

PLANNING AND RADIO USE FOR BACKCOUNTRY SKIERS

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ABSTRACT: We assessed tour planning and group communication among backcountry hut users and how the use of the new BCA Link two-way radios affected these two related issues. In addition, we also investigated how radio use affected how groups used them to negotiate terrain.

KEYWORDS: tour planning, radio communication, backcountry safety

1. INTRODUCTION

Edgerly and Baugher (2012) suggest tour planning and group management is enhanced with more effective intra group communication. They advocate the use of consumer quality radios as a way to prevent accidents where communication failure may have been a contributing factor.

We explore their assertions through the use of a survey aimed at investigating tour planning, group communication, and how the use of radios either encouraged or discouraged both safety and enjoyment of backcountry tours.

The primary focus of this exploratory research was to consider two related factors: tour planning and communication. Two research questions are addressed; both relate to tour planning and communication:

1. What is the nature of tour planning for small self guided groups?

2. Does radio use result in an enhanced backcountry touring experience, increased group travel efficiency, and safety?

2. DATA AND METHODS

Originally, the research setting was to be only the Bell Lake yurt located near Bozeman, MT. Reliance on convenience sampling, we expanded the number of locations to include yurts/huts in the Sawtooths (ID), Beartooths (MT), and Selkirks (BC). The terrain in all locations is a complex mix

of slopes, aspects, avalanche hazard, trees and couloirs. Backcountry huts are an ideal location in which to test small group radio communication.

Our sample consisted of 11 self-guided groups in the huts over the winter 2013/14 season.

We met and briefed each group before they approached their destination. Groups were issued a survey packet that contained:

1. A short description and justification of the research.
2. A confidential participant release form.
3. A set of two to four BCA Link radios and instruction on care and use.
4. Tour planning materials as well as suggested communication protocols for radio use.
5. Copy of the self-administered survey with return postage and return of the radios; an incentive was provided to the group for participation in the project.

3. FINDINGS

A total of 51 skiers in 11 tour groups participated in the study. Most were male and self report as expert skiers. Most were familiar or very familiar with each other ask ski partners and all carried the generally accepted kit for safe backcountry travel (i.e. transceivers, probes, shovels). Few (20%) carried air bag packs however 30% carried avalanche packs. Most groups carried a minimum of group safety gear such as emergency shelter, repair, and 1st Aid. Virtually all groups reported knowing the nature of the avalanche problem before they approached the hut (most reported Considerable Hazard).

1. What is the nature of tour planning for small self guided groups?

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In a backcountry hut location we might expect greater communication than in other settings. Members of the group spend several days together so communication is logistically easy; they are often, but not always, friends among whom communication should be easy. Additionally, coordination among group members is the norm in a hut stay in order to not overlap skiable terrain, not ski above others, and to discuss possible hazards.

Some components of a tour plan and pre-planning in a hut location include:

1. Up to date weather report (as available) and direct weather observations.
2. Avalanche hazard assessment/bulletin (any "red flags"?). Terrain to avoid.
3. Discussion of local terrain knowledge and possible routes – may include maps; reference to hut library; talking with local guides, other local skiers.
4. A destination(s) and route(s) agreed upon by group(s).
5. A general timeline and agreement to check in with each other, emergency call procedures, location of emergency equipment.
6. Beacon function check/ gear check on the way out the door.

All groups reported some level of tour planning but most self reported moderate planning effort for the day's outing. For example, while all groups reported talking about the hazard of the day, few discussed emergency contingencies. Commitment to the day's goal tended to be high – 4.9 average where 5 = very high but most groups report adjusting their goal based on snowpack conditions.

Most groups followed generally accepted travel procedures – spacing between members when exposed to avalanche hazard, establishment of safe zones, and crossing avalanche paths one at a time. Half the groups reported they considered escape paths as part of their terrain management.

2. Does radio use result in an enhanced backcountry touring experience, increased group travel efficiency, and safety?

Edgerly and Baugher (2012) posit that communication failure is, in part, responsible for several aspects of lack of good touring and riding practice. They suggest that an efficient and user friendly communication system would likely alleviate these shortcomings and, in the process, mitigate the risk effects of riding complex terrain (i.e. rollovers, long runs, trees).

Our respondents generally agreed that radio use enhanced safety and enjoyment during their visit. Perhaps reflecting the expert status of our respondents, most (80%) had some experience with radios but only one group brought their own to the hut. Most utilized radio communication protocols as suggested and provided in the survey packet.

We asked four questions about general radio use during the tour:

The use of radios encourages better communication among members of our group while backcountry skiing. Eighty three percent of respondents agree strongly/agreed that radios encourage communication.

Radios did not add to the recreational enjoyment for our tour(s). Fifty eight percent thought the use of radios added to their enjoyment while touring.

As a group, we felt radio communication provided a higher margin of safety for our group. Over 90% of respondents agree strongly/agreed that radio use provided greater safety.

The hassle of the radios just are not worth it. Eighty three percent of respondents disagree strongly/disagreed with the statement and that stated that dealing with the radios was not problem while touring.

We also asked four questions with respect to skiing practice and terrain usage. Each was designed to investigate how skier behavior might be affected with radio use when engaging in standard safe practices.

Using the radios enabled us to place more space between us for safety but still allowed us to communicate effectively. Seventy five percent of respondents agree strongly/agreed that radios made spacing easier and they could maintain effective communication.

We were able to more effectively manage potential avalanche terrain with the use of the radios. Eighty two percent of respondents agree strongly/agreed that radios allowed them to more effectively manage potential avalanche terrain.

We were able to ski longer runs more safely because of radio communication. Eighty two percent of respondents agree strongly/agreed that radios allowed them to ski longer runs more safely.

The use of radios encouraged more communication among our group. Eighty three percent of respondents agree strongly/agreed that radios encouraged more communication.

Finally, we asked participants to think about their experience with the radios overall and if they would use them again; 91%, all but one group, replied they would.

4. DISCUSSION

In terms tour planning, we expected self-guided hut groups to engage in high levels of tour planning. They spend a good deal of time together at the hut and are motivated to maximize enjoyment during a short (3-5 days) duration visit to a discrete location. Hut visitors often span a variety of skill levels and so access multiple types of terrain; this often requires in depth planning of routes both up and down. They are also typically the only skiers in the immediate area and so avoid some but not all of the decision making pitfalls cited by McCammon (2004); this often requires forethought and planning among the group. We found only moderate levels of tour planning where the mean response was: "We engaged in some planning, discussed some possible routes, weather conditions, and snowpack but it was mostly informal and done mostly as an aside to the day". At the same time however, groups stated that they shared leadership and communicated effectively. No group reported in comments that they utilized the tour planning documents we provided.

Good backcountry touring technique consists of several attributes including often traveling through specific terrain one at a time or with an appropriate degree of spacing, riding in pitch lengths that facilitate good communication and/or within visible distance, maintaining visual or verbal contact with group members – if necessary locating to a point of safety to do so, and establishing a stopping plan in a zone of safety and uphill visual or verbal contact. At issue is if these practices could be made safer, easier and more efficient with good radio communication.

It appears unequivocal that most respondents to our survey were enthusiastic about the radios. They found them to enhance their safety because radios make communication more efficient and likely during the course of a tour. One group was consistently not in favor of the use of radios in the backcountry. They stated that they did not think their communication was enhanced and that radio use may provide a false sense of security that encouraged skiing more hazardous terrain. This observation is similar to early opinions on the use of avalanche and airbag packs as well as helmets. Ultimately, such tools are only as good as the judg-

ment of users. For all others, radios were viewed positively and responses seem to provide evidence for the assertions of Edgerly and Baugher (2012).

When taken together, effective tour planning and effective communication are complementary; one does not replace the other. While most of our groups acknowledged the importance of and practiced pre-trip planning, this doesn't always happen. We suggest increased use of radio communication can mitigate communication gaps that result from a lack pre tour planning and clearly, radios aid in adapting to changing conditions throughout the day. Radios were also seen to aid in communication but, for those groups that tend to not communicate well, radios will likely not change their behavior.

5. Conclusion

We found a moderate level of tour planning and relatively low level of emergency contingency planning among backcountry skiers in our sample. For example, few discussed turnaround times for the tour and there was almost no consideration of rescue plans if needed. At first glance this appears counterintuitive considering the nature of a hut stay. However, respondents reported a high level of effective and ongoing communication.

We suggest skiers and riders utilize both a combination of a daily tour plan and utilization of radios to implement a tour plan through the day via enhanced communication. We see the two as complementary and linked practices for safe and efficient travel.

Enthusiasm for radios among our respondents was very high and most agreed that a quality radio system enhances safety, communication, and enjoyment.

Conflict of interest statement

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