Move Further, Mask Emissions, Make Explosions

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Soldiers from across the 10th Mountain Division compete in the second D-Series XXIV on 19 January 2024 at Fort Drum, NY. (Photo by SPC Kaylan T. Joseph)

The essential experience of a rifleman is largely the same from 1775 to today. For 250 years, American Infantry Soldiers have fought to protect and defend the American people. For two and a half centuries, American Infantrymen have marched to battle in leather boots with rifles pressed against their shoulders. Every Infantry Soldier from 1775 to 2025 has shaken their canteen at the end of a long march, hoping there's an extra swig of water left. In all these years, they've all slept in mud, waded through swamps, shivered, and bled in the pursuit of our enemies.

Soldiers in the 10th Mountain Division know these aspects all too well. Training in northern New York and Louisiana keeps us ready to fight in the "*heat and cold of snow.*" Our heritage — from battles on Mount Belvedere and Riva Ridge 80 years ago to Somalia in 1993, to Afghanistan, Iraq, and Syria in recent years — reminds us of what it takes to fight "*where others dare not go*."

These shared hardships continue to calcify the bonds of Infantry from across generations because boots, rifles, mud, thirst, and blood are timeless features of the close fight. But ground warfare is changing — the *way* we fight is changing.

Transformation in Contact (TiC) units like the 3rd Light Brigade Combat Team, 10th Mountain Division are helping the Army experiment with the latest technology, equipment, and formation designs. But transformation comes in many forms. Sometimes the most impactful advancements come from changes in habit and mindset, not just equipment. Transformation is as much about shaping culture as it is about updating kit.

Being the "Blue Collar Division" generates some inherent advantages for the 10th Mountain. Not always having priority for the latest equipment and newest fieldings drives us to build lethality with classic means. What's old may not be completely new again, but some time-honored light infantry features have renewed advantages in the technologically enhanced battlefield.

What this article calls for isn't really about transformation (at least not in the TiC brigade sense). This is about **adaptation**. It's less about costly equipment or advanced technology. It's about shifting the mindset and culture of the light infantry to thrive in the next major war.

Three principles that will maximize light infantry lethality on the modern battlefield are for rifle squads and platoons to:

Move further. Mask emissions.
Make explosions.

Moving further is about ***endurance*** — both in physicality and sustainment — to enable grueling movements up, over, into, and through restrictive terrain. *Moving further* is about

infantry forces remaining self-reliant and fighting out of our rucks for 48-72 hours without resupply. It's about carrying what you NEED and ruthlessly shedding unessential weight. Every pound they carry will matter, whether that weight is in their kit, in their ruck, or strapped to their bodies.

Moving further into rugged, austere, and isolated terrain requires the Infantry to cut our sustainment requirements. The U.S. military's sustainment capacity throughout the War on Terror was incredible. The battlefield was littered with thousands of bases, combat outposts, and other nodes of tactical infrastructure, ensuring steady access to food, fuel, ammunition, and medical evacuation. Even when improvised explosive devices turned ground corridors impassable, we retained uncontested control of the air. Veterans of the next conflict will likely have the exact opposite experience.

Sustainment will be constantly challenged in the next major war. The availability of supplies, repair parts, replacements, and medical evacuation will be a major challenge. Light infantry forces will find themselves isolated from their supply lines much like the 101st Airborne Division in Bastogne. In such circumstances, self-reliant infantry formations will need to extend their operations by sourcing supplies and equipment with what they find on the battlefield, including food, vehicles, and fuel.

Soldiers from across the 10th Mountain Division climb Lower Wolfjaw Mountain near the Adirondack Mountain Range as part of Warrior Alpine Readiness Week on 8 August 2024. (Photo by SPC Elijah Campbell)

There are a multitude of resupply options that also reduce our reliance on ground logistics and reduce risk to our aviation assets. These include expanding our proficiency with Low Cost Low Altitude (LCLA) aerial delivery systems and increasing our applications of unmanned drones to resupply troops with ammunition, batteries, and food.

Future fights in austere and isolated terrain will also limit our ability to evacuate casualties within the "Golden Hour" and have them on a surgical table within 60 minutes of being injured. Infantry platoons and companies will rely on methods of prolonged casualty care and administering whole blood from their internal walking blood banks to keep their wounded alive long enough to orchestrate a deliberate medical evacuation plan — likely hours after a battle ends.

Moving further also necessitates a shift in how we approach physical fitness to a distinct mindset of building physical endurance. High-intensity and mass-building workouts are easier to embrace, but sustaining low-intensity actions for hours on end will be the key to light infantry employment in a major war. Light infantry will win fights because of their distinct ability to move for extended periods — under load — as small units across *rugged and austere terrain*. The Expert Infantryman Badge 12-miler is a deceiving benchmark for our capacity to move dismounted. Endurance for the light infantry means squads going up, over, into, and through restrictive terrain, where you're lucky to manage 1-2 kilometers per hour — day after day.

Endurance requires pushing our physical training to extended periods where the body experiences caloric deficit: to learn what it feels like to *bonk* — for individual Soldiers to detect and anticipate that teetering cliff of stamina and learn how to keep their body hydrated and fueled throughout a continuous activity. That is what the 10th Mountain Soldier experiences while conducting alpine training in the Adirondack High Peaks in northern New York, where it takes 6-12 hours to cover 12-16 miles in the backcountry to reach a summit and back. The mountains have a humbling way to expose the distinction between being fit and having endurance. Therefore, repeated exposure to caloric deficit teaches Soldiers how to avoid that cliff and keep the body performing over extended periods of activity.

Another aspect of *moving further* is remaining vigilant on the constant struggle for individual Soldier load. Water becomes one of the greatest weight factors. Simple habits like self-procuring water and proficiency in caching supplies improve the self-reliance of small units in isolated terrain. Climbing in the Adirondacks allows 10th Mountain Soldiers to routinely use individual water filters to procure water instead of carrying it. It is not viable to carry enough water for a 72-hour mission. The more we embrace basic habits like water procurement as a common practice for our light infantry formations, the more we shift our formations to self-reliance and expand their endurance.

The weight of batteries remains the other constant struggle for our dismounted forces, especially as more and more

advanced battery-powered systems become available. Any system that requires power has a compounding impact on the Soldier: the weight of the batteries/hardware and the subsequent need to resupply additional power and fuel to keep them running.

Some new equipment is essential, such as the dual-tube PSQ-42 Enhanced Night Vision Goggle-Binoculars (ENVG-B) we have in the 10th Mountain Division. Their thermal outline features are incredible, but ENVG-Bs require four lithium AA batteries for approximately 8 hours of run time, which means each rifleman needs to bring 16 lithium AA batteries just to power their night vision for three nights.

However, the number of radios we carry in a platoon or squad is certainly something to revisit after our habits from the last 20 years of combat. For the radios we do carry, limiting how long they remain on reduces the amount of power consumed, which then reduces the frequency for resupply. And as we'll discuss next, reducing radio emissions also reduces the electronic signature of our dismounted formations.

A Soldier from the 2nd Brigade Combat Team, 10th Mountain Division adjusts his night-vision goggles during the Cold Weather Indoctrination Course on 8 February 2025 at Fort Wainwright, AK, ahead of Arctic Forge 25. (Photo by PFC Makenna Tilton)

Masking emissions takes a renewed look at the different forms of contact and how we see ourselves across the ***electromagnetic spectrum*** (EMS). This includes developing a sophisticated understanding of our visual, radio, and thermal signatures so we can understand how our peer adversaries see – detect – target – and anticipate our movements beyond what we can readily see with the naked eye. Our goal should be to adapt our current habits, so we emit less while still maintaining steady communications as we maneuver dismounted during both day and night.

On the modern battlefield, the invisible forms of contact are among the most dangerous. "If you're seen, you're dead" is the message being quietly noted out of the war in Ukraine. Whether it's cheap commercial drones with thermal cameras, ground-based electronic communications sensors, or aerial reconnaissance platforms, our ability to hide on the battlefield is shifting under our feet.

Though our communication systems are more integrated and enhanced than ever before, their distinct radio wave signatures become a major vulnerability for enemy detection.

There are two fundamental approaches to masking radio emissions: either 1) hide in plain sight by flooding the area with decoys or transmitting within the natural electronic clutter of a populated area or 2) simply emit less signals. We are accustomed to such dichotomies in the Army: We can either "breach *or* bypass" when facing obstacles or "dig down or build up" when making a fighting position. Masking radio emissions from a capable adversary shouldn't be an either/or option: We can both "dig down *and* build up" by increasing the surrounding clutter with decoys AND transmitting less. Neither countermeasure is sufficient on its own to mask the signature of our dismounted troops against the multiplying means available to detect our forces. Applying both approaches in tandem offers the greatest advantage to our dismounted formations.

Transmitting less includes embracing the old method of using communication windows. Adapting this old practice to the distinct capabilities and wave forms of our various comms platforms today makes applying comms windows more nuanced than it once was, but the underlying principle of embracing comms windows remains the same. We developed a "nicotine addiction" to real-time data and communications after 20 years of fighting in the Middle East. The next war will not let us maintain those old habits of transmitting radio waves with impunity.

Radio emissions are not the only way to readily spot maneuver elements on the modern battlefield. The ever-increasing access to thermal cameras on drones and ground systems levels the playing field for our adversaries to detect our forces.

Thermal masking is a bedeviling issue, especially for maneuver forces, but we cannot ignore it. We will never be able to hide completely, but there are ways to make a platoon look like a squad or exploit a complacent enemy operator into mistaking a small element for something less than what it is. Therefore, the goal of thermal masking isn't to become invisible to thermal detection, just reduce the size or purpose of a formation by either fooling the sensors or their operators.

Opportunities to partner with the U.S. Army Combat Capabilities Development Command (DEVCOM) through

our innovation labs make it possible for us to experiment with different thermal-masking techniques to reduce the signature of our dismounted troops. Camouflage nets work particularly well for reducing thermal signatures. Even a poncho "hooch" offers helpful protection from overhead thermal detection (in addition to respite from the rain). The key is to create overgarments that dissipate body heat while retaining functionality to move over and through restrictive terrain.

The modern battlefield will be unforgiving to units that ignore the increasing threat of detection across the electromagnetic spectrum where our adversaries will likely fire on signatures alone. The light infantry is uniquely capable of operating with a significantly reduced EMS signature compared to the rest of the Army. Every effort to minimize our electronic signatures reduces the likelihood of being detected by electronic sensors. Signal-emitting decoys will help. But like any cat-and-mouse game, our decoys only work until the enemy learns how to filter out fake emissions.

Emitting less signals will become a distinct advantage for light infantry units on the modern battlefield. Masking our emissions will help our forces to close with the enemy. The final step is to destroy them with fires.

Making explosions is about embracing all shrapnel-producing systems available to a rifle platoon: M3A1 Carl Gustaf Recoilless Rifles, M320 Grenade Launchers, Javelins, Stingers, dismounted mortars, and loitering munitions.

Marksmanship will always be critical, but we need to reexamine what systems we, as the Infantry community, covet. We put so much emphasis on the weapons we know (M4, M240, M249), but well-placed high explosives can shut down fights. Too often, we revert our focus on building expert marksmen with our M4s and M240s and only familiarize ourselves with our high-explosive (HE) weapons. The true lethality of the light infantry comes from delivering high explosives, not ball rounds. An old mantra echoed by leaders like COL (Retired) Mike Kershaw recall, "make contact with small arms, then gain freedom of maneuver with your belt-fed weapons and kill the enemy with high explosives."

The options for dismounted elements to employ HE with precision are only expanding. The inclusion of loitering munitions like the Low Altitude Stalking and Strike Ordnance (LASSO) and first-person view attack drones. These types of systems expand the ability of small formations to deliver HE at extended range (often beyond what a battalion 120mm mortar system can range) at pinpoint targets, both stationary and moving.

As global conflicts limit our supply of full caliber HE rounds to train with, greater access to simulated systems and lower cost training munitions will make a difference. Installations need virtual trainers for our HE weapons systems — including the M3A1 with Fire Control System 13 optic, the M320, and loitering munitions — to allow Soldiers to experience the full arsenal of munition types and enable repetitions at firing both day and night at multiple target types in various firing positions.

The M3A1 with its integrated fire control system optic is the new crown jewel already sitting in infantry brigade combat team arms rooms. The new M3A1 is lighter, has extended range, better accuracy, and more munition options than the legacy M3 Carl Gustaf. There is a general lack of familiarity with the weapon across the infantry community.

Infantry Soldiers in the 3rd Brigade Combat Team, 10th Mountain Division fire anti-tank rounds during a live-fire exercise in Estonia on 13 November 2024. (Photo by SPC Trey Gonzales)

It is certainly more than a reloadable AT-4. The embedded computer in the fire control system with its internal range finder calculates everything from the distance, ambient temperature, and altitude along with the specific ballistics of every munition type to enable gunners to hit targets both day and night well beyond 1,000 meters. For moving targets, the optic will calculate and depict the necessary aim point for gunners to hit vehicles. Troops in defilade 2,000 meters away? There's airburst for that. Enemy sniper somewhere in a building? Take out a floor (or in some cases the entire building) with the anti-structural munition.

Some wider questions about our HE proficiency to review: How proficient are our M320 gunners at night? How often do our M3A1 Carl Gustaf antitank teams shoot their recoilless rifles (at both static and moving targets)? How often do our squad and team leaders practice call for fire? When can our Soldiers start training how to employ loitering munitions? We need to be more than familiar with the basic functions of our HE weapons systems for the fight ahead. *Making explosions* will be the essence of infantry lethality.

A Soldier assigned to the 19th Special Forces Group fires a Hero-120 loitering munition during a demonstration as part of Operation Summit Strike 24 on 20 November 2024 at Fort Drum, NY. (Photo by PFC Kade M. Bowers)

Shifting from familiarity to true proficiency with our HE systems requires the same approach to training with our M4s and crew-served machine guns. Primary and alternate gunners need repetitions at engaging select target types at various distances, in different firing positions, during both day and night, at both static and moving targets. For many HE systems, there are distinct munition types with multiple fuse settings. A couple rounds a year will never get our teams beyond basic familiarity.

True proficiency with HE also necessitates training practice rounds with both acoustic and visual signatures for gunners to train with. One of the reasons why the M320 remains underappreciated in our community is the prevalence of the underwhelming orange chalk rounds for training (day only). The new 40mm low visibility training rounds being fielded will greatly enhance M320 marksmanship going forward. Overall, not enough of our gunners have fired the host of available munitions in the M320 or M3A1. Those who get to fire 40mm HE gain a new appreciation for what the M320 is capable of in a firefight. And obliterating a fortified bunker with 84mm HE from the Carl Gustaf — at night, hundreds of meters away — will make a convert out of any rifleman. While the M240 will always have a place in our Ranger hearts, it's time for an HE revolution in the light infantry culture.

Light Infantry Lethality

Armored brigades, fighting from platforms like the M1 Abrams and M2 Bradley, are rightly seen as the most lethal formations in the U.S. Army. Certainly, nothing matches the speed, protection, and firepower of an armored brigade in open terrain. Yet there are clearly conditions when armored units historically lose the advantage — when sustainment is contested; when mud begins to swallow tracks, confining vehicles to the roads; and when the fight shifts to rugged terrain, among dense forests, rubbled cities, or up cragged rock. These very features — the mountains, the swamps, the cities and sewers — all become the infantry's protective platform to fight from.

The very conditions that reduce the lethality of heavy formations are the same conditions that amplify the potential lethality of the light infantry. Small formations that are buried deep in unforgiving terrain, emit minimal signatures, and wield high explosives will have a dominant effect for the U.S. Army. American rifle squads and platoons that ***move further***, ***mask emissions***, and ***make explosions*** will decimate our opponents in the next war, just as American Infantry Soldiers have done since 1775.

Author's Note: *This article touches on a couple ways for the light infantry to maintain the advantage in a large-scale combat operations fight. It concentrates on habits and mindset shifts with limited expectation for material solutions. As a catalyst paper, it was written to spark discussions. There is no difference whether readers agree with any of the suggestions above or not if it helps provoke thought. It was written for a distinct infantry audience but certainly touches on issues that apply across the Army, not just for combat training center rotations but for the fight that awaits us all.*

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