Monarch Mountain
Lift Evacuation Plan
(L.E.P.)

Prepared for: Monarch Mountain

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Purpose:

The L.E.P. is a comprehensive strategy that looks at Monarch Mountain (Monarch) general instructions and implementation in the event of a designated Lift Evacuation Emergency. The idea intended for this L.E.P. is to provide personnel with an organized method for dealing with the lift stoppage Emergency. The L.E.P. will provide Monarch Mountain Management, Ski Patrol and other departments with a description of the role they are required to fulfill. General instruction procedure for L.E.P. procedure follows.

L.E.P. Content:

Lift Evacuation Plan Index

Monarch Mountain Lift Evacuation Plan (L.E.P.)

I. L.E.P. DEFINITIONS AND INSTRUCTIONS

A. Types of Lift Emergencies

1. Lift Emergency -- Any lift stoppage in which a reset is not attained within 10 minutes, and/or injuries have occurred due to lift failure.

2. Level 1 Lift Emergency -- A lift emergency in which no injuries have occurred, but lift is inoperable due to mechanical failure.

3. Level 2 Lift Emergency -- A lift emergency in which injuries have occurred as a result of lift failure and lift is inoperable due to lift failure.

B. Assignment of Lift Evacuation Positions:

1. Evacuation Coordinator -- CEO or Mountain Operations Director
2. Site Commander – Ski Patrol Director, Ski Patrol Manager, or Ski Patrol Supervisor
3. Recorder – Ski Patrol Dispatch, or other personnel if dispatch is busy with other duties
4. Evac Team Leaders -- Patrollers or other department personnel trained in lift evacuation and as qualified climbers
5. Evac Team Members -- Use patrol without sacrificing coverage and trained personnel from other departments
6. Line Skiers (2) -- Ski the lift line (approx. every 20 minutes)-Ski Patrol/Ski School/Guest Services with a radio
7. Driver(s)—use snowmobiles to position personnel and equipment where needed-Guest Services or Patrol
8. Guest Attendants—Assist guests with navigating terrain (if necessary), and assist with guest relations-Ski School or Guest Services.

C. Instructions for lift evacuation positions:

1. Evacuation Coordinator Instructions- (CEO, Mt Operations Director, or Ski Patrol Director): LOCATION: ADMIN OR PHQ

The Evacuation Coordinator is responsible for the coordination, implementation, and recording of all evacuation procedures. The Evac Coordinator directly oversees the Site Commander, Recorder, Line Skiers, Drivers, and Guest Attendants. The instructions for these positions are listed below to provide the Evac Coordinator with the necessary information, responsibilities, and duties of each team member. Additionally, the Evac Coordinator will be the only official contact with the media or will appoint a liaison from Marketing.

After completion of the manual evacuation, the Evac Coordinator will organize a debriefing with the Lift Dept, Site Commander, Recorder, and Team Leaders to verify and consolidate all information gathered. Afterwards, the Evac Coordinator will then organize a debriefing with all personnel involved with the evacuation, or if necessary, with other Monarch personnel. See Evacuation Coordinator Checklist. (pg. 23)

2. Site Commander Instructions- (Patrol Director, Patrol Manager, or Patrol Supervisor): LOCATION: ON SITE

The Site Commander is responsible for all on scene activities and onsite personnel involved with the lift evacuation. The Site Commander is the liaison between the Lift Evacuation Coordinator and the evacuation site and is responsible for the communication of pertinent information to the Incident Commander. Once the decision has been made for a manual evacuation to proceed, the Site Commander must organize Evacuation Team Leaders, Team Members, and relay information to the Evacuation Coordinator and the Recorder. See Site Commander Checklist. (pg 25)

a. Team leaders have a full body harness and evacuation equipment with them and are on channel 2

b. Teams are in position based on the Lift Evacuation Schematic (See pg. 19-24)

c. All power to lift is shut off, and all three brakes are engaged (lock out-tag out confirmed)

d. Line skiers ski the lift line on continuous laps to inform guests and report special conditions to you.

e. Personnel trained in self evac are given the equipment and permission to do so

f. Team leaders have a team member with a pen and paper to record:
   a. Guest's name
   b. Guest's address and phone number
   c. Time guest was evacuated

3. Recorder Instructions (Dispatch): <u>LOCATION</u>: PHQ

The Recorder should log all communications involving the evacuation including the time the lift was down, the time the patroller went down the line, the time informing the guests was completed, the time the evacuation was begun and completed, time evacuation suspended and lift operation resumed (if applicable), any related messages or calls, and other pertinent information. See Recorder Notes (pg 14-16)

4. Team Leader Instructions: (Ski Patrol or other personnel trained as Team Leaders)

Your job is to lead a team of 2-3 people in evacuating guests from the chairlift. Team Leaders are trained in all aspects of Manual Lift Evacuation.

5. Evacuation Teams- use patrol without sacrificing coverage, then use trained personnel from other departments. Assist in needed aspects of evacuation process. Record names, addresses, and evac times for each guest.

6. Line Skier Instructions: (Ski Patrol or other personnel trained as Line Skiers)

Ski the lift line communicating with guests as to the status of the evacuation and relay info to the Recorder via radio. Make note of special needs of guests. Inspect lift line for obvious failures or deropement. Use a snowmobile to reach the top of lift (approx. every 20 minutes)

7. Driver Instructions: (Ski Patrol or Guest Services) —use snowmobiles to position equipment and personnel as directed by the Site Commander.

8. Qualified Climber: (Ski Patrol) In the event of an emergency or other similar situation where the required use of a ladder climbing device, such as a double clipping lanyard system would delay a rescue or otherwise endanger lives, OSHA would allow climbs for workers complying with the "Qualified Climber" requirements set forth in paragraph 1910.32(b) (5) of OSHA's Walking and Working Surfaces and Personal Fall Protection Proposal, dated April 10, 1990. In addition, the worker would be required to be "tied off" once they reached their work position. Of course, it would incumbent upon the employer to demonstrate that an actual emergency situation existed.

D. Departments Involved in lift emergencies

1. Patrol -- Lead the evacuation process as Evac Coordinator, Site Commander, and Team Leaders.
2. Lifts -- Assist Patrol as team members
3. Ski School -- Assist guests off mountain after evacuation if terrain requires. Ski school may provide line skiers to free patrol for leading evacuation process.
4. Guest Services – Drivers and assist with guest relations after evacuation.
5. Administration--General or Mountain Operations Director may serve as Evacuation Coordinator
6. Other Departments—Use personnel based on training, ability, and needs

II. PROCEDURES FOR LIFT EMERGENCIES AND EVACUATIONS

A. Level 1 Lift Emergency

1. Lift Dept personnel notify patrol dispatch. Lift Dept insure lock-out-tag-out.
2. Patrol dispatch record time of incident and name of reporting party
3. Patrol dispatch notifies:
    a. Patrol Director and/or Manager
    b. Lift Dept Management
    c. Patrol on duty -- hold positions at top of each lift
    d. CEO or Mountain Operations Director
4. Patrol dispatch sends a skier down the line to inform guests of the situation and evaluate their levels of comfort/anxiety after 5 to 10 minutes. Tell skiers to "Remain in the chair and "HOLD ON."
5. After 20 minutes of lift failure, Ski Patrol Director and CEO or Mountain Operations Director in conjunction with Lift Maintenance decide if manual evacuation is appropriate based on the following:
    a. air temp
    b. wind speed
    c. precipitation
    d. number of guests on lift
    e. time of day (see attached: Time Estimates for LEP)
    f. status as reported from lift maintenance
6. If decision is NO to manual evac:
    a. Ski Patrol Director and CEO or Mountain Operations Director re-evaluate every 10 minutes, based on factors listed in step 5 above.
    b. Patrol dispatch send skier down line every 10 minutes to update guests and evaluate their levels of comfort/anxiety.
7. If decision is YES to manual evac:
    a. Ski Patrol Director and CEO or Mountain Operations Director report decision to patrol dispatch.
    b. Patrol dispatch record time decision was made as time manual evac begins. Recorder Notes (pg 14-16)
    c. Patrol dispatch notifies patrol on duty, lift department, guest services, ski school, marketing, in the order as listed. All departments remain on standby, awaiting further instructions.
    d. Ski Patrol Director assigns the following positions and confirms appropriate attached instructions are held by each:
        1. Evac Coordinator
        2. Site Commander
        3. Team Leaders
        4. Team Members
        5. Recorder (Dispatch)
8. Move to instructions on attached forms for each position.

B. Level 2 Lift Emergency

1. Lift Dept personnel notify Ski Patrol Dispatch. Lift Dept insure lock-out tag-out
2. Patrol dispatch record time of incident, name of reporting party, and estimated number of injured guests
3. Patrol dispatch notifies:
    a. Patrol Director and/or Patrol Manager
    b. Lift Dept Management
    c. Patrol on duty
    d. CEO or Mountain Operations Director
    e. Chaffee County Sherriff Dispatch/EMS
    f. Heart of the Rockies Regional Medical Center E.R.
4. Patrol Director and/or Patrol Manager decides if Monarch's Emergency Plan is appropriate:
    Yes -- initiate Emergency Plan, with LEP plan to follow
    No -- dispatch appropriately for injured guests and continue on with LEP

C. Passenger (Manual) Chair Evacuation Procedures

1. Beginning the evacuation

After lock-out tag-out is completed and verified, the team leader who is wearing a full body harness climbs the designated starting tower ladder and places the evacuation rope with rope saver over the haul rope. Meanwhile, one designated Evac Team Member will explain the procedure to each passenger prior to beginning their evacuation from the lift chair. Instruct them to do nothing and that you will talk them through each step. Clear people from under the lift and have passengers drop their poles to side and on the ground, but to leave their skis/snowboard on.

2. Raise the evacuation device

Raise the evac chair keeping it on belay and out of reach of the guests in the chair until team is ready to instruct them on the process. The belaying rescuer and anchor must secure his or her belay because the passenger may unexpectedly place weight on the device despite instructions not to do so.

3. Prepare to transfer guest to the evacuation chair

When the belaying rescuer has raised the evacuation chair up to the lift chair, locked down the belay and is anchored, the passenger is instructed to place the seat of the evac chair is directly under the chairlift seat.

The passenger is then instructed about the safety loop which is permanently fastened to the evac device. With this type of device, the safety loop is placed over the head and arms and around the upper torso. The safety loop is then made snug around the chest by pulling the metal sleeve close to the chest.

After the passenger is ready to transfer their weight to the evacuation chair and the belaying rescuer is in a secure position, the passenger will then be instructed to begin placing their weight onto the evacuation chair.

4. Transferring passenger to evacuation chair and lowering to the ground with the belay device

On a seat type device, the passenger should be instructed to slowly push off the chair keeping one hand on the seat of the chair. As the passenger pushes off, he or she should turn sideways to the chair and keep one hand on the chair until it is above his or her head.

The passenger must be cautioned against allowing anything to be caught during lowering. Particular attention should be made to avoid catching hair, jewelry, or clothing on anything. Careful attention should be made on guests avoiding any entanglement of skis/snowboards. Additional guests in the chair should be instructed to make sure that they are not caught on the evacuee in any way and to *"Hold on to the lift chair"*.

Once the passenger is out of the lift chair the belaying rescuer may begin to slowly lower the passenger to the ground using the belay device. As the passenger touches the ground the second rescuer may move into position to assist. The rescuer should grasp the passenger, turning the skis perpendicular to the fall line. Once the passenger is on the ground and steadied by the rescuer, the tension on the rope is slowly released and the passenger is assisted out of the evac chair. Record all necessary information at this time. If they are beginner skiers on steep terrain, a member of the ski school will help them traverse out to a moderate slope to assure their safe descent to the base area.

Should a passenger be hesitant or refuse to leave the chair, he or she should neither be bypassed or left alone, nor be allowed to interfere with the evacuation procedure. A staff member should remain below the chair to continue to talk to the passenger while the rest of the team continues with evacuation of other passengers.

The passenger should be told that this is the only method by which they can be removed from the lift. They should understand this when they are able to observe others being evacuated, and will usually become convinced they also wish to be evacuated. However, despite your best efforts, a rescuer may be required to go up to the chair to assist.

If a passenger is incapacitated or refuses to leave the chair, a rescuer may be required to go up to the chair and assist. In this situation, Monarch Ski Patrol has a rope ascending system located at PHQ. This will allow a member of

MSP to ascend up to the chair and give the guest the confidence needed and provide assistance with transferring the guest into the evac chair or lowering along side the guest.

5. After passenger is out of the evacuation chair

The evacuation chair is returned to the lift chair for the next guest and the procedure repeated. Work downhill from the starting point. Instructions are to be repeated to each and every passenger as though they did not hear the directions given to previously evacuated passengers.

As each chair has been evacuated, the rope is moved around the chair and over the chair grip and moved down the haul rope using the rope saver to the next chair. Remember to repeat instructions to each and every passenger.

The general condition of each passenger must be assessed immediately to determine whether there is a need for first aid. A separate ground care team should administer any first aid needed so the evacuation may proceed.

At this time, it is essential that personnel record passengers' names, addresses, phone numbers and the time they were evacuated. They are then advised to leave the immediate area. If it is necessary to guide passengers to a trail, they should be grouped out of the way of rescuers until the group can be lead to the trail.

6. After all passengers are on the ground

When all passengers and equipment have been evacuated, a patroller is assigned to sweep the lift line, insure that all passengers have been evacuated, that all passengers have cleared the evacuation area and that all personnel, evacuation ropes, rope gun lines, and other equipment are clear of the lift and removed to an assembly area. When the sweep has been completed, the patroller will report to the Site Commander. The Site Commander will then notify the Evacuation Coordinator that the evacuation is complete.

7. Unusual Terrain Conditions

Between tower 12 and 13 on the Panorama lift there exists a steep rock band for about 150 feet. To assure a safe chair evacuation, the evacuation team will have extra personnel on station for belay and for receiving the evacuated person safely to the ground. Additional terrain considerations are listed on the lift evacuation schematic including where Pioneer crosses over the Garfield Lift. (pg 19-23)

D. Auxiliary Evacuation

In the case of auxiliary evacuation, a patroller may be assigned to the lower terminal for radio communications and to assist the lift crew. A patroller will be sent down the line within five minutes (if possible) to inform all waiting guests of the situation at hand. This patroller will use specific verbiage:

"We are experiencing mechanical difficulties. Be patient and the lift will move soon. Stay in the chair, you will be helped down if necessary."

In addition, a patroller will be assigned to the top terminal to record the time each guest reached the top on each guest's lift pass. This patroller will also assess any cold related injuries, provide first aid if needed. Additionally, patrollers at the top station should be attentive of guest service and remedy any situations where guests are upset. Guests may be directed to the Mountain Operations Director if needed.

Dispatch should log all communications involving the evacuation including the time the lift was down, the time the patroller went down the line, the time informing the guests was completed, the time the evacuation was begun and completed and any related messages or calls. (See Recorder Notes-pgs.14-16)

E. Ladder Rescue

Ladder rescues may be used when a guest misloads a lift or slips out of the chair. On occasion, guests get clothing or other personal articles caught in the chair as they attempt to load or unload, or may slip out of the chair. This leaves the guest hanging from the chair by the caught article. When this happens, the speed of the evacuation is critical.
An evacuation ladder is placed at PHQ. A minimum of three people performs the evacuation. The rescue team will place the ladder hook over the cable uphill from the guest's position and bring it downhill with the ladder angled under the chair. A minimum of one person stays on the ground and stabilizes the ladder, while the other climbs the ladder. Once at the guest level, depending on the guest's individual situation, a few options may be available. First, the guest should be assisted back into the chair if possible. If this cannot be achieved the rescuer should secure the guest, assist in removing their skis, and help the guest climb down the ladder.

F. Suspending Evacuation Due to Lift Becoming Functional

If the lift department repairs the lift during the evacuation and the lift may become functional again, the evacuation shall be terminated, and the lift will be started again. All personnel and rescue equipment shall be removed from the line and the line shall be skied and visually inspected to make sure that all equipment is free of the line. Once clear, this should be called in to dispatch and the lift started again (make sure all evacuation teams are notified and have all called "clear" before restarting lift). Patrollers will be stationed on top of the lift to evaluate passengers for any injuries or distress as they unload.

G. Protocol and Procedures for Self Evacuation

MSP trains on self-evacuation techniques to evac patrollers off a lift that is not functional so that they may assist with the evacuation. Self evac bags are located at the top Patrol buildings of Panorama and Breezeway and will be given to patrollers on the lift by a hand toss if possible or by connecting it to a tag line lowered by the patroller.

1. Establish lock out tag out
2. Gain permission from Patrol Dispatch
3. Remove self-evacuation equipment from patrol vest (if carried) or accept it from line skier
4. Place on webbing harness. Loop self evacuation line securely to chair or cross bar on top of chair.
5. Establish that both ends of self evacuation line touch the ground
6. Use carabiner wrap or munter hitch technique to rappel to the ground
7. Clear evac equipment from chair or cross bar.
8. Assist with evacuation.

H. Crash Pads

Located at PHQ and at the bottom of Panorama are large yellow pads that may be placed under a hanger. This pad may be used to cushion a hanger's fall. Do not encourage the hanger to jump onto the pad. Tell the hanger to "HOLD ON". Lift attendants at Pano should put this out immediately after stopping the lift and calling patrol. The pad located outside PHQ may be rapidly deployed via snowmobile to another base area hanger location if needed.

I. Rope Guns

Located at the top of Breezeway and Panorama is one rope gun at each station. Additionally, two are located at PHQ. These are used for placing twine over the haul line using 22 caliber rounds. Once the twine is over the haul line, an evacuation rope may be tied to the line and pulled up and over the haul line. Use the rope guns on high spans where repetitive tower climbing becomes tiresome and time consuming or simply to expedite the evacuation.

J. Jumar Assistance

Located at PHQ is the Jumar Pack. This pack contains ascending equipment to be used in the event that a guest to be evacuated will not leave the lift chair. Patrollers trained in ascending may Jumar up to the guest in the chair to assist them with leaving the lift chair and being lowered via the evacuation seat or in tandem with a patroller.

III. Communications

A. Radio Communications

All personnel involved with evacuation go to channel 8 for radio communications once instructed to do so.

B. Communications with Guests

All personnel involved with the evacuation must communicate with guests involved in the evacuation and display confidence and reassurance to passengers. Personnel should not place any blame or mention any fault regarding the lift incident. Patrol should check all passengers for any injuries or discomfort and obtain names, addresses, and note the time of evacuation for all passengers evacuated.

Specifically, one member of the rescue team should be in charge of speaking with each guest on the lift as the evacuation is taking place. The following is a list of what should be stated to the guest.

1. Fully explain the process of the evacuation process to the guest before placing any rescue equipment near the guest and instruct anyone else in the chair to avoid any entanglement with the evacuee.
2. They should instruct the guest to drop their poles off to the side.
3. Instruct the guest to not grab the rescue equipment until asked to do so.
4. Raise the seat up to the guest and ask them to place the rescue seat under their chair.
5. Raise the rescue loop over their head and under their arms-then to tighten the loop around them.
6. Wait to leave the chair until the belayer is secure and ready.
7. When the team is ready, the guest should be instructed to slowly transfer weight onto the rescue seat.
8. Watch for any chair swing or entanglement and use one arm to push the chair away from them.
9. Instruct the guest to hold onto the rescue seat and tell them that the patroller on the ground will help them once they near the ground.

IV. Equipment

A. Evacuation Equipment

Self Evacuation Bags contain:

150’ of 6mm cord, 15’ of 1” tubular webbing, and 1 steel locking carabiner.

Manual Evacuation Packs contain:

a. Evacuation seat with passenger safety loop and slider
b. Evacuation rope at least 2x the highest point where rope is designated to be used, according to LEP schematic. 11 mm static rescue rope with rope saver attached to the evacuation seat with a figure 8 knot
c. Mechanical belaying device and 1 locking carabiner.
d. 1" tubular webbing to be used as belay harness
e. Equipment bag clearly marked with designated location title
f. Logbook for the evacuation rope and equipment usage, condition, age, and inspection notes.

B. Equipment locations

5 Full body harnesses, 1 tag line spool, the jumar evac pack, and 2 rope guns are located at PHQ. One Self evacuation bag and one rope gun are located in the top patrol buildings on Breezeway and Panorama respectively.

1. Garfield Evacuation Packs

a. Upper patrol terminal-Top Garfield evac pack and Midway Garfield evac pack
b. Lower lift terminal-Bottom Garfield evac pack

2. Breezeway Evacuation Packs

a. Upper patrol terminal-Top Breezeway evac pack and Midway Breezeway evac pack
b. Lower lift terminal-Bottom Breezeway evac pack

3. Panorama Evacuation Packs

a. Upper patrol terminal-Top Panorama evac pack and Midway Panorama pack
b. Lower lift terminal-Bottom Panorama evac pack

4. Tumbelina Evacuation Packs

a. Upper lift terminal-Top Tumbelina evac pack
b. Top of the Caterpillar Lift House-Midway Tumbelina evac pack
c. Lower lift terminal-Bottom Tumbelina evac pack

5. Pioneer Evacuation Packs

a. Upper lift terminal-Top Pioneer evac pack and Midway Pioneer evac pack
b. Lower lift terminal-Bottom Pioneer evac pack

C. LIFT EVAC INVENTORY

1. GARFIELD

bottom--	midway--	top--
evac seat w/ safety loop	evac seat w/safety loop	evac seat w/ safety loop
140’ static w/ rope saver	130’ static w/rope saver	165’ static w/rope saver
15’-1” webbing harness	15’ -1” webbing harness	15’ -1” webbing harness
steel locking biner	alum locking biner	alum locking biner
alum locking biner	belay device	belay device
belay device	rope log	rope log
rope log		

2. BREEZEWAY

bottom--	midway--	top--
evac seat w/ safety loop	evac seat w/safety loop	evac seat w/safety loop
140’ static w/ rope saver	145’ static w/rope saver	135’ static w/rope saver
15’-1” webbing harness	15’ -1” webbing harness	15’-1” webbing harness
alum locking biner	steel locking biner	alum locking biner
belay device	belay device	belay device
steel locking biner	rope log	rope log
rope log		

3.PANORAMA

bottom--	midway--	top--
evac seat w/ safety loop	evac seat w/safety loop	evac seat w/safety loop
135’ static w/ rope saver	150’ static w/rope saver	150’ static w/rope saver
15’-1” webbing harness	15 ft-1” webbing harness	15’-1” webbing harness
locking biner	locking biner	locking biner
belay device	belay device	belay device
rope log	rope log	rope log

4. TUMBELINA

bottom--	midway--	top--
evac seat w/ safety loop	evac seat w/safety loop	evac seat w/safety loop
140’ static w/ rope saver	100’ static w/rope saver	150’ static w/rope saver
15’-1” webbing harness	15’ webbing harness	15’ -1” webbing harness
locking biner	locking biner	locking biner
belay device	belay device	belay device
rope log	rope log	rope log

5. PIONEER

bottom--	midway--	top--
evac seat w/ safety loop	evac seat w/safety loop	evac seat w/safety loop
185’ static w/ rope saver	180’ static w/rope saver	175’ static w/rope saver
15’-1” webbing harness	15’-1” webbing harness	15’-1” webbing harness
belay device	locking biner	locking biner
locking biner	belay device	belay device
rope log	rope log	rope log

D. NIGHT EVACUATION

In the event of a night evacuation, additional items and considerations must be accounted for. Additional lighting will be needed. Headlamps are available at PHQ in the Director’s office. Patrollers should have headlamps as well in their vest or locker. Flares are located in the hasty packs at the top of lifts and should be placed on the ground near the evacuation area(s). Snowcats or snowmobiles may be used for additional lighting as well. Cold related injuries may be exacerbated by darkness and should be accounted for and patients treated accordingly.

Recorder Notes

Recorder_____

Evacuation Coordinator_____

Incident Site Commander_____

Lift Maintenance on Duty_____

Date _____

Lift_____

Time of lift malfunction _____

Time that the decision was made to evacuate_____

Time that lift power was turned off_____

Time that all three brakes are engaged_____

Time that Lock-out Tag-out confirmed_____

Line Skiers, to ski line in continuous laps (approx. every 20 minutes) _____
_____

Air temp_____
Wind speed_____
Precipitation_____
Number of guests on lift_____
Special Needs/Considerations_____

Team 1 Leader_____
Assistant_____
Assistant_____

Team 2 Leader_____
Assistant_____
Assistant_____

Team 3 Leader_____
Assistant_____
Assistant_____

Team 4 Leader_____
Assistant_____
Assistant_____

Team 5 Leader_____
Assistant_____
Assistant_____

Team 6 Leader_____
Assistant_____
Assistant_____

Time Manual Evac suspended and Lift able to start again (if applicable) _____

Time Teams clear to restart the lift (if applicable)/otherwise: time teams are clear and have completed the evac:

Team 1_____

Team 2_____

Team 3_____

Team 4_____

Team 5_____

Team 6_____

Time that Manual Evac Teams all clear and lift re-started (if applicable) _____

Time Manual Evac Completed_____

Was a Post-Evacuation De-brief conducted with all teams? _____

Date/Time conducted: _____

By Whom: _____
_____
_____
_____
_____

*Please attach sheet including names and signatures of those involved/attending and notes from meeting.

Recorder Notes:

Team 1	# and Time Evacuated	# and Time Evacuated	# and Time Evacuated
# to be Evacuated:			
Members:			
Time Evac. Completed:			
Team 2	# and Time Evacuated	# and Time Evacuated	# and Time Evacuated
# to be Evacuated:			
Members:			
Time Evac. Completed:			
Team 3	# and Time Evacuated	# and Time Evacuated	# and Time Evacuated
# to be Evacuated:			
Members:			
Team 4	# and Time Evacuated	# and Time Evacuated	# and Time Evacuated
# to be Evacuated:			
Members:			
Time Evac. Completed:			
Team 5	# and Time Evacuated	# and Time Evacuated	# and Time Evacuated
# to be Evacuated:			
Members:			
Time Evac. Completed:			
Team 6	# and Time Evacuated	# and Time Evacuated	# and Time Evacuated
# to be Evacuated:			
Members:			
Time Evac. Completed:			

Monarch Mountain
Time Estimates for Lift Evacuation Plan

The following estimates were arrived at by using the following formula:

Total Time Required for Lift Evacuation = $\frac{CxM}{N}$

C= capacity of lift (maximum uphill load)
M= minutes needed to evacuate each person
- (The industry standard of 5 minutes is used for these estimates)
N= total number of evacuation teams (3 per team)

Garfield: Capacity= 118 (59 Chair Max)
148 minutes with 4 evacuation teams
118 minutes with 5 evacuation teams
98 minutes with 6 evacuation teams

Panorama: Capacity= 132 (66 Chair Max)
165 minutes with 4 evacuation teams
132 minutes with 5 evacuation teams
110 minutes with 6 evacuation teams

Breezeway: Capacity= 114 (57 Chair Max)
143 minutes with 4 evacuation teams
114 minutes with 5 evacuation teams
95 minutes with 6 evacuation teams

Tumbelina: Capacity= 58(29 Chair Max)
97 minutes with 3 evacuation teams
73 minutes with 4 evacuation teams
58 minutes with 5 evacuation teams

Quad: Capacity= 204 (102 Chair Max)
170 minutes with 6 evacuation teams
146 minutes with 7 evacuation teams
128 minutes with 8 evacuation teams

REVISED 11/12

Principles of Friction

The purpose of the belay is to apply friction to the evacuation rope to dissipate the energy and rate of the descending load. A certain amount of friction will inherently exist in any rope system and occurs where the rope changes direction or passes directly over a surface. Other contributing factors include: the angle of the rope from the load to the belay, the diameter and type of rope being used, the type of belay device being used, the angle of the rope passing through the belay device, and the weight of the passenger being lowered will all affect the amount of friction in the system.

A small amount of friction occurs where the evacuation rope passes over the haul rope through the rope saver. The point of greatest control however, is where the rope passes through a mechanical belaying device. The amount of friction applied to the system is controlled as the belayer decreases the angle at which the rope passes through the device. The smaller the angle, the slower the rope will pass through the device. The belayer maintains friction by holding onto the rope with the "brake hand" after it passes through the belay device. It is imperative that the evac chair itself is not raised near the guest until a proper belay is in place.

A belayer's stance and position are also important in containing the forces of a fall. If you're not braced securely, the belayer could be pulled by the weight and force of the passenger being lowered and lose control of the rope. A belayer in good position is oriented in the direction of anticipated force and braced to absorb it. This means standing with one foot in front of the other (well braced), in a direct line with the anticipated force. The belayer must remain alert at all times and be proficient at the belaying process necessary for proper rope management and to provide the braking action specific to the belay system in use.

Since the weight of the rescuer and that of the passenger will vary considerably, rescuers will have to use considerable judgment in determining the amount of friction to introduce into the system. If too much friction is used, it will be difficult to lower the passenger, and too little friction can cause the evacuee to rapidly approach the ground. The belayer should not be uphill from where the passenger will reach the ground. This may cause the belayer to be pulled downhill, losing the proper belay stance and possibly losing control of the belay. Instead, the belayer should be off to the side, or even downhill for controlling heavier loads. Additionally, the belay should have some type of anchor. Due to the open terrain conditions under a ski lift, the most likely anchor for the belayer will be another person holding onto the back of the belay harness providing extra weight and stability to the belay.

LIFT EVACUATION SCHEMATIC

This schematic is designed to provide a rapid description of each lift at Monarch Mountain and the factors and approach to be taken in the event of a lift emergency or evacuation.

This overview includes the number and approximate height of towers/haul-cables, prominent landmarks and terrain features, midway evacuation pack locations, compression towers, and objectives for the deployment of evacuation teams.

GARFIELD-(LIFT #1)

Tower 1-Loading area
Tower 2-30 feet
Tower 3-35 feet
Tower 4-35 feet
Tower 5-25 feet-Pioneer crosses overhead-Lower No Name Runout
Tower 6-25 feet- Pioneer crosses overhead-Lower No Name Runout-Compression Tower
Tower 7-25 feet
Tower 8-25 feet-Creek bed ("hot-tub" on lower examiner)
Tower 9-25 feet
Tower 10-25 feet-*Compression Tower*
Tower 11-20 feet-Top of entrance to Lower No Name-Box Closure
Tower 12-30 feet-Exit from Lobo
Tower 13-20 feet
Tower 14-20 feet-Rope closures
Tower 15-20 feet-Rope closures
Tower 16-20 feet-Rope closures
Unloading area/Bull wheel

The highest span on the Garfield Lift is between Tower 12 and 11. The Garfield Midway Evac is sufficient for this span. All Garfield evacuation kits are sufficient for an evacuation on any section of the lift line. The only significant terrain feature under the lift line is the creek bed located at Tower 8.

Teams should be deployed from:

Team 1-Top-Tower 12-Ski in from the top with **Garfield Top Evac Pack**.
Team 2-Tower 12-Tower 9-Ski in from the top with the **Garfield Midway Evac Pack** to tower 12. Option for team members to access starting evac point via snowmobile up Lower No Name
Team 3-Tower 9-Tower 5-Ski in with **Top Pioneer Evac Pack**
Team 4-Tower 5-Tower 1- Snowmobile team up to the Lower No Name run out with the **Bottom Garfield Evac Pack.**
*In the event that more resources are available to create more evacuation teams, allocate personnel based on resources and areas of lift passenger densities.

BREEZEWAY-(LIFT #2)

Tower 1-Loading area
Tower 2-30 feet-Lower Glade
Tower 3-35 feet-Lower Glade
Tower 4-35 feet-Lower Glade-**Highest Span to Tower 5-70 feet**
Tower 5-45 feet-Last Tower on Lower Hall's Alley-**Highest Span from Tower 4-70 feet**
Tower 6-35 feet
Tower 7-35 feet
Tower 8-30 feet-Lowest Clearance on Breeze Haul Line 20 feet
Tower 9-30 feet-High Wind Area-Doc's
Tower 10-25 feet--*Compression Tower*-High Wind Area-Doc's
Tower 11-30 feet
Tower 12-30 feet
Tower 13-30 feet-Top of B's Bash-High Wind Area
Tower 14-20 feet-High Wind Area
Tower 15-25 feet-High Wind Area
Tower 16-Unloading Area/Bull-wheel-High Wind Area

There is a significant high span on the Breezeway Lift to be negotiated between Tower 5 and 4 of 70 feet. The Midway Evac Pack located in the lift shack is longer (145 feet) and should be used for this span. The span between Tower 9 and 10 as well as between tower 14 and 16 can be quite exposed, windy, and cold for anyone stuck in the chair. These guests should be evacuated as quickly, and safely as possible. There are no significant terrain features under the Breezeway Lift.

Teams should be deployed from:

Team 1-Top-Tower 13- Ski in from the top with **Breeze Top Evac Pack.**
Team 2-Tower 13-Tower 10- Ski in from the top with the **Midway Breezeway Evac Pack**.
Team 3-Tower 10-Tower 6- Snowmobile additional team members and **Tumbelina Midway Evac Pack** via Doc's Run.
Team 4-Tower 6-Tower 1- Snowmobile team and **Breeze Bottom Evac Pack** up Lower Hall's Runout or down from the service road if there is too much snow to climb Lower Hall's Alley.

*In the event that more resources are available to create more evacuation teams, allocate personnel based on resources and areas of lift passenger densities.

PANORAMA-(LIFT #3)

Bull-wheel-Bottom Lift House
Tower 1-Loading area
Tower 2-20 feet-End of pit closure
Tower 3-35 feet
Tower 4-35 feet-
Tower 5-35 feet-Tenderfoot
Tower 6-30 feet-Next to Mirage Runout
Tower 7-30 feet-*Compression Tower*
Tower 8-40 feet
Tower 9-35 feet
Tower 10-30 feet
Tower 11-30 feet-*Compression Tower*-Sheer-Rock-O Exit to High Anxiety
Tower 12-40 feet-**Highest span**
Tower 13-35 feet-Top of Cliff-Band-**Highest span**
Tower 14-35 feet
Tower 15-30 feet
Tower 16-30 feet
Tower 17-30 feet
Tower 18-25 feet
Bull wheel-Unloading Area-Top Lift House

There is a significant high span on the Panorama Lift to be negotiated between Tower 12 and 13 of 65 feet. The terrain in this section includes a cliff band that needs to be negotiated as well by rescuers and possibly by guests. Midway and Top Evac Packs located on this lift are long enough (150 feet) to be used for this span.

Teams should be deployed from:

Team 1-Top-Tower 15-Ski in from the top with **Pano Top Evac Pack**.
Team 2-Tower 15-Tower 12-Ski in from the top with **Pioneer Top Evac Pack**.
Team 3-Tower 12-Tower 6-Ski in from the top with the **Pano Midway Evac Pack**. Additional team members may be brought in via snowmobile from the High Anxiety run out.
Team 4-Tower 6-Tower 3- Snowmobile team and **Pano Bottom Evac Pack** up the Mirage run-out.
Team 5-Tower 3-Tower 1-Snowmobile team and **Breeze Bottom Evac Pack** up to Tower 3.

*In the event that more resources are available to create more evacuation teams, allocate personnel based on resources and areas of lift passenger densities.

*If not, enough resources are available for 5 teams, an evacuation with 4 teams is still within acceptable time limits. Team 4 should evac Tower 6-Tower 1.

TUMBELINA-(LIFT #4)

Bull-wheel/Loading area/Bottom Lift House
Tower 1-30 feet
Tower 2-35 feet
Tower 4-25 feet- **Midway Evac**-*Compression Tower*
Tower 5-35 feet-Above Midway Rope Closure
Tower 6-35 feet
Tower 7-35 feet
Tower 8-30 feet
Tower 9-20 feet
Bull-wheel/Unloading Area/Top Lift House

There are no significant high spans or terrain features to be negotiated on the Tumbelina Lift. All Evac Packs located on this lift are long enough (minimum rope length of 115 feet) to be used anywhere on this lift.

Teams should be deployed from:

Team 1-Top-Tower 7-Ski in from the top with **Tumbo Top Evac Pack**.
Team 2- Tower 7-Tower 4-Snowmobile team and **Tumbo Bottom Evac Pack** Up Little Joe to Ski in from the top to Tower 7
Team 3-Tower 4-Tower 1-Snowmobile team to Midway Area, use **Tumbo Midway Evac Pack**.

*In the event that more resources are available to create more evacuation teams, allocate personnel based on resources and areas of lift passenger densities. Any other evac packs from other lifts may be used on any Tumbelina span.

PIONEER-(LIFT #5)

Tower 1- Bull-wheel-Bottom Lift House-Loading area
Tower 2-30 feet
Tower 3-40 feet
Tower 4-60 feet-**Highest Span-70 feet**
Tower 5-70 feet-**Crosses Garfield Lift-Highest Span-70 feet**- *Compression Tower* -Lower No Name Runout
Tower 6-70 feet-**Crosses Garfield Lift- Highest Span-70 feet**
Tower 7-50 feet- **Highest Span-70 feet-** *Compression Tower*
Tower 8-45 feet
Tower 9-35 feet-Clearance Rope Closure
Tower 10-30 feet- Clearance Rope Closure
Tower 11-40 feet-Below Kanonen Service Road- *Compression Tower*
Tower 12-40 feet-Wait's Glades- *Compression Tower*
Tower 13-35 feet-Wait's Glades
Tower 14-40 feet-Below Roundabout
Tower 15-30 feet
Tower 16-30 feet
Bull wheel-Unloading Area-Top Lift House

There is a significant high span on the Pioneer Lift to be negotiated between Tower 3 and 7 of 50-70 feet. Another significant factor to be considered is that the Pioneer Lift crosses over the Garfield lift between Tower 5 and Tower 6 on the Pioneer Lift. Therefore, an evacuation of the Pioneer Lift will include calling last chair on Garfield, assuring lock-out/tag-out of Garfield, and the use of a tag line on the evac chair to maneuver it around the Garfield lift line, towers, and or chairs on ascent and descent. Long tag lines are located in PHQ. The only significant terrain feature on the ground is a cliff band between Towers 8 and 9 that needs to be negotiated by rescuers and possibly guests. All Evac Packs located on this lift are long enough (175 feet Minimum) to be used for any span on this lift.

Due to the increased capacity of the Pioneer Lift, and longer linear length, as many teams as possible should be used for an evacuation on this lift. Taller towers and longer climbing times may require the use of line guns to expedite the rigging of evacuation equipment over the haul line. 4 rope guns are located at PHQ.

Teams should be deployed from:

Team 1-Top-Tower 14-Ski in from the top with **Pioneer Top Evac Pack**
Team 2-Tower 14-Tower 11-Ski in on Roundabout with **Top Garfield Evac Pack**
Team 3-Tower 11-Tower 8-Ski in with the **Garfield Midway Evac Pack**
Team 4-Tower 8-Tower 5-Ski in with the **Pioneer Midway Evac Pack**
Team 5-Tower 5- Tower 3- Access via snowmobile up Lower No Name Runout with personnel and **Pioneer Bottom Evac Pack**
Team 6-Tower 3-Tower 1- Access via snowmobile up Lower No Name Runout with personnel and **Garfield Bottom Evac Pack**

*In the event that more resources are available to create more than 6 evacuation teams, allocate personnel based on resources and areas of lift passenger densities.

EVACUATION COORDINATOR CHECKLIST: **DATE:** _____

Call Sheriff Dispatch at 539-2596. Call the Forest Service at 539-3591. Consider enacting the Emergency Plan.

TIME	COORDINATOR ACTION	NOTES
____	Assign Site Commander_____	
____	Assign Recorder_____	
____	Assign Line Skiers_____	
____	Assign Drivers_____	
____	Assign Guest Attendants_____	
____	Assign Media Liaison_____	
____	Lift Maintenance Personnel_____	
____	GM or VP Mtn Ops _____	
____	Contact Forest Service_____	
____	Contact Tramway_____	

Time decision was made to evacuate: _____ Manual Evac. ☐ Auxiliary ☐ Ladder ☐

Time lift power turned off, all three brakes engaged, Lock Out/Tag Out confirmed: _____

Team I Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team II Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team III Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team IV Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team V Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team VI Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

_____ Time Manual Evacuation Completed
_____ Time all teams and equipment secure
_____ Time/Date Debrief Completed (Use the back side for additional notes.)

SITE COMMANDER CHECKLIST: **DATE:** _____

TIME SITE COMMANDER ACTION

_____ Team leaders have acquired a full body harness from PHQ and rescue personnel are operating on channel 8

_____ Teams/Evac packs are in position based on the Lift Evacuation Schematic (See pg 19-23)

_____ All power to lift is shut off, and all three brakes are engaged /lock out-tag out confirmed

_____ Line skiers ski the lift line on continuous laps to inform guests and report special conditions

_____ _____

_____ Lock out/Tag out has been completed and verified

_____ Personnel trained in self evac are given the equipment and permission to do so (list below)
_____

Time decision was made to evacuate: _____ Manual Evac. ☐ Auxiliary ☐ Ladder ☐

Team I Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team II Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team III Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team IV Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team V Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

Team VI Leader: _____ Assigned Tower Location: _____
Assistant: _____
Assistant: _____ Time team is clear_____

_____ Time Manual Evacuation Completed

_____ Time All Teams Are Clear

(Use the back side for additional notes.)

POST EVACUATION REPORT FORM **Date of Evacuation**: _____

Chair Lift: _____**Number of Guests on the Lift:** _____

Evacuation Coordinator: _____

Site Commander: _____

Recorder_____

Lift Maintenance on Duty: _____

EVACUATION TIME LOG:

Time lift malfunction reported _____

Time that the decision was made to evacuate _____

Time that lift power was turned off _____

Time that all three brakes are engaged _____

Time that Lock-out Tag-out confirmed _____

Line Skiers, to ski line in continuous laps (approx. every 20 minutes) _____
_____

Air temp_____
Wind speed_____
Precipitation_____
Special Needs/Considerations_____

Team 1 Leader_____
Assistant_____
Assistant_____

Team 2 Leader_____
Assistant_____
Assistant_____

Team 3 Leader_____
Assistant_____
Assistant_____

Team 4 Leader_____
Assistant_____
Assistant_____

Team 5 Leader_____
Assistant_____
Assistant_____

Team 6 Leader_____
Assistant_____
Assistant_____

Time Manual Evac suspended and Lift able to start again (if applicable) _____

Time Teams clear to restart the lift (if applicable)/otherwise: time teams are clear and have completed the evac:

Team 1_____

Team 2_____

Team 3_____

Team 4_____

Team 5_____

Team 6_____

Time that Manual Evac Teams all clear and lift re-started (if applicable) _____

Time Manual Evac Completed_____

Was a Post-Evacuation De-brief conducted with all teams? _____

Date/Time conducted: _____

By Whom: _____
_____
_____
_____
_____

*Please attach a log of names and signatures of those involved/attending and notes from meeting.

Check if any guests were injured as a result of the lift malfunction: ☐ YES ☐ NO

If Yes, Incident Reports Numbers Associated with the Evacuation

- **Attach RECORDER NOTES, EVACUATION COORDINATOR CHECKLIST and SITE COMMANDER CHECKLISTS to the end of this report.**

Describe fully any incident or situation occurring during the evacuation:

What went well during the evacuation process?

What could be improved in the Lift Evacuation Process?

Passengers Evacuated

Date:_____ Page___of____ Lift Name_____

#	Time	Chair #	Name	Address	Phone
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Passenger Evacuated

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Passenger Evacuated

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Passenger Evacuated

Date:_____ Page___of____ Lift Name_____

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