

Understanding “Nose Time”

In the Cross Trained Wilderness-Cadaver Dog

A concept that is not often discussed in the world of Search and Rescue Dog training is “nose time.” *Nose Time* is the actual time a canine, while on a directed search pattern, can continue to “sniff” for a particular odor and be able to recognize that odor at an acceptable level of reliability. The application in which the dog is utilized will determine the rate of sniffing behavior; the higher the rate of sniffing, the shorter the time that the dog is considered reliable. Reliability is measured by the dog’s ability to successfully locate the target odor, without an increase in misses, false alerts or self-rewarding behaviors.

Search patterns are determined by the size or strength of your target odor. If you are looking for a missing person in a wilderness search scenario, you have a large target odor. In wilderness work, our dogs are *sweeping* target areas in an attempt to pick up the scent pool or cone of the victim. When a dog *sweeps* an area, as opposed to *detailing* an area, the dog is using the natural rhythm of his breathing to locate odor. You will notice that these dogs have a particular speed they move at, their mouths are often times open and they are taking air in via the mouth as well as the nose. This has also been called the *free search*. Once the dog alerts to scent, you will see a change in speed, direction, as well as the closing of the mouth and an increased sniffing behavior so they can process the scent and follow it to source. Wilderness dogs also “search” (actually sweep) to a certain probability of detection. Because of this concept, there are times that wilderness dogs will miss. This has been built into the system because of our acceptance of POD and the need to cover large areas quickly to locate clues or other evidence that might direct our search.

The *directed* or *detailed search* is utilized to search a particular area for a target odor ensuring that the area is *clear* of the suspect odor. Wilderness teams do not *clear*. They *sweep*. A dog that is sweeping and alerts to odor can often be placed into a directed or detailed search by his handler in order to determine the source of the scent or confirm that the target is no longer there.

In order for a handler to utilize their canine to the fullest extent, it is important to know the *maximum nose time* for their dog in both the sweep and the detailed search. If you deploy your dog and continue to search with them after passing the maximum nose time for your canine, your reliability drops and you will see an increase of misses and false alerts.

The Space Shuttle Columbia Search – Review of the Use of Cadaver Dogs

Two of the major complaints in reference to the use of cadaver-trained dogs during the recovery effort at the Space Shuttle Columbia disaster were **misses, and false alerts** on animal remains. I have conducted extensive interviews with dog handlers and law enforcement officials who responded to the Shuttle Disaster. The purpose of the

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interviews was to find out from their perspective what the problems were that they encountered or other handlers encountered and what needed to be addressed from the trainer’s perspective in training the dog and handler team. I made it quite clear from the start that I did not want any information that was protected by the “gag order” issued by Federal Authorities. My inquiry was a quest for information that could be used by dog handlers and trainers to better prepare themselves for future missions. In no way would the information be used to embarrass or point fingers, but rather aid in the training process.

Again, the top two concerns were misses and false alerts.

When you look simplistically at these two events, you could easily surmise that the misses were caused by improper training, use of the wrong training aids or lack of proper aids and that the false alerts on animal remains were caused by failing to proof the canine on animal remains in training. Those ideas are valid, but assume improper foundation training. One thing that has not been suggested is that these events, misses and false alerts, actually occurred due to the handler not knowing the maximum nose time of their canine and continuing to search with the canine in excess of the maximum nose time.

How to Build a Dog’s Nose Time

In a cadaver dog’s foundation training, we have taught the canine to recognize scent, alert and give us a trained indication (final response/alert) at the source of the target odor. We set up search scenarios with multiple finds so we can work on search patterns. We make sure we use a wide variety of training aids so the dog learns to generalize cadaver scent. We proof on available animal remains; rabbit, deer, etc. We reinforce the find and alert. But ask yourself this:

How much negative searching do I do?

A *Negative Search* is requiring the dog to search or sweep an area for a specific amount of time without the dog being successful in locating a target odor. (Blank area)

In foundation training, our search/sweep time might be a sum total of 15-20 minutes. During that time the dog has located one to five hides. It is quick, it is convenient, and it gives the dog what HE needs to be motivated; quick reinforcement. But, that is not what WE need on a search.

A common mistake that dog handlers do during training is not extending the search or sweep in a negative (blank) fashion both prior to the dog making a find and after the dog has made the find. If you want to extend the nose time of your dog, set up a problem and sweep until you start to see your dog fade, become bored, offer other behaviors like disassociation or self-reward, and then is when the dog should be working into the odor. It is at that point that the dog should be successful and rewarded for locating the target odor and offering the trained indication/alert behavior.

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What if the dog doesn't offer the trained indication? WELCOME TO THE REAL WORLD!!!!

How many times have you heard from trainers that no matter what, no matter the day, no matter the conditions, the dog **MUST ABSOLUTELY POSITIVELY WITHOUT A DOUBT** give you the final alert/indication/trained behavior (sit, down etc) when it locates the target odor at source?

Let's talk about the real world. An explosive detection canine with a maximum nose time of 60 minutes on a detailed search has conducted three evolutions on a given day. Each evolution has taken approximately 45 minutes and there has been 15-30 minutes of recovery time between searches. Each search has 6-8 target odors to be located. The canine's trained indication is a passive sit. The canine exhibits a change of body carriage when entering the odor (alert) which includes the changing of speed, direction, head tilt, sniffing rate until it reaches source and then is trained to sit. On the third search, the canine locates three hides by sitting and then, when finding the next hide offers the change of body carriage clues but instead of sitting, stops and turns and looks at the handler. Is there a bomb there?

A good handler will tell you **ABSOLUTELY!** And call it. That is because a good handler has worked his dog in excess of his maximum nose time and has seen the change in the dog's behavior as well as the decreased reliability in the final response (trained alert/indication). In training, they have made the dog search a negative of 60 minutes before he was ever allowed to enter explosive odor. Then, they watched the change of body, and if the dog didn't go to final response (trained alert/indication behavior), they commanded the dog to do the final alert behavior and then rewarded.

The purpose of this training is two fold. First, it shows the dog that even when you are tired, the odor still might be there and you can be rewarded. Second, it shows the handler the realities of working a canine in a demanding real world and the changes that will happen to their dog.

The dog is a tool. Their purpose is to help you identify a target odor. It is **NOT** necessary for the canine to go to final response – trained alert – trained indication – bomb proof alert once you know he has exceeded his maximum nose time. Your job, as the handler, is to interpret the dog's ability to recognize scent and put the dog's nose in an area that allows them to locate scent. You interpret whether or not the dog is saying something is there. The dog cannot say. The dog cannot testify. It is up to you.

Now, let's go back to that explosive detection dog. This is the second set of searching on a given day. The dog has located all the target odors (three) and has been searching for 30 minutes. You know that number three is your last hide and there is nothing else to find. Do you stop there?

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No, you continue on and search for another 5-10 minutes. You put a negative into the end of your training. This builds your dog’s nose time and also teaches him that finding does not mean the game is over. We always want them to think there is MORE.

You get called to command and are given an assignment to search a sector for human remains. Command advises you that you will have human support, a line search will happen behind you and you should work your dog on point in front of the line. It is estimated that you will be in field for six hours and you are to conduct this search at a POD of 100% between your canine and human support.

It is not possible for your canine to search a sector for six hours for human remains at 100% POD. The Columbia Shuttle Disaster was a reality check for canine handlers. First, 100% POD was required of the team. The astronauts were on a mission and it became the mission of the searchers to bring them home. But the dogs were being asked to do something they could not do. Or were they?

Again, the dog is a tool with limitations. The canine handler is a specialist. He is like the sniper. The sniper is no good without his long gun. If his long gun does not work, he cannot compensate for the malfunction just as the dog handler cannot compensate for a non-working nose. Your dog has exceeded his maximum nose time. You, as the handler must realize that it is time for the line to continue on in the search and you must address the drop in reliability.

Do I have a controlled aid I can plant for my dog?

Part of the reason that the dog has reached his maximum nose time and his reliability is dropping is that in most cases he has already found a target odor and his “nose clock” tells him that it hasn’t smelled anything and therefore his brain figures it’s not there because it has never taken this long to find it before.

This is easy enough to fix. It is time to break your dog, reach into your pack and make a quick hide with a controlled aid so you can reinforce your dog and make sure that he is rewarded and motivated to continue on.

A controlled aid is one of the following:

- ❑ A scented item, previously stored with cadaver material but only containing the odor transfer.
- ❑ Pseudo Corpse Scent

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You never carry any real cadaver material on your person when conducting a search. If it is a law enforcement search, you will compromise the investigation.

Break your dog for 5-10 minutes or so, water him, plant the controlled aid, put your dog back on command and within 30 seconds let him find the aid. Reward BIG! Take the time to play with your dog and announce there is more and then catch up with the line and continue on.

In doing this, you will have demonstrated your ability to know the limitations of your canine, that you understand the search does not revolve around you and your dog but rather you are there to supplement and assist the searchers, and that you have the maturity and professionalism to fix any problems as they arise and are not willing to compromise the integrity of the search. In doing this, you will have won the respect of the commanders and other searchers.

The longer the search goes on, the more frequent you will be required to plant controlled aids and break your dog. Remember, he is just a tool with limitations and you cannot compensate for his lack of abilities.

What about the legalities of using Pseudo?

I hear a lot of talk in reference to having problems in court due to the use of Pseudo scents during training. There is absolutely NO CASE LAW on record, at the federal level, that has ruled that using Pseudo scents destroys the credibility of the canine. In fact, there is only one case that mentions Pseudo scents and it is a narcotics case. Legally, pseudo scents are a proper training aid.

Why did my dog alert on pig bones?

There are over 2700 different smokeless powders in production today. Explosive Detection Dogs are trained on a handful, but yet will respond to most. This is due to the theory of *Generalization*. The constant odor provided by most smokeless powders is a nitrate base. Therefore, the trained dog recognizes the nitrate base and alerts and indicates on the odor. If we have exceeded our maximum nose time in a search then the trained bomb dog is likely to generalize to another item that has nitrates in it but is non-explosive and provide an alert and indication. This is due to generalization. The chance of this occurring increases the longer the search.

Take, for example, the cadaver dog that has been proofed on animal remains during training. What if the animal remains are the only things in the search segment and the canine has exceeded the maximum nose time and has yet to be rewarded for finding human remains. Will the dog, who has been proofed, false alert on the animal remains? Absolutely!

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The dog will generalize and because he is passed the maximum nose time when confronted with the animal remains he will false alert/indicate. He is reward driven and usually, he has already found something and been rewarded. He will think that this animal must be what he is supposed to locate and will perform alert and trained indication behaviors in order to get his reward.

So, What is the solution?

In training, you must determine your maximum nose time when sweeping an area as well as when detailing an area on a directed search pattern. You must increase your use of negative training areas and frequently break your dog. Add negative searches prior to entering your actual search area as well as after you have completed your search area. Don't always end your search with a find and reward. Learn to read the change of behavior in your dog when the dog enters odor and investigate that. Don't always expect your dog to go to final response (trained alert behavior) if you know you are working in that gray area near your maximum nose time. Set up training scenarios using animal remains with negative searches prior to locating the remains as well as after locating the remains. Extend your nose time by providing a controlled aid for the dog to find, thus reinforcing the job at hand. Break your dog when he has reached his maximum nose time.

During deployments, accept that your dog has limitations. If your dog is not working, pull the dog. You will be respected for this and I guarantee if you continue to work a dog and the dog makes a mistake, you will be crucified for it in the court of public opinion.

Your dog is a tool to assist in the task at hand. Nothing more, nothing less. If the tool is not working properly, don't use it.

*I would like to personally thank the dog handlers and law enforcement officials that took the time to answer my questions in regards to the Space Shuttle Columbia Disaster search. It is important to state that they were able to answer training questions without releasing any protected information and the interviews were conducted with the utmost respect for the astronauts who lost their lives that day. **“Their mission became our mission.”***