IMPROVING K-9 AVALANCHE TEAM PERFORMANCE AND COMMUNICATION IN
BACKCOUNTRY AVALANCHE MISSIONS:
A COLLABORATIVE APPROACH BETWEEN SKI PATROL AND K-9 SEARCH AND RESCUE
(SAR) TEAMS

Susan Purvis *1
Patti Burnett 2
1 High Altitude Rescue Dogs (HARD), Whitefish, Montana
2 Search and Rescue Dogs of Colorado and Summit County Rescue Group, Frisco, CO

ABSTRACT: The goal of a K-9 avalanche search team is to find buried victims quickly and efficiently while reducing risk to all involved. Problems arise during backcountry avalanche missions because responding ski patrol and K-9 SAR teams have unique deployment weaknesses that may result in reduced effectiveness.

This subject is important because currently members of these two organizations train separately, and yet they often search together on missions. Because of this, they are not as effective as they could be operationally. Consequently, the avalanche mission may not result in a live rescue or body recovery.

Susan Purvis and Patti Burnett have over 35 combined years experience working as ski patrollers and SAR K-9 handlers in Colorado. They have observed and experienced the very positive importance of avalanche SAR and ski patrol teams training and mutually responding to avalanche searches.

This presentation will offer practical solutions as to how and why ski patrol and K-9 SAR team collaboration and cross-training enhances and strengthens K-9 avalanche resources.

Our goal is to foster cooperation and networking between these two organizations so multi-jurisdictional search operations result in more positive search outcomes with safer and more efficient body recoveries.

KEYWORDS: K-9 search and rescue, search and rescue dogs, avalanche dogs, avalanche deployment, High Altitude Rescue Dogs.

INTRODUCTION

Every snow safety manager, highway forecaster, search and rescue leader and K-9 avalanche handler's worst nightmare is when the avalanche alarm goes off and people are buried. Avalanches can rip down a slope in seconds without warning. Avalanches bury paying customers at ski resorts, slam into automobiles on highways, crush condominium complexes in avalanche paths, and suffocate the savviest of backcountry users.

Corresponding authors address: Susan Purvis, HARD, PO Box 5533 Whitefish, Montana 59937; tel: 970-596-2999; email:avalanche@cboutdoors.com

When this happens, most agencies rely and depend on the nose of a well trained K-9 avalanche dog to find the buried people quickly and efficiently.

There is considerable pressure on K-9 avalanche teams to perform and be successful. Avalanche missions are confusing, complex and quickly become contaminated by search parties. K-9 avalanche teams need to identify all of the problems at an avalanche and execute a plan in order for the mission to be successful. Often, our K-9 avalanche training regime does not mimic real avalanche conditions. As a result, K-9 teams are frustrated and confused during a real mission. Handlers loose sleep wondering why their K-9 couldn't find the buried victim.

It doesn't matter if you're a ski patrol director, SAR manager, or K-9 avalanche handler, when the avalanche pager goes off and people are buried, we quickly find ourselves immersed in a mission that may affect us the rest of our lives. Is your K-9 team ready? Take the test. How would you handle these scenarios below?

Photo 1: In-bounds ski area avalanche

 Photo 1 is an in-bound avalanche at a busy California ski area. As a responder you don't know how many people are buried. What would you do? The clock is ticking. GO! You have 6 minutes to find the buried victims. What is your strategy?

Photo 2: Backcountry avalanche mission

Photo 2: It's mid June and a plane crashed into the mountain side 34 days prior. Plane and passenger buried multiple times by 5 wet slab avalanches near Ouray, Colorado. Photo taken from inside helicopter at 7:00 a.m. You have less that one hour to find one buried victim. The family is counting on you. It is the last ditch effort. What is your plan?

Photo 3: Mt. Crested Butte Urban Avalanche

Photo 3: Three toddlers completely buried outside of a condominium complex waiting for a shuttle bus to transport them to the airport. You have one ski patrol avalanche dog minutes away. What is your plan?

Photo 4: Highway avalanche

Photo 4: An avalanche crashes down the side of a mountain covering the closed road with 12 feet of avalanche debris. Parked cars and snowmobiles are completely buried. Unknown number of burials. No one is reported missing. What do you do?

DISCUSSION

"Look at that! Fido can find the buried subject under the snow in 30 seconds. That rescue dog must be really good," are sentiments frequently expressed by ski area managers, search and rescue members, and law enforcement agencies observing K-9 avalanche teams. Maybe the K-9 team is fast and efficient at their local training site, 100 meters from the patrol shack, a parking lot, or parked vehicle on a mountain pass. But in real backcountry avalanche missions, the buried victims will likely be in unstable and unfamiliar environments impairing the K-9's ability to focus and search if they have not trained to problem-solve and work through all the distractions.

The question isn't how quickly can an avalanche dog find a subject buried in a controlled training environment, but how efficiently and effectively does the K-9 avalanche team problem-solve and strategize on a real mission? Could your K-9 team work through all of the distractions that occur in a complex and dynamic mountain environment? Is the team prepared to work backcountry avalanche missions safely and efficiently? The bigger question is this— Does the team have all the tools, skills, and confidence to search independently on a backcountry avalanche or a highway disaster when it is dark and the wind is blowing 40 mph? Does your program train for the real world? Your life, your partner's life, the K-9 program, and the public all depend on your team--this is the real world and we owe it to each other to be good at what we do.

Definitions

K-9 teams responding to avalanches fall into two major categories on any given backcountry avalanche mission in America.

1. *Professional Ski Patrol K-9 Teams*
Definition: K-9 avalanche search teams work and train at ski area resorts. Ski resorts often support and pay for training, vet bills, food and training expenses. Primary function of team is to find in-bound avalanche victims. Some are cross-trained to find lost guests.

Strengths; Handlers work and live on their skis from November to April. K-9's live and work outside in cold and snowy environment. Human and K-9 skills in winter survival, transportation across and through snow, and team's ability to locate subjects in short, shallow burials are all strong.

Weaknesses; K-9 teams train once a week and rarely work dogs for extended periods of time. K-9's usually are not crossed-trained in cadaver or wilderness search. Handler's knowledge about scent theory, ability to read dog, and problem-solving is limited to the types of training scenarios performed. Validation/certification for backcountry deployment may not exist.

2. *Volunteer K-9 Search and Rescue (SAR)*
Definition: K-9 team holds an avalanche certification which allows them to respond to backcountry avalanche missions. Primary function of team is to look for missing people in wilderness SAR. Teams maybe affiliated with SAR, law enforcement, or other deployment agency. Teams may or may not live or work in avalanche country.

Strengths; K-9 and handler work year round in all aspects of SAR. Solid search dog skills in wilderness search. Handler can read dogs behavior and work long complicated problems. Searching on snow is fun and easy for dog. Teams are cross-trained or exposed to cadaver, water, evidence, and wilderness and urban searching environments. K-9 teams living and working in avalanche country are well versed in backcountry winter travel, SAR deployment, and spend a considerable amount of time training in the snow.

Weaknesses: Some certified avalanche teams may not live in avalanche country and are not affiliated with ski patrol, avalanche forecasting, or SAR teams. Teams may lack strong skiing and survival skills necessary for winter backcountry deployment. Physical fitness can be questionable. Often teams are a liability rather than asset. Difficult to stay current on all aspects of avalanche SAR, maintain

fitness and avalanche training when teams infrequently train in the mountain environment. Often questionable validation of certification, certifying agency, and /or testing process.

RESULTS

To increase the likelihood of success of a live rescue or body recovery on a backcountry avalanche mission, K-9 teams must have the skills to problem-solve and move confidently and efficiently over the snow. It is our job to ensure K-9 teams are assets to the mission rather than liabilities. Identifying each team's strengths and weaknesses will help incident commanders and law enforcement agencies recognize which teams should be called out and why. The purpose of this paper and poster session is to allow the reader (ski patrol directors, snow safety specialists, SAR managers, sheriff's deputies, K-9 handlers, and forecasters) to evaluate their team's strengths and weaknesses and know how the team would respond to a backcountry mission. What additional training is required to be successful on a real avalanche mission? What type of cross-training and collaboration is necessary to make the next avalanche mission a positive outcome for K-9 teams?

Below is a list of practical solutions of how and why collaboration and cross-training with K-9 avalanche search team teams will increase the likelihood of success on backcountry avalanche missions.

Why collaborate and cross-train? Collaboration with other teams and agencies starts long before the avalanche season. We owe it to our K-9 partners to train in some capacity year round. Not only will it keep your K-9 problem-solving skills sharp but handlers will have a better read on K-9 behavior. K-9 teams are only as good as the training imagination. We are only as good as our helpers, so find fun creative handlers who can help you work through training problems. We recommend training with reputable K-9 teams to gather new ideas and expose your K-9 to unusual environments. Allow your K-9 to explore

different situations under the guidance of other professionals. For K-9 teams lacking strong winter deployment skills, it is imperative that you find ski patrol teams that allow you to train at their ski resort.

To enhance a K-9's ability to problem-solve and increase handler confidence, organizations need to recruit the help of other K-9 handlers. If you want to be successful in the real world here is a list of questions you should be able to answer regarding the case study photos.

Photo 1: In-bounds avalanche mission. Have you ever train on a big avalanche slope with distractions? Why not?
Here are some training ideas for this season.
1. Practice searching on real avalanche debris with >10 people on scene.
2. Work your K-9 greater than one hour.
3. Work a slope with no live burials.
4. Send your K-9 onto the avalanche path. Collect all of the information you need in one search grid.
5. Make a map of the avalanche, stand back and watch your K-9.
6. Do you have an initial strategy? The wind?
7. Do you call another K-9 team you have never trained with before for backup?
8. Is your K-9 capable of working with another unfamiliar K-9 present?

Photo 2: Backcountry avalanche mission. Obvious body recovery. Do you go? Why risk your life and your partner's life when you know it is a body recovery? Here is where cross-training comes in.

1. Do you have authorization to be called to this scene?
2. Do you have the technical skills to be on this scene?
3. Do you trust yourself and K-9 to find a missing person in one hour?
4. Has your K-9 been exposed to cadaver before? What would your K-9 do if exposed? Do you know?

5. How do you interpret subtle behavioral clues from your K-9? Do you let your K-9 work it out?
6. Do you stop working at a whine?
7. What type of alert do you expect at this scene of a decomposed body?
8. What if the victim is not completely buried? What will your K-9 do?

Make sure you can answer these questions before you say yes to a mission like this. Gaining SAR mission experience will allow handlers to make good field decisions. The author's K-9 located the victim within 40 minutes. June 2005.

Photo 3: Urban avalanche across from the ski resort. The only K-9 avalanche dog team is 10 minutes away. The primary handler is not with dog. What do you do?

1. Is the K-9 cross-trained with a secondary handler? When was the last time a stranger handled the K-9?
2. Do you send a dog on scene with an unqualified handler? Would you rather have the wrong resource or no resource?
3. Has the K-9 trained for a deep burial? Article? What does your K-9 do when it detects weak human scent?
4. Have you trained to work through distractions like yelling, screaming, and untrained rescuers?
5. How long does your K-9 stay focused after 15 minutes of work with no indication of scent?

This urban avalanche accident occurred in February 1989. Two victims were located by probes within the first 6 minutes of burial and found in respiratory arrest. Both were administered CPR and had full recoveries. The third victim was buried for 70 minutes and was located by spot probing under 8 feet of snow.

Photo 4: This avalanche occurred at night on a closed mountain road burying parked cars and snowmobiles at a trailhead.

1. K-9 teams were not called to search avalanche path because no one was reported missing.
2. Has your team searched at night?
3. Take advantage of a training site like this and work the path. Watch carefully how your K-9 behaves. Does the K-9 alert on ripped up vegetation? Snowmobiles?
4. How do you communicate you're your K-9?
5. Do you have the confidence to tell a Sheriff that "the avalanche is clear"!
6. How do you know the avalanche is clear of humans?

CONCLUSION

Avalanche K-9 search operations are not as easy and straight forward as we think. They happen at night in unexpected and unfamiliar places. If we make the effort as K-9 teams to think outside the box and adjust our training to real world avalanches missions, we have a better chance to be successful. Our success begins when we communicate and cross-train with other K-9 teams who have actual mission experience. Our efforts will result in more positive search outcomes for K-9 teams. For this to happen, we need to leave our ego buried in the snow and help one another strengthen our weaknesses. If we are safe and efficient on avalanche missions, then we will reduce risk to others, save agencies time and money and sleep peacefully at night knowing we trained our K-9s to their full potential.

If we take action now by improving our K-9 training programs we will all be better prepared for the upcoming avalanche season.