



The Guardians of the Embassies Present:

The MVP

DS-17: LESS THAN LETHAL: Adonis, Bella, Bonnie, and Brianna

The Problem at Hand

- **Old statement:** "On-site personnel at US embassies in the Middle East region need a Less-Than-Lethal security system that can be used multiple times in a short period of time to prevent large groups of attackers from breaching the facility."
- **New statement:** "The Department of State needs a repeatedly deployable Less-Than-Lethal security system that can be standardized across all US embassies to ensure the safety of the facility and those who work there."
- **Problems with current system (tear gas):**
 - One-time use deployment
 - After deployment, new canisters need to be installed by technician
 - Hazardous material (Black Powder and Talcum powder)
 - Not easily shippable & accepted into host nations



Quantico

Before	After
General knowledge of the role of the Marines	Learned directly from Marines about standard operating procedures on the ground & training
Vague idea of area to protect	Concrete understanding of general embassy layout & placement of security systems



MVP

LEVEL 1: Deterrence



Deter aggressive crowds outside of embassy walls through an oral warning system



LEVEL 2: Compellence



Compel crowds to leave with a combination of two Less-than-lethal systems, such as an OC Nozzle Spray and an Acoustic System



LEVEL 3: Defense



Defend embassy personnel within the chancery building through a last resort measure if intruders break through



LEVEL 1

- Location
 - Outside of the primary CAC point
- How it will work
 - Local forces employed by the US to protect embassy compound
 - Speakers relaying messages to stand down, and about the use of the security system
 - Pre-recorded messages in local language to effectively communicate
- Improvements
 - Current compound alert systems are limited
 - Descriptive and only internal
 - Require marines or a translator to manually operate it
 - Added layer of deterrence, also counteracts negative optics



LEVEL 2

➤ Location

- OC: liquid nozzle deployment "sprinkler system" placed within the ground area between the primary CAC and the hardline
- Acoustic: directed speakers mounted high-up on the chancery building at all entry & exit points

➤ How it will work

- Simultaneous deployment of acoustic & OC systems
- Sprinkler system deployment (OC w/ food-grade dye), wide range
- Controlled from Post-1

➤ Improvements

- Combined level 2 & 3 from last version into this level 3: simultaneous deployment will be more effective in disorienting attackers
- Dye for easier identification of attackers by local forces



LEVEL 3

Location

- Inside the Chancery Building
- Primary First Point of Entry
- Within the hard line (Vestibule)

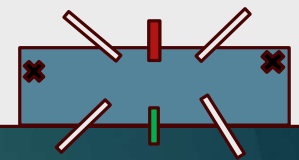
How it Will Work

- Will use Solid State Monolithic Microwave Integrated Circuit (MMIC)
- Will have a potential output of 200 Watts
- Will create an invisible impenetrable wall within the hard line
- Will be controlled by Marines in Post-1
- Will only be fired when intruders enter the hard line

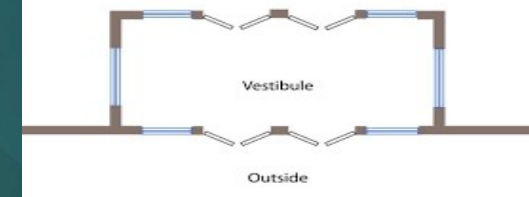
Improvements

- Strategic placement in the highest critical interior point
- Increased effectiveness due to a concentrated location
- Increased fortification of sensitive entry points

Chancery



Conditioned Space



Comparison Chart

LEVEL 2: OC

LEVEL 2: Acoustic

LEVEL 3: ADS

RANGE	Wide dispersal	Wide dispersal	Targeted
SECURITY TYPE	Physical system	Energy based	Energy based
DEPLOYMENT	Continuous dispersal	Continuous dispersal	Continuous, but controlled (pulse capabilities)
TECH. GOAL	Crowd dispersal, differentiation between attackers w/ low vs. high motivation	Disorientation, prevent coordination & communication of attackers	Total entry denial, delay final entry into chancery

What is Next?

▶ Next Research Goals:

- ▶ Food-grade dye
- ▶ Sprinkler system nozzle types/design
- ▶ Acoustic system technology specifics
- ▶ Sprinkler system reserves, calculating amount needed

▶ Continuing interviews w/ diverse fields of specialists

▶ Experimental trials to test effectiveness under a variety of conditions

- ▶ Understand how distance & wind impact efficacy of this system

