Force Projection Technology Overview

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Associate Director
Force Projection Technology

12 AUG 11
**FORCE PROJECTION TECHNOLOGY OVERVIEW**

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U.S. Army TARDEC, 6501 E.11 Mile Rd, Warren, MI, 48397-5000

**DISTRIBUTION/AVAILABILITY STATEMENT**
Approved for public release; distribution unlimited

**SUPPLEMENTARY NOTES**
Briefing to local SAE international office.

**ABSTRACT**
N/A

**SUBJECT TERMS**

Force Projection Technology (FPT) MISSION

- AR 70-12: Serve as the DoD responsible agent for all ground fuels and lubricants specifications

- AR 700-136: Lead Lab for Water Supply and Wastewater Treatment

- Software National Depository Authority for the US Army on Military Load Classification for bridges, ferries, rafts, and vehicles

- Execute total life cycle engineering for:
  - Fuel Handling & Quality Surveillance Equipment
  - Water Purification, Handling, & Quality Equipment
  - Material Handling Equipment
  - Tactical Military Bridging
  - Combat Engineer (Construction) Equipment
  - Mechanical Countermine & Counter IED Equipment
  - Fuels and Lubricants

- Respond to MANSCEN (EN) and CASCOM (TC,QM) needs

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Excellence in Force Projection Technology

Water Supply
- AR 70-12 lead for ground fuels & lubes
- Lead DOD lab for water technology
- Military Load Classification
- International involvement
- Shaping requirements
- Component development & test

POL Technology
- Preservation
  - Combustion
- Transmission
- Hydraulics
- Condition Based Maintenance
- Engines
- Radiators

Potential Applications
- Nano-chemistry
- Petroleum Supply
- Mechanical Countermine
- Labs & Facilities
- Combat Engineering and Material Handling Equipment

Bridging
- Semi-autonomous control
- Overload and Rollover Prevention Sensors
- Hydraulic Hybrid Regeneration

Labs & Facilities
- ROWPU
- Erdlator
- Mobile Purification Unit

Bridging
- Basic Building Blocks (Optimum Design)
- MGB
- SLED
- AVLB
- Over Load Sensors

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Technology Areas
Supporting Force Projection Technology

Water Supply

Next Generation Technologies
- Alternative Fuels
- Fuel Additive Technologies
- Fuel Efficient Powertrain Lubricant
- Nanotechnology for Fuels and Lubes
- Water from Air
- Water Reuse
- In-line Water Monitoring
- Fuel and Water Remote Quality and Quantity Surveillance
- Mechanical Countermine Increased Stand-off
- Mechanical Countermine Increased Mobility
- Structural Health Monitoring of Bridging
- Rapid Military Load Class Determination
- High Performance Materials for Lightweight Bridging & POL Storage Applications
- Priority Hydraulic System Combat Engineer (CE) & Hydraulic Hybrid Material Handling Equipment (MHE)
- Semi-Autonomous: CE, MHE, Bridging, Mechanical Countermine

POL Technology

Potential Applications
- Preservation
- Combustion
- Axles
- Transmissions
- Hydraulics
- Condition Based Maintenance
- Engines
- Radiators

Combat Engineering and Material Handling Equipment

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**POL Technology Program**

**Purpose:**
Provide superior and safer POL products that reduce logistic burden, maintenance requirements, and reduce fuel consumption.

**Products:**
- Fire Resistant Fuel, Single Common Powertrain Lube (SCPL) in the Battlefield,
- Nano Lubricants and Fluids, Coolants that minimizes overheating occurrences,
- Additive to enhance field available products, Biobased fluids, Long life fluids

**Payoff:**
- Reduce warfighter maintenance effort
- Reduce waste products
- Increase heat transfer of fluids to avoid overheating
- Increase fuel economy thus reducing volume of fuel needed or increasing range.
- Deploy Arctic-to-Desert without changing fluids

**Schedule & Cost**

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<th>MILESTONES</th>
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Purpose:

Products:
• Water from Air System
• Real-time in situ or hand held water quality monitoring tools
• Water reuse systems
• Remote monitoring and asset visibility.
• Advanced, scalable water purification systems with new pretreatment, desalination and post treatment technologies.

Payoff:
• Reduces the logistical footprint associated with water storage and distribution.
• Improve production and reliability while reducing weight and logistics
• Improve force protection and response to threat agents
• Transitions to PM FCS (BCT) and/or PM PAWS.
FPT - Water Reuse

Purpose:

• Develop and integrate multiple technologies to produce compact, mobile, energy efficient systems capable of rapid start up that can eliminate black water and treat gray water to a level that enables reuse for non-potable applications.

The effort does this by identifying technology with the ability to implement energy from waste techniques and eliminate consumables and fouling.

Products:

• A stand-alone wastewater treatment system
• A wastewater reuse technology that can be integrated into current CSS equipment to include:
  • Water Purification Systems
  • Shower and Laundry Systems
  • Field Feeding and Medical Systems

Payoffs:

• Reduces transportation assets required to haul wastewater and provide potable water
• Improves force protection at base camps
• Reduces health risks from wastewater associated vectors
• Supports the expeditionary base camp initiative

Total: $7.6M

FY11 FY12 FY13 FY14 FY15 FY16 FY17

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$7.6M Total Program

Updated: 14 Jan 11

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