

Snow Trail Signpost Evaluations

Snow trail managers told MTDC that only a few signposts had passed the test of time. In addition, some nontraditional products, such as telescoping steel signposts and polyvinyl chloride (PVC) plastic pipe, have been effective. All the signpost systems used in the field are simple, inexpensive, and effective (Figure 3).

Choosing the best signpost depends on the expected snow depth. Trail managers commonly use two or three different types of signposts based on the expected snow depths in particular parts of the trail system.

Table 1 (following page) summarizes our findings. Extra-high, fixed-base signposts permanently set in the ground worked best in shallow (0 to 3 feet, 0 to 1 m) and moderate (3 to 12 feet, 1 to 3.7 m) snowpacks. Free-floating signposts of wood or PVC that were supported only by the snow worked best in moderate and deep (more than 12 feet, more than 3.7 m)

snowpacks. Temporary bases and telescoping signposts worked for shallow, moderate, and deep snowpacks. They were seldom used because they required more maintenance, were more expensive, or presented unacceptable hazards.

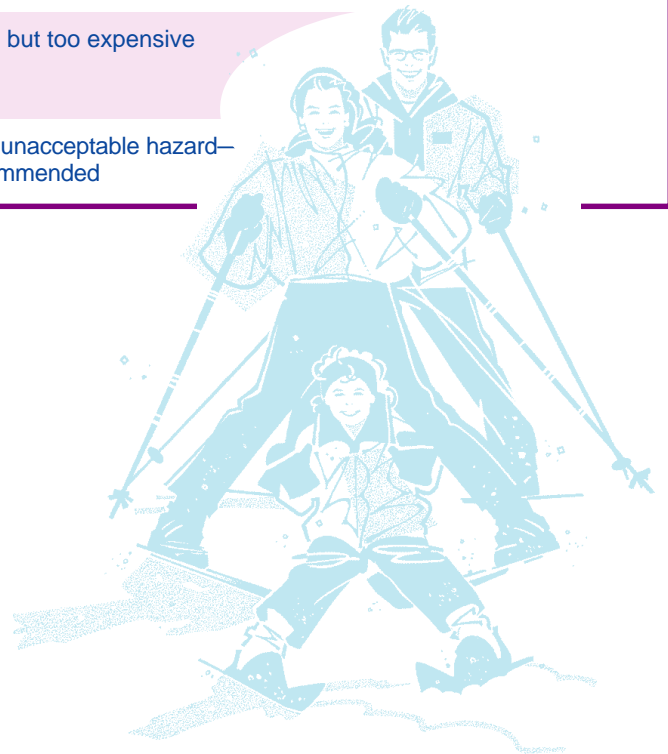


Figure 3—Minus zero: Icy nuts dropping into the snow. Signposts frozen in solid. High winds and poor visibility. Oops! There goes the wrench! Good reasons to keep your signpost system simple.

Snow Trail Signpost Evaluations

Table 1—Evaluations of snow trail signposts.

Materials	Works best at (snow level)			Description and comments
	0–3 ft	3–12 ft	12 ft+	
Fixed Base				
Wooden signposts	✓	✓		Install longer-than-normal posts with holes drilled so the sign can be raised
Tubular steel	✓	✓		Post can be telescoped as depth increases, or better yet, sign can be raised or lowered
Buried steel base	✓	✓		4 by 4 can be fastened to base
Double posts with rungs	✓	✓		An option for bulletin boards or other heavy signs
Free Floating				
PVC pipe		✓	✓	Inexpensive and lightweight—can be painted
Plastic fenceposts		✓	✓	Square for easier sign mounting, more expensive, and shorter than PVC pipe
2 by 2, or 2 by 4 wooden native poles		✓	✓	Simple, inexpensive, and popular for reassurance markers and small signs
Temporary Base and Telescoping				
Wooden base with 2 by 4 signpost	✓	✓	✓	Will need to be able to pull the posts out of the base for deep snow
Portable steel base with PVC signpost	✓	✓	✓	Will need to be able to pull out of base for deep snow
Steel base with steel signpost with telescoping Extren	✓	✓	✓	Worked, but too expensive
Steel fenceposts or conduit pipe base	–	–	–	Created unacceptable hazard—not recommended



Fixed-Base Signposts

Wooden Signposts

Traditional wooden signposts anchored in the ground were the most common signposts. They work fine in areas of low and moderate snowfall, even though the sign may end up less than the recommended 40 inches (1 m) above the snow (Figure 4).

Anticipating the amount of snow accumulation allows trail managers to customize their fixed signposts. For example, in areas with low to moderate snowfall, a standard summer-use sign height may be satisfactory for winter. Or a post two feet (610 mm) taller than normal might be good for year-round use.

For deeper snow, a much taller fixed wooden signpost may be needed. Signposts up to 16 feet (4.9 m) long can have a number of mounting holes that allow workers to move the sign up and down (Figure 5).

Another variation is to bolt post extensions onto existing signposts. The extensions should be bolted on before heavy snowfall to avoid having to dig out the top of the post. Metal braces can be used to help support larger signs (Figure 6).

For holding heavy bulletin boards, the Deschutes National Forest built a ladder-like, double-post frame. The bulletin board hangs from one of the ladder rungs (Figure 7). The 4- by 4-inch posts shown in the photo were not strong enough, so they were replaced with peeled 8-inch (200-mm) logs.



Figure 4—BEFORE: This sign has just about lost its effectiveness.



Figure 5—AFTER: Raising the sign to a higher set of holes makes it effective once again. Some Districts use permanently set signposts up to 16 feet (4.9 m) tall with holes drilled at several levels.



Figure 6—Metal braces can strengthen sign supports on larger signs.

Fixed-Base Signposts

Figure 7—Simplicity itself. Hooks on the back allow the bulletin board to be moved from one rung to the next. Hooks are much easier to work with than nuts and bolts. Two people can easily lift the bulletin board to the next rung. Supplemental security bolts or a lock and chain could be added in areas where users tend to evaluate signage by its warming fire potential.

most areas. The sign could be raised and lowered as needed.

Tubular steel posts can be telescoped with posts of the next larger or smaller size. Because of their relatively tight fit and the tendency of the bolts and steel members to freeze together (and the need to dig out part of the buried post for adjustments), few managers prefer telescoping signposts. It is easier and less expensive to simply move the sign to another set of holes on a fixed signpost.

The steel posts are heavy, so freight costs and the logistics of getting them to the site are important considerations. The underground bases need to be installed before the ground is frozen. The steel signposts are more expensive than most wooden ones. Costs vary too much nationwide to provide a good comparison here.



Steel Signposts

Steel signposts (Figure 8) are popular in areas where a sturdy post is required. They work best for low to moderate snow depths. These signposts, designed for highway signing, are made by several manufacturers. They offer the convenience of a permanent base embedded in the ground, and they have adjustable, removable steel posts for mounting the sign.

The steel posts come in a variety of lengths and dimensions. A 15-foot (4.6-m), 2- by 2-inch (50- by 50-mm) steel post would be long enough for



Figure 8—Steel signposts are quite popular at plowed snowparks where signposts need to withstand the force of plowed or blown snow.