

**Some challenge course vendors have said that the staff are required to wear a full body harness. The following explains why that is not true in most instances**

### **OSHA and COPE/Climbing**

The OSHA 29 CFR 1910 regulations detail **general industry safety regulations** and apply to most worksites. The OSHA 29 CFR 1926 standards focus on the **construction industry**.

ASTM 2291 20.1 says

Fall protection must meet OSHA 29 CFR 1926 502 d

The following is an explanation of OSHA and how they relate to our COPE and Climbing programs.

In prior years, a few incidents and deaths occurred at aerial adventure parks and zip line courses throughout the country. None of them were at Boy Scout facilities.

In March of 2016, OSHA published a “Protecting Zip Line Workers” flyer. It was terribly written and wrong.

In August of 2016, after input from the industry (including the BSA), they updated it and it is available at <https://www.osha.gov/Publications/OSHA3845.pdf>

There is really nothing new or different as long as you have been doing things properly all along.

#### **Here is the important thing:**

Your staff must always be attached so that they cannot fall from their work area whether it is a small take-off platform, or it is a landing platform. Since your attachment prevents you from falling, this is called **Fall Restraint**.

When using a tether or lanyard, a seat harness with an attachment at the waist is allowed when you cannot fall. OSHA calls it a “body belt.”

If you have the chance to fall up to 2 feet then you must use a full body harness with a sternal (front of the chest) attachment point. OSHA calls this a “body Harness.” Because you can fall, this is called **Fall Arrest**.

If you have the chance to fall more than 2 feet then you must use a full body Fall Arrest harness with a dorsal or rear (between the shoulder blades) attachment point. You cannot belay with this harness.

This is also called **Fall Arrest**. There is no chance for self-rescue. This is for other industries, (roofers, steel workers) not ours.

Our normal BSA programs should not put staff in the position to require a dorsal attachment.

Make sure that your tether or lanyard is short enough that there is no possibility of a fall off the work area.

Other acceptable safety techniques are:

1. Guardrails. The top rail must be at least 42" above the walking surface and have mid-rails between the top rail and the working surface. Well-designed climbing towers may already have guardrails on working surfaces.
2. Safety Nets. Safety nets should be positioned to adequately protect workers from injury if they fall. And to allow prompt retrieval of the worker from the net following a fall.
3. Travel Restraint Systems: When working on elevated work platforms with unprotected edges, these systems limit the travel of the worker to eliminate the possibility of falling over the edge of the platform. Employing travel restraint systems may allow the use of seat harnesses which are currently in common use by staff and participants at camps.
4. Personal Fall Protection System: When it is not feasible to use travel restraint systems, personal fall protection systems may be used. Full body harnesses are required. When the free fall potential is limited to 2' or less, the harness may be connected to the sternum attachment on the harness. This still allows the worker to self-rescue in the event of a fall.
5. Personal Fall Arrest System: In rare cases, facility design or operation may not allow free falls to be limited to 2' or less. In these cases, the best course of action is to re-design the facility or operations so that personal fall protection systems or travel restraint systems can be used. When re-design is not feasible, personal fall arrest systems must be used with a dorsal connection to a full body harness. The

free fall potential must be limited to 6' or less, the maximum deceleration distance must be limited to 3.5' or less, and the maximum force on the worker must be limited to 1800# or less. The dorsal attachment on the full body harness eliminates self-rescue in the event of a fall.

The mention of the dorsal attachment is for full body "fall arrest" harnesses. Those are used by people who are standing on a surface (possibly roofers or workers in a bucket or lift). It is designed to catch them (arrest them) if they fall. They have no "positioning" capabilities. They are not designed for our programs or staff. They are not designed for self-rescue. They are not designed for belaying.

Because of our Job duties, we must use a "fall restraint" and "positioning harness". "Fall restraint" would be a tether that prevents a worker from walking or falling off a zip platform (or any other height) and that can be attached to a seat harness.

We use the positioning points of a harness when we attach to rappel or climb. Some harnesses have a central waist attachment point for that. In addition, some harnesses also have positing rings on the right and left side of the waist (such as the ones we use for spar pole climbing.)

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<b>Carabiners for staff use</b>
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**OSHA standards require that staff carabiners in their Fall Protection System must be auto locking carabiners. Non-Locking and screw gate carabiners do not meet this standard for staff use.**

OSHA 1910.140 Personal Fall Protection Systems

(b) Definitions

**Carabiner** means a connector generally comprised of a trapezoidal or oval shaped body with a closed gate or similar arrangement that may be opened to attach another object and, when released, automatically closes to retain the object.

**Competent person** means a person who is capable of identifying existing and predictable hazards in any personal fall protection system or any component of it, as well as in their application and uses with related equipment, and who has authorization to take prompt, corrective action to eliminate the identified hazards

**Qualified person** describes a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

Snaphooks are a larger version of a carabiner designed to be clipped onto metal structure like a radio tower. Some commercially sewn lanyards are now using snaphooks.



**Snaphook** means a connector comprised of a hook-shaped body with a normally closed gate, or similar arrangement that may be manually opened to permit the hook to receive an object. When released, the snaphook automatically closes to retain the object. Opening a snaphook requires two separate actions. Snaphooks are generally one of two types:

- (i) Automatic-locking type (permitted) with a self-closing and self-locking gate that remains closed and locked until intentionally unlocked and opened for connection or disconnection; and
- (ii) Non-locking type (prohibited) with a self-closing gate that remains closed, but not locked, until intentionally opened for connection or disconnection.

Lanyards/Tethers

C (4) Lanyards and vertical lifelines must have a minimum breaking strength of 5,000 pounds (22.2 kN).

(5) Self-retracting lifelines and lanyards that automatically limit free fall distance to 2 feet (0.61 m) or less must have components capable of sustaining a minimum tensile load of 3,000 pounds (13.3 kN) applied to the device with the lifeline or lanyard in the fully extended position.

(6) A competent person or qualified person must inspect each knot in a lanyard or vertical lifeline to ensure that it meets the requirements of [paragraphs \(c\)\(4\)](#) and [\(5\)](#) of this section before any employee uses the lanyard or lifeline.

**(9) Snaphooks and carabiners must be the automatic locking type that require at least two separate, consecutive movements to open.**

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## ACCT Standards about tethers and lanyards



**ANSI/ACCT 03-2019**

**CHALLENGE COURSES  
AND CANOPY / ZIP LINE TOURS**

**STANDARDS**

*(Revision of ANSI/ACCT 03-2016 Standards)*

### **E.2. Lifeline Systems**

#### **E.2.6.2. Terminations in non-metallic Rope and Webbing**

**E.2.6.2.1. Allowable Techniques:** Lifeline terminations in non-metallic rope and webbing shall be specified by a qualified person and created by a competent person. Acceptable termination methods include stitching, splices, knots, bends, and hitches.

#### **I.3.6. Lanyards**

**I.3.6.1. Strength:** Lanyards shall have a minimum rated breaking strength of 5,000 lbf (22.2 kN) for fall arrest systems and 3,375 lbf (15.0 kN) for personal safety systems. Knots are allowable so long as the strength requirement is met and they are tied by a competent person.

***Explanatory Note to I.3.6.1.** Tying knots in ropes and clipping carabiners into the created loops is considered rope rigging and not manufacturing. However, spliced terminations are considered to be manufactured due to their intended permanent nature.*

**I.3.6.2. Quality Assurance:** Material used for lanyards in life safety systems shall comply with the requirements of DPI Standard I.3.11.1.

**I.3.6.3. Inspection and Evaluation:** Inspection of lanyards shall include an assessment of knots, splicing, and stitching; strength reduction from the termination; condition of the energy (shock) absorber, lanyard material, and metallic components (including built in connectors or buckles); age; and use.

### I.3.11. Rope and Webbing

**I.3.11.1. Performance Requirements:** Rope and webbing used as part of a life safety system shall be of a type specifically designed for life safety use.

**I.3.11.1.1. Dynamic Rope** shall meet UIAA 101 or EN 892 or be approved by the manufacturer for belaying a single person.

**I.3.11.1.2. Low Stretch Rope and Static Rope** shall meet one or more of the following standards: UIAA 107, NFPA 1983, EN1891 (Type A), or CI 1801 or be approved by the manufacturer for belaying a single participant.

**I.3.11.1.3. Webbing (tape)** shall have a minimum rated breaking strength of five times the expected load as determined by a qualified person.

***Explanatory Note to I.3.11.1.3.** References: PIA (Parachute Industry Association) standard for webbing (PIA-W-5625), EN 565 or UIAA 103.*

**I.3.11.1.4. Accessory Cord** for use in an equipment system shall meet either UIAA 102, EN 564, or CI 1803, and be compatible with other system components, AND shall meet the system performance requirements in which it is employed.

**I.3.11.2. Inspection and Evaluation:** Inspection shall include assessment of rope or cordage integrity with consideration given to wear, cuts, discoloration, or glazing; stiffness, softness, or inconsistency; change in diameter or bend radius; unknown or suspect history; age; and use.

A good commercially sewn lanyard will meet these standards.

Static Rope and Multiline must meet CI (Cordage Institute) 1801

#### Tied Lanyards

Must be tied and inspected by a competent person as noted above

#### Spliced Lanyards

Splicing assumes responsibility. Whomever splices the lanyard is now the manufacturer of the lanyard.

**During a COPE or Climbing activity, is a volunteer scouter required to follow OSHA even if they aren't getting paid.**

Yes, our staff (whether volunteer or paid) are acting in the capacity of a supervisory leadership role and must follow OSHA standards for employees.