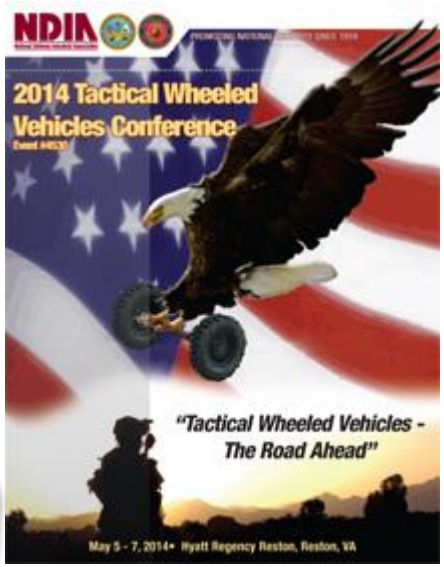
Managing to the Army Tactical Wheeled Vehicle Strategy



BG JOHN P. SULLIVAN
Chief of Transportation

MR. SCOTT J. DAVIS (SES)
Program Executive Officer
Combat Support & Combat Service Support

6 May 2014
NDIA TWV Conference

Organization

350+ Systems

Deputy PEO
COL Brian Cummings

Program Executive Officer
Mr. Scott Davis

Deputy PEO (AL&T)
COL Shawn Osborne

Force Projection
PM: Mr. Bryan McVeigh
DPM: Mr. Steve Roberts

- **PdM Bridging** — LTC Benny Shepard
- **PdM Combat Engineer/Material Handling Equipment** — LTC Garth Winterle
- **PdM Petroleum & Water Systems** — LTC Shonneil Severns
- **PdM Sets, Kits, Outfits & Tools** — LTC Christopher Ford
- **PdD Test, Measurement, & Diagnostic Equipment** — Mr. George Mitchell

Joint Program Office Joint Light Tactical Vehicle
PM: COL John Cavedo
DPM-Ops: Ms. Pam Demeulenaere
DPM-Acq: Mr. Robert Schumitz
MILDEP: (Vacant)

- **PdM JLTV Test** — LTC Misty Martin
- **PdD JLTV EMD A** — Mr. Michael Sprang
- **PdD JLTV EMD B** — LtCol (S) Matt Pfeffer*
- **PdD JLTV EMD C** — COL Shane Fullmer

Mine Resistant Ambush Protected Vehicles
PM (Acting):
Mr. Michael Receniello

- **PdM Joint Logistics** — LTC John O'Neill
- **PdM MRAP Vehicle Systems** — LTC Elliott Caggins
- **PdM Assured Mobility Systems** — Mr. Mark McCoy

Expeditionary Energy & Sustainment Systems
PM: Mr. Paul Richard (Acting)

- **PdM Small Power Sources** — LtCol(S) John Gutierrez*
- **PdM Medium Power Sources** — LTC Senodja Sundiata-Walker
- **PdD Large Power Sources** — Mr. Bob Thoens
- **PdD Battery Power Sources** — Mr. Cory Goetz
- **PdM Force Sustainment Systems** — LTC Ross Poppenberger
- **PdD Contingency Basing Infrastructure** — Ms. Kathy Lytle

Transportation Systems
PM: COL William Boruff
DPM: Ms. Pat Plotkowski

- **PdM Medium Tactical Vehicles** — LTC Frank Bridges
- **PSM Armored Security Vehicles**
- **PdM Heavy Tactical Vehicles** — Mr. Wolfgang Petermann
- **PdM Allied Tactical Vehicles** — LTC John Hall
- **PdD Army Watercraft Systems** — Zina Kozak-Zachary
- **PdD Light Tactical Vehicles** — Mr. Steven Rienstra

Mission: Enable Joint and Coalition Warfighters Across Today's and Tomorrow's Diverse Mission Requirements Through Effective Life Cycle Management of the Army's Combat Support and Combat Service Support (CS&CSS) Portfolio, Employing Solid Facts & Data to Develop, Produce, Field, Sustain, and Integrate the Right Mobile, Survivable, Lethal, and Affordable Capabilities

Transportation Corps

Provide our Army and the Joint Force trained and ready Transporters / Logisticians and synchronize deployment and distribution to enable Unified Land Operations.

Mission:

Train, educate, and deliver professional transporters and sustainers; develop doctrine, concepts, capabilities and force structure to deploy expeditionary forces and distribute materiel to Army and Joint organizations conducting Unified Land Operations in a JIIM environment.

TC Vision:

Our Army's deployment and distribution experts, effectively supporting expeditionary forces; The Spearhead of Logistics!

Strategic Environment

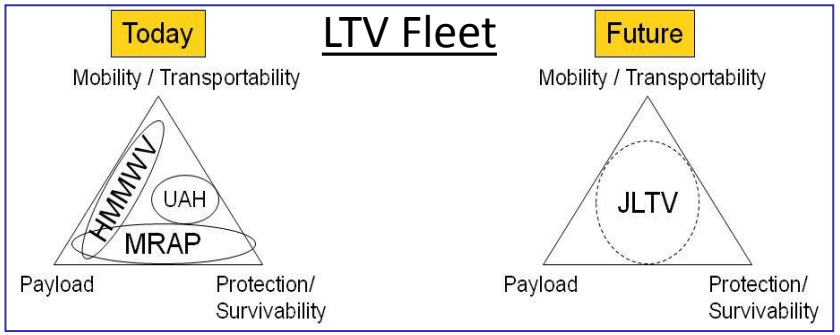
- Support to ongoing operations remains the priority
  - More than 66,000 Soldiers deployed for various contingencies
- Drawing down the Army—before conflict ends
  - Force Structure: 490,000 Active Army Soldiers in FY15 but then "?"
- Plenty of **Uncertainty**
  - Threat: Complicated and rapidly changing security environment
  - Resources: Sustained, fiscal uncertainty
    - Army absorbed ~$170B in cuts already
    - Modernization accounts down 39% from FY12 planning cycle
- Army must balance: End Strength, Readiness, Modernization

Goal: Lean, more capable, expeditionary forces

TWV Portfolio Priorities

1. Provide JLTV/MRAP level of protection

- Procure Joint Light Tactical Vehicle (JLTV)
- Recapitalize or procure to ≥ 50% Armor Capable
- Integrate ACO capability to maximize TWV operator protection



2. Network Interoperability and Mission Command

- Ensure sufficient available platforms to host the network as it is fielded

3. Reduce fleet age and operational costs

- Procurement/Recapitalization for MTV, HTV (HMMWV recapitalization /reset, while fielding JLTV)
- Divestment to meet new requirements from Army 2020
- Reduce Logistics footprint through advanced technologies (Operational Effectiveness/Operational Energy and ACO capability development initiatives)

4. Procure additional protection

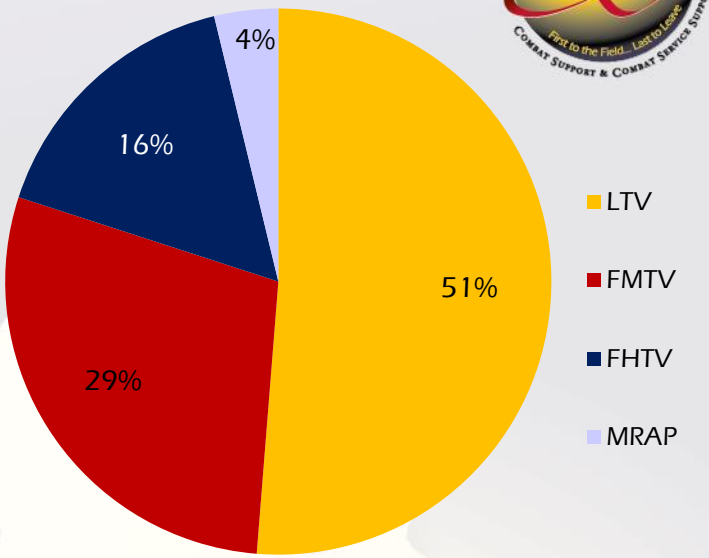
- Procure to ≥ 30% B-Kit on-hand

5. Maintain Anti-Access/Area Denial (A2/AD) capability

- Maintain Armored Air Assault and Low Velocity Air Drop Capabilities

Tactical Wheeled Vehicles

- Today's TWV Fleet
  - Beneficiary of substantial, rapid, warfighter-focused investment over the past decade
  - Healthy with a relatively low average fleet age
  - Offers greater capability and protection than predecessors
  - *Much improved protection, but at the cost of mobility and performance*



- FY15 Budget Request TWV Objectives (across FYDP)
  - Initiate production of the Joint Light Tactical Vehicle
  - Conclude most medium & heavy production programs
  - Progress toward procurement of new Heavy Dump Truck
  - Transition fleets to sustainment with low average fleet ages
  - Divest older platforms to reduce sustainment costs and manage fleet ages
  - Continue fielding protection kits
  - Support S&T efforts linked to future program insertion opportunities
  - Begin to explore next programs, like a Joint Medium Truck

TWV Fleet Overview

	Avg Ages	Size	Mission Roles	Future
Light	5-6 yrs	~120,000	•Mission Command •Troop / Cargo / Shelter Carrier •Security	 JLTV
Medium	8 yrs	~80,000	•Troop / Cargo Carrier •Line Haul •Non-transport Missions •Mission Command	Joint Medium Truck
Heavy	6-7 yrs	~40,000	•Recovery •Transport •Line Haul •Construction	 20T Dump Truck
MRAP	4 yrs	8,585	•Purpose built •Protected Mobility •Troop Transport •Mission Command	Enduring Requirement

JLTV Program Success

Feasible and Affordable

Requirements Management & Analysis Plan (RMAP):

- Program Schedule, Event-Driven Process
  - ➢ Knowledge Points Inform Service Senior Leaders on capabilities document development throughout a program phase

Streamlined Acquisition Strategy:

- Increased probability of delivering on time and within budget (i.e. Engineering and Manufacturing Development (EMD) Phase condensed from 48 months to 33 months)
- Competitive prototyping & testing in Technical Development (TD) phase allowed the Services to demonstrate achievable operational requirements

Industry Partnership:

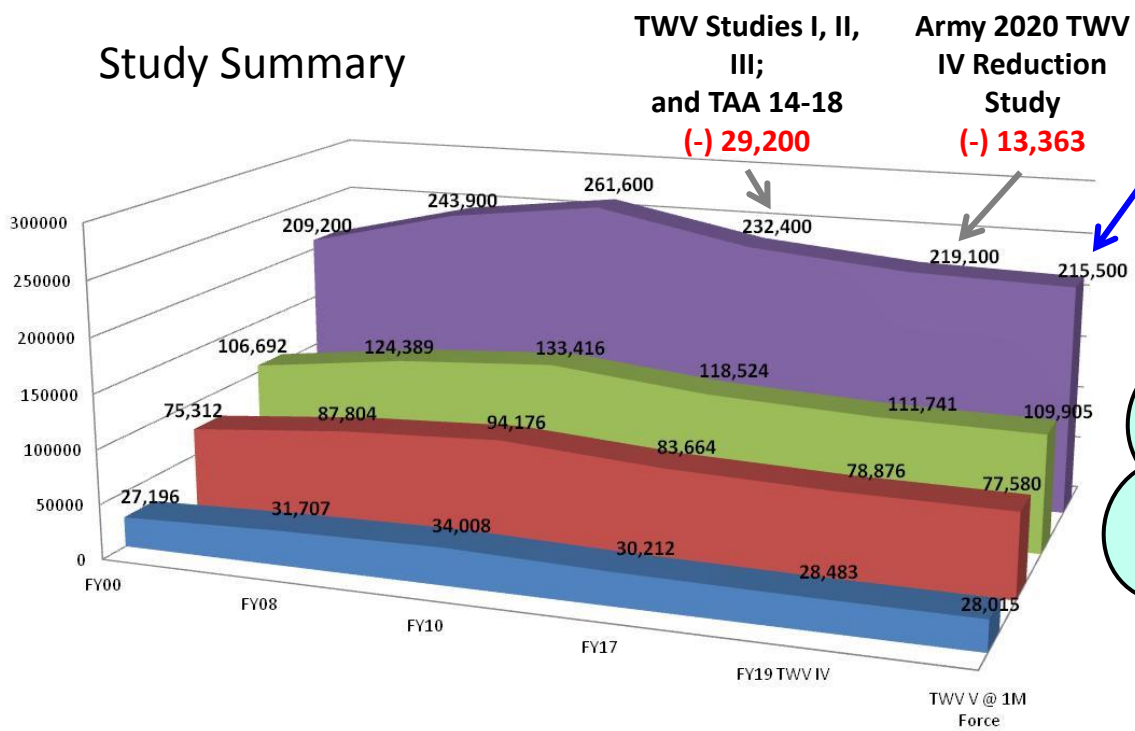
- Program allowed to sustain a competitive environment in TD, and EMD phases (Three vendors provided 12 variant prototypes in TD phase. Three vendors provided 22 variant prototypes in EMD phase.)

Testing Community Partnership:

- Testing early in TD & EMD Phases to prove maturity of technology to meet requirements
- Unprecedented ballistic testing to validate Force Protection and Survivability KPPs.

TWV Requirement Reductions

Study Summary



TWV V
Reduced 575 TWV requirements in the operating force.

Way Ahead

- More TWV Requirement Reductions probable
- JLTV Increment I quantity remains 49,099
- JLTV will make up a large % of the LTV fleet

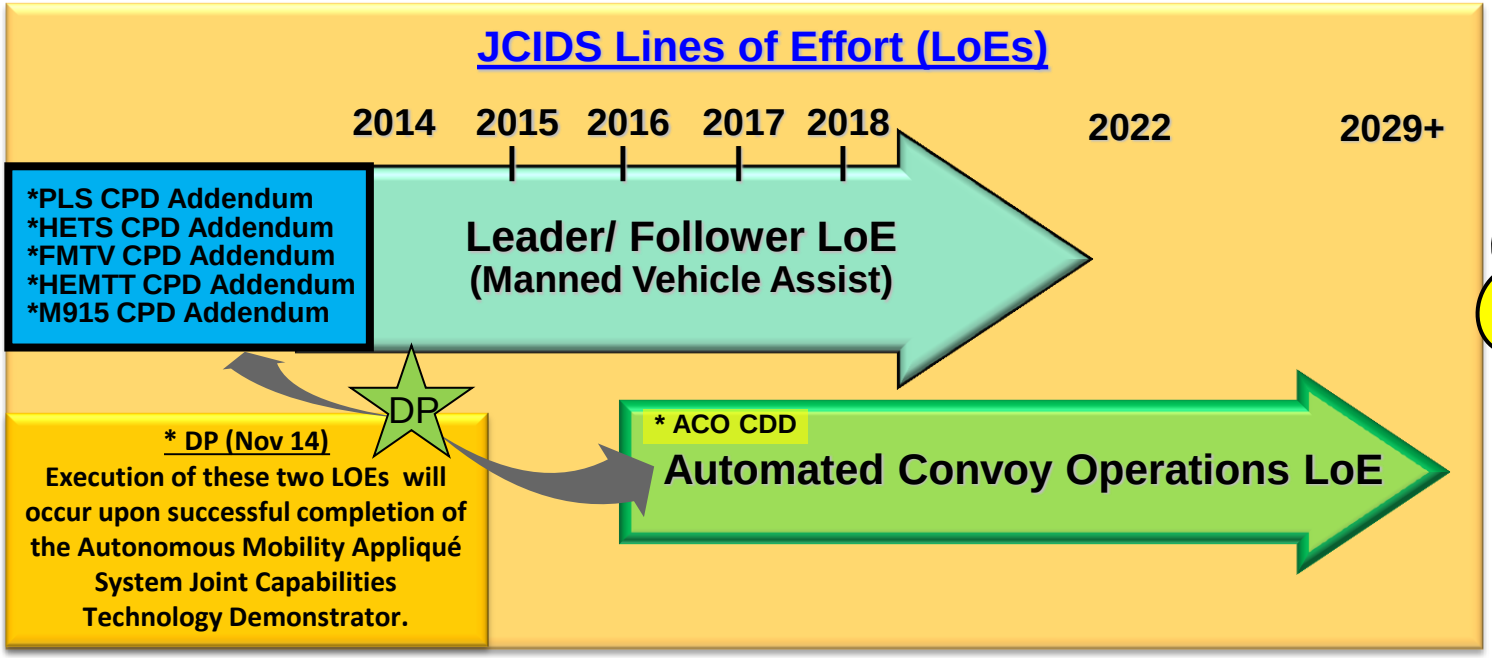
Equipment Modernization Approach

- Incremental improvements
  - Modernize existing critical systems and build new to address key gaps
- Divest older systems and niche capabilities
  - Decrease sustainment costs and re-allocate resources
- Slow procurement and limit quantities
  - Cannot afford to provide the most advanced equipment across the force
- Insert technologies and capability improvements only as needed
  - Leverage commercial investment where we are "technology-takers"
  - Focus S&T investment where we are "technology-makers"
- Scrutinize each equipment decision
  - Ensure affordability within the overall budget and cost-effectiveness in addressing capability gaps.

Automated Convoy Operations (ACO)

Technology Description: Automated Convoy Operations (ACO) is a system designed to incorporate automated capabilities into existing TWVs. These vehicles are designed to operate with minimal human input to accomplish an assigned mission. ACO will utilize a series of sensors including radar, light detection and ranging (lidar), cameras and GPS to determine and navigate the most appropriate route. ACO can operate within purely automated convoys or in conjunction with manned vehicles. ACO vehicles can be controlled and assigned a mission remotely through the use of an operator control unit (OCU).

Automated Convoy Operations JCIDS Summary



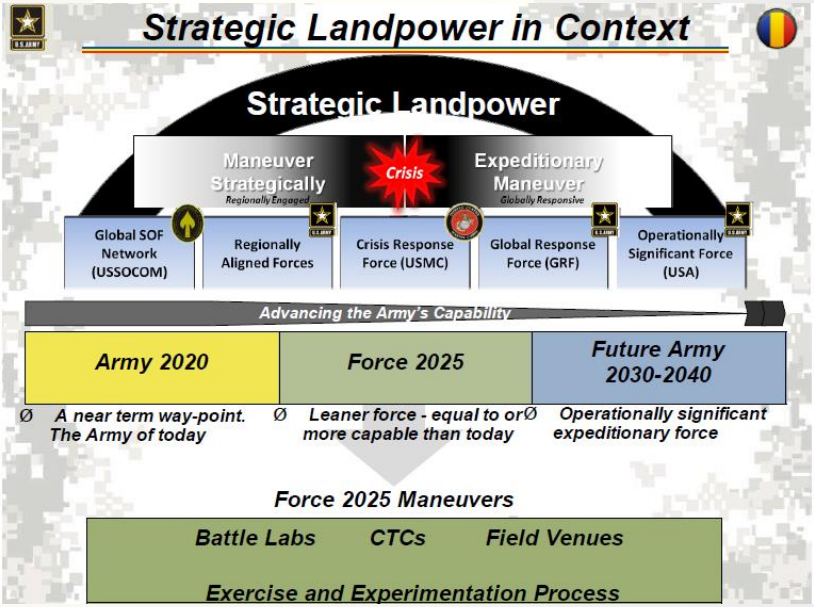
The best protection is not being there!

Way Ahead: Continue to execute ACO Requirements Management Analysis Plan (RMAP) Knowledge Point process to further develop the Draft ACO CDD

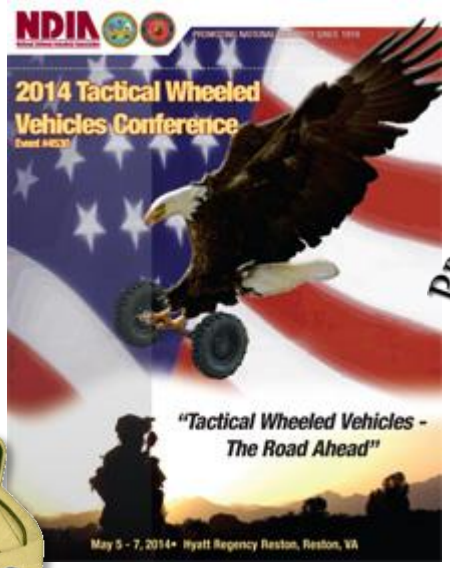
Potential to maximize unit operational effectiveness, improve soldier protection and Significantly reduce Life Cycle Sustainment Costs.

Future Considerations

- How do we best align requirements, S&T, and programs?
  - Long-rage analyses to identify technology insertions
  - JLTV as model for future acquisitions
  - Look to CSA's imperatives for 2025 and beyond
- How can we better manage fleets?
- What industrial base do we need and how do we shape it?
- How do we invest to reduce sustainment costs?
- What technologies are ready now?
  - Operational Energy / efficiency
  - Survivability & Mobility
  - Partnerships (Joint)
  - Commonality
  - Autonomous Operations



Questions



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Back Up Slides

TWV Capabilities Management Priorities

Capabilities Document Current & Projected Status

Document	Worldwide Staffing	ARCIC Validation	AROC Staffing		HQDA Approval	JROC Staffing	DoD Approval
			1-Star	3-Star			
FMTV CPD						Jun 14	
JLTV CPD	17-Feb-14	17-Feb-14	15-May-14	15-Jun-14	30-Jun-14	1-Jul-14	Sep-14
ACO CDD	1-Sep-17						
HETS CPD					13-Dec-11		
HEMTT CPD					15-Mar-13		
PLS CPD					1 Apr 14		
LHT CPD					11 Apr 14		

Initiatives

* **HETS, PLS, LHT, HEMTT, FMTV:** Update CPDs to include objective leader follower automation addendum
  PLS, LHT, and FMTV: Update CPDs to reflect increased underbody protection, once capability is demonstrated
  FMTV: Update CPD to include Armored Ambulance and Armored Troop Carrier variants, by FY16
  HETS: Update CPD to reflect increased protection, once capability is demonstrated
  UAH: Update improved force protection and performance (Objectives)

*** Represent the ORD to CPD conversion only. There is a second CPD update envisioned in 2015.**

Government – Industry Success Stories

To counter enemy attacks
TWVs have increased force protection……..

2001
Light Skinned

2003
Add On Armor (AOA)

2005
Long Term Armoring Strategy (LTAS)

2010
TWV Long Term Protection Strategy (LTPS)

2016
TWV Semi-Automation (Leader Follower)

2022
ACO Fully Automated TWVs

To date we have made significant changes to the Tactical Wheeled Vehicle Fleet
- *Increased survivability*
- *Improvements to TWV wheel and tires*
- *Improvements to powertrains and suspensions*
- *Collision Warning System*
- *Increase Climate Control*
- *Anti-lock Brakes and Traction Control*
- *Blast Absorbing Seats*

…….. increased protection has bought back Performance and Payload

Future TWV Capabilities

TWV Future Capabilities (2020+)

Protection
- Armor Kits
- Active Protection
- NBC Protection
- Environmental Control
- Weapons Mounts
- Non-Lethal Protection
- Full Automation

Maintainability/RA
- Imbedded Diagnostics/Prognostics
- Program reliability growth
- Condition Based Maintenance Plus (CBM+)

Safety
- Lateral Stability
- Emergency Braking
- Restraint System
- Crash Protection
- Fire Suppression

Operational Range
- Increased power train efficiency
- EPA emission compliant
- Fuel Efficiency
- Pay load Ton Miles Per Gallon

Force Sustainment
- Operational Energy compliant
- Power Generation
- Water Generation

C4ISR
- Victory Architecture Compliant
- GCSS Army architecture enabled
- Situational Awareness

Mobility
- Improve Cross Country Range (RCI)
- Improved Ride Limiting Speeds
- Improve Ride Quality
  - Independent suspension
  - Drive by wire

Deployability
- Weight Reduction
- Internal/External transport

Distribution
- Multifunctional Intelligent Load Handling System (ILHS)
- Capable of Autonomous operation