Why?
War on terror taking a toll on bomb dog supply

Jason Sickles, Yahoo
Yahoo News
March 25, 2016

Click image for more photos of bomb dogs. Above, TSA explosives detection handler Diego Villanueva and his dog Josie train at the Atlanta airport in December. (AP/John Bazemore)

The now ubiquitous surveillance image of the Brussels suicide bombers strolling through the airport corridor is enough to instill fear in anyone with plans to fly.

In the U.S., security officials are partly depending on bomb-sniffing dogs to thwart similar terror plots.

Since the 9/11 attacks, the number of canines deployed to protect the nation’s busiest airports, train stations and other transit centers has surged 400 percent.

A similar strategy is employed across the world. But the global war on terror’s ever-increasing reliance on man’s best friend is presenting a new problem — a deficit of high-quality bomb dogs.

“More developing countries are incorporating detection dog teams into their national security plan,” Cynthia Otto, executive director of the Penn Vet Working Dog Center at the University of Pennsylvania, told Congress earlier this month at a hearing on canines used for homeland security. “The demand for detection dogs has increased to the point that the quality of dogs has suffered and the price has increased dramatically.”

SLIDESHOW – Bomb-sniffing dogs at work>>>
Dogs of DHS: How Canine Programs Contribute to Homeland Security

Full Committee Hearing

March 03, 2016 10:00AM

SD-342, Dirksen Senate Office Building

INNOVATIONS IN SECURITY: EXAMINING THE USE OF CANINES

TRANSPORTATION AND PROTECTIVE SECURITY SUBCOMMITTEE

OCTOBER 3, 2017 2:00PM | RAYBURN HOUSE OFFICE BUILDING ROOM 2164

The Committee on Homeland Security, Subcommittee on Transportation and Protective Security and the Committee on Oversight and Government Reform, Subcommittee on Intergovernmental Affairs will hold a joint hearing entitled "Innovations in Security: Examining the Use of Canines." The subcommittees will hear from industry professionals and experts on the use of canines for security purposes, shortages in the supply of qualified canines, challenges to use and procurement of domestic canines, innovations in canine detection and security tasks and techniques, and efforts to improve collaboration on these issues. The panel will also discuss opportunities to expand the utility of canines at soft targets and transportation hubs throughout the country.

OPENING STATEMENTS

Rep. John Katko, R-NY, Subcommittee Chairman
Opening Statement

LIVE STREAM
How?

• Identify the phenotype for each organization

• Create a cooperative breeding program
  – Health, behavior, heritability
  – Semen collection and banking

• Create a system for raising the dogs
  – Development
    • Environmental exposure, training
  – Assessments
    • Success and career placement

• Create a system for placing the dogs
Building Domestic Explosive Detection Canine Capacity

A Stakeholder’s Meeting
Hosted by the Penn Vet Working Dog Center
April 23, 2018

• 33 representatives from:
  – Non-profits
  – Industry
  – Academics
  – Government Agencies
National Breeding Co-op Structure?

- Nonprofit partnered with Private/Government
- A National Detection Dog Center of Excellence
  - Nongovernmental organization 501c3
    - Academic Institutions, Private Industry, Nonprofits
      - Governing Board
      - Advisory Board
    - Coordinate the Breeding Co-op
    - Clearing house for distribution of dogs
    - Drive research
domestic sourcing
Agreed on:

- Dog types
  - Detection
  - Dual purpose (police)

- Opportunity for dogs to also go to service organizations if not appropriate for detection/dual purpose
Critical Topic Areas

- Genetics
- Breeding
- Puppy Raising
- Phenotype Traits
- Phenotype Testing
- Dog Placement
- Business Aspects
Survey

• 20 stakeholders

130 general responses

AKC board member, veterinarian, research/for profit trainer

Dog welfare advocate, hobbyist, veterinarian, search and rescue
Assessment, AKC support

Welfare, injury prevention, veterinary care, observer, nonparticipant (2), evaluations
Years of Working Dog Experience

- > 10 years: 50%
- 5-10 years: 20%
- 2-4 years: 10%
- <2 years: 10%
- None: 10%
1 response each: Cross breeds, Poodle, Dutch Shepherd, Golden Retriever, Jagd Terrier, Border Collie

> 3 responses: Any breed, Cross breeds, Beagle, Border Collie, Dutch Shepherd, Golden Retriever, Belgian Shepherd
Genetics Priorities?

- Shared electronic Phenotypic data repository (health and performance)
- Shared electronic Genetic data repository
- Consistent scoring schemes for data
- Teaching and support for co-op members
- Phenotypic variation to include failures
- DNA Bank
- Semen Bank
- Funding for genetic characterization
Genetics Priorities

• Consistent scoring schemes for data-1
• Phenotypic variation to include failures – S2
• Shared electronic repository for Genetic data-G2
• Shared electronic repository for Phenotypic data (health and performance) S3
• Teaching and support for co-op members-G3
Deal Breakers: Genetics

- Inadequate phenotype data to calculate EBVs
- Inaccurate/incomplete pedigree data
- Lack of funding
Breeding Priorities?

- Database to include DNA, genetics, EBVs, permanent ID
- Educational platform
- Health Standards
- Frozen semen banked
- Genetic diversity
Breeding Priorities

- **Health Standards 1**
- **Database to include DNA, genetics, EBVs, permanent ID - 2**
- **Genetic diversity – S2**
- **Educational platform - G3**
Semen Bank?

Photos from wikipedia

Photo by Annemarie DeAngelo
Breeding Priorities?

- Phenotype specification for selection
- Job specific temperament/phenotype testing
- Breeder Contract
- Puppy placement plan for dogs without work phenotype
Breeding Priorities

- Phenotype specification for selection - S1
- Job specific temperament/phenotype testing S2 G1
- Puppy placement plan for dogs without work phenotype - S3 G2
- Breeder Contract G3
Deal Breakers: Breeding stock

- Health and behavior standards not met
- Unethical breeding standards
- Lack of breeder input
- Unrealistic expectations
- Cross breeding – requiring or limiting
Deal Breakers: Breeding

- Health and behavior standards not met for puppies
- Unethical handling of puppies that don’t work
  - Must be transparent
  - Breeder involved
- “co-ownership” of breeding program
- High expense
Puppy Raising?

- Diverse environmental exposure
- Nutrition and healthcare standards
- Documented oversight
- Scheduled time table
- Regular and standardized evaluation of puppies
- Proper puppy placement with appropriate skill sets
Puppy Raising

• Adequate exercise
• Structured physical fitness program
• Formal and updated training of puppy raisers (for relevant raising programs)
• Ability to intervene early to turn around a problem health/behavior
• Independent evaluations of puppies
Puppy Raising

- Diverse environmental exposure 1
- Nutrition and healthcare standards S2
- Proper puppy placement with appropriate skill sets G2
- Adequate exercise S3
- Ability to intervene early to turn around a problem health/behavior – G3
Deal Breakers: Puppy raising

- Unethical practices
- Unsanitary/unsafe conditions
- Failure to communicate
- Lack of early training
- Harsh training methods
Puppy Raising?

- Fosters
- Prisons
- Kennel
- Professional Raisers
Puppy Raising

- Fosters 1
- Professional Raisers S1G2
- Prisons 3
Deal Breakers: Puppy raising

- Raising environment – Kennel? Volunteer?
- Lack of guidelines – too rigid of guidelines
- Lack of raiser incentives
Phenotype Traits

- Natural predation/hunt for
- Focus/trainability
- Environmental soundness
- Physical capability
- Stress resilience
- Nose/odor guided hunting ability
Phenotype Traits

- Environmental soundness 1
- Stress resilience 2
- Focus/trainability S3*G2*
- Physical capability S3*
Phenotype Testing?

- Objective evaluation of traits
- Capture target career vs actual career outcome
- Uniform/reproducible/reliable/validated tests
- Realistic implementation of tests
- Standard definition of traits
- Central data repository
Phenotype Testing

- Standard definition of traits S1
- Objective evaluation of traits S2 G1
- Realistic implementation of tests G2
- Uniform/reproducible/reliable/validated tests 3
Deal Breakers: Phenotype testing

- Refusal to collaborate
- Impractical to implement
- Lack of funding
- Refusal to allow external assessment
Dog Placement?

- Careers based on buyer need or dog skill
- Central database of available dogs with phenotype/skills
- Complete medical history
- Documented socialization
- Documented environmental soundness
Dog Placement

• Complete medical history 1
• Documented environmental soundness 2
• Documented socialization S2*
• A central database of available dogs with phenotype/skills G3
Deal Breakers: Placement

- Lack of follow up to breeders/raisers
- Failure to address needs after retirement
- Poor matching with the handler/career path
The Business side of it all

• **MUST HAVE:**
  – FUNDING!!
  – Code of ethics
  – Board of directors
  – Standards
    • Quality
    • Policies,
    • Procedures
  – Communication
    • common language
The Business side of it all

• How is it sustainable?
  – Stable product at a stable price
  – Equitable distribution of canines
  – Build on existing dog production resources
  – Incentivize quality breeders and members
  – Non-profit
The Business side of it all

Action Items

• Develop a comprehensive business plan
• Identify end users
• Identify Co-op members
• Create Mission/Vision/Value statements
• Establish a pilot program
Conclusions

• We all have to play together
Conclusions

• We need to quantify the phenotypes for each type/career of dog
Conclusions

- We need a cooperative breeding program
  - Data driven! Health, behavior, heritability
Conclusions

We need to implement SMART raising strategies to maximize success.
Conclusions

• Our dogs need to be . . .

Made in the USA
Breeding and Training

Penn Vet Working Dog Center

www.facebook.com/PVWorkingDogCenter/

https://www.surveymonkey.com/r/BreedingCo-op

www.vet.upenn.edu/wdc