SAR DOGS

Distance Alerts & how they can impact the search effort

by Marcia McMahon

Team Commander

The Rocky Mountain Region of the United States is famous for its unparalleled mountains, valleys, and foothills with their corresponding variations and weather. People love to come and climb, hike, fish, etc. and sometimes they get lost in the process.

Searches in this type of terrain quickly expand into miles and miles of area, should the subject not be found right away, not be noticed missing for several days, not have left any information as to their travel plans, etc. In these cases, clues become terribly valuable.

This article explores the training and use of Scent Discriminating Airscent Dogs and Cadaver Dogs for the purpose of aiding in the search effort to provide clues to further the search effort. It is to be emphasized that dogs are just one of the many specialized resources that work together to achieve a successful search outcome. When used properly, dogs can and should have a strong impact on the information available to help the search.

The thought on searches is all too often that either the dog

team found the subject or it didn't and no other information is retained from the debrief. However, dogs can very positively impact every search in one or more of the following ways:

1. Locate the subject.
2. Provide directional alerts in the general direction of the subject allowing for successful placement of other dog teams, foot teams, or helicopters in the next operational period.
3. Indicate the subject is not in the area.

For this article, "Alert" means when the dog enters, reacts to and follows scent and the corresponding body language. "Distance Alert" would be those alerts initiated from a minimum of ½ mile or more from the subject. Well-trained dogs can begin to follow scent from well over a mile away; even farther with nighttime downslopes above timberline or from subjects who have been missing for several days. (See maps overleaf)

Training:
Traditional methods for working search dogs mandate using a grid

pattern and working until the dog alerts and finds the subject or comes up with no positive indications. Using distance alerts , however, emphasizes a much stronger trust of the dog earned by careful training and education. Education is the key here, as the dog is learning to compile its scent information from quite far away, when properly trained, and to work the area on its own initiative if enough scent is present to draw him forward.
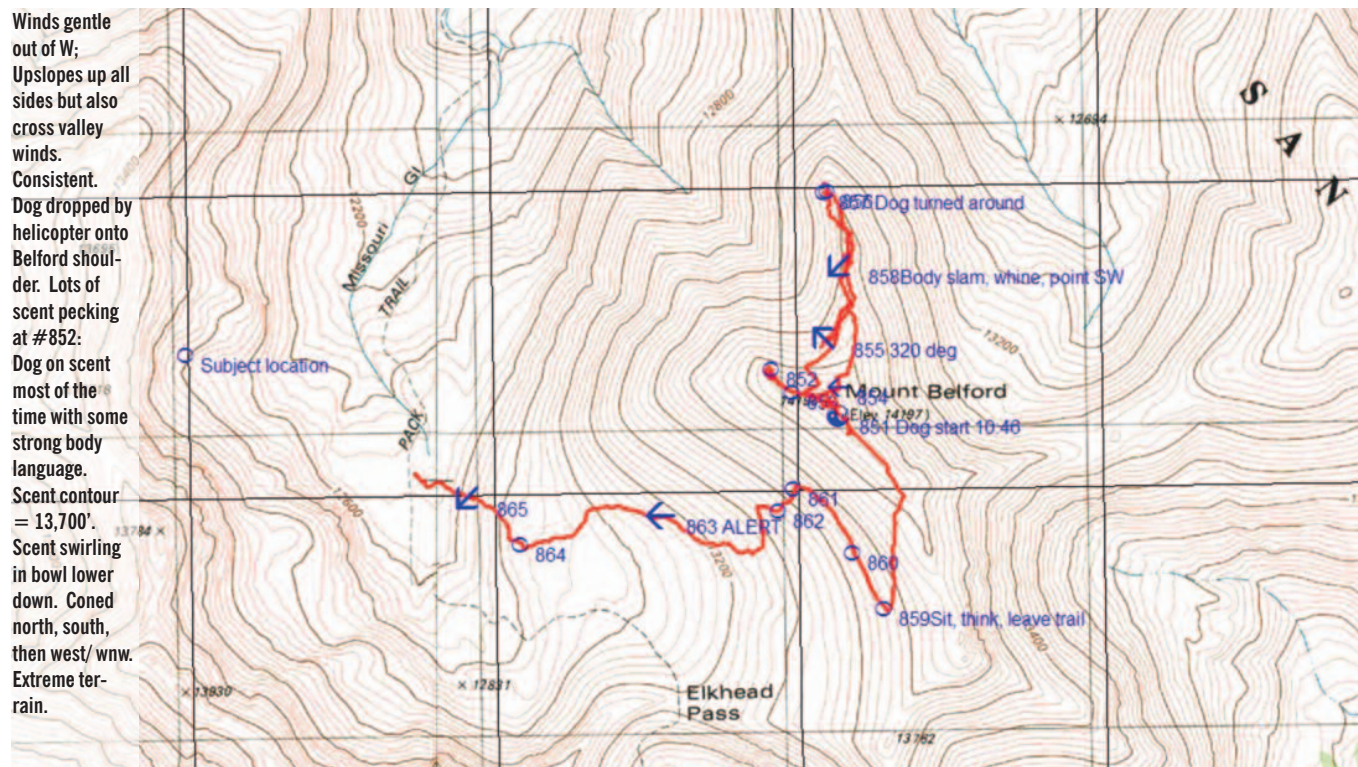
This portion will briefly address the progression method of establishing the foundation for proper scent cone work. It will not address the issue of scent discrimination, which the dog should already have learned. It is expected the dog will always use a scent article or, in the case of the cadaver dog, the appropriate command. Depending on the terrain, time of year, and time the subject has been missing, scent discriminating dogs can be effective for up to 2-3 weeks (Bison Peak, Park Co, CO, 2011), even in the event that the subject is suspected of being deceased, which is almost never a known variable. These dogs can and will give accurate alerts in spite of how many searchers, hikers, etc. are in the area during the search.

Basic Scent Cone Education:
When thinking about basic scent movement, envision water flowing down rivers-it will follow the path of least resistance. Scent is impacted by wind, terrain, temperature, vegetation, time of year, obstacles, etc. Heat makes scent rise upwards, sometimes causing it to loop up into the air and come down in a different location and flow onwards, bouncing and swirling unpredictably. Cool air helps the scent flow settle into more complete, careful downslope patterns. Then the wind will aggravate or enhance the entire process.

1. Start training with small areas of a specific terrain characteristic-i.e. down drainage with subject at top, bowl feature with subject higher in

Winds gentle out of W; Upslopes up all sides but also cross valley winds. Consistent. Dog dropped by helicopter onto Belford shoulder. Lots of scent pecking at #852: Dog on scent most of the time with some strong body language. Scent contour = 13,700'. Scent swirling in bowl lower down. Coned north, south, then west/ wnw. Extreme terrain.

Missouri Mission Map-Dog was dropped by helicopter onto Belford southern shoulder; dog immediately went on scent. Worked cone north, then turned around and worked south, with several sit and points towards the Missouri ridge. Scent was travelling along the 13,700' contour line as well as depositing on top of Belford. Dog examined scent (scent-pecking) on top of Belford for quite awhile before deciding to continue cone south and then down the mountain. Scent was extremely "sticky" due to heavy, late snowpack melting rapidly. Winds out of W consistently. Subjects had been in place for 10 days. Subjects located by helicopter on first flight the next morning.

bowl, etc. These problems can be worked in a matter of minutes- the scent cone from subject to dog will be continuous from the beginning and immediately workable by the dog. The goal is

a find based on a hard hit scent cone.

2. Continue the size of the problem, keeping the scent cone strong and continuous, but vary the terrain style. Always do 2-3

Springer spaniel, Sadie, examining scent flow

problems of the same terrain type in a row for sequential days so the scent cone work will be similar and the dog will learn the scent patterns.

3. Remember that dogs learn from short problems when a new variable is introduced. Types of problems include: •up/down drainage, •cross drainage with subject placement on different sides with different wind directions, •intervening high ridges (features) with valley floors, •looping culprits such as isolated aspen groves, •subjects in trees, •cross-ridge problems with scent gaps, etc. The list is endless; the point is to educate the dog and the handler, and let the dog educate itself so be able to figure out how to work increasingly longer scent cones.

4. As the dog learns, and it doesn't take long, the distance involved can be increased so it is learning to work through scent

pools and scent gaps (often confused with scent pools or negatives), interspersing short problems with the long problems to work on sharpening the brain skills and enthusiasm, while adding in new types of scent problems and endurance.

5. Always allow the dog to follow the nose pop. A trustworthy dog is a joy to watch working scent. Encourage him. If the dog can't put enough pieces together, continue the grid from the new location and move on through the search area, following the dog as soon as it gets more information and wants to break the grid. As its confidence grows, and the dog's faith in you to trust it, the farther the distance over which it will be able to work scent.

6. Watch all body language, including scent rolling and grass biting. Your dog is not messing around when it does these.

These are clues. GPS them. Clues come in packages - note and learn the clue patterns your dog uses while working scent and when it is not in scent.

7.   Include all types of weather and times of day/night in trainings. Understand when the dog is working scent and try to understand how that scent is travelling. Avoid the common mistake of calling quick negatives. These can very often be scent gaps. Think positive information and work forward from that location.

8.   Most problems should be known problems. This is the only way to understand what your dog is doing, learn to use the clues, and have the confidence to follow him.

GPS work & direction:
The GPS is the key to successful distance work. As your dog works, you will be marking its clues on your GPS, as well as the track. The fastest way to do this is to carry a small notebook in your harness and write down the number of the waypoint with a quick note and compass bearing (if applicable). This will begin in training when your dog starts becoming good at following his scent cones and the problems increase in size. Things to note especially in training will be scent rolls, nose pops with bearings, grass biting, ground scent analysis, etc. As you become more of a team, you will have your own clues that you recognize that are important to putting the scent picture together to try to determine the direction and location of your subject. For example, ground scent is particularly important to one of my dogs. This dog can pick his way right over a ridge by analyzing the line of ground scent that has deposited and the strength. Excessive ground scent can often mean the subject is fairly close. Why is the scent depositing so heavily in one spot? For relatively recently deceased subjects, the ground scent deposits can be extremely strong; some might misread the dog's interest as trailing
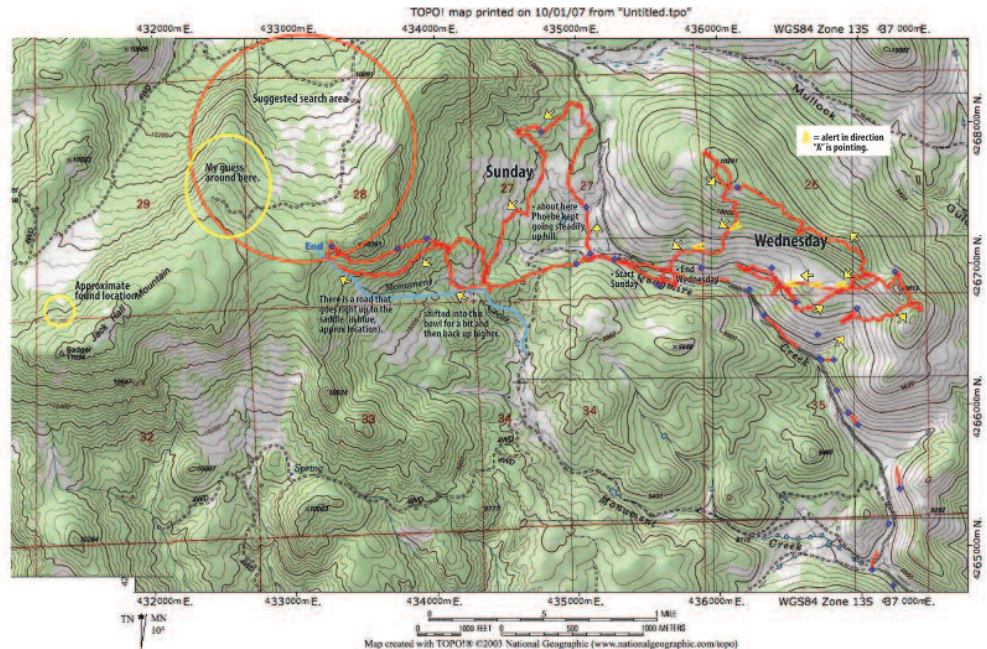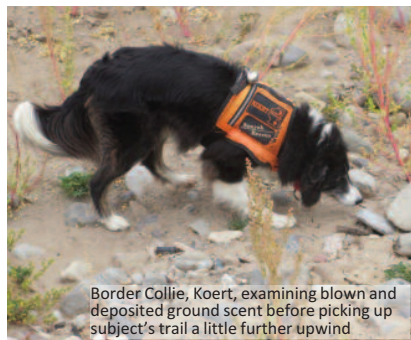

Cotopaxi Mission map of dog's work and alerts. Subject found at "approx. found location" 1 month later. Winds out of SW. Red line is the route taken by dog; yellow arrows point in the direction of the alerts. Yellow circle, "my guess is around here," was pretty accurate. Base can consider a wider circle extending in the direction of alerts for moving the search forward.

Google Training Map-The bluish line is the scent cone worked by dog. Dog was working scent the entire time and chose this route. Subject was high up in a rock formation on south side at the "Find" marker. Time of day was 11:00-14:00. Hot conditions. Strong winds out of south. Notice the geography and how the scent followed the paths of least resistance. Scent was popped up high by rocks and then blown NW.

Border Collie, Koert, examining blown and deposited ground scent before picking up subject's trail a little further upwind

when it is actually "scent pecking"- trying to get a direction towards the subject to get into an airborne scent cone.

At home, download the tracks and waypoints onto your mapping program, adding a description of each waypoint and directional arrows for alerts, as well as the start and find locations. Draw lines out from these waypoints according to the bearings and see how the triangulation flows. How do the alert directional lines line up with the find location? What terrain features are affecting direction and scent flow? For your training maps, all this information should be saved and printed onto topographical maps so you will be able to visualize the scent flow patterns as they are affected by the terrain and see, the dog's style of working through these issues caused by terrain, wind, subject placement, etc. By studying the training maps, the handler will learn how to better work through difficult times on searches by hopefully recognizing similar terrain, etc. patterns from problems set up and studied in training so as to achieve a much more positive result on real searches.

Information that will be relayed to base upon debrief for real searches:

The information above is mostly for the handler. When giving the results of your search to the search manager, you will relay only the important information:

1. Coordinates of dog interests

and alerts with bearings.
2. High probability areas according to the above.
3. If interest is high enough while searching, ask for the area ahead to be checked out by ground teams, helicopter, etc.
4. Triangulation of all alerts (particularly if several dog teams bring information back to base) that might point to the high probability area for the subject. Mark the points with bearings and draw the lines well out across your map.
5. What factors might be affecting your information?
6. Do not give excess information. The search manager only needs the information that might directly lead the search forward. Don't over emphasize, either. Misleading the search is a very bad thing.
7. Negative areas, areas cleared, and holes that you missed in your area.

How Search Managers use this information:

Good information from well-trained, reliable dogs teams can help further the search in a major way. In addition, having a "Dog Team Leader" or the equivalent at base to analyze the dog information and consolidate it all onto one map to look for the areas of dog interests and where they lead can give a good idea as to where the subject might be and assist in a find in the next operational period.
1. Record interests from all dog teams, with coordinates and bearings, onto one base map. Include the cleared areas and areas not searched.
2. Draw lines forward in the direction of the bearings looking for triangulation of interests.
3. If dog alerts appeared skewed, look for terrain features, weather issues, etc. and how those might be affecting the direction of the alerts. (Think rivers and how the

water runs around the rocks, eddies, etc. when thinking about scent movement through wind and terrain.)
4. Draw the lines well out; find out the strength of the alerts, as lighter alerts with lots of scent gaps can mean the subject might be quite a bit farther away, and circle your high probability area(s). Dogs jumping for scent in the air can mean several

German Shepherd, Annie, deciding which way to go with scent

things, such as subject is up high somewhere or the scent is having to bounce over a very high ridge, rock formation, etc. to travel across the area.
5. Do not redirect all resources to the area; continue the search as you would normally for any other clues, but do send enough appropriate resources out to the dogs' area of interest to check it out thoroughly.
6. It must be remembered the subject might also be moving which might explain inconsistency in alerts - but direction of travel can be determined by noting the direction of the alerts.
7. In the case of a deceased subject, several issues exist:
• Scent from recently deceased parties will manifest as fairly strong scent, along with very strong ground scent deposits that might look like trailing, especially when humidity is high, evaporative conditions exist, etc.
• Scent from deceased subjects who have been out for several months will manifest quite

differently - this type of scent tends to "pool" as well as set up as scent pools in different locations due to the repeated depositing of scent, from possibly different sites (depending on the condition of the subject). Often the scent pool can be stronger than the source. It is critical to research the history of missing persons in the area, including animal activity, if relevant, to understand the entire picture.
8. Take note of patterns in the GPS track. A long line with consistent direction followed by a sudden change in course could mean the subject is close. The change in direction might be caused by heavy scent pooling or by intervening terrain that suddenly interferes with the scent and widens the cone. A high probability area in this type of situation could be farther along the original line of scent.
9. Location of the subject also impacts the strength of the scent - If subject is up high in the wind, scent will be much stronger and easier to follow than that of a subject down in the bottom of a cold drainage, etc.

Again, dogs are just another one of all the wonderful resources available to help in the search for the missing person. However, scent discriminating airscent and cadaver dogs well-trained in large area distance alerting can have quite a successful impact on difficult searches involving moderate to difficult terrain in the Rocky Mountain Region. ⓟ