

DRAFT
AVALANCHE RESCUE PLAN
Medicine Bow Nordic Ski Patrol
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INTRODUCTION

The following is the avalanche rescue plan for the Medicine Bow Nordic Ski Patrol (MBNSP), a unit of the National Ski Patrol (NSP). The plan should help MBNSP members, officials from the Medicine Bow – Routt National Forest, and the Albany County Sheriff's Office coordinate rescue efforts in case of an avalanche emergency in the mountains around Laramie, Wyoming. The plan discusses the following topics:

1. Requirements imposed by the nature of the patrol area.
2. General issues associated with rescue leadership.
3. Equipment.
4. Rescue procedures in each of three distinct scenarios.
5. Advance coordination with other agencies.

The scenarios covered in Section 4 are as follows:

- Patroller caught in an avalanche.
- Patrollers' party members caught in an avalanche.
- Patrollers called to an avalanche accident.

For each scenario, the plan covers immediate actions, notification protocols, and the organizational requirements and responsibilities.

This plan is intended to be used in conjunction with NSP's Avalanche Rescue Quick Guide (National Ski Patrol, Lakewood, CO, 1996).

1. NATURE OF THE PATROL AND THE AREA THAT IT SERVES

MBNSP's patrol area is the backcountry of the Medicine Bow National Forest, a large, mountainous region in southeastern Wyoming with avalanche-prone terrain ranging in elevation from 8500 to over 12000 feet above sea level. In the winter, recreational users include backcountry skiers, snowboarders, snowshoers, and snowmobilers. The region in which avalanche rescue is most likely is that covered by the USGS Centennial, Medicine Bow Peak, Sand Lake, and Morgan 7.5-minute quadrangles.

Although the period in which avalanche rescues are most likely ranges from November through June, snowfields persist on some steep slopes throughout the year. From November through June much of the region is remote and difficult to reach except by snowmobiles, skis, or snowshoes.

MBNSP operates under a volunteer agreement with the Medicine Bow - Routt National Forest. The patrol has the following general avalanche-rescue capabilities:

- **Routefinding.** Patrollers are familiar with routefinding and avalanche-prone terrain in the region.
- **Medical training.** All nordic patrollers have emergency medical training through the NSP Outdoor Emergency Care course, a program designed to match the U.S. Department of Transportation's National EMS Standard Curriculum in subjects relevant to winter and outdoor settings.

- **Avalanche-rescue and mountaineering training.** Except for some new members, all nordic patrollers have at least basic training in avalanche safety and rescue and in winter mountaineering skills. Many have advanced training in these disciplines.
- **Presence in the field.** On a typical weekend day there are one to four nordic patrollers in the field. There may be additional avalanche-trained nordic and alpine patrollers at the Snowy Range Ski Area (SRSA), depending on the time of day, week, and year.
- **Communications.** Patrollers have radio contact, via Forest-Service radios and repeaters, with other Forest-Service personnel, including contact with the Centennial Visitors' Information Station (VIS). The radios also allow contact with other rescue-related agencies, such as the Albany County Sheriff's office and the Laramie Communications Center. Some members of the patrol are licensed amateur ("ham") radio operators.

Later sections of this plan discuss organizational aspects and equipment for avalanche rescue in detail.

2. RESCUE LEADERSHIP

Avalanche rescue in the Medicine Bow backcountry comes under the aegis of the appropriate Sheriff (Albany or Carbon County). Therefore, nordic patrollers *must* follow this basic principle in an avalanche rescue:

Contact the appropriate Sheriff as soon as possible with information about the location, number and conditions of the victims, and number and condition of the rescue party.

In extended rescues, the Sheriff will appoint a Rescue Leader, who will direct the overall operation. Figure 1 shows a typical organization chart for avalanche rescue. In any case, nordic patrollers must adhere to the rescue organization established by the Rescue Leader.

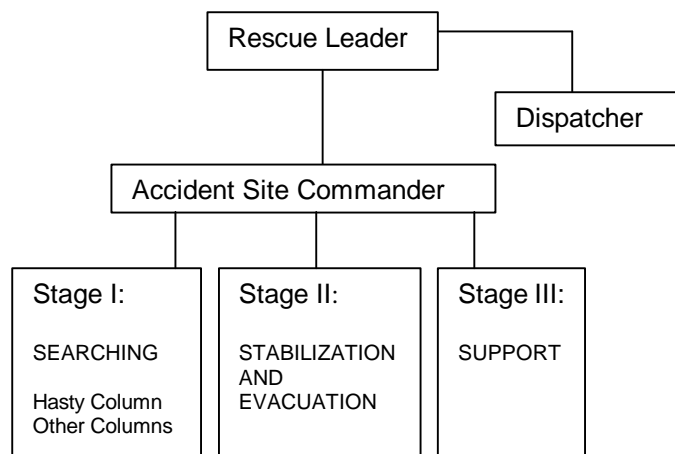


Figure 1. Structure of avalanche rescue

3. EQUIPMENT

The following list describes the equipment available to nordic patrollers for avalanche rescue:

- A nordic patrol party in the field typically has at least one Forest Service (USFS) King **radio**. Some patrollers carry "ham" radio with even greater capabilities. Contact with the Albany County Sheriff's

Office is possible using these radios, by contacting either VIS or Laramie Communications. Patrollers are proficient in using the appropriate channels and repeaters that these radios can access.

- Nordic patrollers in the field and at SRSA have **rescue packs** containing backcountry first-aid equipment, avalanche beacons and probes, collapsible shovels, compass, the four topographic maps listed above, overnight survival gear, and the Avalanche Rescue Quick Guide.
- The Albany County Sheriff maintains a **rescue sled** (snowmobile, trauma toboggan, probe poles, tools, and some signaling devices) in a cache near the shop west of SRSA. Nordic patrollers have access to this rescue sled under the condition that they contact the Sheriff's Office.
- Patrollers who are patrolling without radios should consider carrying **cellular telephones**, recognizing that the terrain limits their utility in the patrol area.

4. RESCUE PROCEDURES

The following discussion covers three scenarios: (1) patroller caught in an avalanche, (2) patrollers' party members caught in an avalanche, and (3) patrollers called to an avalanche accident.

4.1 Patroller caught in an avalanche.

Patrollers should follow safe travel practices, as taught in the required NSP Basic Avalanche course:

- Know relevant weather and snow conditions.
- Use caution near slopes exhibiting high angles (30 to 45 degrees), evidence of snow loading, or previous avalanche activity.
- Choose safe routes.
- Carry and use appropriate rescue equipment, including avalanche transceivers.
- If crossing risky terrain is unavoidable, cross one-at-a-time, identify skiable escape routes, and prepare to eject packs, skis, and poles.

Nevertheless, patrollers should be aware of the basics of self-rescue, in case they are caught in an avalanche:

- Shout!
- Ski toward the escape route.
- "Swim," eject equipment if possible, and grab trees or rocks.
- Try to create an air pocket around your head as the snow slows to a stop.
- Dig yourself out if possible.
- Otherwise, try to conserve energy (stay calm, control the tendency to panic) after you are buried.

Once freed from an avalanche, remember to check the safety of other party members, if you are still fit to do so. If others are injured or buried, proceed as in Section 4.2. In any case, someone in the party should contact the Sheriff's office via radio relay through VIS, cellular phone, or other means.

4.2 Patrollers' party members caught in an avalanche.

In this scenario, the unburied and uninjured members of the party must serve in the role of a hasty team.

IMMEDIATE ACTION. Checklist 1 lists actions that members of the party should take immediately.

CHECKLIST 1. PARTY SELF-RESCUE

- Appoint a scribe-dispatcher and notify Sheriff with:
 - Location of the accident.
 - Number of victims and searchers.
- Ask patrollers or USFS to haul rescue sled to site.
- Assemble near the site.
 - Assign care for unburied, injured people, if any.
 - Establish a safe personal equipment cache.
 - Check that searchers' transceivers are receiving.
- Quickly assess the site:
 - Determine site safety and escape routes.
 - Have the scribe map the site.
- Conduct transceiver search.
- Search likely traps:
 - Last-seen areas (mark with flagging).
 - Terrain and vegetation traps.
 - Surface clues (mark with flagging).
- Maintain contact with Sheriff's office.

4.3 Patrollers called to an avalanche accident.

This scenario includes two distinct cases: (a) patrollers respond before the appropriate Sheriff has been notified; (b) patrollers respond to a request for help from the appropriate Sheriff.

CASE (A): SHERIFF HAS NOT BEEN NOTIFIED.

This is the case requiring the most detailed action plan for ski patrollers. The following plan covers immediate action, hasty team procedures, other Stage I columns, and Stages II and III.

IMMEDIATE ACTION. Checklist 2 lists actions to be taken immediately. Expect the Sheriff to appoint a Rescue Leader.

CHECKLIST 2: IMMEDIATE ACTIONS WHEN SHERIFF HAS NOT BEEN NOTIFIED

- Notify Sheriff with information about
 - Location of the accident
 - Number and names of witnesses
 - Probable number of victims
 - Names of people in your party
 - Proposed mode and route of travel to accident site.
- Offer to proceed as a hasty team.
- Stand by for instructions and organizational information.

HASTY TEAM PROCEDURES. While awaiting instructions, or in case the Sheriff's office accepts the offer to proceed as a hasty team, assemble the hasty team following the procedures in Checklist 3.

CHECKLIST 3. HASTY TEAM PREPARATION

- Retain any witnesses.
 - Appoint a witness escort.
 - Assess witnesses' fitness to return to site.
 - Ask if victims wore transceivers.
- Appoint a scribe-dispatcher.
 - List hasty team members and witnesses.
 - List probable victims.
- Ask SRSA or Sheriff's personnel to haul rescue sled to site.
- Assess rescue party members' readiness:
 - Avalanche transceivers and shovels.
 - Portable probe poles.
 - Adequate food and water.
 - Backcountry aid packs.
 - Fitness and knowledge of terrain.
 - High-visibility flagging.
 - NSP's Avalanche Rescue Quick-Guide.
 - Communication equipment
- Identify a safe, efficient itinerary to the site.
- Maintain contact with Sheriff's personnel.
 - Transmit list of hasty team members, witnesses, victims

In case the Sheriff requests a hasty team (and only in that case), proceed to the accident site, flagging the route and bringing witnesses as appropriate. Once at the site, follow the hasty search procedures outlined below. Meanwhile, the Rescue Leader may appoint an Accident Site Commander.

CHECKLIST 4. HASTY SEARCH PROCEDURES

- Assemble near the site.
 - Assign care for unburied, injured people, if any.
 - Establish a safe personal equipment cache.
 - Check that searchers' transceivers are receiving.
 - Plan search strategy.
- Assess the site:
 - Determine site safety.
 - Have the scribe map the site.
 - Note entrance and exit tracks.
 - Establish escape routes.
 - Appoint avalanche guard.
- Conduct transceiver search.
- Search likely traps:
 - Witnesses' suggestions.
 - Last-seen areas (mark with flagging).
 - Terrain and vegetation traps.
 - Surface clues (mark with flagging).
- Maintain contact with Sheriff's office.
 - Expect appointment of Accident Site Commander.
- Yield to Accident Site Commander when (s)he arrives.
 - Copy list of hasty team members, witnesses, victims.
 - Copy scribe's map.

Continue hasty search procedures until either

(a) hope for this approach is exhausted, and there are enough searchers available for a probeline,

or

(b) the Accident Site Commander deems a probeline search appropriate.

Follow probeline procedures specified by the Accident Site Commander or, by default, as described in the Avalanche Rescue Quick Guide.

OTHER STAGE I COLUMNS. The Rescue Leader may appoint other columns to proceed to the accident site. Column Leaders should follow instructions of the Accident Site Commander, adhering to the guidelines in Checklist 5.

CHECKLIST 5. STAGE I COLUMN LEADER GUIDELINES

- Check preparation of column members.
- Monitor column members on the trail and at the site.
- Follow instructions of Accident Site Commander.
- Keep track of column members and equipment.
 - List all column members at the outset.
 - List all equipment associated with column.
 - Obtain list of hasty team, witnesses, victims.
- Establish formal checkout procedures for people and equipment

STAGES II AND III. The Rescue Leader will arrange Stages II and III, as necessary, under the aegis of the Sheriff's office. The following is a summary of recommended procedures for these stages:

Stage II: Medical stabilization and evacuation. Soon after dispatching the hasty team, the Rescue Leader should appoint a Stage II leader to begin assembling a team with expertise and equipment for emergency medical care and evacuation. Checklist 6 lists suggested equipment that should accompany this team to the accident site.

CHECKLIST 6. SUGGESTED EQUIPMENT FOR STAGE II

- Medical equipment:
 - Physician's kit.
 - Resuscitation equipment.
 - Oxygen.
- Patient stabilization equipment:
 - Blankets and sleeping bags.
 - Tent.
 - Gas stove.
- Evacuation equipment:
 - Additional snowmobiles?
 - Additional trauma toboggans?
 - Helicopter?
- List all equipment before entering site.
- Account for all equipment at end of rescue.

Stage III: Support. This stage involves providing food, beverages, extra clothing, additional manpower, additional communication, and lighting, if needed for a prolonged rescue. The Sheriff's office has expertise in providing this type of support for backcountry search-and-rescue operations.

CASE (B): SHERIFF REQUESTS PATROLLERS' HELP

In this case patrollers should follow instructions of the Sheriff or Rescue Leader, if one is already appointed. Patrollers should indicate their level of readiness to do any of the following:

- Form a hasty team, if feasible, or serve on one.
- Serve as hasty team leader, if qualified.
- Lead another column in Stage I, Stage II, or Stage III, if qualified.
- Serve on such a column.
- Serve in other capacities deemed appropriate by the Rescue Leader.

The outlines presented in the previous case list suggested procedures and equipment for these tasks.

5. ADVANCE COORDINATION

Representatives of MBNSP, USFS, and the Albany County and Carbon County Sheriff's office should meet annually, in the early autumn, to review this rescue plan for the coming avalanche season. As part of this review, MBNSP should provide a current list of patrollers and telephone numbers, along with a "short list" of two or three patrollers to contact to initiate a search-and-rescue telephone tree. MBNSP should periodically execute drills to refresh members' awareness of avalanche rescue procedures. Convenient times to conduct these drills are (1) at MBNSP's annual On-The-Trail Refresher, typically held in November, and (2) at field days of the NSP Basic Avalanche course, held roughly annually in midwinter. The patrol should coordinate these drills with the Sheriff's office and USFS.