

ASB Technical Report 025, First Edition
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Crime Scene/Death Investigation – Dogs and Sensors Terms and Definitions



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Forward

Between December 28, 2005 and March 22, 2011 the Scientific Working Group on Dog and Orthogonal detector Guidelines (SWGDOG) approved SWGDOGSC1abcdefghijkl -Terminology for the documents forthcoming from that SWGDOG group. That technical document was an effort to standardize the terminology within the detector dog community. This document serves as the progression of that effort.

The Dogs and Sensors Subcommittee of the Organization of Scientific Area Committee (OSAC) determined that there was a variation in the terms and definitions (terminology) as used by different individuals in the detection dog community. This technical report standardizes the terms and definitions used in the detection dog community promoting consistency across the multiple canine disciplines and jurisdictions. This document was approved by the AAFS Standards Board Dogs and Sensors Consensus Body.

All hyperlinks and web addresses shown in this document are current as the publication date of this document.

Key Words: *Alert, change of behavior, chain of custody, disclosure, certifying official, initial training, canine certification, canine team assessments, maintenance training, record keeping and document management, technical report, training aid storage and handling, references, terms and definitions, case and legal references*

Abstract: This technical document provides the standardization of terms and definitions used in the detection dog community. The use of standardized terminology in the detection dog community promotes consistency across jurisdictions and relieves the judicial system of conflicting terms and definitions.

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Crime Scene/Death Investigation – Dogs and Sensors

Terms and Definitions

1. Scope

This technical document provides the standardization of terms and definitions used in the detection dog community. The use of standardized terminology in the detection dog community promotes consistency across jurisdictions and relieves the judicial system of conflicting terms and definitions. Some terms as defined in this document may be used with different meanings in other disciplines.

2. Normative References

There are no normative reference documents, Annex A, Bibliography, contains informative references.

3. Terms and Definitions

3.1

accelerant

A fuel or oxidizer, often an ignitable liquid, intentionally used to initiate a fire or increase the rate of growth or spread of fire [3].

3.2

accelerant detector canine

A canine trained to detect accelerants. Also referred to as an arson dog. [See **3.195 ignitable liquid detection canine (IGL)**.]

3.3

acclimation

A period of time used for the canine to become adjusted to its environment. Scientific usage: Adaptation or adjustment to a new circumstance. (See **3.144 environmental conditioning**.)

3.4

accreditation

The process by which an organization (or, in some cases, an individual or canine team) is formally recognized by an accreditation body as competent and able to plan, manage and operationally conduct their actions safely, effectively and efficiently. This is an ongoing process that must be renewed within the accreditation body's compliance timeframe. (See **3.5 accreditation body**.)

3.5

accreditation body

An organization responsible for management and implementation of the system to set standards or guidelines within the relevant field.

3.6

accredited

The designation given to those who are able to demonstrate they meet or exceed the standards or guidelines set by the appropriate accreditation body.

3.7

active alert

A type of response that the canine displays/indicates in a manner that may disturb the environment and or forensic evidence (i.e., dig, bark, scratch, paw, jump, and bite after the detector canine has detected a trained odor/scent).

3.8

activity drive

The subconscious impulse to be constantly physically active.

3.9

Adnexa of the eye

Accessory visual structures.

3.10

adipocere

Semi-solid/liquid (cheesy) decomposition product of human remains.

3.11

admonished witness

A witness that has been deemed to have done something wrong.

3.12

aged scent

Specific human scent that has been present for a period longer than 24 hours.

3.13

aged trail

A specific human scent pathway that has been present for a period longer than 24 hours.

3.14

aggression

Description of an act of a canine that is an outcome of an agonistic interaction. It can be appropriate or inappropriate, and involve a threat, challenge or contest.

NOTE: The word “aggressive” is often used as a descriptive term for intense, enthusiastic, or forceful behavior of any kind, and these canines may not be truly aggressive or possess aggression.

3.15

air scenting

A technique used by a canine to locate a target odor/scent. The canine searches for the target odor/scent on wind/air currents and attempts to identify/work on an odor/scent cone to the source of the odor/scent.

3.16

alert

A characteristic change in ongoing behavior in response to a trained odor/scent, as interpreted by the canine handler. The components of the alert may include: change of behavior (COB), interest, and final response or indication. (See [3.167 final response](#), [3.206 indication](#).)

3.17

approximation

(See [3.349](#) **shaping**.)

3.18

area search

The act of using a canine to search a designated area for a target odor/scent.

3.19

arrhythmia

A condition in which the heart beats with an irregular or abnormal rhythm.

3.20

article

(1) A particular item or object, typically one of a specified type used to present to the canine for scent discrimination.

(2) Scented objects left on the track or in a search area at various intervals to which the canine is expected to indicate.

3.21

article search

The process of locating and indicating items that contain non-specific or targeted human scent. (See [3.152](#) **evidence search**.)

3.22

artificial distracters

Distractions placed in the search area that do not occur naturally. (i.e., Proofing items such as containers, gloves that are not contaminated with human remains, uncontaminated storage containers etc.)

3.23

assessments

An evaluation during training and/or certification process; a tool to assess canine team ability.

3.24

assessment record

A record of the assessments of the canine team, i.e., evaluations during either the training or certification to assess the canine team's ability and proficiency. The assessment records may be combined with training and certification records or maintained separately. A record documenting the performance of the canine team, especially an account of an act or occurrence kept in writing or some other permanent form, i.e., digital format, which is discoverable.

3.25

auscultation

The action of listening to sounds from the heart, lungs, or other organs, typically with a stethoscope, as a part of medical evaluation.

3.26

aversion

A stimulus or training method that animal will work to avoid or terminate.

3.27

aversive conditioning

Training procedure relying on the use of unpleasant stimuli. For example, when a canine receives a correction on the leash as it is lunging for food on the floor in the work environment. Canine learns that lunging for food is an unpleasant experience.

3.28

aversive stimulus

A stimulus that an animal will work to terminate or avoid.

3.29

avoidance behavior

The process in which an animal responds to a signal to avoid unpleasant consequences. (See [3.28 aversive stimulus](#).) Example: A canine sits on command to avoid a correction.

3.30

avoidance conditioning

Intentionally pairing a behavior with displeasure to develop a desired outcome. (See [3.31 avoidance learning](#).)

3.31

avoidance learning

The process in which an animal responds to a signal to avoid unpleasant consequences (aversive stimulus). (See [3.30 avoidance conditioning](#).)

3.32

avoidance training

The pairing of displeasure with a negative behavior in order to extinct the behavior. (See [3.31 avoidance learning](#).)

3.33

avoidance-avoidance conflict

A conflict resulting from being repelled by two undesirable goals or stimuli when there are strong pressures to choose one or the other. Often when the conflict is intense the canine will refuse to choose between the alternatives.

3.34

backup handler canine

A canine that is trained, certified, and/or works with more than one certified canine handler.

3.35

bark props

Items used to conceal a target source in order to test the canine to perform the bark indication.

3.36

base rate

baseline

The normal frequency of occurrence of a specified response per unit of time for that individual canine or group of canines.

3.37**behavior**

Any measurable, physical response of a canine. Can be voluntary (goal directed) or involuntary (reflexive).

3.38**behavior modification**

The application of a behavioral technique (e.g., positive reinforcement) to change a behavior.

3.39**behavioral chain**

A series of independent behaviors that are linked together.

3.40**best practices**

A system of processes, checks and testing that may deliver an outcome that has fewer problems and fewer unforeseen complications, and that may combine the attributes of the most efficient and most effective ways of accomplishing a task based on proven and provable methods, while maintaining overall operational integrity and remaining within the bounds of legally accepted practices.

3.41**bias**

Preconception; prejudice; taint; partiality. Since most persons have biases, the issue is whether the bias is such that impartiality cannot be achieved and a fair outcome cannot occur. Any predisposition that a judge or arbitrator may have may be grounds for recusal. Any predisposition that a witness may have may be grounds for impeachment by cross-examination. Any predisposition that a juror may have may be grounds for excusal determined by through a process known as *voir dire*. This use of the term 'bias' is not that as used in statistical evaluations. (See [3.76 cognitive bias](#), [3.93 contextual bias](#), and [3.155 experimental bias](#).)

3.42**blank**

Any area or container where target odor/scent is not present. (See [3.43 blank search](#).)

3.43**blank search**

A training or certification exercise in which the target odor/scent is not present.

3.44**blank testing**

A known odor/scent sample that is used to assess the canine's proficiency in a non-matching odor/scent scenario. The canine is expected to give a negative response.

3.45**blind experiments**

The person(s) obtaining the measurements does not know the treatments.

3.46

blood chemistry

A panel of blood tests that measures the components of blood including electrolytes, glucose and enzymes that provides information about organ function and physiologic state.

3.47

body condition

Weight for frame and relative proportions of muscle and fat.

3.48

body condition scoring

The process of evaluating the relative fat composition of the canine. Scores are based on 1 to 5 with normal as a 2-3; or 1-9 with normal as a 4-5.

3.49

body fluids

Fluids associated with a human body (e.g., sweat, saliva, blood, vomit, decomposition fluids).

3.50

bond

Positive relationship, rapport between canines or a human(s) and a canine.

3.51

breeds of dogs

Groups of canines based on canalized or restrictive gene pools derived by selective breeding by humans for behavior or function and / or conformation. When sire and dam come from the same breed, puppies are expected to fall within the broad outlines of the breed standard, which outlines physical and behavioral attributes said to be typical of the breed.

3.52

bridge or bridging stimulus

A signal (conditioned reinforcer) that marks (reinforces) a desired behavior. Often called a bridge because it bridges the gap in time from when the animal performs the desired behavior to when it receives the reward. An example would be the use of a clicker.

3.53

building search

A training or certification exercise that is conducted on the interior or exterior of a building or structure.

3.54

cadaver

A dead human body or the physical remains of a dead human body at one location. Note that this use of the word is different from that often used in law enforcement, which describes the body at a scene where it was found as a corpse, and only as a cadaver once it is under a coroner's or medical examiner's examination.

3.55

canine

A dog, *Canis familiaris*, more commonly used to denote a working dog and sometimes abbreviated as K-9.

3.56

canine handler

A person who has successfully completed a recognized course of canine handling in a specific discipline and maintains those abilities through field applications, maintenance training, certification, recertification and agency or program required continuing canine education.

3.57

canine handler error

Any action or cue by the handler that causes the canine team to perform incorrectly.

3.58

canine sociability with humans

The dog's situational appropriate comfort level and interaction with people.

3.59

canine sociability with canines

The dog's situational appropriate comfort and interaction with other dogs.

3.60

canine team

A human and working canine that train and work together as an operational unit.

3.61

canine team assessment record

The documentation of an evaluation conducted during training.

3.62

canine trainer

A person providing training/instruction who has demonstrated, through education, training and operational experience, extensive skill and knowledge in the subject field or discipline. This person would normally perform the maintenance training and proficiency training in the field and may train canines in preparation for a formal course of instruction. (See [3.209 instructor](#).)

3.63

casting

- (1) A description of the canine's movement as the canine searches for and/or follows the concentration of target odor/scent.
- (2) A directional command to the canine.

3.64

cataracts

Partial or complete clouding of the lens on the eye that leads to a decrease in vision. Cataracts can be genetic or acquired.

**3.65
certification**

A process that attests to the successful completion of an examination of relevant skills for the canine team.

**3.66
certification component**

An element of the canine team odor/scent recognition or operational assessment.

**3.67
certification record**

A record of the certification achieved by a competent canine team, maintained separately from other records, i.e., training, assessments or discipline-related deployment records. A record documenting the performance of the canine team, especially an account of an act or occurrence kept in writing or some other permanent form, i.e. digital format, which is discoverable.

**3.68
certifying authority**

The organization authorizing the certification of a canine team.

**3.69
certifying official
assessor**

A person who has been delegated the authority to conduct an evaluation (assessment and/or certification) and/or sign certificates on behalf of an organization or entity, that recognizes a canine team has been trained to a particular standard within the organization.

**3.70
Change of Behavior
COB**

A characteristic pattern of behaviors, as interpreted by the canine handler that occurs when the canine detects a trained odor/scent. This differs from other olfactory interest that otherwise are exhibited by the canine in response to the daily environment. The initial change of behavior typically leads to following the odor/scent to its source/target. The pattern of behavior may be unique to each canine. (See [3.211 interest](#).)

**3.71
chain of custody**

History of possession, responsibility, and safe-keeping for items of potential evidence. Documentation of chain of control establishes each person having control of the evidence, thereby establishing continuity of possession, and proof of integrity of the evidence collected.

**3.72
chain of custody records**

The chronological documentation or paper trail, showing the seizure, custody, control, transfer, analysis, and disposition of physical or electronic evidence.

3.73

chimney effect

The effect of heat on odor/scent such that the odor/scent rises and travels through the air in a manner affected by air movement and temperature through convection. The end effect is that odor/scent is detected in a place that is different from the source. This can happen indoors or outdoors.

3.74

classical (Pavlovian) conditioning

A form of learning in which the pairing of a previously neutral stimulus with a stimulus that elicits a response results in that neutral stimulus producing a similar response.

3.75

coercion training

Coercion deals with compliance induced by physical or mental pressure. Examples may include use of force, threats, or intimidation.

3.76

cognitive bias

A mental error caused by a person's simplified information processing strategies; it does not result from any emotional or intellectual predisposition toward a certain judgment but rather from subconscious mental procedures for processing information.

3.77

competent canine trainer

A person having suitable or sufficient skill, knowledge, experience to train canines and canine handlers.

3.78

concentration

The canine's focus on the area of search (further specification will be discipline specific).

3.79

concentration (chemical)

The amount of a constituent expressed as a mass or volume divided by the total amount of material expressed as a mass or volume.

3.80

conditioned aversive stimulus

As a result of classical conditioning, an event that is initially neutral will acquire aversive properties because it is paired with other aversive events.

3.81

conditioned fear

Fear in response to a previously neutral stimulus caused by aversive conditioning and/or event.

3.82**conditioned reinforce**

A previously neutral stimulus that has become reinforcing because of its association with a primary reinforcer. A stimulus that becomes a reinforcer because it is paired with another reinforcer, usually a primary reinforcer. If conditioned reinforcers are not maintained by periodically pairing them with primary reinforcers, they will lose their reinforcing value.

3.83**conditioned response****CR**

In classical or Pavlovian conditioning, a conditioned response (CR) is produced by pairing a conditioned stimulus (CS) with an unconditioned stimulus (UCS). (See **3.74 classical conditioning**.)

3.84**conditioned stimulus****CS**

In classical or Pavlovian conditioning a previously neutral stimulus (NS) becomes the conditioned stimulus (CS) and evokes the conditioned response (CR) after it is repeatedly paired with an unconditioned stimulus (UCS). (See **3.74 classical conditioning**.)

3.85**conditioning**

- (1) A general term that explains how animals learn the connection between stimuli, events, and actions.
- (2) Physical conditioning is a process by which an animal develops cardiovascular and respiratory stamina.

3.86**confidence**

- (1) A conditioned level of ability to operate independently in different environments as developed with training.
- (2) The innate ability of each canine to operate independently in different environments.

3.87**confirmed alert**

An alert for which the presence of a trained odor/scent can be verified or corroborated. Also referred to as a “hit”, “find” and/or “positive response”.

3.88**confirmed operational outcome**

Verification of search results following a deployment of a canine team(s).

3.89**conflict**

A condition in which two or more events cause incompatible responses.

3.90
consistency

Consistent measures are those where repeated measurements of the same thing produce the same results. (See **3.314 reliability**.)

3.91
contaminating odor/scent

Of target: any odor/scent not ordinarily part of a target odor/scent signature. Of area: any odor/scent not normally part of the context of that area.

3.92
contamination

When an odor/scent is inadvertently introduced. Contamination can include the following: contamination of a search area with a target odor/scent or contamination of a target aid with competing odor/scent.

3.93
contextual bias

A deviation in human judgment caused by exposure to information that is either irrelevant to the judgmental task or inappropriate for consideration.

3.94
continuous reinforcement
CRF

A schedule of reinforcement where every occurrence of the behavior is reinforced.

3.95
contraband

An article or substance that is prohibited by law or regulation within a specific area.

3.96
control

A sample used as a quality control measure to demonstrate that the system is working to an optimum level and/or that the integrity of the analytical process is maintained. Material of established origin that is used to evaluate the performance of a test or comparison. A test with an expected positive or negative result often used to confirm the reliability of the method being used.

3.97
controlled search

An experiment/training/testing exercise in which any defined variable(s) is consistent within specific parameters.

3.98
co-ordination/timing

The canine handler's ability to correctly recognize and reward a desired behavior of the canine, or redirect or stop an undesired behavior.

3.99
corneal defects

Irregularity or abnormality of the cornea, the clear outermost layer of the eye.

**3.100
correction**

The application of an aversive stimulus intended to prompt the canine to cease undesired behavior using verbal reprimand, choke collar (slip)/check chain, prong collar, remote trainer, etc.

**3.101
corrective action plan**

A training course of action to remediate performance deficiencies with a canine team.

**3.102
correlation**

A correlation is an association between two variables, when the variables are related. Correlation does not imply cause.

**3.103
crisis point**

A point at which mental or physical duress causes survival and trainability to come into conflict.

**3.104
crittering**

A change in the canine's behavior where the canine becomes distracted by animal odor or some other animal distracter. Usually evident as there is a change in body language (head and tail position). (See [3.132 distractibility](#).)

**3.105
cross-contamination**
(See [3.92 contamination](#).)

**3.106
cross-over track**

A path where something can be crossed to get from one side to the other.

**3.107
cryptorchidism**

The absence of one or both testes from the scrotum.

**3.108
CSI effect**

Perception of the near infallibility of forensic science in response to popular media.

**3.109
cueing**

A verbal or physical action (done consciously or unconsciously) by anyone, and/or any environmental stimulus that causes a detector canine to change its actions to respond to an area or item whether target odor/scent is present or not.

**3.110
decomposition fluids**

Fluids associated with the human body decay process that produces a distinctive odor.

3.111**decoy (non-target odor/scent)**

A training term, most commonly associated with patrol work but the term can be used in other canine training disciplines. A person will perform the role as a decoy. Multiple people can be used if more than one decoy is needed for the training exercise. (See **3.133 distractor**.)

3.112**decoy (apprehension)**

The decoy should always be under the control of the canine trainer for the exercise. The canine trainer will tell the decoy how he/she is to behave throughout the training exercise, while in the presence of the canine(s) being trained. Given the proper equipment, the decoy will manipulate the canine's behavior according to the canine trainer through agitation, body movement (toward, away from and perpendicular to the canine's position), posture, noises, etc. The decoy may also provide the canine with a bite, by presenting a part of the body.

3.113**decoy (patrol)**

The decoy should always be under the control of the canine trainer for the exercise. The canine trainer will tell the decoy how he/she is to behave throughout the training exercise, while in the presence of the canine(s) being trained. Given the proper equipment, the decoy will manipulate the canine's behavior according to the canine trainer through agitation, body movement (toward, away from and perpendicular to the canine's position), posture, noises, etc. The decoy may also present themselves for apprehension by the canine.

3.114**defense/defensive behavior**

Behavior exhibited by canines to protect themselves and, or their canine handler when faced with a perceived or real threat.

3.115**delayed reinforcement**

The interval between the performance of a behavior and the delivery of reinforcement.

3.116**dentition**

Pertains to the development of teeth and their arrangement in the mouth. In particular, it is the characteristic arrangement, kind, and number of teeth in a given species at a given age. That is, the number, type, and morpho-physiology (the physical shape) of the teeth of an animal.

3.117**dependent variable**

The variable whose value depends on that of other variables (independent variables). Typically, the variable of interest in an experiment or test.

3.118**deployment**

Assignment of a canine team in an operational environment.

**3.119
deployment record or utilization record**

A record of the deployment and/or utilization of a trained canine team, maintained separately from other records, i.e., training, assessments or certifications. A record documenting the deployment and/or utilization of the canine team, especially an account of an act or occurrence kept in writing or some other permanent form, i.e., electronic format, which is discoverable. (See **3.310 record, 3.127 discipline-related deployment record.**)

**3.120
deprivation**

The restriction of access to something desired by the canine such as food, social companions, or toys.

**3.121
detailing**

- (1) A handler technique by which the handler will present productive area to the canine, usually by pointing or hand and arm sweeps.
- (2) Used to search a particular area in more detail or when a canine may have walked by to prompt the canine to search in a particular direction.
- (3) Used to prompt a canine to search high and low productive areas.

**3.122
detector/detection canine
detector dog**

A canine trained to detect and alert to the presence of certain scents or odors for which it has been trained. May be referred to as a law enforcement or search and rescue service canine, which is not to be confused with canines covered by the Americans with Disabilities Act (ADA).

**3.123
deworming**

(Replacing worming) is the giving of an anthelmintic drug (a wormer, dewormer, or drench) to a human or animal to rid them of helminths parasites, such as roundworm, flukes and tapeworm.

**3.124
digestibility**

The measure of how much of the nutrient in a food the canine can extract and absorb.

**3.125
directional control**

The control a canine handler has over the canine during a search whereby the canine handler directs the canine into productive search areas by utilizing hand or voice cues.

**3.126
direction of travel**

The route in which a subject laid a trail as indicated by the canine.

3.127**discipline-related deployment record**

A record of the deployment and/or utilization of a trained canine team, maintained separately from other records, i.e., training, assessments or certifications. A record documenting the deployment and/or utilization of the canine team, especially an account of an act or occurrence kept in writing or some other permanent form, i.e., electronic format, which is discoverable. (See **3.310 record, 3.119 deployment record or utilization record.**)

3.128**discoverable**

Documentation that pertains to an investigation that can be requested and must be produced by the prosecution or the defense for trial purposes. For example, notes, records, certifications, photographs or digital media.

3.129**discrimination**

The ability to recognize differences between two or more stimuli. Operational usage: The ability to recognize differences between two or more odors/scents.

3.130**discriminative stimulus**

A stimulus that signals when a particular response produces specific consequences. For example, sitting in the presence of a particular odor/scent leads to a reward. The odor/scent in this case is the discriminative stimulus.

3.131**distemper**

A highly contagious viral disease of canids, including domestic canines, that is caused by a paramyxovirus genus Morbillivirus) and is marked by fever, leukopenia, and respiratory, gastrointestinal, and neurological symptoms, especially in young canines. In older canines symptomology may be less severe, but neurological impairment is always common.

3.132**distractibility**

The tendency to be easily diverted from task.

3.133**distractor**

Non-target stimuli placed within a search area. These can include: humans, toys, food, animal odor, etc.

3.134**distractor odors/scents**

Non-target stimuli placed within a search area. These can include: humans, toys, food, animal odors or other blank-target odors/scents.

3.135**distracting stimuli**

Meaningful or meaning less blank-target sources that prevent concentration or diverts attention.

3.136**disturbed area**

A change in the normal odor/scent picture of the area.

3.137**dog handler**

The trained person who works the canine. (See **3.56 canine handler**.)

3.138**double-blind assessment/double-blind testing**

Scientific usage: This condition occurs when neither the experimenter/canine handler, nor the observer/evaluator, knows which treatments/manipulations are given to which subjects.

Operational usage: In the evaluation of a canine neither the assessor nor the canine handler knows the location of the target odor/scent or whether target odor/scent is present (i.e., a blank/null search).

3.139**drive**

The propensity of a canine to exhibit instinctual behaviors when faced with particular stimuli. Drives are triggered by these particular stimuli (e.g., food or retrieve) and expressed in a typical and predictable way that is associated with the particular stimulus. Drives can be enhanced or diminished through experience (e.g., training, environment, etc.), but they cannot be created or eliminated. Traditionally defined in the working canine literature as an exaggerated, instinctual response to certain stimuli and situations. Drive is most narrowly and clearly defined as a willingness, vigor, or enthusiasm to engage in certain behavior, contexts, or situations. (See **3.170 food drive**, **3.308 rank drive**, **3.323 retrieve drive**, and **3.370 survival drive**)

3.140**dry bone**

Bone that no longer retains its visco-elastic properties (it could still be associated with tissue, but that tissue would likely be mummified).

3.141**dual-purpose dog**

A canine trained in two disciplines. For example, a canine trained for narcotics and criminal apprehension.

3.142**elbow dysplasia**

A disease of the elbow joint of canines caused by growth disturbances in the elbow joint.

3.143**endoparasite**

An organism that lives in (internal) another organism (its host) and benefits by deriving nutrients at the host's expense.

3.144**environmental conditioning**

(See **3.3 acclimation**.)

3.145

environmental enrichment

The process of improving the mental and physical welfare of animals by providing behavioral choices through enhancements to their environment.

3.146

environmental soundness

The ability of the canine to work, maneuver, search and rest in various conditions of noise, odor, surfaces without demonstrating fear or anxiety.

3.147

environmental training/testing

Instruction and evaluation procedures used to teach a canine to work, and determine whether a canine can work, in a variety of operational environments with increasing biological and physical complexity, which may distract or inhibit the canine from work. The training and testing, respectively, are designed to teach the canine to work, and assure that the canine can work, in a variety of operational environments, some of which may be extreme.

3.148

escape/escape behavior

The relationship between a performance and an aversive stimulus in which the performance terminates the aversive stimulus.

3.149

escape training

A conditioning technique in which the subject canine learns to escape or terminate an unpleasant stimulus.

3.150

evaluator

An individual with relevant training and experience in the discipline being evaluated, who assesses the performance of canine, canine handler, or canine team while showing no bias or partiality. (See [3.69 certifying official/assessor](#).)

3.151

evidence

A body of facts, information, or material objects indicating whether a belief or proposition is true or valid.

3.152

evidence search

The process of a canine locating and indicating items that contain a trained odor/human scent. This may be non-specific or targeted based on the discipline. (See [3.21 article search](#).)

3.153

evidence search dog

A canine trained to locate and indicate items in question by means of detecting a trained odor/human scent.

3.154**exclusion scent check**

A type of location search in which a scent match is not indicated by the canine thereby excluding an individual as the scent contributor.

3.155**experimental bias**

Anyone testing any idea has a strong expectation that leads to an influence about the outcome.

3.156**expert**

A person displaying special skill and knowledge in a given area derived from training, education, or experience.

3.157**expert testimony**

The testimony made by a qualified person about a scientific, technical, or professional issue. An expert is often called upon to testify due to his/her familiarity with the subject or special training in the field.

3.158**extinction training**

A procedure where the reinforcement of a previously reinforced behavior is discontinued with the intention to reduce the occurrence of that behavior.

3.159**false alert**

An indication/trained final response demonstrated by the canine in the absence of the target odor/scent; a situation in which the canine exhibits the trained final response in the absence of the odor/scent on which he/she was trained to find.

3.160**false hole**

A depression or void that is intentionally created in a search environment by the assessor/evaluator/handler that does not contain and has not contained the odor of human remains. This is a distractor depression or void.

3.161**false indication**

Any location, person, or item incorrectly identified by the canine handler. (See [3.159 false alert](#))

3.162**false negative**

Operational usage: A response indicating that something is not true or not present when it is true or present. Scientific usage: Type II error.

3.163**false positive**

A response indicating that something is true or present when it is not true or absent. Scientific usage: Type I error.

3.164**false response**

In a controlled environment, the canine responds as if a trained substance was present when it is known that it is not. (See **3.163 false positive**.)

3.165**fear**

A behavioral response involving the autonomic nervous system (e.g., fight or flight) in the presence of real or imagined danger involving avoidance and, or withdrawal under circumstances where the canine is distressed.

3.166**fight drive**

The subconscious impulse of a canine to merely measure physical prowess with an opponent.

3.167**final response**

A behavior that a canine has been trained to exhibit in the presence of a target odor/scent source. This behavior may be either passive (sit, stare, down, point, etc.) or active (bite, bark, scratch, jump, etc.). Also known as a trained final response. (See **3.16 alert**, **3.206 indication**.)

3.168**fixed interval schedule of reinforcement**

A schedule of reinforcement in which rewards for a correct response occur after a fixed period of time.

3.169**fixed ratio schedule of reinforcement**

A schedule of reinforcement in which the subject is rewarded after a set number of unrewarded correct responses.

3.170**food drive**

The subconscious impulse to work to obtain food.

3.171**frame****skeletal proportion**

The internal bony structures that give the shape and proportion to the canine.

3.172**fresh trail**

A human scent pathway that has been present for a short period of time. A trail that is under 24 hours old.

3.173**generalization**

The tendency to respond to a class of stimuli that share some common characteristics (e.g., the presence of some compound) and that may vary across some other dimension (e.g., a concentration gradient) rather than only to the one which was originally conditioned.

3.174

green dog

Ranges from an untrained canine up to but not including a certified canine. (See [3.257 novice dog](#).)

3.175

grid search

A type of systematic pattern used to ensure thorough coverage of a defined area.

3.176

guideline

Recommended practice that allows some discretion or leeway in its interpretation, implementation, or use. A set of general principles used to provide direction and parameters for decision making.

3.177

habituation

The lessening or disappearance of a response that was once elicited by the stimulus with repeated presentation of the same or closely related stimulus.

3.178

handler

(See [3.56 canine handler](#).)

3.179

handler error

Any action or cue made by the handler that causes the canine to perform incorrectly. (See [3.57 canine handler error](#).)

3.180

hasty search

A quick search of the defined area.

3.181

headspace of target substance

The vapor surrounding a specific source of interest or investigation.

3.182

hematology

The study of blood in health and disease.

3.183

hides

Refers to the number of target odor sources/target subject that are hidden within a search area.

3.184

hip dysplasia

An abnormal formation of the hip socket.

3.185

HME

Homemade Explosives.

3.186

HRD

Human Remains Detection.

3.187

human distractor

Non-target person placed within a search area.

3.188

human scent behavior

The way in which human scent moves or reacts in a given environment. Factors that influence the dispersion of scent may include wind, temperature, air currents, and topography. An example would be a plume of scent that a canine has been trained to follow to its target.

3.189

human scent evidence

A particular person's scent collected for use for investigative purposes.

3.190

human scent evidence canine

A canine trained to locate and indicate items in question by means of detecting human scent.

3.191

human target

Individual that laid a track/trail for a canine to follow to the exclusion of all other trails.

3.192

hunt

Search determinedly for someone or something.

3.193

husbandry

The science of providing for the needs of an animal including housing, daily care, feeding, exercise, and meeting the behavioral/mental/emotional needs of the animal.

3.194

ignitable liquid

Any liquid or the liquid phase of any material that is capable of fueling a fire, including a flammable liquid, combustible liquid, or any other material that can be liquefied and burned. [NFPA 921 (2008)]

3.195

ignitable liquid detection canine

IGL

Canines specifically trained to locate and respond to the presence of certain classes of ignitable liquids by associated odor. Also known as accelerant detector canine or arson dog.

3.196**illicit drugs**

Substances used non-medically that are prohibited by law, including but not limited to stimulants, cannabis, cocaine, heroin, other opioids, and MDMA.

3.197**immediacy of consequences**

The timing involved in delivering consequences for a response directly following the response in time. This reduces the likelihood of inadvertently reinforcing/punishing some other behavior. (See [3.312 reinforcement](#).)

3.198**immunization**

Make an animal immune to infection, typically by inoculation. (See [3.399 vaccination](#).)

3.199**immunize**

To make an animal immune to infection, typically by inoculation. (See [3.399 vaccination](#).)

3.200**imprinting**

A phenomenon by which an animal during a formative stage of life forms a lasting attachment to, and preference for, some object or activity through exposure to the same independent of consequences. Operational usage: A method of initial odor/scent discrimination training.

3.201**IED**

Improvised Explosive Device.

3.202**inadvertent reinforcement**

Reinforcement delivered despite the appropriateness of any response on the part of the subject.

3.203**inclusion scent check**

A type location check in which a scent match is indicated by the canine thereby including an individual as the scent contributor.

3.204**independence**

Scientific usage: Statistical studies assume a property called independence - a situation where the data collected are not related to each other because they come from a random sample from the population examined; independence is often assumed but seldom tested. Good statistical testing tests for independence when its presence is unclear. Operational usage: The canine's capability to perform without assistance or being influenced by the canine handler.

3.205**independent variable**

In the simplest experiment this is the item that you vary or that varies as a function of the way the experiment is designed.

3.206**indication**

The canine's response to the odor/scent in the manner in which it has been trained, independently and without distraction. (See [3.16 alert](#), [3.167 final response](#).)

3.207**initial training**

The fundamental training associated with detector canine training which consists of, but not limited to: bonding/relationship building, obedience, basic odor/scent discrimination, and basic search techniques.

3.208**instinct**

The innate tendency to react in specific ways in specific circumstances. Behaviors that are not taught, and are stereotypical in action and similar in all members of a species.

3.209**instructor**

(See [3.62 canine trainer](#).)

3.210**instrumental conditioning**

(See [3.274 operant conditioning](#).)

3.211**interest**

Any reaction to an odor/scent, which may include:

(1) A noticeable, readable, physical change in behavior in a detector canine during the search when the canine reacts to (i.e., is interested in) an odor/scent.

(2) Pattern of behavior following the canine's initial reaction to a trained odor/scent when the canine displays motivation to remain at or trace the trained odor/scent to its source. (See [3.70 change of behavior](#).)

3.212**inter-observer reliability**

The extent to which different observers obtain the same result when measuring the same behavior.

3.213**interstimulus interval****ISI**

In classical conditioning, the time elapsed between the conditioned stimulus and the unconditioned stimulus. In habituation, the time between exposures to a stimulus.

3.214**interval schedule of reinforcement**

A schedule in which reinforcement is delivered on the basis of the amount of time before a response can be reinforced. The interval may be fixed or variable.

3.215

kennel assistant

The trained person who undertakes husbandry duties.

3.216

keying

A verbal or physical action by the canine handler which causes a detector canine to change its actions or to respond to an area or item whether target odor/scent is present or not. (See [3.109 cueing](#).)

3.217

last known position (LKP)

point last seen (PLS)

Point on a map where the person was last identified or spotted by a witness.

3.218

latent learning

Learning that takes place unintentionally, and does not manifest in overt behavior at that time, but may become evident at a later stage.

3.219

learning plateau

A period in which early progress in learning appears to have stopped and improvement is at a standstill. The plateau is followed by a new period of progress.

3.220

limited access search site

A site designed to test the canine's ability to search and indicate independently of the handler.

3.221

line up

Utilization of a canine to scent discriminate among a predetermined sequence of items with target odor/scent(s) versus non-target odor/scent(s).

3.222

location check

Utilization of a trailing canine to determine if a matching scent is located at a specific site or not by using a scent article.

3.223

location/pinpoint accuracy test

A test involving one odor per 0.3 meters (1 foot), 1 minute per odor.

3.224

lumbar spine

The seven vertebrae between the ribs and the pelvis.

3.225

magnitude of reinforcement

The size, strength, or duration of a reward following a behavior.

3.226

maintenance training

Continuing training conducted beyond the initial training of a discipline, designed to maintain a level of proficiency by ensuring the canine team's capability to perform desired tasks.

3.227

masking odor/scent

The presence of an odor/scent that impedes detection of the target odor/scent source.

3.228

match

The determination that two samples are not distinguishable from each other given available data and/or information. When used in a DNA testing report, a match refers to genetic profiles that show the same types at all loci tested in common; a match statement does not confirm that an individual is the source of the DNA.

3.229

matching scent trail

A pathway laid by a human subject whose scent matches the scent on the article presented to the canine.

3.230

matching-to-sample

MTS

A procedure where upon presentation of a comparison stimulus, an animal chooses the same stimulus amongst an array of stimuli. For example, a canine is presented with scent of Person X and then identifies the scent contributor amongst an array of persons.

3.231

mental state

The level of awareness and response to the environment.

3.232

microchip

An implant that is placed under the skin of an animal that provides a unique electronic identification.

3.233

minimum standard

Written documents established to define the least level of performance considered acceptable.

3.234

miss

When the canine fails to alert in the known presence of the target odor/scent.

3.235

mission requirement

Performance demanded of a person or canine team in accordance with certain fixed regulations, needs of the department or agency. Compulsory pre-requisites needed before deployment.

3.236

motivation

Mindset and physical behaviors associated with interest, willingness, and keenness to work.

3.237

multi handler canine

(See [3.34 backup handler canine](#).)

3.238

multi-purpose canine

A canine trained in more than two disciplines.

3.239

muzzle

A device placed on the canine's face to prevent the canine from biting other animals or people, or consuming material.

3.240

narcotics

Medical definition: A drug (as opium or morphine) that at moderate doses dulls the senses, relieves pain.

Operational usage: An illicit drug (such as marijuana or cocaine) subject to restriction similar to that of addictive narcotics whether physiologically addictive and narcotic or not^[1].

3.241

narcotics canine

A dog trained to detect illicit drugs.

3.242

nares

The nostrils.

3.243

nasopharynx

The upper part of the pharynx connecting with the nasal cavity above the soft palate.

3.244

National Incident Management System

NIMS

A systematic, proactive approach to guide departments and agencies at all levels of government, nongovernmental organizations, and the private sector to work together seamlessly and manage incidents involving all threats and hazards—regardless of cause, size, location or complexity—in order to reduce the loss of life, property and harm to the environment.

3.245**National Institute of Standards and Technology****NIST**

A non-regulatory federal agency within the U.S. Department of Commerce. NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve quality of life. The Dogs and Sensors Subcommittee of the Organization of Scientific Area Committees (managed by NIST) focuses on standards and guidelines related to performance of deployed canines, canine handlers and canine teams, and optimization of their integration with electronic detection devices.

3.246**natural distractors**

Distractor odors that are naturally occurring in the search environment that are not placed by evaluators, observers or participants. Animal remains that were not placed by someone, holes that were dug by wild animals, feces from other animals, etc. (See **3.411 white noise**.)

3.247**negatives**

A trained final response by a canine to a non-matching odor/scent.

3.248**negative control**

A known odor/scent sample that is used to assess the canine's proficiency in a non-matching odor/scent scenario. The canine is expected to give a negative response.

3.249**negative location check**

A type of site check in which no existing scent matches the human scent on the article presented to the canine.

3.250**negative response**

An alert/indication given by a canine showing no match to odor/scent, i.e., no matching trail, no substance present, etc.

3.251**neuter**

To remove the canine's reproductive organs.

3.252**neutral stimulus/cue**

Any stimulus that has no effect on behavior before conditioning.

3.253**noise**

Meaningless output occurring in electronic equipment; it is random electronic variation that is generated by and intrinsic to the electronic circuitry. It ultimately establishes the smallest analytical signal that can be quantitatively measured with confidence. A part of a signal that is not the target signal.

3.254**non-indication**

(See [3.234 miss.](#))

3.255**non-matching scent trail**

A pathway laid by a human subject whose scent does not match the scent on the article presented to the canine, or the absence of a matching scent pathway.

3.256**non-productive response**

A change of behavior of the canine followed by a positive indication which cannot be confirmed by the canine handler. This may be the result of residual odor/scent that the canine can detect but which cannot be confirmed by technology or direct observation. A non-productive response may also be an error—a false positive—but these outcomes cannot be distinguished in an operational environment.

3.257**novice dog**

(See [3.174 green dog.](#))

3.258**nutrition maintenance**

Nutrients provided to keep body condition at a healthy level in an adult canine without providing additional nutrients for growth, reproduction or weight gain, will vary with level of activity.

3.259**obedience training**

The training of an animal, especially a canine, to obey certain commands.

3.260**objective-oriented training**

Training to enhance a canine team's proficiency using specific goals established prior to the initiation of the training.

3.261**odor**

Volatile chemicals emitted from a substance that are able to be perceived by olfaction. "Odor" has traditionally referred to canine detection of a substance. "Scent" has traditionally referred to canine detection of humans. (See [3.329 scent.](#))

3.262**odor dispersion**

Environmental conditions/factors/influences affecting the movement of odor. (See [3.263 odor plume.](#))

3.263**odor plume**

Dispersion of odor in a given environment. (See [3.262 odor dispersion.](#))

3.264

odor recognition

Demonstration of the canine's olfactory ability to alert to a target odor(s).

3.265

odor recognition assessment

A test of the canine's olfactory ability to alert to target odor(s) in a controlled environment.

3.266

odor/scent pool

Area of concentrated target odor/scent.

3.267

odor signature

The chemical profile of an odor produced by a substance.

3.268

odorant

Molecules that are properties of the external world objectively defined in terms of their physical and chemical characteristics and capable of being transposed by particular nervous systems into odors.

3.269

olfaction

olfactory

Of, relating to, or connected with the sense of smell.

3.270

off-lead

Any work or interactions with the canine where the canine is not attached to a lead.

3.271

on-lead

Any work or interactions with the canine where the canine is attached to a lead.

3.272

open area

A designated search area for the purpose of conducting canine team exercises.

3.273

open water search

Utilizing a canine in a boat to locate the odor of human decomposition in a body of water.

3.274

operant conditioning

When used in training, operant conditioning involves teaching an animal to perform a response in order to obtain a reward or avoid displeasure.

3.275**operational assessment**

A test conducted (single- or double-blind) in an operational environment in which the canine team will be deployed or utilized.

3.276**operational certification**

A process that attests to the successful completion of an examination of relevant skills for the canine team to be deployed on operations.

3.277**operational experience**

A person's years of training and experience related to mission specific objectives.

3.278**operational proficiency**

Training conducted beyond the initial training of a discipline, designed to maintain a high level of competence or skill by ensuring the canine team's capability to perform desired tasks.

3.279**operational requirement**

(See [3.235 mission requirements](#).)

3.280**operational search**

(See [3.118 deployment](#).)

3.281**palate**

The roof of the mouth separating the oral cavity from the nasal cavity. Canines have a bony hard palate and a soft tissue extension called the soft palate.

3.282**passive alert**

A trained final response given by the canine that requires an inactive behavior such as sitting, staring or lying down. These types of behaviors are typically trained so as not to disturb the environment and/or forensic evidence. (See [3.283 passive response](#), [3.321 response](#).)

3.283**passive response**

A type of response that the canine displays/indicates in a manner that does not disturb the environment (i.e., sit, stand, lie quietly, or focus/stare after the detector canine has detected a trained odor). (See [3.282 passive alert](#).)

3.284**peer review**

The review process of a paper submitted to a scientific journal by an equally competent independent party to evaluate the methods, claims, and conclusions before publication.

3.285**personal protective equipment****PPE**

Equipment worn for protection from discipline-specific environmental hazards, e.g., biological, radiological, chemical. For disaster canine applications in a rubble search, helmet, gloves, long pants/long sleeves, and safety toe/steel shank boots, which must be worn by the canine handler. Canine handler must also have eye protection and knee pads on hand, as they may be required by the hosting task force/agency.

3.286**personality characteristics**

Behavioral qualities of the canine that are relatively constant and reliable, and frame or affect the canine handler's response across contexts.

3.287**point-to-point**

An open area search method in which the canine team moves in a straight line from one designated location (point) to another.

3.288**positive alert**

A trained detection alert in the presence of the target odor/scent.

3.289**positive location check**

A type of search conducted in a specific area in which an existing human scent in the environment matches that of the scent article presented to the canine.

3.290**positive reinforcement**

A reward given after a response or as the response occurs that increases the probability of that response recurring. For example, if a canine is rewarded for sitting by being given a treat the canine is more likely to sit again.

3.291**possession**

Upon presentation of the reward article, the canine takes the article without hesitation, and maintains a firm grip.

3.292**posture**

The position in which the body is held.

3.293**praise off**

Physically removing the canine, after he has shown a response, from the area or item without causing any physical discomfort to the canine, while verbally praising the canine.

3.294**pre-scenting**

A sample target scent that is presented to the canine prior to deployment. The canine's objective is to match the scent article to the target scent. This is commonly used in tracking/trailing/location checks and/or scent discrimination line ups.

3.295**pre-scenting canines**

A type of canine that smells a sample target odor pad (scent article) prior to deployment. The canine's objective is to match the pre-scented pad to the target scent. This is commonly used in tracking/trailing and/or scent discrimination line ups.

3.296**primary reinforcement**

The delivery of a naturally occurring stimulus that requires no previous experience or learning to be reinforcing. It satisfies some biological need (i.e., food, water, air, social interaction).

3.297**probable cause**

Probable cause exists when the facts and circumstances known to the officer would warrant a prudent person to believe a crime had been committed and the accused had committed it or that the evidence will be found in the place to be searched.

3.298**productive response**

A change of behavior of the canine followed by a positive indication that can be confirmed by the canine handler.

3.299**proficiency assessment/testing**

An evaluation during training; a tool to assess a canine team's ability.

3.300**program**

All-encompassing plan of action aimed at accomplishing a clear objective that meets a defined need. i.e. the instruction for completing the training, certification, and documentation requirements within a detection canine discipline.

3.301**prompt**

A previously learned association that stimulates the initiation of a response. Instructions, gestures, physical guidance and modeling cues serve as prompts to the canine.

3.302**proof off/proofing**

A training technique that aims to teach the canine to ignore all odors/scents except target odors/scents.

3.303

proprioception

Awareness of the relative body position in space at rest and during movement.

3.304

pupillary response to light

The action of the pupils constricting in response to light, it requires vision and normal neurologic control of the pupils.

3.305

quartering

A systematic search of an area in a series of point-to-point patterns utilizing the wind to the canine's best advantage.

3.306

radiograph (x-ray)

An image produced on a sensitive plate or film by x-rays or similar radiation, and typically used in medical examination range of motion.

3.307

random/randomized

When the choice of something or the placement of something is random the source placed is equally likely to be either location.

3.308

rank drive

The subconscious impulse on the part of the canine to rise in status within the pack social order.

3.309

recall

A verbal command given to the canine, terminating with the canine returning to the canine handler. The canine's response to return to the canine handler on command.

3.310

record

record/utilization log

A record/log in the use of a trained canine team in an operational environment, as opposed to training records. A log constituting a piece of evidence about the past, especially an account of an act or occurrence kept in writing or some other permanent form, i.e., electronic format. (See [3.119 deployment record or utilization record](#).)

3.311

refusal

A lack of response on the part of the canine, or a declination to accept instruction or direction.

**3.312
reinforcement**

This refers to any consequence, positive or negative, of a response that increases the probability of that response. (See **3.197 immediacy of consequences**.)

**3.313
reinforcement/reward schedule**

The rule denoting the number of responses, the interval of time, and/or the duration of the response that will be reinforced.

**3.314
reliability**

The extent to which an experiment, test or measuring procedure yields the same results on repeated trials. Low probability of alerting to anything other than a target odor/scent and a high probability of alerting to a target odor/scent. Evidence that establishes a fair probability that a target odor/scent is present. The extent to which a measurement is repeatable and consistent and free from random errors. (See **3.90 consistency**.)

**3.315
remote training**

Training to work the canine at a distance from the canine handler. A training situation in which an attempt is made to remove the human element from the picture.

**3.316
repetitive barking**

In disaster applications, three or more barks directed at the same victim that may be interspersed with digging, scratching, or any other attempt to access the victim. The canine may reposition itself while indicating at target location.

**3.317
reproducibility**

The extent to which a process yields the same results on repeated trials.

**3.318
residual odor/scent:**

Odor/scent that originated from any substance/subject that may or may not be physically recoverable or detectable by other means. The odor/scent that originated from a target substance/subject and lingers after the target substance/subject has been removed or has totally decomposed (as in the case of human remains).

**3.319
residue**

Remnants of a target substance that can be recovered and identified.

**3.320
respiratory**

Related to breathing and exchange of oxygen and carbon dioxide.

3.321**response**

A behavior that a canine has been trained to exhibit upon locating the source of a target odor/scent. This behavior may be either passive (sit, stare, down, point) or active (bite, bark, scratch, jump, etc.). (See [3.206 indication](#).)

3.322**retrieve**

Behaviors associated with finding and returning prey or objects back to the canine handler or social group.

3.323**retrieve drive**

The subconscious impulse to find and bring prey to the pack leader.

3.324**reward**

The presentation of an article, toy, food, or praise given to the canine once the detector canine has alerted and responded to the odor(s)/scent(s) for which the canine is trained to detect/locate.

3.325**routine training**

Canine training conducted with regularity that maintains the canine's operational capabilities.

3.326**safety data sheet****SDS**

A document providing comprehensive information about a substance or mixture for using in workplace chemical management as adopted by the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Note: Previously known as a Material Safety Data Sheet (MSDS).

3.327**safety violation**

An action by the handler, canine or canine team that if done in operational environment, could place the canine team in jeopardy.

3.328**satiation**

When a reinforcer loses its effectiveness as a result of being overused.

3.329**scent**

Volatile chemicals emitted from a live human that are perceived by the canine through olfaction. "Scent" has traditionally referred to canine detection of humans. "Odor" has traditionally referred to canine detection of a substance. (See [3.261 odor](#).)

3.330**scent article**

An item that has been exposed to the target scent source that is used to put the canine on task.

3.331

scent association

When a canine learns to identify a trained scent with a specific reward.

3.332

scent cone

A funnel-shaped scent pathway, which extends down-wind from the target, becoming wider the farther away from the target. The canine is able to locate the target by moving upwind.

3.333

scent dispersion

Environmental conditions/factors/influences affecting the movement of scent from a fixed scent source. Movement of the source creates a separate scent cone at the new location.

3.334

scent discrimination

The ability of the canine to use olfactory capabilities to differentiate one scent from another.

3.335

scent match

(See **3.230 matching-to-sample**.)

3.336

scent/odor association

When a canine learns to identify a trained odor/scent with a specific reward.

3.337

scent/odor picture

The combination of odors/scents that are present when a detector canine responds to a trained odor/scent.

3.338

scent pad

A material used to collect target scent from a person, object, or location for subsequent presentation to the canine.

3.339

scent plume

Dispersion of scent in a given environment. (See **3.332 scent cone/scent dispersion**.)

3.340

scent recognition

Demonstration of the canine's olfactory ability to alert on a target scent(s).

3.341

scent recognition assessment

A test of the canine's olfactory ability to alert to target scent(s) in a controlled environment.

3.342

scent trail

Scent pathway left by a person.

3.343

scientific expert

A person who has special knowledge of a subject about which a court requests testimony.

3.344

search intent

The level of interest, attitude, and enthusiasm the canine shows while searching.

3.345

second handler canine

(See [3.34 backup handler canine](#).)

3.346

sensitive periods

Periods during early development when an animal is notably sensitive to stimuli that may create a specific association or otherwise alter their behavior and that remains relatively stable over time.

3.347

sensory threshold

The amount of stimuli that is necessary to produce a response from the canine.

3.348

set time

The length of time between the target placement and when the canine is deployed to detect the target odor/scent.

3.349

shaping

shaping by successive approximation

The process of selectively rewarding responses that approximate the desired behavior to an increasingly greater degree. This is one method for teaching a new behavior and can be used as a method of modifying additional behaviors. (See [3.17 approximation](#).)

3.350

sharpness

A tendency to react to stimuli with aggressive behavior.

3.351

shoreline search

Utilizing a canine to locate target odors in a shoreline environment.

3.352

single/sole-purpose canine

A dog trained in only one discipline.

3.353**single-blind assessment/testing**

An evaluation of the canine team's ability to complete an exercise where the evaluator knows the outcome and the handler does not.

3.354**single split trail/turn**

Refers to a training exercise in which two subjects walk a straight line and then split into two different directions. When the canine is presented with a scent article from one of the subjects, the canine commences to trail and match the correct person to the scent article. Despite the contamination of scent from the other person on the trail the canine is still able to discriminate between scents and identify the correct subject.

3.355**sinus arrhythmia**

A regularly irregular heart rhythm associated with changes in breathing, normal finding in the canine.

3.356**social maturity**

The period of behavioral maturation that appears to be correlated, in species in which it has been studied, with changes in brain chemistry. Canines' temperaments can be considered relatively stable after this period, although learning continues. The broad range cited for social maturity is 12 to 36 months, and the narrow range cited is 18 to 24 months.

3.357**socialization**

The exposure of canines to other canines, humans, and animals of different species during the sensitive period when they are best able to begin to learn about such stimuli.

3.358**source**

- (1) The point of origin of the odor/scent.
- (2) The skill is for the canine to locate the source by arriving at its threshold for that odor/scent, then uses different thresholds to reach a point where the odor/scent is located. When a canine reaches the source, it should make a final response as it has been conditioned to make.

3.359**spontaneous recovery**

The tendency of a behavior in a canine to reappear after it has undergone extinction.

3.360**staged/staging area**

A location separate from the search site designated for canine handlers to wait until they are called to search.

3.361**standard**

An established or widely recognized model of authority or excellence as a reference point against which other things can be evaluated or the ideal in terms of which something can be judged.

3.362

startle response

A largely unconscious defensive response in a canine to sudden or threatening stimuli or perceived stimuli.

3.363

statistical significance

The probability of obtaining the observed result—or a more exaggerated one—if the null hypothesis of no effect was true.

3.364

stertor

The act of producing a snoring sound ^[1].

3.365

stridor

A harsh vibrating sound heard during respiration in cases of obstruction of the air passages ^[1].

3.366

structurally sound

The anatomical correctness of the feet and legs of an animal.

3.367

sub-surface deposition

The placement of human remains under ground or surface area, i.e., buried or underwater.

3.368

substance detection

Recognition and response to trained target odor.

3.369

surface deposition

The placement of human remains on the surface of the ground.

3.370

survival drive

The subconscious impulse for the dog to defend itself from real or imagined danger.

3.371

systematic search pattern

A method that employs a specific search sequence to increase accuracy and minimize omissions, while maximizing coverage. Such patterns usually have set start and stop points.

3.372

tactile reinforcement

Any reward perceptible by touch for the canine.

3.373

taggant

Chemical markers (e.g., Nitro compounds) that vaporize rapidly and are added to enhance the detection of plastic explosives by instrumental analysis.

3.374**target**

The odor/scent for which the canine is trained to respond. (See [3.358 source](#).)

3.375**target trail**

A pathway that was laid by a target subject that matches the scent article presented to the canine. (See [3.229 matching scent trail](#).)

3.376**target training**

The process of conditioning an animal to touch a particular object.

3.377**technical review**

An evaluation of reports, notes, data, and other documents, conducted by an equally competent peer, to ensure there is an appropriate and sufficient basis for the scientific conclusions.

3.378**temperament**

The general consistence with which the animal behaves. Broad classes of temperament appear to be heritable.

Outgoing—Behavior of the canine characterized by seeking human interaction.

Stable—Behavior of the canine that is consistent over time, place and environmental conditions.

3.379**tenacity**

The quality of a canine to persist at a task regardless of the environmental distractions or task difficulty.

3.380**threshold**

Detection—The minimum and maximum concentration of a chemical vapor that can be detected by a canine or an instrument.

Behavioral—The level of stimulation above or below which learning and/or performance is impaired.

3.381**titer**

(See [3.400 vaccine titer](#).)

3.382**trace odor**

A minimal amount of target odor.

3.383**track/trail**

The scent pathway left by an individual moving.

3.384**tracking**

The propensity or learned ability of a canine to methodically follow odor/scent on the ground (human/ground disturbance) by working the canine close to the pathway. Canines are not typically pre-scented on an object.

3.385**trailing**

The propensity or learned ability of a canine to methodically follow the target scent. The canine may follow a scent plume which could be either air borne or settled on the ground/vegetation. The canine will use whichever technique will get them to the target the most efficiently. Canines are typically pre-scented on an object.

3.386**trainability**

The potential ability and the motivation on the part of the canine to learn and develop all the skills required, and the ability to learn from successes and failures.

3.387**trainer/instructor**

Any member of a specific discipline who is in a situation of instructing any part of the canine team using established methods and validated training guidelines.

3.388**training**

Goal oriented task designed to teach, correct, expand, improve, and maintain detection capabilities. (See [3.312 reinforcement](#).)

3.389**training aid**

Target odor/scent sources used for training.

3.390**training log****training record**

A record used to document the training of a canine, canine handler or canine team, maintained separately from other records, i.e., assessments, certifications or discipline-related deployment records. A record documenting the performance of the canine team, especially an account of an act or occurrence kept in writing or some other permanent form, i.e. electronic format which is discoverable.

3.391**transport container**

A container used to appropriately move training aids in compliance with storage and handling guidelines of the Federal, state, and/or local agencies' policy.

3.392**type I error**

This is the mistake when one rejects the null hypothesis (one states that there is an effect) and it is true (there is really NO effect). This is also called a false positive—detecting an effect where none exist. (see **3.163 false positive**.)

3.393**type II error**

This is the mistake when one accepts the null hypothesis (there is no effect) when it is false (there really IS an effect). This is also called a false negative—failure to detect a real effect. (see **3.162 false negative**.)

3.394**unconditioned response****unconditioned stimulus**

(See **3.74 classical conditioning**.)

3.395**unconfirmed alert**

An alert for which the presence of a trained odor/scent cannot be confirmed. This may be the result of residual or lingering odor/scent that the canine can detect but which has not been confirmed by technology or direct observation. (See **3.256 non-productive response**.)

3.396**unconfirmed operational outcome**

Lack of verification of search results following a deployment of a canine team(s).

3.397**urban search**

To locate target odor/scent sources in a city type of environment.

3.398**urine specific gravity**

A measure to determine the concentration of the urine.

3.399**vaccination**

The administration of antigenic material (a vaccine) to stimulate an individual's immune system to develop adaptive immunity to a pathogen. Vaccines can prevent or ameliorate morbidity from infection. (See **3.199 immunize**.)

3.400**vaccine titer**

The antibody titer is a test that detects the presence and measures the amount of antibodies within a canine's blood. The amount and diversity of antibodies correlates to the strength of the body's immune response.

**3.401
validation**

The confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled.

**3.402
validity**

The extent to which a measurement actually measures what you intend to measure which provides information relevant to the questions asked; valid measures provide a good, close relationship between a variable. Validity has two aspects: accuracy and specificity.

**3.403
variable interval schedule of reinforcement**

A reward schedule for a canine in operant conditioning in which the subject is rewarded after a period of time that varies from one reinforcement period to the next; there is variable time after one reinforcer or reward before the next reinforcer or reward becomes available.

**3.404
variable ratio schedule of reinforcement**

A reward schedule in which the canine is rewarded after a number of correct but unrewarded responses; the number varies from reinforcement to reinforcement. A reward schedule in which the reward occurs irregularly after a number of correct responses.

**3.405
vehicle search**

Utilizing a canine to locate a target odor/scent source in any type of motor vehicle.

**3.406
verification**

To confirm the truth or correctness of something.

**3.407
voice inflection**

Use of tonal changes and volume to effectively communicate with the canine.

**3.408
welfare**

The treatment that a canine receives providing for its physical and mental needs.

**3.409
wet bone**

Bone that still retains its visco-elastic properties, typically due to retention of soft tissue and associated fluids.

**3.410
whelping**

Giving birth to a puppy.

3.411

white noise

Distractor odors that are naturally occurring in the search environment that are not placed by evaluators, observers or participants. Animal remains that were not placed by someone, holes that were dug by wild animals, feces from other animals, etc. (See [3.246 natural distractors](#).)

3.412

wilderness search

To locate target odor/scent sources in a rural environment.

3.413

zoonosis

A disease communicable from vertebrate animals to humans.

Annex A **(informative)**

Bibliography

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