

Chapter 3

MILITARY WORKING DOG PROCUREMENT, VETERINARY CARE, AND BEHAVIORAL SERVICES

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“War dog procurement is partly a matter of selecting breeds for combat and then drawing a steady supply, but it’s also a matter of demilitarization and repatriation.”^{1(p18)}

—Maria Goodavage, author of *Soldier Dogs: The Untold Story of America’s Canine Heroes*

INTRODUCTION

The US Army Veterinary Corps’ first primary patients were horses and mules; Army veterinary personnel did not formally begin caring for canines until the establishment of the “War Dog” program in 1942. (See also Chapter 2, Military Working Dog History.) Since World War II, support for military dogs has grown. The Department of Defense (DoD) Military Working Dog (MWD) program now procures its own MWDs and provides many relatively new services in various canine care arenas: applied behavioral and biomedical research and development; behavioral care and employment; consultation to the DoD MWD

executive agent and the MWD Training Center regarding procurement, assessment, and employment of MWDs; clinical veterinary medicine for MWDs with behavioral and training problems; and training for veterinary and other personnel. This chapter gives an overview of the historic procurement and veterinary care programs for MWDs; describes new specialty training for veterinary personnel who care for MWDs; and explores research, contingency, and breeding programs that support MWD operations as well as the challenges faced by current and incoming MWD veterinary service providers.

HISTORICAL OVERVIEW OF MILITARY DOG PROCUREMENT AND VETERINARY CARE

World War II Procurement

As noted above, World War II was the first conflict in which the US military used canines in a significant capacity, thus requiring new provisions for professional veterinary care for dogs. At the start of the war, the US military did not have its own dog procurement program. Conversely, equine use and procurement was already well established; 140,000 equines were utilized during the war, and over 66,000 horses and mules were procured during the war, numbers that far surpassed the number of dogs acquired for military service.² Discounting mascots and a couple of pre-World War II dog procurement program initiatives (an assortment of sled dogs and a coastal artillery dog project at Ft MacArthur, California), the first major step towards large-scale canine procurement was taken in 1942.²

On March 13, 1942, the undersecretary of war granted approval to the Quartermaster Corps to accept 200 trained guard dogs offered by the American Theater Wing, Inc., a voluntary organization that received donated canines from dog owners and presented them to the military.² When this organization was unable to continue its “Gift of Dogs” program, it was replaced by the “War Dog” program.^{2(pp616,638)} Under the new program, Dogs for Defense, Inc., a private civilian organization, took the lead in canine procurement. However, in March 1945, Dogs for Defense, Inc., ceased procurements, and the military—through the Quartermaster Corps—began to directly acquire dogs, generally from private pet owners.²

World War II Veterinary Care

Once the dogs were accepted and transported to various “dog centers,” US Army veterinary staff provided full care for dogs as well as training in husbandry and dog care to handler personnel. (See also Chapter 2, Military Working Dog History, for more information about dog centers.) Trained dogs shipped to fixed military installations were cared for by installation veterinarians or the closest military veterinarian if the site did not have its own veterinarian. Coast Guard dogs were similarly cared for by the closest military animal doctor. Many dogs were utilized by the Quartermaster Corps to guard important civilian facilities such as manufacturing plants. These dogs also received care by Army veterinary assets when possible, but local civilian veterinarians were utilized by commanders when Army animal doctors were not readily available.²

Care for dogs deployed overseas was divided between trained veterinary sergeants and military animal doctors. During World War II, 15 Army infantry scout dog platoons were deployed overseas; each was authorized one veterinary sergeant who provided routine care and first aid. Medical needs outside the sergeant’s ability were provided by the closest veterinarian in the area. US Marine Corps dog units in the Pacific were also given veterinary assistance by nearby Army veterinary personnel.²

At this time, veterinary field units that focused on animal care existed as separate detachments and hospitals; each covered specified geographic areas usually located at some distance from the battlefields.

Ill or injured dogs were evacuated to the nearest facility. Dogs serving in remote jungle units in the China Burma India Theater were sometimes flown to rear areas for veterinary care² (Figure 3-1).

At the end of the war, some dogs acquired from private owners were returned to civilian life after receiving training by Quartermaster personnel to “demilitarize” the animals.^{2(p636)} A veterinary examination was performed prior to release to ensure only healthy animals were returned.^{2(p637)}

Korean War and European Theater Procurement

After World War II, another method of procurement was needed; purchasing dogs for military service was deemed preferable to public donation to the military since there was no need to return dogs to their original owners after a war’s end. The Army Dog Association, Inc., formed with the goal of providing German shepherds for government use (Figure 3-2), and a noted canine expert, Sergeant William Hankinson, was sent to Germany, where he procured eight German shepherds. The association accepted the breeding stock from the government, then transferred the animals to individuals and dog breeders, who increased the stock’s numbers for military service. A few years later, the military dog program was greatly reduced. Since increased numbers of German shepherds were no longer needed, the Army Dog Association, Inc., eventually ceased operations.³

In the early 1950s, at a crucial time in the formative years of the Cold War and the Korean War, the propensity, locations, and number of dog training centers changed. Although there were canines in service in the continental United States, Europe, and Japan, more dogs were sought for duty in Korea, and the Quartermaster Corps turned over management and propensity of these dogs to the Military Police Corps.³

On July 11, 1951, a war dog receiving and holding station was activated at Cameron Station in Alexandria, Virginia. Newly purchased dogs were processed and conditioned onsite before they were shipped to the Army Dog Training Center at Camp Carson (later named Ft Carson), Colorado.³ There were also a few instances of American units in Korea purchasing local animals for improvised sentry or scout duty. The 7th Cavalry Regiment of the 1st Cavalry Division purchased nine dogs from local inhabitants and trained the dogs onsite.⁴ When possible, the dogs utilized in the Korean War remained in service after the war’s end, continuing to patrol the demilitarized zone, performing security in Japan, or, in some cases, returning to the continental United States. The lack of records makes it



Figure 3-1. “Skipper,” an Army dog, receives treatment for a gunshot wound in the lower jaw at a (human) field hospital on Luzon in the Philippines, April 8, 1945. His wounded handler, Animal Technician 5 Frank Oliver (left) assists in bandaging his dog. The enlisted medical person is unknown and whether he is wearing a green cross armband (Veterinary Corps medical symbol identification for its field personnel similar to the Red Cross symbol for human medical personnel) is not discernable. “Skipper” served as a scout and sentry dog and was presented to the Army through the Dogs for Defense program.

Photograph courtesy of the National Archives and Records Administration. SF 756129 WP.

DOG ASSOCIATION TO RECRUIT GERMAN SHEPHERDS

The Army Dog Association, comprising persons active in raising dogs, has arranged a canine assembly where dogs can be brought for possible purchase by representatives of the Quartermaster Corps. Most of the war dogs have been demobilized, and it is necessary to fill the ranks with new recruits. As a permanent policy, it has been felt desirable to purchase the dogs just as other animals are purchased.

Figure 3-2. This figure notes a publicized change in the dog procurement method and mentions the favored breed for the Army directly after World War II.

Reproduced from the *Bulletin of the U.S. Army Medical Department*, Volume 6, Number 2, August 1946, page 117. <http://stimson.contentdm.oclc.org/cdm/singleitem/collection/p15290coll6/id/3023/rec/1>. Accessed May 15, 2015.

difficult to estimate the number of dogs in the Korean War, but a rough estimate is that this number was under 300 dogs (William H. Clark, Retired Colonel, US Army Veterinary Corps, unpublished data collected during service at the Office of the Surgeon General, 1989, and unpublished manuscript produced from this information, 2009, Ringgold, Georgia).⁵

Dogs were also needed to support the large American military presence in post-World War II Europe. By 1950, a European Command Dog Training Center was located at Lenggries, Germany, to initiate and direct the purchase of military dogs. Although its mission remained the same, the center later changed its name to the US Army Dog Training Detachment, Europe, and received direct support from the 51st Medical Detachment (Veterinary Animal Hospital). Under the direction of the European Zone of Communication (1952–1966) quartermaster and personnel of the 51st Medical Detachment, the dog training detachment would inspect animals to be purchased through the West German Schaeferhund Association. Following a passing veterinary health inspection and purchase, the animals were placed in a 5-week quarantine and given appropriate vaccinations before initiating training.⁶

Korean War and European Theater Veterinary Care

Historical records regarding use and care of US Army dogs in the Korean War are limited because the dogs were not used as frequently in the Korean War as they were in World War II. While there were several infantry scout dog teams and other dogs serving in different capacities during the conflict, some of the most complete records are from the 26th Infantry Scout Dog Platoon. The first squad of this platoon was deployed to Korea from May to June 1951, with the remainder of the unit arriving in January 1952.⁵

Animal care for these units varied, but, similar to World War II care conditions, an enlisted animal technician was generally available, either organic to the unit or within the area. Veterinary Corps officer (VCO) care was provided geographically, with locally available VCOs providing treatment when not performing their primary mission of food inspection (William H. Clark, Retired Colonel, US Army Veterinary Corps, unpublished data collected during service at the Office of the Surgeon General, 1989, and unpublished manuscript produced from this information, 2009, Ringgold, Georgia). Technicians—either formally trained or serving in a “journeyman” (other-than-medical-branch) capacity—provided treatment at the point of injury or during convalescence. (See also Chapter 1, *Military Veterinary Support Before and After 1916*.) For example, Private First Class Farnia Rose, who served as both a veterinary technician and

a dog handler for the 3rd Reconnaissance Company, had previously worked at the veterinary hospital at Ft Riley, Kansas. (The 3rd Reconnaissance Company arrived on June 12, 1951, and was the first unit to officially utilize scout dogs in Korea.⁷) Sergeant Robert Goodman was a dog handler with the 26th Infantry Scout Dog Platoon but also served as the unit’s veterinary technician.^{8,9} (Goodman would earn a Silver Star for rescuing fellow soldiers trapped in a minefield.^{5,9})

When combat casualties occurred, some injured canines required more extensive care than could be provided by the facilities and equipment available to the food inspection detachments. One anecdote from June 1952 describes a dog with multiple shrapnel injuries that had to be cared for at a human evacuation hospital (ie, the 121st Medical Evacuation Hospital). Although this experience signaled the need for a veterinary hospital in Korea, plans for this construction were not approved and implemented until the summer of 1953, at the close of the war. A food inspection detachment (ie, the 150th Veterinary Detachment) that had previously supported enemy prisoner of war operations was relocated after its original mission concluded and was re-established as the veterinary hospital (William H. Clark, Retired Colonel, US Army Veterinary Corps, unpublished data collected during service at the Office of The Surgeon General, 1989, and unpublished manuscript produced from this information, 2009, Ringgold, Georgia).

Veterinary treatment of military dogs in the European theater was similar to the care received by canines stationed in Korea before and after the war: treatment was dependent upon VCO availability or proximity to the 51st Medical Detachment. Former Brigadier General Frank A. Ramsey, Veterinary Corps Chief from 1980 to 1985, described the scope of available dog care while serving in France in the late 1950s as follows: “Although food inspection and food establishment sanitary inspection was our major duty, we had several hundred military working dogs in our western district and also provided limited care to pets of US personnel, including an immunization clinic.”^{10(p10)}

Records also indicate a steady growth of military dog care in Europe. In 1956, the 51st Medical Detachment’s hospital staff administered 11,958 military dog treatments (in- and outpatient).¹¹ By 1961, the American military used 1,470 sentry dogs in Europe.¹²

Vietnam War Procurement

By the 1960s, American military dog procurement was somewhat stabilized, and the previously mentioned US Army Dog Training Detachment in Germany received a DoD request for 300 German shepherds

for shipment to Vietnam in late 1961. The first dogs brought to Vietnam through American efforts were sent there in 1961 to bolster South Vietnamese security. By October 1962, all of the canines were delivered to Saigon. These first military dogs were to be part of Army Republic of Vietnam forces, but extensive training, care, nutrition, and treatment programs had to be developed. Replacement animals were subsequently purchased from the Military Dog Center at Lackland Air Force Base (AFB), San Antonio, Texas.¹³

In 1964, the procurement of military dogs changed from a US Army to a US Air Force (USAF) responsibility. Replacement animals were subsequently received from the Military Dog Center at Lackland AFB.^{13,14} Harkening back to World War II, the USAF sought dogs from US citizens, who were encouraged by an advertising campaign to bring their animals to temporary mobile buying team sites where the animals could be donated or purchased.¹⁴ Later, in an effort to centralize procurement with dog training, the USAF formed Detachment 37 at Lackland AFB.¹⁴ Detachment 37, under the control of Air Force Logistics, handled nearly all aspects of dog procurement including recruiting, training, and veterinary care.^{14,15} Detachment 37's facilities came to be known as the Military Working Dog Center; in 1971, it was renamed the DoD Dog Center (DODDC).^{14,16}

In the Vietnam War's earliest phases, US military dogs sent to Vietnam were research and development dogs brought by the USAF personnel. Later, in 1965, the animals were US Army military police dogs. As the war continued, the role of the military dogs expanded from sentry to scout missions. All the dogs used by the US military were assumed to have been received through the Military Dog Center at Lackland AFB and completed training at one of the following specialty schools: Sentry Dog School at Lackland AFB; the British Jungle Warfare School in Malaysia; Scout Dog School in Ft Benning, Georgia; combat tracker training at Ft Gordon, Georgia; or the military dog training facility at Okinawa, Japan. Army, Air Force, and Marine dog usage increased after 1965; by mid-1966, over 500 military dogs were estimated to be in Vietnam.¹⁷ At the end of 1970, approximately 5,000 dogs were utilized worldwide by the DoD, according to information presented at a 1970 MWD conference at Lackland AFB.¹⁶

Vietnam War Veterinary Care

Although the rate of establishing American and South Vietnamese care systems for military dogs serving in Vietnam paralleled the rate the Vietnam War escalated, establishing an independent military dog program was very problematic for South Vietnamese

forces. A lack of resident veterinarians was the one of the largest hurdles. A program to educate doctors of veterinary medicine, which began early in the war, took years to reach fruition, sometime near the war's end.¹⁷

The US Army's veterinary care system in Vietnam—patterned after the human medical care system—started at the primary level and included an evacuation plan at each of three levels. First- or primary-level care was given by military occupational specialty 91T personnel (now called 68T animal care specialists) who were organic to each scout and sentry dog platoon. The next care level was the dispensary level (care requiring short-term treatment and medication but generally not requiring surgery). Because the dog platoons were widely dispersed and used an increasing number of dogs (1,200 dogs by 1967), veterinary food inspection teams provided dispensary care. The last level of care (ie, long-term care) was provided at veterinary hospitals¹⁷ (Figure 3-3).

By January 1966, three veterinary detachments were in Vietnam: (1) the 4th Medical Detachment (Veterinary Service), (2) the 75th Medical Detachment (Veterinary Service-JA), and (3) the 936th Veterinary Detachment. At first, veterinary care was the responsibility of the



Figure 3-3. Kennel area (complete with green cross) for the 175th Veterinary Detachment at Da Nang, South Vietnam. As referenced in the sign, the detachment provided care for military dogs for all military branches.

Photograph courtesy of Colonel (Retired) William Kent Kerr, US Army Veterinary Corps, Corpus Christi, Texas.

936th, which maintained a small animal hospital located at Tan Son Nhut. The 504th Veterinary Detachment, a small animal dispensary, arrived in October 1966 to supplement the hospital's resources. With adequate veterinary assets available, preventive medicine and improved kennel facilities became priorities for long-term dog health (Figure 3-4).¹⁷

Despite improved care plans, military animal evacuation systems did not initially include animal transport via helicopters. From 1968 through part of 1969, Brigadier General Hal B. Jennings (then commander of the 44th Medical Brigade in Vietnam) (later Lieutenant General and US Army Surgeon General, 1969–1973) would not allow dogs to be evacuated on unit helicopters. In 1969, after the 44th Medical Brigade's change of command, helicopter evacuation became available for dogs and handlers, and an evacuation policy was established for dogs that required more than 7 days' treatment. However, dogs were not evacuated outside of Vietnam.¹⁷

By May 1970, approximately 1,600 American military dogs were serving in Vietnam.¹⁷ In ensuing years, as American forces withdrew from Vietnam, fewer dogs were needed for service, and fewer veterinarians were deployed there to provide canine treatment. How to withdraw the remaining canine forces in Vietnam became an issue.

At first, because of health and animal behavioral concerns, the majority of requests for handlers to adopt service canines were denied (this decision was later restudied). Transmissible canine pancytopenia, a disease that had killed 300 military dogs by 1969, played a major role in these initial denials. It was later determined that if the canines passed medical examinations by veterinary personnel and if other commands needed the animals, the dogs could be transferred out of Vietnam.¹⁷

Over the next two years, military dog numbers dropped from the May 1970 figure of 1,600. From 1970 to 1972, 148 military dogs died from wounds, disease, or other mishaps; 371 were euthanized for various reasons; and 191 were returned to the continental United States. The vast majority of the animals (ie, 971) were transferred to service with the South Vietnamese army and quarantined to the Southeast Asia Theater to prevent the spread of canine pancytopenia.¹⁷

Vietnam-Era Research, Breeding, and Training Programs

In the latter years of the Vietnam War, the US military researched increasing dog capabilities not only in the tasks assigned, but also for physical improvements in dog breeds. Although discussion of the proposed



Figure 3-4. A veterinarian captain from the 175th Medical Detachment (Veterinary Medicine) uses a stethoscope to listen to the heart of a K-9 sentry dog during the dog's monthly examination.

US Army photo by Specialist 5 Ronald Delaurier, December 16, 1968, courtesy of the AMEDD Center of History and Heritage Archival Collection, Joint Base San Antonio-Ft Sam Houston, Texas.

program had occurred for years, 1967 was the first year of a formalized plan of study. The US Army Training and Doctrine Command authorized the program, the US Army Combined Arms Combat Development Command was designated as the proponent, and the US Army Medical Research and Development Command was designated as the developing agency. The project was further delegated to the Walter Reed Institute of Research, Ft Meade, Maryland. Program facilities were initially based at the Walter Reed's Animal Farm at Ft Meade but later moved to Edgewood Arsenal at Aberdeen Proving Grounds, Maryland.¹⁷

After examining the applicability of several dog breeds, the program focused on improving the genetics of German shepherds.¹⁴ In fiscal year 1969, three VCOs, two clerks, a Medical Service Corps geneticist, and 27 enlisted personnel conducted research on various traits, including reducing inherited problems such as hip dysplasia and improving intelligence and training capacities, in what became known as the Biosensor Research Program. Numerous consultants from the military, academia, entertainment, and civilian police agencies also contributed to the program.¹⁷

Research from the program provided not only breeding information, but also some canine behavioral data that was compiled for later use, which included socialization in outdoor environments and with humans as well as litter behavior dynamics and future

training aptitudes. To better understand the effects of certain stressors on military dogs, program puppies also were tested using extremely minor temperature and motion changes. While these changes were not harmful to the animals, public outcry caused the Humane Society of the United States to conduct an investigation that later affirmed that the minimal “stressing” of these puppies during program testing was not detrimental.¹⁷

Finally, a small portion of the program was diverted to conduct trials that proved canines could detect marijuana and other illegal substances. The results of the testing were reported to the Office of the Provost Marshal and disseminated to the US Army Military Police School at Ft Gordon so that handlers and dogs stationed there could begin training on their new detection mission.¹⁷

Through four generations of dogs, the Biosensor Research Program succeeded in reducing hip dysplasia from 50 percent (as found in a civilian population of dogs of the same breed) to 18.7 percent, and projections for follow-on years were positive.¹⁷ Similarly, the quality of the dogs, in respect to their intelligence, was improved. However, despite successes, budgetary limitations for the post-Vietnam US Army loomed. Termed the “Super Dog” Program by some, the project was supposed to switch from research to a larger production of working dogs, but since the war was over by the time of the results, the program was halted in the mid-1970s.¹⁷

Other dog programs that supported combat operations (ie, scout, combat tracker, and mine detection schools) were eliminated in 1976. This left only sentry dog tasks and the emerging law enforcement field, which were largely under the control of the US Army military police and USAF security forces. After the Biosensor Research Program closed, program animals considered “fit for duty” were shipped to Lackland AFB. Seeing Eye Inc., of Morristown, New Jersey, received some of the Biosensor Research Project dogs as well. Other animals were retained for proposed breeding programs with the US Bureau of Customs and the USAF. Both agencies maintained minimal breeding programs for study, but, by 1979, these programs were discontinued.¹⁷

Pre-Persian Gulf War Procurement

After Vietnam, the Army reduced its numbers and restructured. Without a current conflict, the need for MWDs was greatly reduced, and, as noted earlier in this chapter, the Army’s combat tracker and scout dog schools closed. However, years later, new threats from terrorism and a proliferation of the drug trade led to

an increased need for dogs used in law enforcement and detection roles. Many of these dogs were trained at Lackland AFB for use by non-DoD federal agencies for detection roles. Still maintaining a public US advertising campaign and operating mobile buying teams, the DODDC accepted dogs to the Lackland AFB center if the privately owned animals presented for program consideration were approved by a military or civilian veterinarian and the mobile buying teams evaluating them for overall health and general aptitudes¹⁴ (Figure 3-5).

This program of accepting dogs from private US citizens worked for a while, but, by the early 1980s, problems emerged. The increased demand for working dogs (an estimated 2,200 were in use by the DoD in 1982) was not met by the animals volunteered by the public or American breeders, and an animal deficit occurred.^{14,18} The USAF was still the proponent for acquiring the dogs and overseeing their training, but with veterinary service changes throughout the DoD, the US Army maintained animal health. This arrangement was formalized by DoD Directive 5200.31 from September 7, 1983.¹⁹ (Near the close of 1990, DoD document, AFJI-23-224 [December 1, 1990], reinforced the USAF’s responsibility of procuring and training MWDs.²⁰)

In 1984, the DODDC sent mobile buying teams to Europe to procure more dogs. At first these teams gathered enough animals to reduce the deficit; however, the gap gradually reappeared as rejection rates eliminated 25 to 50% of the animals. By 1990, there was a backlog of 485 MWD requisitions.¹⁴

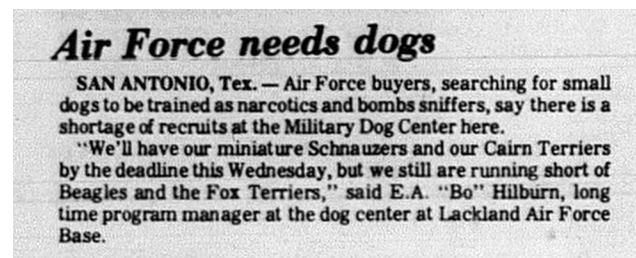


Figure 3-5. “Air Force needs dogs. . . .” In addition to running in the McKinney, Texas, newspaper, similar articles appeared in newspapers across America as part of the Air Force campaign to maintain the military working dog force. Also of note, the dogs being requested for potential military service are smaller breeds suited for narcotics detection. Reproduced from the *McKinney Courier-Gazette*, November 11, 1975, archived excerpt provided courtesy of Susan Kusterbeck, genealogy librarian, Roy and Helen Hall Memorial Library, McKinney Public Library System, McKinney, Texas.

Persian Gulf War Veterinary Care

With the onset of the Persian Gulf War (Operations Desert Shield and Desert Storm, 1990-1991), MWDs were deployed, but their roles were generally limited to that of base security, performing functions such as explosives detection, and monitoring entry control points. At their peak numbers of utilization, approximately 110 to 140 MWDs were in the Southwest Asia Theater at numerous locations within Saudi Arabia and other Gulf States (electronic personal communication from Colonel [Retired] Robert Vogelsang, former US Army Consultant, to Lieutenant Colonel Ronald Burke, US Army Veterinary Corps, May 31, 2013). Despite the massive build-up of American and coalition armies, the fighting did not last long.

Veterinary care for these dogs was provided by the closest veterinary unit available. At this period of time, only one type of detachment was designed specifically for animal medical care, and only one such unit existed: the 51st Medical Detachment (Veterinary Medicine). Although this unit was an active component detachment, it was not deployed in support of MWDs during the Persian Gulf War. Instead, veterinary care was provided by other units, which—similar to the ones in Korea and Vietnam—had a food inspection focus but could also provide basic MWD care (electronic personal communication from Colonel [Retired] Robert Vogelsang, former US Army Consultant, to Lieutenant Colonel Ronald Burke, US Army Veterinary Corps, May 31, 2013).

No MWDs perished from enemy activity during the Persian Gulf War. Of the known MWD treatment cases during Operation Desert Storm, one 13-year-old MWD was euthanized due to chronic renal disease, two MWDs were identified as unfit for duty and returned to CONUS, and one MWD was treated for urinary tract infection. Other minor medical conditions such as cracked nares, eye irritations, and minor cuts were treated without incident.²¹

Military Working Dog Procurement, 1990-2015

As American forces expanded military operations in the 1990s through early 2000s—first, with lower-intensity operations in Somalia (Figure 3-6), Haiti, and the Balkans and, later, with more intense operations in Afghanistan and Iraq—there was a continuing need for MWDs. Because previous procurement methods were inadequate for the demand, the feasibility of maintaining an “in-house” breeding program was studied.

While MWD procurement is generally under the control of the USAF, the US Army also conducted a MWD breeding program feasibility project from 1994

to 2005. The project built on earlier efforts and included collaboration with academic partners and other breeding programs to develop an evidence-based assessment of the use of quantitative genetics and selective pressure to demonstrate the feasibility of producing between 10 to 30 percent of the military’s requirements for MWDs while providing a contingency program to supplement adult-purchase of candidate MWDs (Dr Walter Burghardt, chapter author, unpublished data, January 2015).

In April 1998, after again making purchases of breeding stock animals in Europe, the USAF’s 341st Training Squadron, located at Lackland AFB, began breeding operations.²² The program focused on two dog breeds: the (1) Belgian shepherd (Malinois) and (2) Dutch shepherd.²³

In 2002, a new breeding, whelping, and rearing facility opened on the grounds of Lackland AFB’s training-school kennel. The facility has 2,016 square feet of building space with four sheltered whelping rooms and another 5,000 square feet of running yard space. The facility accommodates up to four litters of puppies and their mothers from 1 week prior to birth to the fostering age, approximately 9 to 12 weeks. The working dogs are then “fostered” to families as puppies to provide a solid human connection before their military or law enforcement training.²⁴

Operations Enduring Freedom and Iraqi Freedom Veterinary Care

In 1999, the DoD had 1,326 MWDs serving worldwide.²² However, when military operations expanded after the 9/11 terrorist attacks, the need for MWDs increased. By 2004, there were an estimated 2,300 dogs serving in the DoD.²⁵ More dogs meant an increased potential for canine injuries and, hence, a growing need for more veterinary support.

During Operations Enduring Freedom and Iraqi Freedom, some mine detection dog units were deployed with an organic veterinary technician, but the vast majority of dog units relied on the closest veterinary unit for care. Such in-theater care was provided by medical detachments, veterinary service (MDVS) and later, medical detachments, veterinary service support (MDVSS). MDVSSs usually focused on food inspection but had some animal care capability. Medical detachments, veterinary medicine (MDVMs), which had specific animal care missions, did exist, but none were deployed to Iraq; instead, personnel from two of the MDVMs were utilized in Iraq from 2007 to 2010 under an MDVS unit. No MDVM units or personnel were deployed to Afghanistan (electronic personal communication from Colonel [Retired] Robert Vogel-



Figure 3-6. A military working dog and its military police handler inspect vehicles in Somalia during Operation Restore Hope. Reproduced from the briefing, *Veterinary Operations in Somalia, January 2, 1993, to March 1994*, Veterinary Corps Photograph Collection, Box 2, Army Medical Department Center of History and Heritage Archives, Joint Base San Antonio-Fort Sam Houston, Texas.

sang, former US Army 64F Consultant, to Lieutenant Colonel Ronald Burke, US Army Veterinary Corps, May 31, 2013). Although units specifically deployed for MWD veterinary care, all units had the capability to provide veterinary care at various levels, or roles of care. These roles of care mirrored the human medical system.²⁶ (See also Chapter 4, *Medical Evacuation of the Military Working Dog*.)

Role 1 care generally included first aid by the handler or a medic assigned to the unit, as well as basic stabilization and first aid by a veterinary team. Role 2 care generally consisted of more advanced veterinary services, including emergency surgery and stabilization as well as management of more advanced disease processes. Most Role 2 veterinary sites generally had basic diagnostic capability such as running blood work, fecal exams, and urinalysis, but other capabilities often varied considerably, depending on location and facilities. For example, a Role 2+ facility might provide more advanced surgical and medical care, as well as some imaging capability and

other diagnostics, and advanced dental care, while other Role 2 teams only had the ability to perform stabilization surgery and evacuate to the next level of care, Role 3.

Role 3 facilities were usually manned by teams consisting of one VCO, multiple food inspection specialists, and one or two animal care specialists. Veterinary clinical specialists (64F military occupational specialty) were also part of these teams. (See the section on long-term health education training later in this chapter for more information on the 64F specialty.)

Role 3 facilities had the capability to provide advanced medical and surgical care, as well as diagnostics and advanced imaging. They were most often co-located or closely located to a human hospital and often acquired services from it. For example, the mobile magnetic resonance imager at Bagram Air Field (BAF) in Afghanistan was utilized for MWDs when needed. The radiology facility at BAF regularly supported the veterinary team by performing radiographs, computed tomography, and other imaging whenever necessary.

In these instances, MWD care was never allowed to impact human care (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015).

The veterinary clinical specialist, or 64F, was critical to providing advanced care of MWDs at Role 3 facilities, and, historically, the 64F was the MDVM commander. However, with the deactivation of the last MDVM in 2011 from Korea, the soldiers in the MDVMs were reassigned to the MDVSSs, minus some administrative and logistics soldiers (electronic personal communication from Lieutenant Colonel Douglas Owens, Commander, 129th MDVM, to Colonel Thomas Honadel, US Army Veterinary Corps, February 2, 2015). The 64F was then utilized as the MDVSS chief of clinical operations and served as consultant for the rest of the dispersed teams throughout the area of operations.

Units typically operated in a dispersed fashion through food procurement and laboratory teams, veterinary service support teams, and veterinary medicine and surgical teams. The food procurement and laboratory team was generally staffed with field veterinary service veterinary officers (64As) (usually one per team) and enlisted veterinary food inspection specialists (68Rs) while the veterinary service support teams were staffed with 64As, 68Rs, and 68Ts (animal care specialists). The unit's 64F was generally assigned to the veterinary medicine and surgical team along with supporting 68T soldiers.²⁷ During the transition process to the MDVSS, many MDVSSs did not have an assigned 64F veterinary medicine and surgical team. During deployment to OIF and OEF, 64Fs were often deployed as a Professional Filler System (PROFIS) officer,²⁸ pulled from various veterinary units across the globe.

Because of the critical roles MWDs played (and, in some areas, still play) in making Afghanistan and Iraq safer for military personnel and civilians (Exhibit 3-1), MWD care during these wars became more like human care. During the early stages of these conflicts, veterinary units (ie, MDVSSs and later MDVSSs) were dispersed to locations where MWD populations were concentrated. Some locations with kenneled dogs had a veterinarian and a technician; some had either a veterinarian or a technician. Other locations had no veterinary assets on the installation where the dogs were kenneled. These dogs either traveled with their handlers to the nearest veterinary staff, or veterinary personnel went to the dog kennels. Routine care and minor illness and injury were handled locally by the closest veterinary personnel. MWDs that had nonbattle injuries or illnesses beyond the capability of the local veterinary asset were evacuated to the veterinary detachment's medical or surgical team by either ground

or air, generally via helicopter (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015).

Dogs sustaining battlefield injuries were often evacuated straight to the nearest installation with an appropriate medical facility—even if it did not have a co-located veterinary asset—especially when both the handler and MWD were injured. In a number of instances when veterinary assets were not available, human doctors and other medical staff performed life-saving procedures on the dogs while waiting for veterinary personnel to arrive, or in consultation with veterinary assets. Because of such cases, veterinary staff developed clinical practice guidelines (CPGs) for use by human medical providers treating MWDs.²⁹ (See Chapter 4, Medical Evacuation of the Military Working Dog, for additional information on the veterinary CPGs and MWD evacuations briefly described in this chapter.)

The CPGs enabled human care providers to appropriately stabilize and perform life, limb, and eye-saving procedures in the absence of veterinary support. Veterinary teams provided sundry training to their medical counterparts on anything from taking the vitals of an MWD, treating shock, and wound management, to major surgery. If advanced procedures had to be performed by a human care provider on an MWD, the human provider who administered the care to the animal had to be certified or trained to perform that procedure in a human patient.

Even when an MWD was evacuated to a veterinary medical or surgical team, sometimes the animal's injury required more advanced care than the veterinary unit's limited equipment or manpower could provide. For example, veterinarians often worked with their medical counterparts within hospitals to obtain necessary advanced imaging studies such as magnetic resonance or computed tomography. They also col-

EXHIBIT 3-1.

“. . . [M]ilitary working dog teams in Afghanistan were credited with finding more than 12,500 pounds of explosives in 2010. The number is probably slightly higher, officials say, since dogs are not always given credit for finds. Still, when you think of the damage even [10] pounds of explosives in an IED can do, you get a sense of the importance of these dogs to our military capability.”

Source: Goodavage M. *Soldier Dogs: The Untold Story of America's Canine Heroes*. New York: Dutton; 2012:11.

laborated with medical (ie, nonveterinary) orthopedic surgeons, other medical surgeons and specialists, and nursing and technical staff to perform labor-intensive or highly complex procedures on MWDs.

In one case, an MWD was presented to a forward surgical team (FST) for various injuries and complications after receiving multiple close-range gunshot wounds: (a) The dog’s right front leg was injured so badly that it was essentially amputated and had very little remaining soft tissue; (b) its humerus was fractured into many small pieces and was nonreconstructable, and the blood supply to the rest of the front leg was destroyed; (c) the other front leg was also injured; and (d) a bullet had severed the MWD’s triceps muscles and caused a large, contaminated wound. A junior VCO was co-located at the same forward operating base as the FST and was prepared to receive the dog. However, the veterinary team could only offer Role 2 care at best and was not trained in advanced surgery (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015).

FST and veterinary personnel worked together, in consultation with the 64F at BAF, to perform amputation of the unsalvageable front limb and began limb-saving treatment of the other front limb. The other injuries were fairly minor and were also managed. The dog was then evacuated to the BAF Level 3 facility to receive further care directly from the 64F, who was a veterinary surgeon with advanced surgical skills. The MWD received advanced wound management care and stabilization at BAF before being further strategically evacuated for further advanced care at a Role 4 hospital (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015). Despite best efforts by all health care providers, dog team casualties occurred, but canine deaths were only recently tracked¹ (Exhibit 3-2).

Once MWDs were stabilized and resuscitated (if necessary) at either the medical or veterinary deployment facility, most were quickly evacuated to Germany, especially when the medical or veterinary staff determined that the dog could not reliably return to duty within approximately 10 to 14 days.^{30,31} Injured MWDs traveled on the same aircraft as human casualties flying to the Army hospital at Landstuhl, Germany. Dogs were then transported from Landstuhl to the nearby Dog Center Europe (DCE) facility at Pulaski Barracks in Vogelweh, Germany. The DCE is a Role 3 facility and has the capability to perform definitive surgery and hospitalization.

During the Afghanistan and Iraqi operations, the DCE was manned with two clinical specialists, at least one being a surgeon, as well as a robust technical staff.³²

The DCE received evacuated MWDs and provided necessary definitive care (eg, orthopedic implant application and skin wound reconstruction). Once an MWD recovered enough to travel, it was further evacuated to its home kennel, where the local garrison veterinarian took over required follow-up care.

Some MWD patients, particularly those needing long-term physical therapy, went from the DCE to the only facility in the DoD with the staff and equipment to provide this service: the Lieutenant Colonel Daniel E. Holland MWD Hospital (Holland MWD Hospital) at Lackland AFB. Similar to human physical therapy, the procedures used at the Holland MWD Hospital helped dogs injured in Afghanistan and Iraq to regain full range of motion, mobility, and muscle strength, enabling them to work again. (For more information about the Holland MWD Hospital, see the Public Health Command section and the section on Foxtrot Support to Operations Enduring and Iraqi Freedom in this chapter.) Dogs that could not return to work even after treatment were generally made available for adoption.

Changes in technology, legislation, and public opinion have all guided veterinary care and treatment for the MWD. As noted, it is not uncommon for injured dogs to receive high-quality care equivalent to human soldiers while being evacuated from around the world. Veterinary assets are now dedicated to not only maintaining the force of MWDs and their procurement, but also their continued health after tactical service. Physical therapy and behavioral training (which will be discussed further later in this chapter) had humble beginnings but are now receiving greater attention. MWDs also have a better chance for fuller lives after retirement; the “Robby

EXHIBIT 3-2.

“Even as troops start to draw down in Afghanistan, the dog teams don’t show any signs of staying home for long. Because of their vital role there, many in the military dog world think the dog teams could keep deploying steadily to the end of [US] involvement. This could put them at higher risk. Already, [17] handlers have been killed in action since 2001, and [44 MWDs] have died in war zones since 2005, the first year for which figures are available. (The number of dog deaths includes dogs killed in action and dogs [that] have died from heat injuries and other causes. The [DoD] does not yet have a full report of causes of death.)”

Source: Goodavage M. *Soldier Dogs: The Untold Story of America’s Canine Heroes*. New York: Dutton; 2012:11.

Law” (H.R.5314, amendment to Title 10- Public Law 106 - 446) was ratified by Congress on January 24, 2000, and allows for the adoption of former MWDs at retirement or when the dog is otherwise excess to DoD needs.³³

The MWD adoption program is managed by the USAF 341st Training Squadron.³⁴ (See also Chapter 4, Medical Evacuation of the Military Working Dog, which features the adoption of an injured MWD by an injured Marine Corps sergeant and his family.)

EVOLVING SPECIALTY TRAINING AND SUPPORT ACTIVITIES

Long-Term Health Education and 64F Training

In the past, military veterinarians with more advanced clinical skills generally trained to support the research community rather than the MWD mission. Only a small number of VCOs received post-professional training to acquire skills in specialties such as surgery, medicine, radiology, and ophthalmology, and no standardized method existed to acquire such training. However, after a significant number of MWDs were lost to service due to problems that were potentially preventable or treatable, it became apparent that if MWDs were to be provided the best care possible, more clinical specialists were needed within the Army Veterinary Corps (electronic personal communication from Colonel [Retired] Robert Vogelsang, former Army 64F Consultant, to Lieutenant Colonel Ronald Burke, US Army Veterinary Corps, May 31, 2013).

Most Army Medical Corps officers who receive specialty training do so within a large military medical center. However, VCOs selected for clinical residency training—other than in the field of pathology—must study at civilian veterinary institutions because these clinical residencies are not available in military settings.

In the 1980s, the Veterinary Corps began sending VCOs who desired to become clinical specialists to civilian residency programs to meet this need. The first residents were confined to a 2-year residency, culminating in a master’s degree, although clinical residency programs were traditionally 3 years long. The first Army veterinary radiology resident was required to complete the program in only 2 years, and the first surgery resident was initially authorized a 2-year program, which was later extended to a 3-year program (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015).

VCOs who complete residency training and subsequent board-certification are classified as area of concentration 64Fs; these 64Fs are also dubbed “Foxtrots” within the Veterinary Corps. Initially, these clinical specialists were assigned to the MWD hospital at Lackland AFB, DODMWDVS, and to research facilities, where their skills gave them the expertise to evaluate shock, trauma, and

other animal models that were used to improve human trauma care and resuscitation. They also began to participate in the training of junior VCOs and cared for all MWDs in training at the 341st Training Squadron. Later, the 64F personnel were assigned as regional veterinary clinical specialists to provide consulting services for MWDs, other government-owned animals, and privately owned pets at a number of locations around the world. As time went on, the numbers of 64Fs grew to the current number of 38 authorized positions (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015).

Military Veterinary Behaviorist Programs

One of the Army’s more recently recognized 64F specialties is the veterinary behaviorist. A veterinary behaviorist is a veterinarian who has completed formal residency training, passed the board examination of the American College of Veterinary Behaviorists, and is qualified to provide advanced evaluation and veterinary behavioral treatment of animals displaying problem behaviors.

The scope and depth of available behavioral care used in the treatment of US MWDs often varies from location to location, depending on disparate service missions and philosophical and physical distances among various personnel responsible for MWD care. For example, procurement, training, certification, and operational assessment of MWDs, provided by the USAF’s 341st Training Squadron and operational units in all branches of the military, are not considered veterinary functions, which often results in an artificial division between training and behavior personnel. Since military trainers and handlers have virtually no instruction in the identification and management of behavioral problems, they often use a training model of management to “treat” MWD behavioral problems (ie, they deal with a behavior problem as a training issue), instead of referring the animal to military behavioral specialists for diagnosis and treatment. Access to adequate veterinary behavioral services also depends on whether the Army veterinarian overseeing a particular MWD kennel is willing to rely on the remote diagnosis and treatment recommendations of a behavioral

specialist who may never see the patient on site (Dr Walter Burghardt, chapter author, unpublished data, January 2015).

Historically, military behavioral services have been limited because of the small number of personnel initially available and capable of providing such care for MWDs. As mentioned previously, prior to 1983, the USAF and US Army provided separate veterinary care for their MWDs. Although the Army Veterinary Corps provided a number of research psychologists to support such MWD programs as the Biosensor MWD, the Army Veterinary Corps did not specifically provide behavioral medicine service or support to its operational MWDs.³⁵

Until 1983, the USAF Veterinary Corps allocated only one behavioral position to serve its MWD school at Lackland AFB: a veterinary research psychologist (Air Force Specialty Code 993XD). This psychologist's behavioral support included assistance with handler and MWD training program design, MWD team assessment, identification and treatment of MWD behavior problems, and support for MWD task-related research and development activities. The Navy and Marine Corps MWD programs did not possess organic veterinary support and received all of their veterinary services from either the USAF or Army (Dr Walter Burghardt, chapter author, unpublished data, January 2015).

In 1980, all veterinary services for all military branches began being provided by Army personnel; training and inventory management transitioned to the USAF personnel. However, between 1983 and 1994, the Army still offered no behavioral support while the USAF continued to engage the services of a veterinarian with advanced training in behavior via either a contract or government employee position in support of the MWD Training Squadron. One USAF behaviorist during this period was Colonel Dan Craig, who provided similar support in his civilian position as he did while on active duty working with the USAF MWD program (ie, similar training designs, MWD procurement and team assessment, and applied research projects in explosives and drug detection) (Dr Walter Burghardt, chapter author, unpublished data, January 2015).

In 1993, US Army Colonel Gary Stamp served as the director of the DODMWDVS, the Army Veterinary Corps unit supporting the DoD MWD Training School at Lackland AFB. Stamp spearheaded an effort to acquire the services of a board-certified veterinary behaviorist to support the training school through the Army Veterinary Corps. A civilian position, created by the Army at the DODMWDVS in 1995, was filled by Dr Walter Burghardt. From 1995 to the present, the entire DoD veterinary behavioral program has been supported

by this single Army position (Dr Walter Burghardt, chapter author, unpublished data, January 2015).

In 2010, in order to meet a perceived need to expand specialty veterinary behavioral services, Colonel David Rolfe, then commander of the Army Veterinary Command (VETCOM), laid the groundwork for a Long-Term Health Education Training (LTHET) residency in behavioral medicine. In 2009, the DODMWDVS Behavioral Medicine Section was tasked with creating a specific local residency training program for veterinarians focusing on MWD behavior. Ultimately, this program became a 4-year joint residency in behavior and veterinary practice, culminating with a master's thesis in neurobiology from the University of Texas at San Antonio. The behavioral residency program is recognized as conforming by the American College of Veterinary Behaviorists (the only conforming program not affiliated with a veterinary college). Ideally, this program trains one new resident every 3 to 4 years (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015).

Behavioral Medicine Applied Research and Development Activities and Challenges

One of the most significant products of the DODMWDVS and its program of applied research and development in selective breeding at Lackland AFB has been the formation of the International Working Dog Breeding Association (IWDBA), a professional organization representing a broad spectrum of the working dog community from 26 countries around the world. In 1999, as US DoD personnel prepared for proof-of-concept breeding programs for the military and the Transportation Security Administration, they planned a conference for approximately 50 attendees at Lackland AFB. The nine invited presenters were selected on the basis of their expertise and publications in the management of large-scale breeding programs and the science related to successful selection, breeding, whelping, and rearing. During the 1999 meeting, participants felt that a conference of this sort was not only unique but could also be of value to a larger working dog audience than just the US military. The eventual formation of the IWDBA stemmed from these sentiments and an unexpected event.³⁶

In 2001, the conference was repeated at Lackland AFB but was also expanded to attract a wider audience and presenter selection. As fate would have it, the 2001 meeting, attended by 50 international guests from 12 countries, was scheduled for three days: September 10, 11, and 12.³⁶ The terrorist events of September 11, 2001, could have ended the meeting early, particularly with

the virtual lock-down of the conference site for security reasons. Instead, 9/11 galvanized the participants to form the IWDBA to represent the interests of working dog programs and support future meetings (Dr Walter Burghardt, chapter author, unpublished data, January 2015). Since 2001, IWDBA has held conferences every other year on a rotating basis (Figure 3-7).

By the 2011 meeting, the conference size grew to over 200 participants from 25 countries, and the scope of the meeting included program management, applied theriogenology, selection, quantitative and molecular genetics, nutrition, husbandry and veterinary care, and canine sports medicine. Participants represented major military, government, public, and private canine programs involving military and police work, substance detection, canine assistance and therapy programs, academic and research community projects, the working dog-related industry, and smaller canine programs for individual canine handlers and end-users.³⁶

Challenges for the Behavioral Medicine Section have included those common to virtually every private or public veterinary practice: funding, facilities, and manpower. The DODMWDVS has never had a dedicated line of funding in support of applied research and development activities. All applied research and

development has been performed using extramural or operational funds, which is fraught with the challenge of maintaining year-to-year continuity in ongoing programs. The other significant financial challenge has been access to sufficient travel funding to allow for optimal patient care and veterinary support for a worldwide patient base.

The Behavioral Medicine Section also has no dedicated clinical or research facilities. Therefore, attempting to support advanced behavioral assessments and applied research and development projects that require instrumentation, recording equipment, climate control, or other environmental controls is a continuing challenge. Over the years, the program temporarily used a variety of facilities (from research laboratories to abandoned buildings) and was able to construct a whelping kennel to support the MWD breeding assessment project from 1999 to 2005 (subsequently granted to the USAF 341st Training Squadron for use in their operational MWD breeding program). A 5,000-square-foot behavior evaluation, treatment, and research building was planned in 1995 but never constructed (Dr Walter Burghardt, chapter author, unpublished data, January 2015).



Figure 3-7. Attendees of the 3rd International Working Dog Conference, October 5 to 8, 2003, at Lackland Air Force Base, Texas. Almost 100 representatives from 12 countries on 5 continents met to address global working-dog issues. Photograph courtesy of Dr Walter Burghardt, Department of Defense Military Working Dog Veterinary Services; Joint Base San Antonio-Lackland Air Force Base, Texas.

The final significant challenge is a long-standing one: manpower. Although the Behavioral Medicine Section has had a staff of up to 15 term contract employees, there has only been one permanent employee in the department since inception.³³ All additional staffing was hired in support of specific training and research programs using contract labor. Although this source provided sufficient personnel to accomplish a number of successful projects, as noted earlier in this chapter, the clinical staff was still left with only one board-certified veterinary behaviorist serving the entire DoD.

As early as 1995, the need for a dedicated behavior technician and several trainers was identified to support the clinical portion of the service. In 2010, the Army Veterinary Corps also recognized the need for additional uniformed veterinary behaviorists in geographical and operational areas that are difficult to serve by a single behaviorist based in San Antonio (eg, Europe, the Far East, Asia, and Africa) and, as previously noted, funded the first residency for uniformed veterinarians. Given time, more specialists can offer better behavioral support worldwide, starting with the graduation of the program's first resident in 2016, but these newly trained specialists will also need adequate facilities and staffing (Retired Colonels Gary Stamp and David Rolfe, US Army Veterinary Corps, personal communications, July 1995, and January 2010, respectively).

Future opportunities include meeting the various challenges just enumerated: (a) securing an ongoing line of basic funding for research and development; (b) acquiring a permanent facility to support applied behavioral research and development and clinical activities; (c) hiring a veterinary behavior technician and one or more trainers to work with each veterinary behavior specialist; and (d) maintaining a sufficient number of uniformed veterinary behavior specialists to support worldwide requirements. Several other opportunities also exist for the Behavioral Medicine Section, namely in training. Although all uniformed veterinary interns (VCOs) receive 22 hours of behavioral training at the seven First-Year Graduate Veterinary Education (FYGVE) sites (see the next section of this chapter), uniformed veterinary technicians (68T enlisted soldiers) currently receive no formal behavioral training. Accordingly, there is a need to create and insert training into the 68Ts' technical school training and produce a series of technician training tracks that could be used as continuing education.

The other significant opportunity to improve MWD behavioral care would be through the training of MWD handlers, trainers, and kennel masters. Like veterinary technicians, operational MWD handlers, trainers, and

kennel masters are not formally trained to identify behavioral problems in MWDs or to implement the various methods used to treat these problems. Opportunities for and implications of such training are currently being explored because, as an aggregate, behavioral problems may represent the single largest cause of lost service in MWDs (Captain Desiree Broach, DODMWDVS intern, unpublished data, 2015).³⁷ Early identification and effective intervention may be more likely if such training is actively implemented and may result in better outcomes for MWDs with behavioral problems.

First-Year Graduate Veterinary Education

Since the primary animal mission conducted by the Veterinary Service is comprehensive care of MWDs, VCOs must have competency in basic animal medicine and surgery skills to resuscitate, stabilize, and evacuate wounded dogs to the next higher level of care. However, sustaining such skills within a garrison environment is often difficult because most MWDs rarely present with medical issues. These dogs are seen regularly by Army veterinarians for scheduled wellness checks, usually need only routine surgeries (eg, spays and neuters), and typically present few complex medical conditions for VCOs to treat. To maintain the skills needed to make more difficult diagnoses and perform other surgeries in contingency operations, VCOs and their animal technicians draw from a larger available pool of "patients": pets of service members and retirees. When veterinary clinics are not being used for MWD care (the first priority), veterinary personnel hone a wider variety of critical skills by taking care of family-owned animals on a space-available basis. (See also Chapter 5, Family-Owned Animal Health Services.)

Gaining necessary veterinary expertise from MWDs and the larger patient population of beneficiary pets was only one challenge faced by VCOs before the creation of the FYGVE program. Although other Army Medical Department officers just out of professional school (eg, physicians, dentists, and nurses) are assigned to locations where they work under other officers to gain experience in both their medical area and serving as an Army officer, many new VCOs are first assigned to locations where they are not only the sole veterinarian, but also the officer-in-charge of a section. Because the Army provides veterinary support for all services, new VCOs can also be located at non-Army installations, where they may be the only Army officer.

Given this set of unique challenges, new VCOs, especially those who were the lone veterinarian at a small base with minimal facilities or equipment, used

to be at particular disadvantage as they tried to establish and maintain needed animal medical and surgical skills. To provide beginning VCOs better preparation, the FYGVE program was created in 2010 and is similar to programs established for other new Army medical officers.³⁸

The FYGVE program began training at one location, and, by the summer of 2014, was fully established at seven locations including Ft Benning, Georgia; Ft Bragg, North Carolina; Ft Campbell, Kentucky; Ft Carson, Colorado; Ft Hood, Texas; and Joint Base Lewis-McChord, Washington. As of 2015, all new VCOs now receive an initial 1-year assignment to one of the FYGVE sites. Each site has a cadre of two VCOs,

each offering a different area of concentration: one is a 64B (veterinary preventive medicine specialist), and the other is a 64F (veterinary clinical specialist). The 64F clinical cadre is responsible for training new VCOs in basic surgical and medical procedures, helping them understand the MWD program and diverse responsibilities of MWD care and handler training, and providing guidance about veterinary treatment facility management. The FYGVE program's overall goal is that new VCOs leave the program feeling confident and competent to perform the clinical tasks expected of a junior VCO; advanced specialty training may be pursued later (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015).

RECENT MILITARY WORKING DOG VETERINARY SUPPORT EFFORTS

Army Public Health Command

The Army Public Health Command (PHC) was created on October 1, 2010, when the former Army Center for Health Promotion and Preventive Medicine (CHPMM) and VETCOM merged.³⁹ Prior to PHC's formation, CHPMM was responsible for disease control and prevention, environmental health, and health surveillance activities within the Army while VETCOM was responsible for providing veterinary care to almost all MWDs (dogs in Korea and Bahrain were the exceptions), performing food protection (ie, safety and defense), and quality assurance programs. VETCOM also accounted for the majority of Veterinary Corps personnel within the Army. With the establishment of PHC, these missions were integrated within a single unit. As of 2014, veterinary personnel provided installation and area veterinary support for approximately 2,250 MWDs at their home stations and to over 150 Army, Navy, Air Force, and Marine Corps installations located throughout the world.⁴⁰ (As of publication, it remains unclear how all the proposed US Army medical transformation will affect the organization of veterinary medical assets.)

Generally, current local installation veterinary facilities are small in size and have limited staffs who provide routine preventive and minor medical and surgical care for their MWDs. Dogs requiring facilities, expertise, and equipment beyond that of home station veterinary teams are referred to facilities with more capabilities, generally regional veterinary sites, if they are capable of being transported. MWDs with cases that are emergent or cannot be transported are referred to local civilian veterinary facilities.⁴¹

If regional facilities cannot support needed care, transportable MWDs are usually referred to PHC's Holland MWD Hospital. This facility is a state-of-the-

art veterinary hospital staffed with 11 veterinarians (8 of the 11 are specialists); over 20 animal technicians; and logistical, medical records, resource management, and information technology staff.³² The hospital's approximate 38,000 square feet is divided into surgery, dental, medicine, intensive care, imaging, behavior, canine reproduction, and physical therapy sections. The hospital is capable of providing care to an average population of over 800 MWDs from a patient population that includes dogs being trained at Lackland AFB for subsequent assignment worldwide or used as permanent party training aids at the dog school, puppies from the breeding program, and operational dogs from other kennels referred for veterinary care (electronic personal communication from Colonel Cheryl Sofaly, Director, DODMWDVS, to Lieutenant Colonel Ronald Burke, US Army Veterinary Corps, March 16, 2015).

Army Public Health Command Regional Consultants

Within PHC, each of its five regions is authorized one 64F who acts as the regional clinical consultant, providing the region's commander with advice and guidance regarding any animal health-related matters. Each regional 64F also performs several other key consulting duties: (a) acts as the primary clinical consultant to individual units and veterinarians within their region when assistance is required to manage MWD and other animal medicine cases; (b) ensures regional animal medicine staff are trained to, and maintain, an acceptable level of clinical proficiency; (c) assists veterinarians with the disposition of MWDs no longer able to perform military duties (generally this assistance results in transfer to civilian law enforcement agencies or adoption as pets); and (d) interacts with other nations' agricultural or quarantine services

to ensure animal importation requirements are clear and disseminated to other veterinary units, enabling pet owners to understand pretravel requirements.³² (As noted previously, it remains to be seen how the US Army Medical Command transformation will affect this organization.)

Foxtrot (64F) Research Support

Currently, there are two authorizations for 64Fs within military research institutions: the Army Institute of Surgical Research in San Antonio, Texas, and the Walter Reed Army Institute of Research. Clinical specialists supporting these organizations assist investigators and laboratory animal veterinarians to ensure analgesia, anesthesia, and general veterinary medical care methods and processes are well planned and executed. The presence of both laboratory animal and clinical specialist veterinarians within these institutions provides two synergistic assurances: (1) any research performed is in strict accordance with regulatory guidance and requirements; and (2) ani-

mal medical care is provided by an individual with veterinary clinical training beyond that of a general veterinary practitioner or laboratory animal medicine veterinarian (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015).

In addition, the clinical specialists provide expertise in their field when evaluating research protocols, ensuring that proposed animal models meet the intent of the research. Because clinical specialists possess advanced knowledge of trauma, resuscitation, cardiovascular pathophysiology, critical care, and other important research subject matter, they can provide input to improve study models using animals. Research in the field of tactical combat casualty care has led to significant advances in trauma care and care of the battlefield wounded soldiers in Iraq and Afghanistan. For example, innovations such as the tactical tourniquet and combat gauze have revolutionized initial management of hemorrhage on the battlefield, allowing more soldiers to survive and reach definitive care (Lieutenant Colonel Jennifer Beck, chapter author, unpublished data, March 2015).

SUMMARY

Although canines have always been valued by civilians and militaries across the globe, the American military's use of war dogs is relatively recent and has waxed and waned over a period of many conflicts. However, even with today's advanced technology, the dog still reigns supreme for overall utility in battle. The dog is mobile, requires little maintenance, and provides the intangible benefit of companionship to its handler and unit. The US Army now has its own procurement program as well as strong ties to the modern dog facilities at Lackland AFB (ie, the dog training center and the Holland MWD hospital, which offers advanced rehabilitation opportunities for wounded

dogs). Although legal and moral changes since the Vietnam era now make MWD adoption to an owner the preferred means to discharge a dog from service, wounded MWDs must continue to have adequate veterinary care available in a timely fashion to prevent such disposition. New training programs for all junior Veterinary Corps officers and the addition of a growing number of Army behavioral care specialists to the senior ranks has steadily improved the efficiency and standard of MWD care both on and off the battlefield. Quality veterinary care for these canines remains the highest priority of the US Army Veterinary Corps' modern animal mission.

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