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Airport Security Measures and the Role of Less-Lethal Technologies

Presented by
Amy Truesdell



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Joseph J. Cecconi, NIJ Senior Program Manager

Study Parameters

Questions considered:

- How common are less-lethal technologies in the airport environment?
 - What is the level of knowledge of LLs in the airport environment?
 - Are there barriers to implementation of LLs in the airport environment?
 - How could LLs be best applied?
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AIRPORTS SELECTED

DCA



ATL



ONT



LAX



JFK



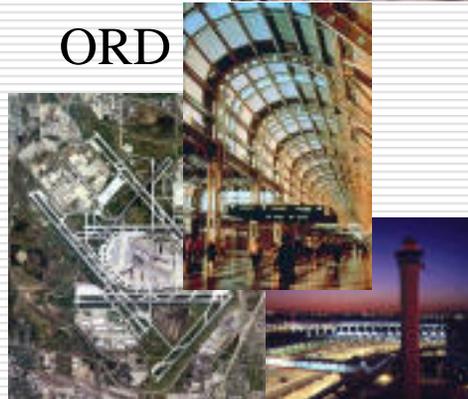
IAD



LGA



ORD



BWI



EWR



Study Parameters

Record of Pertinent Airport Attributes

- Terminals: number; proximity; inter-terminal connections; screening checkpoints; parking and off-loading of passengers
 - Perimeter: fencing; water vs. highway; vehicle gates; surrounding environs
 - Cargo facilities: ramp vs. drive-through
 - Critical facilities: fuel farm; air traffic control tower
 - Security: role of LEOs, airport management, TSA, contractors, exclusive area agreements
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Study Parameters

Record of Key Airport Security Concerns

- Perimeter
 - Critical Facilities
 - Cargo
 - Connections to the Terminals
 - Unruly passenger
 - Employee integrity
 - Suicide bombers
 - MANPADS
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Mapping Technologies to Airports

Starting Point Assumptions:

- Less-lethals to be part of layered defense
 - Surveillance, detection, access control, unmanned robotic systems all examples of complementary technologies
 - Not all security concerns lend themselves to LL solutions
 - Recommendations did: take into account potential users and locations of use; and encourage widest array of LL solutions without constraint by financial or technology maturity considerations
 - Full analysis of policy, operational, human effects, decontamination, and other concerns a prerequisite before adoption – testing within working environment a must
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Example Recommendations

	Vehicle-arresting						Area security/ Counter-personnel						Personal Use								Infrastructure -mounted					
	X-Net	PVAB	CATSLAW	Delta Barrier	Jaycor Auto-Arrestor	Slippery Agents	TAPM	MCCM	Slippery Agents	LRAD/HIDA	LVOSS	RGES/Sea Fence	12-gauge single projectiles	12-gauge multiple projectiles	37 mm/40 mm single projectiles	37mm/40mm multiple projectiles	Sticky Shocker	12-gauge TASER	TASER	Marking/ Taggants	Pepper Foam	Sage chemical irritant projectiles	FN 303 chemical irritant projectiles	Microwire/netting barrier	Laser-Dazzle Portal	TASER Sentinel
Status*	B	B	A	A	C	B	C	B	B	B	B	B	A	A	A	A	C	C	A	A	A	A	A	C	C	C
Term.												X					X	X	X	X	X		X			
Cargo Areas																										
Crit. Facil.	X	X		X					X			X		X		X	X	X				X	X			
Pmtr.	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X		X	X			

* A - commercial off-the-shelf B - available through special order C - in research and development

Concluding Thought:

The right weapon + the right person +
the right time = effective security

Backup Slides

Mapping Technologies to Airports

Pertinent Technologies Reviewed

- *Active Denial System*: directed energy technology developed by the Air Force Research Laboratory's Directed Energy Directorate
 - *Advanced Tactical Laser*: high-energy airborne laser system developed by Boeing
 - *Auto-Arrestor*: electrical pulse vehicle-arresting technology developed by Jaycor
 - *Burst Illumination Laser*: thermal imaging technology used for maritime applications, developed by QinetiQ
 - *CATSCLAW*: tire deflating retractable blade system developed by CATSCLAW International
 - *Cerberus*: underwater swimmer detection technology developed by QinetiQ
 - *CS/CN grenades and rounds*: developed by Combined Tactical Systems, Defense Technology Federal Laboratories, Sage Control Ordnance
 - *Cyclops*: suicide bomber detection technology developed by QinetiQ
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Mapping Technologies to Airports

Pertinent Technologies Reviewed

- *Delta barriers*: permanent or portable vehicle-arresting barriers developed by Delta Scientific
 - *Flash-bangs*: diversionary devices emitting sound and light, developed by Combined Tactical Systems, Defense Technology Federal Laboratories, ELABS Inc., Nico Pyrotechnik, Pyrotechnic Specialties Incorporated, and Scientific Applications and Research Associates Inc.
 - *FN 303*: less-lethal launcher system capable of firing kinetic energy, paint, and OC rounds, developed by FN Herstal
 - *High Intensity Directional Acoustics*: developed by American Technology Corporation
 - *Laser-Dazzler*: disorienting light source, different versions developed by QinetiQ, and LE Technologies
 - *Light Vehicle Obscuration Smoke System*: used by U.S. Army
 - *Long Range Acoustic Device*: developed by American Technology Corporation
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Mapping Technologies to Airports

Pertinent Technologies Reviewed

- *MagnumSpike*: tire deflation strip developed by Phoenix International Ltd.
 - *Microwires*: barrier technology concept being explored by the German Fraunhofer Institut Chemische Technologie
 - *Mobility Denial System*: slippery agents developed by U.S. Marine Corps
 - *Modular Crowd Control Munition*: multiple ball projectiles contained in a mine configuration, used by U.S. military
 - *Motivator*: pressure point device attached to flashlight, developed by TDM
 - *Pepperball projectile system*: developed by Jaycor
 - *PING*: suicide bomber detection technology developed for U.S. Air Force
 - *Portable Vehicle Arresting Barrier*: developed by General Dynamics
 - *Pulsed Energy Projectile*: pulsed chemical laser technology developed by Mission Research Corporation
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Mapping Technologies to Airports

Pertinent Technologies Reviewed

- *Running Gear Entangling System*: marine-based technology used by U.S. military
 - *Sea Fence*: marine-based netting system developed by General Dynamics
 - *Sticky Shocker*: wireless EMD technology in a 37mm or 40mm projectile, developed by Jaycor
 - *Stingball grenades and rounds*: containing multiple rubber balls developed by Combined Tactical Systems, Defense Technology Federal Laboratories, Scientific Applications and Research Associates Inc., Sage Control Ordnance
 - *Stun Baton*: electro-muscular disruption device developed by Aegis
 - *TASER*: EMD technology developed by TASER International
 - *TASER Anti-Personnel Munition*: TASER EMD technology packaged in a less-lethal mine configuration, developed by General Dynamics
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Mapping Technologies to Airports

Pertinent Technologies Reviewed

- *Tigerlight*: pepper spray-equipped flashlight developed by Tigerlight
 - *Thirty-seven mm and 40mm rounds*: including drag-stabilized, spin-stabilized, wooden, rubber, and sponge batons, and multiple-ball projectiles developed by Combined Tactical Systems, Defense Technology Federal Laboratories, MK Ballistic Systems, Nico Pyrotechnik, Sage Control Ordnance
 - *Twelve-gauge rounds*: including drag-stabilized, fin-stabilized, wooden and rubber batons, and multiple-ball projectiles developed by Combined Tactical Systems, Defense Technology Federal Laboratories, MK Ballistic Systems
 - *Webshot*: less-lethal entanglement net developed by ALS Technologies
 - *X-Net*: vehicle entangling system developed by QinetiQ
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