K9 SEARCH MIDWEST

SEARCH DOGS

The use of dogs in search and rescue (SAR) is a valuable component in wilderness tracking, natural disasters, mass casualty events, and in locating missing people. Dedicated handlers and well-trained dogs are required for the use of dogs to be effective in search efforts. Search and rescue dogs are typically worked by a small team on foot, but can be worked from horseback. Search and rescue dogs detect human scent. Although the exact processes are still researched, it may include skin rafts (scent-carrying skin cells that drop off living humans at a rate of about 40,000 cells per minute), evaporated perspiration, respiratory gases, or decomposition gases released by bacterial action on human skin or tissues.

From their training and experience, search and rescue dogs can be classified broadly as either airscenting, tracking, trailing and cadaver dogs. They also can be classified according to whether they *scent discriminate*, and under what conditions they can work. Scent discriminating dogs have proven their ability to alert only on the scent of an individual person, after being given a sample of that person's scent. Non-scent discriminating dogs alert on or follow any scent of a given type, such as any human scent or any cadaver scent. SAR dogs can be trained specifically for rubble searches, for water searches, and for avalanche searches.

SEARCH DOGS

Types of Search Dogs

Airscenting (or area search) dogs primarily use airborne human scent to hone in on subjects. Airscenting dogs typically work off-lead, are usually, though not always, non-scent-discriminating (e.g., locate scent from any human as opposed to a specific person), and cover large areas of terrain. These dogs are trained to follow diffused or wind-borne scent back to its source, then to indicate their find (for example, by sitting with the lost party and barking until the handler arrives, or by returning to the handler and indicating contact with the subject, and then lead the handler back to the subject). Handler technique, terrain, environment (vegetation), and atmospheric conditions (wind speed and direction, temperature, humidity, and sky conditions) determine the area covered by airscenting dogs, although a typical search area may be 40–160 acres and scent sources can be detected from a distance of 1/4 mile or more. Although other breeds can be trained for airscenting, the prototypical airscenting dog is a herding (e.g., German or Belgian Shepherds, Border Collies) or sporting (e.g., Golden Retrievers, Labrador Retrievers or Springer Spaniels.) breed that has a reputation for working closely and in coordination with a human handler.

Tracking dogs will typically work on lead and will mostly have their nose to the track following ground disturbance. A good tracking dog will be able to work through a variety of terrain as well as successfully maneuver turns and "double backs" that a subject might take.

A trailing dog is scent specific, can also have his/her head up using some of the air scent techniques to find the subject. Trailing dogs will work on and off lead, and trailing dogs will venture off the actual path that a subject took should a scent pool be discovered. This is not to be considered an error by the dog, as they are following a specific scent and working through all other human scents to get to the source. It is a common misperception that only German Shepherd Dogs, Doberman Pinschers and the old Bloodhounds do this type of work. All dogs are capable of tracking and trailing; larger, sport, hound, working and herding breeds tend to be used more often simply for their adaptability in various terrain.

In addition to these types of dogs, some teams cross train dogs in both trailing and airscenting and use them as scent specific "area searches". Typically these dogs are worked in an area that an airscent dog would work, but are capable of ignoring other search teams and other people in or near the assigned search area. When deployed this way, these airscenting dogs require a scent article as does a trailing dog.

Specific Applications for SAR Dogs

In wilderness SAR applications, airscenting dogs can be deployed to high-probability areas (places where the subject may be or where the subject's scent may collect, such as in drainages in the early morning) whereas tracking/trailing dogs can be deployed from the subject's last known point (LKP) or the site of a discovered clue. Handlers must be capable of bush navigation, wilderness survival techniques, and be self-sufficient. The dogs must be capable of working for 4–8 hours without distraction (e.g., by wildlife).

Disaster dogs are used to locate victims of catastrophic or mass-casualty events (e.g., earthquakes, landslides, building collapses, aviation incidents). Many disaster dogs in the US are trained to meet the Federal Emergency Management Agency K9 standards for domestic or international deployment; advanced agility and off-lead training are prerequisites reflecting the nature of these dogs' application. Disaster dogs rely primarily on airscent, and may be limited in mass-casualty events by their inability to differentiate between survivors and recently deceased victims.

Human remains detection (HRD) or cadaver dogs are used to locate the remains of deceased victims. Depending on the nature of the search, these dogs may work off-lead (e.g., to search a large area for buried remains) or on-lead (to recover clues from a crime scene). Airscenting and tracking/trailing dogs are often cross-trained as cadaver dogs, although the scent the dog detects is clearly of a different nature than that detected for live or recently deceased subjects. Cadaver dogs can locate entire bodies (including those buried or submerged), decomposed bodies, body fragments (including blood, tissues, hair, and bones), or skeletal remains; the capability of the dog is dependent upon its training.

Training

Training is a rigorous, time-consuming and comprehensive process for both the dog and the handler. For the dog, training is best begun early in life (upon acquisition of a suitable puppy, 8–10 weeks) for deployment of the dog in 12–18 months and retirement at 5–10 years, depending on the breed and individual dog. Obedience training is essential for the dog's safety, order at staging areas, and to maintain professionalism in law enforcement and the public audience. Socialization and handler-canine bonding are especially important for airscenting dogs. Basic agility training is necessary, and advanced training may pay off unexpectedly. Scent training should be initiated early using a variety of methods and is often best accomplished by working with an experienced, well-established local training group that has a track record of working with local or state law enforcement.

For puppies, expect to train obedience, socialization, and agility daily 2-5 times for 10 up to 60 minutes, and scent training 3-7 times per week for 5–30 minutes. As the dog's abilities improve, daily obedience training continues, with impromptu or planned agility and socialization sessions. Scent training frequency decreases (3-5 times/week) but duration increases (20–60 minutes per session). Search-ready (or mission-ready) dogs need once-weekly training sessions (4–8 hours) along with frequent focus sessions (5–60 minutes, 3 or more times per week). Training outside the dog's primary focus (e.g., teaching an airscenting dog scent discrimination, cadaver, or avalanche techniques) should be done cautiously and only once the dog reliably performs in his primary training area.

Usually training starts as a game played with puppies, starting with simple reward-based training (i.e. puppy is given a treat or allowed to play with a toy upon showing a simple skill such as retrieving the toy and bringing it back to the trainer) and expanding outward to "games" with more specific job skills (i.e. a well-loved toy is scented with the desired scent to find; when puppy finds the toy, he/she is allowed to play with the toy; later, scent and toy are separated so that puppy will search for the scent and is rewarded with the toy afterward). The "games" technique is particularly effective with dogs bred for retrieval (such as hunting and sporting breeds) but has also been successful with working and herding dog breeds. A more commonly used approach is to base training on herding, prey/pursuit, and pack instincts: initial training for puppies usually involves run-away games where the handler runs from the puppy and hides a short distance away. Basic instincts drive the puppy to locate the subject, initially by sight but with the association of human scent. To advance this training, the subject hides further away or longer times pass between departure of the subject and release of the dog. The dog is forced to rely increasingly on scent to locate the subject. Eventually, the dog can be transitioned to search without seeing the subject depart by simply giving the command used when he's released during basic runaway training. During all stages, finding the subject is reinforced by multiple means (praise, play, or food treats).

For the handler (again, based on wilderness airscenting experience), wilderness orienteering and wilderness self-sufficiency/survival are essential training skills. Dog handling skills must also be learned during training (e.g., recognizing working v. distracted behaviors, differentiating

between alerts and finds, and positioning the dog to maximize terrain coverage). Of primary importance is the handler's ability to understand how the dog is working at any point in time, for which the handler will require detailed and intimate understanding of scent theory. Advanced emergency medical skills are usually not required but are advisable. There are rigorous studies of scent theory, lost person behavior, canine search technique, and incident command. Due to the level of physical exertion required at times, the top end SAR organizations may require difficult physical standardized testing. This ensures that the handler is able to cope with the ever changing situations presented to them.

Airscenting dogs are trained to find (i.e., follow human scent to its source, be it human or traces of a human), but this basic process has been elaborated and improved upon: dogs now are commonly also trained in recall/refind and indication. The entire process may begin with the command "Find!" or “Search!”, indicating that the dog is to search until the find is made. After the find, the dog can be trained to return to the handler (recall), perform a trained indication (often a bark coupled with some form of meaningful touching of the handler, such as a paw placed on the handler's leg or a "sit-stay" at the handler's feet), and return to the subject (refind, sometimes cued with the "Show Me!" command). Once the handler is with the subject, the dog is released (and during training, rewarded). Dogs are trained in the recall/refind shuttle between the handler and the source until the handler and subject are within sight (this builds on the dog's natural pack instinct). This is of greatest use in situations where the dog may be ranging from the handler (wilderness airscenting) or the subject may be concealed or out of sight (e.g., at night, hidden in brush), but is less useful for dogs trained for close-quarters searches (e.g., cadaver and drowning dogs).

There are two schools of thought on recognizing when the dog has made a find, the "natural" or untrained indication, versus the trained indication. With the natural indication, the handler must learn to recognize the dog's change in body language when s/he has made a find. For example, the dog may approach the handler and give specific look, or return to the handler in a very determined manner; each dog's natural indication is unique and often difficult for the handler to accurately describe to others. This method is touted as being accurate (currently the only method used by RCMP), instinctual, and natural thus requiring less training for the dog and more for the handler. This allows the dog to "have a bad day" and given that it is still a natural reaction the dog will still react in the same way.

During training, the handler must learn to recognize this behavior without cueing the dog (lest the dog learn to "indicate" only when the handler subconsciously prompts him to, a common mistake during the training process), and can complicate early training sessions if the handler (who is learning to read the dog) fails to reward a successful find appropriately because she failed to recognize the dog's natural indication. Thus it is important to train with those having more experience. On scene, the handler must pay constant close attention to the dog, which may be difficult or dangerous in commonly encountered search scenarios (e.g., night, hazardous terrain, low-visibility, while navigating off-trail, when fatigued or distracted). Handlers using dogs trained to a natural indication risk missing finds outside of training scenarios, mistaking alerts for finds, or missing finds because a natural indication was not

noticed or recognized, however they have the advantage in that as the dog tires or becomes distracted they will still exercise the natural behavior while they may not follow up with the trained response.

The trained indication involves an additional step in the search-find process; the dog is taught to perform a clearly recognizable behavior only upon finding the subject. For example, the dog may return to the handler and sit, perform a jump up, bark (either at the handler or near the subject), or grab a decoy or bringsel (a tug toy worn at the handler's waist). Addition of this extra step during training is easily accomplished, has the benefit of being easily recognizable under any circumstance, and can be easily differentiated from an alert (see below). Often, training the dog to perform a specific behavior is easier and more reliable than training handlers to consistently and reliably read a dog's "natural" indication. This takes less training on the part of the handler and more on the part of the dog. An example of a trained response is that, when a distant find has been made, the dog can be taught to repeatedly shuttle between the subject and handler using a refind-return-indicate-refind sequence.

When using a trained indication, the behavior must be well-ingrained in the search-find-recall process that a fatigued dog does not skip it. Distractions are still a problem and *extensive* training must be done to avoid this lest something as simple as a loud noise or animal prevent the lost person from being found. Advanced dogs can be trained to give different indications depending upon the nature of the find: for example, a jump-up for a live airscent find and a sit for cadaver. A potential problem with this method is that poorly trained dogs (or those who have been rushed through training) can become distracted before performing the alert.

An *alert* by an airscenting dog can be distinct from an *indication* (although for a dog that uses a natural indication, the two may not be distinguishable). Both involve being able to read the dog's behavior. Alerts are instances where an airscenting dog detects human scent but has not located the subject or source. Alerts can be recognized by a change in the dog's behavior—pointing, following a scent upwind, circling, or following scent up terrain or obstructions, for example. Recognizing an alert is important for any experienced handler, as the location of alerts along with wind conditions, environmental conditions, and terrain can be used by the handler to alter the search strategy. Regardless of whether the dog is trained to perform an indication on find, or whether the handler uses a natural indication on find, all handlers must be able to recognize an alert in order to effectively deploy their dog. Inexperienced handlers who use trained indications may have difficulty recognizing alerts, while handlers who rely on a natural indication may not be able to differentiate an alert from an indication (since the behaviors are essentially the same).