

Bringing the Future Back to Combat Systems: Recognizing the Need for a New Main Battle Tank

by MAJ Michael J. Trujillo

The Army's current stagnation with developing a fully capable and modern armored-combat platform to replace the aging M1 Abrams main battle tank (MBT) promises to degrade our ability to deploy, fight and win our nation's wars on the future battlefield. With potential and realized adversaries developing and purchasing modern combat systems that may outmatch our armored fleet, the Army must reinvigorate a more realistic version of the Future Combat Systems (FCS) initiative, focusing first on the development and fielding of a new MBT.

History is cyclical; just as the genesis for the development of the M1 Abrams was in response to what was then Soviet-era tank developments during the Cold War, we again find ourselves in a race to field the most capable, lethal and deployable platform ahead of our competitors/adversaries. The development of a new MBT does not, however, require a "blank sheet" way ahead. The intellectual capital, infrastructure and pre-existing requirements already live in the archives of the Army's cancelled initiative to achieve what GEN Eric Shinseki, former Chief of Staff of the U.S. Army (CSA), called "the objective force."¹

FCS

In October 1999, GEN Shinseki began the path that would lead the U.S. Army, Department of Defense and acquisition community down a 10-year, multi-billion-dollar stretch to a vision that completely reorganized and transformed the U.S. Army. GEN Shinseki's vision involved achieving "the objective force." The objective-force transformation promised to create a family of vehicles (FoV) and systems that would increase the Army's lethality, decrease force build-up timelines and decisively execute cross-domain fires through a highly effective and integrated communications system.

GEN Shinseki envisioned a highly capable land force capable of deploying a brigade in four days, a division in five days and five divisions in 30 days.² In addition to the 14 combat and combat-support platforms, the plan called for both manned and unmanned systems as a part of what would become FCS. The FCS concept included the XM1202 Mounted Combat System meant to replace the M1 Abrams MBT.

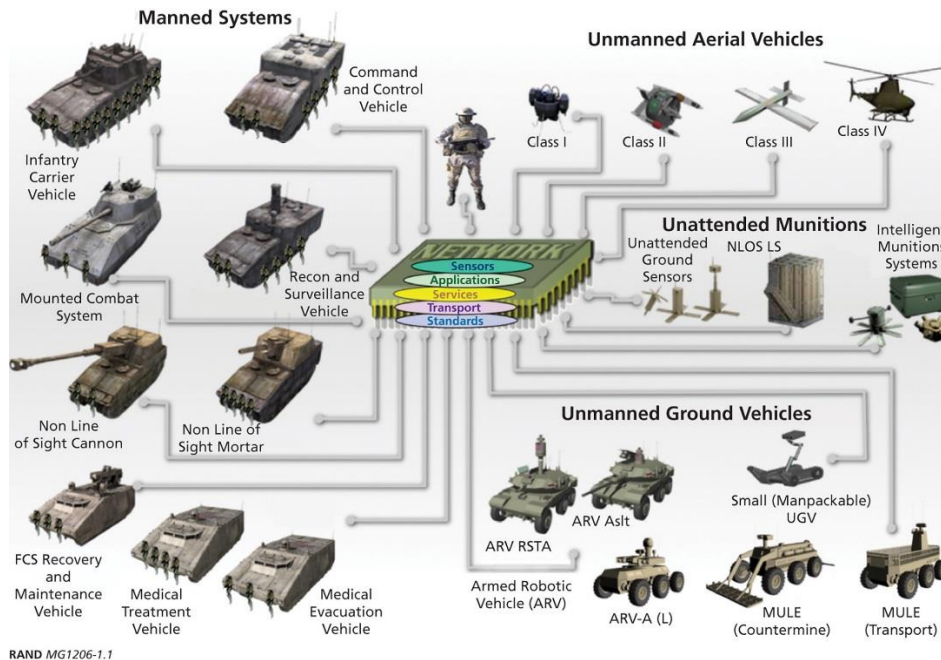


Figure 1. The 18+1+1 FCS systems. (From *Lessons from the Army's Future Combat Systems Program*, Figure 1.1, published by the RAND Corporation, 2012. Copyright 2012 by the RAND Corporation, Santa Monica, CA; reprinted with permission.)

Arguably, the path to cancellation and divestiture of the FCS program began in June 2003. As GEN Shinseki left his position as CSA and the realities of two prolonged counterinsurgency (COIN) campaigns began to surface, the elements of the original FCS concept began to shift and change in response to the Army's increased commitment to COIN operations. The Army quickly realized emphasis on the FCS redesign was in many ways counterproductive to the COIN fight save for a few technologies like communications and intelligence, surveillance and reconnaissance, which were not only relevant but necessary in the COIN fight.

Also, program requirements for the FCS initiative became more and more unrealistic – namely weight and size requirements of the FCS FoV. Demonstrating a desire to be more agile and lean as a land force (an ostensible “have to have” in the face of the demands of urban warfare), program developers became obsessed with weight and dimension requirements for the FCS FoV. The requirements, or what one developer called “desirements,”³ became so ridiculous that an initiative to deliver the FCS vehicles directly to the main battle area (or close fight) levied yet another new requirement for the development of a Vertical Takeoff and Landing Aircraft capable of lifting, transporting and delivering a ground-combat vehicle.

Further, a weight restriction of 20 tons (roughly 50 tons lighter than the combat-ready M1 Abrams MBT) related directly to the maximum cargo capacity of the Air Force's C-130 aircraft. Program developers later admitted that the C-130 transport requirement wasn't related to deployment or force-buildup requirements, but was more of a “forcing function” to decrease the weight of the FCS platforms.⁴

The aforementioned data points demonstrate a mere sampling of the many causes of the failure and cancellation of the FCS program. In addition to unrealistic weight requirements, the Army's commitment to Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) forced the Defense Department to tap developing technologies or “spin outs” in support of the wars in Iraq and Afghanistan. This subtracted several technologies from the FCS program to “spin out” and answer the operational needs of OIF/OEF. Although this move by the Defense Department was appropriate and necessary, it diluted the perceptive need to continue development of the FCS program, and it mortgaged the Army's ability to fight and win in major combat on future battlefields.

Familiar threat, familiar need

In the late 1960s and early 1970s, the Soviet Union executed an aggressive armor-development program. The United States' response to this developmental threat equaled acknowledgement that the M48 and M60 series tanks, “while equal to or better in some ways than many Soviet designed and built [MBTs], would never be able to overcome the large imbalance in numbers between the American and Soviet tank fleets.”⁵ As an army, we began development of what was to become the world's most lethal war platform, the M1 Abrams tank. During a nearly 15-year development timeline, the M1 arrived in armor formations in the early 1980s and began its life as the Army's decisive combat arm. In Operation Desert Storm, combined with the mobility and flexibility of the M2 Bradley Fighting Vehicle (BFV), the M1 proved its worth by outmatching Russian-built T-72 tanks on the battlefields of Iraq.

During the 26 years since the end of Operation Desert Storm, we remember with great nostalgia and pride the effectiveness and lethality of the M1 Abrams MBT. Fortunately, the cyclical nature of warfare once again places us in a position of opportunity to recognize the need for a new decisive combat arm. The Soviet Union is gone, but Russia's desire to regain its place on the geostrategic stage is demonstrated by its weapons-development programs, including the T-14 Armata. The Armata program closely mirrors that of FCS; it only increases the FoV fleet to 28 platforms, with its champion as the T-14 MBT.

Russian defense-media outlets captured through open-source means advertise various capabilities of the T-14 MBT, such as a 125mm main gun, and active-protection systems capable of defeating kinetic-energy weapons and anti-tank guided missiles (at any angle of attack). Furthermore, Russia's defense-media campaign makes claims of “composite armor protection up to 1,200-1,400 millimeters for shaped shells and 1,000-1,100 millimeters for armor-piercing sub-caliber shells.”⁶ Also, Russian defense developers have a fantastic advantage over the United States by simply seizing the opportunities to apply lessons-learned from the conflicts in eastern Ukraine and Syria.



Figure 2. Russia's T-14 Armata MBT.

President Donald Trump's new national security adviser and celebrated member of the U.S. Army Armor community, LTG H.R. McMaster, summed it up best when he said, "Russians have superior artillery firepower, better combat vehicles ... should U.S. forces find themselves in a land war with Russia, they would be in for a rude, cold awakening."⁷

Renewed focus

As previously mentioned, the last replacement program for an American MBT began in the late 1960s, and it didn't field a finalized platform to the force until the early 1980s. Although recent information tells us that the M1 MBT series promises to last through the 2030s with continued upgrades, we must recognize that a replacement program that uses the latest material composites for armored protection and modern technology for active-protection systems is the most prescient manner to prepare for the combat environment of the future.

Furthermore, one could easily argue that with the Army's renewed focus on unified land operations – specifically the ability to fight and win in the offense and defense – our defense apparatus is in a better position both ideologically and operationally than we were during the global war on terrorism as it relates to development of a new MBT.

Way ahead

Any resurrection of the FCS program, specifically the development of a new MBT, must offer a decrease of the fantasy that once was FCS and an increase in the reality of our operating environment. Weight and platform movement (intercontinental sea or air lift) must serve as considerations, not debilitating constraints. The current weight of the M1 Abrams MBT (roughly 70 tons) does offer significant limitations to expeditionary capability, so any replacement systems should aim to correct that issue.

We must, however, acknowledge the reality of our situation as a land power. In contrast to potential adversaries (Russia) or competitor nations (China), our design must continually recognize the need for intercontinental deployment while balancing, not wishing away, the natural constraints of an MBT's weight. The requirement to strategically lift large formations of combat power to battlefields far away from the homeland is a constraint we have to endure.

New main gun needed

Development of a new MBT must include a larger main gun. With full acknowledgement that a larger-caliber main gun yields heavier ammunition, development teams should prioritize kinetic killing power while balancing weight and protection requirements. Russia, our main threat topic, aims to extend its tactical reach through long-range weapon systems at both the operational and tactical (as evident by the integration of a 125mm main gun) level. Developers should seek opportunities to leverage the highly effective targeting capabilities of the M1A2 System Enhancement Program V4 to extend the range and lethality of our new MBT's main armament.

Development of command, control, communications, computers and intelligence (C4I) capabilities for the replacement MBT should integrate into pre-existing and joint communications architecture. Furthermore, cross-domain fires for the replacement platform must be at the forefront of the integration of any C4I capability just as in the original FCS design. Again, this effort should not involve building the airplane while it's flying. Developers should be able to tap into pre-established lessons-learned and planning horizons to greatly reduce development and fielding timelines.

Finally, Army Battle Command System integration and improvement must consider the potential for cyber intrusion. The potential for cyberattacks that aim to disrupt and degrade Global Positioning Systems is very real; it must be considered for any replacement combat platform.

Concept to fielding

The original model for FCS fielding called for a brigade combat team (BCT) at a time. This is, of course, a sound and logical way to integrate a new armored platform into our combined-arms battalions. However, the logical starting point is to identify a test brigade housed under 1st Armored Division. The vast training areas provided at Fort Bliss, TX, and the inherent armored-warfare expertise within the division offer the opportunity to test, refine and field a replacement MBT.

The integration of the new MBT into a test armored BCT addresses testing and validation of what will become several hundred conditions required for fielding the next generation's MBT. Furthermore, fielding horizons should be realistic but not ridiculous or rushed. As mentioned earlier, the fielding timeline for the M48/M60's replacement, the M1 Abrams, took nearly 15 years from concept to fielding. We've already established lessons-learned from two programs (M1, FCS) to mitigate the repeated failures or delays of the past.

With FCS cancellation fees of \$350 million⁸ fresh on our minds, we must commit to development of this platform and avoid shiny-object distractions such as current operational needs that will disabuse us from preparing to win on future battlefields. Simply put: decrease unrealistic requirements in the short term with a focus on the development of a new MBT, and in the mid- to longer term, identify the opportunity to develop a new mechanized Infantry Fighting Vehicle to replace the BFV. Keep it simple, keep it realistic and win.

Conclusion

As the world's premier land power and decisive operation for the joint force, the U.S. Army's preparation for the next war must include development of an MBT that directly addresses the warfighting capabilities of our near-peer adversaries, both potential and realized. The cancellation of the FCS program was an unfortunate, albeit necessary, measure to enable the continued fights in Iraq and Afghanistan. With that said, we are in a position now to focus on the next war.

The development of the M1 Abrams occurred in direct response to the development of what was then improved Soviet armor. The swift and decisive victory on the battlefields of Iraq during Operation Desert Storm provided our proof of concept for the Abrams. We cannot, however, become entrenched in past successes, creating diminished returns in our current armor capability. We must again recognize the need for a replacement platform that prepares our Army to win on the battlefields of tomorrow.

Our Army is in a position to enjoy an unprecedented advantage, the likes of which we may not see again; volumes of lessons-learned from not one, but two, programs that aimed to increase the lethality of American armor. Resurrect the MBT portion of the FCS program and look ahead to the development of other combat vehicles so we are ready to win the next war.

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Notes

¹ Andrew Feickert, *The Army's Future Combat System (FCS): Background and Issues for Congress*, Congressional Research Service, May 2006.

² Ibid.

³ RAND Corporation, *Lessons from the Army's Future Combat Systems Program*.

⁴ Ibid.

⁵ Michael Green, *M1 Abrams Main Battle Tank, The Combat and Development History of the General Dynamics M1 and M1A1 Tanks*, MIL-TECH Series, 1992.

⁶ "CER2017011767184814," Moscow VPK Voenno-Promyshlenny Kuryer; accessed Jan. 11, 2017 through OpenSource.gov.

⁷ Patrick Tucker, "How the Pentagon is Preparing for a Tank War with Russia," *Defense One* (on-line), [DefenseOne://www.defenseone.com/technology/2016/05/how-pentagon-preparing-tank-war-russia/128460/](http://www.defenseone.com/technology/2016/05/how-pentagon-preparing-tank-war-russia/128460/); accessed Nov. 16, 2016.

⁸ Feickert.

Acronym Quick-Scan

BCT – brigade combat team

BFV – Bradley Fighting Vehicle

C4I – command, control, communications, computers and intelligence

COIN – counterinsurgency

CSA – Chief of Staff of the (U.S.) Army

FCS – Future Combat Systems

FoV – family of vehicles

MBT – main battle tank

OEF – Operation Enduring Freedom

OIF – Operation Iraqi Freedom