Alliant Techsystems (ATK)

Transformation of M139 VOLCANO to The Objective Force

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Volcano’s Mission

• Mine canister provides rapid emplacement of anti-armor minefield in all types of terrain
• Designed for modularity & maximum commonality between systems
• System components can be interchanged between dispensing vehicles
Volcano Mission Sequence

Launch

Start Dispense

Emplacement

Arm (2–4 minutes)

Mine Function

$T_1$

4 hours
Self Destruct

$T_2$

48 hours
Self Destruct

$T_3$

15 days
Self Destruct

Timeline
M139 Subsystems

- Subsystems are evolving in response to future needs & requirements

- The FCS (Future Combat Systems) program demands new technology with more multi-mission and multi-response flexibility

Dispenser Control Unit (DCU)  Launcher Racks  Munitions (Mine & Canisters)
M139 Transformation

- Upgrades will transform M139 to the Objective Force

**Munitions**

- R&D efforts underway:
  - Improved Electronics
  - Canister to Mine Communications
  - Mechanical S&A to Electronic S&A Redesign

**Vehicle / Aircraft Launcher Racks**

- Volcano Light (HMVWW)

**Control Units**

- Launcher Control Unit (LCU)
Launcher Control Unit (LCU) Upgrade

• Development Contract DAAE30-02-C-1124
LCU’s Features

- Micro-Processor version of DCU
- Fully Programmable
- Software Controlled

- Built-in Manuals
- Built-in Maintenance Self-Tester
- Upgradeable
LCU’s Features (con’t)

Commonality with the DCU
• Fits existing Pallet Assembly Interfaces and Shipping Container
• Uses same Rack Cables
• Connectors and spacing between connectors are the same
• Electrical characteristics consistent with DCU

Enhancements
• Ruggedized Laptop (Tablet)
  • Touch Screen Controls – Linux operating system & C++ Code
  • Volcano Operators Manual embedded – visual displays
  • Removable – for easy Volcano setup
• Global Positioning System
  • Establish Minefield Coordinates (4 corners are calculated)
  • Better Control of Minefield Density
• Built in Maintenance Self Tester (MST)
• Expandable for Future Systems
## Improvement Steps for Transformation

1. Upgrade M139 Launcher Control Unit (LCU)
   - Increases Today’s Tactical Effectiveness
2. Modify LCU for Volcano Light (HMMWV)
   - Provides capability for the SBCT & Light Fighters
3. Utilize upgrades for Towed Volcano (HEMMT-LHS)
   - Provides rapid deployment of munitions from a M1 flatrack
4. Complete M139 modifications for FCS Deployment of:
   - Munitions & C2 Nodes
   - Unattended Ground Sensors
   - Non-Lethal Delivery
   - Extended Range Delivery of all payloads

### Today At War

[Image of M139 Dispenser Control Unit (DCU)]

### M139 Platforms

- Launchers for M87A1 Munitions

### Transforming

[Image of M139 Launcher Control Unit (LCU)]

### LCU Platforms

- Launchers for Intelligent Munitions and Unattended Ground Sensors

### FCS-Unmanned Systems

### FCS Manned Systems
Questions?

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