess hazards and then eliminate and control them as required by Part 2. Readers are referred to the explanation of Part 2 for a thorough discussion of what is expected of employers and workers.

Hazards specific to tree care operations that need to be considered in the hazard assessment include:

- (i) condition of the root zone e.g. cracks, lack of root flare, soil mounding;
  - (ii) condition of the tree trunk e.g. cracks, loose bark, swellings or depressions;
  - (iii) condition of the tree crown e.g. lodged branches, dead branches, stinging insects, electrical conductors;
  - (iv) weather-related hazards e.g. ice, snow or wet limbs; and
  - (v) climbing and work site hazards e.g. nearby structures, vehicles and their access to the work area, presence of lawn furniture, bird feeders, satellite dishes and antennas, electrical hazards, poisonous plants, extreme slopes, people in the area.
- (b) *worker training, including hazard recognition* – section 15 of the *OHS Regulation* requires that workers be trained in the safe operation of the equipment they are required to operate. This training must include the following:
    - (i) the selection of appropriate equipment;
    - (ii) the limitations of the equipment
    - (iii) an operator's pre-use inspection;
    - (iv) the use of the equipment;
    - (v) the operator skills required by the manufacturer's specifications for the equipment;
    - (vi) the basic mechanical and maintenance requirements of the equipment;
    - (vii) loading and unloading the equipment if doing so is a job requirement; and

- (viii) the hazards specific to the operation of the equipment at the work site.

Workers must participate in the training and apply it when working. Workers must also be trained to recognize hazards and know what to do about them;

- (c) *work positioning and fall protection* – workers must understand the difference between these two safety systems and the equipment each requires. Work positioning systems support a worker so that the worker’s hands are free when he or she reaches the work position. Fall protection systems either “catch” a worker in mid-air, preventing the worker from contacting a lower surface (fall arrest system), or prevent a worker from reaching an edge from which he or she could fall (travel restraint system); and
- (d) *emergency rescue* – the employer must develop rescue procedures to be used if a worker falls, is suspended by a work positioning system or fall arrest system and needs to be rescued. Readers are referred to the explanation of section 140 for information about emergency rescue, as well as the explanation of Part 7, Emergency Preparedness and Response.

For additional information directly related to safe work procedures, readers are directed to section 9, Work Procedures, of ANSI Standard Z133.1-2006, *American National Standard for Arboricultural Operations – Pruning, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements*. The remainder of the requirements of the Standard are already addressed in the OHS Code and *OHS Regulation*, legislation that takes precedence over the ANSI Standard.

#### For more information

-  ANSI Standard Z133.1-2006, *American National Standard for Arboricultural Operations – Pruning, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements*.
-  Jepson J. *The Tree Climber’s Companion – A Reference and Training Manual for Professional Tree Climbers*, 2<sup>nd</sup> edition. Beaver Tree Publishing, Minnesota; 2000.

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### Subsection 793(2)

The purpose of this requirement is to involve those persons most knowledgeable about the work or processes being assessed, and who will be most affected by whatever actions are taken as a result of the assessment. Directly affected workers often have more insight into a job or task than persons who only observe the completed work.

Involving workers can

- (a) increase the number of persons available to perform assessments, spreading out the work into manageable pieces,
- (b) teach them how to recognize hazards, increasing the likelihood that the hazards will be quickly corrected, and
- (c) increase their awareness of, and involvement in, health and safety issues at the work site.

Workers affected by the hazards identified in the hazard assessment need to know about those hazards and the methods that will be used to control or eliminate the hazards. They are the persons with the greatest potential to be affected by the hazards and they need to know if corrective measures will require them to do something.

## Section 794 Fall protection and work positioning

In instances where a worker must climb into a tree to perform work, it may not be reasonably practicable to comply with the fall protection requirements of section 139. If this is the case, the employer must ensure that a worker uses a work positioning system. Work positioning systems support a worker so that the worker's hands are free when he or she reaches the work position. Fall protection systems either "catch" a worker in mid-air, preventing the worker from contacting a lower surface (fall arrest system), or prevent a worker from reaching an edge from which he or she could fall (travel restraint system).

Work in trees is a strenuous, dynamic activity that involves the worker seamlessly and constantly switching from work positioning to fall protection to work positioning. Most often the worker is using his or her equipment as a work positioning system, with ropes, lanyards and lifelines in tension, limiting fall distances to a minimum.

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## Section 795 Harness standards

### Sit harness

Historically, the tree care industry has relied upon the sit harness or “climbing saddle” as it is known within the industry, as the piece of safety equipment that supports a worker while he or she works at height. A saddle consists of a waist belt with two wide leg loops, and sometimes a support strap that passes under the buttocks. Unlike a full body harness, a saddle does not have any shoulder straps.

Virtually all saddles in North America have been built to the requirements of ANSI Standard A10.14-1991, *Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use*. Although the Standard has been withdrawn by ANSI, its use has set the precedent of what is acceptable for worker protection in work positioning systems during tree care activities. The Standard has also set the basic design requirements of the safety harnesses. Based on this precedent, the OHS Code allows the use of sit harnesses or saddles in work positioning systems during tree care activities for which it is not reasonably practicable to use traditional fall protection equipment. To be acceptable, the sit harness or saddle must be approved to one of the standards listed in subsection 795(1).

### Full body harness

In some cases, workers may choose to use a full body harness rather than a sit harness. Many models of full body harness have the waist belt and leg straps of a sit harness, plus shoulder and chest straps. As a result, a full body harness provides protection that is equal to and often better than that offered by a sit harness or saddle. While the minimum requirement is for an approved sit harness, a worker can use a full body harness and is encouraged to do so. To be acceptable, the full body harness must be approved to one of the listed standards for full body harnesses.

Experience in the province of Quebec suggests that full body harnesses with the appropriate design features can be used during tree care activities. Alberta Employment and Immigration will monitor the Quebec program and initiatives elsewhere in North America that would eventually result in the tree care industry moving towards full body harnesses for all tree climbing activities.

### Approval

Only sit harnesses and full body harnesses approved to one of the listed standards are acceptable. For compliance purposes, the harness must bear the mark or label of a nationally accredited testing organization such as CSA, UL, SEI, etc. as evidence that the harness meets the requirements of the listed standard. Without this mark or

label, the harness is unacceptable even if the manufacturer's label and product literature states that the harness complies with one of the referenced standards.

#### Subsection 795(1)(a)

NFPA Standard 1983, *Standard on Fire Service Life Safety Rope and System Components*, 2006 edition, specifies minimum design, performance, testing, and certification requirements for new life safety rope and new system components including escape rope, water rescue throwlines, life safety harnesses, belts, and auxiliary equipment used for rescue and training by the fire service or similar emergency service organizations.

The Standard defines a Class II life safety harness as a harness that fastens around the waist and around the thighs or under the buttocks and is designed for rescue with a design load of 2.67 kilonewtons (600 pounds-force). This is a sit harness or saddle.

A Class III life safety harness fastens around the waist, around the thighs or under the buttocks, and over the shoulders. The harness is designed for rescue with a design load of 2.67 kilonewtons (600 pounds-force). This is a full body harness.

#### Subsection 795(1)(b)

EN Standard 813: 1997, *Personal protective equipment for prevention of falls from a height – Sit harnesses*, specifies requirements, testing, marking and instructions for use of sit harnesses for use in work positioning and restraint systems where a low point of attachment is required. The Standard states that sit harnesses are not suitable for fall arrest purposes.

A sit harness is defined as an arrangement of straps, fittings and buckles or other elements in the form of a waist belt with a low attachment element and connecting support encircling each leg suitably arranged to support the body of a conscious person in a sitting position. Sit harnesses may be fitted with shoulder straps and/or may be incorporated into a garment.

#### Subsection 795(1)(c)

CSA Standard CAN/CSA-Z259.10-06, *Full Body Harnesses*, covers full body harnesses for use as body supports in personal fall arrest systems and in other work situations that involve the risk of falling. The Standard does not stipulate designs for full body harnesses, except insofar as design limitations are necessary to help ensure safe and durable service. The Standard does not include harnesses for use by firefighters or for use in recreational situations such as mountaineering.

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### Subsection 795(1)(d)

ANSI Standard Z359.1-2007, *Safety requirements for personal fall arrest systems, subsystems and components*, specifies requirements for the performance, design, marking, qualifications, instructions, training, inspection, use, maintenance and removal from service of connectors, full body harnesses, lanyards, energy absorbers, anchorage connectors, fall arresters, vertical lifelines, and self-retracting lanyards comprising personal fall arrest systems for users within the capacity range of 59 to 140 kilograms (130 to 310 pounds). In terms of harness types, the Standard only specifies requirements for full body harnesses.

### Subsection 795(1)(e)

EN Standard 361: 2007, *Personal protective equipment against falls from a height – Full body harnesses*, specifies the requirements, test methods, marking, information supplied by the manufacturer and packaging for full body harnesses. Other types of body support, specified in other European Standards e.g. EN358, EN813 or EN1497, may be incorporated into the full body harness.

The full body harness may comprise straps, fittings, buckles or other elements, suitably arranged and assembled to support the whole body of a person and to restrain the wearer during a fall and after the arrest of a fall.

### Subsection 795(2)

The requirement that a harness be approved to one of the listed standards does not apply to sit harnesses and full body harnesses in use in tree care activities prior to April 30, 2004, the effective date of the first edition of the OHS Code.

## Section 796 Knot exemption

Almost every aspect of tree climbing and tree work involves the use of a rope. To use the rope properly and safely, workers must know how to tie and set a variety of knots and sliding hitches. Sliding or friction hitches are used by workers to ascend and descend trees, and as a belay device. Sliding hitches act as a type of rope grab, sliding along a rope. Commonly used sliding hitches include Blake's Hitch, the Taughtline Hitch, and a Prusik knot used with a Prusik sling.

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Section 150.3 restricts the use of Prusik and similar sliding hitch knots to competent rescue or emergency services personnel, or in an emergency to a worker trained in its use and limitations. Reflecting the extent to which tree care activities rely on knots and ropes, and the fact that tree care workers are competent in the use of these knots, section 150.3 does not apply to tree care operations.