Using Dogs as Ground Search Resources

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Introduction

This paper presents a brief guide for the search manager on how to employ dog teams in the ground search for the lost person. It is therefore written from a management perspective rather than a dog handler's. Emphasis will be on estimating probabilities of detection (POD) and integrating the dog team into the overall search effort.

Two Kinds of Search Dogs

Basically, there are two kinds of dogs employed in search and rescue: (1) the air scent dog, most commonly a German Shepherd (but just about any breed can be used for this work), and (2) the trailing dog, typically (but again, not exclusively) a Bloodhound. While SAR dogs are capable, in principle, of being trained for both types of searching, most dog handlers train their dogs to perform only one or the other type of work, i.e. air scent or trailing. In any case, before utilizing a search dog, be sure to know what the dog has been trained to do.

In the best of all possible worlds, the most valuable dog team, in terms of obtaining high POD's, is a dog that can switch back and forth between air scenting and trailing as conditions prescribe, with a dog handler who is a skilled mantracker.

Air Scent Dogs

The air scent dog is the type most frequently encountered. This dog finds lost people by picking up traces of human scent that are drifting in the air, and looking for the "cone" of scent where it is most concentrated. The dog will not normally discriminate scents, so there is the possibility of "false alarms" if other people (e.g. searchers) are nearby, or if people have recently been in the area (a segment should be "aired" of human scent for a minimum of 30 minutes before a dog team enters it). The success of the air scent dog will be affected by a number of factors, including wind conditions (direction and speed), air temperature, time of day, terrain, and presence or absence of contamination (e.g., auto exhaust, factory smoke). Early mornings or late afternoons on cool, cloudy days, when there is a light wind, are the best conditions for air scent dogs to work. (Air scent dogs may also work well at night, although there is greater hazard to the dog handler).

How employed. Air scent dogs should be assigned to segments of their own, much as grid searchers would be sent to a segment and asked to cover it with a certain POD. Because of a dog teams' high efficiency (large area covered compared to person-hours used), they should be regarded as first responders if possible, although air scent dogs should be useful during all phases of the ground search. For example, consider using the air scent dog in the area around the PLS, especially if a direction of travel has not been determined. However, if a reliable air scent dog is not available immediately, but rather is "on the way", do not delay using trackers or other skilled ground searchers for this task.

When tasking the air-scent team, select a segment that doesn't have too many internal barriers, such as cliffs. On the other hand, dogs may be ideal for areas where trails are scarce, but thick brush isn't, as dogs can move around in the brush more easily than can ground searchers, and will complain less.

When briefing the dog handler, be specific about what you want them to accomplish. Normally, you will be asking the air scent dog team to "grid" a particular segment with a particular degree of thoroughness (depending upon the desired POD). An experienced dog handler will understand this request; an inexperienced one will not, but rather move around the segment randomly and unsystematically.

Air-scent dog teams can also be used for "hasty" searches (again, much like ground searchers). Hasty techniques may be preferred when the search locale is large and it is suspected that the lost person is on the move. Such hasty searches have the added benefit of getting the handler into the area quickly and possibly establishing voice contact with the (presumably) responsive subject, as well as being able to provide the information about the terrain over the radio.

For reasons involving both safety and search efficiency, don't let the dog handler go into the woods unaccompanied by at least one other person. In fact, three persons is ideal. A second person can handle the radio, while the third can navigate (and therefore report accurately on coverage). None of the three persons should be so encumbered by their respective tasks that they are too busy to actually search. Be skeptical of a dog handler--especially one you don't know--who insists on working alone.

Most air scent dog handlers, when conducting a sweep, will prefer to travel perpendicular to the wind in a pattern that generally approaches the wind (with each turn of the sweep) rather than move away from it. However, more than is usual when tasking ground searchers, consult the dog handler before making decisions regarding search patterns. The experienced dog handler will be knowledgeable about effects of wind conditions and terrain on dog performance-- especially his own dog's performance.

When debriefing the dog handlers, ask them to justify their estimated POD's, especially if they are high (70% or above), and most certainly if the dog team has returned earlier then expected, considering the size of the segment. Ask the handler what conditions were favorable to achieving such a high POD. Be sure to get a detailed, written report from the dog handler (and be suspicious of a handler who is reluctant to provide one). Emphasize that the report should mention whether or not the dog alerted during the search.

Because dogs work primarily by scent rather than vision, it's much more difficult to establish standardized estimate or formulas for POD. With ground searchers one need only consider spacing and visibility, but with dog teams you have to consider (in addition to these factors) a hundred different variables pertaining to wind currents, air temperatures, and terrain, which are constantly in flux as the dog team works. The experienced and reliable dog handler will be able to explain how these factors contributed to his or her estimated probability of detection. However, consider decreasing the reported POD's for dog teams in which the handler is unable to describe, for example, prevailing wind patterns, direction and speed.

Trailing Dogs

Trailing dogs (often referred to as tracking dogs, although "tracking" and "trailing" dogs to the purist are not quite synonymous) find lost persons by following minute particles of human tissue or skin cells cast off by the person as he or she travels. These heavier-than-air particles, which contain the scent of the person, will normally be close to the ground or on nearby foliage, so the trailing dog will frequently have its "nose to the ground" (as opposed to the air scent dog). This has important implications for the search manager, as it signifies that the trailing dog must be used quite differently than the air scent dog.

For one thing, the trailing dog will normally attempt to follow the same track or path that the lost person traveled, even several days after the subject had made the track. This means that trailing dogs are best employed from a definite PLS or last known position, such as the subject's automobile. Conversely the trailing dog will be less useful when there is no identified PLS.

Secondly, trailing dogs are scent discriminating: they are (supposed to be) able to discriminate the lost person's unique scent from all other human scents. The dog will therefore require a scent article belonging to the subject, protected from contamination from other human scents or by other strong odors, such as perfume or chemicals. Absorbent fabric that has had prolonged contact with the subject's skin is best, such as pillow cases, pyjamas, and other articles of clothing which the subject has recently worn. Ideally, such items should be obtained by the dog handler from the subject's home. However, as this is often impractical, it may be necessary for someone else to obtain the scent article. If so, that person should avoid actually touching the article, if possible, but rather use some implement (e.g., coat hanger) for picking up the article and placing it into a sealable (and unscented) plastic bag, such as Zip-Loc (some dog handlers prefer ordinary brown bags; do not, however, use plastic garbage bags, as they may contaminate the scent). If the scent article has in fact been contaminated by this person's own scent, then he or she should be available to be "sniffed" by the dog so that it can be informed that this is not the person it's supposed to be looking for.

Sometimes a scent article is not available, such as when the subject's home is some distance away from the PLS. If there is an unlocked automobile belonging to the subject, it may be possible to obtain a scent article from that in a similar fashion. Normally, the dog handler will periodically "refresh" the scent for the trailing dog by carrying the scent article and placing it

before the dog's nose. Some trailing dogs may not require this refreshing and may proceed successfully from the initial scent, such as one obtained from a footprint identified as belonging to the subject. In any case, it is critical to protect the PLS and any possible clues by flagging the area off and preventing people from touching possible scent articles or allow them to run their car engines nearby.

Trailing dogs, compared to air scent dogs, have both advantages and disadvantages. On the positive side, being able to discriminate scents makes them easier to be integrated into the search operation, as they should be less affected by the presence of human scents not belonging to the lost subject. For example, it should not be necessary to "air out" an area before deploying a Bloodhound team. Indeed, dog teams using a trailing dog will normally seem more independent than those using air scent dogs, because, once tasked, they don't keep coming back for new assignments. Their task is almost invariably the same: (1) get a scent article, (2) go to the PLS, (3) have the dog smell the scent article, (4) see if the dog can pick up the trail, and (5) keep the command post informed of their location and any other pertinent information.

Unfortunately, this independence comes at some cost. Most importantly, it is very difficult to estimate coverage (i.e., POD) for a dog team that uses a trailing dog. This is because there is no search pattern per se, but rather the handler follows the direction provided by the dog, which may lead to a very erratic and indescribable pattern that crosses any number of segments. An air scent dog that does not find the subject in a particular segment nevertheless provides the search manager with information that can be quantified in terms of cumulative POD's; however, a Bloodhound team returning from the field may be unable to provide useful estimates of search coverage. Often, in fact, the trailing dog team may be unable to specify exactly where it has been--which illustrates the importance of utilizing a navigator competent in using map and compass, and in terrain analysis. Moreover, because the team will cross several segments during its assignment--and may not always be aware of its precise location--there is the added problem of possible destruction of clues by the trailing dog team or, almost as bad, the laying down of false clues which may misdirect or delay other search teams coming across them. This is not to suggest that an air scent dog is somehow "better" than a trailing dog.

In fact, under the conditions where the search is especially urgent and manpower is relatively scarce, a reliable trailing dog team may be the single most important resource you can deploy for finding the lost person as soon as possible. Rather, as with any search resource, the search manager should be aware of the advantages and disadvantages associated with deploying a particular type of dog team.