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Testimony

July 22, 2008

“Training of Rural First Responders”

U. S. House of Representatives
Committee on Homeland Security
Subcommittee on Management, Investigations, and Oversight

Mr. Chairman and Congressman Rogers, my name is John Pearce and I am the Director of Training and Operations for Auburn University's Canine Detection Training Center. On behalf of Auburn University President Jay Gogue and Acting Vice President for Research, Ralph Zee, welcome to our Fort McClellan facility. Thank you for the opportunity to talk with you about Auburn's canine detection research and training program, the benefits of detector dog teams for local law enforcement and first responders, and the Nation's canine detection capabilities.

The Center that we are in now is part of a comprehensive Auburn University program focused on enhancing the use dogs for the detection of hazardous, unsafe or illegal substances and materials through basic research, development, and instruction. Along with researchers at our College of Veterinary Medicine, we have a 17-year successful track record of helping local, state and federal agencies fulfill their public safety and national security missions. These agencies include, for example, the Orange County, California, Sheriff's Office, the Clayton, GA Police Department, the Federal Protective Service, and the U.S. Marine Corps.

For example, Auburn trained detector-dog teams are screening passengers for explosives on the mass transit system in Atlanta and Amtrak interstate commuter rail lines. Here in Alabama, Auburn trained dog teams are helping keep explosives and firearms from entering Lee County schools and interdicting illicit drugs along the I-20 corridor from Leeds to Heflin. They are also protecting Federal Buildings and detecting improvised explosive devices for U.S. forces in Iraq. We are proud of the service they provide to our state and nation.

As the most capable, readily available and least expensive tool for the detection of explosives and illicit drugs, a well trained detector-dog team is ideal for the protection of rural communities and serves as an important force-multiplier for them to deal with an often large service area with only a few first-responders. The detector-dog team is a complement to and extends the capabilities of first-responders as well as providing a very visible deterrence to crime and terrorism. From an emergency management perspective, rural communities do not have the luxury of close-by mutual aid in terms of either detector dog or bomb squad resources but they increasingly do have significant threats of illicit drug production, potentially catastrophic school violence events, special event venues in the form of regional sporting and festivals, and an under-appreciated level of important national infrastructure in the form of, necessarily less-well monitored, pipelines, water resources, and power generation/transmission that could be a target of terrorism. A well trained and maintained detector-dog team resource in such a community can serve as an important regional first responder asset and potentially important homeland security asset.

In order for the benefits of detector dog teams to be realized, those teams must have good equipment, be well trained, and the equipment and training must be well maintained just like any other facet of law enforcement or emergency preparedness. The most important piece of equipment is the dog itself; it must be bred to have the propensity to successfully perform and have a long service life as a detector dog. The quality of the

training of the dog and its human handler are critical to the team's performance. Finally, upkeep of the dog's health and fitness and ongoing training of the team are necessary to maintain its performance over time.

Providing competent canine detection resources for public service – first responder organizations in smaller and rural areas is often overlooked in discussions regarding the status of the detector-dog industry. I appreciate the opportunity this hearing provides to discuss our programs mission and activities, the status of the canine detection industry, and especially the canine detection resources for smaller and rural communities.

We believe the Federal Government will be essential to increasing detector dog resources for local, rural jurisdictions in at least four ways. First, the Government should encourage the development and promulgation of minimum standards for the provision of detector dog services. Second, and most obviously, the Government should develop funding mechanisms to assist local, rural jurisdictions in obtaining detector-dog resources. Third, the Government should encourage the development of domestic sources of high-quality candidate detector-dogs. Finally, we believe that the Government should encourage programmatic research & development efforts to enhance the performance and utility of the use of dogs for detection of hazardous materials.

Eight years ago, Auburn created the Canine Detection Training Center to transfer technology and provide formal instruction on the lessons learned through our research. The center's mission is to provide instruction of these principles in all facets of canine detection to include program management. Another goal of the Training Center was to provide a resource for the quality of dogs and level of instruction afforded to larger Federal Government and the U.S. Military canine programs to state and local law enforcement agencies. We also believe the approach must include selective breeding to ensure detector dogs have the proper genetics to excel in performance of their duties and identified bloodlines to ensure an adequate and readily available source of such dogs. Importantly, breeding alone is not sufficient to realize the potential of such dogs and we are engaged in efforts to engineer the early experiences of puppies such that we maximize such potential.

The industry as a whole is still primarily procuring dogs from European vendors. This tradition stems from a culture of breeding and raising dogs for working dog tasks as being an enthusiast or sporting type hobby in central European countries. Some of these enthusiasts turned their hobby into a business by becoming vendors of such dogs for sale to military, government, law enforcement, and private security entities in the U. S. and elsewhere. It is clearly the case that since the events of 9/11, the worldwide market for these dogs has increased resulting in a diminution of the average quality of dogs imported into the U.S. The dogs must meet certain medical criteria and performance standards but this does not ensure the dogs have had critical environmental exposures and proper preparation.

There are always the exceptional dogs out there, but we need to have consistent, reliable source of good dogs. Vendors typically know the procurement/selection test on

which the dogs will be assessed and train the dog to meet this standard. Upon entering training a good portion of these dogs exhibit behavioral issues causing the dog to fail initial training and/or complete training with substandard results. Often overlooked, but very critical to this process is the proper raising of the puppy so it may express the genetics it received through selective breeding. This is overlooked because of the costly time and money involved in preparation of the puppy to become a good detector dog.

Auburn, in collaboration with Corrections Corporation of America, has significantly reduced the cost of this process through preparation of the puppies within prisons. The key to the success of this program has been educating inmates in development of these puppies: The commitment of the prison administration to the education of the inmates and professional management of such programs are essential to its success. Auburn's original plan was to use local volunteers by placing a puppy in their home for one year. The training plan was structured to ensure various environmental exposures and enhance performance. Although the volunteers' contributions were admirable, they just didn't have the necessary time from day-to-day to fully implement the training plan. This resulted in only 25% of the puppies being successfully trained as detector dogs. However, the initial results of our prison program are that 85% of puppies have successfully entered and completed training. We strongly recommend that the development of domestic programs for selectively breeding and the engineered raising of detector dogs be supported to prepare detector dogs for federal, state and local law enforcement as well as our Military.

The U. S. has the potential for self-sufficiency with regard to detection and other needed working dogs. We have an often overlooked existing source of very sound breeding stock, the American field and hunt trial sporting-dog enthusiast industry and we now have a proven mechanism for raising dogs to be detector dogs, the well-trained inmate volunteer. It should be noted that our prison program can be scaled up to practically any level of production and replicated across the nation at a very favorable cost-to-production ratio: We could double the production of the current Auburn program with addition of only one employee due to the support provided by the prison. With seed funding to initiate growth of such detector-dog production efforts and an emphasis on Federal Agencies and our Military procuring dogs from such programs, a reliable self-sufficient resource of dogs well-prepared to enter and succeed in training could be created. The attendant benefit of such a system would be a more readily available source of high-quality dogs for first-responder organizations in smaller and rural communities.

Although, the quality and preparedness of the dog is critical, there is a tendency for discussions regarding canine detection to focus only on the dog whereas the actual detection capability is as much or more a consequence of the preparedness of the handlers of those dogs. Perhaps the most overarching goal of Auburn's Canine program is to advance the practice of canine detection from the level of a craft to a more mature technology. Albeit there will always be a strong element of craftsmanship involved in training and handling detector dogs, the fact that the detector-dog is the most capable tool available for the important job of hazardous substance detection demands that we aspire for a more sophisticated technological approach.

There are two fundamental reasons for moving toward a more technological approach to the training and handling of detector dogs, reliability and accountability. The most significant problems in relation to homeland security presented by the current state of the canine detection industry is variability in the reliability with which it is practiced and absence of a mechanism for homeland security officials to assess, or account for, such variability. Put in the perspective of the “First-Responder” focus of the Committee’s current Field Hearings: The most likely first detector-dog team resource attending to a potential threat is from local law enforcement or security service provider and there is no current mechanism in place for homeland security officials to know very much if anything about the reliability of that team meet the challenges presented by different levels and types of threats. Taken one-step further back in the process, there is also no current formal way that a funding agency supporting the costs of handler training or purchaser of detector-dog team services can account for the quality of such training or services.

The working dog industry has not fully evolved from a craft. This includes educating handlers in the basic science principles that informs their training and use of their dog and providing them with a strong foundation in operational best practices. Handler instruction is where the industry is cutting corners in competition with one another to reduce cost because it is least amenable to accountability; a handler trainee can exit a training a program having been provided a very capable dog that provides the appearance of initial competence, but without adequate handler instruction, the actual reliability of that team 3-months later is highly suspect. This is particularly relevant to public service agencies in smaller, rural communities which presently do not have the same access to higher-quality detector-dog team training services.

The need to move the use of dogs for detection from a craft to more of a mature technology has been recently recognized in three important ways. Perhaps the most important contribution to this movement has been the House Homeland Security Committees’ emphasis, led by Congressman Rogers, on the importance of canine detection and thus need for standards and innovation in its practice and domestic resources for quality detector-dogs. The industry has taken notice of the Committees’ attention to canine detection, which has buttressed efforts within the industry for self-assessment and the promotion of *Best Practice Guidelines*.

The most significant of these efforts has been the *Scientific Working Group on Dogs and Orthogonal Detectors Guidelines* (SWGDOG). This has been a truly seminal event in canine detection which has for the first time in my 30-year career brought together a true cross-section of the industry (e.g., DHS, DoD, State and local Law enforcement as well as other public service agencies, commercial training and security providers, SME’s from other nations, and academia) to develop consensus-based best practice guidelines for detector dogs. Strong debate amongst different factions in SWGDOG is the norm but the process is working and is nearly on its original schedule. I feel that the emphasis your Committee has demonstrated has kept a lot of the SWGDOG members motivated to complete the difficult tasks of arriving at scientifically valid best practice guidelines.

The guiding principles of SWGDOG are consistent with the defining qualities of a technology and include:

- A common technical language, which facilitates and improves accuracy of information transmitted across generations of instructors and handlers.
- Establishes basic best practices to guide the industry and provides consumers of detector dog services with basis for assessment of those services.
- Facilitates enhancement and new applications for working dogs.

The third and most recent effort in advancing canine detection as a technology has been the efforts of the DHS-Office of Bombing Prevention's (OBP) to develop a canine detection capabilities assessment tool, initiate a trial-run at conducting such assessments across several metropolitan areas, and initiate the development of a model canine handler curriculum designed to meet DHS instructional guidelines. Oak-Ridge National Laboratory (ORNL) has executed the first segment of work for the OBP for which Auburn has served as an SME sub-contractor. Conducting a national canine detection capabilities assessment will provide DHS with a resource-typed database critical to ensuring that the appropriate level of capabilities are deployed in response to particular threat situations. Such a tool will also provide a mechanism for determining the allocation of resources to improve canine detection capabilities in particular areas of the country. Finally, the development of a DHS standard handler curriculum will provide a replicable model that will promote greater consistency and quality-control of handler instruction. ORNL is exploring the conversion of some of the didactic portions of such a curriculum to web-based instruction, which will serve to reduce the duration that a handler candidate must be away from his or her agency for training, which may be critical for smaller organizations to access such services

We believe that the ideal utilization of Auburn's unique program is to conduct systematic R&D resulting in enhanced or new operational capabilities while providing a resource for exceptionally well-prepared potential detector dogs and filling a gap for advanced detector-dog and handler team instruction for national, state and local public service organizations without an inherent training program.

We hope that we can work with your committee and DHS officials to overcome barriers to smaller and rural communities' access to high-quality detector dog resources. State and local law enforcement typically do not have the financial resources and/or the administrative support to attend our 6-week drug or 10-week explosive detector-dog team course. There have been a few exceptions to this: I believe two smaller communities have found ways to use DHS provided grant funding to attend our course and we have provided significantly subsidized services to law enforcement in our local area and, to a lesser extent other departments across Alabama. I have been impressed with the efforts of some communities to obtain our services, such as Lee County, which split the cost between Sheriff Jay Jones Office and the School Board, Cullman County, which engaged

in a fundraising campaign led by a distinguished veterinarian in the area, or Heflin, AL where the City traded us a vehicle, confiscated in a drug arrest executed with a dog we previously trained for them, for a new trained dog.

However, faced with the dilemma of either replacing an unreliable emergency vehicle with 200K + miles of service or obtaining a high-quality detector dog and team training, the choice for any police chief or sheriff is appropriately to take care of the most fundamental needs first (i.e., replacing the vehicle). This leaves the enterprising public service official seeking a working dog and training for the least possible cost and herein we find the dilemma of extreme variability in the reliability with which canine detection is practiced. The canine detection industry is replete with vendors of highly variable quality dogs and, as short as 1-week, training courses offering services in such circumstances. Some of these vendors are just uninformed but many are professionals who do know better but target this niche market. Many public service officials in the position of deciding on the acquisition of a canine are not well informed because this is not something covered in most law enforcement academies (the information emanates mostly from prior military or federal agency working dog service) and there is no accountability of DHS promulgated standards, such as, for example that which exist through resource-typing of equipment with which most public services officials are now aware, for canine detection. The Committee's attention to this issue and attendant efforts such that of SWGDOG hold promise for providing the needed framework for establishing minimum training and certification standards. Therefore, Auburn strongly recommends that the Committee consider mechanisms for smaller and rural communities to obtain canine detection resources but in a way that helps ensure those resources are competent, which is particularly important in this market because there are often no readily available internal or external sources of such information or control regarding such competence.

Returning to the topic of Auburn canine detection R&D efforts, it seems we are continually scratching the surface on ways to enhance canine detection through sporadic, non-systematic development projects in which we produce a few dogs for a special application; examples include, off-lead remote detection of IEDs to increase the safety and security of the war fighter and first responder, Vapor-Wake Detection, which is the detection of hand carried or body worn explosives, wide-area autonomous screening for explosive caches (WAX), and canine physical conditioning programs to enhance overall performance. All of these projects were either examined by independent researchers or tested operationally and assessed as being very successful. Increasing the capabilities of the detector-dog team through development of such technologies is particularly relevant to supporting first-responders in rural and smaller communities because it serves to extend the versatility of applications and area one detector dog team can cover. However, longer-term programmatic support of such projects, analogous to the long-range programmatic efforts to develop detection instrumentation, is needed to fully advance these technologies.

Two examples illustrate well the potential of enhanced canine detection applications and how they could serve to extend or be a force-multiplier for first responders in rural and smaller communities. The vapor-wake detection (or person-screening) of hand-

carried and body-worn explosives development project was actually suggested by the former Chief of the MARTA Police, who was concerned about the transit system being a vector for the entry of explosive devices into high-profile venues in Atlanta. We researched existing information on the plume of heat and air emanating from static and moving people from work related to the development of the electronic explosive detection sampling portals. We used this information to tailor a prototype training program for dogs to interrogate this vapor-wake emanating from persons. DHS S&T somehow learned of our work with MARTA and requested to examine its effectiveness as part of larger rapid transit security technology review. That review, conducted by Sandia National Labs, assessed the vapor-wake detector dog capability as being capable of very effectively screening over 1,000 rapid transit patrons an hour passing through a choke point with practically no affect of the screening on throughput in the transit system. We have had further interest from large metropolitan law enforcement agencies for obtaining vapor-wake detector-dog team training and Amtrak is in the process of obtaining such training for several of their detector-dog teams from us. There is certainly more to be learned that would support and advance the use of dogs for vapor-wake detection and such information would undoubtedly inform and support the use of electronic chemical detection systems for stand-off detection, but yet, we there has been no interest expressed in a systematic program of research and development of this topic.

In another program, Auburn teamed with the Potomac Institute for Policy Studies (PIPS) to develop an off-lead, remotely-commanded, IED detection canine capability for the U. S. Marine Corps Infantry through the Marine Corps Warfighting Laboratory (MCWL). We assessed the necessary requirements and demands of such dog to support Marine Corps Infantry without presenting any but the most minimal additional operational burden and no reduction in the combat capability of the combat infantry squad. This actually did begin as very much a systematic development project, but based on the assessed capability of the prototype dog, the Marine Corps requested that Marine Infantrymen be trained ASAP to operate these dogs and for them to be deployed to Iraq. The development of this capability, designated as the *Improvised Device Detection (IDD) Dog*, utilized the full complement of Auburn University resources to include our College of Veterinary Medicine, Sports Medicine Center, which developed a nutrition and conditioning program that made the dogs capable of working in the extreme conditions hour-for-hour with the Marine Combat Squadrons with which they were deployed.

This program is an example, as is very often the case, of the development of a technology for military purposes that has direct and immediate application in homeland security: In this case, providing the first responder with a means for stand-off detection of explosives through use of a remotely controlled dog. First responders and the Marine Corps Infantry share the need of two critical characteristics of the IDD canine capability: Stand-off, remotely guided detection to increase the distance, and thus safety, between the first responder and public from a potential threat; and rapid screening of relatively large areas.

In closing, I would again like to commend the Committee on the attention it has given canine detection. I can report that such attention has already had very positive effects in

the canine detection field. I believe it is very worthy of the attention of Congress and support this contention with the fact that the numerous scientists and engineers involved in the development of detection technology I have encountered over the years, without exception, acknowledged that the well trained dog and handler team is by far the “gold standard” of capability by which all other detection technology is judged. We are honored by you visiting our facility and I am very grateful for the privilege of testifying before you today. I would be pleased to answer any questions you may have of me.

Supplemental Sheet
for

Testimony Provided to The House Committee on Homeland Security's Subcommittee on
Management, Investigations, and Oversight
on
Training of Rural First Responders

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Summary of Testimony

The testimony provides insight into problems associated with canine breeding and procurement within the working dog industry that directly supports rural first responders. It offers a solution for breeding and preparing exceptional detector dogs to meet the nation's needs through selective breeding and an engineered development of detector dogs. Additionally, the testimony describes the overall lack of a comprehensive canine program education within the industry and suggests the need for further working dog research based on recent successes that were not fully explored.