Dog Team Operations for Staff

10 February, 1999 (Updated 09 Oct 99) - Jason Dalton

Summary:
This class will cover the aspects of searching with canines and deploying canine teams necessary for staff to effectively perform their duties on scene. Since the ASRC does not train dog teams, this information is vital as a supplement to the general information received in MSO, SOS, and PSO courses. Some information is included as an expansion on certain theoretical aspects of canine searching. While this information may not be directly used on scene, the knowledge gained will help staffers communicate intelligently and effectively with dog handlers during briefing and debriefing, or while working along-side base operational dog handlers.

Sources:
Training materials and experiences of past and present dog handlers from DOGS-East Search and Rescue, Mid-Atlantic Dogs, and K-9 Alert Search and Rescue

Definitions:
Dog Team – A dog, and handler. Additionally a walker is included to assist the handler with various tasks
Scent – the substance which a dog can sense and discriminate which allows an individual to be detected by a dog
Handler – The human trainer who is certified to work a particular dog in a SAR mission. The dog and human combination is certified. Change either one, and the team is no longer operational

Basic Scent Theory:
Scent is a chemical compound made up of many different components. William Syrotuck came up with "raft theory" decades ago to describe scent movement and how scent can constantly be generated by humans. This theory includes many bodily fluids, gases, particles, and bacteria, floating on "rafts" of dead skin cells. These are extremely tiny particles, light enough to be suspended in air for very long periods of time, especially in turbulent air.

Advanced Scent Theory:
The tenets of Syrotuck's theory are sufficient to describe the movements of scent. This is really all a handler needs to know, because as long as there is scent, it's not necessary to know *what* it is... Some people just need to know everything, so some very good research, being done right here at the UVA Medical center, is explaining how scent is used in the olfactory system to discriminate between species and between individuals. More on that in lecture...

Scent Movement:
Scent moves on air currents, no matter how minor. Since much is known in the area of fluid dynamics and micro-scale meteorology, these notions are applied as simple and easily remembered rules for the handler to use in performing a better search of an area. As is the case with any very simplified rule, it is nearly never always the case, and can often be misleading, even opposite the real conditions. Despite this, there are several rules of scent movement that can help you understand a handler debrief, and more effectively task out dogs during different conditions

1. Prevailing wind. Most weather forecasts give reports of the prevailing wind for a given area. If you have nothing else to go on, it's OK. But in Virginia, with the rolling hills and sometimes steep ridges and drainages, the prevailing wind rarely reflects the true local scent movements.
2. Air moves downhill at night and uphill in the day. Again, as a general rule this is true, there are atmospheric laws (which I will describe on the board) which explain this. However, there are few instances where this force is strong enough to create this weather pattern. During transitional times, such as early morning, or just before dusk one gets a terrible condition called "breathing" where the air moves up the hill, then down the hill, up the hill, then down the hill. (Dog: I got it...I don't got it...I got it...I don't got it)
3. Air moves toward water in the evening and away from water in the morning. Thank goodness, there are some constants. This is a very powerful force, and by and large will be true. Even in the case of small ponds, the enormous heat trapping ability of the water makes this happen (example on the board)
4. Searching is better at night. This is true, in fact. Under otherwise equal conditions, the decrease in surface heat from the sun causes the low level air movements to stabilize and gives better scenting conditions
5. Other scent phenomena: Ridge to ridge, blocking, treeing, scent pools, layer affects, trail/ridge/drainage dead zones etc.

The handler will be able to describe any strange results while working, but by and large will keep these comments to themselves. As with any searcher, it is a handler's worst nightmare to clear an area where the subject is found to have been. The complexities of scent movement are astounding, and yet the dogs continue to find people again and again. It is amazing the capabilities of the certified dog, and they should not be underestimated. Trust the handler to tell you any follow-ups or researching that they recommend, as with any FTL.

Canine search techniques:
Think of the contrasts between a multi-member field team and a single human, single dog team. In the field, we know exactly where we have searched (we mark it with tape, pick up where we left off, etc.) Dog teams have to rely solely on the ability of the dog to seek out enough area to pick up any human scent, follow it to it's source, return to the handler, tell the handler that it has found something,

and lead the handler to the subject. The handler's role is to know the dog well enough to assist in it's searching, keep the dog working, and recognize what the dog is telling them. When posed with a search task, the handler will determine the best way to search the area. Accounting for primary wind direction, time of day, terrain, etc. the handler will execute the appropriate methods. I've described below some of the techniques used for canine searching

Perimeter search – just as it sounds, the team makes a pass around the perimeter of an area. This is only useful as a hasty of an area, or to determine wind direction for another pass

Ridges and Drainages – the handler will search every ridge and drainage in the sector. This is a very thorough method and in most area of the Commonwealth yields a very good result. This method can be tiring in steep terrain, since you are constantly moving up and down in elevation

Contouring – the handler starts at a contour level, following it back to the starting point, then moves either up or down in elevation to contour again. This method is extremely difficult in slippery or loose terrain, but is useful if there are many small "fingers" or tight drainages where scent can become trapped.

While conducting the search, the handler will direct the dog into different areas, otherwise letting the dog alone and allowing them to work.

Types of search dogs:

Tracking : Dog keeps nose to the ground, following the exact track of the subject. The tracking dog is aided greatly by a scent article and an exact LKP

Trailing : Similar to the tracking dog, except that the trailing dog is trained to "cut corners" and follow a track more loosely. These dogs also are aided by a scent article and defined LKP

Air Scent : Searches without a scent article or LKP. Searches for any human scent in an area. Detects scent riding on wind currents rather than on the ground

Tasking:

Ground Scent Dogs

Give them a scent article and LKP and they are happy. Let them go where they will. Even if a find is not made, pay attention to the initial direction of the dog's travel. Immediately around the LKP should be the most pristine area for the scent. Once outside of that, the area gets trampled, searched, driven over, etc. The Ground Scent dog may be able to determine an initial direction of travel for the subject.

Air Scent Dogs

Are given a linear or area task exactly like field resources. They can search the same terrain in approximately the same time. Air scent dogs search for any human scent in an area. Because of this, it is likely that they will search for other teams if they are in the adjacent area. If this happens, the handler can simply reward the dog as if it has succeeded (because it did) and continue looking for the subject. Avoid bringing them together if possible because false searching takes time and energy away from searching for the real subject

- Dogs search best at night, in good wind, and good weather.
- Light rain tends to drive scent down hill and toward the ground
- Heavy rain will deplete any airborne scent. High heat is especially taxing

Briefing:

Dog handlers are to be given a thorough briefing just like any FTL. Very often teams will be deployed by their group with little or no. Expect the handler to ask investigative questions as to the subjects mobility, health, and mental state, as this gives hints as to whether the team should search drainages, trails, ridges. peaks, etc.

Debriefing:

Searching terms

Interest – dog searches a particular area heavily

Alert – dog gives a noticeable change in activity due to the detection of human scent

Find – dog searches out and finds the subject

Indication – dog returns to the handler, and gives a clear signal that it has found the subject

ReFind – dog returns to the subject with the handler

Scent Checking – the dog detects human scent and returns to all the human members of the team comparing their scent with the one it detects

Map symbols;

→ Wind direction (shows direction wind is **coming from**)

> Alert, with direction wind was coming from (you can think about it as the dog's nose

If any of the above are included in the debrief, do not take for granted that either of you understand the symbols or terminology. Talk about it in plain English.

Generally the term alert is used for what we assign as a clue. If a handler gets an indication from the dog this is very strong and more resources should be assigned to that area.

POD for dogs. There are many variables which come into play when determining how well a dog did. The handler will generally give a low (30 – 40 %) POD when

a find is not made. This is due to the uncertainty of the area, and the inability to debrief the dog, who did all the work. So with any search, it is best to cover all areas with multiple types of resources. That way the strengths of one can overcome the weakness of another.

Providing logistical support for dog teams:

- Dog's lose a great deal of water though panting. A generous supply of water is appreciated
- An area for the dog to relieve itself. This is especially important in urban SAR
- Parking area away from base. Often handlers must leave their dogs unattended in a vehicle so that they may return to base or staging. A parking area away from any commotion will keep the dog quiet and calm.
- Handlers provide almost all of their perishable supplies for the search. If possible dog snacks, dog food or powder bottles would make great friends with dog handlers
- In high heat situations, a shaded area to place the dog in a down stay is essential if the dog must be brought to staging or base. Extra water is also a must. Dogs can only release excess heat by panting, they cannot sweat like we do, and need a little help staying cool