Evolution of the Historical Human Remains Detection Dog: Choosing the Best Resource

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Abstract

Canines trained to alert on specific scents have long been utilized in law enforcement, U.S. Customs, the military, and search and rescue work. The historical human remains detection dog is the most recent in the evolution of detection dogs. Its training and certification make it a unique resource for assisting in the search for historical and ancient graves. This presentation will cover the history and evolution of this specialized tool and why it is uniquely qualified for the job. Guidelines for choosing the best canine resource will also be included.

Key Terms

Human Remains Detection
Historical Human Remains Detection

Institute for Canine Forensics

The Institute for Canine Forensics is a non-profit organization located in the San Francisco Bay Area in California. The Institute was formed in 1998 to educate individuals regarding Forensic Evidence and Human Remains detection dogs in relation to law enforcement and cultural resource management. The Institute is involved in ongoing research and workshops to advance the dogs' value in both applications.

History

Throughout history, dogs have played an important role in man's daily life because of their outstanding scenting abilities. The human nose has approximately five- million olfactory cells, and the dog's nose has approximately 220 million. It is estimated that 1/8th of the dog's brain is committed to olfaction.

During both world wars, dogs were used to locate injured soldiers on the battlefield. Often, an injured soldier would crawl away and hide. The dogs were taught to find the injured soldier and return to the handler, who would then follow the dog back to the victim. In World War II, these dogs were called "casualty dogs," and worked with the Medical Corps. Dogs were also trained to detect mines and act as messengers, scouts, trackers, and sentries.

The casualty dog was the start of the modern day Search and Rescue dog, a dog taught to locate people who are injured or lost. The search dog has evolved into a specialized tool.

Terminology and Nomenclature

There is no standard terminology for describing the different types of search dogs, but general terminology is agreed upon by most search and rescue handlers. This paper addresses the history of the search dog and how it relates to dogs trained for human remains detection, and does not address the other disciplines used for search and rescue, such as disaster, trailing, and avalanche.

Casualty Dog: Name given to dogs trained in WWII to locate injured soldiers on the battlefield.

Area Search Dog: Also called Air Scent Dog, or Wilderness Search Dog. This dog is trained to cover or grid large geographic areas by sampling the air currents for traces of live human scent.

Cross Trained: A search dog trained in two disciplines, usually live human and cadaver.

Cadaver Dog: A term used in a search and rescue context to indicate a canine primarily trained as an area search dog (live human scent) that has also received cross training in the location of deceased humans.

Forensic Evidence Dog: A general term that can describe several kinds of specialties, including, but not limited to: firearms, weapons, articles, or scent discrimination. Some people describe Human Remains Detection Dogs as Forensic Evidence Dogs.

Human Remains Detection Dog: (HRD) This detection canine specializes in crime scenes, old cases, small scent sources, and residual scent. HRD dogs are trained to exclude fresh human scent, feces, urine, semen, and all animal scents.

Historical Human Remains Detection Dog: Also called historical grave detection dogs. This dog is the most recent in the evolution of human remains detection dogs. The training is similar to HRD, but emphasis is placed on old bones, historical graves, teeth, and buried bodies.

Evolution

In the early years of Search and Rescue, all search dogs were taught to find live, lost people. No consideration was given to the terrain, or if the person were still alive. It soon became apparent that not all dogs trained to find live people would alert and show their handlers a dead body.

Dogs also needed specific training in the environments they would be expected to search. Specialized training was needed to make dogs more skilled at specific tasks. New terms for the different disciplines were adopted. Avalanche trained dogs were needed to work in a snow environment, disaster dogs needed extensive training in agility along with training in a rubble environment, and area dogs needed imprinting on cadaver scent if they were going to be reliable for finding expired lost people.

Cross-trained dogs were developed that would reliably find and alert on both live and dead people. The Specialty Human Remains Detection Dog was developed to carefully search crime scenes and look for trace evidence and small items relating to human remains.

Dogs are very capable of learning many scent sources and can be trained for multiple disciplines at the same time. However, experience shows us that dogs trained for different types of scents have different ways of working. Dogs trained primarily to search for live human scent hold their heads high to catch the scent carried in the wind. A dog imprinted on old graves, old bone, and teeth works with its nose close to the ground. For most historical graves, the scent is only on the surface of the ground; it tends not to be carried high in the winds like fresh human scent. Dogs working with their heads up tend to miss the low-lying scent of historical graves.

Environmental Factors

Environmental factors must be considered when working a detection dog. Working a dog in the desert with high heat has very different concerns when compared to working a dog in snow and very cold climates. The best conditions for working a dog are temperatures between 40°F and 75°F, moist ground, high humidity, and a light breeze.
Although dogs can work in extreme conditions, their working time is greatly reduced. Factors for length of time working in the field are the above-mentioned weather conditions, what scent the dog is looking for, amount of water available to the dog, and the terrain.

Live human scent is the most abundant and available scent to the dog, with prehistoric graves being the most fragile and difficult. Fatigue is also a factor as to how long a detection dog is effective in the field. Rest and water breaks are crucial to keeping the detection dog an effective tool. Dogs that train and work regularly will build up their scenting endurance, but, as with an athlete, you must maintain a training program to keep a high level of endurance.

For a more successful search, the dog should be allowed time to adjust or acclimatize to each new search location. This

way the dog has time to adjust to local conditions and sort out normal background scents for the new area. This also includes letting the dog acclimatize to different weather conditions, like humidity, heat, or cold.

The Training Process
The training process includes imprinting the dog, adding a passive alert, and then increasing the difficulty of the problems. Most dogs used for historical search work have come from the specialized human remains detection dog, a dog that is specifically trained to only find human remains. These dogs are trained to locate very small amounts of scent and work closely with the handler. Controllability and the trained behavior to search with the nose down are key factors in finding historical artifacts or graves.

All properly trained HRD dogs have been taught to preserve human remains; they are never allowed to pick up or dig up human remains. Because of our history in working modern crime scenes, we understand that preservation of evidence is of crucial importance.

The historical HRD dog has now been developed. The training of the historical HRD dog is very similar to the training that HRD dog receives, the difference being that emphasis is placed on old graves, bone, and teeth in an outdoor setting. The dogs are also taught how to search, with the handler, in a grid pattern. Scent discrimination is an important part of the training. Animal bones and teeth are introduced into the training as negatives, and the dog is taught to ignore them.

Guidelines for Using Historical Dogs
Historical human remains detection dogs are specialized tools that can be useful in many situations; however, like any tool, there is a time and place for them. It is important when choosing a dog team to assist in your search for historical or prehistoric human remains that you make certain they have had extensive training in historical graves and artifacts, as well as old bones and teeth. The dog must be a specialist and not cross-trained for live human scent. When interviewing potential resources, request a curriculum vitae of their work and experience and an example of their training logs. Important things to look for in a curriculum vitae or training logs are certifications, actual searches, frequency of training, and the scent sources on which the dog has trained and proofed. If the team does not have the right training on historical human remains, it is the wrong resource for locating historical graves or remains.

It is important to discuss weather conditions with the team as well as soil conditions and terrain. Different soils present different problems. Here in California, especially in the Santa Clara valley, much of the soil is adobe—very hard and cement-like in the summer. Soil conditions like this can be very difficult in the summer months for dogs to detect scent. Searches in soil like this are best conducted after the first rains, winter, and spring.

Typical searches worked by historical HRD dogs are: locating boundaries of poorly marked cemeteries, locating lost graves or cemeteries, and scattered bones or artifacts relating to the burial.

Conclusion and Opinions
1) Dogs specifically trained to detect scent from historical graves and older human remains can be an invaluable asset to the archaeologist. Experience has taught us that graves, artifacts, or evidence are not always in the place we think they should be. Because dogs are using their ability to scent, they are not predisposed to "human" ideas of where things should be.

2) Existing training and testing techniques for the search and rescue live-find dog does not address the specific and rigorous training needed for dogs that are expected to reliably detect and alert on historical graves. It is crucial, however, that the dogs be used in situations appropriate to their training level. A severely fatigued dog can inadvertently be pressured to give a false alert. Therefore, it is important that the dog be maintained at a high level of physical fitness and training.

3) All dogs trained and used in the detection of decomposed human tissue and bones should be negatively conditioned to the scent of decomposed non-human tissue and bone.

4) When requesting a historical HRD dog resource, you have the right to expect a curriculum vitae, a demonstration of the team's work, or some assurance that the team is trained for historical work. This does not mean the dog has been trained for every condition or circumstance, but that the dog is a specialist and not cross-trained on live human scent.

References
1) Institute for Canine Forensics, www.K9Forensic.org
2) Syrotuck, William G, Scent and the Scenting Dog, Arner Publication 1972
3) War Dogs, www.vetshome.com/war_dogs.htm
4) Michael R. Scarpuzzi, Clinton T. Lacinak, Ted N. Turner, Charles D. Tompkin, David L. Force, Decreasing the frequency of behavior through Extinction: An application for the training of marine mammals. Sea World Inc.,
5) Iserson, Kenneth V. M.D., Death to Dust, What happens to dead bodies? Galen Press, LTD, Tucson Arizona