

Technology's Influence on the NCO

By Christopher Raynor

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Artist Spiros Karkavelas envisions combat on a future urban battlefield. Success in a complex environment like this will require coordinated, mutually supporting efforts by all U.S. services across the entire multi-domain battlefield. (Artwork by Art of Spiros, Spiros Karkavelas Entertainment Design, artofskar.blogspot.com; modified by Jim Crandell, Army University Press)

The role of the noncommissioned officer has evolved with technological advances. Army history contains examples where technology influenced changes to NCO roles and responsibilities.

Command Sgt. Maj David S. Davenport Sr., command sergeant major of U.S. Army Training and Doctrine Command, is well aware of how technology shapes the roles of the NCO.

The Army's strength is the Soldier, so it must equip and prepare them to fight and win across all domains. Multi-Domain Battle and the associated capabilities will ensure that future Soldiers and joint teams can fight, win and survive on tomorrow's battlefields.¹

Growth of NCO Responsibilities

From the Revolutionary War to the Civil War, NCO duties changed very little. During the Civil War, NCOs oversaw organization and maintenance details, discipline, and conducted drills. While on the battlefield, NCOs maintained formations, carried the unit colors, and took care of their Soldiers afterward.²

Over the years, NCOs adapted as technology influenced the battlefield. During World War I, advances, such as tanks, gas masks, machine-guns, and trench warfare, caused NCOs to grow their traditional roles from supporting Soldiers into leading them. It also gave them new opportunities to use ingenuity in developing tactics for these advances.²

Rapid advancements in technology between the world wars saw NCOs' roles expand again as they became specialists in tank, electronic, and aircraft maintenance.⁴

World War II bred sergeants as infantry squad leaders. Their responsibilities increased dramatically from training and supervising Soldiers to actively leading them in battle and making battlefield decisions.⁵

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During the Vietnam conflict, NCOs became force multipliers. They were the platoon leaders, and commanders' eyes and ears on the battlefield, advising them, supplying them with information, while keeping supplies moving, and assisting in casualty evacuations.⁶

Considering how technology has sparked NCO transformation in the past, it is important for NCOs to continue tracking technological advances, remain fluid to their use, and understand how they may change their roles in the present and the future.

Multi-Domain Battlefield

Gen. David G. Perkins, commanding general of U.S. Army Training and Doctrine Command, author of *Military Review* article, "Preparing for the Fight Tonight: Multi-Domain Battle and Field Manual 3-0," discussed the speed at which warfare changes in today's climate and how Army doctrine addresses multi-domain battlefield challenges.⁷

Army Field Manual 3-0, *Operations*, focuses on how advances in technology will shape future doctrine. It points out the need for agile support in all domains of the battlespace, including space, cyber-space, and the information environment.⁸

FM 3-0 uses the following short story to highlight the need to remain flexible in accepting emerging technologies.

Ukrainian infantry units were positioned to prevent the transfer of military equipment from Russia to a rebel faction. Some of the Soldiers noticed a drone aircraft fly overhead. After it passed, artillery and rockets fell on their positions, destroying one brigade and rendering another ineffective.⁹

This is only one example of why Army doctrine must remain flexible to meet the challenges of emerging technology.

This is critical information for today's NCOs. It is a roadmap of where the Army is going and addresses future doctrinal challenges. The extraordinary speed of technological growth means the Army's future leaders must adapt with the same speed and flexibility.

Equipment and Technology

The avalanche of technological advancements available to warfighters over the years is immense. To demonstrate, look at how technology has changed an infantry platoon's equipment in 30 years.

In 1991, during Operation Desert Shield and Desert Storm, the equipment assigned to an infantry platoon was one or two bulky GPS units, secure AN/PRC-119 radios, monocular night vision goggles, unwieldy night vision riflescopes, and body armor that was slightly more advanced than the Vietnam era flak vests.¹⁰



A Soldier assigned to 4th Battalion, 17th Infantry Regiment, 1st Brigade Combat Team, 1st Armored Division, demonstrates the capabilities of an unmanned aerial vehicle to Frank Kendall, defense undersecretary for acquisition, technology, and logistics, Oct. 2, 2015, during Network Integration Evaluation 16.1 at Fort Bliss, Texas. (U.S. Army photo by Spc. Lauren Harrah)

By 2016, GPS units were small enough to allow Soldiers to carry individual devices. The technology allowed squad members and fire teams to talk over secure channels and platoon leaders to monitor individual soldier's location. NVGs became lightweight, stereoscopic, and compatible with weapon sights. Body armor was designed to adapt to the mission and is able to withstand rifle round impacts, explosions and shrapnel.¹¹

With technological advances, equipment that was once too bulky or expensive and relegated to headquarters commands became available to individual platoons.

Logistics and Training

While advances in technology may be lifesaving and expand infantry capabilities, it has increased the infantry platoon sergeant's "beans, bullets, and band aids" responsibilities.

Consider a platoon preparing to conduct a dismounted patrol in Afghanistan. The platoon sergeant ensures the squads and fire teams have water, food, and ammunition, but also a variety of batteries, appropriate body armor, and coordinate mission support with joint partners and allies. Throw in special equipment requirements (i.e. remote-controlled surveillance drones, IED detection sensors and a K-9 team) and before long the logistical requirements creep into the mission scope.

Prior to deployment, Soldiers must gain proficiency in new equipment and software functions to ensure familiarity with the equipment and procedures. In addition to training, platoons need the opportunity to develop the proper tactics, techniques and procedures, before they begin operations.¹²

Research and Development

The Army is continually looking for ways to improve its capabilities. The continued development of major weapon systems, such as the M1A2 Abrams Main Battle Tank, M1126 Stryker Combat Vehicle, and the AH-64 Apache helicopter, demonstrate the Army's commitment to improving its capabilities, equipment and training.

The U.S. Army Natick Soldier Systems Center is continually pursuing advanced technology on all fronts.¹² Organizations and private companies like Natick continually research weight reductions, uniform improvements, and body armor.¹³

For instance, the Army is currently researching a new infantry helmet. Known as the Integrated Head Protection System, it has shock sensors, integrated imaging, radio, and eye protection. Another new development is an advanced weapon sighting system that will feed information from the rifle into a monocle mounted on a Soldier's NVGs.¹⁴

When you consider the possibility of combining the IHPS with the weapon sighting technology and add integrated hearing protection, which will not only protect hearing from but also amplify sounds, the possibilities of turning the infantryman into a real life Iron Man™ does not seem so far off.¹⁵

Not only are there improvements in the infantryman's basic equipment, but there is also research into how to support infantry squads, platoons, and companies in the field with robots.

The Defense Advanced Research Projects Agency is developing autonomous robots able to carry supplies for extended operations, retrieve injured Soldiers, and gather intelligence. They will be capable of following the unit, alleviating the need for a Soldier to steer it.

In addition to robots, DARPA is also developing small drones capable of gathering intelligence and providing surveillance to further enhance infantry squad or platoon capabilities.¹⁶

The Future

Often, the imagination of those who create a fictional future will directly affect actual research and development. For example, look at how Star Trek influenced the development of real technology. The science behind flip phones, medical scanners, smart phones, virtual reality, video conferencing, computer controlled systems, and handheld sampling devices can all trace their origins to the fictional technology of the Star Trek universe.¹⁷

Science fiction authors such as Robert Heinlein and James S.A. Corey write of future infantry Soldiers wearing powered armored suits, which protect them and carry a variety of weapons, sensors, communication suites and other enhancements to increase their capabilities.¹⁸

While these suits come from the authors' imagination, they are not far from what is under development.¹⁹

Tomorrow's NCO

How do advances in technology affect the future of combat operations and the role of NCOs in small units? NCO duties and responsibilities at the squad, platoon, and company level will continue to evolve as advancements in technology reshape the battlefield.

As technologies and NCOs continue to evolve, the importance of that relationship is something Command Sgt. Maj. Davenport recognizes:

The Army's strength is the Soldier, so it must equip and prepare them to fight and win across all domains. Multi-Domain Battle and the associated capabilities will ensure that future Soldiers and joint teams can fight, win and survive on tomorrow's battlefields.

NCOs will be expected to be more than the backbone of the Army ... they must be known as high-caliber professionals, who are comfortable in ambiguity and operating within the commander's intent to accomplish the mission.²⁰

The technological capabilities of infantry Soldiers will increase and shape the duties and responsibilities of future NCOs. Leaders who are flexible and adapt new technologies to support, protect, and assist their Soldiers will lead the way in tomorrow's Army.

Additional Reading

CSM'S Blog: Developing NCOs for the Multi-Domain Battle (<http://tradocnews.org/csms-blog-developing-ncos-for-the-multi-domain-battle-2/>)

The Army Wants Robot Four-Wheelers and Decepticons (<http://www.defenseone.com/technology/2015/04/army-wants-robot-four-wheelers-and-decepticons/109687/>)

Army Capabilities Integration Center (<http://www.arcic.army.mil/>)

High-Tech Army Device Helps Mobile Infantry in Combat (<http://asc.army.mil/web/news-high-tech-army-device-helps-mobile-infantry-in-combat/>)

The New Mobile Infantry (<https://www.wired.com/2002/05/robots-2/>)

Squad X Core Technologies (SXCT) (<https://www.darpa.mil/program/squad-x-core-technologies>)

U.S. Army Weapon Systems Handbook Archive (<http://asc.army.mil/web/weapon-systems/wsh-archive/>)

Notes

1. David Davenport, "CSM'S Blog: Developing NCOs for the Multi-Domain Battle", TRADOC News Center, October 18, 2017, <http://tradocnews.org/csms-blog-developing-ncos-for-the-multi-domain-battle-2/> (<http://tradocnews.org/csms-blog-developing-ncos-for-the-multi-domain-battle-2/>).
2. Harris, Sgt. Major Richard A. 2003. The Role of the Noncommissioned Officer During the Civil War. NCO History Paper, Fort Bliss. U.S. Army Sergeants Major Academy.
3. Perkioniemi, Jerod. 2009. Army NCO History (Part5): World War I. Accessed September 28, 2017 https://www.army.mil/article/18046/army_nco_history_part_5_world_war_i (https://www.army.mil/article/18046/army_nco_history_part_5_world_war_i)
4. Perkioniemi, Jerod. 2009. Army NCO History (Part5): Accessed September 28, 2017
5. Perkioniemi Jerod. 2009. Army NCO History (Part 6: World War II. Accessed September 28 2017. https://www.army.mil/article/18048/army_nco_history_part_6_world_war_ii (https://www.army.mil/article/18048/army_nco_history_part_6_world_war_ii)
6. Galloway, Lt. Gen. Harold G. Moore (Ret.) and Joseph L. 1992. We Were Soldiers Once...and Young. New York: Random House.
7. Perkins, D. G. (2017). Preparing for the Fight Tonight, Multi Domain Battle and Field Manual 3-0. Military Review Sept.-Oct. Vol 97 No.5, 6-13
8. S. Army Field Manual 3-0 Operations (https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN6687_FM%203-0%20C1%20Inc%20FINAL%20WEB.pdf). October 2017 Washington D.C. Department of the Army
9. S. Army Field Manual 3-0 Operations (https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN6687_FM%203-0%20C1%20Inc%20FINAL%20WEB.pdf). October 2017 Washington D.C. Department of the Army
10. Evans, Anthony A. 2015. Gulf War, Desert Shield and Desert Storm, 1990-1991. Barnsley: Frontline Books.
11. S. Army 2016. Weapon Systems Handbook, 2016. Washington D.C.: Department of the Army.
12. S. Army Field Manual 3-21.8 The Infantry Rifle Platoon and Squad. March 2007 Washington D.C. Department of the Army
13. S. Army Natick Soldier Systems Center, About, Accessed Oct 18, 2017 <https://www.army.mil/info/organization/natick/#org-about> (<https://www.army.mil/info/organization/natick/#org-about>)
14. Jahnera, Kyle 2016. "Army to Rollout Better Body Armor, Combat Shirt in 2019" Army Time February 24, 2016; South, Todd. 2017. "New Night Vision Lets Soldiers Shoot Around Corners." Army Times, August 8: 12.
15. Garamone, Jim. 2015. Special Operations Develops 'Iron Man' Suit. Jan 28. Accessed September 15, 2017. <https://www.defense.gov/News/Article/Article/604009/> (<https://www.defense.gov/News/Article/Article/604009/>).
16. Defense Advanced Research Projects Agency. 2017. News. Accessed September 5, 2017. <https://www.darpa.mil/news/> (<https://www.darpa.mil/news/>)
17. National Aeronautics and Space Administration. 2016. The Science of Star Trek July. Accessed September 5, 2017. https://www.nasa.gov/topics/technology/features/star_trek.html (https://www.nasa.gov/topics/technology/features/star_trek.html)
18. Heinlein, Robert A. 2010. Starship Troopers. New York City: Berkley Publishing Group.; Corey, James S.A. 2012. Caliban's War, Expanse Series #2. New York: Orbit, Hachette book Group.
19. Jacobson, Annie. 2015. Engineering Humans for War. Sept 23. Accessed Sept 13, 2017. <https://www.theatlantic.com/international/archive/2015/09/military-technology-pentagon-robots/406786/> (<https://www.theatlantic.com/international/archive/2015/09/military-technology-pentagon-robots/406786/>).
20. David Davenport, "CSM'S Blog: Developing NCOs for the Multi-Domain Battle (<http://tradocnews.org/csms-blog-developing-ncos-for-the-multi-domain-battle-2/>)"