

RESIDUAL SCENT IN BUILDINGS

One of the questions we are commonly asked as forensic canine handlers is "*How long will scent last in any given situation?*" This is a very complicated question, but we want to begin to unravel the secrets. We know some of the elements that will affect residual scent are heat/sun, wind, humidity and rain.

Our first project was conducted in a closed, unused building. Items were placed in different rooms for 5 hours and then removed.

What is Residual Scent?

Residual is defined by Webster's dictionary as - leaving a residue remaining effective for some time.

Within this paper we are using the term in conjunction with decomposing human scent. Residual scent searches are those conducted when no physical form is present. Residual scent is what is left when the decomposing item has been removed. It is something we cannot see and humans cannot necessarily smell.

Introduction

This project began by accident, so was not preplanned as a residual scent research paper. We make no claims to having ruled out all variables, but are using this project to learn what the variables are and how to more effectively set up our next residual scent project.

Our goal in this paper is to look at residual scent in a closed, unused building and see if we can find out how long a trained cadaver / forensic evidence dog can locate the original scent location. All the dogs used in this project ranged from those with some basic training in the finding of cadaver scent to specialized trained dogs in forensic evidence / body recovery. We see this as just the beginning of ongoing residual scent undertakings.

On November 9, 1996 several items were placed in different areas of a building. The building used was built in the 1930's and was used as classrooms up until 1995. It is part of a large developmental hospital that was built before 1900. Most of the furniture is now gone. There is still human clothing around, chairs, desks, shelves with things on them, wardrobes, curtains, and boxes of books and general effects. The facility has been closed down and most of the buildings are scheduled to be demolished.

Room #11 was used as an activity or day room. It is a large open room. The scent sources were blood (3cc) left to dry on the floor and door in the room.

Room #16 is a closet/storage room off room #11. The scent source was blood (approx. 1cc) on paper on the floor.

Room #5 is a large storage room with closets and shelves. The scent source was a soil sample with dried fluids from a gunshot to the head suicide enclosed in a 50ml vented container. The upper window has been open the whole time in this room.

Room #18 is a large living room. Scent sources were; hair mixed with cadaver scent in the fireplace flue, and a very small amount of blood inside a trash can.

Room #9 is a tiled utility area across the hall from a kitchen area. Scent source was hair and blood in a 50ml container placed in the foot of standing ironing board, so the sample was 5 feet off the ground.

Since the original set up date on November 9, 1996, we have returned to the building 4 times: January 8, 1997, April 2, 1997, July 23, 1997 and December 7, 1997. On our visit in April we found that they had removed most of the original furniture and some boxes of trash, so the building had little left in it. Two of the objects (the ironing board and a box of trash), that had held scent sources were now missing.

Results

Each dog participating in this project was able to find most or all of the locations where the decomposing scent articles had been. We saw dogs, which varied, from full alert and pinpointing to general interest in the room or area.

What we have found so far is; residual scent will last 1 year in a building with minimum environmental influence, or human disturbance. Even after the objects where the scent source had been were removed, the dogs were able to locate the rooms, general area, or pinpoint where it had been.

Each time we have worked the problem we have included teams that had not worked the area before. We now have had 16 teams work the residual scent problem. The dogs have ranged from veteran cadaver trained certified teams to 1 year old puppies (who have been training from 8 weeks of age on cadaver and residual scent).

Observations

We noticed that there was a big difference between teams that do mainly live person searching and teams that specialize in forensic evidence / body recovery searches. The general difference being, forensic evidence / body recovery dogs are searched slower, have been taught to do a fine search, check items for scent sources, and alert without seeing an object. Most live human search dogs are trained to keep looking until they find the person and then to alert. Younger and less experienced dogs had fewer problems and were willing to commit to an alert more readily than some of the mainly live human search dogs.

Questions, Variables, Problems, Future Ideas

One of the questions that we have wondered about after observing dogs who have worked the problem prior is; do the dogs remember where items were previously placed or where they alerted before and how long do they remember?

Also, what effect does having an observer that is knowledgeable of all the locations have on the team? Can the handler and or dog read body language that gives them information as to where they should look or alert?

Plans for our next visit include having first time teams work the building by themselves without an observer on deck. The handler will then report any alerts or interest to the observer by showing them on a diagram of the building. This way the handler will have to commit to what the dog has done without any input from the observer. The observer will not be able to influence the team while they are searching.

No food reward will be allowed in the building.

Our next residual scent projects will employ measurable scent items. Example: 3cc of blood mixed with 2oz of human hair, or a specific human bone. This way we can control and repeat the scent items more closely in different conditions.

Room with the blood (3cc) is not a true residual scent problem, as we have defined it, because the blood has been left on the floor and door. But we now have data on how long dogs can locate dried blood.

Our next step in studying residual scent is to set up problems in different environments. We want to compare our results with problems set up in open areas, areas with sun and shade and no building to protect the scent.

Room #11 - dried blood - dogs able to show dried blood on door and floor

Room #5 - soil with dried fluids - dog showing inside closet where source had been

Room #18 - Hair with scent - all dogs indicated flue area of chimney where source had been

Room #18 - area where trash can had been - dogs all indicated area and showed pile of curtains now on floor but had been hanging above trash can originally. Curtains are porous and holding scent.
