

What can YOU do for the FRONTLINE (TSA's Officers in the Field) today?

Ron Molway

ronald.molway@tsa.dhs.gov

Operations Improvement Branch, Operations Performance Division, Office
of Security Operations



Transportation
Security
Administration

OFFICE OF SECURITY OPERATIONS



Operations Improvement is a Challenge

- It is tough because:
 - Increased passenger frustration;
 - Steady innovation and patience shown by adversaries;
 - Congressional direction to lower cost and increase *Security Effectiveness*;
 - Complex balance of costs, funding, passengers, threats, training, labor, technology...
- Realities are:
 - Wholesale refresh of technology is not fast
... and not all technology is suitable
 - Majority of costs are related to labor (~\$69.2K, fully loaded, x 42.5K officers)
... so we can't just add more TSOs
 - Growth in airline passenger volume not matched by increase in TSO workforce
- Need:
 - Lower the *cost of resolution* of false alarms to lower operational costs
 - Continued and *measurable* improvement in security effectiveness
- Solution:
 - Leverage a systems approach:
 - security effectiveness is a function of integrated performance
 - workforce and non-material solutions are a major part of the system

Funding is available for innovative ideas in this space to improve *Security Effectiveness*

Operations at a glance:

OSO reaches every corner of the United States and its territories, from Puerto Rico to the Pacific Islands. Each of the 77 Federal Security Director locations are shown below.



Staffing:

7
Regional Directors

 **77**
Federal Security Directors

1,256
Inspectors (Surface, Cargo, Aviation, and Canine)

362
Security Specialists-Explosives

1,126
Security Managers

31,856
Transportation Security Officers (TSO)

4,132
Supervisory TSOs

5,204
Lead TSOs

2,487
Behavior Detection

Locations:

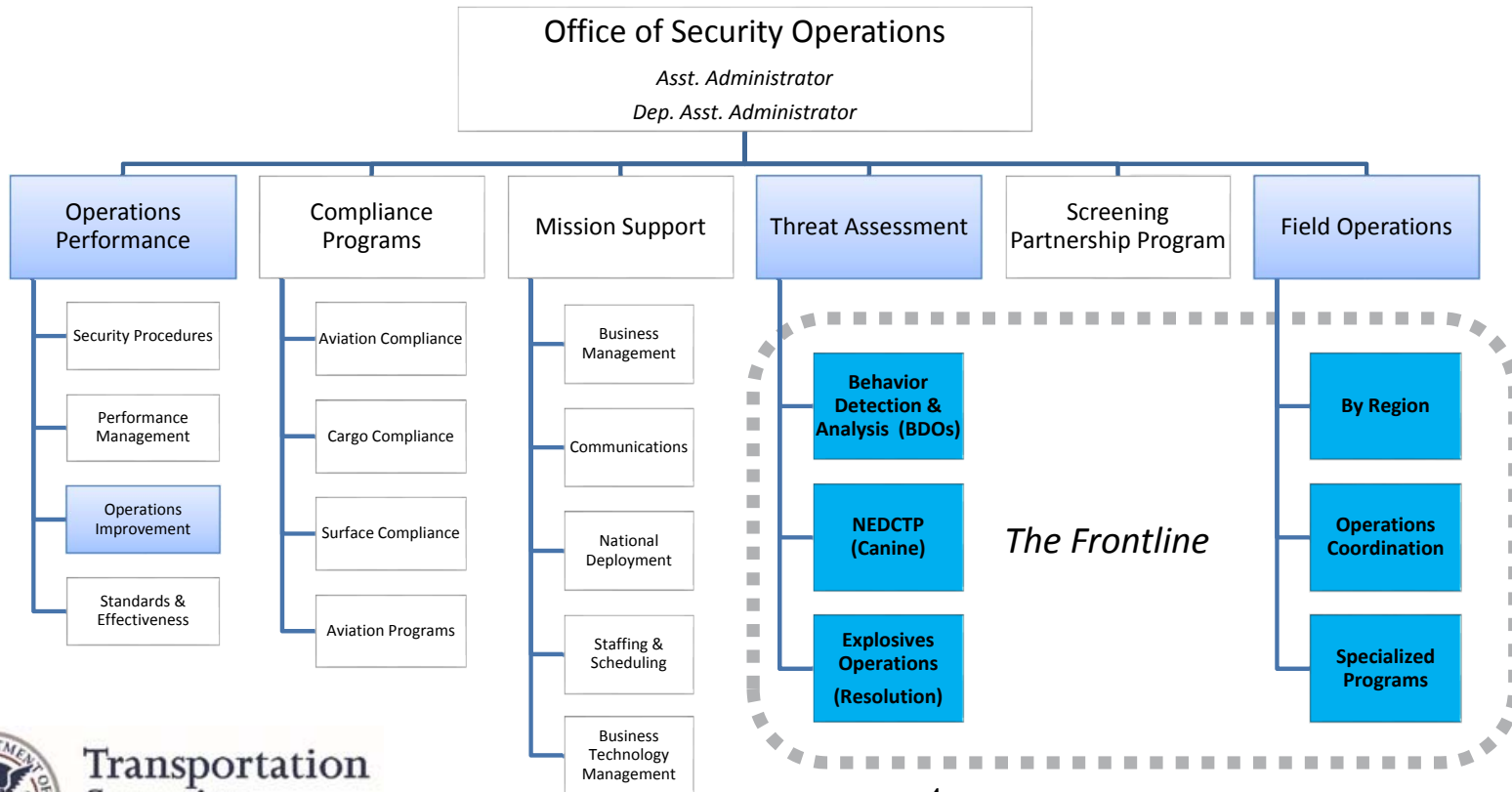
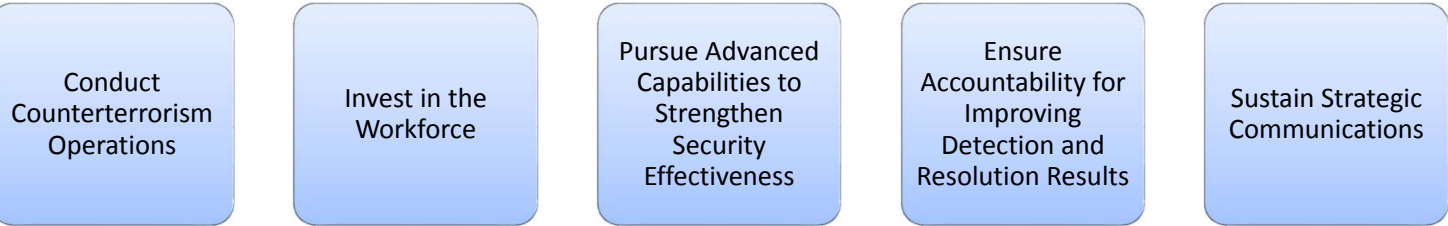
437
Airports

700
Checkpoints

Security Operations



OSO Strategic Goals



Technology Elements

How Tough Is the Screening Environment?

- In 2015¹
 - “Public Facing” agency – people see much of what we do
 - Each day, screened more than 1.9M passengers and 4.4M carry-on bags
 - 98% of passengers wait in line less than 20 minutes; 1M passengers in TSA Pre✓®; 44% of passengers received some form of expedited screening
 - 2,653 guns found at checkpoints
 - 440 federalized airports; 42,500 TSOs
- Screening relies upon a system
 - Some tools may actually complicate, rather than simplify, operations
 - Security effectiveness is a function of integrated performance

Screening Tool Bag

We need to efficiently process stream of commerce and effectively locate the threat

Technology is a tool

- Consider human factors and cognitive load
- Consider automation in screening
- Consider fused, connected and pluggable technology



Systems Approach

- Incorporates non-material elements (procedures)
- Leverage suitable technology
- Measure integrated performance

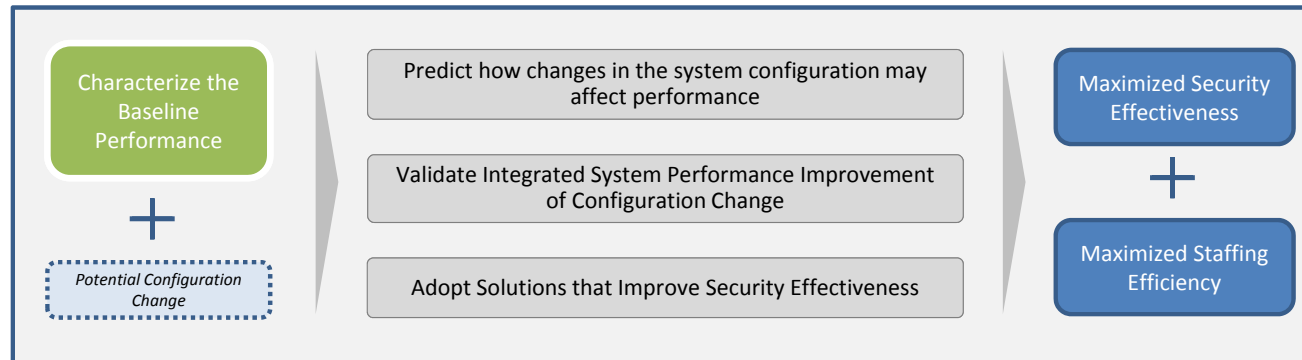
e.g. X-ray + TSO + alarm resolution, etc...



Improving Security Effectiveness



1. *Characterize the Baseline*
 - Capture how each individual technical and operational element contributes to security effectiveness
2. *Evaluate Change*
 - Understand how manipulating one element influences the behavior of other elements of the system and impacts integrated system performance
3. *Adopt and Deploy Suitable Changes; Re-baseline*



Identify System Effects

Security Layers

- Risk Based Security
- Throughput
- Non-Material Approaches

Solutions

- Complexity
- Total Cost of Ownership
- Coverage of Use Cases
- Resolution
- Exception Cases

Checkpoint Layout

- Screener Deployment
- Passenger Paths (X!)
- Equipment Placement

Equipment

- Capability & Configuration
- Human Machine Interface
- Automation
- Connectivity & Standards

A Checkpoint Team

Each team member has a crucial role to play in the checkpoint operation:

- 1. Passenger Screening Canine Team**
Specially trained canines can detect explosives odors in bags or on people.
- 2. Behavior Detection**
Actively engages passengers and observes for indicators of an imminent attack.
- 3. Travel Document Check**
Verifies boarding passes and identification documents.
- 4. Divest**
Prepares the passenger for the screening process.
- 5. X-ray**
Identifies potential explosives and other prohibited items.
- 6. Explosives Specialist**
Responds to suspicious X-ray images. Trains officers on explosives recognition.
- 7. Walk Through Metal Detector**
Screens for hidden guns, knives, and explosives components.
- 8. Advanced Imaging Technology**
Screens for prohibited items hidden on the body.
- 9. Explosives Trace Detection**
Detects the minutest particles of explosives residue.
- 10. Supervisor**
Coordinates the team and provides first-line oversight.

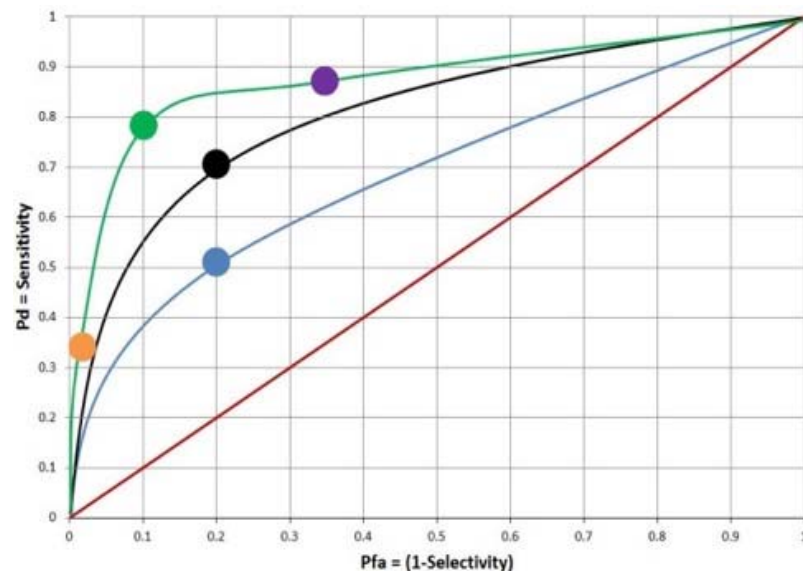


Tracking the Impact

- Ensure that the ROC curve reflects the effective integrated performance of the screening **system**, not simply of a scanner or other *subcomponent*
- We are also looking to move the ROC curve, not just shift along it
 - Adjust the sensitivity index (d')
 - Give operators the tools to be successful on a daily basis

- Behind Each Data Point
 - ...are the costs and tradeoffs incurred achieving and maintaining it
 - ...is an opportunity to demonstrate what matters; what is working, and what's not

Textbook ROC Curve Example



What have YOU done for the FRONTLINE today

1 Team, 1 SO

SECURING AMERICA'S TRANSPORTATION



SECURING AMERICA'S TRANSPORTATION



OFFICE OF SECURITY OPERATIONS