Avalanche Beacon Parks: Focus on Skill Development and Team Coordination

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Goal

Our goal is to understand how avalanche beacon training parks can best support companion rescue training.

We observe and describe the ways backcountry recreationists use a wireless avalanche beacon training park located on a ski hill. From those observations, we suggest best practices on how to set up and maintain a wireless beacon park that supports companion rescue skill development by backcountry recreationists.

Our observations reveal that beacon parks are used in narrow ways that develop only certain aspects of the companion rescue protocol.

How beacon parks fail in practice

1- Overconfidence

Participants who began with a sequence of single burial scenarios became faster and more efficient at finding the single victim. This boosted their sense of confidence. However, when participants moved to more challenging scenarios (e.g., multiple burial scene) difficulty increased significantly, often shaking the participants’ confidence and trust in their beacon. If the participants left the beacon park before trying the more challenging scenarios, they left with an erroneously overconfidence in their rescue skills.

2- Focus on the device vs group dynamics

We saw a large number of participants focus on learning individual skills at the cost of communication and coordination training. This likely occurs because, at the surface level, the beacon park emphasizes the technology itself (beacon search), whereas the need for communication and coordination learning is tacit and thus easily overlooked.

Our Recommendations

1- Balance individual and group training

In addition to individual skills training, we see value in making communication and coordination learning an explicit activity. The scenarios and learning descriptions should describe the steps on how to achieve communication and coordination goals. In addition, the signage in the beacon park should encourage individuals to find other like-minded people to practice as a team.

2- Use a progressive scale of difficulty

We saw significant value in using progressive scales of difficulty in beacon park scenarios. When talking to participants, the facilitator suggested to do simple single burial scenarios first until they mastered their basic skills, and only then to make their way to the complex multiple burials. While solidifying basic skills increased self-assurance, the complexity progression of the scenarios also helped break the false sense of confidence.

3- Manage levels of realism

Beacon parks are poor simulations of real avalanche terrains and conditions. The low level of environmental realism can be partially remedied by manipulating the ways participants construct believable stories about the rescue situation. Solutions include constructing scenarios that included how the avalanche happened and visually marking areas in the terrain to simulate environmental conditions (e.g., bamboo poles indicating avalanche boundaries).

4- Encourage the community of practice

Knowledgeable mentors add considerable value to those training in the park. We propose to encourage mentorship and facilitation within the community. Beacon parks can be designed as a common space where members of the community can group, build relationships between each other, and learn from one another. Since scenarios can be structured and ready to use, members of the community can go straight to the heart of the topic without spending a whole day preparing the site.