

The Army's New Start-Up

The Army Futures Command will bring emerging technologies to Soldiers, allow the Army to keep pace with commercial industries, and prepare the nation to fight future adversaries.

■ By Lt. Gen. Aundre F. Piggee

If I were 22 years old again, just graduating from college and newly commissioned as a second lieutenant, I would be very excited to be entering our Army because of a game-changing step we took this summer: the activation of the Army Futures Command.

The New Command's Purpose

The activation of the Futures Command is the most significant reorganization of the Army since 1973, when the Army established both the Training and Doctrine Command and Forces Command after the Vietnam War. I was in middle school at the time, but when I entered the Army a decade later, I was very much a beneficiary.

That reorganization drove the modernization of the Army's big five weapon systems: the Abrams tank, Bradley fighting vehicle, Apache helicopter, Black Hawk helicopter, and Patriot missile system.

The Futures Command is aimed at reawakening that innovative spirit to deliver technologies to warfighters faster than ever, at a time when the speed of technological developments in our civilian sector is startling. Of the nation's 10 largest technology companies today, seven were not even around in 1973: Apple, Microsoft, Alphabet, Cisco, Oracle, Facebook, and Qualcomm.

That being said, the Army did not cease to innovate after developing the big five weapon systems. In the case of sustainers, we would not have been as successful in Iraq and Afghanistan were it not for many innovations.

Mine-resistant ambush-protected vehicles and improved personal

body armor aided in Soldier protection. Very small aperture terminals connected us to networks. Aerial GPS-guided delivery systems were used to drop supplies in remote locations. Explosive ordnance disposal enablers helped us hunt for roadside bombs. Movement tracking systems let us communicate with convoys and monitor materiel and equipment throughout the supply chain.

The Global Combat Support System—Army, now used by more than 150,000 logisticians, has drastically improved our materiel readiness. As proud as we are of our new logistics information system, it took 20 years to develop. We cannot wait another 20 years for our next success story.

That is where the Futures Command comes in. This “start-up” is designed to operate not in the industrial age but in the information age. Its 500 personnel will be located in Austin, Texas, near high-tech industries and research universities in order to harness the best talent possible and bring emerging technologies to Soldiers.

Its focus will be on six modernization priorities: long-range precision fires, next-generation combat vehicles, future vertical lift, an Army network, air and missile defense, and Soldier lethality.

Leading the efforts to stand up the command are Under Secretary of the Army Ryan McCarthy and Vice Chief of Staff of the Army Gen. James McConville. As they explain in interviews in this edition of *Army Sustainment*, logisticians will play an important role as the Army experiments with technologies that 10



years ago may have seemed better fit for the Star Wars movies. What they have to say is important because the equipment we supply, how we get it there, how we manufacture it, how we communicate, and our state of readiness will be much improved.

Five Transforming Areas

Here are what I consider to be five of the most promising areas that will transform Army logistics: autonomous resupply, additive manufacturing, advanced power generation and distribution, condition-based maintenance plus (CBM+), and big data decision-making.

Autonomous resupply. In the future, sustainment Soldiers will not be required to man vehicles if we can instead deliver materials by autonomous or semi-autonomous ground vehicles, aerial vehicles, and watercraft. These vehicles could take Soldiers out of harm's way and provide responsive sustainment to widely dispersed units when conditions pose unsuitable risk. They could provide more options for commanders and



ARMY FUTURES COMMAND

WHAT IS IT?

The establishment of the Army Futures Command is the most significant Army reorganization effort since 1973. The Army Futures Command will be the fourth Army command and will be tasked with driving the Army into the future to achieve clear overmatch in future conflicts. The other Army Commands (ACOMs) include:

ARMY FORCES COMMAND:

Force provider of the Army; trains, prepares a combat ready, globally responsive Total Army Force of U.S. Army Soldiers to build and sustain Army readiness to meet combatant command requirements.

ARMY TRAINING AND DOCTRINE COMMAND:

Architect of the Army; recruits, trains designs, acquires, and builds the Army.

ARMY MATERIEL COMMAND:

Sustainer of the Army; provides materiel readiness by equipping and sustaining the force.

ARMY FUTURES COMMAND:

Modernizes the Army for the future; will integrate the future operational environment, threat, and technologies to develop and deliver future force requirements, designing future force organizations, and delivering materiel capabilities.

ORGANIZATION

Army Futures Command will have three subordinate organizations:

Futures and Concepts will identify and prioritize capability development needs and opportunities.
Combat Development will conceptualize and develop solutions for identified needs and opportunities.
Combat Systems will refine, engineer, and produce developed solutions.

CHARACTERISTICS

- Links operational concepts, requirements, acquisition, and fielding.
- Brings concepts and requirements together with engineering and acquisition functions into one team.
- Small, agile headquarters focused on flexibility, collaboration, and speed. Focus on faster innovation, experimentation, and demonstration.
- Enable rapid prototyping—fail early and cheaply, and then increase learning with operational inputs.

STRUCTURE

- Each Army Futures Command subordinate organization exists within TRADOC, AMC, ASA(ALT), or Army Test and Evaluation Command.
- Army Futures Command's subordinate organizations will remain at their current locations but will be realigned to ensure all Army major commands remain closely linked.
- Cross-functional teams (CFTs) will report to the Army Futures Command. Program managers will remain under control of ASA(ALT) but will be teamed with the CFTs.
- Command headquarters will be located near industrial and academic institutions and develop the culture of innovation and synergy required to lead the Army's modernization effort.



1 LONG-RANGE PRECISION FIRES:

Long-range precision fires provide the Army with long-range and deep-strike capability. They are the Army's number one modernization priority and critical to winning in a fight against a peer adversary.

2 NEXT GENERATION OF COMBAT VEHICLES:

Manned, unmanned, and optionally-manned vehicles will ensure our combat formations can fight and win against any foe. They will deliver the most modern firepower, protection, mobility, and power generation capabilities.

3 FUTURE VERTICAL LIFT PLATFORMS:

The Army is leading a multi-service initiative focused on enhancing vertical lift dominance with manned, unmanned, and optionally-manned variants that can survive the modern and future battlefield.

4 ARMY NETWORK:

The Army is building a network with sufficiently mobile and expeditionary hardware, software, and infrastructure that can be used to fight cohesively in any environment where the electromagnetic spectrum is denied or degraded.

5 AIR AND MISSILE DEFENSE CAPABILITIES:

These systems will defeat missile threats against the United States and ensure our future combat formations are protected from advanced air and missile delivered fires, including drones. They are critical to winning a fight against a near-power adversary.

6 SOLDIER LETHALITY:

Soldier lethality spans all fundamentals—shooting, moving, communicating, protecting, and sustaining. The Army will field individual and combat weapons as well as improved body armor, sensors, radios, and load-bearing exoskeletons.

Eight cross-functional teams were created to address the six modernization priorities.

The Army's Cross-Functional Teams:

- Long-Range Precision Fires • Future Vertical Lift • Assured Positioning, Navigation, and Timing • Next Generation Combat Vehicles
- Army Network • Air and Missile Defense Capabilities • Soldier Lethality • Synthetic Training Environment

create multiple dilemmas for our adversaries.

Additive manufacturing. If we can print parts or special tools on the battlefield, we will not need to manufacture them 8,000 miles from where Soldiers fight. Additive manufacturing processes help us meet demand at the point of need, allow inoperable vehicles to be fixed faster, and will reduce distribution requirements, increase operational readiness, and improve materiel development.

Advanced power generation and distribution. We will not need to transport fuel if warfighters can instead have their own organic power sources. Advanced power generation may provide greater energy output with increased fuel efficiency and management. It will enable expeditionary sustainment of forces in remote areas and self-sufficient power generation so that Soldiers can operate away from existing power grids. This could reduce our logistics footprint and extend operational reach, making Soldiers more effective and units less logistically dependent.

CBM+. The CBM+ technology gives us a way to conduct information-enabled, fleetwide management at the tactical level through national level. It is great for commanders; they get actionable information to ensure their systems are ready. This will increase reliability and reduce the cost of sustaining equipment.

Big data decision-making. The Army is working hard to improve our information management processes by maximizing the usefulness of the massive amounts of data we get through our enterprise resource planning systems like the Global Combat Support System—Army. This will result in improved data-driven decision-making for all Army leaders and managers.

During the past few years, I have made it a priority to visit or learn from leaders at companies like Amazon, Walmart, Home Depot, and Starbucks and to visit leading research universities, including Penn State, the



Pfc. Jimmy Roe fixes a 3-D printer that is part of an expeditionary system called the Rapid Fabrication via Additive Manufacturing on the Battlefield at Amberg Training Area in Amberg, Germany, on May 4, 2018. (Photo by Spc. Elliott Page)

University of Southern California, and the University of Texas El Paso.

What struck me is both how disruptive technologies can be and how much is commercially available for us to use today. If there are innovations that allow us to do our jobs better on a multi-domain battlefield, we need to employ them.

Key to our modernization is a good understanding of our current capabilities, the operational environment, and the threat. We need technologies and processes that can solve real issues, not technological wizardry that does not meet our basic, practical needs.

New technologies can be expensive to develop. We have only a finite amount of resources, so we must use them wisely and not waste them on

things we do not need. We also have to do a good job of maintaining what we have because it must serve until we field the next breakthrough technology or equipment.

Just as I benefited from the last big modernization of the Army, so too will our future Soldiers. They must be enabled with the latest technology. And we must keep pace with our commercial industrial base to fight adversaries we may face in the future. Our nation expects—and our Soldiers deserve—the very best; they continue to be our greatest asset.

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