Training Individuals and Units to Fight and Win in LSCO

by LTC Mitchell Payne and LTC John Thomas

From the earliest histories of humankind, the nature of war has remained unchanged.[1] At its heart, it is an inherently violent contest of wills between two parties, where one party enforces its will upon the other. This inherent nature of conflict has not changed throughout the thousands of years of recorded human history.[2] But while the inherent nature of war may remain the same, the conditions of war have continually changed and evolved in conjunction with technological and military revolutions. If the character of war is unchanged, the characteristics of today's large-scale combat operations (LSCO) environment bear further examination.

From the start, however, it is necessary to understand that LSCO is not a series of tasks for individuals or units to train on, it is an operating environment that individuals and units must train in. The individual level task of "Treat and evacuate a casualty" is a basic 10-level task for all Soldiers, but the way in which it is executed may differ greatly based on the surrounding environment.

LSCO, as an environment, has several characteristics that differ greatly from small-scale combat. Some of these characteristics include the predominance of indirect fires from both sides, as well as contested airspace without the guarantee of friendly air dominance. Fluid conditions on the battlefield dictate the need for rapid transitions between offense and hasty defenses, where leaders may not have time to fully develop engagement areas.

Subsequent integration with multiple functions means that no one warfighting function, branch, or unit is self-sufficient in the LSCO environment. Compounding all these factors is the physical terrain in which LSCO is fought. The continued urbanization of world populations virtually guarantees that LSCO will be fought in urban and sub-urban terrain, presenting challenges to both information operations as well as determining the appropriate (and inevitable) collateral damage estimates.

While these five characteristics are certainly not an exhaustive list of every characteristic of LSCO, they do represent a broad compilation of characteristics that other military leaders across the United States Army have identified and discussed. In this paper, we will expand the discussion on each of these characteristics of LSCO and offer suggestions for military leaders on ways to tailor individual and unit training to prepare for, fight, and win in LSCO environments.

Characteristics of LSCO	1. Predominance of IDF	2. Contested Airspace	3. Multi-Faceted Integration	4. Rapid Transitions	5. Urban Operations
Individual-Level Training Implications	- Overhead cover / Hasty Fighting Positions - Overhead (Vehicle) Concealment - Survival Moves - Call For Fire Training	- Establish Individual Air Guards for vehicle crews and dismount squads - React to Red Air	- Armored crewman familiarization with dismount support - Dismount infantry supported by tanks and BFVs	- Build adaptability by training in ambiguity - Communication mastery on all platforms - Train drivers on berm drills and movement to battle positions	- Accepting Appropriate Collateral Damage - Higher Casualties - Continual (unsecured) connectivity on the battlefield
Unit-Level Training Implications	- Permissive FSCMs - Push Fires Assets Forward - Avoid Massing Formations (BSAs, C2 Nodes)	- Train for effective Airspace Planning - Incorporate Red Air into Risk Mitigation planning for Protection WfF	- Multi-echeloned training incorporating C2, Logistics, and Fires at every opportunity - EW integration - CBRNE Planning	- RDSP focus - Better Organizational Assessment process - Plan to secure rear areas from hybrid threats - C2VE vs. COMMEX	- Ethical Training - Casualty Evacuation - Triage/Remains Processing - EW integration - Social media discipline

(CUT) Holistic Intelligence
- Employ SUAS whenever Possible - Recon assets must be familiar with all other intelligence assets
- Consider and mitigate deception and feint - Examine C2 of holistic intelligence picture

Table 1. Characteristics of large-scale combat operations and training implications. (*Source: Authors*)

Characteristic 1: Predominance of indirect fires

Indirect fires (IDF) are the most lethal aspect of LSCO. This has been evidenced in both U.S. Army Warfighter Exercise (WFX) simulations and in the brutally stark reality of the 2014 Russian invasion of Crimea and the current Russian invasion of Ukraine. Data analysis from multiple WFXs indicates that IDF will account for +90 percent of friendly casualties, translating to 6,000-7,000 casualties in a 10-day period at the division level. The truth of these simulated data has been evidenced in Ukraine. From March 2023 to June 2023, "most of the casualties are the results of [artillery] barrages: in the last three months of war, 80-90 percent were due to artillery…"[3]

Individual training implications

At the individual training level, this has four distinct implications. First, individual-level training cannot over-emphasize the need for and importance of overhead cover and hasty fighting positions. In a recent article discussing the infantryman's experience in the trenches of Donbas noted that "Soldiers on the front in Ukraine adhere to a maxim that grows more sacrosanct the longer they survive: If you want to live, dig."[4] Individual-level training must emphasize the presence of overhead cover as a part of hasty survival positions as a critical part of fighting in the LSCO environment.

Figure 1. Soldiers assigned to the 1st Battalion, 14th Field Artillery Regiment, 41st Field Artillery Brigade, V Corps, engage targets with a pair of high mobility artillery rocket systems during Exercise Griffin Shock 23 in Bemowo Piskie, Poland, May 19, 2023. Exercise Griffin Shock demonstrates the Army's ability to assure the NATO alliance by rapidly reinforcing the NATO Battle Group Poland to a brigade size unit. (*U.S. Army photo***)**

A corollary of this for the armored community is also a renewed emphasis on overhead concealment for individual vehicle positions. Armored vehicle crewmen at the individual driver level, must be well-trained in how to establish overhead concealment using both natural terrain and vehicle camouflage netting. Setting up vehicle camouflage nets must be as inherently intrinsic a task for armored crewmen as digging fighting positions is for individual infantrymen.

Third, all individuals at every echelon must embrace the need for continual survival moves. This means that artillery forces must be well-trained to shoot and move. Logistics Soldiers must be well-versed in rapidly breaking down and re-establishing logistical nodes. In the LSCO environment characterized by massive amounts of IDF, staying stationary means you will end up as one of those 80-90 percent of casualties. Individual Soldiers must learn to move or die.

Lastly, if we accept the premise that IDF is the most lethal aspect of the LSCO environment, then all maneuver individuals must be masters of using IDF. For the military occupational specialty (MOS) 19D Cavalry Scout, calling for fire is a 10-level task. This same emphasis must be instilled in all maneuver personnel. If IDF is the biggest killer on the battlefield, individual-level training must emphasize to every Soldier not only how to survive IDF, but how to use it to gain lethality on the battlefield.

Unit training implications

In a broader scope, this same mentality applies at the unit level. Former National Training Center commander of the Operations Group and current U.S. Armor School Commandant BG Michael J. Simmering noted in a recent article that units must "synchronize fires with the movement of tactical formation at the speed required to function effectively in the decisive action training environment."[5] Units must train their staff to develop permissive

fire support control measures, which further enables free use by reconnaissance assets to shape the deep fight. Failure to develop permissive fire measures inhibits the speed at which fires can be effective against enemy forces, while also significantly hindering counterfire and targeting efforts.[6]

Using IDF also means accepting a degree of risk by pushing those assets forward enough in proximity to the forward line of own troops to truly effect transition of the fight from the BCT deep fight to the close fight to affect the enemy as early as possible.[7]

Figure 2. U.S. Army boats assigned to the 50th Multi-role Bridge Company, 5th Engineer Battalion, ferry a Romanian Piranha III Armored Personnel Carrier across the Danube River near Bordusani, Romania, during the wet gap crossing exercise of Saber Guardian 23, June 6, 2023. The exercise is a component of DEFENDER 23, co-led by Romanian Land Forces and the U.S. Army at various locations in Romania to improve the integration of multinational combat forces by engaging in events such as vehicle road marches, medical training exercises and river crossings. (*U.S. Army photo***)**

Finally, given the predominance and lethality of IDF in the LSCO fight, units must train themselves to avoid massing formations in stationary positions. The Ukrainians learned this in 2014, when in the space of about two hours, Ukrainian forces lost more than 30 Soldiers and two battalions worth of combat vehicles and equipment due to Russian artillery fire.[8] Ukrainian military forces, in turn, taught that same lesson to Russian military forces in May of 2022, when Ukrainian artillery destroyed more than 100 Russian combat vehicles across two battalions that were massing to execute a wet gap crossing of the Siverskyi River.[9]

Ukrainian forces repeated the same lesson to Russian forces in June 2023. Russian bloggers and independent news agencies reported that members of the Russian 20th Combined Arms Army allegedly massed in formation and stood stationary for more than two hours so that the division commander could address his troops prior to executing a major offensive. Ukrainian artillery and M142 High Mobility Artillery Rocket System (HIMARS) allegedly inflicted more than 100-200 dead and wounded in the space of a single artillery attack on the massive stationary target.[10]

Characteristic 2: Contested airspace

The second major characteristic that defines the LSCO environment is the fact of contested airspace. During counterinsurgency operations over the last two decades, the U.S. military grew accustomed to the air dominance that was quickly established throughout every theater. Fighting against an asymmetric threat, U.S. military forces intrinsically knew that if something was in the air, it was inherently friendly. In today's LSCO environment against peer threats, however, that cannot be a predominant assumption. In fact, the evidence from our training centers and the ongoing conflict tells us that one should assume the worst.

Individual training implications

At the individual level, this has two distinct implications. First, individual Soldiers must be trained to look and think in all directions. All too often, individuals are only taught to look out and around, with less emphasis on the equally critical task of "looking up." For the armored crewman on a tank, Stryker, or Bradley, this means that individual members (such as 19K loaders) must be designated as air guards for their vehicle. In a similar fashion, for the dismounted infantry squad, one should also designate a squad member as an "air guard." These air guards must provide their vehicle, squad, or section with a critical warning for enemy unmanned aerial systems (UAS) and enemy aviation assets.

Second, all individuals at every echelon must be trained to understand the inherent link between red air (either aviation, rotary wing, or UAS assets) and indirect fire. Every individual Soldier must intrinsically understand that if the enemy is flying an asset overhead, then enemy IDF is likely quickly to follow. The "react to red air" must become an individual battle drill for all Soldiers if they are to survive in the LSCO fight.

Unit training implications

At the unit level, two additional implications emerge. First, brigades and divisions must emphasize the importance and need for effective airspace planning at echelon. Elements at the corps and division must build expertise to train in the Joint Specialized Airspace Training at every opportunity.[11] As units gain expertise with effective airspace planning, they must emplace airspace coordination measures (ACMs) to ensure a detailed understanding of the airspace. Accurate ACMs can help to identify red air in the battlespace, giving precious time for units on the ground to react and survive. Additionally, this helps corps and divisions identify and target the crux of the threat.

Second, units must include red air planning and mitigation into their orders process. Failure to do so results in an untenable risk to force and risk to mission. Integration of red air planning as a subset of the protection warfighting function can highlight gaps in coverage for critical protection assets and drive subsequent task organization changes.

Figure 3. An AH-64D Apache attack helicopter flies in front of a wall of fire during the South Carolina National Guard Air and Ground Expo at McEntire Joint National Guard Base, S.C., May 6, 2017. The expo showcases South Carolina National Guard airmen and soldiers. (*U.S. Air National Guard photo by Tech. Sgt. Jorge Intriago***)**

Characteristic 3: Multi-faceted integration

The burning Russian tanks littering Ukrainian roads are vivid proof of the next characteristic of LSCO: to be successful, you must learn to integrate at all levels. In the Russian offensive into the Ukrainian town of Vuhledar in the Donetsk region in February and March 2023, Russian military forces lost more than 100 armored vehicles, a third of which were ambushed along the roadway in one ambush. “Russian tanks have fallen prey to Ukrainian Soldiers using anti-tank Javelin missiles … one serious misstep by Russia’s military has been its failure to protect its tanks with a combined-arms approach that provides additional support and integrates its armor with other units.”

Individual training implications

At the individual level, this means every Soldier must be comfortable working together as part of a combined arms team. Recent events show that infantry forces without armor and artillery coverage, function more as targets than as combat power. The burning Russian tanks littering the road to Vuhledar teach the exact same lesson. Individual Soldiers who are not trained to operate in integrated combined arms efforts of mounted and dismounted maneuver supported through fires all become individual targets.

Figure 4. A U.S. Army paratrooper fires an FGM-148 Javelin shoulder-fired, anti-tank missile during a combined arms live-fire exercise at Grafenwoehr Training Area, Germany, Aug. 21, 2019. Javelin missiles have been pulled from U.S. military inventory to be sent to Ukraine. Now, the Defense Department is contracting to backfill those weapons. (*U.S. Army photo***)**

The U.S. Army Armor community must end the false dichotomy of mounted vs. dismounted warfare pervasive in our programs of instruction. Armored crewmen are first and foremost maneuver warfare experts, which requires both mounted and dismounted expertise. Similarly, the U.S. Army Infantry community that fails to grasp the obvious combat power enhancement of armor in LSCO will at best secure the division security area, or at worst contribute to high casualties associated with LSCO. Armored and infantry forces must work together to fight and win in LSCO, or they will die separately.

The MOS 19K10 tank driver must be comfortable operating the tank with MOS 11B10 dismounts in support. The 11B10 dismounts must be trained to support and be supported by MOS 19D and 19C Bradley vehicles. All maneuver Soldiers must be comfortable using all types of indirect assets.

Figure 5. An Army M1 Abrams tank fires during live-fire training at Pabrade Training Area, Lithuania, Dec. 10, 2020. (*U.S. Army photo***)**

Unit training implications

The same characteristic applies at echelon. From company/battery/troop to division levels, commanders must look for ways to make every training event a multi-echeloned training opportunity. A platoon live-fire exercise trains lieutenants on the employment of combined arms and maneuver, but it can also serve to train a battalion staff how to battle track dismounted maneuver units using graphic control measures. Every event also has the potential to be a logistical training event, both in terms of maintenance and support across all classes of supply, thereby stimulating another critical area of LSCO.

At higher echelons, as more assets become available, the integration and sequencing of those assets on the battlefield to maximize combat power at the decisive place and time become even more arduous. Enemy EW capabilities may shut down satellite-based communications. Limited ranges of FM and limited familiarity with HF radio systems present challenges that can be integrated along multiple facets of all unit-level training.

Characteristic 4: Rapid transitions

A third characteristic of the LSCO environment is the speed at which combat fluctuates. The sheer lethality of munitions and weapon systems at work in LSCO means that the combat power of any given unit can change in a matter of moments. The propensity for rapid transitions means both individuals and units must be mentally prepared to operate effectively in a complex and ambiguous environment to achieve their military objectives.

Individual training implications

For individual Soldiers, this means they must be trained to react to rapidly changing conditions with flexibility and adaptability. This may mean designing training events for individuals with the express intent of changing plans, to continue to enhance that individual adaptability. Furthermore, all Soldiers at the individual level must be trained to be comfortable working with “intent” and sometimes ambiguous guidance.

To mitigate the risks of ambiguous guidance, however, individual-level Soldier training should also focus on having them master all available communications platforms. In a rapidly changing environment, communication is the critical element that will enable disciplined initiative within the commander's intent. Soldiers must master all forms of communication, from Advanced System Improvement Program radios and satellite Joint Capabilities Release systems to maps with overlays. If we accept that the LSCO environment is characterized by rapid transitions, individual Soldiers must be comfortable operating in ambiguity and equally competent in their ability to receive and process updated information on various communication platforms.

Lastly, mounted Soldiers must be trained on the basics of operating armored vehicles in both offense and defense or security-type mission sets. It is not sufficient that individual-level armored crew operators know how to operate the vehicle – they must learn to execute berm drills and how to move from concealed positions into primary and alternate battle positions and back to concealment. Individuals must be taught how to use micro-terrain to mask vehicle and dismounted movement. The more familiar everyone is with these operations, the better prepared they will be to react to rapid transitions in LSCO.

Unit training implications

At the unit level, every echelon from platoon to division must be comfortable with effective Rapid Decision-Making and Synchronization Planning (RDSP). Successful RDSP in LSCO emphasizes speed and synchronization over detail in planning.[12] Units must also examine their organizational assessment processes to increase the speed at which information flows to the appropriate decision-making level.[13]

Second, the Russian military has shown time and time again that rapid transitions in LSCO environments may involve non-contiguous or non-linear environments. Russian military forces use speed and audacity to make rapid and deep thrusts along major ground lines of communication in conjunction with airborne and air assaults to seize key terrain (airports).[14] The Russian operational approach dating as far back as the 1979 invasion of Afghanistan, including the 2008 actions in Georgia, 2014 actions in Crimea, and the current Ukrainian conflict all began with bold thrusts at the outset of hostilities. The Russian propensity for bold offensive actions adds a layer of additional complexity in an already rapidly changing environment. Units must plan and allocate resources to secure areas that are behind the forward line of own troops, whether from special purpose and hybrid threats or from large-scale conventional offensive operations.

Lastly, units must also gain a mastery of their C2 architecture. Prior to each exercise, units should execute a command-and-control validation exercise (C2VE). C2VEs are differentiated from a mere communications exercise (COMMEX) in that COMMEXs only test the functionality of the equipment – C2VEs test each operator's ability to use the equipment the way it is intended. It does not matter if the various computer programs in a command post can send 1s and 0s if the operators are not trained on how to process that data to make coherent recommendations or disseminate orders. This is a subset of the command post training progression, which details training progressions at various echelons for command post functions.[15]

Characteristic 5: Urban operations

The final characteristic of LSCO discussed in this paper is the physical context in which LSCO takes place. Currently, over 56 percent of the world's population – around 4.4 billion inhabitants – live in urban areas. That trend is expected to continue growing, with estimates indicating that upwards of 70 percent of the world's population will live in urban areas by 2050. Simply put, this means that conflict of any kind is likely to involve urban terrain. Urban terrain contains multiple tiers and generally leads to higher casualty rates. Threats can come from any level, whether multi-storied buildings or sewer networks below the surface. Hybrid threats can observe friendly forces virtually undifferentiated from the normal civilian population. Social media bloggers hundreds or thousands of miles from the front have unlimited 24-7 access to emerging news from the front, and use that to shape national opinion and politics, as well as the current enemy situation. While all environments are challenging, the urban environment presents specific challenges to modern LSCO efforts. "The advantages afforded to the better trained, equipped, supported, and mentally prepared Solder are magnified by this environment, which rewards tactical skill."[16]

Individual training implications

Training individuals for this characteristic of LSCO means that individuals must learn to assess and accept appropriate collateral damage. Put another way, the task of entering and clearing a building may require hand grenades, an AT-4, or a 120mm HEAT round as opposed to a four-man stack. The hybrid and urban threat environment means Soldiers must be well-prepared to make difficult decisions to preserve themselves and accomplish their military objectives.

Second, both LSCO and urban operations may generate higher casualty numbers. Soldiers should be trained in self-medication and buddy aid, without the expectation of aerial medical evacuation. The high number of casualties may often exceed a unit's inherent medical capabilities, effectively rendering every medical engagement as a mass casualty event. Individuals and leaders must be prepared for this significant shift in casualty processing to save the most lives possible and still preserve the mission.

Third, continued urbanization means Soldiers in the future may have virtually unlimited access to social media and Wi-Fi networks. This is evidenced today on the Ukrainian front lines, where Soldiers can chat with their significant others in the dugouts from the front lines.[17] Cell phone discipline in LSCO is critically important, and individuals must be trained on how not to use cell phones. In January of 2023, "Unauthorized use of cellphones by Russian soldiers led to a deadly Ukrainian rocket attack on the facility where they were stationed, [raising] the death toll from the weekend attack to 89."[18] This is true at the highest echelons, where early in the 2022 war it was common news to hear Russian general officers were also targeted and killed due to their use of unsecured cell phones.[19]

Unit training implications

Implications for unit-level training responsibilities should include consideration of additional ethical training as a part of the law of war and collateral damage estimation. Units should practice and rehearse non-standard evacuation of casualties given the likelihood of mass casualty events. Gone are the days when individuals can expect a medical evacuation helicopter to fly to the point of injury – units must practice the art of moving casualties from the point of injury through exchange points to higher levels of care. Casualty operations should also consider civilian casualty processing. Military medical centers may have to reconsider triage operations, given the predominant mission of battlefield medicine to build as much combat power as quickly as possible. Contrary to recent experience, more severe cases may not be treated first if it means returning critical combat power back to the unit. Finally, given the massive number of casualties associated with both LSCO and urban operations, units may need to consider the appropriateness of battlefield burials if logistical capabilities run out of capacity for processing remains.

Urbanization and access to personal cellular devices also mean that units must continually work to educate the electronic warfare (EW) signatures that their communications emit. Units must train individuals on radio net discipline, understanding that a long radio communication might directly correlate to enemy IDF. Secondarily, real-world examples in Ukraine show the power of blending open-source intelligence (OSINT), social media, and enemy cyber warfare. Ukrainian forces using both OSINT and social media posts from Russian military units were able to identify and target headquarters elements at echelon. "It's using online posts like these that Molfar was able to locate the aforementioned Pyatnashka Brigade. This video shows the [Russian] brigade's anniversary celebration posted on its Telegram channel … from another angle [on the video], you can see the blue and white hanger and power lines in the background. They had a match and a pinpoint location on Google Maps. One month after they passed their target report to Ukrainian intelligence, the site was struck Aug. 22, according to local media and this drone footage."[20]

Conclusion

The U.S. Army exists to fight and win the Nation's wars. The character of war remains unchanged, but the characteristics of LSCO may require a new way of looking at both individual and collective training. We do not know how or when our nation will call us to serve in the future, but as stewards of the profession of arms, it is the responsibility of military leaders to ensure that our subordinates have the best equipment and the best training possible to defeat the nation's enemies on the field of battle with honor. MG Buzzard, the U.S. Army's proponent for maneuver warfare, expressed a belief that "we are in an interwar period, our next war will be far more dynamic and complex," and that success in the next war necessitates a cognitive shift in how we train at both the individual and unit level to prepare for the specific challenges of LSCO.[21] Success in LSCO means, among many other things,

that individuals and units must understand the predominance of IDF, the risk associated with contested airspace, and the necessity of multi-faceted integration at all levels in training.

Even when fully trained, each headquarters must develop and practice systems to enable effective command and control of all these elements – something that is beyond the scope of this paper but warrants further discussion. All combat is inherently chaotic, but LSCO involves multiple rapid transitions for which individuals and units must be prepared. Failure at the individual and unit levels to adjust to the LSCO environment may result in even higher casualties at every echelon. Tough and realistic training is how leaders inform and mitigate risk at both the individual Soldier level as well as at higher echelons.

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Notes

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Acronym Quick-Scan

ACM – airspace coordination measures
C2VE – command-and-control validation exercise
COMMEX – communications exercise
EW – electronic warfare
HIMARS – High Mobility Artillery Rocket System
IDF – indirect fires
LSCO – large-scale combat operations
MOS – military occupational specialty
OSINT – open-source intelligence
RDSP – Rapid Decision-Making and Synchronization Planning
UAS – unmanned aerial systems
WFX – Warfighter Exercise