

**Title:** Fall Protection Program – S08  
**Date:** August 2016  
**Approval:** Ryan Lavoie, Risk Manager

### **1.0 Purpose**

Mount Snow is dedicated to the protection of its staff from on-the-job injuries and has developed a Fall Protection Program to enhance the health and safety of our staff. The purpose of this program is to ensure staff are trained in understanding when fall protection requirements may be necessary and are proficient in the skills and equipment necessary for working safely at heights.

### **2.0 Scope and Applicability**

This program is intended for those employees whose job requires them to work at heights using scaffolding, aerial work platforms, fixed ladders, or any walking/working surface with an unprotected side or edge. The departments affected include but are not limited to: Lift Operations, Lift Maintenance, Ski Patrol, Facilities Maintenance, Building Electrical, and Lodging Maintenance.

Each department head is responsible for ensuring that members of his/her staff are trained before climbing or working at heights.

### **3.0 Reference**

This Fall Protection Program is intended to comply with OSHA Standard 29 CFR 1926 Subpart M Fall Protection, 29 CFR 1926 Subpart L Scaffolds, 29 CFR 1910 Subpart D Walking-Working Surfaces, and 29 CFR 1910 Subpart F Powered Platforms, Manlifts, and Vehicle Mounted Work Platforms.

This program is designed to enable affected staff and management to recognize fall hazards and establish the procedures that are to be followed in order to prevent falls. Each staff member required to perform work at heights will be trained accordingly in regards to fall protection and their applications. All staff shall strictly adhere to the procedures described herein, except when the procedure would not be effective and could expose them to a greater hazard. If so, the staff member should not proceed with the task and immediately notify the team leader/supervisor/manager of the concern so it may be addressed.

### **4.0 Policy Statement**

Mount Snow strives to provide a place of employment that is free from recognized hazards that cause or are likely to cause death or serious physical harm to employees or the public. This can be accomplished through proper training and education of its staff and by eliminating hazards as possible from the jobsite.

It is the policy of Mount Snow to require that an employee be protected from falling when working on a surface that has an unprotected side or edge. The general industry regulation requires fall protection when working at heights 4 feet or more above an adjacent floor or ground level (29 CFR 1910). The construction regulation requires fall protection when working at heights 6 feet or more above an adjacent floor or ground level (29 CFR 1926). It is the responsibility of the manager to determine which standard applies to the task/project.

In turn, all Mount Snow employees who are subject to working at heights for their job, including those who must climb fixed ladders, are provided with some form of fall protection as defined in 29 CFR 1910 or 29 CFR 1926.

Employees are expected to follow all safety rules and procedures as described in this program and other related programs of Mount Snow.

## **5.0 Specific Responsibilities**

### **5.1 Program Manager**

It is the responsibility of the Safety Committee and Risk Manager to maintain this program.

Any changes to this Fall Protection Program shall be reviewed by the Safety Committee and approved by the Risk Manager.

### **5.2 Department Manager**

Each department manager is responsible for obtaining all fall protection equipment for use within their department and ensuring that staff receives the proper training. The training, and its documentation, should occur prior to their working at heights.

The department manager is responsible for coordinating training of staff with either the Lift Maintenance Manager or the Facilities Manager or his or her designee.

Any questions shall be directed to the Lift Maintenance Manager, Facilities Manager, or the Risk Manager.

### **5.3 Department Supervisors**

Supervisors of staff using fall protection systems shall have thorough knowledge of this program and understand the associated procedures, work practices, and fall protection options.

It is the responsibility of these supervisors to confirm that all employees working at heights or climbing fixed ladders have received appropriate training prior to performing any task requiring fall protection and are following appropriate fall protection procedures.

Finally, supervisors will confirm that all department fall protection equipment has been properly inspected and maintained as described by the manufacturer and that damaged or defective equipment is tagged out and removed from service.

#### **5.4 Employees**

Employees have the primary responsibility for proper care, use and inspection of their assigned fall protection equipment. Employees are required to always use good judgment and comply with safety policies and training. Employees are expected to immediately communicate any safety deficiencies or concerns to their supervisor.

Upon completion of the training program, it is the employees' responsibility to comply with all procedures and rules as described herein.

#### **5.5 Competent Person**

The supervisor, or an assignee by the Risk Manager or Department Director is designated as the competent person. OSHA defines a competent person as:

1. A person who is capable of identifying existing and predictable hazards in the surroundings or identifying working conditions which are hazardous or dangerous to employees (and)
2. A person who has authorization to take prompt corrective measures to eliminate the above.

The competent person will be responsible for training staff affected by this program and will cover the following topics:

- The nature of the fall hazards in the work area;
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
- The use and operation of guardrail systems, personal fall arrest systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used;
- The role of each employee in the safety monitoring system when this system is used;
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs;
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection;
- The role of employees in fall protection plans.

## 6.0 General Provisions

Fall protection training shall be conducted by the Lift Maintenance Manager, Facilities Manager, or his/her designee who is knowledgeable of and familiar with fall protection systems, pertinent manufacturer specifications and the type of fall protection application being trained.

### Requirements:

- Employees working at heights as described in section 4.0, must have fall protection training prior to working at heights.
- Personnel must read and sign receipt of this document and be familiar with the user instruction manuals for fall protection equipment including: harnesses, lanyards, self-retracting life lines, roof anchors, and any other equipment used in a personal fall arrest system.
- All equipment shall be properly inspected before use each day to determine whether it is in proper working order and free of damage or defect.
- Lanyards shall be protected against being cut, burned, or abraded.
- Employees must first inspect the work area in order to eliminate or control hazards prior to beginning work (i.e. holes, sharp edges, electrical, and similar).
- It is preferred to have a minimum of two employees present when using fall protection systems, however, in the event this is not practical or in the event of an emergency, the employee using a personal fall arrest system must be equipped with a two-way radio and must initiate a check-in system prior to beginning work at heights. The worker must notify another person of the location which they are working and expected duration of the work.
- While climbing or transitioning to a work surface of a different level, staff must maintain three points of contact at all times (this includes climbing ladders).
- 100% tie off must be maintained at all times while working at heights as described herein.
- A staff member who climbs tower ladders shall wear a full-body harness equipped with appropriate lanyards or attachments as means to maintain 100% tie off to the fixed ladder.
- All fall protection harnesses should be equipped with a pair of Relief Step Safety Devices to help prevent suspension trauma in the event of a fall.
- Personal protective equipment appropriate for the nature of work shall be used by all employees on the job site.
- Work boots with rubber soles are required when working at heights.

### Recommended:

- Gloves
- Tool belt
- More frequent breaks if hot or inclement weather

**Prohibited:**

- Leaving tools, supplies, garbage uncontained/unsecured in the work site.
- Use of personal fall protection equipment for hoisting of any kind.
- Using any equipment outside its intended use.

**6.1 Fall Protection Systems**

One of the following systems must be in place whenever an employee is exposed to a fall of four feet or greater for general industry activities or six feet or greater for construction activities.

**6.2 Guardrail System**

Guardrails may be used to protect staff from a fall from height, as described in section 6.1. This may include the edge of excavations.

Guardrail systems need to meet the following criteria:

- Top-rail is 42 inches, +/- 3 inches above the walking/working level
- Mid-rail is located midway between the top rail and the walking/working level
- It is important to remember that the working level is that level where the work is being done. Someone working on a stepladder next to an edge may raise his/her working surface well above the walking surface.
- Both top and mid-rails should be constructed of materials at least one-quarter inch in thickness or diameter. If wire rope is used for top-rails, it needs to be flagged with a high-visibility material at least every 4 feet and can have no more than 3" of deflection
- The top-rail needs to withstand a force of 200 pounds when applied in any downward or outward direction.
- The mid-rail needs to withstand a force of 150 pounds applied in any downward or outward direction
- The system should be smooth to prevent punctures, lacerations or snagging of clothing
- The ends of the top rail should not overhang the terminal posts, except when such overhang does not present a projection hazard
- When a hoisting area is needed, a chain, gate or removable guardrail section must be placed across the access opening when hoisting operations are not taking place.

**6.3 Personal Fall Arrest System**

The main components to the personal fall arrest system include:

1. Harness
2. Lanyard

3. Designated anchorage point
4. Vertical life line

Personnel using personal fall protection equipment shall employ the "buddy system" by either having another fall protection trained person in the immediate vicinity or by establishing a check-in system via two-way radio prior to working at height.

Personal fall arrest systems need to be inspected prior to each use and damaged or deteriorated components tagged out, removed from service, and given to your supervisor. The employee will inspect the entire personal fall arrest system prior to use each day. The visual inspection of a personal fall arrest system will also follow the manufacturer's recommendations.

Reference 6.6 Equipment Inspection for an example of a complete inspection.

Any personal fall arrest system that was subjected to a fall needs to be tagged out and removed from service immediately and given to the Risk Manager.

#### **6.4 Personal Fall Arrest System Requirements**

The following are requirements regarding the main components of a personal fall arrest system:

##### *Harness*

- Full body harness is required. The use of body belts is prohibited.
- The attachment point of the body harness is the center D-ring on the back.
- Harnesses must be equipped with the Relief Step Safety Device (pair) which can be deployed in the event of a fall. Once deployed, the straps should be crossed and used to stand with the opposite foot from point of attachment (device on the right supports the left and vice versa).
- Employees must always tie off at or above the D ring of the harness except when using lanyards 3 feet or less in length.
- Load testing shall not be performed on fall protection equipment.
- When working from aerial lifts or self-propelled work platforms, full-body harnesses must be worn with a shock-absorbing or self-retracting lanyard and must be worn when working from an elevated work platform
  - Reference the Aerial Work Platform program for more information.

##### *Lanyard*

- Only locking snap hooks (locking carabiners) may be used.
- Lanyards need a minimum breaking strength of 5,000 pounds.
- Lanyards may not be clipped back to itself (e.g. around a post and clipped back onto the lanyard) unless specifically designed to do so.
- Lanyards which go over harp edged structures can reduce breaking

strength by 70% therefore; chafing pads or abrasion resistant straps must be used around sharp edged structures to prevent cutting action against safety lanyards or lifelines.

#### *Designated Anchorage Point*

Secure anchor points are the most critical component when employees must use fall arrest equipment. Some buildings may have existing structures (e.g., steel beams that may meet the criteria for a secure anchor point). Other work locations may require the installation of a temporary or permanent anchor. As a minimum, the following criteria must be considered for each type of anchor point:

- Structure must be sound and the anchorage must be capable of withstanding a 5000 lb. per employee attached.
- Structure/anchor must be easily accessible to avoid fall hazards during hook up.
- Structures used as anchor points must be at the worker's shoulder level or higher to limit free fall and prevent contact with any lower level (exception – when self-retracting lifelines and or 3 foot lanyards are used).
- Choose structures for anchor points that will prevent swing fall hazards. Potentially dangerous "pendulum" like swing falls can result when a worker moves horizontally away from a fixed anchor point and falls. The arc of the swing produces as much energy as a vertical free fall and the hazard of swinging into an obstruction becomes a major factor. Raising the height of the anchor point can reduce the angle of the arc and the force of the swing. Horizontal lifelines can help maintain the attachment point overhead and limit the fall vertically.
- When working from aerial lifts or self-propelled work platforms the point of attachment must be the lift's work platform or designated anchorage point as indicated by the manufacturer. Personnel may not attach lanyards to adjacent poles, structures, or equipment while they are working from the aerial lift.
  - For fall protection requirements while occupying a ski lift work chair, reference the Work Chair standard operating guideline.

#### *Permanent Anchor Requirements*

In addition to all the criteria listed above, the following points must be considered:

- Environmental factors and dissimilarity of materials can degrade exposed anchors.
- Compatibility of permanent anchors with employee's fall arrest equipment.
- Inclusion of permanent anchors into a Preventive Maintenance Program with scheduled annual re-certification.
- Visibly label permanent anchors.
- Anchors must be immediately removed from service and re-certified if subjected to fall arrest forces.

#### Reusable Temporary Anchors:

- Reusable temporary roof anchors must be installed and used following the manufacturer's installation guidelines.
- Roof anchors must be compatible with employee's fall arrest equipment.
- Roof anchors must be removed from service at the completion of the job and inspected prior to reuse following the manufacturer's inspection guidelines.
- Roof anchors must be immediately removed from service and disposed of if subjected to fall arrest forces.

#### *Vertical Life Lines*

- If vertical lifelines are used, each employee will be attached to a separate lifeline.
- Lifelines need to be protected against being cut or abraded.

### **6.5 Fall Protection Equipment**

Before the equipment is used, staff shall be trained in the limitations of the fall protection equipment; proper anchoring and tie-of techniques, including determination of elongation and deceleration distance of a personal fall arrest system; methods of use; and inspection and storage of the system. Careless or improper use of the equipment can result in serious injury or death. Staff should also be aware of the reduction in strength caused by certain tie-offs (such as using knots, tying around sharp edges, etc.) when using a personal fall arrest system.

### **6.6 Equipment Inspection**

All fall protection equipment shall be inspected before each use in accordance with the manufacturer's instructions. The following is general guidance for the inspection of this equipment.

#### **Harness Inspection**

##### Webbing:

Inspect the entire surface of webbing for damage. Beginning at one end, bend the webbing in an inverted "U". Holding the body side of the belt toward you, grasp the belt with your hands six to eight inches apart. This surface tension makes the damaged fibers or cuts easier to see. Watch for frayed edges, broken fibers, pulled stitches, cuts, burns, and chemical damage.

##### "D" Rings/Back Pads:

Check "D" rings for distortion, cracks, breaks, and rough or sharp edges. The "D" ring should pivot freely. "D" ring back pads should also be inspected for damage.



**Attachment of Buckles:**

Note any unusual wear, frayed or cut fiber, or distortion of the buckles.

**Tongue/Grommet:**

The tongue receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted or broken grommets. The webbing should not have any additional punched holes.

**Tongue Buckle:**

Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. The roller should turn freely on the frame. Check for distortion or sharp edges.

**Friction and Mating Buckles:**

Inspect the buckle for distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment points of the center bar.

**Lanyard Inspection****Carabiner:**

Inspect closely for hook and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should seat into the nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly close the keeper. Keeper locks must prevent the keeper from opening when the keeper closes.

**Thimbles:**

The thimble must be firmly seated in the eye of the splice, and splice should have no loose or cut strands. The edges of the thimble must be free of sharp edges, distortion, or cracks.

**Web Lanyard:**

While bending the webbing over a curved surface such as a pipe, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Examine the webbing for swelling, discoloration, cracks, or burns. Observe closely for any breaks in the stitching.

**Rope Lanyard:**

Rotation of the rope lanyard while inspecting from end to end will bring to light any fuzzy, worn, broken or cut fibers. Weakened areas from extreme loads will appear as a noticeable change from the original diameter. The rope diameter should be uniform throughout, following a short break-in period. Make sure the rope has no knots tied in it. Knots can reduce the strength of the rope by up to 60%.

**Shock-absorbing Lanyard:**

Shock-absorbing lanyards should be examined as a web lanyard. However, also look for signs of deployment. If the lanyard shows signs of having been put under load (e.g. torn out stitching), remove it from service.

## **7.0 Employee Information and Training**

Each employee who may be exposed to fall hazards will be trained in:

- How to identify fall hazards in the work area
- Erecting, maintaining, disassembling and inspecting fall protection systems
- The use and operation of the fall protection systems
- The role of employees in fall protection plans
- What rescue procedures to follow in case of a fall
- An overview of the OSHA fall protection standards

A training record will be maintained for each employee. The record will contain the name of the employee trained, date of training, and the signature of the person who conducted the training.

Retraining will be done if there is a change in the fall protection system being used, revision to the Fall Protection Program, or if an employee's actions demonstrate that the employee has not retained the understanding or skills important to fall protection.

### **7.1 Training Process**

Fall protection training will typically consist of classroom and hands-on training.

The classroom training shall consist of information contained in this program as well as, any special considerations on the property or best management practices to be used with any existing fall protection systems.

Hands-on training may consist of climbing lift towers, accessing roof tops, or being shown other locations where fall protection will be needed. Hands-on training may also consist of working at heights and an observation by an experienced climber. Hands-on training shall be performed under supervision by the trainer.

Approval to use personal fall protection systems, personal fall arrest systems, and climb will be at the discretion of the trainer and is to be communicated with the employees' manager/supervisor.

## **8.0 Audit and Review**

This plan shall be reviewed by the Safety Committee and Risk Manager on an annual basis. Staff shall be notified and trained on any revisions to this program

## **9.0 Personnel Action**

### **9.1 Enforcement**

Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The team leader,

supervisor, manager, director or Risk Manager, or their designee, reserve the right to issue disciplinary warnings to staff, up to and including termination, for failure to follow the guidelines of this program.

Fall protection records shall be maintained by the department manager, on site for at least 7-years.

## **9.2 Discipline**

As a condition of employment, all Mount Snow employees are required to participate actively in safety programs and follow established health and safety-related policies, procedures, guidelines, instructions, and/or rules. Disciplinary action, in some instances up to and including dismissal, will be taken in cases where it is determined that disregard for safety and health has occurred.

## Appendix A: Fixed Ladders (Ski Lift Towers & Super Polecats)

### Compliance:

Many ladders attached to ski lift towers do not meet the dimensional requirement (16 inches rung width or a 7 inch toe depth) and do not have cages around the ladders as prescribed in 29 CFR 1910.27 due to the increased hazard to riders using the ski lifts as their skis are likely to become entangled in the cage structure. Additionally, the possibility of ice accumulation on the cage creates an unacceptable potential for structural failure. However, as described in paragraphs 1910.27(d)(1)(ii) and (d)5 the employer may provide 100% fall protection during ascent and descent of the ladder in lieu of cages.

This appendix addresses specific activities and hazards associated with climbing fixed ladders of ski lift towers or Super Polecat (fan gun) towers.

### Required

- All staff using personal fall protection equipment engaged in climbing fixed ladders on ski lift towers or super polecat towers must comply with the Fall Protection Program.
  - The requirement for fall protection does not apply when climbing fixed ladders less than 20-feet in length.
  - Fall protection is required when climbing fixed ladders on the Super Polecat towers, based on the need to transition into the basket.
- Staff wearing a harness must ensure that lanyards and tools are secured in a manner to prevent them from dragging on the ground or coming in contact with the snowmobile track or skis (reference Snowmobile Guideline).

### Ascending & Descending

- When ascending or descending a tower, the climber shall alternately clip into a ladder side rail of the ladder or when not appropriate the ladder rung ensuring that he/she is always tied into the ladder and never below the climbers' lanyard D-ring unless an ascension device is being used.
- The LadSafe system (cable and ascender) must be used on all equipped ladders rather than lanyards.
- The climber shall have both hands free of tools or materials when ascending or descending a ladder. Tools shall be transported to the work level and returned to ground level by backpack or hoisted up and down by a hand line.

### Prohibited

- Do not tie-off to the haul rope or any movable object (i.e. chair or grips).
- When climbing ladders, never slide hands along the side rails, always use rungs.
- Do not perform any work on towers during an electrical storm. When lightning is being observed, all staff shall cease working on towers. Work may resume 30-minutes after the last sign of lightning, if the weather conditions are no longer threatening.
- Never perform tower work without being accompanied by another worker or without establishing radio communication with a buddy for check-in.

## **Appendix B: Tower Rescue (Fallen Climber)**

**PURPOSE:** This document explains the plan for rescuing an employee who has fallen from a lift tower.

### **TOWER RESCUE KIT CONTENTS:**

175' Rope with line saver and auto-locking carabiner  
SuperClip with extension pole  
Rescue knife or utility knife with lanyard  
Messenger line  
Auto-locking carabiner

### **DISTRIBUTION OF TOWER RESCUE KITS:**

Rescue, Lift Operations, Lift Maintenance

### **POST FALL:**

- Have the lift stopped (if running) and request lock out (verbal).
- Call for help (winter = Dispatch via radio or ext. 5555, summer = 300 via radio).
  - State the location of the incident (Tower X on Lift Y) and request the Tower Rescue Kit.
  - Request an ambulance as a precaution for suspension trauma
- Ask the employee if they are all right.
  - If they answer, they are conscious. Remind them to deploy their Relief Step Safety Device.
  - If there is no answer, notify dispatch or 300 that the employee is not conscious.

### **RESCUE PROCESS:**

- When the Tower Rescue Kit arrives, the rescuer should visually inspect the equipment/ropes for proper functionality and damage.
- The climber or belayer will then deploy the rope with line saver over the haul rope uphill of the sheave (regardless of the location of the employee) or other appropriate location. Place a twist in the rope if possible.
- The climber then attaches the carabiner to the appropriate point of harness of the fallen employee using the extension pole with the SuperClip on the end. Once the carabiner is hooked to the employee, pull the SuperClip off the carabiner with a quick pull. The carabiner will auto-lock.
- The belayers take up slack. The climber asks, "On belay?" If ready, the belay team answers, "Belay on!" Then climber then tells the belayers, "Cutting!" and the belayers acknowledge with, "Cut Away!"
- The fallen employee's lanyard can now be cut, paying close attention as to not cut the rescue rope. Once the lanyard has been cut, the employee can be belayed down, using the messenger line to guide them if necessary.

- The employee should be evaluated by rescue personnel immediately following the incident.
  - The employee should be kept in a seated position (knees bent and legs towards chest) to allow a gradual return of pooled blood from the lower extremities to the heart/core.
- Advise dispatch or 300 of completion of rescue and status of rescued employee.
- Remove all equipment from the lift/haul rope.
- Double check that the lift can resume operation and remove lock out.
- The fallen employee's harness and lanyard should be placed out of service immediately and turned over to the risk manager.
- Tower Rescue Kit contents will be hung overnight to dry, inspected and repacked by rescue before being placed back into service.