

THE K-9 'NOSE'

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Introduction

As a boy growing up in rural Arkansas, I was introduced to hunting by my dad at a fairly young age. I remember the thrill of the hunt, which included hearing the dog bay a squirrel in a tree. What was amazing to me was the accuracy of the dog, always stopping at the right tree as it barked out where the animal was in hiding. There were many smells in the woods, and for the dog to be able to track the certain type of animal that it was trained to detect was nothing short of a miracle to me. I did not understand it then, but little did I know, the career path that I would choose later in life would eventually help me to understand how this happens.

I ended up becoming a state trooper and spent 16 years in highway interdiction as a canine handler. I had the privilege of handling three different breeds of canines, all of which were very successful in their narcotic detection efforts.

Now, through years of training, handling, and courtroom testimony I have come to understand what the hunting dog in the woods smelled, and how the dog could discriminate odors (Syrotuck, 2000). I have since moved on to supervision and have felt the need to write about my experiences and training in hopes of not only educating the rank and file officer of what they are actually watching during a canine sweep or search, but to also share this information with others in supervision and administration.

I feel the research and personal experiences that I have compiled will also aid in helping other canine handlers and departments in defending the actions of their detector canines when those actions are questioned. Remember: a police canine is not an infallible piece of equipment, such as a RADAR or a canister of pepper spray, but a

living breathing mammal that happens to have an olfactory receptor system (sense of smell) that is anywhere from 44 times to 100 times greater than man's (Syrotuck, 2000). This enhanced sense of smell, along with the canine's ability to scent discriminate makes the police canine a valuable tool in odor detection.

Therefore, a properly trained police canine team is an asset to a police agency. Whether it is detecting a cache of narcotics, tracking a suspect, finding articles of evidence, or finding a lost person, it is usually always a "win-win" situation for the agency when the canine team is successful. However, there are times when the team comes under scrutiny, when the canine responds to the odors upon which it is trained and no physical evidence is found. This mainly happens in the area of narcotics detection. This occurs with some frequency in automobiles where large amounts of drugs have recently been transported, leaving odor molecules behind in the materials of the vehicle. This also occurs when drugs have recently been smoked inside the vehicle. The odors are still noticeable to the canine's nose, causing the dog to respond positively to narcotic odor, even though no usable amounts of the narcotics are present.

Hopefully, in the following pages I will be able to explain what takes place when the canine team is deployed. I will attempt to describe what the dog smells, how it analyzes odors, and how it positively responds to its handler, the presence of those odors that it has been trained to alert upon. Simply stated, understanding how the canine works should instill confidence of the team's abilities to both the line officers and the agency administration. I will help you to draw your own conclusions by discussing the following categories listed below:

- 1. The Sense of Smell**
- 2. Anatomy and Physiology of the Nose
(Human vs. Canine)**
- 3. The Human Body as a Scent Source**
- 4. Selecting a Canine for Detection Work**
- 5. Evaluating a Canine for Narcotics Detection Potential**
- 6. Basic Detection Training**

The Sense of Smell

It is impossible to carry on a verbal conversation with an animal. So, much of our information on the sense of smell comes from studies on humans. It is fair to say the sense of smell is very primitive and can evoke early memories (Gorman, 1964). Maybe this is why a dog can remember its first owner many years later. The dog's sense of smell develops early for survival, as it has to root for milk from its mother as a newborn. Humans are fed and protected by their mother, and don't have to rely on the sense of smell at such an early age. As humans, we don't rely on our sense of smell or (olfaction) for survival (Gorman, 1964).

Moncrieff (1967) postulated that there is no widespread, naturally occurring vapor that is both toxic and odorless. He felt that unpleasant smells in nature are associated with danger, and our noses keep us away as a safety measure. Raw sewage is an example as well as the odors from rotten or spoiled foods. Some people have well trained noses. Examples are the blind and certain people who do night scouting. They obviously rely

more on their noses as a sense of survival and navigation. This causes the sense of smell to develop much more acutely than the sense of smell of the average person. Man has a relatively small and simple olfactory system and is considered microsmatic. On the other end of the spectrum, many four legged animals, including the dog, have a keen sense of smell. These animals are known as macrosmatic and have a complex nose design, in addition to a large olfactory lobe in the brain (Syrotuck, 2000).

Our noses are constantly assailed with odors from the environments that we live in. We tend to frequently ignore or suppress smells that we are constantly in contact with. This also occurs in dogs to some degree. But, the major difference here is the dog's ability to find a particular scent that it was trained to find, or an odor from a dangerous enemy that is shrouded within the more pungent or common odor that is present (Syrotuck, 2000). This takes us back to the hunting dog in the woods. Even though the pungent odor of the pine forest is there, along with other animal odors, the dog still manages to scent and trail the correct animal to the exact tree.

In the mid 1990's I was invited as a guest instructor to the California Narcotic Canine Association in Van Nuys. While there, I was fortunate enough to attend some other classes in between teaching my own. In one of the classes I attended, the instructor placed a large bale (20 lbs.) of marijuana on a table. As he un-wrapped the bale, the room was quickly enveloped with the odor of raw marijuana. He told us to take a 10 minute break, and then return to class. When we returned I saw the bale of marijuana, still on the table, but the only odor I smelled was that of gasoline. The instructor had placed an open, plastic jug of gasoline on another table, beside the table with the marijuana bale. The instructor then retrieved a narcotic detector canine from its crate, outside the

building. The instructor brought the canine into the room and gave it the command to search. Within seconds, the canine pulled the handler directly to the bale of marijuana, and indicated positively to the handler, the presence of narcotic odor. This may seem extreme to some, but it proved the point of scent discrimination. The humans could only smell the most dominant odor, but the dog not only smelled the dominant odor, but could also smell the less pungent odor of the narcotics, which it had been trained to indicate on.

The above demonstration proves the canine's olfactory performance is relative to the amount of training it receives in detecting certain odors (Syrotuck, 2000). I will discuss this more in-depth in the Basic Detection Training category of this paper.

Anatomy and Physiology of the Nose **(Human vs. Canine)**

A good understanding of the structure (anatomy) (Miller, Christensen, Evans, 1965) and what is known about the function (physiology) (Moncrieff, 1967) of the nose will help the handler in both training and working with the dog. It can also aid in preventing some serious errors in handler judgment. A closer look at the environment will often reveal a good reason why a dog is unable to scent in those conditions. I will begin with the structures and function of the dog's nose.

The Nasal Plane is the hairless part of the nose covered with a plaque –type pattern that is unique to each dog. It contains the nostrils which allow air to enter the nasal chambers. The nostrils widen or flare during the time the dog is sniffing, to draw in large amounts of air. Sometimes this is so intense, that the attentive handler can actually hear the dog's nostrils making a “popping” sound. This is a good indication that an odor the dog has been trained to detect may be contained in the air its scenting.

The Vomeronasal Organ is a narrow tubular canal, starting near the front of the nose, behind the canine tooth, and running along the floor of the nose. It contains olfactory cells and 608 nerve bundles connecting it to the olfactory lobe of the brain (Syrotuck, 2000). An easy way to identify this organ is to open the dog's mouth and look at the roof of the mouth. On any breed of dog, directly behind its front gum line, you will notice a slightly pronounced protrusion similar to a button placed flat against the roof of the mouth. This is the Vomeronasal "Button". It is very important to the survival of the dog in the wild against predators or danger. It is also very useful when the dog is doing detection work on a hot day.

There are only two ways that a dog can cool its core temperature naturally. As humans we cool our core temperature by sweating through our skin. A dog's skin does not contain sweat pores to aid in the cooling process. The two natural ways that a dog cools its core are, through its paw pads (feet), and by panting (mouth open). So, on a hot day, when the dog has been hunting or working and begins to cool off by panting, it can still scent and analyze the air molecules through the Vomeronasal organ. If the dog detects an odor of alarm or interest, it will momentarily close its mouth, and analyze the air more closely (nose "popping" may be heard).

Case in point: I made an interdiction stop with the use of my canine back in 2001, which resulted in the seizure of 90 kilograms of cocaine. When I was subpoenaed to federal court in Dallas to testify at a suppression hearing, the video of my stop was played for all to see. The stop had taken place on you guessed it, a warm day. Under cross examination the defense immediately attacked the credibility of the canine, inferring the canine was analyzing nothing, because of its panting. I was able to counter

with the explanation of the dog's Vomeronasal organ, and then show on the video where the dog begins to close its mouth and smell more intensely and rapidly, just prior to giving me a positive response (scratching the rear bumper) to narcotic odor coming from the vehicle. The narcotics were hidden in the rear panels of the van, in the same area where the canine alerted. Needless to say, the evidence was not suppressed.

The Turbinates are bony ridges covered with mucus membranes that slow down the flow of air entering the nose, by protruding into the nasal chamber (Syrotuck, 2000).

The Sinuses are bone cavities located in the head that are small at birth and grow with age. They are lined with mucous like cells, which may have olfactory capabilities.

Nasal Mucosa is a mucous membrane that covers the entire interior of the nasal chambers. It secretes a brownish fluid, as opposed to the clear fluid in humans.

Olfactory Cells (also known as receptor cells) are long, slender cells that protrude out and float in a mucous layer that covers all the cells. These cells begin rather sparsely at the front of the nose and progress to a denser level toward the rear of the nose (Syrotuck, 2000).

Sustentacular Cells are also long rod-shaped cells with short fibrillar projections at the top. There is recent evidence to suggest that they may be the more important cells in receiving the odorous substances (CIBA Foundation, 1970).

Comparison of Human vs. Dog- The olfactory system is composed of the nasal chambers and sinuses, which serve as receptor areas for scent, and the olfactory nerves, which carry the signals to the olfactory lobe. It is in the brain that odors are recognized, interpreted, and filed for memory. The brains of larger dogs are very near the same size as the human brain, but have fewer folds and creases. Folds and brain size correlate with

intelligence levels (Syrotuck, 2000). Almost one eighth of the dog's brain and over fifty percent of the internal nose is committed to olfaction (smell), whereas the human olfactory lobes are much smaller, and the area of olfactory cells is only about one square inch. The above translates that man has about five million receptor cells compared to a large breed dog such as a German Shepherd or a Retriever, which have two hundred twenty million of these receptor cells.

A dog's sensitivity to butyric acid was found to be one hundred thousand to one hundred million times greater than man's (Syrotuck, 2000).

Droscher (1971) gave the following theoretical example: A gram of butyric acid contains 7×10^{21} molecules. If they were made to evaporate evenly in all the rooms of a ten story building, a man would barely be able to perceive its existence by standing in one of the rooms. However, if the same gram of butyric acid was diluted to fill the air above the entire city of Hamburg, Germany, the dog could still perceive it at an altitude of three hundred feet. Syrotuck (2000) felt the probable advantage from the dog's increased olfactory area is the enhancement of discrimination.

The CIBA Foundation (1970) had data suggesting that a dog's level of sensitivity is somewhere between ten and one hundred times better than man's. There is some variability, depending on the ability and motivation of the dog.

Two examples of dogs with substantially limited olfactory abilities: Short nosed dogs are subject to respiratory problems, sometimes due to restricted nostrils. Albino dogs and certain breeds of white or light colored dogs may have partial or almost complete impairment of smell (Syrotuck, 2000).

Obviously, when choosing a canine for scent work, the above factors should be taken into consideration. It is well established that the dog is very capable of detecting trace amounts of certain odors and has a nose much superior to humans. Heredity, intelligence, and training vary with each dog. Regular training will improve both the working ability of the dog's mind, as well as the discriminatory quality of its nose (Syrotuck, 2000).

The Human Body as a Scent Source

Our bodies are shaped through heredity, environment, and experience. The generation of scent takes place both internally and externally. The choices we make also have considerable influence on the emotions and chemical experiences of our bodies (Syrotuck, 2000).

As we continue to press forward with the study of DNA we know that inheritable characteristics are transmitted by genes. Each gene corresponds to a longer or shorter fragment of the DNA molecule with some particular and specific sequence of nucleotide units. Heredity, therefore gives rise to individual differences. It would be safe to say that, out of three billion humans, each is quite individualistic scent-wise (identical twins may be the exception). This is just one part of many factors that contribute to a unique scent to the dog's nose in scenting individual humans.

Racial Variations- Anthropologists have contributed much of the information concerning racial variations. In their studies of racial migrations, they constantly catalogue racial markers. Many of the markers have to do with physical structures (Syrotuck, 2000). Genetics also produce consistent physical and metabolic differences.

Recently this was proven to be true. Asian races have a distinctly different type of ear wax. It is a grayish, granular secretion, as compared to the yellow-brown sticky secretion of the African-American and Caucasian races. Another difference of more interest to dog trainers and handlers is the size, distribution, and function of sweat glands. African-American races have greater number of total sweat glands, Caucasian races have somewhat fewer total sweat glands, and Asian races have the least total number of sweat glands (Syrotuck, 2000).

Cultural and dietary customs also play a role in the individual's scent. Bathing customs vary, along with what soaps and body oils may be used in the process. The types of clothing that are worn, as well as any animals that are kept in homes also contribute to scent individuality. What we eat also plays an important role in our scent.

I only feel the need to expound on one particular substance, proteins. The ingestion of proteins, since they are the tissue or cell building blocks, which determines the structure and functions of any cell, and is, itself, determined genetically by the linear sequence of amino acid subunits in the DNA. What we eat, how often we eat it, and the rate and manner in which it is metabolized, is individually different.

Cells and Skin- The cell has two main parts: The nucleus, which contains the genetic material (DNA), and the cytoplasm, which contains the surrounding semi fluid of proteins and enzymes. Binding the cytoplasm is the cell membrane which keeps the cell contents in place. It is estimated that fifty million cells die, in our body, every second. Many of them are shed to our environment (Syrotuck, 2000).

However, for the purpose of this paper I am interested in the skin cells, and how these shed cells aid a trained canine in tracking, or trailing an individual. Dead cells,

called “rafts” are shed constantly from our skin, respiratory tract, and digestive tract. The skin rafts are readily visible on dark, rough fabrics that we rub against our skin. As stated above, regarding the fifty million cells that die in the body every second, approximately forty thousand of these are skin rafts, each minute, being deposited into the air or environment. This allows a properly trained police canine to track or trail an individual.

There are some environmental issues that warrant discussion to assure the canine team’s success in a human track. First, when a suspect flees, it is our natural instinct as police officers to pursue the suspect; it’s what we get paid to do. We then get to a point and realize that we need the canine unit, as we have lost sight of the suspect. The canine arrives and immediately picks up a scent, as we have shown the handler exactly where the suspect went into the woods. What happened here? Did the officer not go into the woods here as well? The team trails to exactly where the officer stopped chasing and came back to the start of the track. Two things: If possible, the handler should have tried to locate an article that had the suspect’s scent on it, or the initial pursuing officer should have made note of where he stopped the pursuit, and the canine team begin their track at that point.

Remember earlier, when I said a dog is not an infallible piece of equipment. Constant training and doing our part to make the scene as level of a playing field as possible for the canine team usually results in a successful apprehension or find. Don’t always expect instant success on a tracking mission. The terrain and air currents have a lot to do with the canine team’s probability of locating someone. If the subject being tracked travels over mostly concrete, asphalt, or other non-porous surfaces, the skin rafts may be blown several feet or yards away from the actual traveled path. This is something

to keep in mind, especially if the track is lengthy. This could make the dog appear off-course at the end of the track if it has no other odor to go on other than the rafts.

Fortunately, physical activity and adrenaline cause our bodies to secrete large amounts of sweat, which contain protein and give off an individualistic odor to the canine. In most law enforcement encounters the canine has at least these two scent factors in its favor to aid in a successful outcome. The exception may be a lost person who has become tired or distraught and doing little or no physical activity.

Selecting a Canine for Detection Work

Now that I have discussed the scientific, physiological, and anatomical aspects of the dog's sense of smell, we can move on to the selection process of a potential detector canine. I touched on tracking and trailing earlier. But from this point forward, I will primarily be talking about narcotic detector dogs. Narcotic detection work is by far the bulk of the work done by most police canine teams. Not all canines are suitable for police service. First, you have to consider what purpose(s) the canine is expected to perform for the agency. Even though the retriever type dogs can make excellent narcotic detector dogs, they would not be a viable candidate for a dual purpose (narcotic and patrol) dog. Robicheaux (1996) stated that about one in twenty dogs tested will make a narcotic detector dog. There is also a dual credibility issue at stake when selecting a dog; neither the dog trainer nor the police agency can afford to have its credibility damaged by the selection of an inferior canine candidate. The non-aggressive breeds, such as sporting dogs and retrievers are an excellent choice for industry or schools, where the handler does not rely on the dog to protect itself or the handler. The aggressive breed dogs on the

other hand are expected to not only detect narcotics, but also to serve as an aggressive patrol dog and/or perform tracking. The successful breeds for these multi-tasks have shown to be the Belgian Malinois and German Shepherd dogs.

The age of the canine candidate should be considered as well. A dog under one year old is usually not considered, since their concentration level has not developed to where it needs to be for consistent behavior in detection work. A dog over five years old should not generally be considered either, since it will only be able to give a short time of service for the agency's investment (Robicheaux, 1996). The sex of the dog is not a big issue, although if selecting a female, it would be better to have them spayed as soon as possible. This would be less down time for the team, due to the dog not being as focused during the natural "in heat" cycle, and causing a problem if another male police canine was on patrol in the same area as the "in heat" female.

Finally, the size of the dog is a critical factor. If doing narcotic detector work only, it would certainly be practical to use a smaller breed dog if you were exclusively assigned to search packages on conveyer belts or bus and plane interiors. On the street, the agency is better served with a large breed retriever for narcotics only, and as stated earlier, a large breed shepherd type dog for dual purpose applications.

Evaluating a Canine for Narcotics Detection Potential

Now that the canine has met the initial selection criteria, it's time to evaluate its potential as a narcotic detector. Robicheaux (1996) stated the dog should be evaluated away from its "home" territory in order to gain a true picture of how the dog responds in an unfamiliar place. The temperament of the dog needs to be high energy and always

ready to work or play as compared to a lazy or laid back dog that is hard to motivate.

Dogs that are obviously under stress or un-controllable are usually not suitable candidates either. Although, some types of alleged temperament problems can be trained out of the dog. These types of problems are usually associated with prior bad or incorrect training experiences (Robicheaux, 1996).

The retrieve drive of the dog is the first test performed and it evaluates the dog's natural drive to retrieve. This test is most critical in determining the potential success of the dog. It begins with a trainer throwing individual objects from a bag of assorted items. Items may include: a rolled up towel, tennis ball, retriever dummy, a piece of PVC pipe (about 8" length), a metal pipe, and a piece of wood. Each item is thrown one at a time in full view of the dog. The dog should want to freely retrieve some of the items. The ideal dog should show an almost frantic desire to retrieve each and every item thrown. The dog should also act this way when the trainer fakes throwing an item. A dog that retrieves nothing should not be considered for any further testing in the process.

The next step is the dog's possessiveness level. If the dog has passed the retrieve drive test, it will usually do well in this test too. Simply stated, a dog with a high level of possessiveness will not want to give up the item that it has just retrieved. The dog will usually want to play a game of tug of war with the handler, and if the dog does drop the object, when someone starts back towards it, the dog will grab the item and run away with it. Another desirable action is the dog may only drop the item to get a drink of water, and when finished drinking, picks the item right back up.

The hunt drive evaluation begins with teasing the dog with an item. The item is thrown into some tall grass and the dog is not allowed to see where it is thrown. The dog

is taken close and down wind from the object and released. The dog is then encouraged to find the object. The evaluator is constantly observing the dog to see if it is using its nose or sight hunting by looking into the grass without its nose down. If the dog is relying on its eyes and not its nose, it is known as a “sight hunter”. There is no place for this dog in detector work. The ideal dog will put its nose to the ground with tail wagging, and frantically sniff and search the area until it finds the item. The dog should also exhibit a strong concentration level during this phase. The longer it hunts the better.

From the initial retrieve drive phase, the dog should have exhibited which item it was most possessive of. If it was one of the hard items, the dog should easily adapt to the PVC pipe. If it was a soft item, the dog should adapt well to the rolled up towel. I name these two items specifically because they are readily available, and they are two items that are easily made “odor neutral”. I’ll talk more about this in the training and scent association part of the Basic Detection Training section.

Next, either the rolled up towel or the eight inch piece of PVC is tied to a string and introduced to the dog in an upside down milk crate. The item tied to the string is bounced up and down inside the crate by the trainer. This creates the appearance of live prey inside the crate. The more the dog wants to get at it by scratching or biting, the better. This intensity demonstrates the dog’s desire and possessiveness.

The final test is the dog’s environmental sensitivity. The dog is taken to a building with slippery floors, such as damp tile or concrete. The dog’s favorite item or “toy” is then thrown into an area where the dog has to cross the slippery floor. It is okay for the dog to be unsure, but the desire is for the dog not to be distracted by the surface and retrieve the item. Next, the toy is thrown into the open trunk of a vehicle. A

desirable dog will climb into the trunk and retrieve the toy. A dog that successfully completes these tests is now ready to move to the next phase, Basic Detection Training (Robicheaux, 1996).

Basic Narcotic Detection Training

Before I go into the narcotics training, I need to address a few obedience skills that the detector dog prospect needs. Before the detector dog candidate begins the narcotic scent training it must be able to: heel, sit, go into the down position, obey the stay command, and the go to the bathroom command. Obedience training and maintenance should also take place at a separate time and location than the narcotics training. This is so the dog doesn't relate any corrections given during obedience training with the possibility of the dog scenting narcotics odor, causing a negative correction to the dog.

Let us begin the narcotics training with **Scent Association**. From the first day of training the dog is conditioned to associate a specific scented article called a "gifte", as its personal play toy. As noted earlier, it should be the dog's favorite toy. This is usually a rolled up towel or a piece of 8 inch by three quarter inch schedule forty PVC pipe. From the start, the "gifte" is loaded with the desired narcotic that the dog is being trained to find, usually Marijuana (Robicheaux, 1996). The narcotic is placed in the "gifte" so that the dog cannot get to the actual narcotic. Begin the training with the loaded "gifte", making sure the dog accepts it as its toy. Teasing and playing tug with the dog and toy motivates the dog to want the toy more, while also allowing the dog to smell the narcotic

odor and associate that odor with fun. This is why when the dog smells the narcotic odors that it must always be associated with positive reinforcement and fun for the dog.

Next, the “gifte” is thrown into some tall grass for the dog to retrieve. Just like in the initial hunt drive process, this exercise tests the dog’s ability to scent and not sight hunt. The dog is now associating the narcotic odor as it hunts for the toy. After the dog finds the toy, there needs to be high praise to the dog along with playing with the dog and tugging at the toy, trying to get it from the dog. Allow the dog to win and run away with the toy. After doing this, the next step is getting the toy back from the dog. This is a critical step as the handler does not want to create a negative experience for the dog. Start by holding the top of the dog’s collar, picking its front feet up off the ground, and giving a vocal command to the dog to release the toy. The English command would simply be “out”. Some dual purpose dogs are trained in Dutch or German, and have “out” commands for those respective languages. The Dutch or German command would be either “lot lowse” or “lowse”. As soon as the dog releases the toy, pick it up and fake a throw away from the dog and hide the toy on your body, so that the dog thinks the toy is gone (Robicheaux, 1996). This process reinforces the dog to scent for the toy or narcotic odor.

Developing Indication Skills- There are several methods used for having a dog indicate or alert the handler to a narcotic odor or a find. The most common are scratch, bark, or sit (Robicheaux, 1996). The scratching or barking methods are known as an aggressive alert dog. The sit method is known as a passive alert dog. Both alert types have a place in law enforcement.

In a mass transit hub such as an airport or a large public gathering, the passive alert dog would serve well here when alerting the handler to narcotic odor from luggage or other personal effects that are subject to a free air canine sniff. On the other hand the aggressive alert dog is the method of choice for most agencies that are involved with highway interdiction and daily patrol activities. The aggressive alert dog can pinpoint the odor much closer to the source, thus saving the handler valuable time in locating the contraband in a house or vehicle. The barking method has some shortcomings, one being that a barking dog expels large amounts of physical energy when barking, which causes unnecessary fatigue for the dog. The other being, as the dog barks, it is constantly moving and may leave the source of odor, making it difficult for the handler to locate the find.

There are two kinds of rewards or toys the dog is allowed to train with. Up to this point, I have discussed the primary reward or toy, which is the toy loaded with the actual narcotic odor. This toy is used in training only, and the secondary reward is the unscented toy, used during training and on scene searches. As the dog progresses through its training and develops its indication skills with the primary odor, the trainer/handler begins to hide actual narcotics. When the dog alerts or indicates to the odor, the handler rewards the dog with the unscented toy, which is thrown by the handler and hits the area the dog indicates on. This allows the dog to believe that scratching at the source of the odor caused its toy to pop out or appear. When the dog pounces on the toy, the praise and tug should immediately begin. The important thing to remember is never allow the dog to see the handler throwing the secondary reward. This can create a conditioned response from the dog by scratching, and then looking back at the handler for

the toy. In the event that this happens, the handler should go back to hiding primary rewards, which allows the dog to reward itself when scratching.

Start with low finds until the dog develops an automatic alert when it locates odor. Then, move up to muzzle level until the desired alert is achieved. Finally, place the finds high so the dog has to rise up on its hind legs as it gets into the scent of the narcotic odor. Continue with this training until the dog is automatic with its indication every time you train, whether using a room or vehicle for the training scenario.

Negative Training Aids- To ensure the dog is not scenting just the odor of its toy, before any narcotics are added wash the towels in hot water with no detergent and air dry outside. White towels are preferred since they have no dyes in them. Then they are rolled up and tied with a cotton string. The PVC pipes are lightly sanded with a coarse sand paper, power washed with hot water only, then allowed to air dry outside. The non-scented items are then hidden in a narcotic odor free area for the dog to search. This should be a regular part of the dog's ongoing training throughout its career to document that the dog does not alert to a neutral or odor free training aid.

Search Pattern Strategies- Let us begin with rooms or buildings. As the handler enters a room through the door he/she should mentally divide the room into four sections, with each wall being a section. Put the dog in a sit at the left side of the door. The handler should then place the leash in their left hand. The handler fakes a throw with a secondary reward or toy in the direction the handler wants the dog to go, and gives the dog the command to search.

Robicheaux (1996) preferred the reverse search pattern, and I must agree, since I have had great success with it in my career. The reverse search pattern always has the

handler walking backwards, so that the handler's body creates a moving chicane to help direct and focus the dog's nose in the area the handler desires it to search. A second, equally important function of the pattern is that it allows the handler to watch the dog's movements and posture as the search progresses. When the dog gets to the end of the first wall, the handler switches the leash to the right hand, and has the dog repeat the search from the opposite direction. By doing this, the handler has allowed the dog to detail any areas that it missed searching on the first pass, and also has a greater probability of putting the dog's nose directly into the wind that contains odor. Each wall of the room is searched in the same manner until the entire room has been searched. Objects in the center of a room are broken down similarly and searched the same way.

Vehicle searches are broken down into two sections on the exterior, a sweep of the interior, and any area inside the vehicle that needs detailed. Always begin at the right front of the vehicle with the dog in a sit. Fake a throw with a secondary reward and give the dog the command to search. With the leash in the left hand, walk backwards along the front of the vehicle, down its left side to the left tail light, then switch the leash to the right hand, and reverse the dog, searching back along the left side and across the front again. As the dog and handler approach the right front, they continue searching down the right side of the vehicle and around the trunk area to the left tail light. At the left tail light, switch the leash to the left hand, reverse the dog, and search back down the right side, ending at the right front of the vehicle. If the dog responds to odor, open the passenger door, and place the dog inside to search the interior (Robicheaux, 1996). Do not go to this step in a real search unless you have consent to search the vehicle or the dog positively responded to odor, which gives rise to probable cause for the inside search.

Note: A quality handler will also perform an on sight safety check of all areas to be searched before placing a dog in a hazardous environment.

The Process of Recognizing a Positive Response- Most handlers and trainers will agree there are three things that happen when a canine gives a positive response or alert to a narcotic odor that it has been trained to detect. The first thing that happens is a noticeable change in the dog's breathing, closing its mouth, hearing the nose pop, or seeing the nose move high or low during the search. The second event is the noticeable change in the dog's posture, which can be anything from the dog trying to crawl low under a vehicle, or down into a hole in a room or building. Also, when the dog voluntarily begins to stand up on its hind legs is also considered a significant event in this stage. This is not a natural act for the dog to do this. It is usually a good indication that the dog is scenting odor from a high area. The third stage of the alert is the actual aggressive (scratch) or passive (sit) indication, depending on which indicating style of dog is used. However, a good handler will be able to recognize the first two stages of the alert and will be able to ease an aggressive alert dog off the object just before the dog scratches (Robicheaux, 1996). This is especially done in the cases where the dog may scratch the paint on an automobile or furniture in a room.

Introducing Additional Narcotic Scents- Most police canines in narcotic detection work are trained to detect four narcotic odors: Marijuana, Cocaine, Heroin, and Methamphetamines. The procedure for adding the additional scents are the same steps that were discussed earlier when I talked about introducing the Marijuana scent to the dog.

Training Records- It is important to document training on the detector dog from day one of its training until retirement of the dog. These records should include dates, locations, amounts, and types of narcotics that the dog trains on (Robicheaux, 1996). I have been asked for my training records many times in court. The professional handler will take the time to document all training scenarios, and have them available for their supervisor or court.

Certification- Although required, the certification actually only states that on that particular date and time the canine team passed the criteria of that organization to become certified for one year. This is why the daily training records are an invaluable asset to the certification.

Conclusion

In closing, I hope that I have shared useful information on the police canine that will be beneficial to the front line officer as well as the supervisors and administrators that fully support the efforts of a professional canine team. Remember, it is your support that contributes to their ultimate success, which reaps the rewards for the agency.

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