An Abrams covers dismounts as they advance at the Fort Knox MUCT site.

All photos by Robert L. Stevenson

The Abrams Tank, Fulcrum of Army Transformation

by Lieutenant Colonel Dave Pride

In this era of transformation, the main focus of Army modernization is, with good reason, on the development of the Interim Brigade Combat Team (IBCT) and the Objective Force. The Interim and Objective axes of the Army's three-pronged Transformation Campaign are under a watchful eye and remain topics of professional debate around every coffeepot. As the Interim Armored Vehicle (IAV) and the Future Combat System (FCS) are developed, one must not lose sight of the fact that the Abrams tank is undergoing a positive, and often overlooked, transformation process of its own.

In the last year, the Abrams tank achieved major fielding milestones and received funding for selected upgrades and recapitalization. This good news deserves our acknowledgement, not our neglect. This article will highlight the most significant Abrams tank milestones achieved during the last year and offer some insights into the Abrams' challenging future.

Modernization

Abrams tanks are not being modernized but selectively upgraded and rebuilt. True modernization, according to the Army definition, involves "a new program start" like the Crusader, Comanche, and the Tactical Unmanned Aerial Vehicle (UAV). During the last 18 months, certain organizational realignments and deactivations reduced the number of tanks in the force. To the 2LT and PFC, it may at first glance appear to indicate doom and gloom for the U.S. Tank Corps. On the contrary, the future is very bright for the 3,325 armor officers and 9,232 NCO/enlisted who wear tanker's brass. Lurking quietly in the shadows of Army Transformation are spectacular tank developments, each one worthy of a little chest thumping and fanfare.

Every day, dozens of stories emerge from the field praising the tank's capabilities and warfighting potential. Here are just a few of the more salient events that took place over the last year.

Fielding

- In June 2000, the Army fielded the first M1A2 SEP battalions to 2nd Bde, 4ID at Ft. Hood, Texas. Fielding to 3-67 AR, 1-67 AR, and 1/10 Cav marked the introduction of the Army's first weapon platform equipped with second-generation forward-looking infrared (2nd gen FLIR) sights and the new fully integrated brigade and below digital battle command system. The 1CD is fielding its M1A2 SEP tanks now through 2003. (See story, Page 42)

- In July 2000, we fielded the first digitized M1A1D battalions (1-66 AR and 3-66 AR) to 1st Bde, 4ID. The "D" identifier signifies the tank is modified with the appliqué version of the new digital battle command system and possesses the Far Target Locate (FTL) capability.

- Additionally, 1-66 AR marked the first fielding of tanks from the highly acclaimed Abrams Integrated Management (AIM) depot overhaul pro-

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gram. When a unit receives their AIM tanks, they are receiving a depot rebuilt tank (zero miles/hours), complete with a new paint job and that new tank smell. USAREUR (1-1 Cav) received their first AIM tanks in May 2001. The next battalion scheduled to receive the AIM M1A1 is 1-37 AR, 1AD in October 2001. The remaining two 1AD armor battalions will complete AIM fielding by May 2002.

Demonstrations of Warfighting Capability

• During August-September 2000, M1A1D's from C-1-66 AR successfully participated in the Joint Contingency Force (JCF) Advanced Warfighting Experiment (AWE) at the JRTC. In the pine forests of Fort Polk, elements of C-1-66 AR demonstrated complete digital command interoperability with their supporting light force. This digital connectivity demonstrated the Army's growing capability to operate seamlessly at the tactical level in a light-heavy environment.

• From March-April 2001, during the Division Capstone Exercise (DCX) at Fort Irwin, 4ID successfully demonstrated its digitally interconnected command and control (C2), intel, and admin-logistics systems. The DCX displayed for the first time the awesome lethality of M1A2 SEP and Bradley A3's equipped with second generation FLIR sights, FTL, and integrated digital battle command. The tanks from 4ID also premiered the Under Armor Auxiliary Power Unit (UAAPU). This addition saves fuel, reduces wear and tear on the main engine, and improves survivability during mounted surveillance by reducing the tank's overall thermal and noise signature. The OPFOR, when asked what challenged them the most during the rotation, replied emphatically — "the SEP."

Threat and the Contemporary Operating Environment

In view of the changing operational environment, TSM Abrams led an interagency team of subject matter experts on a task to conduct a comprehensive Threat and Vulnerability (T&V) assessment of the Abrams main battle tank. Numerous organizations from around the Army participated in the T&V Integrated Product Team (IPT) to review threats to the Abrams tank and identify vulnerabilities as a result of the threats. The T&V assessment verified traditional threats and uncovered some newer threats which emerged from the new contemporary operating environment. Few deficiencies were identified during the vulnerability assessment that weren't already known to us. Vulnerabilities encountered are minor and will be factored into the Abrams 1-N list for correction.

While most details of the T&V assessment are safeguarded, it is clear that the M1A2 SEP is the "baddest beast on the battlefield" and completely capable of full spectrum warfare. Even the 2001 M1A2 SEP Live Fire Test and Evaluation (LFT&E) verified the tank is fully capable of withstanding the most severe battlefield threats. Provided adequate tactics, techniques, and procedures are in place for non-MTW related tasks, the Abrams will still function extremely well in future fights. Today, the tank's biggest problem is getting to the fight quickly. The tank just cannot rapidly get to all of the locations our Army needs it to go, and get there fast enough, with all of its enablers. Hence, a new Future Combat System (FCS) is needed.

The Future of Abrams

The M1A2 SEP tank is the most lethal land combat system in the world and will continue to be so for the foreseeable future. Our Legacy Force is, and will remain, a key component of our National Military Strategy. There are over 4000 Abrams tanks and over 5000 Bradley fighting vehicles in the force. Irrespective of transformation, these armored systems will not disappear overnight. The Abrams is expected to be in the Army until 2031, which means that it is conceivable that second lieutenants in today's Armor Basic Course could still command an Abrams battalion.

The Abrams tank will continue to evolve. While major block modifications to the Abrams tank are not feasible, selective upgrades will be. Moreover, the Abrams may be the recipient, later this decade, of some key FCS technologies. During the 2001 Armor Conference, an International Tank Panel convened to discuss tank modernization. Representatives from France, Germany, Russia (United States subject matter expert), United Kingdom and the United States discussed national tank initiatives and shared ideas on potential tank upgrades in the new operating environment. Some of the upgrade and recapitalization plans for the Abrams include:

• In November 2000, the Army awarded a contract to develop and replace our older AGT-1500 tank engines with a new Abrams/Crusader Common Engine (ACCE). The new turbine engine will be 30 percent more fuel efficient and five times more reliable than the 1970's vintage AGT-1500. Fielding of the new engine is anticipated in FY04 and will be installed in M1A1D and M1A2 SEP tanks.

• Earlier in 2001, the Army approved the requirement for a 120mm canister anti-personnel round. This "shotgun-like" round (already dubbed the XM1028) will fulfill an urgent requirement to defeat massed dismounted threats with one blast of the main gun. This new requirement did not fall on deaf ears. Approved by the Army as a Warfighter Rapid Acquisition Program, the canister round will enter development a year earlier than forecast. This essential capability is targeted for fielding by 2004.

• Increasing lethality in the close combat zone is critical to success on future battlefields. We must preserve our lethality overmatch because, despite what you might think, our adversaries have not stopped modernizing their tanks. The threat continues to upgrade their tanks with thermal sights, improved armor and countermeasures systems, and more lethal ammunition. Our solution to this challenge is the M829E3, APFSDS-T round. This Kinetic Energy (KE) round is guaranteed to blow through the toughest of armor targets. The M829E3 design was ap-

proved this year and should be fielded by 2003. For long-range targets, we have the Tank Extended Range Munition (TERM) planned. The TERM requirement was approved at HQ TRADOC this year. TERM will provide the Abrams-equipped force with the ability to destroy high value targets at extended line-of-sight and beyond line-of-sight ranges out to 10 kms.

Tanks in Complex and Urban Terrain

There have been several articles published that call for upgrading the Abrams to be more versatile in complex and urban terrain. To provide the tank with full spectrum capabilities, the Armor Center gained approval for fielding the 120mm canister anti-personnel round. Other initiatives that posture the tank for 21st century operations in complex and urban terrain include:

- Contingency Side Armor – This low-weight, non-obtrusive, add-on armor provides additional protection to the side of the tank without major modification. This additional protection will be used in contingency operations should the threat dictate its use. Effective against a full range of threats, contingency armor will be required in urban and complex environments where added flank protection is critical.

- Secure, wireless tank-infantry communications – The U.S. Marine Corps put the tank external phone back on its tanks. While the Army is monitoring this effort, a more flexible system is under development that provides tank crewmen continual connectivity to the vehicle intercom even when dismounted from the vehicle. This system has tremendous application to heavy-light operations, as well as peacetime safety and training utility. The mounted crewmen cordless communications set was successfully demonstrated by 5-112 AR, Texas National Guard, during its annual training at Fort Knox's MOUT Site in July 2001.

Summary

The Armor Corps is experiencing many exciting transformation-related changes. We are fielding two upgraded tanks — the M1A1D and the M1A2 SEP, each complete with a sporty new paint job, that new tank smell, and zero miles/hours on the powertrain. (Note: The M1A2 SEP even has an air conditioner, Bose speakers, and a Rolls-Royce auxiliary power unit.)

New materiel upgrade initiatives are emerging that will preserve our Armor Force's combat overmatch capability as the Army undergoes its necessary metamorphosis. Team Abrams is committed to maintaining the necessary overmatch required to guarantee a superior 21st century main battle tank, with full spectrum capabilities. Our Abrams strategy is simple — provide full spectrum combat capabilities overmatch while simultaneously improving reliability and reducing fleet operating and support costs.

The Abrams tank remains lethal, survivable, and its future secure. The Abrams tank, along with its Bradley counterpart, continues to provide this nation with a critical warfighting capability. During Army Transformation, the Abrams serves as the fulcrum. Constantly under pressure to fight and win our nation's wars, the Abrams force will support the other two axes of transformation (Initial and Objective) until they achieve initial operational capability. The Army continues to demonstrate its continued commitment to the Abrams fleet. In joint testimony to Congress, the Secretary of the Army and the Army Chief of Staff reported:

"Today's force, the Legacy Force, enables the Army to meet near-term national military strategy commitments. Until the Objective Force is fielded, the Legacy Force — augmented or reinforced with an interim capability — will continue to engage and respond to crises to deter aggression, bring peace and stability to troubled regions, and enhance security by developing bonds of mutual respect and understanding with allies, partners, and potential adversaries. It must remain ready to fight and win if necessary, giving us the strategic hedge to allow transformation."[1]

While much of the Army's modernization and transformation attention is focused on developing the other two axes of the Transformation Plan, it is important to remember that the Abrams- and Bradley-equipped Legacy Force is still our decisive, ground fighting force. The future is bright and all tankers should know they are in the finest tank in the world. This situation will not change until significant numbers of Future Combat Systems are fielded in the next decade that take the Abrams' place as the new "king of the killing zone."[2]

Author's Note: The organization within TRADOC that conducts total system management for the Abrams tank across the DTLOMS is TRADOC System Manager (TSM) Abrams. This organization represents the "Field" and serves as the TRADOC advocate and voice for tank issues. TSM Abrams coordinates user requirements for the tank, fights for high-payoff improvements, and oversees all issues related to the modification (safety, training, survivability, lethality, digitization, etc.) of the Abrams tank and its training devices.

Notes

[1]Joint Statement by the Honorable Thomas E. White, Secretary of the Army and General Eric K. Shinseki, Chief of Staff United States Army before the Committee on Armed Services, United States Senate, First Session, 107th Congress, 10 July 2001.

[2]Orr Kelly, *King of The Killing Zone: The Story of the M-1, America's Super Tank,* Berkley Books, N.Y., 1989.

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