Bryce Resort Chair
Lift Evacuation Procedures

I. **Introduction and Purpose:** Bryce Resort Ski Area currently has two chairlifts in operation. This plan provides basic procedures to be followed in the even of failure of one or both chairlifts. These procedures developed by the Ski Patrol and approved by area management, will be followed to the extent feasible to ensure prompt and safe evacuation of any passengers stranded on the chairlift. However, in order to accomplish this goal, deviations from this plan may be authorized, when considered necessary by patrol, maintenance chief of management. If any deviations are authorized, they will be noted and explained by management in the “Chairlift Incident Report”. These procedures are in accordance with the “Lift Evacuation Manual” published by the National Ski Patrol (NSP), National Ski Areas Association (NSAA), and rope procedures/techniques published in “High Angle Rescue Techniques, 3rd Editions” by Tom Vines and Steve Hudson.

II. **Training:** All Ski Patrollers, both volunteer and professional, are required to attend the management sponsored and Bryce NSP administered Lift Evacuation Training and Refresher Clinic(s). This training provides “hands-on” application on the use of both rescue ladders and the rope rescue method. These are the currently accepted lift evacuation methods used at Bryce. The training conducted in June and/or October yearly and at other times upon request from management. This training is required for all Ski Patrollers and Lift Operators, and other employees designated by management. Attendance and participation in this training will be documented by the lead instructor and entered into the Bryce Patrol Lift Evacuation Log and a copy provided to Area Management. All personnel involved with on hill operations (management, ski patrol, ski school, maintenance and lift) are required to read this procedure prior to each ski season.

III. **Decision to Evacuate:** Chairlifts can stop for a variety of reasons, some of which are related to normal operations, others which may require repairs and/or evacuation. It is the sole responsibility of management to determine whether or not to initiate the following chairlift evacuation procedures. It must be kept in mind that leaving a chair by other than normal means is a dangerous operation. Thus, lift evacuation should be the final resort only after all reasonable efforts have been made to get the lift back into operation with either normal or auxiliary systems. Therefore implementing evacuation procedures will occur only when
management takes into weather conditions, temperature, darkness, and available personnel with respect to the time it will take to restart the lift. In the event of a chair derailment, management will normally order an evacuation immediately.

IV. Evacuation Alert: In making a decision for a chair lift evacuation, management will consult with both the Ski Patrol and Lift Personnel to alert all concerned to prepare for an evacuation. An evacuation alert will put all evacuation personnel in a state of readiness to begin an evacuation as soon as possible upon orders from management. Management only may order and “Alert”. An alert, however, will not necessarily lead to an evacuation, but does meant that ski patrollers and lift personnel will be mobilized under the direction of the Ski Patrol Hill Captain, to form chairlift evacuation “teams”.

A. The Ski Patrol Captain will be the Evacuation Leader and will coordinate actions with both management and the Lift Maintenance Chief. During Non-Holiday weekdays, when patrollers are fewer, they may be involved in treating injuries thus either a Management Representative, Maintenance Chief, or Lift Supervisor may assume duties and the Lift Evacuation Leader. Enclosure (1) is a check list the Evacuation Leader should use to prepare for and execute chair evacuation procedures. A copy of this list is located in the chair evacuation closet in the Patrol Ready Room and Hill Captains Log Book.

B. In the event of a mass casualty/triage emergency, management will be prepared to activate the “Bryce Resort Emergency Plan”. Management will also be prepared, at the request of Ski Patrol, to call the local rescue squad for further medical assistance.

C. The Evacuation Leader will assemble all available patrollers and other trained personnel at the Ready Room/Patrol Building. Patrollers on top time will stay in place until otherwise directed.

D. If the public is to be permitted to continue skiing, during either an alert or evacuation, management will designate appropriate skiing areas and the Evacuation Leader will maintain coverage of those areas with a minimum of Ski Patrollers. In such a case, to insure safe and prompt evacuation, management should be prepared to provide are employees, if necessary, for skiing traffic control and should consult with the Evacuation Leader to determine the extent of traffic control warranted.

E. The Evacuation Leader will designate evacuation teams of three people and assign them evacuation tasks as either a ladder or rope evac team. A team leader, preferably a Ski Patroller, will be appointed for each team.

F. If both lifts are inoperative, the Evacuation Leader may also designate a Ski Patroller to be in charge of each lift, thus placing these patrollers in charge of the teams assigned to their lifts.

G. If, in the judgment of management, time is a critical factor, the Evacuation Leader shall deploy the teams and leaders as quickly as possible. If time isn’t critical, evacuation personnel will wait at the assembly area until evacuation is ordered.
H. No team, regardless of location will begin any phase of evacuation of
chairlift occupants without direct, verbal authorizations from the
Evacuation Leader.

I. The Evacuation Leader will dispatch a Ski Patroller to go down the length
of the chairlift line telling the occupants the situation status, and informing
them to remain on the lift and not to remove skis, or throw poles or other
items from chair. This patroller should inquire of each passenger if they
have any special medical or other condition(s) that would require
immediate evacuation. Also management will announce the situation over
the Public Address System, if operating, and instruct stranded skiers with
the same guidance provided above.

J. Management will handle all contact with the press and media regarding
the events surrounding the alert or evacuation. All questions will be
referred to management, and no criticism will be voiced in public by
anyone participating in the alert or evacuation.

V. Actions and Responsibilities:

A. When Chairlift Evacuation is ordered, emergency radio procedures will be
implemented. All nonessential transmissions will stop. The only radio
traffic should be from: (1) Management, (2) Evacuation Leader, (3)
Evacuation Team Leaders and (4) Maintenance Chief. All other personnel
will stay off the air unless responding to a command or query from one of
the four above-mentioned radio users.

B. Once the decision is made to evacuate the chair lift(s), the rescue teams
will move into place with equipment suitable (Evac Bags or ladders) to
perform their assigned task(s). The teams will get up the mountain by best
available means: Lift #1 is operating, snowmobile, snow cat, private
automobile or walk. Snowmobile operation will be coordinated by the
evacuation leader.

C. Lift evacuation equipment is stowed in the large wooden cabinet located
in the Patrol Ready Room Building entrance. The closet contains: (2)
complete evacuation kits, (2) Lift evacuation seats, (1) mechanical
advantage system, (2) safety lines. Ladders are located at both the tops
and bottoms of the lifts.

D. The Evacuation Leader will coordinate with the Lift Maintenance
Supervisor to ensure that all electrical power to the chairlift(s) is
disconnected/locked-out, and that the lift cable safety lock is engaged.
The evacuation of skiers will not commence until these two actions have
been taken. The power and cable will not be reactivated until the
evacuation is completed as determined by the Evacuation Leader.

E. The Evacuation Leader will station at the base of the inoperative lift or in
the area of the Patrol Ready Room if both lifts are down. The leader will
direct the rescue operation, but should avoid getting involved in the
mechanics of the rescue.

F. The team leaders are responsible for the safe and effective performance
and operation of their equipment and personnel while evacuating skiers
from the chairlift(s).
G. After the skiers have been rescue from the chairlifts, if they are capable, they should be directed down the hill to the base lodge area. If they cannot get down the hill on their own or they have a medical problem, call for appropriate transportation (guide, snowmobile, toboggan) and assistance (available ski patroller). If the skier needs immediate medical attention, the ski patroller(s) on the team should render aid until back up assistance arrives. If it is dark with no lights on the slopes the skiers should be advised to stay put until they can be safely assisted down the mountain. The team will obtain the names, ages, sex, injury (if applicable), and chair number of the rescued patron(s). This information is necessary in completing both the Evacuation Leader’s Report and the Chairlift Incident Report. Evacuation Team Leaders should obtain this information prior to the evacuee getting out of the chair. It is also helpful to management in addressing various after incident inquires (see enclosure #2)

H. Management will implement necessary crowd control actions. Bystanders should be encouraged to go to the lodge or elsewhere unless they can be put to work.

I. After all passengers have been rescued, the Evacuation Leader will assure that all rescue equipment is removed from the lifts and then shall advise the ski area manager that the lift evacuation is complete. Only after this action by the Evacuation Leader can efforts be made to put the lift(s) back into operation.

VI. Rescue Techniques:

A. **Ladder Rescue**: Ladders with special hooks have been provided at the top and bottom of both #1 and #2 lifts. The ladders are 24ft long and can be used to reach chairs that are no more than 15ft from the ground. A team of three is required to make a ladder rescue. Ladder rescues should be made moving down the hill from the first loaded chair unloading all the lift chairs the ladder can safely reach.

1. The ladder is placed between two chair seats. It is then positioned on the ground parallel to and directly under the lift cable with the special ladder hooks on the uphill end. There is a correct side and an incorrect side to the ladders and the team must insure that the ladder is placed on the ground correct side up. “**Correct side up**” is with the ladder lying with the cable hook points facing down. One team member braces the bottom end of the ladder with his/her feet while the other two team members raise the hooked end hand over hand up the channels, until it contacts the cable. Team members must wear gloves since exposed flesh may freeze to the ladder in extreme cold weather.

2. Either of the two hooks may be hooked over the cable. The ladder may have been have been twisted slightly to get the hooks to catch properly. The reason for setting up between two chairs is to avoid the possibility of striking a chair occupant with a
toppling ladder. Once the hook is engaged over the cable, the bottom of the ladder can be raised and the whole assembly slid back down the cable to a point just in front of the stranded passenger(s).

3. Once rescue team member ascends the ladder to remove the chair occupant(s) skis and poles while the other two members steady the ladder and receive the skis and poles. Do not drop the skis or poles to the ground. Carry or hand them down to avoid injury to others and loss of the equipment. Warn the skier that his/her footing on the ladder will be slippery. Accordingly, it is recommended the rescue team member assist and steady the skier during their descent by holding their ankles as they step from the chair to the ladder, also hold the chair back during the descent.

4. After the occupants have been removed from one chair, the ladder is unhooked and lowered in a manner that is the reverse of raising it. The ladder is than carried well ahead of the next chair and the procedure repeated.

B. **Rope Rescue:** Bryce currently uses a simple friction lowering system to evacuate patrons from the lift during an evacuation. A mechanical advantage system is available to enable a rescuer to be lifted to a chair during a medical emergency or to lift a heavy or difficult patient from the chair (see section IV, C; “Advanced Rope Rescue”). During the evacuation the patron will keep their equipment on unless removal of equipment is necessary to facilitate a safe extrication. Please remember that the person(s) life is literally in the hands of the rescuer that is on belay.

1. Each of Bryce Resort two “Lift Evac” bags contains the following (Orange Bags):
   a) (1) 200ft Static Kernmantle Rope (white)
   b) (1) Universal sit harness (2nd seat available soon)
   c) (1) Rescue “8” descender
   d) (1) Throw bag with 150ft of avalanche cord
   e) (3) Steel Carabiner
   f) (1) Line saver

2. Mechanical Advantage Bag (system already laced) (Blue Bag):
   a) (1) 200ft Static Kernmantle Rope (orange)
   b) (1) Universal sit harness
   c) (4) Steel Carabiner
   d) (1) Rescue “8” descender
   e) (2) Double steel pulley

3. Other Equipment
   a) (2) Lift Evacuation Seats [located in closet next to bags]
   b) (2) Rescue “Safety”/Training lines (Yellow Bags); 150ft kernmantle rope w/line saver
c) (2) Anchor kits
   a. (1) 1” webbing (purple)
   b. (2) Carabiners

d) Tag lines available in bottom of closet if needed
   a. **NOT** to be used for Rescue
   b. **Should be in colored bag soon w/carabiner**

e) Lights and logs *(see appendix 3; Inventory list)*
   a. Headlamps and lightsticks available soon

f) Leather gloves available soon

4. A rope rescue team consists of three people: the leader who will direct the team’s operation(s) and talk the evacuee down, the first belayer who will actually lower the evacuee to the ground, and the second belayer who will anchor the first in case he/she loses footing. Rescuers have the option of using a stationary object for an anchor rather than utilizing a second rescuer, thus reducing the number of rescuers needed.
   a) Each team will grab (1) Lift Evac bag, (1) Evac seat and have leather gloves, eye protection and lights (if necessary) with them
      a. Leader grab tag line and paperwork
   b) Have belay person put harness on prior to starting operation
      a. Second rescuer should put seat on as well if available
   c) Position team between two chairs
   d) Take out the throw bag and grasp the free end of the cord with the non throwing hand. Toss/throw the weighted bag over the cable.
   e) Attach a carabiner to the free end avalanche cord and other end attach to end of rescue rope with figure 8 tied in it.
   f) “Leki Maneuver” Tie and overhand “loose” knot just behind the line saver to facilitate placement of the saver
   g) In order to keep the rescue rope from getting tangled, pull the avalanche cord slowly over cable. The rescue line will come right out of bag without the need to empty contents in snow.
   h) When the line saver is seated on cable pull on rescue rope from the bag side and free knot, then proceed to gather enough rope to attach evacuation chair to end of rescue rope.
   i) Once evac chair is attached and carabiner is screwed shut the belay person will proceed to attach rescue “8” and give the command “on belay”.
      a. The belay person may choose to attach the rope/rescue “8” to a piece of webbing attached to an alternate anchor
i. Acceptable anchors: snowmobile, snow cat, tree, lift pole, “bomb proof” anchor
j) The second belayer will be “attached” to the primary belayer’s seat by means of 1” webbing or rope. If the primary belay person slips
k) The Leader can then attach the tag line to the chair
   a. Facilitates patron removal from chair by allowing leader to pull patron away from chair while being lowered
l) The system can be slid into place close to the chair and the seat raised.
m) The Team leader will explain the operations of the equipment and instructs the evacuee what to do. Ask evacuee:
   a. Open safety bar
   b. As soon as the evacuee touches the evacuation equipment the leader will give the “on rope” command and belayers will stand ready.
   c. Pass the rope attached to the evac chair over his/her head, down back and put his/her arms through the loop in the rope positioning the rope under each arm pit. Pull slide down rope close to their chest
   d. Pull the evac seat onto the chair and get firmly seated evac seat
n) The Team leader determines if evacuee firmly on evac seat and enough tension remains on the rope to allow removal. Belayer’s may move away to tension rope if needed.
o) The leader talks to the evacuee into entrusting themselves to the seat and leaving the chair. The leader pulls the seat slightly away from the chair and the passenger uses one hand to push away from the chair and to hold it away until they are safely below the chair.
p) The first belayer lets the rope slide slowly through their hands controlling the descent of the evacuee.
q) The Leader is close by to steady evacuee when they reach the ground and positioning their skis across/perpendicular to the hill to prevent evacuee and their equipment from sliding off down the hill.
r) The leader then helps disentangle evacuee from equipment and directs them to the main lodge area if conditions permit. If conditions are not suitable, the leader will direct the evacuee to an area clear of the evacuation to stage.
s) The leader should maintain accountability for crew and all skiers that they evacuate from the lift. Once again, name(s), ages, sex, physical condition and chair number are required info from everyone.
t) After both skiers are evacuated from the chair, the team picks up rope bag and disconnects the evac chair, then flips the rope over the chair then reseats the line saver and proceeds to next evacuation.

u) This procedure can be repeated until the next lift tower is encountered. At this point all equipment will need to be disconnected and the throw bag re-thrown and line attached to proceed.

5. When pulling rope back over cable, disengage the rope saver and take knot out of end of rope to avoid getting hung up. When line back in hand remember to re tie figure 8 on a bight to end of rope. (see appendix 4; Diagram Evac System) (see appendix 7; Knot tying), (see appendix 8; Rope Yellow Card)

C. Advanced Rope Rescue: When the need arises to lift either a heavy evacuee or an unconscious/unresponsive or difficult patron it is up to the Team Leader to call for additional equipment & resources. While the likelihood of this system being needed is remote, the leader and team should be familiar with the procedure in order to carry out the evacuation in a safe and timely manner.

1. The Leader will need to call for the “Mechanical Advantage” bag and more personnel to manage the additional rope(s).
   a) Whoever the patroller is getting the bag can either place the harness on in the ready room or wait to get to the scene

2. If the standard evac system is not already in place do so and stand ready to attach the “Mechanical Advantage” system into the existing one.

3. Detach the evac chair from the existing evac system and place to the side, also detach the carabiner from the end of the rescue line and clip onto side of harness this becomes an extra carabiner and not used.

4. Open the “Mechanical Advantage” bag and pull out the system.

5. Connect the carabiner with the pulley labeled “top” to the figure 8 on a bight at the end of the rescue line and secure the carabiner.

6. Connect the other carabiner with the pulley labeled “Chair/bottom” to the evac chair and secure the carabiner.

7. If there is simply a heavy patron that needs to be evacuated the system is finished continue to step #8, if a rescuer needs to be raised go to step #15

8. Pull the rescue line through the line saver until the figure 8 on a bight is at the top of the cable next to the line saver.

9. The “White” rescue rope is now the anchor at the top of the cable.

10. One patroller or other qualified person will now secure the rescue rope by either
a) Lacing the rescue 8 and fastening onto harness then attaching harness to another rescuer

b) Lacing rescue 8 and fastening to “bomb proof” anchor

11. One patroller or other qualified person will lace the “Orange” line onto a rescue 8 and fasten it to their harness.

12. Both systems are now “on belay” and should be anchored

13. Other rescuers will talk to the patient and assist in hauling the evacuee off the chair and lowering either system through the rescue 8(s). (see appendix 5; Mechanical Advantage system), (see appendix 8; Rope Yellow Card)

14. Go to end of section

15. A combination system will be needed to safely carry out a evacuation where a rescuer needs to be raised to a chair.

16. The Team leader will need to call for the other lift evac pack

17. After completing step #6, pull the rescue line through the line saver while holding onto the lift chair and feeding “orange” line through the pulley to keep the seat at ground level.

18. One patroller or other qualified person will now secure the rescue rope by either

   a) Lacing the rescue 8 and fastening onto harness then attaching harness to another rescuer

   b) Lacing rescue 8 and fastening to “bomb proof” anchor

19. One patroller or other qualified person will lace the “Orange” line onto a rescue 8 and fasten it to their harness.

20. Both ropes are now “on belay” and stand ready

21. A rescuer will seat themselves on the evac chair or attach their harness to the carabiner and, with the assistance of other rescuers, be raised to the level of the patient and begin assessment

22. One the second evac system is in place and “on belay”, raise the second chair up to rescuer to place evacuee onto chair.

23. Both chairs are then lowered to the ground together. (see appendix 6; Combination system), (see appendix 8; Rope Yellow Card)

24. Continue to follow established Lift Evacuation Guidelines per manual

D. Cancellation of Evacuation: In the event that a chair lift can resume operation, either before or during an evacuation all evacuation personnel will be notified by the Evacuation Leader. The Evacuation Leader will be responsible for ensuring that all evacuation teams clear their equipment from the lift(s). When this is accomplished, the Evacuation Leader will notify management that power can be resorted and the lift started. Teams deployed will remain in place until recalled, even after the chairlift if restarted, in the event the chairlift fails again. Only after receiving word from the Evacuation Leader that management has canceled or ended the
alert or evacuation should ski patrollers and Area Personnel resume their normal duties.

E. **Post Evacuation Procedures:** When the rescue teams report that a lift evacuation is completed, the Evacuation Leader will assure management that all skiers and equipment have been removed from the lift(s). If any equipment or material is stuck on the lift(s) and cannot be removed, the Evacuation Leader will ensure the lift supervisors are informed. When all evacuees and equipment have been removed, control of the lift will be returned to the lift operators.

1. The Evacuation Leader assisted by the Evacuation Team Leaders will prepare a detailed report to include:
   a) Lift failure time
   b) Evacuation start and completion times
   c) Suspected cause
   d) Lessons learned
   e) Consolidated list of injuries (not utilizing names HIPPA), name and list of all evacuation participants

F. **Restoration of Equipment:**

1. Each rescue team is responsible for inspecting all of its equipment for damage or excessive wear.
2. Ropes particularly should be inspected carefully and discarded if evidence of significant wear.
   a) After incident both the event and inspection should be logged in the “Rope” log book (OSHA requirement)
3. Ropes will be returned to rope bags for rapid deployment
4. At end of day if ropes were used and are wet, ropes will be laid out or hung to dry
   a) Avoid chemical(s)
   b) Avoid sunlight and fluorescent lighting
      a. UV light breaks down rope
5. Ladders should be inspected for strength and integrity
   a) No bent or broken
      a. Rungs
      b. Hooks
   b) Frame balanced and sturdy
6. Ladders placed back into position at top and bottom of both lifts

VII. **Critique:** At a time designated by management a meeting will be held to discuss both problems encountered and constructive criticism of the evacuation. Also, the circumstances surrounding any personal injuries and suggestions for improvement of procedures and equipment will be discussed. As the result of the critique the Ski Patrol will be responsible for the documentation and implementation of procedural changes and management will be responsible for the modification or procurement of equipment. Management will be responsible for the follow up on
any injuries. Critique participants will include representation from management, ski patrol, lift operations and lift maintenance.

VIII. **Reports:** Management, assisted by the Evacuation Leader, will be responsible for completing a Chairlift Incident Report.

IX. **This document will be reviewed and updated yearly**