



NTIS/PS-77/1098

**Explosives, Narcotics, and
Personnel Detection Using Dogs**

A Bibliography with Abstracts

Search period covered

1964 - November 1977

52897A

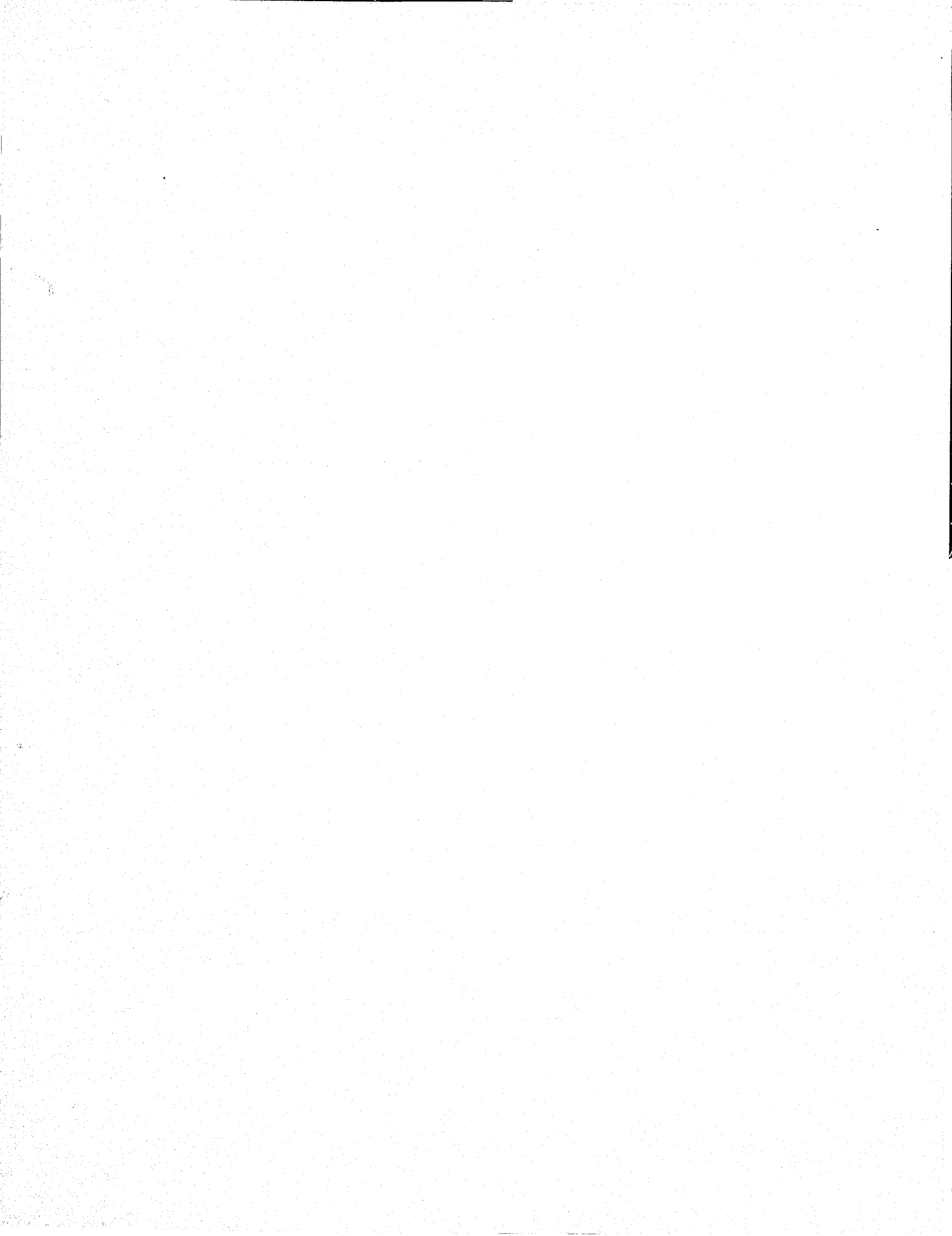
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15. Supplementary Notes Supersedes NTIS/PS-76/0828 and NTIS/PS-75/648		11. Contract/Grant No.	
16. Abstracts The citations cover the use of dogs by law enforcement personnel or by the military to detect explosives, narcotics and intruders. A few reports are included which cover the use of dogs in riot control and in military operations. Some attention is also paid to sensitivity and responses in the detector dog. (This updated bibliography contains 45 abstracts, 35 of which are new entries to the previous edition.)		13. Type of Report & Period Covered 1964 - Nov., 1977	
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**SAMPLE ENTRY OF A CITATION FROM THE
NTIS DATA BASE**

Title
Compilation of State Data for Eight Selected Toxic Substances. Volume I

Corporate Author
Mitre Corp., McLean, Va. *Environmental Protection Agency, Washington, D.C.
Office of Toxic Substances. (402 364)

Sponsoring Agency
Environmental Protection Agency, Washington, D.C.

Report Date
Sep 75

Pages in Report
165p*

NTIS Subject Categories
C5945F4 FLD: 06T, 06E, 57Y*, 57H, 68* USGRDR7606

Final rept.

AUTHOR: Roberts, Elisabeth, Spewark, R., Stryker, S., Tracey, S.

C5945F4 FLD: 06T, 06E, 57Y*, 57H, 68* USGRDR7606

Sep 75 165p*

REPT NO: MITRE-75-52-Vol-1

CONTRACT: EPA-68-G1 2933

MONITOR: EPA/560/7-75/001-1

Paper copy also available in set of 5 reports: as PB-248 659-SET, PC\$36.00.

ABSTRACT: In June 1974, toxic substances data in the U.S. was collected and analyzed in 20 key states. This report describes that effort and discusses the amount, type and usefulness of the data and the toxic substances monitoring capabilities of the state agencies contacted.

DESCRIPTORS: *Environmental surveys, States (United States), Monitors, Toxicology, Arsenic, Beryllium, Cadmium, Cyanides, Lead (Metal), Mercury (Metal), Chlorine aromatic compounds, Data acquisition, Data processing, Water pollution, Air pollution, Chemical compounds

IDENTIFIERS: *Toxic agents, Biphenyl/chloro, State agencies, NTISEPAOTS

PB-248 660/3ST NTIS Prices: PC\$8.00/MF\$3.00

Paper Copy
Price

Microfiche
Price

Keywords

Order Number

NOTE: Prices are subject to change. See colored pages accompanying this search.

A Compact Laboratory Facility for Psychophysiological Study of Dogs

Creedmoor Inst for Psychobiologic Studies Queens Village N Y (100
500)

AUTHOR: Kaplan, Michael

D3454F2 Fld: 6J, 6P d7723

1964 9p

Rept No: 5

Contract: Nonr285000

Monitor: 18

Distribution limitation now removed. NOTE: Only 35mm microfilm is
available. No microfiche.

Abstract: An integrated laboratory facility for the
psychophysiological study of dogs is described. (Author)

Descriptors: (*Psychophysiology, Test facilities), (*Biological
laboratories, Psychophysiology), Design, Specifications, Dogs

Identifiers: NTISDODXD

AD-443 956/8ST NTIS Prices: PC A02/MF A01

The Training of Dogs for Field Reconnaissance

Canine Behavior Lab Univ of Maryland College Park (074 170)

Final rept.

AUTHOR: McIntire, Roger W.

D2612C3 Fld: 5I d7715

Sep 65 104p

Contract: DA-18-001-AMC-260 (X)

Monitor: 18

Distribution limitation now removed.

Abstract: This report investigated the feasibility of training a free-ranging dog to perform personnel reconnaissance. The assumptions about terrain, weather and other pertinent conditions of the military problem were changed as the development of the project progressed. The general trend of these changes began with a consideration of a highly versatile canine reconnaissance system not dependent upon a particular handler, a pathway, or a particular kind of military unit to be protected. However, as the project progressed, the conditions for the operation of the system became more and more specified and limited. The final focus of the investigation was upon providing effective personnel reconnaissance for a foot patrol progressing along a pathway, trail, or road. The reconnaissance is to have adequate efficiency for providing warning of the presence of enemy personnel so that the patrol would be protected from an ambush consisting of small arms fire. (Author)

Descriptors: (*Dogs, *Military training), Performance(Human), Handling, Warning systems, Visual perception, Smell, Effectiveness, Motivation, Response, Radio transmitters, Meteorological phenomena, Attention, Decoys, Detection

Identifiers: NTISDODXD

AD-476 427/OST NTIS Prices: PC A06/MF A01

Lessons from the Indo-China War. Vol. Iii (Enseignements de la Guerre d'Indochine. Fascicule III)

Battelle Memorial Inst Columbus Ohio Remote Area Conflict Information Center (052 410)

D2022D3 Fld: 15G, 19A, 19F d7711

1957 157p

Contract: SD-171

Grant: ARPA Order-935

Monitor: 18

See also Volume 2, AD-804 376L. Translated from the original French version.

Distribution limitation now removed.

Abstract: No abstract available.

Descriptors: (*Warfare, *Far east), (*Vietnam, Warfare), (*France, *Military tactics), Military organizations, Infantry, Airborne, Rifles, Guns, Machine guns, Artillery, Dogs, Mine clearance, Armored vehicles, Logistics, Air transportation, Food, Clothing, Medical personnel

Identifiers: Air power, Paratroopers, NTISDODXD

AD-804 377/OST NTIS Prices: PC A08/MF A01

Usary Seminar Report: Night Operations in Rvn

Adjutant General'S Office (Army) Washington D C (003 650)

Rept. for 20 Mar-3 Apr 68.

D1422A3 Fld: 15G d7707

13 Apr 68 78p

Monitor: OACSFOR-OT-RD-68X013

Distribution limitation now removed.

Abstract: Reports are given on night warfare in South Vietnam, including preparations, training, operations, and lessons learned.

Descriptors: (*Night warfare, Vietnam), Symposia, Tactical air support, Army operations, Limited war, Unconventional warfare, Environment, Military strategy, Artillery, Armored vehicles, Logistics, Military intelligence, Roads, Military training, Infrared equipment, Communication and radio systems, Jungles, Area coverage, Dogs, Boats, Deployment

Identifiers: Ambush, Infiltration, *Lessons learned, South vietnam, NTISDODXD

AD-831 735/6ST NTIS Prices: PC A05/MF A01

Enhancement of Olfactory Discrimination

Pennsylvania Univ Philadelphia Monell Chemical Senses Center (405301
)

Final scientific rept.

AUTHOR: Moulton, D. G.

D1121H1 Fld: 6P, 57S 3RAI7705

Oct 76 42p

Grant: AF-AFOSR-2425-73

Project: 9777

Monitor: AFOSR-TR-76-1183

Abstract: Concentration - response functions for pentyl acetate have been established for the German shepherd and for human subjects tested in the same behavioral apparatus. In dogs the magnitude of performance decrement at a given concentration was found to be a function of the magnitude of the concentration reduction from the preceding test concentration if this reduction exceeded a certain quantity. In another series of experiments, data suggests facilitation of performance in dogs following ingestion of an odorant is not nonspecific but the degree of specification needs clarification. A third study concerned the measurements relevant to understanding the aerodynamics of the nasal chamber and the dispersal of odorant molecules in the nasal airways. The final study attempted to determine the minimum number of molecules necessary to excite a single olfactory receptor in the dog. (Author)

Descriptors: *Smell, Chemical agent detectors, Discrimination, Dogs, Nose (Anatomy), Concentration (Chemistry), Acetates, Chemoreceptors, Sensitivity, Stimulation (Physiology), Humans

Identifiers: Pentyl acetate, Adjuvant, Alpha-ionone, Propyl acetate, NTISDODXA

AD-A032 923/5SI NTIS Prices: PC A03/MF A01

User's Guide: Land Mine and Booby Trap Detector Dogs. Volume III

Southwest Research Inst San Antonio Tex Dept of Bioengineering (409922)

Final technical rept.

AUTHOR: Mitchell, Daniel S.

D0395L4 Fld: 19A, 2E, 15G, 79A, 74G, 98E GRAI7703

Sep 76 67p

Contract: DAAK02-73-C-0150

Monitor: 18

See also Volume 1, AD-A031 980.

Abstract: While the capabilities of land mine/booby trap canines have been well documented, several years of carefully-controlled studies have shown that the successful utilization of such animals requires a knowledgeable, dedicated handler with proper training and experience. This manual is intended as a field guide for use by personnel who meet these qualifications. Its purpose is to provide a 'field-portable' summary of the important procedures and considerations involved in the deployment of land mine/booby trap detector dogs.

Descriptors: *Mine detection, *Booby traps, *Military dogs, Teaching methods, Mines(Ordnance), Training, Conditioning(Learning), Land mines, Behavior, Smell, Psychology, Animal husbandry, Motivation, Searching

Identifiers: Obedience training, Animal behavior, NTISDODXA

AD-A031 982/2SI NTIS Prices: PC A04/MF A01

Training and Employment of Land Mine and Booby Trap Detector Dogs.
Volume II

Southwest Research Inst San Antonio Tex Dept of Bioengineering (409922)

Final technical rept.

AUTHOR: Mitchell, Daniel S.

D0395L3 Fld: 19A, 2E, 15G, 79A, 74G, 98E GRAI7703

Sep 76 247p

Contract: DAAK02-73-C-0150

Monitor: 18

See also Volume 3, AD-A031 982.

Abstract: The present document is intended as a procedures manual and reference text to be used during the training of initially naive canines for land mine and booby trap detection service. No directly related experience on the part of the handler/trainer personnel is assumed. Each successive phase of training is treated in detail, and all specialized training aids and facilities are described and/or illustrated. Commonly encountered training difficulties are discussed and appropriate solutions indicated. Techniques of service deployment are described in the concluding chapter. Chapter II presents a discussion of those concepts of operant and classical conditioning which are relevant to land mine and explosive booby trap detection training and has been included to provide handler/trainer personnel with a basic knowledge of the underlying behavioral principles.

Descriptors: *Mine detection, *Booby traps, *Military dogs, Mines(Ordnance), Training, Teaching methods, Land mines, Conditioning(Learning), Physical fitness, Animal husbandry, Psychology, Motivation, Searching, Smell

Identifiers: Obedience training, Animal behavior, NTISDODXA

AD-A031 981/4ST NTIS Prices: PC A11/MF A01

The Relationship of the Number of Olfactory Cells to the Olfactory Threshold in the Dog

Army Biological Labs Frederick MD (036 550)

AUTHOR: Neuhaus, Walther; Mueller, Adam

D0324L2 Fld: 6P d7702

Mar 69 4p

Rept No: Trans-2408

Monitor: 18

Trans. of die Naturwissenschaften (West Germany) v41 p20 1954, by C. L. Lust.

Distribution limitation now removed.

Abstract: No abstract available.

Descriptors: (*Smell, Thresholds(Physiology)), Cells(Biology), Sensitivity, Nose(Anatomy), Measurement, Dogs, Molecules, Density, Brain, Air, West germany

Identifiers: Translations, NTISDODXD

AD-850 940/8ST NTIS Prices: PC A02/MF A01

Off Leash Tracker Dog-Helicopter Tracking Team

Behavior Systems Inc Raleigh N C (387 626)

Final rept. Jan-2 Jul 69

AUTHOR: Carr-Harris, E.; Siebert, L.

C7805B3 Fld: 15G, 6C d7626

Sep 69 21p

Contract: DAAD05-69-C-0177

Project: LWL-08-B-69

Monitor: LWL-CR-08B69

Distribution limitation now removed.

Abstract: The purpose of this study was to explore the feasibility of training tracker dogs to work off-leash in conjunction with a helicopter to locate enemy personnel. The two essential elements of the task were considered to be the ability of the dog to work off-leash, independent of the handler, and the ability of the dog to display stalking behavior. This latter term was defined as the dog vigorously pursuing a target while carefully avoiding alerting target personnel to his presence. Two Labrador retrievers were trained to the independent tracking task while two different animals were trained to display the stalking response. The dogs were trained for six weeks and their behavior successfully demonstrated. Although a few problems pertinent to the pretrial effectiveness of the overall dog/helicopter team still need to be worked out, it would appear that the feasibility of training suitable behavior on the part of the dog has been established.

Descriptors: (*Enemy personnel, Detection), (*Dogs, Tracking), Feasibility studies, Training, Helicopters, Handling, Terrain, Odors, Behavior, Close support, Counterinsurgency, Army personnel

Identifiers: Labrador retrievers, Personnel detection, Scout dogs, NTISDODXD

AD-858 987/1ST NTIS Prices: PC\$3.50/MF\$3.00

60TH Infantry Platoon (Scout Dog) (Mine/Tunnel Detector Dog)

Army Concept Team in Vietnam APO San Francisco 96384 (037 350)

Final rept.

AUTHOR: White, Ben O. Jr

C7661A4 Fld: 19A, 15G d7625

Dec 69 42p

Project: ACTIV-ACG-65F

Monitor: 18

Distribution limitation now removed.

Abstract: The Army Concept Team in Vietnam evaluated the 60th Infantry Platoon (Scout Dog) (Mine/Tunnel) (60th IPSD) to determine its suitability for tactical employment with US Army units in RVN. The 28 man platoon had 14 mine and 14 tunnel dogs. The mine dogs were trained to detect explosive artifacts and trip wires. The tunnel dogs were trained to detect open and camouflaged holes and trip wires. (Author)

Descriptors: (*Army operations, Vietnam), (*Mine detectors, Dogs), (*Dogs, Underground structures), Military tactics, Antipersonnel weapons, Wire, Military personnel

Identifiers: 60th infantry platoon, Booby traps, *Dog handler teams, South vietnam, Trip wires, *Detection, *Tunnels, NTISDODXD

AD-869 383/OST NTIS Prices: PC\$4.00/MF\$3.00

Mine, Booby-Trap, Tripwire and Tunnel Detection

Behavior Systems Inc Raleigh N C (387 626)

Final rept.

AUTHOR: Carr-Harris, E.; Thal, R.

C7645I4 Fld: 5I, 6P, 19A d7625

Jan 70 73p

Contract: DAAD05-68-C-0234

Monitor: LWL-CRO1B68

Distribution limitation now removed.

Abstract: Reports from the field indicated that German Shepherd scout dogs had been observed to alert on mines, tripwires and other man-made artifacts. The purpose of the present program was to explore the feasibility of training such animals specifically to the tasks of detecting mine/tripwires and tunnels, by means of techniques that were sufficiently objective to permit instruction of military handlers in their use. A six month feasibility study was conducted. Procedures and practices derived from the formal study of animal behavior were used throughout the program. Because of the success of the first phase of the problem, a second six months of work was initiated with the objective of training an army scout dog platoon for the capability of mine/tripwire and tunnel detection. The platoon was judged ready and deployed to Vietnam April 20, 1969. An additional 3 month program was undertaken to study the feasibility of cross-training tunnel and personnel detection dogs. The results of this work were ambiguous.

Descriptors: (*Ordnance locators, Army training), Learning, Behavior, Learning curves, Reaction(Psychology), Conditioned response, Transfer of training, Army personnel, Infantry, Mine detectors, Land mines, Underground structures, Smell, Visual perception, Enemy personnel, Detection, Vietnam

Identifiers: Booby traps, Obedience training, *Scout dogs, Tripwires, NTISDODXD

AD-867 404/6ST NTIS Prices: PC\$4.50/MF\$3.00

Monitoring Military Dogs by Biotelemetry

Colorado State Univ Fort Collins Surgical Lab (409836)

Final rept.

AUTHOR: Gorman, Harry A.

C7454G1 Fld: 6B, 95C GRAI7623

30 Sep 74 108p

Contract: DADA17-72-C-2054

Monitor: 18

Abstract: A study was undertaken by the Surgical Laboratory at Colorado State University under a contract issued by the Research and Development Command of the United States Army to develop a telemetry package for monitoring trained scout dogs under field conditions and to study physiologic activity of these dogs in response to alerting on hidden quarries. A complete two channel telemetry system with one channel of physiologic data and one alert information channel was designed, built, and tested. The physiology channel transmitted the electrical activity of the heart. The alert channel transmitted an alarm signal activated by a sitting alert position switch or by a redundant pull switch mechanism. The completed system included a transmitter and receiver alert switching mechanisms, heart rate electrodes, antenna, receiver carrying pack, transmitter carrying saddle, and internal power supplies.

Descriptors: *Bioinstrumentation, *Telemeter systems, Monitoring, Dogs, Monitors, Field conditions, Response(Biology), Heart rate, Data acquisition, Data reduction, Electrodes, Blood pressure

Identifiers: *Biotelemetry, *Military dogs, NTISDODXA

AD-A029 432/2ST NTIS Prices: PC\$5.50/MF\$3.00

Factors Influencing Odor Sensitivity in the Dog

Pennsylvania Univ Philadelphia Monell Chemical Senses Center*Air Force
Office of Scientific Research, Bolling AFB, D.C. (405301)

Final rept.

AUTHOR: Moulton, D. G.

C6623B4 Fld: 6P, 5J, 57R GRAI7614

Oct 75 39p

Grant: AF-AFOSR-2425-73

Project: AF-9777, AF-6813

Task: 681312

Monitor: AFOSR-TR-76-0504

See also report dated Mar 75, AD-A008 942.

Abstract: The report covers an investigation of the possible influence of adaptation on the ability of dogs and human subjects to detect alpha-ionone; the form of the concentration-response function for alpha-ionone in dogs; the time trained dogs required to reach stable performance levels on low concentrations of alpha-ionone and its relation to adsorption time in olfactometers; the concentration response function for amyl acetate in the dog and quantitative measures of flow rate and associated parameters in dogs sniffing odor and air. The relevance of data to mechanisms of olfactory discrimination is discussed. Data on flow rate changes obtained from dogs not trained to detect odors presented is also given.

Descriptors: *Odors, *Smell, Dogs, Humans, Performance(Human), Performance, Response(Biology), Ketones, Cyclohexenes, Parameters, Adaptation(Physiology), Concentration(Chemistry), Experimental data, Sensitivity

Identifiers: Ionone, Animal behavior, *Odor detection, NTISDODAF

AD-AC24 267/7ST NTIS Prices: PC\$4.00/MF\$2.25

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A Review of Some Experimental Measurements on Detectors for Trace Chemicals in the Atmosphere

Ballistic Research Labs Aberdeen Proving Ground Md*Army Materiel Command, Alexandria, Va. (050750)

Final rept.

AUTHOR: Shelton, R. D., Wall, W. A.

C5301D1 FLD: 7D, 4A, 13B, 14B, 6P, 99A, 68A, 63G GRAI7523

Jul 75 35p

REPT NO: BRL-1798

PROJECT: DA-1-T-161102-B-53-A

MONITOR: 18

ABSTRACT: A number of detectors for trace contaminants in the atmosphere have been developed and tested for environmental measurements, military surveillance, and law enforcement. This paper summarizes the work done by an Army laboratory in the area of detector development and evaluation, and speculates on future evolution in this important area. Detectors subjected to development and evaluation included electric quadrupole mass spectrometers, thin film detectors, biochemical sensors, dogs, ion mobility spectrometers, electron capture devices, condensation nuclei detectors, and remote sensors. (Author)

DESCRIPTORS: *Air pollution, *Trace elements, *Detectors, *Remote detectors, *Atmospheres, Trace gases, Effluents, Transport properties, Ions, Spectrometers, Mass spectrometers, Drugs, Condensation nuclei, Electron capture, Thin films, Biochemistry, Contaminants, Surveillance, Aerosols, Particles, Molecules, Dogs, Smell, Bioluminescence

IDENTIFIERS: Ionic mobility, *Personnel detectors, *Air pollution detection, NTISDODXA, NTISDODA

AD-A014 946/8ST NTIS Prices: PC\$3.75/MF\$2.25

Blood Flow and Pressure Telemetry

University of Southern California Los Angeles Dept of Physiology*Air
Force Office of Scientific Research, Arlington, Va. (405147)

Final scientific rept.

AUTHOR: Stevens, Christopher M., Rader, Roland D.

C4624I2 FLD: 6S, 6B, 57W, 95C USGRDR7513

21 Feb 75 29p

GRANT: AF-AFOSR-2190-72

PROJECT: AF-9777

MONITOR: AFOSR-TR-75-0509

See also report dated 30 Nov 73, AD-776 839.

ABSTRACT: The past year's research concluded a two-year study of the renal hemodynamic adjustments of the military working dog in response to a variety of environmentally-induced stimuli chosen to produce both physical and emotional responses. The vascular reactivity of the kidney was the indicator of the relative amount of psychophysiological stress inherent in a given situation. Hemodynamic responses of the kidney were studied, using an implanted blood pressure and flow telemetry system activated by a radio frequency-sensitive switch. Renal blood flow was obtained by a pulsed ultrasonic flow detection system with the flow transducer cuff placed on the left renal artery, and aortic blood pressure was obtained from an intravascular pressure transducer implanted immediately below the left renal artery bifurcation.

DESCRIPTORS: *Blood circulation, *Blood pressure, Telemeter systems, Experimental data, Dogs, Stress(Physiology), Stress(Psychology), Kidneys, Psychophysiology, Implantation, Response(Biology), Models

IDENTIFIERS: *Biotelemetry, NTISDODAF

AD-AC08 885/6ST NTIS Prices: PC\$3.75/MF\$2.25

Factors Influencing Odor Sensitivity in the Dog

Pennsylvania Univ Philadelphia Monell Chemical Senses Center*Air Force
Office of Scientific Research, Arlington, Va. (405301)

AUTHOR: Moulton, D. G.

C4625K3 Fld: 6P, 5J, 57R GRAI7513

Mar 75 24p

Grant: AF-AFOSR-2425-73

Project: AF-9777, AF-6813

Task: 681312

Monitor: AFOSR-TR-75-0521

See also report dated Oct 74, AD/AC04 468.

Abstract: A technique has been developed for the quantitative analysis of the relation between odor detection and sniff parameters. Thirsty dogs are rewarded with water for identifying which of two ports is associated with an odor. Sniff flow rate, frequency and amplitude are recorded from the output of a pneumotachometer behind one port. When dogs are engaged in an odor detection task the normal pattern of respiration is interrupted and replaced by trains of rapid sniffs usually structured around 1-3 trains consisting of 3-7 sniffs per train. In contrast, when dogs are sitting alert but not engaged in odor detection, presentation of a novel odor may disrupt the normal breathing pattern only momentarily and the integrated volume shows little change.

Descriptors: *Odors, *Smell, Humans, Dogs, Sensitivity, Thresholds(Physiology), Senses(Physiology), Perception, Performance(Human), Ketones, Cyclohexenes, Response(Biology), Experimental data

Identifiers: Ionone, Animal behavior, NTISDODAF

AD-A008 942/5ST NTIS Prices: PC\$3.75/MF\$2.25

Military Dog Training Aids: Toxicity and Treatment

Environmental Health Lab Kelly AFB Tex (300925)

Technical rept.

AUTHOR: Taylor, Gale D.

C4363C2 Fld: 6T, 15G, 57Y, 74G GRAI7509

Jan 75 36p

Rept No: EHL(K)-75-2

Monitor: 18

Abstract: An extensive search of the literature was conducted for articles concerning the toxicology and treatment of six compounds (Mace, TNT, Smokeless Powder, Dynamite, RDX, and C-4) used, or considered for use, in training devices in the USAF Military Dog Program. Published results of research in the laboratory animals and information from documented cases of human poisoning were used to: predict the toxicity of these compounds for dogs, outline the probable symptoms of acute and chronic toxicosis, and develop a suggested course of treatment for poisoning by each compound.

Descriptors: *military dogs, *Toxic agents, Training devices, Toxicity, Poisoning, Therapy, TNT, RDX, Explosives

Identifiers: NTISDODAF

AD/A-C06 438/6ST NTIS Prices: PC\$3.75/NF\$2.25

Factors Influencing Odor Sensitivity in the Dog

Pennsylvania Univ Philadelphia Monell Chemical Senses Center*Air Force
Office of Scientific Research, Arlington, Va. (405301)

AUTHOR: Moulton, D. G.

C4201F4 Fld: 6F, 5J, 57R GRAI7507

Oct 74 30

Grant: AF-AFOSR-2425-73

Project: AF-9777, AF-6813

Task: 681312

Monitor: AFOSR-TR-75-0058

See also report dated Nov 73, AD-777 274.

Abstract: Detection curves were previously derived for alpha-ionone for four German Sheperd dogs. To determine the generality of those findings, six men and one woman were tested in the same apparatus using comparable procedures and the same compound. Human detection curves reach their asymptotes in one and half units of concentration while those of dogs extend over five log units. The marked discontinuity in the slope of the canine detection curves was also seen in the curves for four of the human subjects and in one case extends over 50 percent of the dynamic range. Three subjects showed no discontinuity. A technique has been developed for the quantitative analysis of the relation between odor detection task and sniff parameters. Sniff flow rate, frequency and amplitude are recorded from the output of a pneumotachometer behind one port.

Descriptors: *Odors, *Smell, Humans, Dogs, Sensitivity, Thresholds(Physiology), Training, Perception, Senses(Physiology), Performance(Human), Ketones, Cyclohexenes, Progesterone, Sex hormones

Identifiers: Ionone, Animal behavior, NTISDODAF

AD/A-004 468/5ST NTIS Prices: PC\$3.75/MF\$2.25

Olfactory Acuity in Selected Animals Conducted during the Period June 1972 - September 1974

Southwest Research Inst San Antonio Tex*Army Mobility Equipment Research and Development Center, Fort Belvoir. (328200)

Interim technical rept.

C3762J2 FLD: 6P, 5J, 15G, 57R, 74G, 63 GRAI7426

Sep 74 83p

CONTRACT: DAAK02-72-C-0602

MONITOR: 18

ABSTRACT: The report summarizes the results of extensive experimentation designed to assess the olfactory acuity of various animal species for commonly encountered explosive odors in tactical situations such as C-4, Composition B, TNT, tetryl, PETN, and RDX. The experimental population included various breeds of canines as well as more exotic animals such as the domestic pig, javelina, coyote, civet cat, fox, raccoon, skunk, coatimundi, deer and ferret. In approaching this task, which had as its aim identification of potentially effective biosensors, both laboratory and field assessments were utilized. The latter approach (field assessment) was considered to be particularly important in that it represented conditions under which the biosensor would ultimately be used.

DESCRIPTORS: *Smell, Perception, Animals, Acuity, Explosives, Detection, Odors, Military operations, Training, Dogs

IDENTIFIERS: Field tests, Odor detection, NTISDODA

AD-787 495/1SL NTIS Prices: PC\$4.75/MF\$2.25

Evaluation of Explosives/Narcotics (EXNARC) Detection Dogs

Army Mobility Equipment Research and Development Center Fort Belvoir
Va (403160)

Final rept. Jul-Sep 72

AUTHOR: Knauf, Henry, Johnston, William H.

C3753K3 FLD: 6C, 57Z, 85D, 91C*, 63 GRAI7426

May 74 24p*

REPT NO: USAMERDC-2102

PROJECT: DA-1-S-663719-DK-71

TASK: 1-S-663719-DK-7102

MONITOR: 18

ABSTRACT: The report describes the performance evaluation of three dogs trained to detect heroin and explosives. The dogs, a German Shepherd, a Golden Labrador Retriever, and a Royal Standard Poodle, were evaluated by MERDC personnel during the time period July 1972 through September 1972. Two objectives were accomplished: First, to determine whether dogs could detect explosives buried up to 8 inches deep in dry sand and second, to determine the capabilities and limitations of dogs to search out explosive samples concealed in a variety of scenarios such as office areas, and residences. For completeness, the results of the heroin- and weapon-detection evaluation conducted by contractor personnel in San Antonio, Texas, is included in the test results. (Author)

DESCRIPTORS: *Dogs, *Explosives, *Heroin, *Detection, Searching, Smell, Conditioning(Learning), Odors, Buildings, Personnel, Aircraft, Environments, Army research

IDENTIFIERS: Evaluation, *Sentry dogs, NTISDODA

AD-787 308/6SL NTIS Prices: PC\$3.25/MF\$2.25

Remote Control of War Dogs (Remotely Controlled Scout Dog)

Army Land Warfare Lab Aberdeen Proving Ground Md (038950)

Final rept.

AUTHOR: Romba, John J.

C3551K4 Fld: 6C, 15C, 74, 57Z GRAI7423

Jun 74 56p

Rept No: LWL-TR-74-78

Project: LWL-08-B-72, LWL-03-B-74

Monitor: 18

Abstract: A major objective of the study was to develop procedures by which a dog handler can control the direction of off-leash movement of his dog by remote means in an unrestricted environment. Several dogs were successfully conditioned to respond to a tone signal to change direction and to make excursions of one-half mile or more under the control of terrain stimuli and of tone signals transmitted by radio. Automated procedures to train dogs to change direction in response to a tone were developed; in these procedures the learning contingencies of reinforcement were arranged by a computer control system. The learning of other scout dog skills is described in terms of sub-programs consisting of small, easy-to-learn steps. (Modified author abstract)

Descriptors: *Dogs, *Remote systems, *Military training, Conditioned response, Learning, Training devices, Automation, Radio signals, Terrain, Motion, Response, Field tests

Identifiers: *Scout dogs, NTISDODA

AD-785 508/3 NTIS Prices: PC\$3.75/MF\$2.25

A Study in Training Methodology of Mine Dogs

Army Land Warfare Lab Aberdeen Proving Ground Md*Army Mobility
Equipment Research and Development Command, Fort Belvoir, Va. (038950)

Final rept.

AUTHOR: Romba, John J.

C3444A1 Fld: 5I, 6C, 15G, 74G, 57Z GRAI7422

Jun 74 14p

Rept No: LWL-TR-74-91

Project: LWL-62-B-72

Monitor: 18

Abstract: An attempt was made to organize the training of mine dogs into logical learning segments: object discrimination, outgoing excursion, and search. The procedure for object discrimination learning alone failed to produce the desired result. A possible alternative method is suggested and briefly described. (Author)

Descriptors: *Dogs, *Training, *Mine detection, Conditioning(Learning), Searching, Conditioned response

Identifiers: *Military dogs, NTISDODA

AD-784 048/1 NTIS Prices: PC\$3.00/MF\$2.25

Selection, Training, and Control Problems in the Use of the Military Working Dog

Mississippi Univ University Biocontrol Systems Lab (408758)

Final rept. 15 Jan 72-14 Sep 73

AUTHOR: Berryman, Robert

C3253F3 Fld: 15E, 5J, 6C, 74E GRAI7419

2 Apr 74 23p

Contract: F44620-72-C-0037

Project: AF-9777

Monitor: AFOSR-TR-74-0974

Abstract: A report is made of operant conditioning procedures used in the determination of auditory, olfactory and visual acuity measures in the German Shepherd. An account is given of a procedure for semi-automatic training of dogs to search for, detect, and objectively report specified odors. The procedure for training Shepherds to search for, detect, and objectively report odorous substances shows that they can acquire the essentials of this performance in less than 20 hours--an impressive savings in time compared to conventional techniques. (Modified author abstract)

Descriptors: *Dosage, *Training, *Military applications, Motivation, Behavior, Visual acuity, Auditory acuity, Smell, Conditioned response

Identifiers: *Sentry dogs, NTIS DODAF

AD-782 300/8 NTIS Prices: PC\$3.00/MF\$1.45

Draft Information on Training, Use and Maintenance of Explosives
Detector Dogs

Franklin Inst Research Labs Philadelphia Pa (142925)

Final rept.

AUTHOR: Phillips, Ray, Lomax, Robert, Krauss, Max
C2755A2 FLD: 5J, 6C, 19A, 19C, 57Z, 74E, 79A, 79C, 63 GRAI7412
Jan 74 71p
CONTRACT: DAAD05-73-C-0145
PROJECT: LWL-01-B-70
MONITOR: LWL-TR-74-08

ABSTRACT: Procedures for training dogs to detect explosives are described in detail. Food is used as the primary reinforcer to establish the desired behaviors rather than the traditional method of praise/petting/punishment. Beginning with simple odor discrimination, the training progresses through easy stages to complex search/detection in realistic settings. Concepts and strategies for conducting operational bomb searches in buildings are described.
(Author)

DESCRIPTORS: *Explosives, *Bombs, *Detection, *Dogs, *Training, Animals, Behavior, Searching

IDENTIFIERS: A

AD-777 499/5 NTIS Prices: PC\$3.75/MF\$1.45

Monitoring Military Dogs by Biotelemetry

Colorado State Univ Fort Collins Surgical Lab (409836)

Final rept.

AUTHOR: Gorman, Harry A.

C7454G1 Fld: 6B, 95C GRAI7623

30 Sep 74 108p

Contract: DADA17-72-C-2054

Monitor: 18

Abstract: A study was undertaken by the Surgical Laboratory at Colorado State University under a contract issued by the Research and Development Command of the United States Army to develop a telemetry package for monitoring trained scout dogs under field conditions and to study physiologic activity of these dogs in response to alerting on hidden quarries. A complete two channel telemetry system with one channel of physiologic data and one alert information channel was designed, built, and tested. The physiology channel transmitted the electrical activity of the heart. The alert channel transmitted an alarm signal activated by a sitting alert position switch or by a redundant pull switch mechanism. The completed system included a transmitter and receiver alert switching mechanisms, heart rate electrodes, antenna, receiver carrying pack, transmitter carrying saddle, and internal power supplies.

Descriptors: *Bioinstrumentation, *Telemeter systems, Monitoring, Dogs, Monitors, Field conditions, Response (Biology), Heart rate, Data acquisition, Data reduction, Electrodes, Blood pressure

Identifiers: *Biotelemetry, *Military dogs, NTISDODXA

AD-A029 432/2ST NTIS Prices: PC\$5.50/MF\$3.00

Factors Influencing Odor Sensitivity in the Dog

Pennsylvania Univ Philadelphia Monell Chemical Senses Center (405301
)

Interim rept.

AUTHOR: Moulton, D. G.

C2745E1 Fld: 6P, 5J, 57R GRAI7412

Nov 73 42p

Grant: AF-AFOSR-2425-73

Project: AF-9777, AF-6813

Task: 681312

Monitor: AFOSR-TR-73-2337

Abstract: Detection curves for alpha-ionone for four dogs were derived using an automated odor-choice apparatus. Factors critical for maximizing, stabilizing, and evaluating performance of both dog and odor delivery system were identified. These include use of a descending and not ascending concentration series, minimizing decrements between successive dilution steps, use of criterion of stability of performance based on achieving low variance. Six human subjects were tested on the same apparatus. The dog could detect alpha-ionone at 3-4 and one half log units lower than could human subjects. Detection curves consist of two segments with markedly differing slopes. The discontinuity occurs at high performance levels suggesting the possible presence of a dual process at the receptor level. In cyclic female rats trained to detect cyclopentanone performance shows a high correlation with levels of circulating estrogens. (Modified author abstract)

Descriptors: *Odors, *Smell, Dogs, Sensitivity, Thresholds(Physiology), Performance(Human), Training, Perception, Senses(Physiology), Endocrine glands, Hormones, Ketones, Cyclohexenes

Identifiers: Animal behavior, Ionone, AF

AD-777 274/2 NTIS Prices: PC\$3.25/MF\$1.45

Electronic Dog Handler System

Westinghouse Electric Corp Baltimore Md Systems Development Div (405897)

Final rept.
C1295A3 Fld: 6B GRAI7317
Jun 73 10p
Contract: DAAD05-72-C-0222
Monitor: LWL-CR-08B72

Abstract: The report describes the development and test of an electronic dog handler system which remotely monitors and controls the movements of a dog. The system consists of a control unit held by the operator and a remote unit carried by the dog by means of a harness. The control unit transmits control tones (change direction, down-stay, and recall) to the dog and provides instantaneous readout of the dog's heading, actions (sit, stand, or motion), and range and azimuth with respect to the operator. The remote unit receives signals from the control unit, producing audible command tones for the dog, and transmits heading, action and range data back to the control unit for processing. (Author) Portions of this document are not fully legible.

Descriptors: (*Remote control systems, *Dogs), Monitors, Command + control systems, Electronic equipment

Identifiers: Sentry dogs, A

AD-763 232 NTIS Prices: PC\$3.00/MF\$1.45

Body Recovery Dog

Army Land Warfare Lab Aberdeen Proving Ground Md (038950)

Final rept.

AUTHOR: Quinn, Woodrow L. Jr; Montanarelli, Nicholas

C1294J2 Fld: 6C, 57Z, 91I GRAI7317

May 73 49p

Rept No: LWL-03B73

Monitor: 18

Abstract: A four-month study that demonstrated the feasibility of training dogs to search for and locate human casualties under conditions that might exist in the aftermath of man-made or natural disasters was conducted as a joint project by the U.S. Army Land Warfare Laboratory and the U. S. Army Infantry School. Four body recovery teams, each consisting of a dog and its handler, were trained to search in mud, water, rubble of demolished buildings, wrecked vehicles, and in sanitary fills and dumps for simulated human casualties. The teams are available for employment by civilian as well as by military authorities in the event of a disaster. (Author)

Descriptors: (*Casualties, Recovery), (*Dogs, Training), (*Disasters, Casualties), (*Warfare, Casualties), Body, Debris, Rivers, Army research

Identifiers: *Body recovery dogs, A

AD-763 219 NTIS Prices: PC\$3.00/MF\$1.45

Narcotic-Explosive Detector Dogs

Southwest Research Inst San Antonio Tex (328200)

Final rept.

C0553J1 Fld: 6C, 19A, 5D, 91C*, 57Z, 79A GRAI7308

Jan 73 17p*

Contract: DAAD05-71-C-0285

Project: SWRI-13-3095-2

Monitor: LWL-CR-20B72

Abstract: A study was conducted to determine the feasibility of training dogs to search for and detect the odors of nitroglycerin dynamite, TNT, C-3 C-4, a mixture of 96% ammonium nitrate fertilizer and 4% JP4 fuel oil, Smokeless powder as contained in exploded cartridges, and heroin (pure and cut 50%). Three dogs, one male German Shepherd, one female Labrador Retriever, and one male Standard Poodle completed the training program. Two dogs, the German Shepherd and Labrador Retriever were trained to search rooms, warehouses, airplanes, etc.; the Standard Poodle was trained to search for contraband on or carried by a person. (Author)

Descriptors: (*Dogs, *Training), (*Explosive materials, Detection), (*Narcotics, Detection), Odors, Nitroglycerin, TNT, Ammonium compounds, Nitrates, Plastic explosives

Identifiers: *Heroin, *Explosives detection dogs, *Odor detection, Black powder, C-4 explosives, C-3 explosives, *Law enforcement, Animal behavior

AD-756 939 NTIS Prices: PC\$3.00/MF\$0.95

Factors Influencing Odor Sensitivity in the Dog

Pennsylvania Univ Philadelphia Monell Chemical Senses Center (405301)

Final rept.

AUTHOR: Moulton, David G.

C0021L1 Fld: 6P, 5J, 57R GRAI7301

Oct 72 80p

Contract: F44620-70-C-0110

Project: AF-9777

Monitor: AFOSR-TR-72-2050

Abstract: The development of methods for investigating odor preference in dogs and the relation of preference to performance in learning an odor detection task is described. Four German shepherds were given access to two water bowls or troughs, one associated with a test odorant, the other with a 'blank'. Consistent preferences were observed when additional criteria of response included the number of entries made into each station and the amount of time spent at each station. The apparatus and technique for training dogs to avoid odors provides an effective method for grouping dogs according to their ability to learn an odor detection task. This series of studies suggests that in certain cases it may be possible to predict performance on the task detection task from simple measures of preference behavior. A programmed apparatus for obtaining accurate quantitative information on the dog's sensitivity to odors is also described. It consists of a 3-choice (odor/air/air) automated discrimination box supplied by a 6 stage air-dilution olfactometer contained in a controlled environment chamber. Preliminary evidence suggest that the sensitivity of the dog for alpha-ionone is at least 1,000 - 10,000 times greater than that of untrained human subjects tested in the same apparatus. (Author)

Descriptors: (*Odors, Sensitivity), Dogs, Smell, Thresholds (Physiology), Performance (Human), Training, Hormones, Endocrine glands, Sensory perception, Sensory mechanisms

Identifiers: Animal behavior

AD-751 307 NTIS Prices: PC\$3.00/MF\$0.95

Training Dogs for Narcotic Detection

Southwest Research Inst San Antonio Tex (328200)

Final rept.

AUTHOR: Dean, Edward E.

A5272J2 PLD: 5I, 56E, 56C GRAI7222

Jul 72 41p

PROJECT: SWRI-13-3095

MONITOR: LWL-CR-60DJ71

ABSTRACT: The abuse of hard narcotics (heroin and cocaine) has risen sharply in recent years, and coping with this problem has become an important responsibility of law enforcement agencies. In order to assist these agencies in adequately carrying out this increasingly important responsibility, methods have been developed for the training and use of narcotic detector dogs. Considering these advantages it is obvious that a good detector dog and a well trained handler can search for narcotics rapidly and efficiently. A detector dog can be a valuable asset in narcotic detector work and this manual is designed to describe, in a step by step fashion, how to train dogs to effectively search out and respond to hard narcotics. (Author)

DESCRIPTORS: (*Dogs, *Training), (*Narcotics, Detection), Instruction manuals, Criminology

IDENTIFIERS: Drug abuse, Law enforcement

AD-749 302 NTIS Prices: PC\$3.75/MF\$0.95

A Feasibility Study on Training Infantry Multipurpose Dogs

Southwest Research Inst San Antonio Tex (328200)

Final rept.

AUTHOR: Dean, Edward E.

A5044B1 Fld: 5I, 56E GRAI7219

Jul 72 35p

Contract: DAAD05-71-C-0285

Project: SWRI-13-3095

Monitor: LWL-CR-06B70

Abstract: A 1-year feasibility study was conducted to train German Shepherds to detect simulated mines, trip wires, caches, tunnel openings, and ambushes while working off leash and to track and to attack on command. Selection criteria and special food reinforcement training methods and procedures used to accomplish the objectives are presented. Results of these efforts and important evaluation exercises are explained. Features regarded to be significant in training acceptable candidate dogs are discussed. It is concluded that the training methods used in the study are applicable in training dogs to perform a multiplicity of tasks that are associated with operational employment of small infantry units. (Author)

Descriptors: (*Army training, *Dogs), Feasibility studies, Detection, Tracking, Teaching methods, Selection, Military requirements

AD-746 998 NTIS Prices: PC\$3.00/MF\$0.95

Sensory Capacity of the Military Working Dog

Mississippi Univ University Dept of Psychology (405655)

Final rept. 1 Dec 68-14 Jan 72

AUTHOR: Berryman, Robert

A4114L4 Fld: 5J, 57R GRAI7210

14 Mar 72 6p

Contract: F44620-69-C-0050

Project: AF-7921

Monitor: AFOSR-TR-72-0759

Abstract: An olfactometer with appropriate programing and recording equipment was assembled and threshold determinations made for several common odorous substances with values ranging from 0.1 to 0.3 percent by volume. At present the effect of behavioral baselines on threshold measures are under study. Analysis of masking agents on olfactory sensitivity is about to begin. Technical problems suggested changing from Landolt C's to Ronchi rulings for visual acuity measurements. Using Landolt's C's the dogs appeared to come under stimulus control but exhibited unstable behavior. A number of auditory determinations were made. (Author)

Descriptors: (*Dogs, *Smell), Military facilities, Auditory perception, Thresholds(Physiology)

Identifiers: Military working dogs

AD-739 989 NTIS Prices: PC\$3.00/MF\$0.95

Specialized Mine Detector Dog

Animal Behavior Enterprises Inc Hot Springs Ark (407208)

Technical memo. 7 Dec 70-30 Jun 71

AUTHOR: Breland, Marian; Bailey, Robert E.

A3754A2 Fld: 19A, 6C, 74H, 63 GRAI7207

Dec 71 23p

Contract: DAAD05-71-C-0195

Monitor: LWL-CR-04B70

Abstract: Two Golden Labrador Retrievers were trained by operant conditioning methods to detect modified type M14 antipersonnel mines buried at varying depths in an open field. On detection of a buried mine, the dog was required to sit near the mine and remain until verification could be made. At the home training area the dogs experienced difficulty in making detections at depths greater than two inches. Compacted soil, grass, stubble, and heat proved handicapping. One mine was detected at a depth of four inches. During tests at Aberdeen Proving Ground under simulated field conditions, mines buried two years were detected at depths of one-half inch. (Author)

Descriptors: (*Mine detectors, *Dogs), Land mines, Detection, Military training, Conditioned reflex, Learning, Motivation, Performance tests

AD-736 860 NTIS Prices: PC\$3.00 MF\$0.95

Explosives Detecting Dogs

Mississippi Univ University (234450)

AUTHOR: Krauss, Max

A3753E3 FLD: 19A, 6C, 79A, 56C GRAI7207

Sep 71 11p

CONTRACT: DAAD05-70-C-0347

MONITOR: LWL-TR-71-11

Sponsored in part by the Law Enforcement Assistance Administration, Washington, D. C.

ABSTRACT: A feasibility study was undertaken to determine whether dogs can be trained to discriminate the odors of commercial dynamite (straight nitroglycerin dynamite and ammonium nitrate dynamite), black powder and the plastic explosives, C3 and C4. Initial discrimination training established hexachloroethane as a practical surrogate odor. Transfer to the various explosives proved relatively easy. Search behavior, both on- and off-leash appropriate for searching buildings, was developed. At the conclusion of the effort, five trained dogs were delivered to the Land Warfare Laboratory. (Author)

DESCRIPTORS: (*Explosive materials, Detection), (*Dogs, Explosive materials), (*Land mines, Detection), Training, Odors, Feasibility studies, Nitroglycerin, TNT, Ammonium compounds, Nitrates, Plastics, Selection, Effectiveness, Halogenated hydrocarbons

IDENTIFIERS: Ethane/hexachloro, *Explosives detection dogs, Booby traps, Odor detection

AD-736 829 NTIS Prices: PC\$3.00 MF\$0.95

Training Dogs for Heroin Detection

Army Land Warfare Lab Aberdeen Proving Ground Md (038950)

Technical memo.

AUTHOR: Romba, John J.

A3492L2 FLD: 5K, 56C GRAI7204

Sep 71 57p

REPT NO: LWL-TM-71-04

ABSTRACT: The acquisition and maintenance of detection and search task behaviors are accomplished with positive control techniques. The principal controlling reinforcer (consequence) used is food. The dog is permitted to behave freely in the work environment without coercion and, with minimal restraint. The conditioned reinforcers are then used to obtain the fundamental skills, and odor discrimination. Training procedures are described. (Author)

DESCRIPTORS: (*Dogs, Training), (*Narcotics, Detection), Conditioned reflex, Behavior, Smell, Army research

IDENTIFIERS: *Heroin detection

AD-734 888 NTIS Prices: PC\$4.75 MF\$0.95

Training Dogs for Explosives Detection

Mississippi Univ University (234450)

Technical memo.

AUTHOR: Phillips, Ray C.

A3313A4 FLD: 6C, 19A, 57Z, 79A GRAI7202

Oct '71 53p

CONTRACT: DAAD05-70-C-0347

MONITOR: LWL-CR-01B70

ABSTRACT: A feasibility study was undertaken to determine whether dogs can be trained to discriminate the odor of commercial dynamite (straight nitroglycerin dynamite and ammonium nitrate dynamite), black powder and the plastic explosives, C3 and C4. Initial discrimination training established hexachloroethane as a practical surrogate odor. Transfer to the various explosives proved relatively easy. Search behavior, both on- and off-leash appropriate for searching buildings, was developed. At the conclusion of the effort, five trained dogs were delivered to the Land Warfare Laboratory. (Author)

DESCRIPTORS: (*Dogs, Training), (*Explosive materials, Detection), Feasibility studies, Odors, Nitroglycerin, Behavior

IDENTIFIERS: Sentry dogs

AD-733 469 NTIS Prices: PC\$3.00 MF\$0.95

Control and Performance Monitoring of the Military Working Dog

Sensory Systems Lab Tucson Ariz (320225)

Final rept. 1 Feb 70-31 Jul 71

AUTHOR: Baldwin, Howard A.

A3251J2 Fld: 9F, 6B, 61F, 58A GRAI7201

1 Nov 71 16p

Grant: AF-AFOSR-1897-70

Project: AF-9777

Monitor: AFOSR-TR-71-2936

Abstract: The report summarizes the activity of an 18-month exploratory attempt to develop a telemetry technique to monitor alerting responses in military dogs, and to transmit and record the resultant physiological data. The program also attempted to evaluate the feasibility of controlling behavior by telemetric means. Two techniques for monitoring alerting responses at distances to one mile were investigated: heart rate changes and skin temperature changes. Technical feasibility of the experimental technique under field conditions was demonstrated. (Author)

Descriptors: (*Responses, *Telemeter Systems), (*Dogs, Responses), (*Behavior, Dogs), Military requirements, Behavior, Control, Pulse rate, Skin, Temperature, Electrodes, Tests

Identifiers: Sentry dogs, *Military sentry dogs, Heart rate

AD-732 942 NIIS Prices: PC\$3.00 MF\$0.95

Mine, Booby-Trap, Tripwire and Tunnel Detection

Behavior Systems Inc Raleigh N C (387 626)

Final rept.

AUTHOR: Carr-Harris, E.; Thal, R.
C7645I4 Fld: 5I, 6P, 19A d7625

Jan 70 73p

Contract: DAAD05-68-C-0234

Monitor: LWL-CR01B68

Distribution limitation now removed.

Abstract: Reports from the field indicated that German Shepherd scout dogs had been observed to alert on mines, tripwires and other man-made artifacts. The purpose of the present program was to explore the feasibility of training such animals specifically to the tasks of detecting mine/tripwires and tunnels, by means of techniques that were sufficiently objective to permit instruction of military handlers in their use. A six month feasibility study was conducted. Procedures and practices derived from the formal study of animal behavior were used throughout the program. Because of the success of the first phase of the problem, a second six months of work was initiated with the objective of training an army scout dog platoon for the capability of mine/tripwire and tunnel detection. The platoon was judged ready and deployed to Vietnam April 20, 1969. An additional 3 month program was undertaken to study the feasibility of cross-training tunnel and personnel detection dogs. The results of this work were ambiguous.

Descriptors: (*Ordnance locators, Army training), Learning, Behavior, Learning curves, Reaction (Psychology), Conditioned response, Transfer of training, Army personnel, Infantry, Mine detectors, Land mines, Underground structures, Smell, Visual perception, Enemy personnel, Detection, Vietnam

Identifiers: Booby traps, Obedience training, *Scout dogs, Tripwires, NTISPODXD

AD-867. 404/6ST NTIS Prices: PC\$4.50/MF\$3.00

TACTICS IN THE DEVELOPMENT OF MINE DETECTOR DOGS

Army Land Warfare Lab Aberdeen Proving Ground Md (038950)

AUTHOR: Romba, John J.

A1141K4 Fld: 6C, 15G, 63 USGRDR7024

1970 8p

Abstract: The paper describes the development and characteristics of two U. S. mine dog systems. The Mine Detection Dog was recently made operational and has undergone a 6 month evaluation in RVN. The Specialized Mine Detection Dog is currently in development. The training procedures for both have been based on the reward or approach principle of learning. (Author)

Descriptors: (*Mine detectors, *Dogs), Training, Conditioned reflex, Army research, Vietnam

Identifiers: *Mine detector dogs, South Vietnam

AD-713 577 CFSTI Prices: HC\$3.00 MF\$0.65

60TH Infantry Platoon (Scout Dog) (Mine/Tunnel Detector Dog)

Army Concept Team in Vietnam APO San Francisco 96384 (037 350)

Final rept.

AUTHOR: White, Ben O. Jr

C7661A4 Fld: 19A, 15G d7625

Dec 69 42p

Project: ACTIV-ACG-65F

Monitor: 18

Distribution limitation now removed.

Abstract: The Army Concept Team in Vietnam evaluated the 60th Infantry Platoon (Scout Dog) (Mine/Tunnel) (60th IPSD) to determine its suitability for tactical employment with US Army units in RVN. The 28 man platoon had 14 mine and 14 tunnel dogs. The mine dogs were trained to detect explosive artifacts and trip wires. The tunnel dogs were trained to detect open and camouflaged holes and trip wires. (Author)

Descriptors: (*Army operations, Vietnam), (*Mine detectors, Dogs), (*Dogs, Underground structures), Military tactics, Antipersonnel weapons, Wire, Military personnel

Identifiers: 60th infantry platoon, Booby traps, *Dog handler teams, South vietnam, Trip wires, *Detection, *Tunnels, NTISDODXD

AD-869 383/OST NTIS Prices: PC\$4.00/MF\$3.00

Off Leash Tracker Dog-Helicopter Tracking Team

Behavior Systems Inc Raleigh N C (387 626)

Final rept. Jan-2 Jul 69

AUTHOR: Carr-Harris, E.; Siebert, L.

C7805B3 Fld: 15G, 6C d7626

Sep 69 21p

Contract: DAAD05-69-C-0177

Project: LWL-08-B-69

Monitor: LWL-CR-08B69

Distribution limitation now removed.

Abstract: The purpose of this study was to explore the feasibility of training tracker dogs to work off-leash in conjunction with a helicopter to locate enemy personnel. The two essential elements of the task were considered to be the ability of the dog to work off-leash, independent of the handler, and the ability of the dog to display stalking behavior. This latter term was defined as the dog vigorously pursuing a target while carefully avoiding alerting target personnel to his presence. Two Labrador retrievers were trained to the independent tracking task while two different animals were trained to display the stalking response. The dogs were trained for six weeks and their behavior successfully demonstrated. Although a few problems pertinent to the pretrial effectiveness of the overall dog/helicopter team still need to be worked out, it would appear that the feasibility of training suitable behavior on the part of the dog has been established.

Descriptors: (*Enemy personnel, Detection), (*Dogs, Tracking), Feasibility studies, Training, Helicopters, Handling, Terrain, Odors, Behavior, Close support, Counterinsurgency, Army personnel

Identifiers: Labrador retrievers, Personnel detection, Scout dogs, NTISDODXD

AD-858 987/1ST NTIS Prices: PC\$3.50/MF\$3.00

The Relationship of the Number of Olfactory Cells to the Olfactory Threshold in the Dog

Army Biological Labs Frederick MD (036 550)

AUTHOR: Neuhaus, Walther; Mueller, Adam

DC324L2 Fld: 6P d7702

Mar 69 4p

Rept No: Trans-2408

Monitor: 18

Trans. of die Naturwissenschaften (West Germany) v41 p20 1954, by C. L. Lust.

Distribution limitation now removed.

Abstract: No abstract available.

Descriptors: (*Smell, Thresholds(Physiology)), Cells(Biology), Sensitivity, Nose(Anatomy), Measurement, Dogs, Molecules, Density, Brain, Air, West germany

Identifiers: Translations, NTISDODXD

AD-850 940/8ST NTIS Prices: PC A02/MF A01

The Training of Dogs for Field Reconnaissance

Canine Behavior Lab Univ of Maryland College Park (074 170)

Final rept.

AUTHOR: McIntire, Roger W.

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Contract: DA-18-CO1-AMC-260 (X)

Monitor: 18

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Abstract: This report investigated the feasibility of training a free-ranging dog to perform personnel reconnaissance. The assumptions about terrain, weather and other pertinent conditions of the military problem were changed as the development of the project progressed. The general trend of these changes began with a consideration of a highly versatile canine reconnaissance system not dependent upon a particular handler, a pathway, or a particular kind of military unit to be protected. However, as the project progressed, the conditions for the operation of the system became more and more specified and limited. The final focus of the investigation was upon providing effective personnel reconnaissance for a foot patrol progressing along a pathway, trail, or road. The reconnaissance is to have adequate efficiency for providing warning of the presence of enemy personnel so that the patrol would be protected from an ambush consisting of small arms fire. (Author)

Descriptors: (*Dogs, *Military training), Performance (Human), Handling, Warning systems, Visual perception, Smell, Effectiveness, Motivation, Response, Radio transmitters, Meteorological phenomena, Attention, Decoys, Detection

Identifiers: NTISDODXD

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