

CANINE TEAM CERTIFICATION
(February 2002)

9445

It is the goal of the Department to maintain a high level of professionalism with its accelerant detection canine teams. For this reason, criteria have been established to evaluate the control and performance of the canine and handler under most field conditions.

All canine detection teams are expected to participate in the Department's certification testing. The following sections provide a description of test protocol.

SPECIFICITY TEST
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9445.1

Test protocol will involve several different accelerants placed on various burned substrates, along with blanks, in a manner such as that shown in the following table.

Accelerant	A Carpet/ Foam Pad	B Plastic	C Upholstery Fabric/Foam	D Plywood
Gasoline	X	X	X	X
Kerosene	X		X	
Diesel Fuel	X			X
Cig Lighter Fuel	X		X	
Lacquer Thinner	X	X		
Acetone	X	X		X
Blank	X		X	
Blank	X	X		X

The specificity test requires the examination of 20 samples by the canine. The cans will be coded so that neither the candidate nor the test administrator know which cans are positives and which are blanks.

The gasoline used will be fifty (50) percent evaporated (by volume). All other liquids will be neat (unevaporated). The amount of liquid used in each "positive" sample will produce a concentration of approximately ten parts per million (10 ppm) of fuel/air mixture in the can. This involves the use of 10-30ul (10-30 microliters) of liquid, placed directly onto the previously burned debris by means of a micro-syringe.

All substrates will be ignited in a natural gas flame to a free burning state and then put into a can and extinguished with the can lid. The plastic used will be a mixture of polyethylene, polystyrene, and polypropylene, which are the types of plastics found in many environments today.

Canines are to be kept separated during all phases of the test procedure. The handler will advise the evaluator whether the canine is on "active" or "passive" alert.

Each canine team is to have their own set of cans and their own room or area to work. The accelerant detection canine will check the room or area to work prior to the beginning of the test. After the canine checks the room, cans containing the samples will be emptied at various locations throughout the room. Samples shall not be placed in locations higher than the canine can reach by standing on its hind legs.

Once the samples are placed, the room will be allowed to sit for a period of ten (10) minutes to allow air currents surrounding the accelerants to settle. The canine and the handler will then examine the room. The handler shall call any positive alerts by the canine. No credit for alerts will be given to the canine unless called by the handler.

Samples will be removed by the test administrator using clean document forceps from the cans for all tests to minimize distractions. The samples will be replaced into the cans immediately after testing. In order to minimize evaporation losses, no more than ten (10) samples will be permitted to be out at one time. During hot weather, or in heated indoor test sites, no more than five (5) samples will be permitted to be out at one time. Samples will be distributed around the periphery of a room or across a clean concrete slab (indoor or outdoor) with at least five (5) feet between adjacent samples. In either case, the area will be pre-checked by the team being tested in that area.

Once the samples have been placed in the area, multiple passes (up to four) are permitted at the discretion of the handler. The handler is responsible for declaring positive or negative alerts at the time of the test. A continuous videotape record will be made of all tests to help in resolving disputes over scoring later and to aid in training future teams.

ACCURACY TESTING

9445.2

(February 2002)

Each canine team will have their own room to examine in order to minimize distractions from other canines. All rooms will be as similar in size and furnishings as is practical. The room will be checked prior to burning by the team to be tested in that room. The room and furnishings will then be ignited using normal combustibles only and allowed to burn to near flashover conditions to simulate a realistic fire scene. The fire will then be extinguished with normal water only (no foam or light-water additives).

After the room has cooled, the test administrator will place twenty to thirty (20-30) microliter quantities of each of six (6) target liquids (same as in Specificity Test) directly onto burned debris at various locations. Targets will not be placed:

- In close proximity so as to cause vapors to mingle;
- Where they may be diluted by suppression water; or
- In locations higher than the dog can reach by standing on its hind legs.

Once the target liquids are placed, the area will be allowed to sit for a period of ten (10) minutes to allow air currents to stabilize and vapors to settle.

The room will then be examined in any order by the canine team. Multiple passes (up to four) will be allowed at the discretion of the handler, who will be responsible for calling out any positive alerts. The canine will be expected to indicate the specific area intended for sampling. Sampling will be carried out by the test administrator under the direction of the handler, with all samples sealed in clean metal paint cans for laboratory testing. Two comparison samples will be taken at the direction of the handler.

This protocol will result in the recovery and analysis of eight samples for each canine with the scoring dependent on the results of laboratory analysis of the recovered samples. This phase closely simulates real life fire scenes, since it requires not only specificity of detection, but accuracy of location on the part of the canine and its handler. If the wrong material is sampled for analysis, the lab results will be negative and the sample will be counted as a "miss" for scoring.

The test administrator must be careful to place equivalent quantities of accelerants on similar targets in each test room so that all teams will have equal tests. The rooms and target placement shall be as identical as possible for each team. If samples are placed above floor height, the ten minutes allowed will permit vapors to migrate and flow downward to floor level where they are more likely to be detected. The time delay will be standardized for all rooms on a particular day, but may vary with temperature (the higher the ambient temperature, the faster the evaporation, and the sooner a floor layer will be established).

A continuous videotape recording will be made of all tests to help in resolving disputes over scoring later and to aid in training future teams. The combined scores of the Specificity Test and the Accuracy Test will be recorded as the final score for each canine team.

All samples will be returned to the laboratory for analysis. Analysis will be carried out by charcoal strip adsorption elution and capillary column gas chromatography with FID detection. Samples which appear to be negative or questionable will be further tested by solvent extraction of the debris and GC/mass spectrometry where indicated. This is the approach used by most forensic labs in both public and private sectors.

The results of the testing will be made known only to the canine handler. Those achieving a passing score of seventy-five (75) percent or higher, will receive a certificate valid for two (2) years. Those who do not achieve a passing score can apply for retesting at a future date.

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[\(see Forms or Forms Samples\)](#)