

Operational Search Dog Development: The Foundation

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Man has ever been an opportunist. His early realization that it was possible to adapt the dog to his service is a tribute to the progressiveness of his primitive intelligence. It has sometimes been said that the domestication of the dog is man's greatest conquest. (1)

There is no question about the value of working dogs today. They serve as ears for the hearing impaired, eyes for the blind, hands and feet for the physically handicapped, companions for the lonely. As they have done for years they help us find food, for subsistence and sport, they protect stock and herd it to selected places. They offer protection to people and property, control crowds, deter crime and locate specific substances. They provide transportation for people and their loads. They are able to locate victims of disasters under tons of debris and indicate whether they are dead or alive. They find small children lost in the hostile wilderness and decrease the risk to divers by locating drowning victims in dangerous waters. Then at the end of the day they curl up at your feet and let you know how wonderful they think you are.

Working dogs have an aura about them which leads people to believe that they are almost magic. The attitude at a search scene changes noticeably when "Specially trained search dogs are being brought in ..." Criminal suspects readily admit guilt when a dog points them out: "If you're innocent, why did the dog come up on your porch?" "Am I going to jail?" The mystique surrounding search dogs is reinforced everytime searchers look for a subject for days with no results and the search dog finds them in a manner of minutes. Impressed with the abilities of working dogs, we remember the stories of Rin Tin Tin and Lassie. We assume that all German Shepherds and Collies are equally talented.

How does one describe the operational search dog in a way to include this mysticism and define a process of development? To search is 'to look for'. Which is precisely and simply, what search dogs do. They use one or all of their senses to locate a specific person or thing. They learn during training that the subject(s) of their search can be in any number of abnormal places, ie. under snow, water, mud, or debris; in trees, on cliffs, or in the woods, or swamps, desert or corn fields; walking down a path in the woods, or a street in the city; in a building, or a car. The definition of a search dog is simply a dog who is trained to look for people in diverse locations. Although the definition is simple, the process is extensive.

IMPORTANCE OF HEREDITY

A kindergarden contractor (everything you need to know, you learn in kindergarden) can tell you that the higher you build a structure, the larger your foundation must be. The same holds true for high levels of performance. A strong, solid foundation is critical to reach high potential. In order for a dog to reach the level of an operational search dog, it is necessary that he start with the best possible foundation. To go down to the footings of that foundation, one must consider the genotype, which determines physical characteristics, as well as behavior of the dog.

Selective breeding is the manipulation of gene expression. It has made it possible to produce dogs with specific capabilities, and responses to environmental stimuli. By diminishing unwanted traits and exaggerating desirable traits, a diverse variety of dog breeds have been produced; making it possible to select a breed of dog for search work that meets specific criteria. A search dog must have physical and emotional stamina, a high strength to size ratio, a coat suitable for working in a wide variety of weather conditions, a high degree of agility, a good nose, sensitive ears and eyes. He must also have a sound temperament with a high level of trainability and willingness to work with his handler.

Although physical attributes are certainly important in any working dog, behavior characteristics are of at least equal, if not greater importance. Behavior is a result of a complex developmental process regulated by the genotype. This does not mean that behavior is wholly genetic, but neither is it wholly acquired. It evolves as a combination of environmental and hereditary factors. By closely examining the parents of a puppy, it is possible to get an idea of potential behavioral traits, as well as physical attributes.

Beginning in the mid-1940s, a study by J. Paul Scott and John Fuller looked at the question: What does heredity do to behavior?(18) Although they were concerned about human behavior, for ethical reasons (as well as the length of the human reproductive cycle), they used dogs as their subjects. Dogs, like humans, have a high degree of individual variability, share with humans many behavior traits, and many hereditary diseases are common to both species. The 13 year study resulted in some very interesting observations about dog behavior, which have been summarized in the text *Genetics and the Social Behavior of the Dog*. In answer to the initial question of the effect of heredity on behavior, Scott and Fuller found that genetics has a very clear and definitive effect on behavior. Although much of their work can be related to human behavior as well, they determined, among other things, that a dog is a dog and not a four legged childlike human being dressed up in a fur coat.

A more recent study by Lorna and Raymond Coppinger, from Hampshire College in Massachusetts, has looked at how the anatomy of dogs affects their behavior.(6) (As Kevin George so aptly put it, dogs bite because they don't have hands.) While working with dogs bred for protecting or guarding sheep from predators, Coppingers observed that the adult guard dogs, unlike the herding breeds, resembled puppies with broad heads and floppy ears who like to play with objects. Their looks and actions were similar to young wolf pups which have moved from the infant stage of nursing into the juvenile stage. Still dependent on their parents for food, the pups stick close to the den and play with objects - mom's tail or a bug or a leaf flitting by. Hence it appeared, based on behavior and looks, that the guard dog's development had been arrested in the juvenile stage. In contrast, the herding dogs had evolved to having pricked ears, a long nose, and preferred chasing 'prey' to playing with objects.

The Coppinger's theory of the developmental stages of the dog contains some very interesting ideas, especially when discussing play drive and prey drive. According to their theory, the dog breeds which have evolved the farthest and which most closely represent the wild type adult have pricked ears and long, pointed noses. These dogs will have the strongest prey drive. Operational search dogs are found along the continuum from floppy eared retrievers to pricked eared shepherds.

Clearly the operational search dog must come from the ranks of working dogs. If Mary Jane wants to teach Fifi to play hide- n-see, that is fine. It's even possible that Fifi may, through some strange turn of events, find a lost child and save a life. However, if you are prepared to tell a SAR responsible agency that you have an operational search dog, and that they can depend on you to respond 7 days a week, 24 hours a day, you have the responsibility to have a dog that can meet the demands of the most severe environment you could possibly be asked to respond to.

There is no place in SAR for handlers who are out to teach Fido a "new trick". By starting with a breed of dog which has been selectively bred to meet the requirements of SAR, you are at least starting with a solid foundation.

Scott and Fuller's work clearly showed breed specific characteristics in behavior. There is, however, a large range of behaviors within the breeds as well. Just as in physical attributes, a careful examination of both parents and any siblings from previous litters can certainly assist a handler in selecting a puppy with behavior traits compatible with SAR work. Additionally puppy tests can be very beneficial if they are interpreted by an experienced person.

In the mid-1940s, Guide Dogs for the Blind in San Rafael, CA, were experiencing an unacceptable rate of failure among their dogs. Barely 25% of the dogs they trained were able to pass the final test.(17) They approached Clarence Pfaffenberger, who was then at the American Kennel Club headquarters, and asked if he could come up with criteria which would help in the selection of puppies who would be the most likely to succeed as guide dogs. The trainers had already observed that it was possible to predict success based on behavior of the puppies, but they needed a formal criteria.

Pfaffenberger, using the results from the studies by Scott, devised a test for the puppies from 6 to 8 weeks old. He based the test on the personnel tests used for pilots in the U.S. Air Force. These tests simulated the things that would be expected of the one taking the test when he was actually doing the work. Although it was not designed as such, it is very applicable to puppy selection for all working dogs.

One of the key issues that puppy tests look at is the question of trainability. Does the puppy have the physical capacity and motivation to learn what it is you are trying to teach him? Obviously, as a puppy he doesn't have the same physical capacity as an adult, but does he try to compensate for that lesser capacity with an increased effort, or does he lay down and take a nap?

The importance of selecting a puppy genotypically programmed for success as a search dog, can not be overemphasized. Unfortunately not all search dog handlers are dog trainers and due to inexperience, they may misinterpret a puppy's behavior. Such was the case when a talented handler selected her first puppy because "...he ran under the porch when all of the others came to greet me." This puppy developed into an outstanding, courageous working dog with many finds to his credit. Why he ran under the porch will never be known, but can almost be guaranteed not to have been because of fear. Unfortunately, his behavior that one instance caused his handler to select her next puppy based on the same criteria. The difference was that the new puppy was extremely shy and fearful. After many hours of training and much frustration, the handler finely gave up and replaced him.

CRITICAL PERIOD

In 1958, J. Paul Scott described "Critical Periods in the Life of a Puppy", and reported some of the initial findings of the heredity/behavior project.(19) Early in the study it had become very apparent that the greatest learning period for a puppy is between 3 weeks and 16 weeks. Up to 3 weeks, the sensory and motor systems are developing and response capabilities are lacking, but by 3 weeks, the puppy is able to move and respond to outside stimuli. Already at 3 weeks, puppies responded more rapidly to positive reinforcement with food in conditioned responses than to aversion.

During this critical period, small experiences in the puppy's life were shown to produce major effects on later behavior. Prior to 3 weeks, the mother/puppy relationship is primary, then as the sensory and motor systems develop, the puppy is able to make associations between stimuli and

form relationships. He is open to learning and responding, as much as his still developing motor capacities and short attention span will permit.

Unfortunately, there is a down side to this high degree of sensitivity:

This is the most important critical period in the life of the animal. In addition to the determination of social relationships, the emotional sensitivity and still undeveloped motor and intellectual capacities of the puppy suggest that this may also be a critical period for possible psychological damage. Emotional sensitivity is apparently a necessary part of the socialization process, and this automatically makes the animal susceptible to psychological damage as well. (19)

Obviously this period between 3 weeks and 16 weeks is not the time for the puppy to be exposed to negative experiences. However, it is equally important that positive learning experiences occur in which the handler can have a direct and lasting impact on the kind of relationships the puppy, within his genetic ability, is able to form. It is during this time that a puppy learns to develop a familiarity and confidence in new situations.

SOCIALIZATION

The puppy must learn during the critical period that people are really wonderful, fun creatures and that they all smell differently, and that the same one may smell differently at different times. It's a time to discover little league baseball games, and nursing homes; banks and sheriff offices; mailmen and newspaper boys; shopping malls and gas stations.

In addition to socializing with people of various sizes shapes and descriptions, it is important that the puppy maintain relationships with other dogs. His mother taught him the basics in dog/dog behavior, but as his pack leader it is up to the handler to continue the training. The chances of the team searching alone or in an area devoid of other dogs is not very likely. Consequently, he must know how to relate to other dogs in a socially acceptable manner. Puppy classes are a great place to accomplish this, as well as at unit workouts. There is absolutely no place in SAR for dogs who are aggressive or fearful in any way toward people or other dogs.

Based on the work of Scott and Fuller and his own observations at the Guide Dogs for the Blind, Pfaffenberger concluded that puppies which were kept kenneled and not socialized by 12 weeks, had a lower level of trainability than those who were put in homes at 8-11 weeks.(17) Those left in a kennel and not socialized by 14 weeks would almost certainly fail - not only as guide dogs, but would be emotionally handicapped for the rest of their lives.

The importance of socialization during the critical period for any puppy can not be overemphasized, however it is especially important for working dogs. Pfaffenberger reported that the chief reason for failure in guide dogs was their "...failure to take responsibility for the blind person in situations requiring independent judgement." The failure of a search dog to take responsibility in a search situation where his independent judgement is required is certainly unacceptable.

JUVENILE PERIOD

From 12 weeks to 6 months, a dog enters a juvenile period in which his body size, strength and skill develop. To what extent that happens once again depends on the environment in which he lives. A puppy raised in open fields is obviously going to be more active and skillful than one raised in a kennel.

At the beginning of the juvenile period, basic learning capacities are fully developed and by this

time, the formation of conditioned reflexes begins to slow down. A 4 month old puppy can generally cope with ordinary environmental challenges and can solve relatively complicated problems as long as they don't require a high degree of agility or endurance.

HANDLER QUALIFICATIONS

Figure 1 briefly lists the qualifications for a SAR dog handler. It doesn't mention, however that the handler must be able to read his dog, have the temperament, ie. patient, positive, and persistent; the timing, and the physical capabilities to train and handle his dog - these in addition to all of the other SAR qualifications. There are probably some real advantages to the British system of requiring handlers to be operational in mountain rescue for a year before they can become dog handlers.(20) This would certainly help weed out those people who really aren't able to make the commitment. All too often we forget that when we are talking about SAR, we are talking about people's lives - we can not afford to have partially committed handlers.

COMMUNICATION

Although the language area of the human brain is larger than the dog's, it appears that dogs are better at non-technical communication. Humans have a greatly diminished sensitivity to environmental communication stimuli, due to limiting our communication to the auditory channel. Because we too frequently think of radios and electronics when we talk of 'communication', I have borrowed a definition from John Adcock's book, *Animal Behavior*.

Communication signals have the function of conveying information from one individual (the signaler) to another (the receiver). Such messages can evolve initially only if it is advantageous for an animal to produce a stimuli that alters the behavior of a receiver in a specific way. If it is also advantageous for the receiver to change it's behavior upon receipt of the signal, than the basis for communication has been established. (2)

Communication, as defined by Adcock, is critical to the formation of relationships during the puppy's 3 week to 16 week period. He will be using all of his senses to receive external stimuli: visual, auditory, tactile, olfactory, and probably taste as well. It's important that the handler learn to better utilize his own senses - except perhaps taste - in order to communicate with his dog. There's no smell like puppy breath, but what does it communicate to you? What is your response? In order for there to be communication, there has to be both a signaler and receiver.

Lou Button's book, *Practical Scent Dog Training*, does a delightful job of explaining how important communication is between dog and handler. It is what holds the two together and makes a highly efficient team. It is extremely important, particularly during the 3 week to 16 week period, that the puppy is never reprimanded for trying to communicate with the handler. "Loving a child may mean saying No" is just as true with puppies, but you must listen - with your ears, eyes, and feelings and respond. Not to, invites an unwillingness and lack of trainability on the part of the puppy that could persist into adulthood.

Pfaffenberger gave no hypothesis for the failure and lack of willingness and trainability of puppies who were kept kenneled and did not form any social relationships with people until they were 14 weeks old. Social relationships by definition require communication. If the puppy never learns how to communicate with his handler (people) how can he be expected to form a relationship with people which influences almost all of his other behaviors?

Clear, positive communication creates an atmosphere which encourages both the puppy and the handler to excel and reach for their potential. An attitude of willingness and team bonding evolves which acts to drive both team members toward higher levels of performance.

TEAM ATTITUDE

The team bonding or rapport between dog and handler supports a confident, positive, 'we can do it' attitude when both members of the team possess the training and experiences necessary for operational status. The level of rapport is controlled by the handler because he determines what experiences and training the team will have as well as the level of communication. There is a direct correlation between the level of communication and the level of rapport. Low levels of either are unacceptable in an operational team. This is the key reason that it is not possible to buy an operational search dog. You don't send search dogs out on a search - you send a SAR dog
TEAM.

There are a number of ways to establish the necessary level of rapport - obviously the dog cannot be left in a kennel and only brought out for training. Search work can not be trained like competition events where compulsive training techniques are used. Compulsion training in scent work simply is not successful. Glen Johnson notes in his text, *Tracking Dog*, that dogs trained in obedience by compulsion methods, don't do as well in tracking because they are unable to work on their own without constant direction from their handlers. A search dog has to want to work as part of the team with all of his being. Otherwise, when the weather's bad, the terrain rugged, he's tired, and the handler's tired, he is going to quit.

The most time efficient means of establishing a working relationship is for the team to explore, go for walks, be exposed to as diverse a number of environments as possible. While the puppy is in the critical period, learning takes place at the highest rate. What a wonderful time to engage in scent play, to reinforce the puppy's natural inclination to explore the world with his nose.

At all times the handler is responsible for the safety and welfare of his partner. This is particularly significant during the critical period when negative experiences can adversely affect the puppy for the rest of his life. At 8 weeks, Ajax was 'mashed' into the ground by the family goat who made up her mind that the time to take care of German Shepherds is when they are small enough to be flattened. Ajax has never outgrown his desire to even the score and has always felt that goats and, unfortunately, deer are fair game.

SCENT PLAY

By exploring diverse environments, the puppy learns what smells belong where. When possible, he should be permitted to investigate this kaleidoscope of smells off lead and at his leisure. It is important to remember that he is still a baby who is growing and needs lots of rest; this is not a time of training and pressure to perform. It is a time of learning and exploring - discovering that frogs disappear like magic from under your well placed paw; that water can be great fun to play in, and if you drop your stick in the creek, it moves all by itself. If your careless handler drops his glove on the way into the field and you find it on the way out, he will be absolutely overjoyed and think you are the smartest dog in the world! (If he doesn't, get a different person, because he will never make a SAR dog handler)

It has been shown that puppies develop their problem solving abilities during the critical period. Scott and Fuller found that puppies who were confronted by frustrating situations generally responded in one of three ways: vocalizations, investigation or curled up and took a nap. If they were unsuccessful in solving the situation, they all soon gave up. However, if they were successful, it enhanced their motivation the next time they faced a problem, and they put more effort into solving it. Thus it is imperative that if the puppy is to reach his genetic potential, that he be exposed to problems he can be successful at solving. Failure results in a lack of effort in the future, while being successful means developing a highly motivated, persistent worker._

While the team has been engaging in scent play and becoming familiar with a wide diversity of environments, some important things have been happening: the puppy has been introduced to the background on which he will be expected to identify and follow a specific scent; the handler has been learning to read his dog and know what behaviors to anticipate under different conditions. A system of communication has been evolving which will continue to develop. A social relationship in which regular and predictable behaviors occur is being built forming a solid support on which to build a high performance SAR team.

As the team becomes more adaptable to new situations, and they have 'checked out' just about all of the scents around, the handler can add the variable of darkness. Although dogs don't depend on their eyes to the extent humans do, darkness does strange things to the puppy's world. He needs to understand and accept artificial light, because on most searches, that may be the only light around.

Concurrently, weather variables can be added, as long as they are not severe and are not especially objectionable to the puppy. Changes in weather conditions drastically alter scent pictures - from making them almost clear enough for the handler to distinguish, to totally obliterating them. Even though no scent 'training' is being done at this time, it gives the puppy and the handler the opportunity to experience the differences in the scent picture which will occur under varying weather conditions.

Depending on where you have been taking the puppy, he may or may not be conditioned to loud and/or scary noises - things that go thud in the night. Perhaps one of the reasons puppies raised in 4-H homes for seeing eye dogs do better than those raised in homes with no kids, is due to the difference in sound/noise levels. Whatever the reason, search dogs need to respect and be aware of noises, but not be afraid of them. A dog who bolts from a backfire or a clap of thunder in a strange area, a long way from home may end up being as lost as the victim. At the least, he will no longer be an asset to the operation. At the worst, he will become a liability, if resources are pulled from the mission to look or care for him or his handler. Only through past experiences can a dog know which sounds are truly non-threatening and can be filtered out and which ones need to be investigated or avoided.

Agile is not a term often used to describe puppies. However, by setting the puppy up in short simple agility situations and requiring him to use what level of physical coordination he has, he will begin to grasp some of the very basic concepts - like where to place his back feet. If you have any idea that you may someday need to raise or lower your dog or rappel with him, now is the time to practice. He still thinks you are all knowing - when he finds out the truth, he may be less than enthusiastic about dangling on the end of a rope. The important thing to remember is that this is to be a fun, happy, safe time - definitely not a scary time.

By using care, patience, and a bit of imagination, the handler can create an environment where the puppy can learn to trust him, develop confidence in his own abilities and expand his curiosity, which is so critical to a search dog - "which way did he go?" It's also a time to encourage risk taking and a bit of creativity in things like route selection.

TRAINING PHILOSOPHY

Training, teaching, learning, all stimulate different feelings and different ideas depending on your background. For the purposes of this paper, Konrad Lorenz's definition of learning: the change in behavior which results from experience (12), will be used. Lorenz's definition takes away the potential for a threatening situation and opens the concept of learning up to the possibility of fun. Unless you were fortunate enough to have had exceptional teachers in school, you probably learned to play games much easier than you learned the dates and places of the key

battles of the Civil War. If your learning and remembering has been so strongly influenced by the method of teaching, then it will be easy for you to understand why the same is true for your dog. If it's fun, you learn it and remember it.

Glen Johnson describes teaching as initiating the correct response, while training is making that desired response consistent.(9) You teach the dog what 'sit' means; when he has learned to associate the command with the action, you train him to sit everytime he is given the command. Despite the obvious linkage, it is important to understand the differences between of teaching and training.

The concept of using positive reinforcement/reward for altering behaviors, ie. teaching/learning is very old. For some reason it has taken a long time to reach the dog training community. This, despite the fact that trainers working with search dogs since the turn of the century have emphasized the importance of the rapport between dog and handler, and the advantages of using positive reinforcement and avoiding compulsion.

Books by Glen Johnson, Karen Pryor, Lou Button, and Sheila Booth all extol the benefits of non-use of compulsion in training. These books are all listed in the references and go into depth on the subject of positive reinforcement and reward training. This type of training is particularly important in working dogs who often must use their own judgement and can't always depend on the direction of the handler. The consensus of leading search dog tainers throughout this century is that dogs trained with compulsion have difficulty making decisions on their own.(13)

If a puppy was selected who showed a willingness to cooperate in the learning process, then teaching him new concepts will be relatively simple. When these concepts are taught during the critical period, it is not only easy for the puppy to learn, but he will remember it. However, there are some 'teacher criteria' which the handler will find make the job easier. At the top of the list is a sense of humor - don't take yourself too seriously. It will be a bit confusing to the puppy at first that you are totally clueless about things that are common place to him. But he will learn that just because you are the leader, doesn't mean that you know all of the answers. This will be helpful on future missions.

Honesty and integrity are critical to all learning situations. The lack of either will turn off even the slowest of students. You must praise your dog, in addition to whatever you use as a reward, with great levels of enthusiasm. You must mean it. He knows if you don't and will be terribly confused. He will also know if his handler is not dedicated to the effort, and would rather be off doing something else. If the handler is not reliable and consistent, he has no reason to expect his dog to be. On the other hand a handler who is sensitive to his dog's well-being and keeps him in good condition physically and mentally; makes sure he always has quality food, clean water, and a warm dry bed, and makes an honest effort to direct the team towards operational status, will be rewarded by a willing, hard driving partner, who he can depend on under the most extreme circumstances.

FORMAL TRAINING

It is important for puppies to be puppies, otherwise you would see adult canids in the wild, dragging young puppies off to hunt and do other adult-type activities much earlier. Besides, outside of communication, learning to obey handler obedience commands and an environmental awareness, there are not many things for a search dog to learn. Most things he does are natural responses. He simply learns to accept the handler as the pack leader who makes decisions about the hunt.

There is no need to have formal search training for puppies, in fact it may be detrimental. There

is plenty of time for formal training after the puppy is 5 or 6 months old. This is not to say that you don't teach puppies anything or that they don't learn, but teaching and training are 2 different things. Occasionally playing quick hide-n-seek games or short, simple little tracking exercises, which must always be great fun, the puppy must always be successful, and the game must always be ended while the puppy is begging for more, will let the puppy put some of the things he has learned together.

In order to develop and maintain motivation, the puppy/dog should always be successful. As mentioned earlier, success promotes motivation. Good training, success and high levels of motivation go together. Throughout training, two culprits leading toward failure are boredom and expecting the dog to do something he is not capable of doing.

Formal search training relies on the teaching/learning that took place during the critical period. The puppy learned the meaning of many search related words: come, sit, down, stay, find, track, show me, hup, heel, leave it, and probably NO. He learned them because when he performed a particular action, he heard the word for it and immediately received a reward. Consequently when a formal search lesson happens, teaching has generally already occurred and training can progress smoothly. Because each training session has a purpose, preferably one written in a training log, complex issues, ie. finding a lost person, can be broken down into short simple parts and each part worked out separately.

When finding the lost person, the dog has two things to do - find the victim and then take the handler to the victim. The second part, taking the handler to the victim, goes relatively smoothly. The puppy learned when he couldn't get his toy and alerted his handler to the problem, that "show me" means his handler will follow him wherever he leads.

Finding the victim can be done by auditory, visual, or olfactory means. It is important to watch the dog for an alert when calling out to the victim. Dogs have excellent hearing and are often better at determining direction. It is also possible that a dog may see the victim before the handler, but not likely that he will be able to identify the victim by sight. The following will concentrate on using olfaction and training problems directed at increasing the dog's olfactory acuity and problem solving.

As a training tool, tracking (not to be confused with trailing) is the basis for all scent training, because the dog starts with a scent and is required to follow that specific scent from start to finish. Tracking is the only time that the handler knows exactly where the scent is. Even when the handler knows where the 'victim' is, and what the wind conditions are, in an air scent problem, he is totally clueless where the scent is unless he is able to sense it himself; in which case he still doesn't know what the dog is scenting. If during air-scent practice, the dog scents the squirrel, who is observing from closeby, and he is rewarded for his alert, guess what he has just been taught!

By knowing exactly where the scent is, ie. the track, it is possible to encourage the dog to work out scent problems. The most obvious is when the scent disappears - at a corner, or change in surface. He has to look for it. The handler must know exactly where the track is, so if the dog becomes too frustrated, he can guide him into position so he will be successful. The handler then needs to go back and redesign his lesson plan, because he should never put his dog in a training situation in which he is not capable of successfully solving the problem.

Remembering that success results in increased motivation, it's easy to realize that a dog, who has learned that he can find the scent if it disappears in tracking, will be motivated to work out loss of scent problems when he is air scenting later on. However, if he's begins with an air scenting problem without that foundation, and the wind shifts, he's going to fail. Taking him into the

'victim' or even getting him into a downwind position 1)takes too long, he's already lost it and 2)the problem was to follow the scent, not find the 'victim'. Failure rapidly decreases motivation, especially during the critical period. It's also a prime time to start the bad habit of false alerts.

Tracking training continues throughout the search dog's career. It must always be fun for the dog. Generally it's work for the handler, which is probably why it's a weak spot in most training programs. It can be readily compared to playing the scales on the piano, so that you can play concerti. It is highly disciplined and highly demanding. The dog must concentrate on one scent, filtering out all extraneous stimuli while traveling over uneven terrain and pulling the handler along behind. The up side is that it builds stamina, endurance, and discipline. When properly designed, the tracking problem will increase the olfactory acuity and problem solving abilities of the dog as well. It gives the handler an opportunity to focus his attention on reading his dog - recognizing when he loses the scent, where there is a cross track, his response to clues (articles) along the track.

The puppy probably learned tracking on his own when the handler's kid ran across the back yard and disappeared behind the shed. When the puppy was let out, he discovered an intriguing line of scent which went directly to one of his favorite people. How fun! So with proper pre-planning, you don't even have to teach the puppy to track - he learns it naturally.

When the dog and handler are very comfortable with tracking, and solving scent problems, air scent problems come easily. For some dogs they come too easily and they become less than enthusiastic about tracking. This is the reason for tracking training first and making sure it is sound before air scent work. There is nothing wrong with a dog who prefers to air scent; it is obviously faster (the shortest distance between two points...) easier, and more natural. However, you can not use it for teaching problem solving unless you have a foundation with strong motivation from tracking training.

An obvious advantage with a dog who is comfortable tracking, is that search sites are seldom free of numerous human scents. A dog trained in tracking has learned to discriminate between a large variety of scents, focus on a single scent and keep looking for it until he finds the source. At a search scene he is able to work through the myriad of scents, selecting out the one matching the scent he has been given.

Operational search dogs, having been trained in tracking and air scenting, are an unequalled resource at any search when finding the victim in a fast efficient manner is a priority. Tracking/trailing dogs and air scent dogs can be used if that is all that is available, but search dogs are certainly to be preferred. Because they have been trained to use both methods, a search dog can utilize whichever method is most efficient in that environment.

SPECIALIZING

Operational search experience and maturity of both dog and handler will allow the team to diversify and specialize, if they desire. It is important that there be an even higher level of rapport and unity between them when specializing, because most speciality missions are intensive and psychologically stressful. Disaster work requires a team with exceptionally stable temperments and advanced agility training. Water work is limited to teams who are very comfortable in and around water and handlers who are knowledgable about hydraulics and associated dangers.

Although there is generally no way of knowing the condition of the victim(s) at the onset of a search, occasionally one will be deceased. The dog generally will give a different alert, even though the victim may be only recently deceased. On the other hand cadaver work is limited to

searching for known corpses or parts thereof. Once again the work requires a team O.K. with that aspect of search. In areas of the country with high risk of avalanche, handlers may want to train for avalanche rescue/recovery. This necessitates extensive training and exceptional snow mobility on the part of the handler and preferably a relatively small dog. However, all dogs who may be called to search in areas where there may be snow, should learn that people can be found under snow on occasion.

There continues to be a real need for operational SAR dog teams. In order to have top performing teams, it is necessary to have handlers who have a strong foundation in SAR. The dog must be selected for genetic compatibility for the often severe requirements of search work and be trained using strictly positive reinforcement and reward. Building on a high level of rapport and advanced level of communication, the team develops problem solving abilities through advanced tracking and air scent training. With maturity and experience, the team may move on to diversify and work in disaster, water recovery, cadaver location, or avalanche rescue. To reach this high level of performance requires intense commitment and a strong foundation for both members of the team - that others may live.

References unavailable in the online version. See Response '93 (Conference Proceedings) published by the National Association for Search and Rescue.