

## **BACKCOUNTRY SNOWSHOEING AND SKIING FUNDAMENTALS**

### **CONDITIONS YOU MAY ENCOUNTER AND HOW TO DEAL WITH THEM**

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#### **AVALANCHE DANGER, HOW TO RECOGNIZE AND PREPARE FOR**

Avalanche is one of the most dangerous threats to Rocky Mountain backcountry travelers in the winter. While the Colorado mountains are usually thought of as an area of much higher risk than the Sangre de Cristo or Jemez Mountains, there is significant risk in certain areas of these mountains. Anyone traveling in the backcountry in the winter and spring, should have at least a basic understanding of avalanche risk, and take basic precautions to stay safe.

The complete understanding of avalanches and what triggers them is a very specialized study and requires taking avalanche safety courses. These are just some basics to keep in mind whenever you're out in the back country.

**EVALUATION:** Avalanche danger is determined by four primary factors: Terrain, Snow Pack, Weather, and Human Elements.

#### **TERRAIN CONSIDERATIONS:**

- **SLOPE ANGLE:** Avalanches can occur on slopes of 25 degrees and steeper. Most occur in the 35-45 degree range. On slopes steeper than 45 degrees, the snow tends to slough off frequently preventing the build-up that needs to occur for the slide to happen.
- **SLOPE ASPECT:** North facing slopes tend to build up more snow and it doesn't settle like it does on south facing slopes—thereby making north facing slopes more prone to avalanche. Leeward slopes build up more snow and are also more likely to run.
- Clinometers can be helpful to determine a slope gradient before crossing. Some compasses have them built in.
- **IMPORTANT: ALL SNOW IS CONNECTED.....**If you are crossing a flat area at the bottom of a slope, your movement can cause movement under the snow which can then trigger an avalanche above. Same thing above—can trigger below.

- **SLOPE CONFIGURATION:** The type of slope can tell you a lot about potential avalanche activity. Smooth, open slopes have poorer bonding and therefore prove to be more active. Look for areas (runs), where there are no trees or small trees, or trees bent over—this indicates positive avalanche activity. Convex slopes will have a higher danger of avalanche than concave slopes.

**SNOW PACK & WEATHER CONSIDERATIONS:** This has to do with the way the various layers of snow were put down over the course of the winter. Heavy snows or rain on top of existing layers will weaken the bonding system making avalanche danger higher. High winds can carry snow and deposit it on older layers that do not bond well as evidenced by snow cornices on the leeward side of peaks.....Very dangerous places to be.

**HUMAN CONSIDERATIONS:** Know what to look out for and listen for. Determine the experience of your group. Do not attempt to do things you have no experience with unless you are going with others who have avalanche training and can teach you BEFORE you go in to the backcountry.

**AVALANCHE TRANCEIVER AND PROBE:** Should ALWAYS be carried for backcountry travel. These units do not utilize GPS technology. EVERYONE in the party must carry one and make sure they are all compatible. You must learn how to use these before going in to the backcountry. There's no time to learn on the job! Constant practice is a must.

Everyone should also carry a collapsible probe or at the very least a pair of poles that can be hooked together to form a probe. Since time is of the essence, probes make much more sense. They can be opened with one flick of the wrist whereas poles often take time to take apart and refit in to a probe.

Everyone needs to take a shovel with them, even on day trips. The chance of avalanche is often very high in the bowls where you will want to ski.

Many factors are involved in safe winter travel through avalanche terrain. A basic understanding is a must before venturing out. The attached handout lists some basic considerations you will need to ponder when traveling in the backcountry in the winter.

One of the most important things is when crossing an open area that has the right slope and aspect to be considered suspect for avalanche, make sure the group spreads out and crosses one at a time!!!!!! Do not bunch up!!