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Army Tactical Wheeled Vehicle Strategy: Meeting Current and Future Needs

[T]he Army is actively engaged in implementing a revised tactical wheeled vehicle (TWV) modernization and recapitalization strategy with the intent to recapitalize, modernize and eventually replace its existing light, medium and heavy tactical wheeled vehicles with either a new next generation vehicle class or more capable recapitalized tactical wheeled vehicles that have integrated new technologies and incorporated lessons learned from operations involving the Global War on Terrorism.

Section 114 (Acquisition Strategy for Tactical Wheeled Vehicle Programs),
109th Congress (1st Session) House of Representatives Report 109-89,
National Defense Authorization Act for Fiscal Year 2006,
Report of the Committee on Armed Services,
H.R. 1815, released 20 May 2005

Introduction

The Army's Tactical Wheeled Vehicle (TWV) fleet is at a crossroads. The fleet's 235,000 trucks and 118,000 trailers are aging at an accelerated pace as a result of current operational environments and previous low funding levels. In addition, obsolete components designed in the 1980s and earlier are increasing operational and support costs. Current operations, including the Global War on Terrorism, are adding wear and tear to the fleet and revealing major shortcomings in force protection, survivability, mobility, reliability and maintainability. At this critical time, a fully-funded TWV strategy is needed to guide crucial decisions regarding the future of the Army's TWV fleets.

The TWV fleet supports Army and joint forces with critical command and control, maneuver support and maneuver sustainment platforms. Light tactical vehicles, comprising 50 percent of the total TWV fleet, carry troops, armaments, shelters and tube-launched, optically-tracked, wire-guided (TOW) missiles, and are also used as ambulances and scout vehicles. Medium tactical vehicles make up 40 percent of the fleet and provide a significant portion of supply and ammunition delivery to the combat vehicle fleet. The last 10 percent of the total TWV fleet comprises heavy tactical vehicles, consisting of cargo and missile carriers, load-handling systems, fuel tankers, wreckers and material-handling cranes.

The Army's TWV strategy ensures fleet viability and combat effectiveness for the next three decades. **The strategy achieves the proper balance among three competing factors: achieving Army modularity requirements; supporting current operations and fleets; and transforming TWVs to attain future fleet capabilities.** These future fleet capabilities include the survivability and lethality necessary to defeat current and future threats and require

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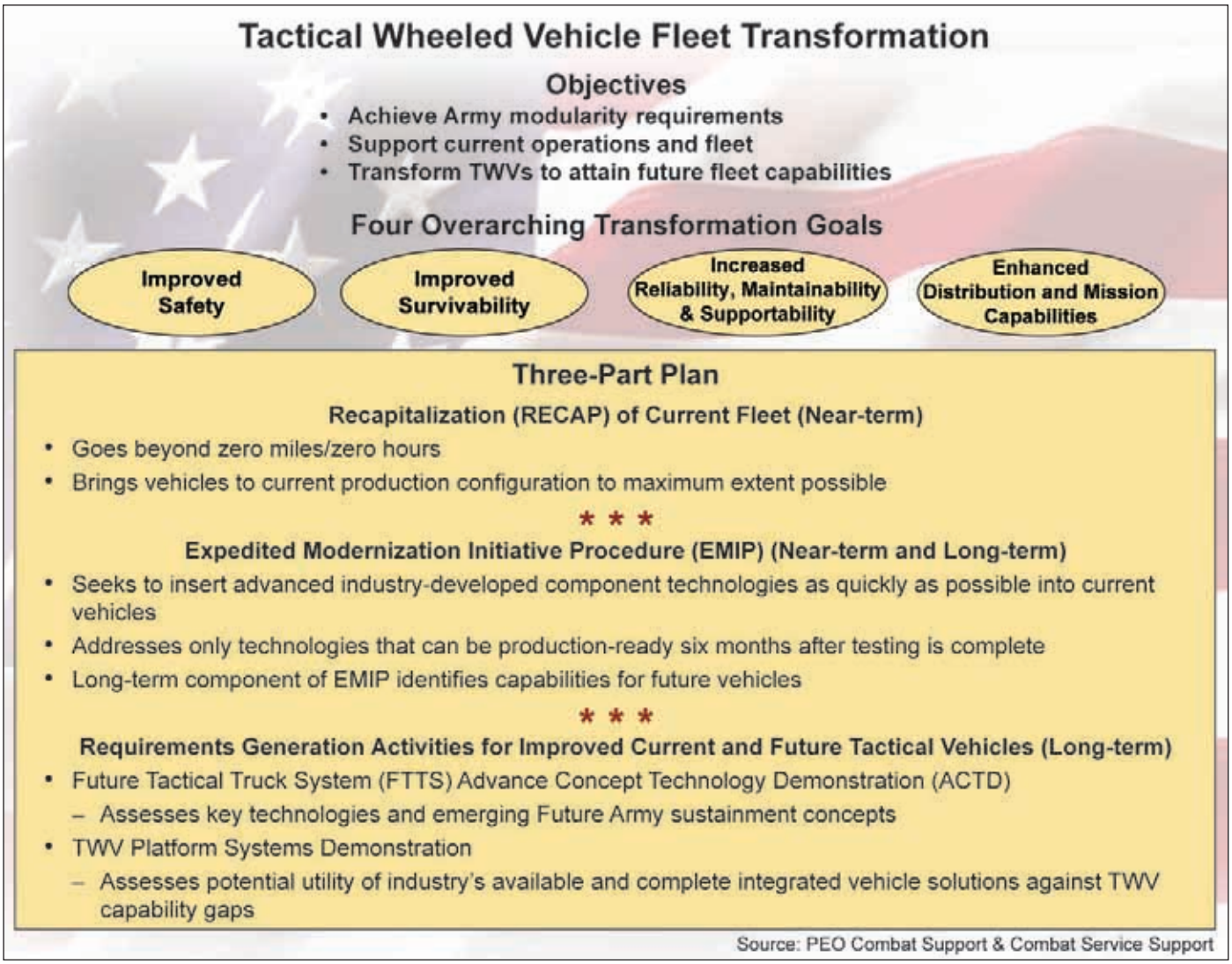


tactical vehicles to perform in a combat mission environment, necessitating the transformation from tactical vehicles to combat vehicles with full armor and self-defense weapons.

The Army is restructuring its division-based force into a modular, brigade-based force, forming self-sufficient and standardized brigade combat teams (BCTs) that can readily deploy and combine with other Army and joint forces. The Army is developing new plans to equip and sustain BCTs and support brigades in accordance with the new modular fielding schedule and Army Force Generation (ARFORGEN) implementation.[1] As the Army modularizes, it will establish a distribution-based sustainment structure that will increase reliance on combat tactical wheeled vehicles to deliver sustainment to the battlefield's forward edge.

TWV Strategy for Current Operations and Fleets

The Army devised the TWV strategy based on the needs of a modular Army and joint combatant commanders' sustainment needs, as well as the needs of units whose equipment must be reset. TWV modernization strategy requires action on two fronts: recapitalization of aging equipment and technology upgrades.[2]

1 For more information about Army Transformation and Army Force Generation, see AUSA's Torchbearer National Security Report "2006 and Beyond: What the U.S. Army is Doing" (March 2006), available online at http://www.ausa.org/PDFdocs/TBSecRpt/TBear_March_06_optimized.pdf.

2 For more information about equipment reset, see AUSA's Torchbearer National Security Report "Resetting the Force: The Equipment Challenge" (September 2005), available online at http://www.ausa.org/pdfdocs/TB_Resetting.pdf.

The TWV strategy's recapitalization effort is a major part of the transformation process for the Army's current TWV fleet. The health of the TWV fleet is critical to sustaining the combat readiness of deployed Army and joint forces by enabling delivery of fuel, food, water and shelter to forward locations. Repairing and recapitalizing TWVs—aging rapidly because of sustained combat operations in severe environmental conditions—requires a consistent, long-term commitment of resources.

Recapitalization is just one facet of the modernization strategy; critical upgrades are another. Not only are vehicles rebuilt and returned to service with zero miles/zero hours, they receive new technology that significantly improves their safety, survivability and reliability. Emerging safety systems that can help reduce hazards include easier-to-engage passenger restraint systems, brighter

vehicle headlights, more durable exterior lighting using light-emitting diodes (LEDs), enhanced night vision and active anti-roll capabilities. Increased survivability measures include add-on armor kits and weapon mounts. Significant improvements in reliability will reduce supply needs and in-theater maintenance requirements dramatically. Advanced steering, braking and suspension will provide not only improved off-road mobility but also on-road mobility, to include high-speed evasive maneuvers without incident.

These new technology investments focus on improving vehicle and crew connectivity, augmenting crew and operator protection, enhancing the current fleet's maintainability and reducing operating costs by increasing fuel efficiency. The Army intends

to use the TWV recapitalization program to kick-start the long-term investment strategy for fleet modernization.

TWV Strategy for Future Fleet Capabilities

A modern, capable TWV fleet is critical to supporting tomorrow's transformed Army. Transformation requires the integrated efforts of industry, academia and the government. The most effective way to leverage research and development is through Advanced Concept Technology Demonstration efforts and a continuous assessment of new component technologies.

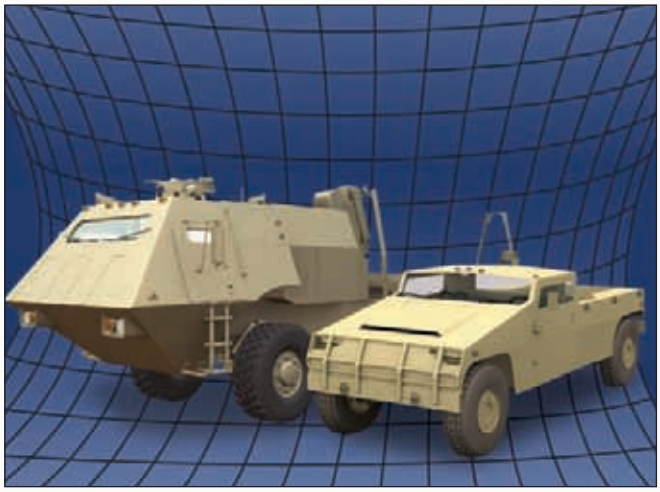
The Advanced Concept Technology Demonstration for Future Tactical Truck Systems takes a two-phase approach to researching advanced capabilities for the future tactical wheeled vehicle fleet. The first phase involved modeling and simulation (M&S) efforts in which multiple vendors presented concepts for technologies to be incorporated into integrated vehicle designs for a Utility Variant (UV) and a Maneuver Sustainment Variant (MSV) of the vehicle. The second phase included awards to three of the M&S contractors to manufacture prototype designs: two contractors will produce their version of a UV with trailer, and one contractor will produce two MSVs with companion trailers, all of which will be evaluated in a Military Utility Assessment (MUA) at Fort Lewis, Washington. The MUA will occur during the first and second quarters of Fiscal Year 2007. The results will feed into the requirements development process, which will define future truck requirements.

As part of a continuous assessment of new technologies within the commercial sector, the Army will also hold a TWV Platform Systems Demonstration (PSD) at Aberdeen Proving Ground, Maryland, in August 2006. The PSD will consider the available, complete integrated vehicle solutions that meet the Army's needs for survivability, network connectivity, sustainability, agility and deployability and will also assess component technology through the Expedited Modernization Initiative Procedure (EMIP).[3] The EMIP is a continuous process that will improve the current and future TWV fleets by identifying and leveraging the defense industry's capital investments in advanced technologies. EMIP allows identification of these advanced technologies, pending adequate funding and priority, for insertion as quickly as possible into current vehicles while also illuminating future vehicle capabilities. Active demonstrations will provide insight into the capabilities offered.

Regarding future fleet capabilities, the Army is coordinating with the United States Marine Corps and the U.S. Special Operations Command to develop a family of Joint Light Tactical Vehicles (JLTV) to overcome the limitations of the current High-Mobility, Multipurpose Wheeled Vehicle (HMMWV, pronounced "Humvee"). On 24 April 2006, the 3-Star Army-Marine Corps Board endorsed establishment of a Joint Program Office to manage the JLTV effort. The result of this cross-branch collaboration, the JLTV Initial Capabilities Document, currently awaits Joint Capabilities Integration and Development System approval by the Office of the Secretary of Defense. Following approval, the Future Tactical Truck Systems Advanced Concept Technology Demonstration, the PSD, EMIP and various Office of Naval Research Science and Technology activities will inform the requirements process, thus ensuring requirements are realistic, achievable and relevant to all services.

Conclusion

The TWV strategy encompasses improvements in the current fleet, research and development into new capabilities and a glimpse into the future of the tactical wheeled vehicle fleet. Recapitalization efforts improve safety, survivability and reliability in current tactical wheeled vehicles. The EMIP program searches for the most advanced technologies available to improve current and future vehicles. Moreover, this year the Army's



Program Executive Office for Combat Support and Combat Service Support is demonstrating prototypes of the UV and MSV so that key participants can see—and touch—the integrated technologies available for the Army's future TWV fleet. **The Army's Future Force, built around highly mobile, highly versatile brigade combat teams and support brigades, will not exist without similarly mobile and versatile tactical wheeled vehicles.** As the Army transforms into a more modular, expeditionary force, there must be a related transformation within the Army's TWV fleet. The ongoing efforts under the TWV strategy ensure that a modernized TWV fleet supports the needs of Soldiers, the Joint Force and the nation.

The Army's comprehensive Tactical Wheeled Vehicle strategy equips the Soldier for the current fight while transforming the vehicle fleet for the Future Force.

3 More information about the EMIP is available online at http://contracting.tacom.army.mil/ssn/sources.htm.