



A Ukrainian soldier and a “swarm” of First Person View (FPV) drones. An unmanned aerial vehicle (UAV) operator who can observe and quickly adjust artillery fire remains the biggest threat on the Ukrainian battlefield. Redundant constellations of high-altitude UAVs teamed with smaller off-the-shelf scout UAVs collectively cueing targets for artillery greatly reduce observation-to-shooter times. (Photo by National Guard of Ukraine)

# Technology at the Point of Contact: Shaping the Future of Warfighting

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**I**t's one thing to draw inspiration and lessons learned from previous battles, but the world is different, and the character of warfare has evolved. On today's chaotic battlefield, integrating technology is crucial for enhancing small-unit tactics.

Innovations like unmanned systems and advanced weaponry offer significant advantages in situational awareness, precision targeting, and sustainment. However, amid these advancements, we must strike a balance to ensure technology enhances rather than hinders small unit effectiveness.

## The Evolving Battlefield

Large-scale combat introduces levels of complexity,

lethality, ambiguity, and speed to military activities not common in other operations (Department of the Army [DA], 2022; para. 6-3).

In this environment, technology enables armies to generate new forms of mass, such as unmanned systems, strategically layered at the tactical edge. These advancements, ranging from unmanned to autonomous, are essential to ensuring operational success. They allow us to adapt swiftly to evolving battlefield conditions and enhance our operational efficiency.

## Unmanned Systems

Unmanned systems can provide persistent observation that allows small formations, like squads, to gather



critical information swiftly and make informed decisions.

This capability is invaluable in developing situational awareness and operational flexibility, enabling squads to adapt rapidly to changing circumstances. By leveraging real-time data and enhanced sensor technologies, unmanned systems extend the reach of the close combat force, providing a critical advantage in reconnaissance, surveillance, and target acquisition.

Incorporating technology on the battlefield may not only reduce risk to personnel but also enhance overall mission effectiveness in diverse and challenging environments.

## **Balancing Technology with Human Elements**

Yet, while technology offers undeniable advantages, its integration into small formations presents challenges that must be addressed. Innovation must complement, not overshadow, squad cohesion and effectiveness.

Their success hinges on human ingenuity, adaptability, and teamwork. Technology should wrap around these core principles to amplify their effectiveness rather than penetrate the squad and physically and cognitively burden Soldiers.

Maintaining a balance is crucial; unmanned systems should enhance a squad's capabilities without compromising their agility or overwhelming them with complexity.

Like other combat power elements, technology can be defeated. Believing that technology alone will win the next battle is a dangerous and naïve mistake. Wars aren't won with the latest gadgets and weapons alone. They involve human skill, leadership, and the ability to adapt.

Just look at the war in Ukraine. Despite having advanced technology, both sides have found that employing traditional military tactics is crucial. Even today, with unmanned systems and cyber warfare, American Soldiers cannot win without solid intelligence, planning, brilliance at the basics, and the flexibility to handle ambiguity. Relying solely on technology is a surefire way to get blindsided in the chaos of combat.

## **Mastering the Fundamentals**

Units must master the basics before progressing to increasingly complex tasks. Basic task training focus provides the foundation to build proficiency in individual tasks as formations progress to more complex collective tasks (DA, 2021; para. 4-8).

Excelling at the fundamentals can lead to initial tactical success, allowing formations to gain and maintain the initiative. This approach ensures that small units are well-prepared to handle a variety of obstacles, reinforcing the squad as the building block of lethality.



A Soldier flies a Skydio drone at the Novo Selo Training Area, Bulgaria, Oct. 3, 2024. Unmanned systems can provide persistent observation that allows small formations, like squads, to gather critical information swiftly and make informed decisions. (U.S. Army photo by Spc. Alexcia Rupert)

## Battle Drills

Small formations conduct battle drills to mitigate the risk of making contact with an enemy before maneuvering. Battle drills are rehearsed and well-understood actions made in response to common battlefield occurrences (DA, 2019; para. 2-64). They are performed instinctively, requiring little thought or leader direction, resulting in an orchestrated response to the operational environment.

Speed and mastery of the fundamentals improve survivability and success, ensuring units can swiftly react to threats and opportunities on the battlefield while maintaining cohesion and operational tempo.

## The Sergeant: Leadership at the Tip of the Spear

An infantry platoon makes contact with the smallest enemy element possible to preserve combat power and conceal the size and capabilities of the main body following the lead element (DA, 2024; para. 4-82).

The responsibility to win the first fight falls on the shoulders of the fighting leader – a sergeant. That sergeant has the unenviable task of dominating and surviving against a potentially superior adversary using audacity, overwhelming fire superiority, violence of action, and, with luck, the element of surprise.

This critical engagement sets the tone for the platoon's initial response. It requires decisive leadership to seize the initiative and control the engagement's momentum, enabling the platoon's ability to fire and maneuver.

The sergeant is an important leader in the U.S. Army. Their loss could be detrimental to a platoon in combat. This begs the question: Why does military doctrine place this critical leader at the tip of the spear, aggressively seeking to gain and maintain contact with an armed enemy?

The answer is simple: An empowered sergeant who understands the commander's intent sets the tone for the formation in every action as the formation's standard-bearer.

However, technology could prevent a sergeant's loss on the modern battlefield. Using an unmanned system is preferable when enemy contact is expected. Losing a gadget is a small price to pay to preserve a fire team.

There simply is no comparable technological system where the value exceeds three to five highly trained and motivated Soldiers whose sole purpose is to march to the sound of the guns and destroy the enemy.

## Technology and Tactics

Employing technology does not replace tactics; it should remain additive to a battle drill. For example, when breaching a mined, wired obstacle, the platoon must physically suppress, obscure, secure, reduce, and assault the breach site, under fire, to seize a foothold against a defending enemy force.

For this battle drill, Soldiers can use unmanned

systems to identify the breach site, employ remote weapon systems used for direct fire suppression, drop obscuration with pinpoint accuracy, and deploy explosive ordnance with robotics at the breach site before a single Soldier maneuvers into one of the most contested, decisive points of the battlefield.

A balanced approach involves wrapping technology around small formations rather than imposing it upon them. This means integrating technological capabilities seamlessly into existing operations while preserving the agility and flexibility that characterize effective small-unit operations.

Soldiers must learn to leverage technology effectively, emphasizing interoperability and tactically using unmanned systems to achieve mission success.

## Adaptability

In addition to mastering the basics and integrating technology, adaptability remains a cornerstone of successful military operations. Warfare's unpredictable nature demands that Soldiers be flexible and quick-thinking, able to adjust strategies and tactics on the fly.

This adaptability is not something technology can replace; rather, it must be fostered through rigorous training and leadership development. The ability to improvise, adapt, and overcome in the face of adversity is what distinguishes a truly effective fighting force.

As we incorporate more advanced technologies



Sgt. Shaquille Siplin, North Carolina Army National Guard, dons night vision goggles during testing of the Next Generation Squad Weapon system's XM7 rifle at Fort Liberty, North Carolina, June 13, 2024. An empowered sergeant who understands the commander's intent sets the tone for the formation in every action as the formation's standard-bearer. (U.S. Army photo by Sgt. 1st Class Jon Soucy)



Soldiers use a flare to notify adjacent units a breach was opened at Drawsko Combat Training Center, Poland, Aug. 9, 2024. **Drones Hold the Line.** In May 2023, the city of Bakhmut was days away from falling into Russian hands. Russian forces surrounded a small Ukrainian observation post through the night, launching ground assaults from neighboring buildings. A nearby Ukrainian unit used a Small Unmanned Aircraft System (sUAS) to target artillery and mortar fire. The defenders were unaware because Russian Ground Forces used electromagnetic jamming, knocking out their communications capabilities, but the effect was immediate. The Russian attacks faltered, and Soldiers' lives were saved. (U.S. Army photos by 1st Lt. Sawyer Phillips)

into our operations, we must ensure our Soldiers remain at the forefront, ready to leverage these tools to their fullest potential without becoming overly reliant on them. The fusion of human ingenuity and technological innovation is the key to maintaining our edge on the battlefield.

## Lessons from Ukraine

This article is not conceptual. The examples provided are not theoretical. The U.S. Army is transforming in contact, aggressively seeking opportunity costs in competition against known budget requirements and antiquated programs of record.

It can't transform at the scope, scale, and speed displayed on the Ukrainian battlefield, but it can learn from the lessons observed to minimize costs and avoid timely acquisition pitfalls. Experimentation events, where scientists are paired with formations in the dirt, at the combat training centers, provide opportunities to accelerate learning as well as research and development.

## Conclusion

While technology enhances small formation capabilities, its successful integration must be thoughtful and complementary to existing Army doctrine. Unmanned systems and advanced weaponry are essential tools, but their value lies in adding to, not replacing, the human elements of warfighting.

By mastering warfighting fundamentals and embracing technological advancements judiciously, Soldiers can navigate the complexities of modern warfare with resilience and effectiveness.

The future of squads at the tactical edge lies in their ability to harness the power of technology while remaining agile, effective, and lethal in today's complex operational environment. ■

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