2005 TACOM APBI

“Partnering to Reset, Recapitalize, and Restructure the Force”

Dearborn, MI

26-28 October 2005

Agenda

Thursday, 27 October 2005

TACOM Address, by MG William M. Lenaers, USA, Commanding General, TACOM
Keynote Speaker, by LTG Joseph L. Yakovac, Jr., USA, Military Deputy, Assistant Secretary of the Army (Acquisition, Logistics & Technology
Acquisition Address, by Mr. Daniel G. Meheey, Director for Acquisition, TACOM
Ground Systems Industrial Enterprise (GSIE) Business Opportunities, by Mr. Frederick Smith, Deputy for Ground Systems Industrial Enterprise
Tank Automotive Research, Development & Engineering Center (TARDEC), by Dr. Richard E. McClelland, Director, TARDEC

Breakout Sessions:

- USA TACOM LCMC - Path forward for heavy-duty Diesel Engines & Engine Emissions, Dr. Peter Schihl & Pam Khabra, TARDEC
- Defense Priorities & Allocation System (DPAS), by Liam McMenamin, Department of Commerce & Joseph Tappel, AMC (DPAS) and International
  Trafficking and Arms Regulations (ITAR), by Chuck Schwingler, State Department (ITAR)
- Public-Private Partnerships (P3), Rick Riney, AMC Industrial Base Capabilities
- Collaborative Planning and Forecasting for Replenishment (CPFR), Pat Dempsey-Klott, Integrated Logistics Support Center

Friday, 28 October 2005

Program Executive Office, Ground Combat Systems, Significant Acquisition Program Opportunities, by Mr. Kevin Fahey, Program Executive Officer, Ground
Combat Systems

Program Executive Office, Combat Support & Combat Service Support, Significant Acquisition Program Opportunities, by BG John Bartley, Jr., USA, Combat
Support & Combat Service Support

Integrated Logistics Support Center (ILSO), Significant Acquisition Program Opportunities, by Mr. Darryl Blackburn, Acting Director, ILSO

Program Manager, Unit of Action Business Opportunities, by Mr. John F. Kelley, Director, Supply Management & Procurement, Future Combat Systems, Boeing
Company
2005 TACOM APBI

Partnering to Reset, Recapitalize, and Restructure the Force

October 26 – 28, 2005
Hyatt Regency Dearborn, MI

Revised Agenda and List of Attendees.
"Partnering to Reset, Recapitalize, and Restructure the Force."

Welcome to the 2005 TACOM APBI. This year’s APBI will provide broad based business planning information to industry relating to future tank-automotive and armament plans, programs and acquisition opportunities. TACOM, the Program Executive Officers (PEOs), and other appropriate tank-automotive and armament organizations will present market opportunities and plans to include research and development efforts, procurement of major end items, secondary items, maintenance, and other system support business. This event will also describe Acquisition Streamlining initiatives and other topics of special interest.

Wednesday, October 26, 2005

5:00 p.m. – 7:00 p.m. Check-in & “Ice Breaker” Reception
Hubbard Foyer

Thursday, October 27, 2005

7:00 a.m. – 8:30 a.m. Check In & Continental Breakfast
Hubbard Foyer

General Session: Hubbard Ballroom

8:30 a.m. – 8:35 a.m. Welcome and Opening Remarks
APBI Co-chairperson

8:35 a.m. – 9:15 a.m. TACOM Address
MG William M. Lenaers, USA
Commanding General, TACOM

9:15 a.m. - 9:20 a.m. Intro to Keynote Speaker
MG William M. Lenaers, USA
Commanding General, TACOM

9:20 a.m. – 10:00 a.m. Keynote Speaker
LTG Joseph L. Yakovac, Jr., USA
Military Deputy, Assistant Secretary of the Army
(Acquisition, Logistics, & Technology)

10:00 a.m. –10:30 a.m. Coffee Break

10:30 a.m. – 11:00 a.m. Acquisition Address
Mr. Daniel G. Mehney
Director for Acquisition, TACOM

11:00 a.m. – 11:30 a.m. Ground Systems Industrial Enterprise (GSIE) Business Opportunities
Mr. Frederick Smith
Deputy for Ground Systems Industrial Enterprise (GSIE)
The balance of the afternoon sessions will be devoted to breakout sessions.

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 1</th>
<th>Session 2</th>
<th>Session 3</th>
<th>Collaborative Planning and Forecasting for Replenishment (CPFR)</th>
</tr>
</thead>
</table>
| 11:30 a.m. - 12:00 noon | Tank Automotive Research, Development & Engineering Center (TARDEC) Tech Base  
                        | Dr. Richard E. McClelland  
                        | Director, TARDEC          | Integrated Logistics Support Center (ILSC),  
                        | Regency A-K               | Pat Dempsey-Klott         |
| 12:00 noon - 1:30 p.m. | Lunch                      |                          |                            |                                                              |
| 1:30 p.m. - 2:30 p.m. | USA TACOM LCMC Path Forward for Heavy-Duty Diesel Engines & Engine Emissions  
                        | TARDEC  
                        | Dr. Peter Schihl & Pam Khabra | Department of Commerce, Liam McMenamin & Joseph Tappel AMC (DPAS)  
                        |                                                           | State Department, Chuck Schwingler (ITAR)               | AMC Industrial Base Capabilities,  
                        |                                                           | Rick Riney                                                | Integrated Logistics Support Center (ILSC),  
                        |                                                           | Pat Dempsey-Klott                                        | Pat Dempsey-Klott         |
| 2:30 p.m. - 3:00 p.m. | Coffee Break               | Coffee Break              | Coffee Break               | Coffee Break                                                 |
| 3:00 p.m. - 4:00 p.m. | TARDEC  
                        | Dr. Peter Schihl & Pam Khabra | Department of Commerce, Liam McMenamin & Joseph Tappel AMC (DPAS)  
                        | State Department, Chuck Schwingler (ITAR)  
                        | AMC Industrial Base Capabilities,  
                        | Rick Riney                                                  | Integrated Logistics Support Center (ILSC),  
                        | Pat Dempsey-Klott                                        | Pat Dempsey-Klott         |
| 4:00 p.m. - 4:30 p.m. | Coffee Break               | Coffee Break              | Coffee Break               | Coffee Break                                                 |
| 4:30 p.m. - 5:30 p.m. | TARDEC  
                        | Dr. Peter Schihl & Pam Khabra | Department of Commerce, Liam McMenamin & Joseph Tappel AMC (DPAS)  
                        | State Department, Chuck Schwingler (ITAR)  
                        | AMC Industrial Base Capabilities,  
                        | Rick Riney                                                  | Integrated Logistics Support Center (ILSC),  
                        | Pat Dempsey-Klott                                        | Pat Dempsey-Klott         |
Thursday, October 27, 2005 (continued)

There will be three one-hour sessions. The same four topics will be presented each session. The times for these sessions are denoted below. Breakout topics are listed below. A floor plan designating specific rooms for each session is available on the back of the next page.

1:30 p.m. – 2:30 p.m. Breakout Session One
2:30 p.m. – 3:00 p.m. Coffee Break
3:00 p.m. – 4:00 p.m. Breakout Session Two
4:00 p.m. – 4:30 p.m. Coffee Break
4:30 p.m. – 5:30 p.m. Breakout Session Three

Break-out Session Descriptions

**U.S. Army TACOM LCMC Path Forward for Heavy Duty Diesel Engines and Engine Emissions** - This session addresses the impact of current and future heavy-duty emission standards on the Army tactical ground vehicle fleet along with future potential solution pathways.

**Defense Priorities & Allocation System (DPAS) and International Trafficing and Army Regulations (ITAR)** - This workshop addresses the following two areas:

DPAS - This part addresses the purpose of the DPAS program as it pertains to both the production and delivery of urgently needed military hardware and the viable tools for obtaining Special Priorities Assistance. Also, it will provide insight on how to obtain preferential scheduling over either higher rated orders or equally rated orders already scheduled in the manufacturing scheme.

ITAR - This part provides an explanation of the Registration process and the legal and regulatory process governing the export /import of unclassified production, articles, technology, using the Canadian Exemption (22CFR 126.5) combined with the recordkeeping requirements.

**Public-Private Partnerships (P3)** - This session will explain what the Public-Private Partnership initiative is, its purpose, and DoD’s plans to increase participation.

**Collaborative Planning and Forecasting For Replenishment (CPFR)** - CPFR is an industry standard for exchanging information amongst supply chain partners. This session will focus more on collaboration between Government and supplier relating to joint requirements planning and forecasting in order to shorten lead times and maximize production capacity, resulting in improved responsiveness to the Soldier.

5:30 p.m. – 7:00 p.m. Networking Reception
Hubbard Foyer
2005 TACOM APBI

**Friday, October 28, 2005**

7:00 a.m. – 8:30 a.m. Check In & Continental Breakfast
Hubbard Foyer

**General Session: Hubbard Ballroom**

8:30 a.m. – 8:35 a.m. Opening Remarks
APBI Co-chairperson

8:35 a.m. - 9:05 a.m. Program Executive Office, Ground Combat Systems
Significant Acquisition Program Opportunities
Mr. Kevin Fahey
Program Executive Officer, Ground Combat Systems

9:05 a.m. – 9:35 a.m. Program Executive Office, Combat Support & Combat Service Support
Significant Acquisition Program Opportunities
BG John Jr., Bartley, USA
Combat Support & Combat Service Support

9:35 a.m. – 10:05 a.m. Coffee Break

10:05 a.m. – 10:35 a.m. Integrated Logistics Support Center (ILSC)
Significant Acquisition Program Opportunities
Mr. Darryl Blackburn
Acting Director,
Integrated Logistics Support Center (ILSC)

10:35 a.m. – 11:05 a.m. Program Manager, Unit of Action Business Opportunities
Mr. John F. Kelley
Director, Supply Management & Procurement
Future Combat Systems
The Boeing Company

11:05 a.m. - 11:10 a.m. Closing Remarks: Adjournment
APBI Co-chairperson

“Partnering to Reset, Recapitalize, and Restructure the Force.”
2005 TACOM APBI

Break-out Sessions

USA TACOM LCMC Path Forward for Heavy-Duty Diesel Engine Emissions - *Hubbard Ballroom*

Defense Priorities & Allocation System (DPAS) and International Trafficking and Arms Regulations (ITAR) - *Stearns/Knight*

Public-Private Partnerships (P3) - *Stanley/Steamer*

Collaborative Planning and Forecasting for Replenishment (CPFR) - *Pierce/Arrow*

"Partnering to Reset, Recapitalize, and Restructure the Force."
“Partnersing to Reset, Recapitalize, and Restructure the Force.”

Displays will feature TACOM --government only -- opportunities.

TACOM Foyer Displays

1 – Problem Resolution Booth
2 – Competition Management
3 – Acquisition
4 – Small Business
5 – GSIE (Including ANAD, JSMC Lima, RIA. Sierra Army Depot, Watervliet Arsenal)
6 – Red River Army Depot (RRAD)
7 – TARDEC
8 – Integrated Logistics Support Center (ILSC)
   (Collaborative Planning and Forecasting for Replenishment (CPFR))
9 – Integrated Logistics Supply Center (ILSC)
   (Reset)

The Tank-Automotive & Armaments Command thanks you for attending
& we look forward to seeing you again next year.

The National Defense Industrial Association (NDIA) thanks you
for your participation in this year’s conference
and wishes you a safe trip home.
2005 TACOM APBI

~ Attendee Information ~

Message Center

For your convenience, a message board will be located at the TACOM APBI registration desk, located in the Lobby Foyer.

Hyatt Regency Dearborn
Fairlane Town Center
Dearborn, MI 48126
phone#: 313- 593-1234
fax#: 313-982-6884

We ask that attendees have faxes sent to the Attention of your room#, and not to the registration desk.

Conference badges are to be worn at all times during event. 
No badge = no access to ANY event venues.

In Case of an Emergency at the:

Hyatt Regency Dearborn -- Emergency, please dial 55

General Local Information:

Hospital phone# is - Oakwood (3 miles)
(313) 593-7440

Pharmacy
local (2miles)
(closes at 10:00 p.m.) Rite Aid
5016 Greenfield Rd. at
Hubbard Rd.
(313) 581-0410

Pharmacy
24 hour (4 miles)
5650 Schaefer Rd. at Ford Rd.
Rite Aid
(313) 581-3280

Police Station
Michigan State Police
Dearborn Police
(313) 348-1505
(313) 943-2241

Proceedings

A hard copy of the 3-part (General Session presentations, Break-out Session briefings, and Acquisition Summary of Estimated Future Buys) proceedings for this meeting will be made available on-site.
Surveys

We appreciate any comments or suggestions you may have regarding this event. Please return the “2005 TACOM APBI, Event #6520” Meeting Survey to the conference registration desk in the Hubbard Ballroom Foyer. If you don’t have the time to fill out the survey now, you can fax it to 703-522-1885 at your convenience.

Point of Contact Information (“List of Attendees” Corrections)

If any part of your contact information is incorrect on the “List of Attendees” included in this “Revised Agenda” hand-out, please stop by the Conference Registration desk to make note of the corrections on the “Master Copy” so we can update our database. We appreciate your letting us know of any errors.

Miscellaneous:

Security

For security purposes, we respectfully ask that you check any personal items (luggage, computer bags, coats, etc.) with the hotel bellman. You will need to present your room key and/or photo ID. The NDIA staff will not accept any of the above.

On-site at the Conference

You must carry all forms of valid photo ID and necessary paperwork (Corporate POC letters, passport, etc.) with you at all times.

Revised Agenda Hand-out

Please write your name at the top of your “Revised Agenda” handout. A limited number of the handouts were made to have one (1) for each registered attendee. If you lose your handout, the registration desk will not be able to give you a replacement until the conclusion of the conference.

Cell Phones/Beeper Usage

We respectfully ask that you turn off your cell phones, beepers, etc. (or turn them to “vibrate”), out of courtesy to the conference speakers and your fellow attendees.

Hotel Parking

Self-parking (outdoor) is complimentary for hotel guests and symposium attendees. Valet parking is available at the main lobby entrance of the hotel. The valet parking fee is $7.00 for the day & $15.00 for overnight parking, with in & out privileges.
### Airport Transportation/Taxis

**From Detroit Metro Airport:**
- **Taxi:** Approx $25-$30 for 1-4 persons
- **Sedan (Lincoln Town Car):** $39 for 1-4 persons
- **Van:** $10 per person for a party of 5 or more
- **Limousine:** $75.00 (Up to 8 passengers)

**To Detroit Metro Airport:**
- **Taxi:** Approx $25-$30 for 1-4 persons
- **Sedan (Lincoln Town Car):** $29 for 1-4 persons
- **Van:** $10 per person for a party of 5 or more
- **Limousine:** $75.00 (Up to 8 passengers)

**Transportation via Sedan, Van, & Limo available:**

Mon-Thu 10am-10pm, Fri & Sat 10am-9pm, Sun 11am-10pm. Contact the Concierge for reservations.
2005 Advanced Planning Brief to Industry

PEO CS&CSS and Industry Challenges

Presented by:
BG JOHN R. BARTLEY
Program Executive Officer
Combat Support & Combat Service Support
Agenda

- Portfolio & Organization
- Mission and Vision
- Project Management Offices/Direct Report Product Management Offices
  - Overview
  - Technology Challenges
  - Opportunities for Industry
- Summary
PEO CS&CSS Portfolio & Organization

Program Executive Officer
BG John R. Bartley
Deputy PEO
Dr. Grace Bochenek

Force Projection
PM: COL Timothy Goddette
DPM: Ms. Patricia Plotkowski

Army Watercraft Systems
LTC Philip Schoenig

Bridging
LTC Jerry Winberry

Combat Engineer/Material Handling Equipment
LTC Carol Solesbee

Force Sustainment Systems
LTC Craig Rettie

Petroleum & Water Systems
LTC Francisco Espaillat

Recovery Vehicle Management Office
Mr. Bill Madro

Test, Measurement, & Diagnostic Equipment
LTC Dwayne Morton

Sets, Kits, Outfits & Tools
LTC Jeff Carr

Tactical Vehicles
PM: COL Scott Kidd
DPM: Mr. Tony Shaw

Heavy Tactical Vehicles
LTC Lisa Kirkpatrick

Light Tactical Vehicles
LTC Kevin Peterson

Medium Tactical Vehicles
Mr. David Dopp

Program Executive Officer
PEO CS&CSS DA Systems Coordinators

Warren, MI
Natick, MA
Rock Island, IL
Washington, DC

Huntsville, AL

28 Oct 05
Innovation for Today’s Expeditionary Forces…

- Gunner Protection Kit (GPK) Installations
- Sherpa Guided Airdrop
- Armor Installations
- Cooling Vests
- Improved Seat Restraints
- Combined Laundry & Shower Facilities (LADS)
- Unique Bridging Solutions
- Sprung Shelters
- Containerized Kitchen
- Force Provider
- TSV Mission

ASV
Cougard
RG31
Buffalo
Fire Suppression
Gunner Restraint System
RTCH
Innovation for Tomorrow’s Expeditionary Forces

“Connect” our Logisticians

- Wireless Diagnostic Sensor
- Digital Backbone
- C4I - EMPRS
- C4ISR
- Communications to CLOE (VCS)

Modernize Theater Distribution

- Multi-Temperature Refrigerated Container System
- Precision Airdrop
- Improved Load Handling
- UV/MSV System Acquisition Concepts
- Trailer Strategy Concept
- RIFTS

Improve Force Reception

- Long Term Armor Strategy
- WRUE
- On-Board Vehicle Power
- Rapid Repower
- MSD

Integrate the Supply Chain

- IETMS
- PLS w/ASLMS

Equipment rarely breaks – When it breaks, it’s easy to fix
- Self-diagnostics and reporting
- Few tools, repairs < 20 min
- Common parts/carry spares
MISSION
Develop, acquire, field, and support materiel solutions that optimize the “System of Systems” approach to project and sustain joint forces worldwide.

VISION
Recognized Experts in Commercial Off-The-Shelf (COTS) & Non Developmental Items (NDI) (CaNDI) Acquisition, Logistics and Technology.

Project Manager
COL Timothy Goddette

Deputy PM Acquisition: Ms. Patricia Plotkowski
Deputy PM Logistics: Ms. Janet Bean
Deputy PM Technology: Mr. Jack Peterson

PRODUCT MANAGERS
- Army Watercraft Systems
  - LTC Philip Schoenig
- Combat Engineer/Material Handling Equipment
  - LTC Carol Solesbee (ARNG)
- Force Sustainment Systems
  - LTC Craig L. Rettie
- Petroleum and Water Systems
  - LTC Francisco Esparllat (USAR)
- Bridging Equipment
  - LTC Jerry Winberry (ARNG)

PRODUCT OFFICES
- Recovery Management Office
  - Mr. William Madro
## PM Force Sustainment Systems

### 43 Systems

- **Advanced Low Velocity Airdrop System (ALVADS)**
- **Army Space Heater (ASH)**
- **Assault Kitchen (AK)** • **Priority 2**
- **Authorized Stockage List Mobility System (ASLMS)**
- **Battlefield 12-Head Shower**
- **Containerized Battle Laundry (CBL)**
- **Containerized Kitchen (CK)**
- **DoD Combat Field Feeding Program (6.4/6.5)**
- **Dual Row Airdrop System (DRAS)**
- **Enhanced Container Delivery System (ECDS)**
- **Extraction Parachute Jettison System (EPJS)**
- **Family of Cargo Bed Covers (CBCs)**
- **Food Sanitation Center (FSC)** • **Priority 1**
- **Force Provider**
- **Chaplains Logistical Support Package (CLSP)**
- **Containerized Chapel (CC)**
- **Containerized Latrine System (CLS)**
- **Containerized Self-Serve Laundry (CSSL)**
- **Containerized Shower System (CSS)**
- **Electronic Shop Van (ESV)**
- **Joint Precision-Guided Aerial Delivery Sys (JPADS)**
- **Kitch., Co. Level, Fld. Feeding - Enhanced (KCLFF-E)**
- **Large Capacity Field Heater (LCFH)**
- **Laundry Advanced System (LADS)**
- **Lightweight Maintenance Enclosure (LME)**
- **Low Cost Aerial Delivery System (LCADS)**
- **Mobile Integrated Remains Collection System (MIRCS)**
- **Mobile Kitchen Trailer-Improvement (MKTI)**
- **Modern Burner Unit (MBU)**
- **Modular Command Post System**
- **Modular General Purpose Tent System (MGPTS)**
- **Mounted Water Ration Heater (MWRH)**
- **Multi-Temp. Refrigerated Container System (MTRCS)**
- **Refrigerated Container System (RCS)**
- **Small Unit Shower (SUS)**
- **Soldier Crew Tent (SCT)**
- **Space Heater Arctic (SHA)**
- **Space Heater Convective (SHC) 35K BTU**
- **Space Heater Convective (SHC) 60K BTU**
- **Space Heater: Large, Medium, Small**
- **Tent Extendable Modular PERsonnel (TEMPER)**
- **Thermoelectric Fan (TEF)**
- **Ultra Lightweight Camouflage Net Sys. *(ULCANS)**

## PM Army Watercraft Systems

### 11 Systems

- **115 Ton Barge Derrick**
- **Landing Craft Mechanized (LCMB) Mod II**
- **Landing Craft Utility (LCU) 2000 Material Change**
- **Large Tug (LT) 128’ Modernization**
- **Logistics Support Vessel (LSV) Reprocurement**
- **Modular Causeway Systems (MCS)**
- **Small Tug 900 (ST900)**
- **Theater Support Vessel - Interim**
- **Harbormaster Command and Control Center ** • **Priority 1**
- **C4I Upgrade**
- **UNDS**

## PM Petroleum & Water Systems

### 16 Systems

- **Tactical Water Purification System (TWPS) 1500 GPH**
- **Reverse Osmosis Water Purification Unit (ROWPU) 600 GPH**
- **Advanced Aviation Forward Area Refueling System (AAFARS)**
- **Assault Hoseline System (AHS)**
- **Fuel System Supply Point (FSSP)**
- **LHS Compatible Water Tank Rack (Hippo)**
- **LHS Modular Fuel Farm (LMFF)** • **Priority 2**
- **Lightweight Water Purifier (LWP)**
- **Modular Base Petroleum Lab (MBPL)**
- **Petroleum Quality Analysis System (PQAS)**
- **Petroleum Test Kit (PTK)**
- **Rapidly Installed Fluid Transfer System (RIFTS)** • **Priority 1**
- **Tactical Petroleum Terminal (TPT)**
- **Unit Water Pod System (Camel)**
- **Versatile Tank and Pump Unit (VTU)**
- **Forward Area Water Point Supply System (FAWPS)**

## Recovery Vehicle Management Office

### 2 Systems

- **M88A1 Medium Recovery Vehicle RECAP**
- **M88A2 HERCULES**

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**PM Bridging**

### 14 Systems

- **Bridge Erection Boat (BEB)**
- **Common Bridge Transporter (CBT)**
- **Dry Support Bridge (DSB)**
- **Improved Ribbon Bridge (IRB) Bays**
- **Rapidly Emplaced Bridging System (REBS)**
- **RG31 Mine Protected Vehicle**
- **Buffalo Mine Protected Vehicle**
- **Cougar Mine Protected Vehicle**
- **LMM Mine Protected Vehicle**
- **AVLB – Armored Vehicle Launched Bridge**
- **M9 ACE – Combat Engineer Equipment**
- **Expeditionary Assault Bridge (EAB)**
- **Bridge Adapter Pallet (BAP)**
- **Improved Boat Cradle (IBC)**

**Workgroup**

- **NATO MHE Workgroup – CE/MHE**

*MANSCEN/CASCOM Participation Joint Programs*
Army Watercraft Systems
- Integrate COTS systems software required to meet performance requirements identified in the Harbormaster Command and Control Center (HCCC).

Bridging Systems
- Develop and integrate composite bridging materials for induction into Dry Support Bridge (DSB) and next generation bridging.
- Investigate, design, develop and integrate new capabilities for Mine Protected Vehicles (MPVs):
  - Component protection
  - Vehicle frangibility
  - Blast mitigating seating
  - Roll over prevention/vehicle control stability ($V=Hull=high~CG$) high propensity to roll
  - Enhanced crew and vehicle capsule cooling system
- MS C follow on contract award FY07 for additional systems

Combat Engineering and Material Handling Equipment
- Procure commercial systems that are easily modified to become C130 transportable by meeting weight, tip-off curve and floor load distribution requirements with minimal disassembly.
- Integrate and apply technologies to meet requirements for Electromagnetic Environmental Effects (E3), High Altitude Electromagnetic Pulse (HEMP), and Nuclear, Biological and Chemical NBC Contamination while continuing operations.
- Develop propulsion systems to meet new Tier 3 EPA non-road emissions standards (a commercial requirement).
- Develop simulators and training solutions to improve institution and unit level training.
Force Sustainment Systems

- Develop smart airdrop systems using Global Positioning System (GPS), autonomous control, software integration with USAF Precision Airdrop System (PADS).
- Identify or develop alternative construction technologies and materials for parachutes that will broaden the industrial base and provide systems that are less costly and easier to maintain.
- Develop method to safely and efficiently manage, handle, treat and dispose of the waste stream (liquid and solid).
- Develop a more efficient means for the disposal of black water than collection and hauling away.
- Investigate cogeneration (energy from waste heat) for shelter heating, field feeding, and field service applications.
- Develop high efficiency insulation for refrigerated containers for reduced cooling and/or reduced wall thickness.
- Develop refrigeration technology for improved performance, reliability, and reduced environmental impact of refrigerated containers.
- Billeting subsystems are the largest component of the Force Provider System; develop expandable, rapidly deployable, and durable rigid wall shelter to replace fabric tents.
- Investigate improved ventilation and heat exchange equipment for tents.
Petroleum and Water Systems

- Develop Department of Transportation-approved lightweight liquid containers, composite tanks (500-3000 gal).
- Develop packaged water concepts.
- Develop innovative water generation technologies (from air, exhaust, etc.).
- Develop new liquid transfer technologies for movement of liquids over long distances (100-600 miles).
- Develop next generation water purification technologies.
- Develop new liquid storage concepts to replace large fabric tanks (200,000 gal and larger).
- Develop remote gauging for collapsible fabric tanks.
- Develop GPS tracking for fuel & water systems.
- Develop innovative, rugged equipment for rapid water & fuel analyses.
Force Projection ~ Opportunities for Industry

- **Army Watercraft Systems**
  - Competitive contract forecast for the Modular Causeway Systems (3QFY06).
  - Competitive contract for Harbormaster Command and Control Center (HCCC) (FY07).
  - Landing Craft Utility mods procured in 2QFY06, 2QFY07, and 2QFY08.

- **Bridging Systems**
  - Potential for competitive contract award for protection and Mine Clearing Vehicle (MCV) capabilities/new technology (2QFY07). MS C follow on award to purchase remainder of fleet requirement.
  - Competitive contract for improved/lightweight composite armor for MCV (2QFY07).

- **Combat Engineering and Material Handling Equipment**
  - Award new competitive contracts for the ATLAS II, Skid Steer Loaders (SSL), and the Heavy Grader (FY07).
  - Opportunities for increased Service Life Extension Program (SLEP) development and application on existing CE systems i.e. Dozers, Scrapers and Graders (FY07 and beyond).
Force Sustainment Systems

- Competitive contract for development and production 2,000-Pound Joint Precision Airdrop System (JPADS). (FY06 – Natick)
- Competitive contract for development and production 10,000-Pound Joint Precision Airdrop System (JPADS). (FY07 – Natick)
- Competitive contract for continuing production of the Containerized Kitchen (CK) (FY08 - Natick)

Petroleum and Water Systems

- Competitive procurement to investigate and integrate new technologies to improve Army petroleum quality and handling systems (FY07).
- Investigate high reliability components for petroleum handling equipment and storage systems (2QFY07)
- Initiate and develop improved water analysis equipment for TWPS and LWP (FY07).
- Opportunities to develop new water packaging concepts to replace bottle water (FY07).
- Opportunities to develop new liquid storage concepts and the next generation of water purification systems (FY07).
- Opportunities to develop new fuel analysis equipment (FY07).
Tactical Vehicles ~ Project Management Office

MISSION
The lifecycle management of tactical wheeled battlefield distribution systems enabling the Modular, Joint and Expeditionary Ground Force

Project Manager
COL Scott R. Kidd

Deputy PM Acquisition: Mr. Tony Shaw
Deputy PM Logistics: Mr. Cesare Gaglio
Deputy PM Technology: Mr. Paul Skalny

PRODUCT MANAGERS
- Light Tactical Vehicles
  - PM, LTC Kevin Peterson
- Medium Tactical Vehicles
  - PM, Mr. David Dopp
- Heavy Tactical Vehicles
  - PM, LTC Lisa Kirkpatrick
### PM Light Tactical Vehicles
- **M966A0, A1** - TOW Carrier, Armored
- **M966A0, A1** - 2-Litter Ambulance
- **M97A0, A1, A2** - 4-Litter Ambulance
- **M998A0, A1** - Cargo/Troop Carrier
- **M1025A0, A1, A2** - Armament Carrier
- **M1026A0, A1** - Armament Carrier w/window
- **M1035A0, A1, A2** - 2-Litter Ambulance
- **M1036A0** - TOW Carrier, Armored
- **M1037A0** - Shelter Carrier
- **M1038A0, A1** - Cargo/Troop Carrier w/window
- **M1042A0** - Shelter Carrier w/window
- **M1097A0, A1, A2** - Heavy HMMWV
- **M1113A0** - Expanded Capacity Vehicle (ECV)
- **XM1144A0** - Up-Armored HMMWV
- **XM1151** - Enhanced Armament Carrier
- **XM1152** - Enhanced Troop/Cargo/Shelter Carrier

Chassis, Light Tactical Trailer (LTT)

M1101 - LTT, Light
M1102 - LTT, Heavy
M116A3 - ¾ Ton Chassis Trailer

HMMWV Add-on Armor Kits (APK)

HMMWV Recapitalization Program (R1)

HMMWV Repower Program (R2)

USMC HMMWV Procurement (inc. M1043A0, A1, A2; M1044A0, A1; M1045A0, A1, A2; M1046A0, A1; M1123)

USAF HMMWV Procurement (inc. M1116, M1145)

### PM Medium Tactical Vehicles
- **M1078A1** - 2.5 Ton Std Cargo
- **M1079A1** - 2.5 Ton Van
- **M1080A1** - 2.5 Ton Chassis
- **M1081A0** - 2.5 Ton Cargo (LVAD)
- **M1083A1** - 5 Ton Std Cargo
- **M1084A1** - 5 Ton Std Cargo w/HME
- **M1085A1** - 5 Ton Long Bed Cargo
- **M1086A1** - 5 Ton Long Bed Cargo w/MHE
- **M1088A1** - 5 Ton Tractor
- **M1089A1** - 5 Ton Wrecker
- **M1090A1** - 5 Ton Dump
- **M1092A1** - 5 Ton Chassis
- **M1093A0** - 5 Ton Cargo (LVAD)
- **M1094A1** - 5 Ton Dump (LVAD)
- **M1096A1** - 5 Ton Long Chassis
- **M1082** - FMTV 2.5 Ton Trailer
- **M1095** - FMTV 5 Ton Trailer
- **M1117** - Armored Security Vehicle
- **XM1087** - FMTV Expandible Van
- **XM1140** - FMTV High-Mobility Artillery Rocket System (HIMARS)
- **XM1157** - FMTV 10 Ton Dump
- **XM1148** - FMTV 8.8 Ton LHS
- **XM1147** - FMTV LHS Trailer
- **XM1160** - Medium Extended Air Defense System (MEADS)
- **M1022A1** - 7.5 ton Dolly Set
- **M200A1** - 2.5 Ton Chassis Trailer
- **M103A3** - 1.5 Ton Chassis Trailer
- **CKT** - Containerized Kitchen Trailer

### PM Heavy Tactical Vehicles
- **M977** - Heavy Expanded Mobility Tactical Truck (HEMTT) Cargo
- **M985** - HEMTT Cargo w/MHC
- **M978** - HEMTT Tanker, 2500 gal
- **M983** - HEMTT Tractor
- **M984** - HEMTT Wrecker
- **M1120** - HEMTT LHS
- **M1074** - Palletized Load System (PLS) w/MHC
- **M1075** - PLS Truck
- **M1076** - PLS Trailer
- **M1070** - Heavy Equipment Transporter System (HETS)
- **M1000** - HETS Semi-trailer
- **M1142** - Tactical Firefighting Truck (TFFT)
- **XM1158** - HEMTT-based Water Tender (HEWATT)
- **M1977** - Common Bridge Transporter (CBT)
- **M14** - Improved Boat Cradle (IBC)
- **M15** - Bridge Adapter Pallet (CBT)
- **M3/M3A1** - Container Roll On/Off Platform (CROP)
- **No Model Number** - Container Handling Unit (CHU)
- **M1, M1077/M1077A1** - Flat rack
- **M915A3** - Line Haul Tractor
- **M915A4** - Line Haul Tractor Upgrade (Glider)
- **M916A3** - Light Equipment Transporter (LET)
- **M917A2** - 20 Ton Dump
- **M878A2** Yard Tractor
- Fifth Wheel Towing Device (FWTD)
- **M870A3** - 40 ton Low Boy Trailer
- **M871A3** - 22.5 Ton Flatbed Trailer
- **M872A4** - 34 Ton Flatbed Trailer
- **M967A2** 5000 Gal Bulkhaul Tanker
- **M969A3** 5000 Gal Refueler Tanker

HEMTT RECAP
M915 RECAP
Tactical Vehicles ~ Technology Challenges

**Safety:**
- Reduce non-combat casualties
- Crew Compartment crush resistance
- Improved crew restraints
- Human Factors (seating, visibility, reduction of operator fatigue)
- Integrated Driver Vision Aids
- Collision avoidance
- Anti-lock brakes
- Suppression of vehicle fires
  - Predictive failure system

**Survivability:**
- Armor protection
- Force protection/self-defense
- Vehicle control enhancement
- Reduced aural & visual signatures

**Reliability/Maintainability/Supportability:**
- Increased reliability
- Reduced # of tools
- Reduced non-operator organic maintenance tasks
- Reduced operator maintenance tasks
- Reduced scheduled maintenance tasks and intervals
- Decreased Mean Time To Repair (MTTR)
- Reduced operator/maintenance training
- Parts commonality
- On-Board Diagnostics/Prognostics, *(Vehicle Computer System – VCS)*
  - Interactive Electronic Technical Manuals (IETMs)
  - Automated Preventative Maintenance Checklist (PMC)

---

*Four main warfighting capabilities*
**Distribution & Mission Enhancement:**

- **Force Sustainment**
  - On-board power generation
  - On-board water generation
- **Operational and Sustainment (O&S) cost savings**
- **Power management/on-board power**
- **Deployability**
  - Reduced curb weights
  - “Quick” component/kit installation & removal, and on-board storage
- **Operational Range**
  - Greater distances
  - Increased fuel efficiency
- **Distribution of materiel, equipment & people**

**Network Centricity (C4ISR)**

- Integrated hardware/mass storage suite
- Open software architecture, incorporating:
  - Non-line of sight 2-way communication
  - Integrated blue force tracking
  - Soldier-machine interface
  - Line-of-Sight (LOS) convoy communications
  - Radio frequency identification (RFID) tracking/automated inventory control

**Mobility**

- Improved soft soil traversing characteristics
- Improved vehicle stability and handling characteristics

**Improved vehicle ride dynamics** (vibration reduction)

*Four main warfighting capabilities (cont)*
Competitive RFPs currently planned during FY 06

- M200A1 - Medium Tactical
  - Small Business Set Aside contract 2Q06
  - 977(ea) 2 1/2 Ton Trailer Chassis, 2 wheeled trailers

- M871 Series Modernization - Heavy Tactical
  - Competitive contract scheduled for award 2Q06
  - Approximate quantity of 700 each M871 trailers

- Tactical Vehicle Performance Based Logistics
  - Market Surveys currently being analyzed
  - Anticipate RFP in late FY 06/07 based on assumption of positive survey results and approved Business Case Analysis
TWV Transformation Strategy

TWV Health Monitored through Fleet Assessment

CURRENT FORCE

FUTURE FORCE

2005 2006 2007 2008 2009 2020+

Field or production line upgrades (VE, ECP, MWOs)

RECAP (HMMWV, HEMTT, HET, PLS, Trls: M871, M872, M967, M969, M870)

Expedited Modernization Initiative Procedure (EMIP)

HMMWV
FMTV
HEMTT
915 Trailers

Light/Medium + New Production (Follow on Contracts)

1. Future Tactical Truck System Advanced Concept Technology Demonstration – Part I on-going (evaluate technologies/integrate into design). Part II – Manufacture demonstrator vehicles for Military Utility Assessment
2. Tactical Wheeled Vehicle Systems Capability Demo – All firms (international/domestic) with TWV systems invited to participate
3. Capability Production Document – Based on comprehensive knowledge of all applicable technologies flowing from ACTD and Rodeo efforts
4. Joint Requirements Oversight Council – Decide between HMMWV, FMTV, HEMTT or UV and MSV CPDs
5. (if required) Defense Acquisition Board will review proposed projects
6. Source Selection – Implements milestone decisions through competitive selection of truck producers

Data as of: 16 Sep 05
Tactical Vehicles ~ Programs discussed here

- Expedited Modernization Initiative Procedure (EMIP) Component Technology Demonstrations
- Future Tactical Truck System (FTTS) System Capability Demonstration
- UV/MSV Follow-on Efforts
- Long Term Armor Strategy (LTAS)
EMIP Process starts with Technology Application Idea (TAI), reviewed for Technology Readiness Level (TRL) and Tactical Vehicle (TV) applicability (submit TAI to: TruckTech@tacom.army.mil)

Component Technology Demonstration – 23-27 Jan 06 at YPG, AZ

Submissions reviewed on continuous basis

Announcement websites
- TACOM Procurement Site (http://contracting.tacom.army.mil/ssn/sources.htm)
Platform Systems Demonstrations

- **Purpose of Platform Systems Demonstrations**
  - Assist in the refinement & development of requirements documents

- **Industry will be invited to showcase integrated vehicle solutions**

- **Systems Demonstrations Event is projected for Jul-Sep 2006 timeframe at a location TBD**
  - To be announced in Fed Biz Ops Oct/Nov 2005

- **This vehicle demonstration will complement the Future Tactical Truck System (FTTS) Advanced Concept Technology Demonstration (ACTD)**
  - MSV Demonstrator award: Stewart & Stevenson
  - UV Demonstrator award: early Nov 05
UV/MSV Follow-on Efforts
System Development and Demonstration (SDD)

Data as of: 16 Sep 05

1. Future Tactical Truck System Advanced Concept Technology Demonstration – Part I on-going (evaluate technologies/integrate into design). Part II – Manufacture demonstrator vehicles for Military Utility Assessment
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LTAS is the second generation of TWV armoring strategies. It is separate and distinct from current near-term SWA Add-on Armor (AoA) efforts which fulfilled an urgent in-theater need.

LTAS allows the Battlefield Commander to adapt to changes in threat, mission, or technology.

- Employs a modular concept – “A-Kit and B-Kit”.
- Emphasizes commonality between vehicle systems.
- Utilizes lessons learned from AoA.
- Synchronized to TWV Modernization Strategy

Meet Army threat requirements derived from TRADOC DCSINT assessment published on 27 March 2005

Incorporate into the TWV Fleet Modernization through RECAP and new production.

Test in two phases based on priority.

- **PHASE I**
  - HMMWV, FMTV, HEMTT

- **PHASE II**
  - HET, PLS, M915, M939

• Separate session to discuss classified information is tentatively scheduled 29 Nov 05 at Detroit Arsenal

Data as of: 14 Jun 05
Direct Report ~ Project Management Offices

PEO Chief of Staff
COL John S. Myers

PRODUCT MANAGERS

- Sets, Kits, Outfits, & Tools
  - PM, LTC Jeff Carr

- Test, Measurement, and Diagnostic Equipment
  - PM, LTC Dwayne Morton
PM SKOT & PM TMDE ~ Products

PM Sets, Kits, Outfits and Tools (SKOT)

**Diving Equipment**
- Diving Equipment Sets (A and B)
- Recompression Chamber
- Under Water Photo Support Set

**Sets, Kits & Outfits**
- Automotive Maint and Repair, FM Basic & Supplement
- General Mechanic’s Tool Kit (GMTK)
- Multi Capable Maintainer Tool Kit (MCMTK)
- Individual Aircraft Armament Repairman Tool Set (IAARTS)
- Team Aircraft Armament Repairman Tool Set (TAARTS)
- Shop Equipment Mechanical Maintenance, Shelter
- Electronic Repair Tool Kit
- Small Arms Toolkit
- Standard Automotive Tool Set (SATS)

**Shelter Mounted Sets, Kits, and Outfits**
- Body, Explosive Ordnance Disposal (BEOD)
- Engine Fuel System Repair, Shelter Mtd /Electronic System
- Maint, Weapon Tool Kit
- Instrument & Fire Control Repair, Shelter Mounted
- Mechanical Maintenance, Shelter Mounted /Battalion Maintenance Sets
- Power Plant Set, Shelter Mounted
- Small Arms Repairs, Shelter Mounted
- Tool Set Contact & Emergency Repair
- Tool Set, Full Tracked Vehicle Repair

**Shop Set Equipment**
- Forward Repair System (FRS)
- Hydraulic System Test and Repair Unit (HSTRU)
- Pioneer Tool Outfit (PTO)/Hydraulic and Electric Tool Outfit (HETO)
- Shop Equipment, Contact Maintenance (SECM)
- Allied Trades
- Mobile Parts Hospital (MPH)
- Shop Equipment, Welding (SEW)
- Shop Set, Electrical
- Spare Parts Storage Cabinet Set
- Carpenter’s Tool Kit (CTK)
- Engine Lathe
- Milling Machine
- Welding Machine
- Power Hack Saw
- Power Hack Saw (Portable)

**Combat Support Equipment**
- Demolition Kit
- Tool Set, Light Engineer Squad/Air Assault Kit

PM Test, Measurement, and Diagnostic Equipment (TMDE)

**Common Embedded Diagnostics**
- Wireless Diagnostics Sensor (WDS)
- Vehicle Integrated Diagnostic Software (VIDS)

**Calibration Sets (CALSETS)**
- CALSET 2000
- CALSETS Equipment Modernization

**IFTE At Platform Automatic Test Systems**
- Maintenance Support Device (MSD)
- MSD V2
- Wireless Internal Combustion (ICE) Engine Diagnostic Kit

**IFTE Off Platform Automatic Test Systems**
- Base Shop Test Facility Version 5 (BSTF (V) 5)
- Next Generation Automatic Test System (NGATS) (BSTF (V) 6)

**General Purpose Electronic Test Equipment (GPETE)**
- OS-303, Oscilloscope
- AN/USM-677, Spectrum Analyzer
- TS-4530/UPM, Portable Radar Test Set
- Test Set, Radio A
- Test Set, Portable Radio AN/PRM-35
- Signal Generator 2GHZ
- Signal Generator 26.5GHZ
- Function Generator
- Pulse Generator
- Analyzer, Data Communications
- Counter, Microwave Frequency
- Test Set, Transmission
- Oscilloscope, Low End
- Analyzer, Distortion
- Test Set, Electrical Cable
- Test Set, Pitot-static
Sets, Kits, Outfits & Tools (SKOs)
- Affordable technology to automate the inventory and accountability of tool kits and shop sets in the field.
- Modularize Explosive Ordnance Disposal (EOD) Response Equipment, enabling more efficient render safe operations against unexploded ordnance and improvised explosive devices.
- Incorporating robotics and advanced diving components for improved gap crossing and underwater surveying.
- Combined Laser and Powered metal technology for Mobile Parts Hospital (MPH).
- Simplified computer operation of the Mobile Parts Hospital (MPH).
- Building a consolidated database with all SKOs and tools
  - Must be accurate and up to date
- Process for evaluating new technology and incorporation into existing SKOs
  - Centrally funded vs. use of Field Operations and Maintenance funding
  - Configuration management

Test, Measurement, and Diagnostic Equipment
- Off Platform Automatic Test Systems (OPATS)
  - Reduce cost and size of Off-Platform testers. Combine instruments and utilize virtual/synthetic instrumentation.
  - Standardize hardware and software interfaces and specifications.
  - Provide family of interconnect devices for current systems.
  - Reduce cost and size of Electro-Optical testing assets.
  - Establish organic Electro-Optic calibration capability.
  - Integrate GCSS-Army/Common Logistics Operating Environment capabilities into Automatic Test Systems.
- At Platform Automatic Test Systems (APATS)
  - Embedded Diagnostics
    - A cost effective and compact ZigBee Wireless Diagnostics Sensor (WDS) for tactical vehicles equipped with Diagnostic Connector Assembly (DCA)
    - Evolve automated maintenance and diagnostics capabilities to predictive maintenance.
  - Wireless Internal Combustion Engine (ICE) kit
    - A single and compact wireless ZigBee pressure transducer with acceptable error to cover the current three ranges –30 inches Mercury (Hg) to +25 PSI, 0-1 Kilo-Pounds Per Square Inch (KPSI), 0-10 (KPSI).
- General Purpose Electronic Test Equipment (GPETE)
  - Transform multiple conventional GPETE instruments into a single Virtual Instrument with a plug and play functionality and fail safe mechanisms.
Competitive RFP’s currently planned for FY06:

**Soldier Portable Shop Sets**

- **Enfire** - Consists of hand held computer, digital video camera, long & short distance laser measuring devices, GPS, bar code scanner, printer/scanner/fax, battery charger, communications interface, transport case and software.

- **Carpenter Support** - Consists of hammer/drill/drivers, circular, reciprocating, and variable speed jig saws, transport bags and selected hand tools. Contains small generator & encapsulated battery recharging station w/extension cord.

- **Urban Operations** - Components include infrared camera, explosive detectors, ventilating fans, markers, saws, emote viewing instruments, multi-industrial gas detector, elbow & knee pads, portal shields, ladders, tactical torches & welders, winches, cheesecloth, paints, lights, wire, cable ties and communicators.

- **Demolition Support** - Components consist of explosively formed penetrating, metal and plastic linear and metal conical charge forms and numerous attachment devices.

- **Pioneer Support** - Large set of tools & construction equipment; some powered, some hand tools for construction, forestry operations and mine emplacement etc.,

- **Command Post/Theater Operations Center Lighting** - Set contains commercial spotlights powered by rechargeable NiCad batteries, charging unit, spare bulbs and accessories.

- **Pioneer General Purpose** - Set contains multiple shovels, axes, picks, sledge hammers, wrecking bars, post hole augers, safety belts, blocks machetes, files, saws, hammers etc., for simple pioneering tasks.

- **Light Set** - Components include light bulbs, corded light fixtures, receptacle plugs, special electrical cords and a storage case.

- **CO2 Repair and Refill** - Consists of tools and equipment to refill and repair carbon dioxide fire extinguishers.

- **Rapid Runway Repair** - Components include sand grid sections, full panel and half panels of FRP matting, mat anchoring bolts and various tools.

- **Landing Zone Lighting** - Components include COTS flashlights and accessories (amber, infrared and white) with wand ends, ground pins and transport case.

- **Pioneer Land Clearing & Building Erection** - large set with axes, picks shovels hammers, saws ropes, ladders, tools etc., for land clearing, building erection and general construction tasks.
Competitive RFP’s currently planned for FY06:

**Mobile/Containerized Shop Sets**

- **Tool Set Vehicle, Full Track** – Components include cleaning tools, brushes, welding tools and supplies, drills and bits and various of hand tools.

- **Auto Maintenance & Repair FM Supp #2** – Includes various maintenance stands, trestle hoist, variety of hand tools, jacks, various gauges.

- **Shop Equipment Machine Shop FM Basic Less Power** – Set includes lathes, various hand tools, gauges, calipers, various power tools, brushes, hand files, paint brushes, drill bits.

- **Shop Equipment Fuel Electric** - Components include sockets, various hand tools, tables, cabinets, power tools, cable assemblies.

- **Shop Equipment Machine Shop FM Heavy Supp #1 Less Power** - Consists of various hand tools, clamps, milling equipment, and cutters, various calipers, milling wood cutters, pipe wrenches, hacksaw, cabinets, cable assemblies.

- **Artillery Shop Shelter** – Components include grinders, hydraulic pump kits, pressure tanks, and various hand tools.

- **Small Arms Repair Shelter** – Consists of a non-expandable shelter with various hand tools, cabinets, gauges, die sets, grinding machines, vices, fire extinguishers, etc.

- **Instrument & Fire Control Repair, Shelter Mounted** – Consists of a non-expandable shelter with various hand tools, cabinets, gauges, calipers, die sets, hand reamers, drill sets, vices, electric etchers.

- **Shop Equipment Machine Shop** – Components include various hand tools, small part storage cabinets, cable assemblies, die and tap sets, thread cutters, drill twists, and gages.

**Targetry**

- **Live Fire Training Ranges** - 19 different hard-wired, pneumatic and radio controlled ranges.
Competitive RFP’s currently planned for FY06:

- **Off Platform Automatic Test Systems (OPATS)**
  - Coordinate with Army in establishing test system interfaces and standards.
  - Established interface standards will open up opportunities for industry to develop their own test solutions, prompting technology development and modernization, yet interfacing with Army ATE future force products.
  - Test instrument miniaturization / consolidation opportunities that have application commercially. The technology has a natural evolution toward At-Platform test and diagnostics.

- **General Purpose Electronic Test Equipment (GPETE)**
  - Application of Performance Based Logistics in Test Equipment Modernization (TEMOD) program will allow industry an opportunity to partner in the logistics support process.
How to get connected with the latest information:

- Fed Biz Ops Web Site:
- Involvement in Annual Technology Demonstrations (January 2006)
  - Not a Source Selection
  - On your own Dollar
Integrated Logistics Support Center (ILSC)

Contracting Opportunities
Agenda

- ILSC Mission
- Points of Contact
- Projected Business Opportunities by Product Line
  - Heavy Combat
  - Light Combat
  - Tactical
  - Deployment Equipment
  - Aircraft Armament and Small Arms
  - Field Artillery and Mortars
  - Tools and Training Systems
  - Tires
  - Chem/Bio Defense
  - Clothing/Heraldry
  - Soldier Systems

- Tires Mission
- Issues/Concerns
ILSC Mission

ILSC Product Support Structure

Integrated Logistics Support Center (ILSC)
586-574-6090

- Aircraft Armament & Small Arms
  309-782-0677
- Light Combat
  309-782-4448
- Heavy Combat
  586-574-6250
- Tactical Vehicle
  586-574-7097
- Soldier Systems
  508-233-6030
- Tools & Training Systems
  309-782-5107
- Field Artillery & Mortars
  309-782-5432
- Deployment Equipment
  586-574-6165
- Chem/Bio Defense
  309-782-2357
- Clothing/Heraldry
  215-737-2500
Heavy Combat
(M1 Abrams, M88, AVLH)
FY06 Projections

FY06 RESET Programs
- M1A1: 249 EA
- M1A2: 25 EA
- M1A2 SEP: 32 EA
- M88A1: 32 EA
- AVLH: 14 EA
# Heavy Combat
(M1 Abrams, M88, AVLB)

## Top 10 Procurement Items

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2815-01-414-6821</td>
<td>Engine</td>
<td>24</td>
<td>$10,000,000</td>
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<tr>
<td>2530-00-692-9316</td>
<td>Track Shoe</td>
<td>31,762</td>
<td>7,700,000</td>
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<td>2815-00-394-9729</td>
<td>Engine Block</td>
<td>340</td>
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<td>2815-00-150-7405</td>
<td>Cylinder Head</td>
<td>1,922</td>
<td>4,300,000</td>
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<td>4130-01-519-4122</td>
<td>Vapor Compression System Unit</td>
<td>31</td>
<td>4,069,924</td>
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<td>5963-01-474-6208</td>
<td>Electronic Control Unit</td>
<td>109</td>
<td>3,144,977</td>
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<tr>
<td>2815-01-233-9709</td>
<td>Crankshaft</td>
<td>218</td>
<td>2,900,000</td>
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<tr>
<td>2540-01-267-2912</td>
<td>Towbar</td>
<td>2,697</td>
<td>2,700,000</td>
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<td>6110-01-514-7369</td>
<td>Revised Hull Network Box w/Container</td>
<td>90</td>
<td>2,784,600</td>
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<tr>
<td>2940-01-406-9209</td>
<td>Filter Element</td>
<td>10,143</td>
<td>2,748,753</td>
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</tbody>
</table>
Light Combat
(Bradley, M113)
FY06 Projections

FY06 RESET Programs
Bradley Organic       72 EA
BAE/RRAD              629 EA
M113A3                34 EA
## Light Combat
(Bradley, M113)

### Top 10 Procurement Items

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>2530-01-496-4444</td>
<td>Track Shoe Assembly</td>
<td>125,957</td>
<td>$20,782,905</td>
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<tr>
<td>2520-01-397-1074</td>
<td>Transmission, Hydraulic</td>
<td>240</td>
<td>16,219,377</td>
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<td>5865-01-462-8498</td>
<td>Sensor Assembly Unit</td>
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<td>13,476,806</td>
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<td>Control Box, Electric</td>
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<td>2540-01-396-2826</td>
<td>Heater, Vehicular</td>
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<td>7,529,122</td>
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<td>2530-01-440-7615</td>
<td>Parts Kit, Track Shoe</td>
<td>722,099</td>
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<td>5998-01-393-7047</td>
<td>Circuit Card Assembly</td>
<td>2,208</td>
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<td>5895-01-485-3489</td>
<td>Processor, Turret</td>
<td>77</td>
<td>4,773,230</td>
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<tr>
<td>6115-01-458-0096</td>
<td>Generator, Direct Current</td>
<td>1,271</td>
<td>4,340,465</td>
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<tr>
<td>2540-01-312-4730</td>
<td>Shock Absorber</td>
<td>5,639</td>
<td>3,857,076</td>
</tr>
</tbody>
</table>
Tactical Wheeled Vehicles
(HMMWV, FMTV, M939, PLS, HET, HEMTT, M915)
FY06 Projections

FY06 RESET Programs
- HMMWV: 200 EA
- FMTV: 100 EA
- M939: 200 EA
- PLS: 248 EA
- HET: 247 EA
- HEMTT: 300 EA
- M915: 160 EA

FY06 RECAP Program
- HMMWV: 11,112 EA
## Tactical Wheeled Vehicles
(Light, Medium, & Heavy Trucks and Trailers)

### Top 15 Procurement Items

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2815-01-439-6664</td>
<td>Engine with Container</td>
<td>6,824</td>
<td>$ 57,635,777</td>
</tr>
<tr>
<td>2510-01-435-9690</td>
<td>Window</td>
<td>19,000</td>
<td>52,000,000</td>
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<tr>
<td>2510-01-435-9693</td>
<td>Window</td>
<td>16,000</td>
<td>45,000,000</td>
</tr>
<tr>
<td>2815-01-439-8164</td>
<td>Engine with Container</td>
<td>4,213</td>
<td>40,130,215</td>
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<tr>
<td>2920-01-420-9968</td>
<td>Generator</td>
<td>9,296</td>
<td>20,795,152</td>
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<tr>
<td>2815-01-257-3879</td>
<td>Engine with Container</td>
<td>335</td>
<td>14,056,265</td>
</tr>
<tr>
<td>6110-01-491-2158</td>
<td>EESS</td>
<td>114,274</td>
<td>6,851,869</td>
</tr>
<tr>
<td>2530-01-303-0801</td>
<td>Wheel</td>
<td>14,949</td>
<td>5,486,283</td>
</tr>
<tr>
<td>6115-01-504-0680</td>
<td>Generator</td>
<td>1,935</td>
<td>2,898,630</td>
</tr>
<tr>
<td>2520-01-472-6309</td>
<td>Transfer</td>
<td>42</td>
<td>2,080,176</td>
</tr>
<tr>
<td>2520-01-347-7646</td>
<td>Transmission Assy</td>
<td>69</td>
<td>1,686,222</td>
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<tr>
<td>2590-00-148-7961</td>
<td>Cable Kit</td>
<td>3,605</td>
<td>1,366,295</td>
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<tr>
<td>2540-01-385-9462</td>
<td>Kit, Cover, Soft</td>
<td>865</td>
<td>1,358,915</td>
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<tr>
<td>2910-00-116-8241</td>
<td>Pump, Fuel</td>
<td>361</td>
<td>1,029,933</td>
</tr>
<tr>
<td>2520-01-358-3160</td>
<td>Differential</td>
<td>1,040</td>
<td>944,538</td>
</tr>
</tbody>
</table>
# Tactical Wheeled Vehicles

(Up-Armor HMMWV)

## Top 10 Procurement Items

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2815-01-439-8164</td>
<td>Engine</td>
<td>4,213</td>
<td>$ 40,130,215</td>
</tr>
<tr>
<td>2520-01-489-0850</td>
<td>Transmission</td>
<td>1,875</td>
<td>5,483,344</td>
</tr>
<tr>
<td>2510-01-435-9689</td>
<td>LF Door</td>
<td>750</td>
<td>5,100,000</td>
</tr>
<tr>
<td>2930-01-448-9439</td>
<td>Radiator</td>
<td>4,000</td>
<td>5,000,000</td>
</tr>
<tr>
<td>2510-01-432-3338</td>
<td>Hood</td>
<td>2,000</td>
<td>4,800,000</td>
</tr>
<tr>
<td>2510-01-435-9691</td>
<td>RR Door</td>
<td>700</td>
<td>4,600,000</td>
</tr>
<tr>
<td>2510-01-478-0306</td>
<td>Axle Shaft</td>
<td>25,000</td>
<td>4,500,000</td>
</tr>
<tr>
<td>2510-01-435-9694</td>
<td>RF Door</td>
<td>700</td>
<td>4,400,000</td>
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<tr>
<td>2510-01-435-9695</td>
<td>LR Door</td>
<td>650</td>
<td>4,300,000</td>
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<tr>
<td>2520-01-416-5217</td>
<td>Differential</td>
<td>1,500</td>
<td>2,700,000</td>
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</table>
## Tactical Wheeled Vehicles
(Up-Armor HMMWV)
Special Interest Procurement Items

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4130-01-460-5782</td>
<td>Evaporator, Coil Ref</td>
<td>4,500</td>
<td>$2,500,000</td>
</tr>
<tr>
<td>2540-01-460-2428</td>
<td>Duct Assembly</td>
<td>2,000</td>
<td>1,900,000</td>
</tr>
<tr>
<td>6105-01-460-4951</td>
<td>Motor, Direct Current</td>
<td>10,000</td>
<td>1,600,000</td>
</tr>
<tr>
<td>6105-01-460-4950</td>
<td>Motor, Direct Current</td>
<td>15,000</td>
<td>1,156,000</td>
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<tr>
<td>4720-01-460-2447</td>
<td>Hose Assy, Nonmetallic</td>
<td>3,500</td>
<td>580,000</td>
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<tr>
<td>4720-01-459-9498</td>
<td>Hose Assy, Nonmetallic</td>
<td>3,500</td>
<td>450,000</td>
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<tr>
<td>4130-01-460-2429</td>
<td>Receiver - Dehydrator</td>
<td>13,000</td>
<td>431,000</td>
</tr>
<tr>
<td>2510-01-460-4955</td>
<td>Cover, Air Evaporator</td>
<td>2500</td>
<td>244,000</td>
</tr>
<tr>
<td>2540-01-460-4952</td>
<td>Housing, Fan</td>
<td>3000</td>
<td>240,000</td>
</tr>
<tr>
<td>2540-01-460-2451</td>
<td>Ventilator, Air cir</td>
<td>1700</td>
<td>170,000</td>
</tr>
</tbody>
</table>
Deployment Equipment
(Construction, MHE, PAWS, Shipping Containers, Special Tool Kits)

FY06 Projections

FY06 RESET Programs
- Construction: 796 EA
- MHE: 1084 EA
- PAWS: 412 EA

<table>
<thead>
<tr>
<th>FY06 (In $ Millions)</th>
<th>Sales</th>
<th>Procurements</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>163</td>
<td>90</td>
<td>13</td>
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<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>
**Deployment Equipment**  
(Construction, PAWS, Shipping Containers)  
FY06 Top 10 Procurement Items

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8145-01-527-2506</td>
<td>Shipping and St</td>
<td>4,992</td>
<td>$18,317,345</td>
</tr>
<tr>
<td>5430-01-473-2320</td>
<td>Tank, Fabric, Col</td>
<td>697</td>
<td>16,304,224</td>
</tr>
<tr>
<td>5430-01-505-4249</td>
<td>Tank Assembly, Fuel</td>
<td>71</td>
<td>6,766,726</td>
</tr>
<tr>
<td>5430-01-473-2319</td>
<td>Tank Fabric, Col</td>
<td>291</td>
<td>3,980,007</td>
</tr>
<tr>
<td>8110-01-482-9152</td>
<td>Drum Fabric, Col</td>
<td>527</td>
<td>3,681,622</td>
</tr>
<tr>
<td>4320-01-483-1054</td>
<td>Pumping Assembly</td>
<td>92</td>
<td>3,577,696</td>
</tr>
<tr>
<td>5430-01-483-1065</td>
<td>Tank Fabric, Col</td>
<td>1,447</td>
<td>3,215,234</td>
</tr>
<tr>
<td>2530-01-234-1917</td>
<td>Track, Shoe, Veh</td>
<td>21,244</td>
<td>2,867,940</td>
</tr>
<tr>
<td>5430-01-473-2316</td>
<td>Tank Fabric, Col</td>
<td>238</td>
<td>2,119,628</td>
</tr>
<tr>
<td>4930-01-194-8324</td>
<td>Nozzle, Fuel and</td>
<td>1,064</td>
<td>1,753,472</td>
</tr>
</tbody>
</table>
Aircraft Armament and Small Arms

FY06 Projections

FY06 RESET Programs
M16A2 Rifle 12,000 EA
M203 Gren Lnch 6000 EA
# Aircraft Armament and Small Arms

## Top 10 Procurement Items

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1005-00-921-5004</td>
<td>Magazine, Cartridge</td>
<td>2,856,750</td>
<td>$24,568,050</td>
</tr>
<tr>
<td>1005-00-701-2810</td>
<td>Mount, Machine Gun</td>
<td>3,908</td>
<td>19,414,944</td>
</tr>
<tr>
<td>1005-01-502-7547</td>
<td>Mount, Machine Gun</td>
<td>7,215</td>
<td>15,050,490</td>
</tr>
<tr>
<td>1005-01-432-3339</td>
<td>Kit, Ring, Lightweight</td>
<td>1,424</td>
<td>11,013,216</td>
</tr>
<tr>
<td>1005-01-452-3527</td>
<td>Adapter Rail</td>
<td>26,915</td>
<td>8,828,120</td>
</tr>
<tr>
<td>1005-01-452-6771</td>
<td>Adapter Rail</td>
<td>22,658</td>
<td>8,496,750</td>
</tr>
<tr>
<td>1005-00-726-6131</td>
<td>Barrel, Machine</td>
<td>6,410</td>
<td>6,948,440</td>
</tr>
<tr>
<td>1005-01-381-5431</td>
<td>Mount, Machine</td>
<td>4,768</td>
<td>6,584,608</td>
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<tr>
<td>1240-01-411-1265</td>
<td>Sight, Flex</td>
<td>15,605</td>
<td>6,242,000</td>
</tr>
<tr>
<td>1005-01-204-4376</td>
<td>Magazine, Cartridge</td>
<td>658,920</td>
<td>4,862,829</td>
</tr>
</tbody>
</table>
Field Artillery and Mortars
(Mortars, M198, M119A1, M109 How, FAASV, PADS, GLPS, Misc. Artillery)

FY06 Projections

FY06 RESET Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortars</td>
<td>223 EA</td>
</tr>
<tr>
<td>M198</td>
<td>51 EA</td>
</tr>
<tr>
<td>M119A1</td>
<td>8 EA</td>
</tr>
<tr>
<td>M109</td>
<td>89 EA</td>
</tr>
<tr>
<td>FAASV</td>
<td>74 EA</td>
</tr>
<tr>
<td>PADS</td>
<td>10 EA</td>
</tr>
<tr>
<td>GLPS</td>
<td>12 EA</td>
</tr>
<tr>
<td>M2A2 Aiming Circle</td>
<td>30 EA</td>
</tr>
</tbody>
</table>
# Field Artillery and Mortars

## Top 10 Procurement Items

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5895-01-524-8674</td>
<td>PMVS and Container</td>
<td>51</td>
<td>$ 2,320,500</td>
</tr>
<tr>
<td>7010-01-524-8672</td>
<td>PDCU and Container</td>
<td>26</td>
<td>2,106,000</td>
</tr>
<tr>
<td>7021-01-451-5790</td>
<td>ACU and Container</td>
<td>55</td>
<td>2,095,830</td>
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<tr>
<td>2920-01-442-9694</td>
<td>Generator AY WI</td>
<td>108</td>
<td>1,640,628</td>
</tr>
<tr>
<td>5905-01-210-0301</td>
<td>Sensor, Temperature</td>
<td>560</td>
<td>1,037,120</td>
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<tr>
<td>5995-01-527-6845</td>
<td>Cable Assembly</td>
<td>171</td>
<td>1,005,993</td>
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<tr>
<td>5995-01-529-8409</td>
<td>Transceiver</td>
<td>39</td>
<td>866,268</td>
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<tr>
<td>4210-01-518-0175</td>
<td>Extinguisher, Fire</td>
<td>435</td>
<td>863,475</td>
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<tr>
<td>2815-01-488-5555</td>
<td>Engine and Cont</td>
<td>93</td>
<td>854,112</td>
</tr>
<tr>
<td>1025-01-365-7042</td>
<td>Equilibrator, Ca</td>
<td>20</td>
<td>820,300</td>
</tr>
</tbody>
</table>
Tools and Training
FY06 Projections

FY06 (In $ Millions)

<table>
<thead>
<tr>
<th>Sales</th>
<th>Procurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>77</td>
<td>63</td>
</tr>
</tbody>
</table>

FY06 RESET Program
Forward Repair Sys 24 EA
## Tools and Training

### Top 10 Procurement Items

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5180-01-481-8389</td>
<td>General Mechanics Tool Kit (GMTK)</td>
<td>15,500</td>
<td>$14,537,830</td>
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<tr>
<td>4910-01-365-9304</td>
<td>Towbar, Motor Vehicle</td>
<td>5,000</td>
<td>7,809,500</td>
</tr>
<tr>
<td>5180-01-502-9507</td>
<td>Kit, Assessment Battery (BDAR Maint)</td>
<td>3,714</td>
<td>2,495,288</td>
</tr>
<tr>
<td>5180-01-502-9504</td>
<td>Kit, Assessment Battery (BDAR Crew)</td>
<td>4,705</td>
<td>2,443,165</td>
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<tr>
<td>1375-01-417-7104</td>
<td>Blasting Machine</td>
<td>2,802</td>
<td>2,059,470</td>
</tr>
<tr>
<td>4910-01-417-1870</td>
<td>Test Stand, Automotive</td>
<td>12</td>
<td>1,349,520</td>
</tr>
<tr>
<td>4910-01-370-9855</td>
<td>Mounter and Demounters</td>
<td>192</td>
<td>1,344,000</td>
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<tr>
<td>5180-01-500-4790</td>
<td>Tool Kit, Small Arms Repairman</td>
<td>1,500</td>
<td>1,141,050</td>
</tr>
<tr>
<td>4910-00-289-7233</td>
<td>Dolly, Jack</td>
<td>540</td>
<td>750,600</td>
</tr>
<tr>
<td>5180-01-493-1663</td>
<td>Tool Kit, Multi-capable Maintainer</td>
<td>600</td>
<td>689,016</td>
</tr>
</tbody>
</table>
Chemical/Biological Defense
(Collective Protection, Masks, Decon, Smoke, Detect, Individual Protection)

FY06 Projections

FY06 (In $ Millions)

Sales
Procurements
Repair

93
77
1
## Chemical/Biological Defense

### Top 10 Procurement Items

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4240-01-529-0601</td>
<td>Facepiece Assembly, Medium</td>
<td>26,000</td>
<td>$3,097,900</td>
</tr>
<tr>
<td>1055-01-451-2285</td>
<td>M310 Installation Kits</td>
<td>982</td>
<td>3,093,300</td>
</tr>
<tr>
<td>6665-01-353-7700</td>
<td>Detector Unit, Chemical</td>
<td>20</td>
<td>2,210,620</td>
</tr>
<tr>
<td>1040-01-454-1625</td>
<td>M7 Grenade Discharger</td>
<td>4,687</td>
<td>1,654,511</td>
</tr>
<tr>
<td>4240-01-529-0593</td>
<td>Facepiece Assembly, Small</td>
<td>13,000</td>
<td>1,548,950</td>
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<tr>
<td>5895-01-528-9289</td>
<td>Filter, Secondary</td>
<td>39,666</td>
<td>1,085,659</td>
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<tr>
<td>6665-01-364-4953</td>
<td>Detector-Cooler Assembly</td>
<td>20</td>
<td>830,280</td>
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<tr>
<td>4240-01-529-2289</td>
<td>Canister, Chemical</td>
<td>38,666</td>
<td>568,414</td>
</tr>
<tr>
<td>4240-01-528-9287</td>
<td>Hood, Chem-Bio</td>
<td>6,067</td>
<td>567,414</td>
</tr>
<tr>
<td>4240-01-529-0602</td>
<td>Facepiece Assembly, Large</td>
<td>4,333</td>
<td>516,277</td>
</tr>
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</table>
NOTE: Current BRAC moves contracting mission for tires to DLA. Privatizes all tires inventory and distribution missions.
# Tires

Top 10 Procurement Items (Expiring Tire LTCs)

<table>
<thead>
<tr>
<th>NSN</th>
<th>NOMENCLATURE</th>
<th>QTY/LENGTH OF LTC</th>
<th>DOLLARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2610-01-333-7632</td>
<td>Tire</td>
<td>670,920 ea (5 YR)</td>
<td>$134,841,502</td>
</tr>
<tr>
<td>2610-01-334-2694</td>
<td>Tire</td>
<td>60,912 ea (3 YR)</td>
<td>30,378,032</td>
</tr>
<tr>
<td>2530-01-477-1660</td>
<td>Wheel Assy</td>
<td>17,145 ea (3 YR)</td>
<td>18,580,379</td>
</tr>
<tr>
<td>2530-01-506-5915</td>
<td>Wheel Assy</td>
<td>5796 ea (3 YR)</td>
<td>10,942,674</td>
</tr>
<tr>
<td>2640-01-419-6202</td>
<td>Run-Flat Kit</td>
<td>124,746 ea (3 YR)</td>
<td>7,932,598</td>
</tr>
<tr>
<td>2530-01-532-5636</td>
<td>Armor Set</td>
<td>3528 ea (3 YR)</td>
<td>6,085,800</td>
</tr>
<tr>
<td>2610-01-473-3997</td>
<td>Tire</td>
<td>13,572 ea (3 YR)</td>
<td>3,895,164</td>
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<tr>
<td>2610-01-364-5044</td>
<td>Tire</td>
<td>5760 ea (3 YR)</td>
<td>3,457,958</td>
</tr>
<tr>
<td>2610-01-481-5378</td>
<td>Tire</td>
<td>11,505 ea (3 YR)</td>
<td>2,969,786</td>
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<tr>
<td>2610-00-204-4091</td>
<td>Tire</td>
<td>12,600 ea (3 YR)</td>
<td>2,329,110</td>
</tr>
</tbody>
</table>
Potential Contractual Pitfalls

Controllable
- Extended Administrative Lead Times
- Extended Production Time
- Quality Defects
- First Article Tests Not Passed and/or Not Timely
- Slow Response Time
- Late Deliveries from Subcontractors

Uncontrollable
- Acts of God
- Plant Problems
- Strikes
- Shortages of Raw Materials
- Cost of Raw Materials

What’s Best For Our Warfighters?

Operational Capabilities at Risk
Customer Satisfaction Decreases
Readiness Declines
Backorders
Increased Costs
Slowed or Stopped Repair Programs
How You Can Help:

- Reduce administrative problems that can delay contract awards (e.g., formatting, incomplete data, timely price quotes, etc.)
- Accelerate every delivery possible – sooner is better
- Drive down costs – so we can buy more for soldiers
- Anticipate readiness driver items and be prepared to help
- Explore supply chain and performance-based support initiatives – dialogue with us on your ideas

_deployed soldiers can’t afford to wait! If we can buy more for the soldiers, everyone benefits!_
TACOM LCMC Advance Planning Briefing to Industry

Mr. Kevin Fahey
Program Executive Officer,
Ground Combat Systems
October 28, 2005
Program Executive Office
Ground Combat Systems

<table>
<thead>
<tr>
<th>Stryker Brigade Combat Team</th>
<th>Combat Systems</th>
<th>Joint Robotics Systems (Army &amp; Marine)</th>
<th>Joint Lightweight Howitzer 155mm (Army &amp; Marine)</th>
<th>Modular Brigade Enhancements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Abrams Tank</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Bradley Fighting Vehicle</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Paladin / FAASV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• M113</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PEO GCS maintains a total Army perspective in managing the development, acquisition, testing, systems integration, product improvement, and fielding that places the best ground combat systems in the hands of our soldiers.
PEO GCS Managed Systems

Combat Systems
- Abrams Tank
- Bradley Fighting Vehicle FOV
- Paladin 155mm SP Howitzer
- M113 FOV
- M707 Knight

Robotic Systems
- UA Ground Systems
- Standardized Robotic System
- Gladiator
- M60 Panther
- Miniflail
- Man Packable
- MV – 4 Flail

LW155 System
- M777 Howitzer
- Towed Artillery Digitization (TAD)
- M119 production

Stryker Brigade Combat Team
- Mobile Gun System
- Infantry Carrier Vehicle
- Medical Evacuation Vehicle
- Reconnaissance Vehicle
- Commander’s Vehicle
- Engineer Squad Vehicle
- NBC Reconnaissance Vehicle
- Mortar Carrier
- Anti-tank Guided Missile
- Fire Support Vehicle
PM Combat Systems

APBI

Larry D. Hollingsworth
Colonel, Infantry
Project Manager
Synchronized Through 2050

CURRENT

2005

FUTURE

20XX

- Requires Partnerships with Industry and RDECOM
- Requires Centralized Management and Oversight
- Requires Balance between Current and Future
- Requires Centralized Funds Management (OMA and PAA)
TSM Abrams / PM Priorities

- (1) Safety Mods - (Complete by FY07)
- Modularity - 18/17 Production
- Sustainment/Recapitalization
  - AIM M1A1, M1A2 System Enhancement Package (SEP)
  - Continuous Electronic Enhancement Program (CEEP) Retrofit (588)
  - Transmission/Track Durability
  - VCSU Silent Fan
  - Voltage Regulator
  - 80GB Removable Memory Cartridges (RMC)
- Lethality
  - (2) 2nd Gen Forward Looking Infrared Radar (FLIR) for M1A1
  - (3) Ammunition Integration Canister, Mid Range Munition (MRM)
- Survivability
  - (4) Tank Urban Survivability Kit
  - (6) Belly Armor
  - Under Armor Auxiliary Power Unit (UAAPU)
- Situational Awareness
  - (5) Helmet Mounted Display/Cordless Command & Control
  - (4) Driver’s Vision Enhancer
- Modernization
  - (7) Vehicle Integrated Defense / Active Protection
  - Spin Out Hardware & Integration
  - Overmatch Capabilities
  - Advanced Armor
  - Training Devices

() TSM Priority
TSM 1-N Priority Bradley

- 18 / 17 BCTs (A3 / Operation Desert Storm ODS)
- ODS Situational Awareness (2nd Gen FLIR)
- ODS Embedded Diagnostics
- Mobility
  - Power Train
  - Track
- Survivability
  - Bradley Urban Operations Kit (BUSK)
  - IED Protection
- Lethality
  - Missile Integration
  - Multi purpose 25 MM
  - Soldier as a System Integrator
- Bradley Integrated Management (BIM)
- Engineer Vehicle Mission Equipment Package
- Training Devices
- Test Measurement Diagnostic Equipment (TMDE)
Other Requirements

• Paladin
  – RESET
  – RECAP
  – Fire Support Combined Arms Tactical Trainer

• Knight
  – Chassis Change

• BFIST
  – Fire Support Sensor System (FS3) Integration
  – Bradley Desktop Trainer
## Abrams Program Schedule

<table>
<thead>
<tr>
<th>Event Name</th>
<th>FY 04</th>
<th>FY 05</th>
<th>FY 06</th>
<th>FY 07</th>
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Bradley Program Schedule
Paladin/FAASV Program Schedule

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<td>System Integration &amp; Eng Support - Paladin Battlefield</td>
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<td>System Integration &amp; Eng Support - Paladin Direct Drive Generator</td>
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<td>Develop &amp; Integrate Excaliber Req’s into Paladin Digital Fire Control Sys</td>
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</tbody>
</table>

- Recap 126 FAASVs (Anniston Army Depot)
- Modular Artillery Charge Sys Paladin/FAASV Field Modifications & Retrofits
- PDFCS Computer Upgrades to Fleet
Other Combat Systems
Challenges & Opportunities for Industry

- **Situational Awareness**
  - Integration of New Technologies to achieve interoperability with Future Combat System
  - Mounted Battle Command on the Move (MBCOTM)

- **Survivability**
  - Vehicle Integrated Defense Systems/Active Protection Systems
  - Loader and TC Weapon Station Improvements
  - Armor improvements/Active Armor

- **Lethality**
  - Muzzle Velocity System
  - Mid - Range Munition (MRM)
  - Multi function Laser Range finder
  - Target Management System
  - 3rd Gen Forward Looking Infrared Radar (FLIR)
Combat Systems
Challenges & Opportunities for Industry

• Mobility
  – Auxiliary Power Unit (APU)
  – Power Pack Durability Improvements
  – Suspension Durability Improvements
  – Hybrid Electric Drive
  – Improved Driver’s Viewer

• Sustainment
  – Recapitalization
  – Reset combat equipment returning from OIF
  – Maintaining Vehicles that are not deployed with the troops (Stay behind Maintenance)
  – Embedded Diagnostics/Prognostics
  – Embedded Training
  – Electronics Obsolescence
Combat Systems Contractor Dollars
FY06 – FY08

DOLLARS IN M

<table>
<thead>
<tr>
<th></th>
<th>Total Contract Dollars</th>
<th>Total Contract Dollars to go to GDLS &amp; BAE</th>
<th>Percent of Contract Dollars for GDLS &amp; BAE</th>
<th>Total Contract Dollars to go to Other Contractors</th>
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</table>
Robotics

Terry W. Griffin
Colonel, USMC
Project Manager
JPO Robotic Systems (Non FCS)

**Joint Force**
- PackBot
- Talon
- Vanguard
- ODIS
- Bombot

- IED Defeat Systems
- In Theater Log
- Joint Facility

**USMC**
- Gladiator
- Assault Breaching Vehicle
- Dragon Runner

- Lethal / Non-lethal Fire
- RSTA
- NBC Detection
- M1 Chassis
- Mine Plow, Lane Marking
- MICLIC
- FIDO Explosives Sniffer
- Disrupter
- Dump Bed

**Army**
- MV-4
- Mini Flail
- Panther

- AP Mine Neutralization
- Wire Obstacle Breaching
- Engineer Missions
- Mine Neutralization
- Contingency Systems
- Europe / OIF / OEF
List of RSJPO
Robotic Technology Needs

• Autonomous Mobility Performance, Articulation, Mobility Algorithms
• Semi-Autonomy in Environments with Moving Persons and Vehicles
• Autonomous Navigation in Adverse Weather
• Autonomous Navigation Capability against Negative Obstacles
• Autonomous Navigation System Weight and Space Requirements
• Adequate System Control Devices
• Non-Line-of-Sight Communications Capabilities
  – Digital Communications
  – Networked Communications
  – Low Latency Global Reach Communications
  – Extended Data Link
  – Limited RF Spectrum Allocations
  – High Bandwidth
• UGV Reliability / Availability
• Anti-Tamper Capability
• Lightweight, Rugged Components
• Improved Battery Technology for Extended Duration and Life
• Non-Active (Stereo) Perception
Autonomous Systems
Challenges & Opportunities for Industry

• Autonomous Mobility
• Autonomous Mobility Performance
• Perception Safety (Moving Persons and Vehicles)
• Navigation Challenges (Adverse Weather, Negative Obstacles)
• System Control Devices
• Autonomous Operations
• Non-Line-of-Sight Communications
• Non-Active (Stereo) Perception
• Reliability/Availability
• Anti-Tamper Capability
• Lightweight, Rugged Components
• Improved Battery Technology
RS JPO Contract Dollars
FY 06 – FY 08

Dollars in M

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<tr>
<th></th>
<th>USMC</th>
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<th>ARMY- FCS Subcontractors</th>
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Totals Include Both RDT&E and Procurement Dollars
Stryker

Peter N. Fuller
Colonel, AR
Project Manager
Stryker Family of Vehicles

**Commonality**
- Common Operating Picture
- Common Chassis & Drive Train
- Common KPP’s
- Common Survivability
- Common TMDE, Spare Parts, Tools & Skills

*Infantry Carrier Vehicle (ICV)*
*Reconnaissance Vehicle (RV)*
*Medical Evacuation Vehicle (MEV)*
*Engineer Squad Vehicle (ESV)*
*Commander’s Vehicle (CV)*
*Fire Support Vehicle (FSV)*
*Mobile Gun System (MGS)*
*NBC Reconnaissance Vehicle (NBCRV)*
*120mm Mounted Mortar Carrier (MC-B)*
*Anti Tank Guided Missile (ATGM)*
SBCT Fleet Management Strategy

Current

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<tr>
<th>2005</th>
<th>2011</th>
<th>2016</th>
<th>2050</th>
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<tbody>
<tr>
<td>Acquisition</td>
<td>MODERNIZATION</td>
<td>SUSTAINMENT</td>
<td>RESET</td>
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</tbody>
</table>


Acquisition

Reset

Recapitalization
Stryker 1 – N List
TRADOC Approved

• Survivability
  – Active Protection System
  – IED Survivability
  – Crew Panoramic Awareness
• Environmental Control - Vehicle/C4 and/or Soldiers
• Power Management / Data Bus
  – Stabilize Power
  – Alternate Power
  – Soldier Battery Recharge
• Soldier as A System Integration - Land Warrior
• Semi Active Suspension - CTIS
• Improved Embedded Training Capability - Combat Maintainer Tasks
• Improved C4ISR Integration
  – Battle Command on the Move
  – Squad Communication to the Vehicle
  – Land Warrior
• Common Logistics Operating Environment (CLOE)
• Stryker Integrated Maintenance (SIM)
Stryker Challenges
& Opportunities for Industry

• Communications:
  – Robust digital capability ensures near-seamless communications
  – Real time situational awareness and distribution of information

• Survivability:
  – Residual mobility virtually eliminates vehicle and personnel losses due to follow-on attacks
  – High hard steel structure / MEXAS ceramic armor/ Spall liner
  – Holistic survivability and force protection
  – Common Ballistic Shield Enhancement
Stryker Challenges & Opportunities for Industry

• Mobility:
  – Improved Digital Video Effect (DVE)
  – C-130 Deployable
  – Decisive Offensive action – dismounted Infantry assault enabled by fires and platforms

• Sustainment:
  – Battle Damage Repair Facility – Qatar
    • Regenerate Combat Power in Theater
    • Vehs. are immediately replaced in unit formation
  – RESET program w/Core Depot support
Stryker Challenges & Opportunities for Industry

- **Interoperability:**
  - Capable of Hosting and Integrating C4ISR Systems (EPLRS, FBCB2, ABCS).
  - Integrate Specific C4ISR Systems into Stryker Platforms IAW Systems Architecture

- **Supportability:**
  - Field and National Level Maintenance (limited wrench turning by contractor)
  - Co-located capability with unit – home station and during deployment
  - Spare Parts (including selected GFE)
  - Maintenance Augmentation After Unit is Trained
  - 90% minimum ORR during and after NET
Stryker Challenges & Opportunities for Industry

• Flexibility:
  – Missions range from mounted and dismounted peacekeeping and patrolling to full-scale urban combat

• Lethality:
  – Organic combined arms lethality
  – Baseline target acquisition is “point and shoot”

• Industry Potential:
  – Register with GDLS to become an authorized supplier/sub-contractor
  – Contact DOD E-Mall to become an authorized supplier
# Stryker Program Schedule

**August 05**

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<th>Calendar Year</th>
<th>Fiscal Year</th>
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**ICV, CV, RV, MEV, ESV, ATGM, FSV**

**NBCRV**

**MGS**

**MC**

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<th>Initial Production</th>
<th>LFT&amp;E</th>
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<th>IOT&amp;E</th>
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**MS II**

**MS III**

**ART**

**Acquisition Excellence**

2-Sep-16

APBI_10-19-2005
Life Cycle Management

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<td>May 05</td>
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<td>Feb 07 – Mar 08</td>
<td>May 08</td>
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Equipment Fielding Window Other than STRYKERs
- MCB Mortar Carrier B
- MGS Mobile Gun System
- LW 155 Towed How
- NBC Recon Vehicle
- Mobilize Decision Pt
Stryker Fielding Plan
Stryker Contractor Dollars
FY06 – FY08

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<th>FY07</th>
<th>FY08</th>
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<td>879.161</td>
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DOLLARS IN M

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<td>834.323</td>
<td>26.721</td>
<td>3%</td>
</tr>
</tbody>
</table>

WTCV: Does not include GFE/GFM.
OMA/Deployment/GWOT: Assumes reset, re-deployment, battle damage repair facility
OMA/PBL/TRM: Assumes full funding is received to support requirements.
Includes FY06 – FY08 dollars only.
JLW 155

Mr. James Shields
Project Manager
Joint Program Manager Lightweight 155mm Howitzer
M777/A1
M119A2
M111 (IPADS)
JPM, Lightweight 155MM Howitzer Picatinny, NJ

Projected End State Total (AAO):
- M777A1: 273 Army / 380 USMC
- M198: 741 Production Complete
- M119: 800 >400 New Production
- IPADS: 327 Army / 60 USMC
- GLPS: 511 In Final Production

Gun Laying and Positioning System

Improved Position and Azimuth Determining System (IPADS)

L-3 S&N

M777E1 Howitzer

M198

M119

CDU

BCU

L-3 S&N M998 Installation Kit

PPA

Davidson Optronics
LW155 Future Needs

• Areas of potential future benefit to LW155

• HW/SW Upgrades – Wireless Technology, Muzzle Velocity Sensor, On-Board Ballistics

• Power Management – Li Ion Batteries, Solar Charger, NATO Adaptors

• Weight Reduction

• Powered Drives (Rammer, Suspension, Azimuth, Elevation)

• Ammunition Handling/Transfer

• Alternative Ignition Technology
M777/A1
Challenges & Opportunities for Industry

- BAE SYSTEMS is the Prime Contractor for the LW155 System
  - Managed From Barrow-In-Furness, UK
  - Integration & Assembly at Hattiesburg, MS
  - Value Chain Was Competitively Selected
  - Full-Rate Production Underway

- General Dynamics ATP (Burlington, VT) is Digital Fire Control Supplier
- Cannon is Government Furnished Equipment
- Software Upgrades Through ARDEC Software Center
- Full & Open Competition for Basic Issue Items
M777 Program Schedule

<table>
<thead>
<tr>
<th>Event Name</th>
<th>FY 05</th>
<th>FY 06</th>
<th>FY 07</th>
<th>FY 08</th>
<th>FY 09</th>
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Fire Control Software Upgrades

= Fielding
# M777 Contractor Dollars

**FY06 – FY08**

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<tr>
<th>Year</th>
<th>Total Contract Dollars</th>
<th>Total Contract Dollars to go to BAE</th>
<th>Percent of Contract Dollars to go to BAE</th>
<th>Total Contract Dollars to go to Other Contractors</th>
<th>Percent of Contract Dollars for Other Contractors</th>
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<tr>
<td>FY 06</td>
<td>172.8</td>
<td>159.8</td>
<td>92.5%</td>
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<td>FY 07</td>
<td>195.7</td>
<td>180.2</td>
<td>92.1%</td>
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<td>FY 08</td>
<td>310.6</td>
<td>292.0</td>
<td>94.0%</td>
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</table>

**Pie Charts**

- **FY06**
  - 7.5% to BAE
  - 92.5% to Other Contractors

- **FY07**
  - 7.9% to BAE
  - 92.1% to Other Contractors

- **FY08**
  - 6.0% to BAE
  - 94.0% to Other Contractors
M119A2
Future Needs

• Areas of potential future benefit to M119A2

• Digital Fire Control Upgrade

• Unique Identification (UID) Marking

• Prime Mover Integration Kits

• Alternative Prime Mover to the HMMWV
M119 Challenges & Opportunities for Industry

- Contract Support Services to Arsenals
  - RIA - Weapon Production and Integration
  - WVA – Cannon Production
- Digitization of M119A2
- Availability and Cost of 95-15 Steel - Long Term IDIQ Contracts Established with Several Vendors
- Competitive Selection of Optical Fire Control - Long Term IDIQ Contracts Established with Several Vendors
- Future opportunities for BII, Fielding, Production Consumables, etc.,
# M119 Program Schedule

<table>
<thead>
<tr>
<th>Task Name</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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M119 Contractor Dollars
FY06 – FY08

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<tr>
<th>FY 06</th>
<th>FY 07</th>
<th>FY 08</th>
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<tr>
<td>Total Contract Dollars</td>
<td>Total Contract Dollars Long Term IDIQ Contracts</td>
<td>Percent of Contract Dollars to go to BAE</td>
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<td>22.2</td>
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<td>6.7</td>
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<tr>
<td>6.1</td>
<td>5.2</td>
<td>85.3%</td>
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M111 IPADS
Future Needs

- Areas of potential future benefit to IPADS
- Integration of GPS
- Upgrade Hardware (Display/Screen, Hard Drive, etc.,)
- Power Management
M111 (IPADS)

Challenges & Opportunities for Industry

- L-3 Communications is the Prime Contractor for the IPADS
  - Indefinite Delivery Indefinite Quantity (IDIQ) Contract in Place
  - Production & Fielding Underway

- Future Production Reliant Upon Potential Supplemental Funding
M111 (IPADS) Contractor Dollars
FY06 – FY08

### FY06

**Total Contract Dollars to L-3 Communications:**
- FY06: 15.1

### DOLLARS IN M

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Contract Dollars</th>
<th>Total Contract Dollars to go to L-3 Communication</th>
<th>Percent of Contract Dollars to go to L-3</th>
<th>Total Contract Dollars to go to Other Contractors</th>
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* FY06 Extended Plan
Back Ups
M707 Knight 1-N List

- Turret Ring Redesign
- Rotate turret and fire crew serve weapons simultaneously
- Incorporate Stand-Alone Computer Unit/Forward Observer Software/Force XXI Battle Command Brigade and Below
- Easier access to Combat Observation Lasing Team Commander
- Common Remote Stabilized Sensor System (CRS3)
- Targeting station/gunners protection kit designed for M707 Knight
- Integrated Electronic Technical Manuals
- Close Air Support radio Integration
- Web seating for the gunner
BFIST M7/M3A3 1-N List

• Fire Support Sensor System (FS3)

• Desk Top Trainers
POC’s

<table>
<thead>
<tr>
<th></th>
<th>Contact</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combat Systems</td>
<td>DPM – Mike Asada</td>
<td>(586) 574-7703</td>
</tr>
<tr>
<td>Robotics</td>
<td>DPM – Duane Gotvald</td>
<td>(256) 955-7042</td>
</tr>
<tr>
<td>Stryker</td>
<td>DPM – Mike Viggato</td>
<td>(586) 753-2189</td>
</tr>
<tr>
<td>JLW155</td>
<td>DPM – Keith Gooding</td>
<td>(973) 724-5319</td>
</tr>
</tbody>
</table>
FCS Program Overview

Advanced Planning Briefing for Industry (APBI)

John Kelley
Director - Supplier Management & Procurement
Future Combat Systems
FCS Program Status

• Program keeping pace with Army needs
  – Accelerating needed capabilities to our soldiers
  – Integrating Modularity and FCS (Spin Outs, Experiments)
  – Transitioning from OTA to FAR; maintain focus on execution
  – Successful System-of-Systems Functional Review

• On cost, On schedule, On performance:
  – SPI = 99.4%, CPI = 100.4%

• FY06 is critical ramp-up year
  – $3.4B President Budget
  – Broad industry ramp-up (Network and Platforms)
  – Extensive Software and Hardware deliveries
  – First major field experiment (Experiment 1.1, JEFX06)
  – Long lead for Spin Out 1
  – Initial Preliminary Design Review (IPDR)
  – Integration Phase 1 (IP1)

Program Momentum is Strong... Maintain Velocity
FCS User Requirements

- Joint, Interagency and Multi-National Capabilities
- Increased Strategic Responsiveness
- Dominant across Full Spectrum Operations
- Campaign Quality Force
- Enabled by Knowledge
- Adaptive Modular Organizations
- 3-7 Days Self-sustainment
- FCS: Family of Systems/System-of-Systems
- Soldiers and Leaders Enabled by Technology
FCS Master Program Plan
Accelerating Capabilities to Our Soldiers

Deploy major forces anywhere, anytime

Networked Battle Command to the Soldier

Modularity + FCS Organization Transformation Technology Transformation

See First, Understand First, Act First, Finish Decisively
Recent Significant Events

- Congressional Staff Tour of Schweizer Plant (1/10/05)
- Class I off tether
- Class IV UAV SIL
- GDAIS Completes First Test Station Build for ICS
- SARTI UGV
- Experiment 1.1 Vehicles
- Firescout flight testing
- NLOS Cannon
- 120MM Cannon
- Experiment 1.1 Vehicles
- Active Protection System
- iRobot Packbot Production Line
- PAM Warhead Testing
- Packbot on Patrol in Iraq
- GDAIS ICS Demonstrator at Fall AUSA Symposium
- After Action Review Meeting Center
- SOSIL 2005
FCS “Best of Industry” Team

BAE Systems - GSD
Santa Clara, California

General Dynamics – AIS
Bloomington, Minnesota

Raytheon - NCS
Ft. Wayne, Indiana

Dynamics Research Corp
Andover, Massachusetts

Piasecki Aircraft Corp
Essington, Pennsylvania

Textron Systems
Wilmington, Massachusetts

BAE Systems - CNIR
Wayne, New Jersey

iRobot Corp
Burlington, Massachusetts

BAE Systems - ASD
Minneapolis, Minnesota

Boeing – McDonnell
Douglas Helicopter Co.
Mesa, Arizona

General Dynamics
Land Systems
Sterling Heights, Michigan

General Dynamics
Robotics Systems
Westminster, Maryland

Northrop Grumman
Mission Systems
Carson, California

Lockheed Martin (Orincon) Defense Corp
San Diego, California

Northrop Grumman
Systems Corporation
San Diego, California

Honeywell - IDAS
Albuquerque, New Mexico

Lockheed Martin
Missiles & Fire Control
Grand Prairie, Texas

AAI Corp
Hunt Valley, Maryland

Teledyne Brown Eng
Huntsville, Alabama

Northrop Grumman –
Electronic Systems CMS
Belcamp, Maryland

Computer Science Corp
Falls Church, Virginia

Overwatch Systems
Austin, Texas

Raytheon Company
Plano, Texas

Northrop Grumman InfoTech
McLean, Virginia

General Dynamics
C4 Systems
Scottsdale, Arizona
Partner Opportunities

- Opportunities for both the LSI and partners are listed on or linked to the FCS website
- Opportunities exist for 2nd and 3rd tier support to recent, pending and future selections

**Example from FCS Website**

**FCS Business Opportunities**

- Intelligence, Surveillance, and Reconnaissance
- C4ISR - Battle Command
- C4ISR - Network Systems
- Unmanned Ground Vehicle
- Unmanned Air Vehicle
- Manned Ground Systems
- Supportability
- Training Support

<table>
<thead>
<tr>
<th>FCS Partner Contact Information</th>
<th>Business Opportunities</th>
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<tbody>
<tr>
<td><strong>Unmanned Ground Vehicles</strong></td>
<td>General Purpose Processors</td>
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<tr>
<td>General Dynamics Advanced Information Systems</td>
<td>Graphics Processors</td>
</tr>
<tr>
<td>Bloomington, MN</td>
<td>Fixed and Removable Storage Media</td>
</tr>
<tr>
<td>Review Information at Web Address <a href="http://www.gd-ais.com">www.gd-ais.com</a> under Supply Chain Management, &quot;How to Sell to GDAIS&quot;</td>
<td>Storage Controllers</td>
</tr>
<tr>
<td>Email: <a href="mailto:Systems.Support@gdc4s.com">Systems.Support@gdc4s.com</a></td>
<td>Network Switches and Routers</td>
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<td>Firewalls</td>
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<td>Network Intrusion Detection</td>
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<td>Chassis and Chassis backplanes</td>
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<td>Power Supplies</td>
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<td>Fiber Optic Cabling and Copper Cabling</td>
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<td>Conversion</td>
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[Submit Supplier Information](#)
# Partner Contact Information

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<tr>
<th>Partners</th>
<th>Contact Name</th>
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<th>Email</th>
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<tbody>
<tr>
<td>Raytheon Network Centric Systems</td>
<td>Valerie King</td>
<td>508-490-2331</td>
<td><a href="mailto:valerie_king@raytheon.com">valerie_king@raytheon.com</a></td>
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<tr>
<td>Raytheon Network Centric Systems</td>
<td>Randy Whitaker</td>
<td>972-344-8302</td>
<td><a href="mailto:r-whitaker@raytheon.com">r-whitaker@raytheon.com</a></td>
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<tr>
<td>Northrop Grumman Information Technology</td>
<td>Sandy VanDerEems</td>
<td>703-556-1714</td>
<td><a href="mailto:Sandy.VanDerEems@ngc.com">Sandy.VanDerEems@ngc.com</a></td>
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<tr>
<td>Northrop Grumman Mission Systems</td>
<td>Pat Austin</td>
<td>703-345-7888</td>
<td><a href="mailto:Pat.Austin@NGC.COM">Pat.Austin@NGC.COM</a> <a href="mailto:john.beckwith@ngc.com">john.beckwith@ngc.com</a></td>
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<tr>
<td>Northrop Grumman Mission Systems</td>
<td>Jack Beckwith</td>
<td>310-764-9831</td>
<td></td>
</tr>
<tr>
<td>Northrop Grumman Electronic Systems Corp.</td>
<td>Susanne Adams</td>
<td>410-765-8269</td>
<td><a href="mailto:Susanne.adams@northropgrumman.com">Susanne.adams@northropgrumman.com</a></td>
</tr>
<tr>
<td>Northrop Grumman Mission Systems</td>
<td>Pat Austin</td>
<td>703-968-1244</td>
<td><a href="mailto:Pat.Austin@NGC.COM">Pat.Austin@NGC.COM</a></td>
</tr>
<tr>
<td>General Dynamics Robotic Systems</td>
<td>Gerry Simmons</td>
<td>410-876-9200</td>
<td><a href="mailto:gsimmons@gdrs.com">gsimmons@gdrs.com</a></td>
</tr>
<tr>
<td>General Dynamics C4 Systems</td>
<td>Stephanie Poppe</td>
<td>480-441-7255</td>
<td><a href="mailto:Stephanie.poppe@gdds.com">Stephanie.poppe@gdds.com</a></td>
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<tr>
<td>General Dynamics Land Systems</td>
<td>Doug Gamache</td>
<td>566-825-7883</td>
<td><a href="mailto:gamached@gdls.com">gamached@gdls.com</a></td>
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<tr>
<td>General Dynamics Advanced Information Systems</td>
<td>Lynn Simmons</td>
<td>508-880-1658</td>
<td><a href="mailto:Lynn.Simmons@gdc4s.com">Lynn.Simmons@gdc4s.com</a></td>
</tr>
<tr>
<td></td>
<td>Gary Muellenberg</td>
<td>952-956-5457</td>
<td><a href="mailto:Gary.Muellenberg@gd-ais.com">Gary.Muellenberg@gd-ais.com</a></td>
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<tr>
<td>Lockheed Martin ORINCON Defense</td>
<td>Regina Stout</td>
<td>610-354-3151</td>
<td><a href="mailto:regina.c.stout@lmco.com">regina.c.stout@lmco.com</a></td>
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<tr>
<td>Lockheed Martin Missiles and Fire Control</td>
<td>Cathy Usztan-Bedford</td>
<td>972-603-1268</td>
<td><a href="mailto:cathy.usztan-bedford@lmco.com">cathy.usztan-bedford@lmco.com</a></td>
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<tr>
<td>BAE Systems</td>
<td>James Nunemaker</td>
<td>973-305-2604</td>
<td><a href="mailto:james.nunemaker@baesystems.com">james.nunemaker@baesystems.com</a></td>
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<tr>
<td></td>
<td>Alex Carroll</td>
<td>703-668-4457</td>
<td><a href="mailto:alex.carroll@baesystems.com">alex.carroll@baesystems.com</a></td>
</tr>
<tr>
<td></td>
<td>John Grindle</td>
<td>703-668-4237</td>
<td><a href="mailto:john.grindle@baesystems.com">john.grindle@baesystems.com</a></td>
</tr>
<tr>
<td>Textron Systems</td>
<td>Jim Hester</td>
<td>978-657-1236</td>
<td><a href="mailto:Jhester@systems.textron.com">Jhester@systems.textron.com</a></td>
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<tr>
<td></td>
<td>Bruce Boucher</td>
<td>978-618-1678</td>
<td><a href="mailto:bboucher@systems.textron.com">bboucher@systems.textron.com</a></td>
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<tr>
<td>Dynamics Research Corp.</td>
<td>Pam Rodgers</td>
<td>978-475-9090 x2584</td>
<td><a href="mailto:prodgers@drc.com">prodgers@drc.com</a></td>
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<tr>
<td>Honeywell Defense &amp; Space Electronic Systems</td>
<td>Bill Spofford</td>
<td>505-828-5548</td>
<td><a href="mailto:billspofford@honeywell.com">billspofford@honeywell.com</a></td>
</tr>
<tr>
<td>BAE Systems</td>
<td>Barbara Knox</td>
<td>717-225-8077</td>
<td><a href="mailto:barbara.knox@udlp.com">barbara.knox@udlp.com</a></td>
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<tr>
<td>BAE Systems</td>
<td>Rick Richter</td>
<td>763-572-7904</td>
<td><a href="mailto:richard.richter@udlp.com">richard.richter@udlp.com</a></td>
</tr>
<tr>
<td></td>
<td>Lynn Arholm</td>
<td>763-572-6846</td>
<td><a href="mailto:lynn.arholm@udlp.com">lynn.arholm@udlp.com</a></td>
</tr>
<tr>
<td>Computer Sciences Corp.</td>
<td>Addie Olsen</td>
<td>703-736-3773</td>
<td><a href="mailto:aolsen@csc.com">aolsen@csc.com</a></td>
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# FCS Business Opportunities

## Technology Areas of Interest

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<tr>
<th>Mounted and Dismounted Soldier Survivability</th>
<th>Sustainment Footprint</th>
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<tbody>
<tr>
<td>• Advanced Soldier Health Monitoring Systems</td>
<td>• Advanced Line-of-Sight Lethality</td>
</tr>
<tr>
<td>• Enhanced Standoff Mine Detection on Unmanned Aerial Vehicles</td>
<td>• Advanced Vehicle Drive Train Components</td>
</tr>
<tr>
<td>• Kinetic Energy Active Protection Systems</td>
<td>• Failure Models for Embedded Digital Electronics and Mother Boards</td>
</tr>
<tr>
<td>• Laser Hardened Sensor Vision</td>
<td>• Fault Tolerant/Self-Repairing Computer Operating Systems</td>
</tr>
<tr>
<td>• Lightweight Appliqué Armor</td>
<td>• Ultra High Density Energy Storage</td>
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<tr>
<td>• Mine Detection on Manned Ground Vehicles</td>
<td>• Ultra Reliability Prognostics</td>
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<table>
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<tr>
<th>Human Factors and Training</th>
<th>Survivability</th>
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<tr>
<td>• Advanced Remote/Distributed Training Environments and Architectures and Effects</td>
<td>• Gap Bridging by 20-Ton and 6-Ton Vehicles</td>
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<tr>
<td>• Methods for Training Command Decision makers Under Time Stress</td>
<td>• Improvised Explosive Device (IED) and Unexploded Ordnance (UXO) Sensing and Neutralization on the Move</td>
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<tr>
<td>• Models and Demonstrations for Human Factors in Remote Vehicle Control</td>
<td>• Innovative Mine Detection by Dismounted Soldiers</td>
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<td>• Mine Clearance and Neutralization by Autonomous Unmanned Vehicles</td>
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<td>• Advanced Line-of-Sight Lethality and Effects</td>
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<tr>
<td>• Advanced Mounted Combat System Ammunition</td>
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</tr>
</tbody>
</table>
How to Get Involved with FCS

• Regularly check the FCS Website Home Page at: www.boeing.com/fcs

• Located on this website:
  - FCS Business Opportunities of the LSI and its Partners (Contacts with websites)
  - Information on Submitting Unsolicited Proposals and Questions
  - Partners’ Requests for Quotations / Information
  - FCS Business Opportunities
    ▪ FCS Supplier Information Submittal Form
      - Supplier Diversity information (specific LSI / Partner Small Business contacts provided in FCS Business Opportunities Brochure)
      - FCS calendar with upcoming conferences and events

• Reach out to the LSI and Partners to express your interest and capability

• Focus on areas of technology and express interest across the One Team
FCS External Web Site

www.boeing.com/fcs
In Summary…

• Key partners have been identified - and their sub-tier source requirements and selections are in progress
  – Partner locations, products provided, and contacts are available on the FCS web site and in the handout we have available here today
• Our Outreach and Supplier Diversity initiatives are in place - with focused and concerted collaborative efforts to identify and incorporate the “Best of Industry”
• The FCS program - already one of the largest Government Defense programs - has just increased significantly in content and scope.
  – Additional emphasis placed on the spiraling out of capability to the warfighter after modeling & simulation and test
  – Planning for capability spirals and efforts toward previously deferred systems are now underway in conjunction with our partners
• With such a large, evolving, and dynamic program, continue to watch the FCS web site for further opportunities and developments as they are identified
CPFR  
At  
TACOM

Briefer:  Pat Dempsey-Klott  
C, e-Business Team
AGENDA

- What is CPFR
- Definition of Collaboration
- Why is Supply Chain Collaboration Important
- Background
  - The Bullwhip Effect
  - Vendor Initiated Parts Resupply (VIPR)
- Implementation of CPFR at TACOM
- Things to Remember
- Contact Information
- Questions
WHAT IS CPFR?

• Collaborative Planning, Forecasting & Replenishment is an Industry Standard for Trading Partner Collaboration

• Voluntary Inter-Industry Commerce Standards (VICS) Sponsored New CPFR Working Group in 1996

• Purpose: To Improve the Partnership Between Government and Industry Through Collaborative Processes and Information Sharing

• Collaboration Examples:

  • GOVERNMENT
    • Demands
    • Production
    • Capacity

  • VENDOR
    • Production
    • Capacity
    • Raw Material Orders

• **CPFR = Primarily Applicable to Long Term Business Relationships**
Definition of Collaboration

“....managing interdependencies to maximize shared goals and enhance individual goals, with a focus on complex problem-solving or joint innovation.”

- Voluntary Interindustry Commerce Standards (VICS) Secretariat for CPFR
HOW CPFR WORKS

Educate
- Business process flow
- How trading partners plan and execute

Share
- Information and knowledge
  - What to share
  - How to share
  - When to share

Agree
- When and how to collaborate
- Improvements and benefits that will be gained

Execute
- Measure and monitor results
- Continuously improve

Educate → Share → Agree → Execute → Educate
EXAMPLES of INFORMATION SHARING

GOVERNMENT

- Active Storage Locations
- Fleet Density
- Two Year Demand history
- Safety Level Requirements
- ALT/PLT
- Base AMD
- ROWP
- Total On Hand
- Demands/Type of Demands
- Requirements Forecast
- Known Contingencies
- Funding Issues

VENDOR

- Vendor On Hand Inventory
- Production Rates
- Capacity
- Surge Capacity
- Raw Material issues
- Production Issues
- Forecasting
WHY SUPPLY CHAIN COLLABORATION IS IMPORTANT

Benefits

• Cut Costs
  • Improve Forecast Accuracy
  • Reduce Inventory
  • Cut Lead & Cycle Times
  • Improve Customer Service

Information is Power

Improved Communication
Fewer Surprises
Better Execution
Coordination for Better Optimizations
Leverage Strengths Of Each Partner
Win / Win Partnerships
The Bull Whip Effect

**BACKGROUND**

**Customer Sales at SSA**

**SSA's Orders to Wholesale**

**Wholesale's Orders to Manufacturer**

**Manufacturer's Orders with Its Suppliers**
SUPPLY CHAIN EFFECTIVENESS

Less Effective, More Costly

More Effective, Less Costly

Demand Pattern

Supply Ordering

Using Unit

SSA

Defense Supply Depot

Government Vendor

Component Manufacturer

Raw Material Supplier

Demand Information

Committed to Excellence — Supporting America’s Warfighters
“... closing the loop from order to retail, creating a ‘Wal-Mart’ like system for notifying suppliers when a part is issued to a consumer… extend the ERP system at DLA, and integrate the ERP system that is transforming AMC into a seamless Logistics Information network… purpose of being forward leaning with regard to automating resupply…”

Mr. Michael Wynne
Acting Under Secretary of Defense for Acquisition, Technology and Logistics
1 August 2003

Vendor Initiated Parts Resupply (VIPR)
VIPR RECOMMENDATIONS

• Incorporate information sharing capability and Government – Vendor collaboration into emerging Enterprise Resource Planning (ERP) systems
  • Long Term…Institutionalize the Benefits

• Establish a DoD collaboration standard for ERPs…OSD sponsorship
  • Interim…Continue the Momentum

• TACOM proposed, AMC CG endorsed:
  – TACOM and qualified vendors establish collaborative relationships
  – Exploit that collaboration to improve our Supply Chain Management Responsiveness to the Soldier

• Defense Logistics Agency
  – Continue BSM Supplier Collaboration development …initial capability implemented February 2005 with next implementation scheduled for September 05
Why Is Supply Chain Collaboration Important to the Army?

**OPPORTUNITY**: Take the best practices* of industry AND the expertise of the Gov’t to achieve an END STATE for the ARMY that allows for the prediction of sustainment actions, shortened lead times, and improved responsiveness to the Soldier.

*Enabling Tool = Collaborative Planning and Forecasting for Replenishment (CPFR)*
3 PRIMARY ELEMENTS of COLLABORATION

- **Planning**
  - Develop a Collaboration Arrangement
  - Create a Joint Business Plan

- **Forecasting**
  - Sales
  - Orders
  - Collaborate on the Exceptions

- **Replenishment**
  - Order Generation
  - Delivery Execution

*TACOM Will focus more on collaboration between Gov’t and Supplier relating to joint requirements planning and forecasting in order to shorten lead times and maximize production capacity, resulting in improved responsiveness to the Soldier*

*Not specifically targeted in TACOM’s CPFR but, will be a natural outcome*
THE CPFR 9 STEPS

• Develop Collaborative Arrangement
  • What info are we going to Share?
• Create Joint Business Plan
  • How are we going to do business?
• Create Sales Forecast –
  • What does the future look like?
• Identify Exceptions for Sales Forecast –
  • What we know that the supplier doesn’t
  • What the supplier knows that we don’t
• Resolve/Collaborate on Exception Items
  • How are we going to overcome the exceptions?
• Create Order Forecast
  • What can we live with and move forward with?
• Identify Exceptions for Order Forecast
• Resolve/Collaborate on Exception Items

• Generate the Orders
BEFORE CPFR – LIMITED COLLABORATION

Characteristics:
- Limited visibility of future demand requirements
- Both partners forecast independently
- Outages cause adversarial relationships

Inventories to buffer against unexpected demand
Characteristics:
- Dual insights provide a better forecast demand
- Long term view of demand requirements
- Both partners jointly forecast
- Earlier visibility of issues through the exceptions
- Monitor POS data via the private exchange/web portal; compare to forecast
- Focus of relationship becomes win-win
SUMMARY

• To smooth the supply chain “bull whip” you need accurate visibility of demands
• CPFR is an industry standard “guideline” for collaboration
• Collaboration requires “trust”
• Collaboration is a transformational strategy
  – Roles and responsibilities can change
• Collaboration facilitates long-term B2B relationships
• Collaborative partnerships must be win / win
• Collaborative benefits can be huge!
IMPLEMENTATION of CPFR at TACOM

What Do I Need to Do?
IMPLEMENTATION

• Choose an Item or Partner
• Determine What You Want to Collaborate On
• Call Us!
IMPLEMENTATION (con’t)

• Choosing an Item
  – Single Item or Family of Items
  – Existing or New Long Term Contract
  – Consider a Repair Program
  – Special Program/Project
IMPLEMENTATION (con’t)

• Choosing a Partner
  – Trusted/Committed Vendor
    • Existing Long Term Business Relationship with TACOM a Plus
  – A Vendor Supplying Multiple NSNs
  – Vendor Size Not an Issue
IMPLEMENTATION (con’t)

• e-Business Team Will Assist You in Getting Started
  – Conduct Introductory Briefings and Facilitate Initial Meetings with Participants
  – Assist in Establishing Implementation Timeline

• Enable a Secure Interactive Web Portal for Data Sharing

• Set Up Data Feeds for Info Sharing

• Provide Any Other Guidance on CPFR As Needed
IMPLEMENTATION (con’t)

Sample Web Portal Screen

![Sample Web Portal Screen](image-url)
Things to Remember

- CPFR is a Long Term effort
  - Takes Time to Build Trust
- Both Partners Should be Open Minded
- Open Communication is Key
- Know Your Partner
CONTACT INFORMATION

Phone:
Comm:  (586) 574-6695
DSN: 786-6695

e-mail:  ec-edi@tacom.army.mil
Questions?
Develop, acquire, field, and sustain Soldier and ground systems for the Warfighter through the integration of effective and timely Acquisition, Logistics, and cutting-edge Technology

What we do (Core Competencies):
- Acquisition / Program Management
- Logistics, Industrial Operations, and Contracting
- Technology, Research, Development, Engineering

The Magnitude:
- 141 Allied Countries Own TACOM Equipment
- Every Army Unit has TACOM Equipment
- Approximately 3,000 Fielded End Items
- 29,000 Components

The TACOM LCMC Product Lines:
- Combat Vehicles
- Trailers
- Materiel Handling Equipment
- Fuel & Water Dist Equipment
- Chemical Defense Equipment
- Howitzers
- Commercial Vehicles
- Tactical Vehicles
- Construction Equipment
- Tactical Bridges
- Sets, Kits & Outfits
- Shop Equipment
- Large Caliber Guns
- Watercraft
- Mortars
- Aircraft Armaments
- Rail
- Fuel & Lubricant Products
- Rifles / Machine Guns
- Soldier Equipment

We support a diverse set of product lines through their life cycles, from combat and tactical vehicles, armaments, watercraft, fuel and water distribution equipment, to soldier, biological, and chemical equipment.
TACOM LCMC - FY05 Funding

Base Program
- PEO CS & CSS, $1.55
- PEO SOLDIER, $0.16
- PEO GCS, $2.80
- ILSC, $5.09
- ARDEC, $0.19
- TARDEC, $0.36

Obligations
- PEO CS & CSS, $4.56
- PEO SOLDIER, $0.60
- PEO GCS, $4.39
- ILSC, $6.22
- ARDEC, $0.27
- TARDEC, $0.33

Supplemental Program
- PEO CS & CSS, $4.59
- PEO SOLDIER, $0.46
- PEO GCS, $2.31
- ILSC, $1.22
- ARDEC, $0.10
- TARDEC, $0.02

$10.138B

Supplemental Program
- PEO CS & CSS, $4.59
- PEO SOLDIER, $0.46
- PEO GCS, $2.31
- ILSC, $1.22
- ARDEC, $0.10
- TARDEC, $0.02

$8.701B

FY05 Funding
- PEO CS & CSS, $4.56
- PEO SOLDIER, $0.60
- PEO GCS, $4.39
- ILSC, $6.22
- ARDEC, $0.27
- TARDEC, $0.33

$16.370B
TACOM LCMC
FY06 Total Obligation Authority

Base Program ($Billions)

- TARDEC, $0.25
- ARDEC, $0.17
- PEO CS & CSS, $1.47
- PEO SOLDIER, $0.16
- PEO GCS, $1.99
- ILSC, $3.90

Supplemental

$ 7.939B
TACOM LCMC Supports An Army at War and Transforming

- Global War on Terrorism - #1
- Modularity

BUILDING MODULAR BRIGADE COMBAT TEAMS
RESET & RECAPITALIZATION
Army Force Generation (ARFORGEN)

- Future Combat System
Support to Operation Iraqi Freedom and Operation Enduring Freedom

- Forward Repair Activity
- Logistics Assistance Reps (LARs)
- Integration Readiness Teams
- Vehicle Protection Kits
- Wheeled Vehicle Service Center
- Small Arms Support Center
- Mobile Tire Service Center
- Mobile Parts Hospital

In support of Operation Iraqi Freedom TACOM LCMC personnel perform manufacturing, maintenance, assembly, repair, and upgrade in theater.
**TACOM LCMC RESET & RECAPITALIZATION**

(ONGOING)

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<td>1st AD/3BCT</td>
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<td>326</td>
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<tr>
<td>3rd ACR</td>
<td>27 DEC 04</td>
<td>446</td>
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<tr>
<td>82nd AB</td>
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<tr>
<td>1st ID</td>
<td>1 Jan 05</td>
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<td>1st ID</td>
<td>1 Jan 05</td>
<td>886</td>
<td>99%</td>
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- FMTV RESET at Stewart & Stevenson
- M1 Tank RESET at Anniston Army Depot

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**TACOM Has linked RESET and Recapitalization efforts to the Army Modularity Campaign Plan**
What is Recapitalization?

The rebuild and selected upgrade of currently fielded systems to ensure operational readiness and a zero time/zero mile condition with enhanced capabilities.

**Rebuild** – Restores equipment to a like-new condition in appearance, performance, and life expectancy; inserts new technology to improve safety, reliability and maintainability where practical; system retains its model designation (OMA)

**Selected Upgrade** – Rebuild of system and adds warfighting capability improvements to address capability shortcomings; results in a new model with new life (OPA)

**RECAP GOALS:**
- Enhance effectiveness & warfighting capability
- Extend service life
- Reduce Operating & Support (O&S) costs
- Improve reliability, safety, maintainability

Two Paths

<table>
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<tr>
<th>Rebuild - OMA</th>
<th>Selected Upgrade - OPA</th>
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</thead>
<tbody>
<tr>
<td>Technology Insertion</td>
<td>Technology Insertion</td>
</tr>
<tr>
<td>Same Model- New Life</td>
<td>New Model- New Life</td>
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</tbody>
</table>

What systems do we recap?

The criteria we consider …

- Exceed half life metric
- Cost effective (recap vs maintain or buy new)
- Readiness trends
- O & S costs
- In fleet beyond 2020
TACOM LCMC RESET – Major Army Divisions (Future)

Numerous Nat’l Guard / Reserve Component unit redeployments at 20 sites & echelons above divisions/corps at 10 separate installations.

Equipment requirements will be finalized as units begin redeploying to home stations.

FY 06

2 BCT/2ID 10th MTN/2 BCT 25th ID/1 SBCT 3rd ID

11 ACR 1 COSCOM 18th ABC HQ 3rd ACR 3/1 AD 82nd ABN/1 BCT
Modularity & ARFORGEN
Modular Army

Intent: Create a Brigade Based Army

(Less than 4,000 Soldiers in each Brigade)

- Infantry
- Heavy
- Stryker
- FCS

Standard maneuver brigades with organic combined arms capabilities

- Maneuver Enhancement
- Reconnaissance, Surveillance, Target Acquisition
- Aviation
- Fires
- Sustainment

Supporting brigades with standard headquarters, but variable subordinate units
Align Soldier assignments with a unit’s operational cycle (~36 months)

- Soldiers arrive, train, deploy, and depart together
- Improves cohesion and training effectiveness

Lifecycle Manning (Tactical Units)

- Reset
- Train
- Certify
- Ready

~ 36 Mos.

2 mo 4 mo

Stabilize Soldiers for longer tours, reassign based solely on this criteria: Needs of the Army, Leader Development or Personal Preference.

- Improves stability and predictability for Soldiers and Families.
- NCOs and junior officers travel to schools and return to their post.

PREDICTABILITY
### The Army Campaign Plan

#### Army Maneuver Brigades 2004

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<th>ARNG</th>
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<td>25</td>
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<tr>
<td>Heavy</td>
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<td><strong>33</strong></td>
<td><strong>38</strong> (*15)</td>
<td><strong>71</strong></td>
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*15 Enhanced Separate Brigades

#### Army Maneuver Brigades 2010

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<th>ARNG</th>
<th>Total</th>
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<tr>
<td>Infantry</td>
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<td>6</td>
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<tr>
<td>Heavy</td>
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<td><strong>Total</strong></td>
<td><strong>43-48</strong></td>
<td><strong>34</strong></td>
<td><strong>77-82</strong></td>
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### Decision Point for an Additional 5 AC Modular Brigade Combat Teams

- Increased Joint Combat Capability
- Globally Managed Deployments
- Improved Versatility
- Modular AC/RC Design
- Increased Readiness
- Increases Stability
Creating Predictably Ready Forces

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</tr>
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<td>Train</td>
<td>Ready</td>
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<td>Ready</td>
<td>Train</td>
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<td>Train</td>
<td>Ready</td>
<td>Train</td>
<td>Ready</td>
<td>Train</td>
<td>Ready</td>
</tr>
</tbody>
</table>

Brigade Combat Teams

\[
\text{AC} \quad \text{RC} \\
48 + 34
\]

CREATE A FLOW OVER TIME WITH 78% OF UNITS BEING READY
Ready & Available Forces

Reserve Component
5 Year Cycle
8 x DIV
34 x BCT

Active Component
3 Year Cycle
10 x DIV
43-48 x BCT

Worldwide Deployments

72 – 82 BCTs

STILL NEED TO WORK SUPPORT BRIGADES

Ready & Available Forces
ARFORGEN
Reset Support a Continuing Requirement

ABOUT 14 BRIGADES GO THROUGH RESET EACH YEAR

• WINDOW FOR TECHNOLOGY INSERTION
  - HOW DO WE COMPLETE IN SHORT WINDOW?
  - DO WE MOVE EQUIPMENT?
  - DO WE CASCADE EQUIPMENT?

• WHO DOES THE WORK?
Continued Commitment to Future Combat System

Concept of Operation
- Deploy rapidly from strategic distance
- Ready to fight shortly after arrival
- Develop the situation out of contact (COP)
- Maneuver to a position of advantage
- Acquisition and lethality overmatch
Near real-time Command and Control and Attack Support
FCS (BCT) System-of-Systems (SoS)

Manned Systems
- Infantry Carrier Vehicle
- Mounted Combat System
- Command and Control Vehicle
- Recon and Surveillance Vehicle
- Non-Line of Sight Cannon
- Non-Line of Sight Mortar

Unmanned Aerial Vehicles
- Class I
- Class II
- Class III
- Class IV

Unattended Munitions
- Unattended Ground Sensors
- NLOS LS
- Intelligent Munitions Systems

Unmanned Ground Vehicles
- Command and Control Vehicle
- Unattended Ground Sensors
- NLOS LS
- Intelligent Munitions Systems

Medical
- Medical Evacuation Vehicle
- Medical Treatment Vehicle

Medical
- FCS Recovery and Maintenance Vehicle
- Armed Robotic Vehicle (ARV)
- ARV RSTA
- ARV Aslt
- ARV-A (L)

Unattended Munitions
- Small (Manpackable) UGV
- MULE (Countermine)
- MULE (Transport)
The objective is to get products to the warfighter faster, make our good products even better, minimize life cycle costs, and enhance the effectiveness and integration of our Acquisition, Logistics, and Technology communities.

– Sustaining the Global War on Terrorism
– Supporting Army Modular Force
  • Rebalancing the Force
  • Resetting the Force
  • Recapitalization of Equipment
– Future Combat Systems
TECHNOLOGY BASE INITIATIVES
ADVANCE PLANNING
BRIEFING TO INDUSTRY

DR. RICHARD E. MCCLELLAND
DIRECTOR

OCTOBER 2005
## FY 06 CONTRACT ACTIONS

### Existing Contracts / 06 Actions

**SURVIVABILITY TECHNOLOGIES**

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Cost</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCLAS Development</td>
<td>$2.7M</td>
<td>Chang Industries</td>
</tr>
<tr>
<td>Engineering Support</td>
<td>$200K</td>
<td>GS Engineering</td>
</tr>
<tr>
<td>Active Protection Analysis</td>
<td>$210K</td>
<td>MIT / Lincoln Labs</td>
</tr>
<tr>
<td>Engineering Support</td>
<td>$300K</td>
<td>Booz Allen</td>
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<tr>
<td>System Analysis</td>
<td>$100K</td>
<td>Altarum</td>
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<tr>
<td>Advanced ATD Structure</td>
<td>$600K</td>
<td>BAE</td>
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<tr>
<td>Active Defense KE System Dev</td>
<td>$6M</td>
<td>BAE</td>
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</tbody>
</table>
**FY 06 CONTRACT ACTIONS**

**Existing Contracts / 06 Actions**

**SURVIVABILITY TECHNOLOGIES (Continued)**

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Funding</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armor Materials Support</td>
<td>$300K</td>
<td>Sandia National Lab</td>
</tr>
<tr>
<td>Adv Joining NDE Concepts</td>
<td>$300K</td>
<td>Michigan State Univ</td>
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<tr>
<td>Armor Modeling and Effects</td>
<td>$600K</td>
<td>SWRI</td>
</tr>
<tr>
<td>Assymetric Thyristor Switch</td>
<td>$750K</td>
<td>Silicon Power Corp.</td>
</tr>
<tr>
<td>FCS Laser Hardened Vision</td>
<td>$950K</td>
<td>Boeing / McD-Douglas</td>
</tr>
<tr>
<td>Signature Modeling Validation</td>
<td>$1.5M</td>
<td>Thermo Analytics</td>
</tr>
<tr>
<td>Assured Mobility Motion Sim</td>
<td>$120K</td>
<td>Dynamic Animation Sys</td>
</tr>
<tr>
<td>Sensor and Eye Protection</td>
<td>$1.1M</td>
<td>Boeing / McD-Douglas</td>
</tr>
</tbody>
</table>
## FY O6 CONTRACT ACTIONS

Existing Contracts / 06 Actions

### INTELLIGENT SYSTEM TECHNOLOGIES

- **Vetronics Technology Integration**  $5.5M  GDLS
- **Remote Imaging for UGVs**  $250K  Lockheed Martin
- **ODIS**  $2M  Kuchera
- **ARV Robotics Technologies**  $3M  BAE
FY O6 CONTRACT ACTIONS

Existing Contracts / 06 Actions

WATER TECHNOLOGIES

• Water from Air $1M Mesosystems/Hamilton Sundstrand
• Water Monitoring $2M Wayne State University
• NBC Water Treatment $2M ACTI
## FY O6 CONTRACT ACTIONS

### Existing Contracts / 06 Actions

**MOBILITY TECHNOLOGIES**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power &amp; Energy SIL</td>
<td>$7.8M</td>
<td>SAIC</td>
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<tr>
<td>Bi-Directional DC-DC Converter</td>
<td>$925K</td>
<td>United Silicon Carbide</td>
</tr>
<tr>
<td>Engineering Support</td>
<td>$750K</td>
<td>TPS</td>
</tr>
<tr>
<td>SIL Battery Pack</td>
<td>$1.0M</td>
<td>SAIC</td>
</tr>
<tr>
<td>Ironless Core PM Motor</td>
<td>$200K</td>
<td>Aerovironment</td>
</tr>
<tr>
<td>Differential Cross-Drive Electric System</td>
<td>$500K</td>
<td>BAE Systems</td>
</tr>
<tr>
<td>Prismatic Cells</td>
<td>$625K</td>
<td>SAFT</td>
</tr>
<tr>
<td>K-Tech Heavy Spreader</td>
<td>$200K</td>
<td>K-Tech</td>
</tr>
</tbody>
</table>
FY O6 CONTRACT ACTIONS
Existing Contracts / 06 Actions

MOBILITY TECHNOLOGIES (Continued)

• PM Operating Temp Rotor Cooling $100K Aerovironment
• Hybrid HMMWV Battery Pack $250K Qualion
• 5kW Steer Motor Inverter Test $100K Premag
• 10kW DC-DC Converter Test $300K UofM
• Hybrid Modeling & Simulation $100K LTU
• Superlattice SiC Materials $600K Titan
• SiC Steer Motor HMMWV Integration $400K DRS
• 6x6 HE Test Bed Upgrade $400K NATC
• HE HMMWV Upgrade $900K DRS
FY O6 CONTRACT ACTIONS

Existing Contracts / 06 Actions

MOBILITY TECHNOLOGIES (Continued)

- HPD Engine Development  $1.45M  DDC/MTU
- Band Track Development  $950K  CTC
- LtWt Steel Track Development  $1.25M  CTC
- Elastomeric Research  $850K  KRC
- Fuel Cell Consultant  $175K  TPS
- SiC MOSFET  $1.25M  IN SOURCE SELECTION
- Technician Support  $400K  TPS
FY O6 CONTRACT ACTIONS

Existing Contracts / 06 Actions

BRIDGING COUNTERMINE TECHNOLOGIES

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lightweight Vehicle Mounted Countermine</td>
<td>$550K</td>
<td>KRC</td>
</tr>
<tr>
<td>Advanced Modular Composite Bridge</td>
<td>$6.2M</td>
<td>Seemann</td>
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<tr>
<td>Field Repair Composite Bridges</td>
<td>$750K</td>
<td>Alphastar</td>
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<tr>
<td>Innovative Wet Gap Crossing Technologies for FCS</td>
<td>$750K</td>
<td>Triton</td>
</tr>
<tr>
<td>Rapidly Deployable Gap Defeat Tech for FCS</td>
<td>$1.9M</td>
<td>QinetiQ &amp; GDSBS</td>
</tr>
<tr>
<td>Operational Mobility Across Gaps for the FCS / Future Force (Robotic Bridging)</td>
<td>$780K</td>
<td>TIAX</td>
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<tr>
<td>Novel Approaches for Maximum Performance of Lightweight Mechanical Countermine Equipment</td>
<td>$70K</td>
<td>IN SOURCE SELECTION</td>
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</tbody>
</table>
**FY O6 CONTRACT ACTIONS**

Existing Contracts / 06 Actions

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future Tactical Truck System (FTTS)</td>
<td>$17M</td>
<td>In Source Selection (Adv Demo Phase II)</td>
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<tr>
<td>Ground Vehicle Modeling and Simulation</td>
<td>$2.4M</td>
<td>Automotive Research Center (ARC)</td>
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<tr>
<td>Logistical Surge Support</td>
<td>$200K</td>
<td>GSI</td>
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<tr>
<td>Engineering Surge Support</td>
<td>$464k</td>
<td>FSSI</td>
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<tr>
<td>Vehicle Electronic Dev and Integrations</td>
<td>$500K</td>
<td>ASTI</td>
</tr>
<tr>
<td>High Performance Computing</td>
<td>$1.4M</td>
<td>HPC</td>
</tr>
<tr>
<td>High Fidelity Platform and Terrain Mechanics</td>
<td>$2.7M</td>
<td>DCS</td>
</tr>
</tbody>
</table>
FY O6 COMPETITIVE SOLICITATIONS

Note: Other Solicitations may be released in FY 06

MOBILITY TECHNOLOGIES:
POC: DAN HERRERA, 586.574.6411

- JP8 Reformer (2 Awards) $2M
- HMMWV / FMTV Integrated Starter /Generator $400K
- Thermal Management $500K
- Battery Chemistry Evaluation $100K
- New Solid State SiC Disconnect $600K
- High Performance Engine Research $1.4M
FY O6 COMPETITIVE SOLICITATIONS

INTELLIGENT SYSTEMS TECHNOLOGIES:
POC: DAVE THOMAS, 586.574.6411

- Human Robot Integration (HRI) $1.2M

TARDEC ACQUISITON SUPPORT TEAM REPRESENTATIVE:
CASSANDRA MAXWELL, 586.753.2619

http://contracting.tacom.army.mil/opportunity.htm
## FY 06 CONGRESSIONAL ADDS

### Comprehensive Listing of Committee Actions

Approximately $100M

- Adv Ground Vehicle Reliability Research
- Low Temperature Vehicle Research
- Adv Coating Systems for Ground Vehicles
- Automotive Research
- Next Generation Joining Technology Research
- Adv Affordable JP-8 PEM Fuel Cell Components for APU and Ground Vehicle Applications
- Advanced Electric Drive
- Center for Tribology and Coatings
- Defense Transportation Energy Research
- Family of Scalable Trailers (FAST)
- Gaming Technology Software Intitiative
- HAMMER
- Hydrogen PEM Ambient Pressure Fuel Cell for Medium / Heavy Duty Ground Vehicle
- Nano-Engineered Multi Functional Transparent Armor
- Nano-Fuels for Adv Military Vehicle Systems
- Plasma JP-8 Fuel Reformer
- Rapid Product Development and Deployment Portal
- Transportable Synthetic Fuel Manufacturing Modules
- Unmanned Vehicle Control Technologies
- Abrams Improved Track
- Advanced Battery Development
- Adv Drivetrains for Enhanced Mobility & Safety
- Adv Technology Integration Environment
- Adv Thermal Management Controls
- All Composite Military Ground Vehicle
FY 06 CONGRESSIONAL ADDS

(Continued)

- Alternative Mobility Vehicles for Special Ops
- Anti-ballistic Windshield Armor
- Armored Composite Cab Development
- Battery Charging Technology
- Lightweight Diesel Engine Initiative
- Center for Innovative Materials Research
- MATTRACKS
- Commercially Based Logistic Support Trucks
- Component Optimization for Ground Vehicles
- Composite Armored Vehicle Technology Transition
- Composite Shelters for Future Tactical Truck & Retrofit of Current Vehicle Shelters
- Detonation System Technology
- Development of Logistical Fuel Processors
- Digital Humans and Virtual Reality for FCS
- Full Spectrum Active Protection Close-in Layered Shield (FCLAS)
- Future Light Weight Military Trailer Chassis
- HAZMAT Material Vacuum System
- HEMTT Structural Weight / Cost Reduction and Efficient Armor Integration
- High Strength Powder Metal Gears for Vehicle Transmissions.
- Hydraulic Hybrid Vehicles
- Light Weight Structural Composite Armor for Blast and Ballistic Protection
- Liquid Hydrogen Storage System
- Mobile Hydrogen Infrastructure
- Next Generation Non-tactical Vehicle Propulsion
FY 06 CONGRESSIONAL ADDS
(Continued)

• Non Line of Sight Cannon (NLOS-C) & Mortar (NLOS-M) Light Weight Technologies Including Aluminum Vehicle Design
• N-STEP Enabled Manufacturing Cell for FCS
• On-Board Secure Telematics for Combat Vehicles
• Pacific Rim Environmental Degradation of Materials
• Personal Mobility Vehicle
• Rocket Propelled Grenade Vehicle Protection System

• Secure Pervasive Computing for Combat Vehicles
• Solid Oxide Fuel Cell Materials and Manufacturing
• Split Cycle Engine Technology
• Virtual Explosives Detection Image Matching
• Adv Mobile Microgrid Liquid Fueler
• Manufacturing Systems Demo
• Power Electronic Systems Research
SMALL BUSINESS INNOVATION RESEARCH (SBIR)

FY 05/06

• 43 Phase I Awards for FY05 Valued at $2,714,587

• 35 Phase II Selections for FY06 Valued at $25,509,904 with an additional $1,570,007 in Options
SMALL BUSINESS INNOVATION RESEARCH (SBIR)

- Pre-Solicitation – MAY 2006
- Open Solicitation – JULY 2006

TARDEC SBIR Managers:  
Mr. Alex Sandel, 586.574.7545  
Mr. Jim Mainero, 586.574.8730
Supporting National Security
TACOM APBI

Liam McMenamin
Senior Staff Officer
Office of Strategic Industries and Economic Security
Bureau of Industry and Security
U.S. Department of Commerce

www.bis.doc.gov/osies
Defense Priorities and Allocations System (DPAS) Regulations (15 CFR 700)
DPAS Objectives

- Keep Current Defense And Emergency Preparedness Programs On Schedule
- Provide System For Rapid Industrial Response (Acceleration / Expansion) In A National Emergency
- Minimize Disruption To Normal Company Commercial Activities
DPAS Legal Authority

- Defense Production Act of 1950
  - Acceptance And Priority Performance On Rated Contracts And Orders
  - Allocation Of Materials, Services, And Facilities Essential To The National Defense

- Stafford Act (1994 revision)
  - Priorities Authority Is Used For “Hazards”
    - Catastrophic Natural Disaster
    - Man-Caused (Terrorism) Event
    - DO-N1 Priority Rating
Commerce Delegation of DPA (Title I) Priorities and Allocations Authority for Industrial Resources

CONGRESS
Defense Production Act of 1950
Selective Service Act of 1948

PRESIDENT
E.O. 12919
E.O. 12742

DEPARTMENT OF COMMERCE
Defense Priorities and Allocations System
DPAS

DELEGATE AGENCIES
DEFENSE
Defense Programs

ENERGY
Atomic Energy Programs

GENERAL SERVICES ADMINISTRATION
Federal Supply Program

HOMELAND SECURITY
Civil Emergency Preparedness and Response

AGRICULTURE
Food Farm Equipment

INTERIOR/USGS
Mineral Facilities and Materials (suspended)

MEMORANDA OF UNDERSTANDING
ENERGY
Petroleum/Gas Products and Equipment

CANADA
Priorities and Allocations Support
Responding to a “Rated Order”
Industry Actions

- Mandatory Acceptance Of Rated Orders
  - Except As Provided By The Rules

- Preferential Scheduling Of Rated Orders
  - Timely Delivery To Customers

- Mandatory Extension Of Priority Ratings
  - Timely Delivery From Vendors And Suppliers
DPAS In The Current Environment

- DOD Applies DPAS To 750,000 Contract Actions Annually

- DPAS Is Used To Make Sure American Men And Women Stay Safe And Prepared

- Apply Priority Rating – Insurance Policy

- Give Field Commanders Critical Items And Tools Necessary To Do Their Jobs
DPAS Responds to the 21st Century Challenges

- Shrinking / Globalizing Defense Industrial Base
- DOD Commercial (COTS) Sourcing Initiatives And Dual-Use Products
- Supports Industry’s Just-In-Time Production And Delivery Practices
Special Priorities Assistance
Program Manager Actions

- Investigate Assumptions and Facts to Determine Possible Remedies
- Coordinate With Affected parties
- Negotiate An Acceptable Solution
Special Priorities Assistance

Official Actions

- Directive – Order Requiring Supplier To Deliver Or Take Other Action Within A Specified Time Frame

- Letter Of Understanding – Informal Agreement With Supplier To Expedite Delivery or Take Other Action

- Rating Authorization – To Authorize Use Of A Priority Rating By A Foreign Entity Or Other USG Agency
COMPLIANCE

- Criminal Prosecution
- Defense Production Act
  $10,000 Fine, 1 Year in Prison, Or Both
- Selective Service Act
  $50,000 Fine, 3 years In Prison, Or Both

- Civil Injunction Under DPA
  - Prohibit Action
  - Enforce Compliance
Contact Information

- Liam McMenamin
  Senior Staff Officer
  OSIES/Room 3876
  U.S. Department of Commerce
  Washington, D.C. 20230
  Tel: (202) 482-3634
  Email: lmcmenam@bis.doc.gov
  Web Site: www.bis.doc.gov
  Click On Industrial Base Programs
TACOM LCMC
Advanced Planning Briefing to Industry

“Partnering to Reset, Recapitalize, and Restructure the Force“
26-28 Oct 05

Daniel G. Mehney
Director, TACOM LCMC Acquisition Center

Committed to Excellence – Supporting America’s Warfighters
TODAY’S TOPICS

- ACQUISITION CENTER MISSION
- CONTRACTING BUDGET
- ITEMS FOR PROCUREMENT
- FY06 BUSINESS DRIVERS
- ACQUISITION INITIATIVES
- POINTS OF CONTACT
## WHAT WE BUY

### Systems Acquisition

<table>
<thead>
<tr>
<th>Picatinny</th>
<th>Warren</th>
<th>Rock Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D, Initial Production</td>
<td>R&amp;D, Production, Sustainment</td>
<td>Production, Sustainment</td>
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<tr>
<td>MUNITIONS</td>
<td>FUTURE COMBAT SYS</td>
<td>COMBAT VEHICLE ARMAMENTS</td>
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<tr>
<td>WEAPONS &amp; ARMAMENTS SYS</td>
<td>COMBAT VEHICLES</td>
<td>TRAINING DEVICES</td>
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<tr>
<td>FIRE CONTROL SYS FUZES</td>
<td>TACTICAL VEHICLES/TRAILERS</td>
<td>CHEMICAL DEFENSE</td>
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<tr>
<td>WARHEAD TECHNOLOGY</td>
<td>SUPPORT EQUIP</td>
<td>SMALL ARMS</td>
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<tr>
<td>FIELD ARTILLERY SYSTEMS</td>
<td>TACTICAL BRIDGES</td>
<td>AIRCRAFT ARMAMENTS</td>
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<tr>
<td>LOGISTICS AND GENERAL SUPPORT</td>
<td>FUEL &amp; WATER DISTRIBUTION SYS</td>
<td>MORTARS</td>
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<tr>
<td></td>
<td>WATER CRAFT &amp; RAIL CARS</td>
<td>RECOVERY VEHICLES</td>
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<tr>
<td></td>
<td></td>
<td>FIRE CONTROL SYS</td>
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<tr>
<td></td>
<td></td>
<td>CANNONS 105-165MM</td>
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<tr>
<td></td>
<td></td>
<td>ROCK ISLAND ARSENAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INSTALLATION &amp; MAINTENANCE SPT</td>
</tr>
</tbody>
</table>
WHAT WE BUY

**Anniston Army Depot**
- **Maintenance Mission** - Core depot for all combat vehicles (less BFVS/MLRS) & associated secondary items
- Ammo storage center
- Chemical Munitions Center

**Sierra Army Depot**
- **Maintenance Mission** – Store & perform COSIS; to include Force Provider Sys, Petroleum & Water Sys, Light Tactical Vehicle, Medium Tlrs, Large Area Maint Shelters, Bridging Sys, Landing Mats, and more

**Watervliet Arsenal**
- Manufacturing, industrial engineering, procurement, fabrication & product assurance for Mortars, Recoilless Rifles, Cannon for Tanks, Towed & Self Propelled Artillery, and fabricate prototype models

**Red River Army Depot**
- **Maintenance Mission** - Repair, rebuild, overhaul and conversion of BFVS, MLRS and associated secondary items
- Ammo storage center
- **Missile Recertification Mission** - Patriot/ Hawk missile
- Rubber Products Mission
TACOM Total Contract Dollars
Historical and Projected (All Sites)

In $Billions

FY03  FY04  FY05  FY06  FY07  FY08  FY09

11.3  8.2  19.0  15.0  12.0  12.0  10.5

Increase of 85% from FY05 projection

Addtl $3B ??
RESET, RECAP, Iraq Reqs
TACOM TOTAL FY06 OBLIGATION PROJECTION

Funds by Customer: $15.00 Billion Estimated Obligation
TACOM TOTAL FY06
OBLIGATION PROJECTION

Requirements Distribution: $15.00 Billion Estimated Obligation

Total RDT&E $3.9B

- Combat, 24%
- Tactical, 17%
- FCS, 25%
- Arms & Munitions, 7%
- Soldier Equipment, 3%
- Tech Base 4%
- Spares, 17%
- Arsenals/Depots, 3%
- Soldier Equipment, 3%
In $Billions

Increase of 140% from FY05 projection
TACOM-ROCK ISLAND
FY06 OBLIGATION PROJECTIONS

Requirements Distribution: $1.2 Billion Estimated Obligation
TACOM-PICATINNY CONTRACT $’S

Historical and Projected

In $Billions

FY03  FY04  FY05  FY06  FY07  FY08  FY09

1.5  1.4  1.87  1.7  1.5  1.5  1.3

Increase of 120% from FY05 projection
Requirements Distribution: $1.7 Billion Estimated Obligation

RDT&E $289M
Prodn $1.4B

Ammo Systems, 53%
Tech Base, 17%
Soldier Systems, 17%
Combat Systems 13%
TACOM-WARREN CONTRACT $’S

Historical and Projected

In $Billions

<table>
<thead>
<tr>
<th>Year</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>4.1</td>
<td>8.6</td>
<td>14.8</td>
<td>12.1</td>
<td>10.0</td>
<td>10.0</td>
<td>10.0</td>
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</tbody>
</table>

Increase of 80% from FY05 projection
TACOM-WARREN
FY06 OBLIGATION PROJECTION

Requirements Distribution: $12.1 Billion Estimated Obligation

- Combat Vehicles, 30%
- Force Projection, 3%
- Future Combat Systems, 34%
- Tactical Vehicles, 17%
- Base Ops, 1%
- Tech Base, 2%
- Sustainment, 13%
- Prodn $8.5B
- RDT&E $3.6B
### TACOM – Ground Systems Industrial Enterprise (GSIE)

<table>
<thead>
<tr>
<th>Location</th>
<th>Fiscal Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anniston Army Depot</td>
<td>1–6</td>
</tr>
<tr>
<td>Red River Army Depot</td>
<td>6–9</td>
</tr>
<tr>
<td>Rock Island Arsenal</td>
<td>9–10</td>
</tr>
<tr>
<td>Sierra Army Depot</td>
<td>11</td>
</tr>
<tr>
<td>Watervliet Arsenal</td>
<td>12–18</td>
</tr>
</tbody>
</table>

### TACOM – Picatinny

- **PEO Ammunition**
  - PM Combat Ammunition Systems (PM CAS) | 19–21
  - PM Close Combat Systems (PM CCS)     | 22
  - PM Maneuver Ammunition Systems (PM MAS) | 23

- **ARDEC (Armaments Research Development and Engineering Center)**
  - ARDEC | 24

- **PM Soldier Weapons**
  - PM Soldier Weapons | 25

### TACOM – Rock Island

- **Foreign Military Sales (FMS)**
  - FMS | 26–28

- **Program Executive Officer, Combat Service & Combat Support System (PEO, CS&CSS)**
  - PM Sets, Kits, Outfits, and Tools (PM SKOT) | 29–31

- **Product Support Integrated Directorate**
  - Aircraft Armaments & Small Arms PSID | 32–34
  - Field Artillery PSID | 35–37
  - Heavy Combat PSID | 38–40
  - Light Combat PSID | 41–44
  - Tools and Training Systems PSID | 45–46

- **Soldier, Bio, Chem Operations Integrated Logistics Support Center (ILSC)**
  - Chem/Bio Defense PSID | 47–49
TACOM – WARREN

- Integrated Logistics Support Center (ILSC)

- Program Executive Officer, Combat Service & Combat Support System (PEO, CS&CSS)

- Program Executive Officer, Ground Combat Systems (PEO, GCS)
  - PM Unit of Action (PM UA)
  - PM Light Armored Vehicle (LAV)
  - Tank Automotive Research, Development and Engineering Center (TARDEC)

- Foreign Military Sales (FMS)
- Installation Support Group

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### TACOM - WARREN ILSC

**SUMMARY OF ESTIMATED REQUIREMENTS**

**NOTICE:** REQUIREMENTS CONTRACT (REQ CON) IS FOR ESTIMATED QUANTITIES

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## TACOM - WARREN PEO CS&CSS

### SUMMARY OF ESTIMATED REQUIREMENTS

**NOTE: REQUIREMENTS CONTRACT (REQ CONT.) IS FOR ESTIMATED QUANTITIES**

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TACOM FUTURE BUYS

Summary listing on the Web......
http://contracting.tacom.army.mil/futurebuys/
FY06/INDEX.CFM

...... Table of Contents links to individual programs
...... Information available for six (6) months
...... Requirements are best estimates

PROCNET
TACOM Procurement Network

Your Source for Business Opportunities
FY06 Contracting Business Drivers

- **INCREASED SCOPE IN MISSION**
  - IRAQ/AFGHANISTAN/FMS REQUIREMENTS

- **UP TEMPO MISSION CONSIDERATIONS**
  - RESET/MODULARITY
  - TACTICAL VEHICLE SYSTEMS
  - REPAIR PARTS
  - FUTURE COMBAT SYSTEMS
  - STRYKER FIELDINGS
ACQUISITION INITIATIVES

- Performance Based Logistics
- Purchasing & Supply Management (PSM)
- Consumable & Repairable Transfer
- Increased Oversight
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<td>WARREN</td>
<td>Dan Mehney</td>
<td>(586) 574-7025</td>
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<td>Martin Green</td>
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<td>LaRuth Shepherd</td>
<td>(586) 574-6597</td>
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<td>Prince Young</td>
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<td>Bruce Berinato</td>
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<td>ROCK ISLAND</td>
<td>Lynn DeRoche</td>
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<td>Sue Ritz</td>
<td>(530) 827-4836</td>
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<td>WATERVLIET</td>
<td>Deborah Jones</td>
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## Contracting Points of Contact (cont.)

**ACQUISITION CENTER**

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<td>(586) 574-6176</td>
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<td>John Bruce</td>
<td>(586) 574-7447</td>
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<td>Connie Tucker</td>
<td>(586) 753-2020</td>
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<td>Pam Demeulenaere</td>
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<td>Mary Donovan</td>
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<td>Kristian Mendoza</td>
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<td>Tools &amp; Training Systems</td>
<td>ROCK ISLAND</td>
<td>Sean O’Reilly</td>
<td>(309) 782-2433</td>
</tr>
<tr>
<td>Chem Bio Defense</td>
<td>ROCK ISLAND</td>
<td>Kevin Sommer</td>
<td>(309) 782-2706</td>
</tr>
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<td>OFFICE</td>
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<tr>
<td>Close Combat Systems</td>
<td>PICATINNY</td>
<td>Val Colello</td>
<td>(973) 724-3398</td>
</tr>
<tr>
<td>Grnd Cbt &amp; Tact Armaments</td>
<td>PICATINNY</td>
<td>Greg Gorman</td>
<td>(973) 724-5961</td>
</tr>
<tr>
<td>Mortar Sys &amp; Ammo</td>
<td>PICATINNY</td>
<td>Jeff Boyle</td>
<td>(973) 724-6632</td>
</tr>
<tr>
<td>Soldier Weapon Sys</td>
<td>PICATINNY</td>
<td>Phil Grottendick</td>
<td>(973) 724-2854</td>
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<tr>
<td>Emerg Tech &amp; Lethal Contr</td>
<td>PICATINNY</td>
<td>Dan Grinter</td>
<td>(973) 724-3245</td>
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<td>Maneuver Ammo Sys</td>
<td>PICATINNY</td>
<td>Larry Visconti</td>
<td>(973) 724-6289</td>
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<tr>
<td>Combat Spt Sys</td>
<td>PICATINNY</td>
<td>Steve Trauger</td>
<td>(973) 724-4748</td>
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<tr>
<td>Combat Ammo Sys</td>
<td>PICATINNY</td>
<td>Paul Milenkowic</td>
<td>(973) 724-5391</td>
</tr>
</tbody>
</table>
### Contracting Points of Contact (cont.)

**SITE** | **POC** | **PHONE**
---|---|---
Warren | Patricia Redding | (586) 574-5388
Picatinny | Rick Burdett | (973) 724-4106
Rock Island | Larry Negaard | (309) 782-6709
Anniston | Sandra Turner | (256) 235-7346
Red River | Robert McDonald | (903) 334-3989
Watervliet | Deborah Jones | (518) 266-5309
Sierra | Susan Ritz | (530) 827-4836
“Need to be faster, more agile, less bureaucratic – Need to fight this every day”
What is a Public-Private Partnership?

- P3 -

- Contractual agreement between an Army-owned and operated facility and one or more private industry or other entities to perform work or utilize the Army’s facilities and equipment.

- Includes one or more of the following:
  - Articles or services to industry.
  - Industry leasing equipment or facilities to perform work for public or private sector.
  - Work sharing arrangements.
  - Teaming arrangements where Army facility and industry contract jointly.

- Army-owned and operated facilities...
  - Maintenance depots
  - Manufacturing arsenals
  - Ammunition plants
State of the World

- Transformation
- Global War on Terrorism
- Market & Defense
- Globalization
- Increased Joint Operations

“Need to be faster, more agile, less bureaucratic – Need to fight this every day”
Benefits to Industry

Benefits:

✓ Access to advanced technology industrial production machinery.
✓ Access to new chemical processes for metal finishing.
✓ Use of hard to receive hazardous waste permits.
✓ Minimize of process flow.
✓ Sign of long term use agreements.
✓ Avoid duplicate investment cost on short/long term contracts.
✓ Decrease in capital investment cost.
Statutory Authorities

**General Statutory Authority**

10 USC 2474: Designated Centers of Industrial and Technical Excellence (CITEs).

**Participate in Public Competitions**

- 10 USC 2208j
- 10 USC 2470
- Section 8032 PL 108-37

**Sale of Articles and Services to Persons Outside DOD**

- 10 USC 2208(h)
- 10 USC 2539b
- 10 USC 4543
- 22 USC 2770

**Lease or Use Army Property**

- 10 USC 2667
- 10 USC 2474

**Other**

- Armament Retooling and Manufacturing Support (ARMS) Initiative
  - 10 USC 4551-4555
- Arsenal Support Program Initiative (ASPI)
  - Pub Law 106-398
  - Def App Bill FY2003 (Expires 1 OCT 2005)
- Providing Government Property to Contractors
  - FAR Subpart 45.3
AMC’s Public-Private Partnership
Goal and Objectives

**Goal:**
Improve the output and performance of AMC organic facilities through increased participation by the private sector via industrial partnerships or cooperative activities.

**Objectives:**
- Enhance support to the warfighter via stronger cooperative partnership relationships with industry.
- Leverage industry’s best practices.
- Improve organic operations efficiencies.
- Reduce and offset cost of ownership of organic facilities.
- Leverage private investment in Army facilities.
HQ AMC’s
Actions to Support Partnerships

Private Industry Awareness
- Established a publicly viewed webpage (http://www.amc.army.mil/partnering/) to create awareness of partnership opportunities, to include: POC’s, facility links, and legislation.
- Participate in Advance Planning Briefings to Industry
- Champion Partnering through Industry Forums

AMC Facility Support
- Support Partnership Legislation
- Conduct on-site Partnership Tutorials at Army Materiel Command installations
Number of Public-Private Partnerships (P3s) Across AMC’s Industrial Facilities

As of 27 Sep

304 P3s across AMC

Tooele AD 35
Sierra AD 5
Riverbank AAP 11
Lake City AAP 10
Hawthorne AAD 12
Kansas AAP 2
McAlester AAP 13
Corpus Christi AD 4
Lone Star AAP 5
Red River AD & Munitions Ctr 25
Watervliet Arsenal 5
Rock Island Arsenal 5
Crane AAA 14
Letterkenny AD & Munitions Ctr 18
Scranton AAP 2
Tobyhanna AD 37
Radford AAP 18
Bluegrass AD 2
Holston AAP 17
Milan AAP 5
Anniston AD & Munitions Ctr 21

= Manufacturing
= Maintenance
= Ammo Production
= Ammo Storage
= Non-Ammo Storage
### AMC Partnership Examples

#### Maintenance Army Depots (ADs)
- **Anniston AD**
  - General Dynamics, BAE, Honeywell
- **Corpus Christi AD**
  - Sikorsky Aircraft Corp, GE Aircraft Engines, The Boeing Company
- **Letterkenny AD**
  - Lockheed Martin JAVELIN Joint Venture, Lechmotoren US, Edgewood Chemical Biological Center (ECBC)
- **Red River AD**
  - BAE, Marvin Land Systems, GS Engineering
- **Tobyhanna AD**
  - Northrop Grumman, Engineering & Professional Services, BAE

#### Manufacturing Arsenals
- **Pine Bluff Arsenal**
  - Lindsay & Osborne, Battelle
- **Rock Island Arsenal Joint Manufacturing and Technology Center**
  - Alliant Tech Systems, Grainger Tools, PB-NAMMO Demil LLC
- **Watervliet Arsenal**
  - Egyptian Co-Production, Hartchrom Inc, GD Land Systems

#### Army Ammunition Plants (AAPs)
- **Crane Army Ammunition Activity**
  - SNC Canada, Gradient Technologies
- **Holston AAP**
  - Railcar Solutions, Transit Mix, Kingsport Railcar Services
- **Iowa AAP**
  - General Dynamics, L3, U.S. Army Corps of Engineers
- **Kansas AAP**
  - Dyno Nobel, Lindsey & Osborn Partnership
- **Lake City AAP**
  - Stealth Garments, Valentec, Fort Osage School
- **Lone Star AAP**
  - American Dehydrated Foods, TEC Liners, Area Z Recreation
- **McAlester AAP**
  - Boeing, General Dynamics, National Forge
- **Milan AAP**
  - Ordnance Systems Inc, SNC TEC, American Ordnance
- **Mississippi AAP**
  - Boeing, Power Dynamics, Dept. of Energy
- **Radford AAP**
  - New River Energetics, Alliant Painting, U.S. Cellular
- **Riverbank AAP**
  - Cingular, Sierra Railroad, Medical Relief Foundation
- **Scranton AAP**
  - DCAA, Pennsylvania Environmental Partnership

#### Ammunition Storage
- **Anniston Munitions Center**
  - AMTEC
- **Blue Grass AD**
  - Lockheed, Air Force
- **Hawthorne AAD**
  - Space & Missile, Marines Dockery
- **Letterkenny Munitions Center**
  - ADK, BAE Deep Digger
- **Red River Munitions Center**
  - RRAD, DDRT, TRMD
- **Tooele AD**
  - General Atomics, Technical Ordnance, Dyno Nobel

#### Mobility Facility
- **Sierra AD**
  - FEMA, Tyonek, Highland Engineering
Watervliet Arsenal

Arsenal Support Program Initiative (ASPI):
- Site Manager Partnership Contract with ABTP for two years at no cost. ABTP markets unused and underutilized space and assets to commercial/Government customers, negotiates agreements and acts as facility manager.
- Partnering Contract with Hartchrom Albany Inc
- CRDA partnership to provide WVA space to two research and development companies
- Oak-Mitsui Inc facility utilization and purchase of service by WVA workforce
- Elmhurst Research Inc rental of office space.
- CRADA arrangements with Benet Labs supports partnering for space and services on-site with two Research and Development Companies - Oak Mitsui and Elmhurst Research
- Extreme Molding is leasing space for a start-up injection molding business with future expansion plans

Direct Sales
- General Dynamics - M256 cannon for the Korea K-1 Tank upgrade program,
- General Dynamics - M68A1 Cannon for the Army Stryker vehicle Mobile Gun System
- Wilburt & Company - Thin foil booms

- Hartchrom Inc. – Chrome plating barrels/components, as of 19 Aug 05

This reduces Army’s cost of ownership, preserves critical mission skills, Permits modernization of faculties and infrastructure
Rock Island Arsenal (RIA)

Utilizing ASPI

- TDF Corporation provides computer support to various tenants at Rock Island Arsenal.

- Quad City Area Labor Management provides in-kind training for Rock Island Arsenal employees.

- General Dynamics Ordnance and Tactical Systems provides a wide variety of services to the Joint Munitions Command.

- Modular Furniture Inc tears down and sets up office systems on Rock Island Arsenal.

- 5 T Office Services provides computer repair services to Rock Island Arsenal and its tenants.

- FR Countermeasures provides a wide variety of services to the Joint Munitions Command.

- Work with the Quad City Development Group on an agreement that allows them to market the facility. This will reduce processing time, cost of multiple leases, and enhance marketing efforts.

- Success with the ASPI program … 7 facility use contracts in place, 5 are for administrative space, 1 for storage space, and 1 for production space.
Rock Island Arsenal (RIA)

Numerous Success Stories with Public-Private Partnering Agreements

- United Defense Limited Partners… Production of turrets and crew production baskets on the BMP-2 Opposing Forces Surrogate and for the upgrade of gun Mounts for the M109 Howitzer

- CMRED…Center for Manufacturing Regional Economic Development for the sale of various supplies and services not commercially available in support of area businesses.

- Depot Systems… For the sale of various supplies and services for both DOD and commercial application.

- Alliant Techsystems… For the sale of gun mounts and spare parts for the M1A1.

- Focus Hope… Mobile Parts Hospital development and production.

- Log Value… Government security qualification

- Pendulum Management… Government security qualification

  –90 BPA’s in place with local vendors to provide additional capacity, as of 19 Aug 05
Ground Systems Industrial Enterprise

• Partner: ArmorWorks, Tempe AZ, uses state-of-the-art ceramic and composite materials to construct high tech armor systems.

• Subcontract for metal manufacturing to:
  • Anniston Army Depot
  • Red River Army Depot
  • Sierra Army Depot
  • JMTC-Rock Island Arsenal
  • JMTC-Watervliet Arsenal

TACOM/GSIE has significant successes with partnering. This is a Basic Ordering Agreement for ArmorWorks to send work to five Army facilities.
Corpus Christi Army Depot (CCAD)

CCAD is leveraging their CITE designation to create depot workload and provide for private sector use of their facility.

- Utilize Memorandums of Agreement to develop a number of Original Equipment Manufacturing Partnering efforts.
  - Partners include:
    - Sikorsky Aircraft Corporation
    - General Electric Aircraft Engines
    - Honeywell International Corporation
    - Boeing Company Aerospace Support
  - These agreements represent three major weapon systems and two major engines that CCAD overhauls.
Letterkenny Army Depot

**AM General**
- Provides Powertrains and unique parts for HMMWV

**Melton Industries**
- Provides engines for Power Generation Systems

**Penn Metal Fabricators**
- Metal Components and Trailers for Mobile Kitchens

**Military Systems Group**
- Gun Mounts and Engineering for Special Operations Vehicles

**Edgewood Chemical Biological Center**
- Biological Shelters and Filters

**AAI**
- Shadow 200 UAV

30 Jun 05
McAlester Army Ammunition Plant

- Harpoon Warhead
- High Speed Anti Radiation Missile (HARM)
- Joint Standoff Weapon (JSOW)
- Extended Range Guided Munition (ERGM)
- Commercial Explosive Charges
- 500 lb. Bombs
- 1000 lb. Bombs
- 2000 lb. Bombs
- Demilitarization
- Pallets
Conclusion

- The U.S. Army Materiel Command is committed to strong and mutually beneficial working relationships with our Industry Partners.
- The Public-Private Partnership process has proven to be a dynamic and effective tool in forging such relationships.

Should be utilized wherever and whenever beneficial as a sound management practice for business in the present and future.

Win – Win For Industry & U.S. Army

Life-Cycle Sustainment Support!

BOTTOM LINE…
Ensure Warfighting Readiness!
AMC Point of Contact:

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DSN: 656-9246  
Fax: (703) 806-9265  
Email: rick.riney@us.army.mil
U.S. Army/TACOM LCMC Path Forward for Heavy Duty Diesel Vehicles/Engines

October 27, 2005

Dr. Peter Schihl  
RDECOM-TARDEC Propulsion Lab

Ms. Parminder Khabra  
RDECOM-TARDEC Engineering Group

Mr. Luis Villahermosa  
RDECOM-TARDEC Fuels and Lubricants Team
Acknowledgements

- BG Patrick O’Reilly
- Ms. Violet Kristoff, TACOM Legal Office
Agenda

• 2006/2007 Heavy-Duty On-Road Fuel and Engine Exhaust Emission Standards
  – Regulation Approach
  – Potential Impacts on DOD
  – DOD interaction with EPA
  – Current production Systems under an NSE*

• Blanket NSE* for Exhaust Emissions Status and Discussion

• Pollution Control Technology Discussion
  – Evolution of Emission Controls
  – Exhaust Gas Recirculation
  – After Treatment Devices

• Fuels and Lubricants Discussion

• Solution Pathways

*National Security Exemption
Regulatory Approach

EPA finalized motor vehicle diesel fuel regulations and the heavy duty diesel on-road exhaust emissions regulations in January 2001.

Took a dual approach to reduce air emissions by:

   - Enable the use of exhaust system aftertreatment devices
   - JP-8 specification calls for < 3000 ppm!

   - Require aftertreatment device(s)

(Both regulations implemented with a phased approach)
Potential Impacts to DoD

• Ground tactical vehicles (i.e. HEMMT, PLS, HMMWV) fielded in the U.S. required to meet the fuel 15 ppm sulfur regulation
  – JP-8 does not meet this requirement

• Procure vehicles with pollution control technology
  – Potential performance degradation (fuel consumption, reliability, durability)
  – The current leading pollution control technology candidates are intolerant to high sulfur fuel

• Nebulous world wide operation since low sulfur fuel is not available world wide:
  – Low sulfur diesel fuel is an enabler for pollution control devices

(Combat vehicles (i.e. Abrams, Bradley, Stryker) are automatically exempt under 40 CFR, 89.908)
DoD Interaction with EPA

• Fuel and Emissions Strategies
  – Seek NSE for JP-8 exclusion from 2006 diesel fuel regulations
    
    In 1995, EPA determined that JP-8 did not meet EPA’s definition of diesel fuel, thus is not regulated as such today. (letter from EPA to Ms. Goodman, DUSD, 1995.)
  – Seek NSE from meeting MY2007 diesel heavy-duty, on-road exhaust emissions standards

• End Result:
  – DoD provided data to EPA in 2003 on tactical vehicles to obtain a NSE from 2006 diesel fuel regulations
  – THESE NSEs ARE ONLY FROM THE ON-ROAD, HEAVY-DUTY EMISSION AND FUEL REGULATIONS
Approach for MY 2007+ Exhaust Emissions NSE

• Typical engine characteristics supplied to EPA for an exhaust emissions NSE:
  – Engine model, engine compliance status, name of Vehicle Family, time frame for the NSE, contract # (if available)

• Today, PM TV does not have the above information for the future tactical vehicle, thus NSE strategy is:
  – Establish a generic NSE, using vehicle family names
  – Provide additional information at the time of contract award
  – Transfer the NSE to engine manufacturers upon contract award
“Blanket” NSE for Exhaust Emissions Status and Discussion

- “EPA hereby approves your blanket NSE request for all the DOD ‘tactical fleet’ that is subject to regulations at 40 CFR Part 85 and Part 86. This ‘tactical fleet’ includes the tactical military vehicles (TMWs) specified on the ‘Tactical On-Highway Fleet’ list (Enclosure 1) and all other TMVs meeting the requirements of the foregoing ‘tactical vehicle’ definition.” – August 23, 2005; K. Jennings, Manager, Engine Programs Group (EPA)

- Tactical On-Highway Fleet (Enclosure 1):
  - Light Tactical Vehicle: HMMWV
  - Family Medium Tactical Vehicles: MTV, LMTV
  - Heavy Tactical Vehicles: HEMTT, HET, PLS, Line Haul Tractor, Light Equipment Transporter, Heavy Dump Truck, Engineer Tractor
  - Current R&D: Smart Truck, FTTS, COMBATT, HMEE
“Blanket” NSE for Exhaust Emissions Status and Discussion

• **Tactical Vehicle Definition:** A motor vehicle designed to military specifications or a commercial design vehicle modified to military specification to meet direct transportation support to combat or tactical operations or for training of personnel for such operations.

• **EPA Acknowledgements**
  - High sulfur fuel used in future engines that include aftertreatment could result in engine failure, drivability problems, and permanent destruction of the emission control system
  - “New TWV procurements can’t contain engines with pollution control technology that is intolerant to sulfur without affecting reliability”
  - The military will integrate 2004 on-road, heavy-duty emissions compliant engines into propulsion systems *whenever technically feasible*
Terms & Utilization of the “Blanket” NSE

• Terms of the “blanket” NSE from 2007 standards
  – The Army/TACOM will integrate 2004 emission standard compliant engines into propulsion systems whenever technically feasible
    • must meet vehicle mobility/propulsion requirements
  – After formal selection of a production contract, the Army shall supply EPA with vehicle details (type, engine model, quantity)
  – Subsequent formal transfer of NSE to engine manufacturer.

• TACOM process for NSE transfer for each contract
  – Develop contract language
    • Contractor will complete a standard form
    • Government review
    • Request NSE transfer from EPA to Contractor
Future Issues: Non-Road Equipment

• **The EPA definition of the *nonroad engine*** is based on the principle of mobility/portability, and includes engines installed on (1) self-propelled equipment, (2) on equipment that is propelled while performing its function, or (3) on equipment that is portable or transportable, as indicated by the presence of wheels, skids, carrying handles, dolly, trailer, or platform [40 CFR 1068.30]. **In other words, nonroad engines are all internal combustion engines except** motor vehicle (highway) engines, stationary engines (or engines that remain at one location for more than 12 months), engines used solely for competition, or engines used in aircraft.

• Effective May 14, 2003, the definition of nonroad engines was changed to also include all diesel powered engines—including stationary ones—used in agricultural operations in California. This change applies only to engines sold in the state of California; stationary engines sold in other states are not classified as nonroad engines.

• **Examples of regulated applications include** farm tractors, excavators, bulldozers, wheel loaders, backhoe loaders, road graders, diesel lawn tractors, logging equipment, portable generators, skid steer loaders, or forklifts.
Future Issues: Non-Road Equipment

• Non-Road regulations
  – EPA has taken a similar approach with non-road equipment by reducing sulfur in the diesel fuel and exhaust emission standards as a single system, finalized June 2004.
  
  • Fuel regulations starting in July 2007 (500 ppm)
    – phase in period to June 2010 (15 ppm)
  • Exhaust emissions regulations begin MY2008 (Tier 4)
  • Impact on DoD is similar to heavy-duty on-road vehicle regulations

  – STRATEGY: Obtain a NSE from fuel as well as exhaust emissions regulations/standards
Emission Control Technology Discussion

- 1974 EPA (HC + NOx)
- 1978 (HC + NOx)

1974 Models:
- Retard Timing
- Lower IMT
- Shorten HRR
- Low Friction

1988 Models:
- Retard Timing
- Inc. Inj. Press
- Higher Boost
- Higher CR

1991 Models:
- Retard Timing
- Low IMT/High IMP
- Inc. Inj. Press.
- Variable Inj. Timing

1998 Models:
- Cooled EGR

1994 Models:
- 1991 Models
- Retard Timing
- Low IMT/High IMP
- Inc. Inj. Press.
- Variable Inj. Timing

Particulate [g/(HP-hr)]

source: Dr. Pat Flynn (retired)
Ex-VP R&D Cummins
Evolution of Heavy-Duty Engine Emission Control – 2007

NOx [g/(HP-hr)]

1991

1994

1998

2004 (2002)

2007

Particulate [g/(HP-hr)]

Approved standards

Exhaust Aftertreatment Required (catalytic converter)

source: Dr. Pat Flynn (retired)
Ex-VP R&D Cummins
Impact of 2002/2004 Standards on Commercial Heavy-Duty Diesel Engines

- Cooled Exhaust Gas Recirculation (EGR)
- ACERT™ – Advanced Combustion and Emissions Reduction Technology

Impact of 2007/2010 Emission Standards on Commercial Heavy-Duty Diesel Engines

- Cooled Exhaust Gas Recirculation (EGR) with advanced combustion and closed-loop engine system controls
- ACERT™ – Advanced Combustion and Emissions Reduction Technology plus aftertreatment (catalytic converter) and closed-loop engine system controls along with low pressure EGR loop
- New combustion regimes that may require specified fuel properties
What is cooled EGR?

- Reduce nitrous oxides (NO\textsubscript{x}) through ‘cooler’ combustion temperatures
- Recirculate and cool exhaust gas downstream of turbine (turbocharger); require back pressure restriction to flow exhaust gas to intake system (fuel economy penalty)
- Cool exhaust gas 400 – 800 F before dumping into intake system; additional engine system cooling requirement (~30% for heavy-duty engines and ~10% for light duty engines); non-ram air scenarios will have additional fuel economy penalty
- Temperature control of EGR crucial in order to avoid formation of sulfuric acid that expedites engine wear and reduces durability of EGR cooler
- This concept introduces particulates into cylinder; requires more frequent oil change w/o certification of proper lubricant
What is ACERT™?

- Caterpillar trademark non-EGR solution
- Limited variable intake valve timing; *extra valve train sophistication*
  - ‘cooler’ combustion temperatures
- Two stages of turbocharging (single stage for smaller displacement engines)
- Additional charge air cooling necessary; increase in required engine system heat rejection – *not as significant impact as cooled EGR*
- Passive oxidation catalyst (catalytic converter)
- Fuel economy penalty comparable to EGR engines

- **PM filters / NOx reduction devices**
  - Catalyzed filters (DOC + CDPF)
  - NOx trap (adsorber) vs. Urea SCR (selective catalytic reductant)
  - Additional space claim, conservatively 5 x engine displacement
- **NOx trap requires 15 ppm fuel sulfur level**
- Likely to include high levels of EGR in additional to NOx aftertreatment device
  - higher heat rejection (~ 50% increase vs. MY1998)
- Push toward new oil formulation to extend CDPF lifetime
- Urea SCR requires on-vehicle, urea storage tank

Potential ACERT Solution

Engine NOx Technology
- Advanced Diesel Combustion

Aftertreatment NOx Technology Options
- DeNOx Catalyst
- NOx Adsorber
- Urea SCR

CGI- clean gas induction

Particulate Filter

intake
New Combustion Regimes

- High Pressure Rise Strategies: HCCI, PCCI, etc.
  - fuel ignition quality and evaporation characteristics important
  - JP-8 ‘loose’ property specifications, i.e. CN dependent on supply source
Fuels and Lubricants Discussion
JP-8 Property Specifications

- **Sulfur content**: max. 3000 ppm
- **Aromatics**: max. 25%
- **Specific gravity**: 0.775 – 0.84
- **Evaporation Characteristics**:
  - 10% recovery: max. 205 C (186 C)
  - End point: max. 300 C (330 C)
- **Net Heating Value**: min. 42.8 MJ/kg
- **Cetane Index**: none
JP-8 Fuel Sulfur Content
Example: Fuel Supply in Iraq

- 2002 Petroleum Quality Information System (PQIS) report
  - 44 million gallons procurement sample
  - 971 ppm mean sulfur (70 to 1500 ppm range) based on < 50 samples

- 2004 PQIS Report and early 2005 samples
  - 878 ppm mean sulfur
  - note: 52% of samples > 1000 ppm and 24% samples < 200 ppm

- Reference – MIL-DT-83133 JP-8 allows up to 3,000 ppm sulfur.
JP-8 Fuel Sulfur Content
Example: Fuel Supply in Iraq

JP-8 Sulfur Concentration Samples from Iraq (2004)
### Impact of Emission Standards on Military Heavy-Duty Diesel Engine/Transmission Oils (E/TO)

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<thead>
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<th>Year of QPL</th>
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<tbody>
<tr>
<td>1987</td>
<td>600 MIL-L-2104D, API CD/2-cycle, Allison C-4</td>
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<td>100 Today: MIL-PRF-2104H, API CI-4/CF-2, Allison C-4, and CAT TO-4</td>
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<td>2004</td>
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Increasing performance and test costs

QPL: Qualified Product List
Why is this happening? Several reasons:

- Reduction directly related to oil change interval issue associated with emission standards

- **Engine test costs have increased dramatically with each new API performance category (i.e. API CG-4, CH-4, CI-4….CJ-4)**
  - From 1998 cost of 200K per oil to 2004 cost of 400K per oil

- Combined engine and transmission performance are critical for reducing military logistics but more expensive - transmission test costs addition $20K
  - ex. 2003 sample: M1, M2, and M915 (Allison Transmissions)

- Designing a dual engine-transmission lubricant is technically challenging and required formulators incur additional R&D expense

- **Lubricant formulators do not receive enough return on investment to justify the high test and R&D costs required to develop and produce military products**
  - Military does not contribute to testing cost
Impact of Emission Standards on Military Heavy-Duty Diesel Engine/Transmission Oils (E/TO) – Performance concerns

- US Market Drivers for lubricants
  - Ultra-low-sulfur fuels (ULSF)
  - Compatibility with pollution prevention devices

- Some additive technologies proven to work well with higher sulfur fuels will not be allowed in the future
  - Additives with phosphorus and ZDDP (zinc dialkyl dithiophosphate)
  - Due to ‘poisoning’ of pollution devices

- Military exposure to high sulfur fuels raises concerns regarding engine protection with lubricant technology developed around ULSF
  - Concerns to Logistic and Maintainability

- Unknown impact of future engine oils on transmission performance
  - No commercial interest.
Solution Pathways – Short Term to 2002/2004
Heavy-Duty On-Road Emission Standards

• EGR Engines
  – Issues: increased heat rejection and system volume, fuel and lubricant compatibility
  – Solution: employ EPA granted waiver, remove EGR system, recalibration of engine to meet military performance demands

• Non-EGR Engines
  – Issue: JP-8 compatibility
  – Solution: ensure JP-8 compatibility with engine system and compliance with military performance demands
Solution Pathways – Long Term to 2007/2010 Heavy-Duty On-Road Emission Standards

• All engine systems heading toward some type of aftertreatment system with advanced combustion and closed loop control
  
  – NOx trap, catalyzed filters (CDPF/DOC), urea or fuel based SCR
  – HCCI, PCCI, and other more ‘homogeneous combustion modes’
  – LTC : low temperature combustion for light loads, possible regeneration strategy
  – Heavy use of cooled EGR (~50% heat rejection increase vs. MY 1998)
    • possible low pressure cooled EGR in some cases
  – Exhaust sensors for temperature(s), pressure(s), NOx concentration, O₂ concentration
    • Closed loop control package for monitoring and regenerating aftertreatment devices
  – Commercial diesel fuel properties may require tighter combustion related property specifications for advanced combustion system operating modes
Solution Pathways – Long Term to 2007/2010 Heavy-Duty On-Road Emission Standards

- Engine systems **must be modified** to meet military requirements
  - Use of blanket waiver for MY 2007+ engine systems
  - Removal of EGR system
  - Removal of aftertreatment devices
  - Recalibration
  - Ensure high sulfur fuel tolerant and oil compatible components
THANKS!

PETE’S NEW ENVIRONMENTALLY FRIENDLY FAMILY VEHICLE
2005 TACOM APBI

CHUCK SCHWINGLER
U.S. DEPARTMENT OF STATE
DIRECTORATE OF DEFENSE
TRADE CONTROLS
REGISTRATION

• WHAT IS REGISTRATION?

  – A means to provide the U.S. Government with information on who is involved in manufacturing, exporting and/or brokering certain commodities.
  – A prerequisite for obtaining export licenses and other approvals from the State Department.
Who Must Register?

- Any company or individual who -
  - Manufactures defense articles
  - Exports defense articles
  - Furnishes defense services
  - Engages in brokering activities
  - Authority –ITAR 122.1 and 129.3
How Do You Register?

- Statement of Registration
- Form DS 2032
- Must be signed by a senior official
- Transmittal Letter
  
  Must be signed by the same senior official

  Letter is different from the transmittal letter submitted with export licenses. Must be completed in its entirety.
Exemptions

Applicant Assumes Responsibility for Correct Use and Risk of Violation – You Become A Licensing Officer

Ensure Responsible Officials Have Thorough Knowledge of Exemption/Conditions/Requirements: Beware Extrapolations!

Exemptions vs Exceptions: Only ITAR Provides Exemptions

Monitor Use and Ensure Compliance
Destination Control
Statement
ITAR 123.9(b)

• Refer to ITAR 123.22 “Filing of Export Licenses and SED’s with Customs”
• On SED, Cite specific exemption language “22 CFR 123
Canadian Exemption
22 CFR 126.5

- For end use in Canada by a Canadian Registered Person
  (Organized under the laws of Canada IAW Defense Procurement Act)
- Canadian Federal or Provincial Governments
- Permanent or Temporary Import or Export
- Except for 22 CFR 126.5 (b)(1) thru (b)(20)
Canadian Exemption 126.5

• Recordkeeping Requirements extremely important
  - 5 years
  – Description of the technical data,
  – Name of recipient end-user,
  – Date and time of export
  – Method of transmission.

• Defense articles and technical data must remain in Canada

• Be careful of business meetings!
Summary

- Fun part of the ITAR
- Do Not Need Prior Approval-No Waiting period
- Not For Prohibited Parties
- Follow Record Keeping Requirements
Ground Systems
Industrial Enterprise
Business Opportunities

Frederick L. Smith
Ground Systems Industrial Enterprise

Transforming the Industrial Base
Tank-automotive & Armaments COMmand
Enterprise Integration

Transforming the Industrial Base
Enterprise Capabilities

• Engineering and prototyping
  – Product design and development
  – Material testing
  – Manufacturing support

• Manufacturing
  – Precision machining
  – Fabrication/assembly
  – Casting/forging
  – Heat treatment/plating/finishes
  – Tool, die, and gage

• Maintenance and overhaul
  – Systems/subsystems support
  – Optics/electronics
  – Unique processes
  – Testing

• Field services
  – Forward repair facilities/teams
  – Spare/repair parts
  – Receipt, storage, and issue of equipment
Enterprise Resources

• 8,800 employees
  – 350 engineers
  – 350 welders
  – 500 machinists

• 32 million square feet of floor space

• 4,300 pieces of industrial plant equipment

• 500 computer numeric controlled machine tools

• 36,000 acres of high desert storage

• 7,100 foot runway
Enterprise Integration

- Serves as single point of entry for Enterprise
- Will match capabilities to allow a requirements single contract mechanism
- Coordinate and manage production at multiple sites
- Serves as single point of contact for installation production issues
- Can deploy industrial skills at a moment’s notice
- Maximizes flexibility for changing requirements
- Capitalizes on existing Public-Private Partnerships arrangements
Enterprise Opportunities for Industry

• Armor programs
  – HMMWV AoA
  – M939/M969

• Outsourced capabilities
  – Laser cutting
  – Welding
  – Painting

• Outsourced parts
  – Standard hardware
  – Standard shop supplies (CARC paint, welding wire)

• Centrally procured
  – Armor steel/standard steel
  – Ballistic glass
Transforming the Industrial Base

Supplier Map

HMMWV Armor Survivability Kit –
19 DoD installations
105 Suppliers in 25 states
3 countries

M939 Add on Armor -
158 Suppliers in 26 States
What the Enterprise Can Offer Industry

- Unique capabilities for your business
- Surge capabilities
- Capitalization cost avoidance
- Deployable resources
  - Skilled personnel
  - Equipment
- Business reforms
- Responsive and proven contract mechanisms
- Arsenal Support Program Initiative (ASPI)
Legislative and Financial Reforms

• Authorization Bill 10 U.S.C. §4544
  – Consolidates/clarifies public-private partnership authority at arsenals/depots
  – Lacked a deposit of proceeds provision to reimburse working capital fund – fix pending

• DOD FMR change allows sites to
  – Enter into fixed price agreements
  – Enter into multi-year agreements
  – Price work using less than fully burdened rate under certain conditions
  – Accept private funding incrementally
Enterprise Partnerships and Contract Mechanisms

• **Partnership Types**
  – Direct Sales
  – Facility use
  – Subcontracting
  – Teaming
  – Workshare
  – Arsenal Support Program Initiative (ASPI)

• **Partnership processes at the Enterprise level**
  – Direct sales agreements
  – Basic ordering agreement

Transforming the Industrial Base
Arsenal Support Program Initiative (ASPI)

• **What is ASPI?**
  – Congressionally mandated program to encourage commercial use of excess facilities at US Army Arsenals

• **Why should you be interested?**
  – Available industrial, warehouse and administrative facilities
  – Monies available to prepare for occupancy
    • Upgrade facilities – “build-to-suit”
    • Remove existing equipment
    • Install computer and phone lines
  – Competitive lease rates
  – State and local matching grants available

• **Are there other benefits?**
  – Building and grounds maintained
  – Private police and fire protection
  – Access to MWR facilities
  – Security
Enterprise Partnerships

- 97 current partnering agreements
- Over $100M in value
- Industry benefits
  - Reduces capital expenditure
  - Provides available surge capability
- Army benefits
  - Maintains critical skills
  - Utilizes facility capacity
- Win/win

Realizing a unified Government/Industry base today!
Ground Systems
Industrial Enterprise

On Point for America

Points of Contract:
Ronald J. Coppinger 309-782-4065 ronald.coppinger@us.army.mil
Frederick L. Smith 309-782-3560 frederick.l.smith@us.army.mil
2005 TACOM APBI
Partnering to Reset, Recapitalize, and Restructure the Force

General Session Presentations
Challenges

• Programs
• People
• Industrial Base
Department of Defense
Research, Development and Acquisition (RDA)
Dollars*

FY06: $147.4B*

Air Force
$55.1B
37%

Navy/Marines
$47.7B
32%

Army
$22.9B
16%

Defense - Wide
$21.7B
15%

*Budget Request Pending Congressional Approval
<table>
<thead>
<tr>
<th>Rank</th>
<th>Program</th>
<th>Funding ($M)</th>
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<tr>
<td>1</td>
<td>BMDS</td>
<td>7,775</td>
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<tr>
<td>2</td>
<td>Joint Strike Fighter</td>
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<td>3</td>
<td>F/A-22</td>
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<td>4</td>
<td>FCS</td>
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<td>C-17</td>
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<td>6</td>
<td>F/A-18E/F Hornet</td>
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<td>SSN 774</td>
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<td>V-22A/CV-22 Osprey</td>
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<td>MH-60R</td>
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<td>19</td>
<td>CH-47 Upgrade</td>
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<tr>
<td>20</td>
<td>Longbow Apache Block III</td>
<td>637</td>
</tr>
</tbody>
</table>

*RDA funding only*
Recapitalization Process

**Two Paths:**

- **Rebuild**
  - Zero Time/Zero Mile Maintenance Standard
  - Technology Insertion

- **Selected Upgrade**
  - Zero Time/Zero Mile Maintenance Standard
  - Daily Insertion

**Same Model-New Life**

- Extended Service Life
- Reduced Operating and Support (O&S) Cost
- Improved System Reliability, Safety, Maintainability, and Efficiency
- Enhanced Capability

**New Model-New Life**

- M1A1 AIM XXI*
  - UH-60A
  - CH-47D
  - M9 ACE
  - M88A1
  - PATRIOT
  - FIREFINDER
  - ELEC SHOPS
  - FAASV
  - HMMWV

- M1A2 SEP*
  - AH-64D
  - UH-60M
  - CH-47F
  - HERCULES *
  - BRADLEY A3*
  - M113 A3
  - HEMTT

**One Outcome:**

- Recapitalization Process
- February 2005
- $26.1B / 5 yrs

*Currently in production*
“Need It Now” Is Working Because:

1. Supplementals, Supplementals, Supplementals, …!
2. Operational Needs Statements Vice The JCIDS Process.
3. Access To Infrastructure Within The Theater.
4. Time (Not Always Adequate) To Integrate Solutions, Minimally Test, And Train To Use Prior To Deployment.
5. Acceptance Of Contractor Support Throughout The Theater.
6. Supply Chain Able To Support New / Low Density Capabilities.

When Goes Away – Then What?
Future Army Career Program-16*
Workforce - 2005

*Engineers and Scientists

1992
Total = 17,080
Avg = 42.18

2005
Total = 15,173
Avg = 44.62

Skill and Experience Gap

Retirement Eligibility Window
National Defense as a Percent of GDP

Source: DOD
EQUIPPING THE WARFIGHTER AROUND THE WORLD