

Training for the Search and Rescue badge

This badge is designed to introduce the dog and handler to this activity and prove a basic understanding of the skills and information needed to perform the task of finding a lost person in a natural (or disaster) environment by scent (not by sight). Dogs know how to use their noses, but humans can teach the dog to find specific scents and indicate them. The following information has been compiled from Steve White's 6 DVD set: "Tracking with Steve White" and the book: "Search and Rescue Dogs- Training Methods" by the American Rescue Dog Association. Both highly recommended if you intend to pursue this farther than the badge.

What the human needs to know for the badge:

What dogs smell: A dog's sense of smell is vastly superior to that of humans. Dogs are utilized to find all manner of specific things from lost or escaping humans to diseases in bee colonies. For this badge, we will concentrate on the humans. Humans constantly shed cornflake shaped dead skin cells known as *rafts*. About 40,000 are shed per minute (about 150 per foot if the person is travelling at 3 mph). Each one contains bacteria and oils that represent the unique scent of the person that the dog is following. The skin starts to breakdown as soon as the raft dies.

Another factor in vegetated areas is the decay of crushed vegetation. Each time a person steps on any vegetation (grass, leaves, etc.) that vegetation is crushed and starts to decay. This can be affected by the amount of vegetation, force of the step, etc.

As the rafts and vegetation decay, the bacteria at work give off odor which is affected by the same variables as the falling rafts. The rate of decay varies with the weather. Moisture and warmth aids in decay while a dry and/or cold environment may slow it down. If a person is running or sweating, the rafts are more hydrated, thus more pungent as the bacteria have more moisture.

In the first 15 minutes after a person crosses vegetation, the scent of crushed vegetation overpowers the scent of the decaying rafts. If the missing person is the only one to go through an area, the dog can still track that scent. But if other people or animals cross or follow the same path as the missing person, it can make the dog's job harder. A track that is between 30 minutes and 3.5 hours old has the strongest human scent (while the bacteria on the rafts are at peak performance). After about 3.5 hours, the bacteria on the skin rafts has eaten what it can and the skin rafts have decayed to a point that their scent is weaker than the increasing scent from the decay of crushed vegetation. However, given that dogs have recently been used to locate graves made during the Civil War, there is clearly scent that remains for a LONG time from the decay of human cells.

How scent can travel: The skin rafts and the odors from decay are carried by air currents and dispersed in a cone shaped pattern with the person at the narrowest point. You may see a dog "zig zag" back and forth as they search, locating the edges of this cone. The rafts and odors from decay are affected by MANY factors like terrain, weather and air currents. This may affect where and how the dog follows the scent trail.

Terrain:

Open fields- This terrain typically allows the scent to follow the wind. A steady light wind or lack of a breeze can make it easier to follow than a strong or gusty wind that quickly and widely disperses the scent. Shifting winds can be a real problem in open fields.

Light brush- This includes areas that have open or wooded areas with some brush or wood piles. This has little effect on the scent and can be treated much like an open field.

Heavy brush- thick woods or un-mowed fields. A hot day with little or no wind would make this area difficult to search because the scent remains with the human and barely disperses. If it's a fresh track, it will be easier than an older one in which a person is trapped or hiding for a long period of time where the dog is relying on that person's scent to get blown out of the hiding place.

Woods- can vary from an open pine forest to a swamp with large trees and very dense brush. Open woods are easy to search. Dense woods will test your and your dog's patience and skills, especially on a hot day or in the dark. In open woods, the wind currents are similar to an open field. In dense woods, air flow is more like the dense brush.

Drainages and ravines: Since hot air rises and cool air falls, this terrain can really cause scent to do some odd things. During the day a search should be conducted along the top of the ravine or gully. An evening search should be done in the bottom of the gully. Searching where the scent is likely to travel can potentially eliminate the need to traverse the possibly steep sides of a ravine. These low areas can also funnel scent so that it flows like a stream.

Special conditions affecting scent:

Looping: Might occur on a day with little wind. The scent from a hidden person travels upward, then gets picked up by an upper level wind till it's dropped a few hundred feet (or farther) from the actual person. The dog may alert, but then lose the scent because there is no scent between the person and the dog. This can also happen near buildings or other vertical obstructions. Inside a building, it can occur due to A/C air flow and the dog may alert on a blank wall.

Chimney Effect: This term describes the rising of air due to warmer air rising and cooler air falling. When combined with upper level air currents or anything that obstructs or redirects the air current, it can cause "false alerts" in areas some distance from the actual target.

Eddying: Typically occurs along cliff lines, tree lines or similar obstructions that might disperse the scent in multiple directions.

Pooling: Low areas collect scent just like they can collect water. A scent pool may cause a dog to alert because of a strong scent, but because of shifting winds above the pool the dog is not able to follow the scent to its source. Often occurs in the cooler evening hours or during the night as the cool air falls and collects in low areas, taking the scent with it.

Being aware of how scent can travel will allow you to set-up better training exercises for your dog. Using a topographic map and evaluating the surroundings for the above conditions can allow you to better help your dog find the target.

The above conditions generally do not deter or defeat a well-trained team and should not be used as excuses for poor training or terrain reading.

How to read your dog: The more you work with your dog on scent exercises, the better you will be at “reading” the signals (body language) your dog gives when he is on the trail and when he has lost it. Steve White has 8 scent work indicators. You should know what it means when your dog does these things while tracking:

- **Pulling-** pay attention to intensity, duration, frequency and direction. Note changes and when/where they occur.
- **Nose height-** in relation to the ground, the dog’s body and to previous carriage
- Tail carriage- in relation to top line, previous carriage, wagging, frequency, amplitude (width of the wag), curl, etc.
- **Breathing-** sniffing (can overheat the dog), panting (dog gets less scent), turbinate pop (odd sounds), respiration rate, deep or shallow breathing, changes in breathing
- **Cadence-** forward speed, steady stride count, zig zagging, changes of pace
- **Circles-** diameter, relation to wind, recovery time, comparison, assessment
- **Crabbing-** (when hind feet try to pass the head or dog walks sideways) usually indicates internal conflict (body says go! Head says wait!) Inchworming: middle of dog’s back rises and falls as the nose stops briefly and the hind end doesn’t stop in time. Nose is hesitating on the scent.
- **Nose anchor-** Casting side to side, suddenness, body follows in line?, subtle or drastic swing, relation to wide direction.

Tracking, Air Scenting or SAR?: *Tracking* refers to when the dog has his nose in each footstep (also called footstep tracking). This method is required for some tracking tests like the ones done for Schutzhund but is not the primary means used for SAR. *Air Scenting* refers to when the dog has his nose up or level with the dog’s back and the dog is following a scent in the air. SAR dogs often use this method, especially when doing an area search trying to find the scent. *Search and Rescue (SAR)* refers to the activity of finding a hidden or trapped person and a dog performing SAR may use a combination of tracking and air scenting as well as visual cues (this combination is also known as “*trailing*”).

Reporting your find: It doesn’t do much good to locate a missing person if you can’t let others know you have found the target or call in help that person might need. Most search teams now utilize GPS, but these devices don’t work in heavy cover, like in a dense forest. So you need to know other methods of letting your fellow searchers know where to find you (& hopefully the target). A whistle can be used if other searchers are within hearing range. A compass can be used to triangulate visual markers to help searchers narrow down your location. This could be like saying the mountain is to my west, river is to my east and swamp is to my south. Knowing approximately how far those landmarks are from you will help narrow the search further. If you work with a search and rescue team, they may have their own protocol that you will need to follow. If you work in two person (or more) teams, you might be able to have one person meet a medical or extraction team at a predetermined point and lead them back to the victim. If you are searching a disaster area, other protocol may be used such as building plans.

Radio protocol: Using a 2 way radio seems like such an easy thing, but there are actually many rules concerning their use. If you are part of a search team, you do not want to cause them to lose their radio license because of what you say over the radio! In a search or disaster, there may be a high level of radio traffic. Only use the radio to communicate important information that others need to know. Do not carry on conversations that have nothing to do with the job at hand. While you are chatting, someone else may have an emergency and they can’t communicate because you are trying up the radio. Always identify yourself and the person you are trying to reach when to start your transmission (3211 to communications...) and wait for that person to

respond before you start talking so that you know they hear you and are ready for your message. (Com to 3211, go ahead.) Follow the search team's protocol for this as it varies from group to group and department to department. Learn the "lingo" and code words of the groups you plan to work with or you may miss an important communication or say something inappropriate! Often if you are searching for a deceased person, there are codes that are used in case a family member can hear radio traffic. The press will often monitor radio traffic and some things don't get released to the press. Be sure you are aware of what you can and can't say about the case on the radio.

Preserving the scene.: You never know when a missing person case may become a crime investigation. So you want to treat each find as though it is a crime scene. While life saving first aid takes priority, you can still follow these guidelines. Minimize the amount of foot traffic into and out of the scene (one path in, one path out) and try to use a least likely path in/out so you don't disturb potentially important foot prints or trace evidence. Before rushing in to the victim, make a quick mental note of the scene, you may need to recall details later. If the victim is deceased do not move the body or anything around it. Get your dog under control and out of the scene as quickly as you can to minimize their impact on the scene. Do not take anything from the scene without permission and documentation including photos.

Training the dog to find a human:

Since dogs already know how to find things with their nose, we just need to teach them how to locate what WE want them to find and then how to tell us it's been found.

If you plan to do Search and Rescue with your dog or pup that lives may depend on, please talk to experts in the field, read books and watch videos. There is a LOT more to learn than what is shared here! Plus, training techniques change and different people use different techniques. Just be sure the techniques you choose to use are based on positive rewards for the dog. If you are simply looking for new things to teach your dog and are interested in getting the badge, you can follow the steps here to get the basic behavior.

STEP 1: To start the training for the badge, you will be the one the dog is finding at first. This means you will need a helper to get the dog excited while you run away and go behind a barrier (side of a building, behind a big tree, etc.) It should be easy for the dog to find you and he should see where you went. As you are running away, you'll be making exciting noises and the person holding your dog will be excitedly saying things like "watch where she goes! Are you going to get her? Ready?" and then uses the search cue as the dog is released. When released, the dog should bolt after you and straight to your hiding place a short distance away. When the dog finds you, you'll have a big party! If your dog is toy motivated, have a play session. If your dog is food motivated, feed one tiny treat after another for about 20 – 30 seconds ("cookie party") while you tell your dog how smart he is. Repeat this several times in new locations.

STEP 2: When your dog is solid on step 1 in multiple locations, you'll start doing a quiet run away while the helper distracts the dog. If he tends to peek, use a barrier so he can't see where you go to hide. Again, it should be an easy place for the dog to find you (around a corner, behind a tree, etc.) and only about 25' away. After you are in place, the helper will rev the dog up by asking excitedly "where did she go?!" "Can you find her?" "Ready?" "Go!" (Don't use the search cue now until you know the dog is going to go directly to the person.) The dog's reaction will determine what needs to be done. Some dogs will use their nose right away, others will check likely hiding places first (especially if you have practiced in this location before). Some will rush off, but then realize they have no idea where they are going and will return to the helper. The helper should encourage the dog only when needed to keep the dog

looking. Give the dog a chance to try using his nose. If the dog is really struggling, the helper can move toward your hiding place. Be aware of wind direction. The dog should be getting the wind in his face that is blowing past you. If the wind is coming from behind the dog toward you, so is your scent and the dog will have a hard time at this stage. When the dog finds you, you'll have a big party! If your dog is toy motivated, have a play session. If your dog is food motivated, feed one tiny treat after another for about 20 – 30 seconds while you tell your dog how smart he is.

** Be SURE to repeat this several times in new locations. This is the foundation to the behavior and you want it to be strong and well understood! You want the dog to clearly be using his nose before you progress.

STEP 3: Once your dog has started using his nose to find you, you want to transfer that behavior to a new person. Repeat steps 1 and 2 with several different people (one at a time) in several locations. Keep the distances short (between 25 and 100'). You want the dog to be successful without getting frustrated. It won't hurt to have the dog practice success, but it can hurt if you rush through this step and find out the dog wasn't doing as well as you thought. Be sure your hiding helpers are having fun with the dog at the end (play with toy or cookie party).

STEP 4: Only after the dog is going right to the hiding person by using his nose every time will you do this step! Even if you don't plan to do serious SAR, you need to have a strong foundation or the rest of the training will fall apart. As the dog gets more and more successful finds under his belt, er, collar... you can gradually make the hiding place farther and farther from the dog's starting point. The dog and hiding person will need to be at least 200' apart for the badge test.

TEACHING THE RE-FIND:

If you plan to do the wilderness find, then while working on step 3 above, you'll need to teach your dog to do a "re-find". This is pretty easy to do. As soon as your dog locates the hiding person, call your dog to you and have a mini-party (toys or food) and then follow the dog back to the person who also has a toy or cookie party with the dog. By following the pattern of:

Find - return to you for party - return to hiding person with you for party

The dog will start to offer that. They know the hiding person won't play or feed till after you do and you won't party till after they make the find.

TEACHING THE INDICATOR:

If you plan to do the urban/disaster find, the target person won't always be accessible to the dog. By having the target person hide higher than the dog can reach, or behind a partially open door (open just a crack) or inside a box or barrel, etc. the dog will not be able to reach the person. After the dog makes the find, if you get the dog excited enough (sometimes the hiding person calling the dog will do it) the dog may offer a bark or scratching. For some dogs it needs to be the handler in the hiding place with a helper encouraging the dog. If you want the dog to bark, then mark and reward any noise the dog makes at first, even a quiet whine! The reward will be the person becoming accessible and playing or feeding the dog in a party style. With each find, wait for more and more noise until the dog is barking several times. Though barking may scare some victims, so a quiet "passive" indicator is often used. If you don't want the dog to scratch, simply don't reward any scratching or move the dog away from the hiding person and then let him approach again or hold the dog just out of reach of any "scratchable" surface. Scratching may injure the victim, cause crime scene damage or structure collapse. Other indicator behaviors may be used (sit, down, sustained nose target, etc.), but they need to clearly be an indicator of a find and not a randomly offered behavior. To teach this, have the dog do the behavior at the find each time and then reward. After some repetition, withhold the cue to see if the dog will offer the behavior to get the reward.