THE ARMY'S OFFICIAL PROFESSIONAL BULLETIN ON SUSTAINMENT

HIP-POCKET GUIDE

PROJECT WARRIOR

SUMMER 2025

ARMY SUSTAINMENT

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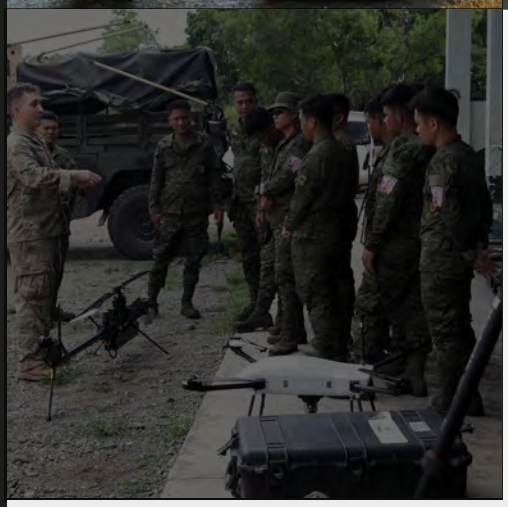
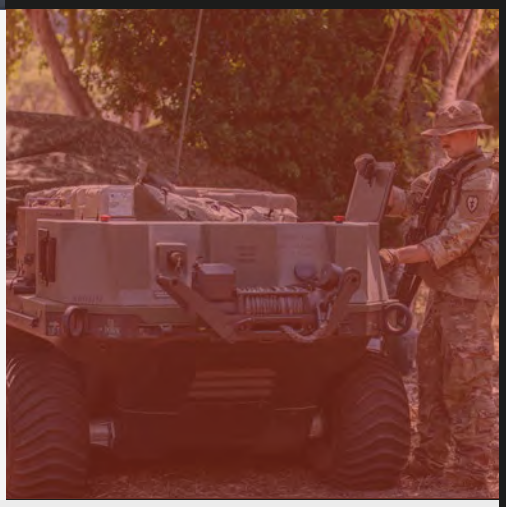


CELEBRATING ARMY'S 250 —years— INCLUDING Quartermaster, Finanace, and Adjutant General Corps



REDESIGNING SUSTAINMENT ORGANIZATIONS THROUGH TRANSFORMATION IN CONTACT 2.0

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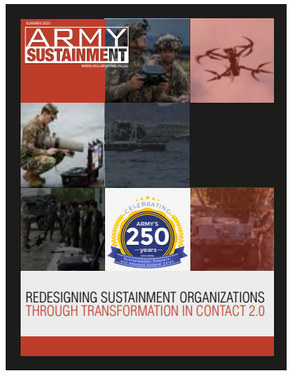

ON THE COVER

The theme of the summer issue of *Army Sustainment Professional Bulletin* is Redesigning Sustainment Organizations through Transformation in Contact 2.0. This issue also marks the 250th anniversary of Army the Quartermaster, Finance, and Adjutant General Corps. (Cover photos by SFC Ryele Bertoch, SGT Daria Jackson, SGT Matthew Wantroba, SPC Abreanna Goodrich, and PFC Brent Lee)

This medium is approved for the official dissemination of material designed to keep individuals within the Army knowledgeable of current and emerging developments within their areas of expertise for the purpose of enhancing their professional development.

By Order of the Secretary of the Army:

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Mission: *Army Sustainment* is the Department of the Army's official professional bulletin on sustainment. Its mission is to publish timely, authoritative information on Army and Defense sustainment plans, programs, policies, operations, procedures, and doctrine for the benefit of all sustainment personnel. Its purpose is to provide a forum for the exchange of information and expression of original, creative, and innovative thought on sustainment functions.

AGILE, LETHAL, READY

Transforming Sustainment for the Future Fight

■ *By LTG Christopher O. Mohan*

We live in a world marked by rapid technological advancements and increasingly complex threats, and the Army stands at a critical juncture as our nation enters an accelerated rebalancing of competitiveness and resources. To maintain our military dominance, we must continuously transform and evolve to deliver ready combat power to the joint force; we must abandon our old ways for new, cutting-edge efficiencies and flexibilities.

At the 2024 Association of the U.S. Army's Annual Meeting and Exposition, Army Chief of Staff GEN Randy George announced Transformation in Contact (TiC) 2.0. In a speech from the year before, he said, "The world and warfare are changing rapidly. We will stay ahead of our adversaries … continuous transformation means iteratively adapting and evolving how we fight, how we organize, how we train, and how we equip."

This fundamental shift to accelerate modernization initiatives underscores the importance of the Army sustainment enterprise's (ASE's) ongoing transformation efforts to rapidly deliver logistics, sustainment, and materiel readiness across the continuous transformation time horizons. To meet this challenge, TiC-Sustainment, or TiC-S, is critical.

Delivering the right support, to the right place, at the right time, and in the right quantities — even in the most challenging and austere environments — is a long-standing, fundamental objective of Army sustainment. And today, we have the right tools at our disposal, from cutting-edge technologies to streamlined processes and a data-driven decision-making approach. The conflict in Ukraine provides a stark reminder of how crucial a robust and agile sustainment system is to battlefield success, highlighting the role of predictive logistics and precision sustainment in modern warfare. This is not a theoretical exercise; it is a real-world imperative shaping our modernization efforts to prepare the future force for large-scale combat operations in contested, multidomain environments.

Sustainment must keep pace with, and in certain cases drive, modernization. It is not simply about chasing the latest technology, but forcefully shaping and adapting to the future operational environment to maintain our strategic advantage.

Army Materiel Command and the entire ASE are continuously improving and innovating the design and delivery of the Army's sustainment capabilities. This requires a fundamental shift in mindset, one that embraces innovation and agility as core principles and fosters a culture of persistent experimentation and continuous improvement. This includes integrating new tactics, techniques, and procedures with the newest technologies into TiC 2.0 formations, allowing for real-time improvements to logistics support on the battlefield.

Advanced manufacturing is no longer a good idea but a reality that has left the drawing board and hit the factory floor. The Army and the rest of the joint force are falling behind global industry as the world discovers new ways to design and build things. We are leveraging advanced manufacturing for sustainment every day, although on a small scale, to mitigate supply chain disruptions. Telemaintenance provides real-time diagnostics and reduces equipment downtime regardless of the location. It is another sustainment innovation that is being embedded into our functional capabilities. But we need more. Instead of leaving age-old techniques such as castings and forgings in our production lines, we must leverage AI-enabled engineering, advanced materials, and robotics to produce the most cutting-edge equipment as quickly and efficiently as possible.

Meanwhile, we are testing an operational readiness program that brings sustainers and maintainers to units, re-instills a culture of maintenance across the force, and increases readiness from home station to training rotations into deployment and back. By embracing existing and new technologies like artificial intelligence and data analytics, we get better capabilities into the hands of Soldiers at a much faster pace.

The Army must also become a leaner, more agile fighting force with a lower signature and increased lethality in a contested environment. This requires a critical examination of our current sustainment footprint, identifying areas where we can reduce redundancies, streamline processes, and optimize for speed and efficiency.

As much as we have said about data analytics in recent years, this is another area where we are at risk of falling behind the global standard. By increasing our use of advanced analytics, artificial intelligence, and other modern data sciences, we take a more aggressive posture toward reducing our logistics vulnerabilities and shortening the Army's sustainment tail, effectively unencumbering our supported formations with less sustainment.

Our adversaries are constantly seeking an advantage and evolving their capabilities. We cannot afford to stand still. The ASE continues to adapt, innovate, and transform, ensuring our warfighters have the decisive edge in any future conflict. Our commitment to providing unmatched sustainment is unwavering, and through continuous transformation and modernization, we ensure the ASE remains a vital strategic asset for our nation as it delivers ready combat formations.

LTG Christopher O. Mohan currently serves as the deputy commanding general and acting commander of U.S. Army Materiel Command. He also serves as the senior commander of Redstone Arsenal, Alabama. He was commissioned into the Army from Appalachian State University in Boone, North Carolina, where he graduated as a Distinguished Military Graduate with a Bachelor of Science degree in criminal justice. His military education includes the Ordnance Officer Basic Course, the Combined Logistics Officer Advanced Course, the Naval College of Command and Staff, and the Army War College. He holds a Master of Science degree in national security and strategic studies from the Naval War College and a Master of Science degree in military strategy from the Army War College.

Finance in the Fight

Operationalizing the Enlisted Guide

■ *By LTG Paul A. Chamberlain*

You know the John Wayne movie *The Fighting Seabees*. No one has made a financial management movie yet, but if they did it might be called *The Fighting Finance and Combat Comptrollers*. Finance is not in the rear, it is in the fight, paying the Army's way every day.

In every contested theater and across every operational phase, finance and comptroller Soldiers provide the velocity behind sustainment. The new *Financial Management and Comptroller Enlisted Guide* reflects this reality. Released in 2024, this resource is more than a reference book; it is a tool for transformation. It helps commanders and senior enlisted leaders harness the full range of financial management capabilities to support large-scale combat operations.

Finance Soldiers do not just balance books; they enable movement, deliver effects, shape decisions, and, when needed, defend the Army's resources, both figuratively and literally. In an era of continuous transformation, the *Enlisted Guide* helps align finance readiness with the Army's imperative to transform in contact.

Built for the Fight

The *Enlisted Guide* outlines critical roles, responsibilities, and requirements for 36B Army Financial Management Technicians across echelons and formations. Developed collaboratively by the Finance Senior Enlisted Integration Committee, the U.S. Army Financial Management Command, and the Finance and Comptroller School, the guide sets the standard for what finance Soldiers must know, do, and demonstrate at every level.

It supports operational commanders and sustainers by identifying the finance tasks that enable everything from disbursing cash in austere environments to synchronizing internal controls with theater business rules. The guide provides detailed expectations for training, certification, systems access, and leader development milestones, allowing formations to assess talent, close capability gaps, and employ finance Soldiers where they are most needed.

Finance is no longer confined to office spaces and spreadsheets; it is dispersed across the battlefield. The *Enlisted Guide* ensures that finance professionals are trained, equipped, and positioned to support the operational force at the decisive point and time.

Aligned with Army Transformation

The release of the *Enlisted Guide* coincides with a significant shift in how the Army approaches change. Transformation in Contact, as described by Army senior leaders, is about adapting while actively engaged. The Army cannot wait for ideal conditions to begin modernization — it must change now, in stride, through its operational units.

Finance and comptroller Soldiers and units are part of operational formations and are therefore integrated into formation-based transformation. The *Enlisted Guide* empowers leaders to do the following:

- Integrate financial operations into mission planning.
- Standardize responsibilities for finance support in every phase of operations.
- Enhance readiness and auditability through tactical-level fiscal stewardship.
- Support mission command by enabling decentralized resourcing decisions.

This is the Army's path forward: a continuous cycle of transformation across near-, mid-, and long-range planning horizons. The *Enlisted Guide* supports immediate operational innovation, informs future force structure and talent alignment decisions, and helps build

Army Reserve SGT Brandon Froelich (left) and SPC Bhavish Ranjetkar, financial management tacticians assigned to the 374th Financial Management Support Detachment, count and put away simulated currency during a training exercise at Joint Base McGuire-Dix-Lakehurst, New Jersey, on July 24, 2023. (Photo by PFC Aiden Griffitts)

MSG Marcus Pirela, 45th Finance Center, plans and operations advisor, marks a board as MAJ Sonja Keith, 45th FC Chief of Operations, makes remarks during a staff exercise at the Major General Emmett J. Bean Federal Center in Indianapolis, Oct. 28, 2024. (Photo by Mark R. W. Orders-Woempner)

enduring competencies to meet the demands of emerging operational environments.

Sustainment Advantage Through Finance Integration

In the sustainment warfighting function, finance and comptroller Soldiers play a unique role. They translate operational intent into executable resources. During operations, finance enables sustainers to meet battlefield demand, whether contracting urgent supplies, funding bulk fuel shipments, or tracking financial obligations.

At the tactical level, well-trained 36Bs help commanders validate spend plans, adjust budgets, and track obligations in real time. At the operational level, they bridge gaps between resource managers and sustainers. And at the strategic level, they support theater fiscal operations that ensure compliance and transparency.

By clearly articulating these roles and responsibilities, the guide provides a common framework for collaboration. Sustainment leaders can use it to do the following:

- Synchronize financial and logistical planning with operational planning cycles.
- Align duty positions with required system credentials and training.
- Forecast support needs during deployment and redeployment phases.

Operational units that use the guide as part of pre-deployment planning are better postured to deploy finance capability tailored to mission design. In a resource-constrained environment, this alignment becomes mission critical.

Driving Readiness Through Standardization

Standardization is a combat multiplier. The *Enlisted Guide* establishes a shared vocabulary across formations, reducing ambiguity about what finance and comptroller Soldiers must do in the field. It defines developmental paths for specialists and NCOs, providing structure for talent management.

This helps the Army match personnel to mission more effectively. For example, if a brigade requires internal controls support during a rotation, leaders can use the guide to identify Soldiers with the right training and certification. If a division needs expeditionary disbursing capability, the guide outlines how to build and assess that team.

Moreover, standardization enhances interoperability. As the Army operates in joint, interagency, and coalition environments, finance roles must be clearly defined and interoperable. The guide facilitates that by linking duty positions to system access and competency standards. It helps ensure that the right people have the right tools at the right time, which is a necessity in complex operations.

Looking Ahead: A Living Document for a Lethal Force

Transformation is not a phase. It is a mindset. As the Army accelerates toward the future, the *Enlisted Guide* will evolve alongside new doctrine, systems, and requirements. It is designed to remain current by being adaptable and serving as a touchpoint for leaders navigating change.

From evolving force structure decisions to future-oriented concept planning, the guide provides continuity. It supports units conducting assessments of their finance footprint, helps leaders visualize force-design implications, and enables readiness reporting by linking finance and comptroller tasks to operational outcomes.

Importantly, the guide reinforces the Army's talent management objectives. It gives enlisted Soldiers visibility on their career paths, from skill development to strategic-level impact. Finance Soldiers who begin their careers balancing travel claims may one day oversee budget execution for multinational operations. The guide shows that path.

Employ Finance as a Combat Enabler

Finance may not be the most visible enabler on the battlefield, but it is among the most essential. The *Enlisted Guide* puts actionable tools in the hands of commanders, planners, and sustainers. It ensures that 36Bs are employed to their fullest potential, enabling commanders to fight, sustain, and adapt at the speed of relevance.

As we continue to transform in contact — learning, adapting, and delivering effects in stride — let us ensure we leverage all the force multipliers in our formations. The *Enlisted Guide* is a call to action. Use it. Train to it. Plan with it. And build readiness through it.

Because when the "Fighting Finance and Combat Comptrollers" are in the fight, the Army wins.

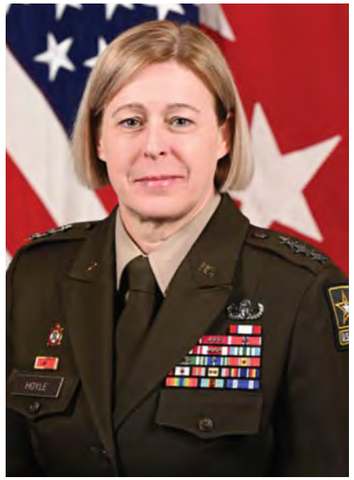
To view or download the guide, visit the U.S. Army Financial Management Command SharePoint site or contact the Finance and Comptroller School.

LTG Paul A. Chamberlain serves as the Military Deputy for Budget, Office of the Assistant Secretary of the Army (Financial Management and Comptroller). He previously served as Director of Army Budget, Headquarters, Department of the Army; as the Director of Operations and Support in the Army Budget Office; and as the commanding general of the U.S. Army Soldier Support Institute at Fort Jackson, South Carolina. His military education includes the Signal Officer Basic Course, Infantry Officer Advanced Course, Special Forces Officer Qualification Course and Language School, Command and General Staff College, and the Industrial College of the Armed Forces - National Defense University (ICAF-NDU). He was commissioned into the Army in 1988 from Clemson University and was assigned as a signal platoon leader. He has a Master of Business Administration degree from Syracuse University and a Master of Science degree in national resource strategy from ICAF-NDU.

SUSTAINMENT

AS A CORNERSTONE OF ARMY TRANSFORMATION

Adapting to a Changing Battlefield



■ *By LTG Heidi J. Hoyle*

The Evolution of Army Sustainment: Meeting the Challenges of the Future Battlefield

As we celebrate the 250th birthday of our Army in June 2025, we find ourselves at a pivotal moment in history. The geopolitical landscape is increasingly complex, with near-peer adversaries rapidly developing advanced military capabilities. As the landscape continues to quickly evolve, the Army must transform and adapt to enable lethality for the joint force. In other words, we must continuously transform and fundamentally change the core of Army operations.

As we see in the ongoing fight in Ukraine, the increasingly dispersed nature of warfare means that convoys, support areas, and other vital nodes in the sustainment network have become increasingly vulnerable to enemy action. Force protection must incorporate advanced surveillance and reconnaissance capabilities into sustainment formations, employing unmanned ground vehicles for resupply missions in high-risk areas and developing innovative techniques to minimize the signature of logistical assets.

Army logisticians are critical enablers of continuous transformation, and we will holistically adapt our doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policies alongside our fellow warfighters. Sustainment units are becoming more agile, technologically sophisticated, collaborative, and resilient to meet the demands of modern military operations. This evolution is critical, particularly as logistics support becomes increasingly dispersed and contested. On future battlefields, rapid and reliable sustainment will mean the difference between mission success and failure, between victory and defeat.

The integration of emerging technologies and evolving operational concepts drives a fundamental shift in how we approach sustainment. Greater use of automation in warehousing, transportation, and supply distribution is essential for managing the increased volume and complexity of logistical demands. Artificial intelligence-powered planning tools will optimize routes, anticipate bottlenecks, and enhance the overall responsiveness of the sustainment enterprise. These technologies require a new breed of logistician, equipped with the skills to navigate this evolving landscape. These skills must be directly tied to enhancing operational tempo, extending operational reach, and increasing the lethality of the warfighter on the battlefield.

The strategic imperative of continuous transformation demands effective tactical implementation at the unit level. Bridging this gap is the Army's Transformation in Contact (TiC) initiative, a focused effort designed to translate modernization efforts into tangible improvements on the battlefield.

TiC 2.0: Change Impacting the Battlefield

Continuous transformation represents the Army's overarching, long-term commitment to adapting and modernizing its force, encompassing everything from technological advancements and doctrinal shifts to organizational restructuring. TiC, in contrast, is a focused, deliberate effort designed to operationalize aspects of this broader transformation at the tactical level. Think of continuous transformation as the strategic vision, and TiC as a project or program directly contributing to that vision. TiC ensures that modernization efforts translate into tangible improvements in our units and on the battlefield.

Building on the initial phase (TiC 1.0), which focused on infantry brigade combat teams and the development of the light support battalion concept, TiC 2.0 expands the scope and integrates new technologies to enhance agility and responsiveness. TiC 2.0 prioritizes mobile brigade combat team structures and broadens the scope to encompass armored brigade combat teams, Stryker brigade combat teams, division sustainment brigades, multidomain task forces, and U.S. Army Special Operations Command units.

TiC 2.0 further integrates cutting-edge materiel and technologies. This includes advancements in mission command systems, the Integrated Visual Augmentation System, counter-unmanned aircraft systems (UASs), and the Joint Tactical Autonomous Aerial Resupply System (JTAARS).

The integration of UASs, like JTAARS, the integration of UASs for delivery is a prime example is a prime example of how technology reshapes sustainment. Drones are increasingly being used to deliver critical supplies to troops in the field, particularly in areas where ground transportation is difficult or dangerous. JTAARS and similar systems allow us to extend the operational reach of our forces and provide them with the supplies they need, when and where they need them.

These technological advancements will result in a more informed, connected, and responsive sustainment network capable of supporting the complexities of future operations. TiC 2.0 represents a significant step forward from TiC 1.0 in modernizing Army sustainment, ensuring the force remains ready and resilient in a rapidly evolving operational environment.

Beyond TiC 2.0: Accelerating Sustainment Transformation

The Army's modernization journey is inextricably linked to the transformation of its sustainment enterprise. From adapting to the complexities of future warfare and cultivating a new generation of technologically proficient logisticians to embracing innovative approaches and leveraging autonomous systems, the sustainment community is at the forefront of ensuring the Army's continued operational readiness. For our sustainment professionals, acceleration of the doctrinal, structural, and technological innovations initiated in TiC 1.0 and advanced further in TiC 2.0 represents the next step in this continuous transformation.

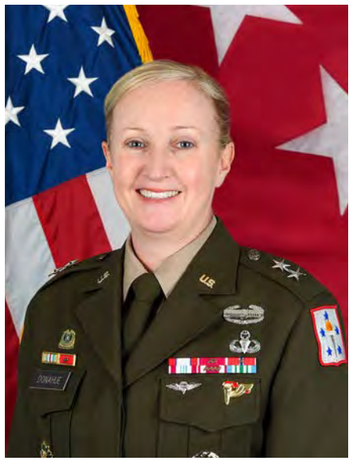
The Army's modernization effort, particularly the emphasis on materiel and technological innovation, represents both a challenge and an opportunity for the sustainment community. The effectiveness of our capabilities will no longer be measured solely by the ability to deliver supplies, but rather by the capacity to adapt, innovate, and integrate seamlessly into a rapidly evolving operational landscape. Army sustainers have a unique opportunity to shape the future of the force. This requires a proactive approach, actively engaging in the experimentation process, providing feedback from the field, and working to ensure that sustainment considerations are integrated from the outset.

The sustainment community leads the way in integrating advanced technologies, enhancing agility and responsiveness, improving resiliency and survivability, and developing the skills needed to win the fight in contested battlespace. Collectively, we ensure that the sustainment enterprise serves as a critical enabler of the Army's success in an increasingly complex and contested world. Our commitment to transforming sustainment is a commitment to ensuring the operational dominance of our warfighters on any battlefield, against any adversary.

Be all that you can be! This we'll defend!

LTG Heidi J. Hoyle currently serves as Headquarters, Department of the Army, Deputy Chief of Staff, G-4, and oversees policies and procedures used by Army logisticians. A graduate of the U.S. Military Academy, she has a Master of Science degree in systems engineering from the University of Virginia and a Master of Science degree in national resource strategy from the National Defense University. She is a graduate of the Chemical Officer Basic Course, Combined Logistics Officer Advanced Course, United States Army Command and General Staff College, and the Eisenhower School of National Security and Resource Strategy.

Transforming Sustainment to Win the Future Fight



■ *By MG Michelle K. Donahue*

The Army's success in large-scale combat operations (LSCO) within a multidomain operations (MDO) environment hinges on a modernized and agile sustainment enterprise. As maneuver forces rapidly evolve through Transformation in Contact (TiC) — a strategic initiative designed to increase adaptability, lethality, and operational overmatch — synchronized transformation within the logistics community is critical to sustaining momentum.

Logistics is no longer a rear-echelon function; it is a frontline enabler. As maneuver formations become lighter, faster, and more distributed, the Army must reshape its sustainment formations to deliver continuous support under fire, in degraded conditions, and across contested domains. This article examines the imperative of transforming logistics in contact and how the TiC initiative serves as a catalyst for sustainment reform.

TiC: A Sustainment Imperative

Launched in response to the rapidly changing operational landscape and the need to outpace near-peer threats, TiC is the Army's framework for rapid transformation in the LSCO environment. TiC 1.0 initiated iterative change by creating the mobile infantry brigade and enhancing capabilities with the Infantry Squad Vehicle and new weapon systems. Recognizing the need to keep pace, sustainment units conceptualized and tested the light support battalion (LSB) — a modular, agile logistics formation designed to enable freedom of action and operational reach for transformed brigade combat teams (BCTs).

Aligning Sustainment Design with Maneuver Evolution

As maneuver units validated new concepts through exercises like Operation Lethal Eagle, Joint Pacific Multinational Readiness Capability, and Combined Resolve, sustainment units simultaneously piloted redesigned support structures. These experiments revealed the need to transition from traditional brigade support battalions (BSBs) to more flexible LSBs, reshaping force structure by merging, converting, growing, or eliminating capabilities.

The transformation from BSB to LSB involves the following:

- Merging the headquarters and headquarters company and distribution company into a single headquarters distribution company.
- Transforming the field maintenance company into a maintenance supply company.
- Converting forward support companies to combat logistics companies.

These changes streamlined the logistical footprint, increasing agility and survivability — critical capabilities for sustaining dispersed formations in contact.

Division-Level Sustainment: Scaling for the Future Fight

TiC extends beyond the brigade level. As divisions expand with the division artillery and signal, engineer, and intelligence battalions, division sustainment brigades are also evolving. To mitigate potential shortfalls, U.S. Army Combined Arms Support Command's force developers split the composite supply company into dedicated division supply and petroleum companies, addressing the increased mission scope and complexity.

Additional adaptations include the following:

- Increased throughput by converting Medium Tactical Vehicle platoons to Palletized Load System platoons.
- Integrating postal and mortuary affairs platoons within sustainment companies.
- Integration of organic counter-unmanned aircraft systems (cUAS) capabilities.
- Enhanced protection through organic UAS security for convoys and forward nodes.

These adaptations prepare sustainment units for the high-tempo, contested, and dispersed battlespace characteristic of LSCO.

TiC 2.0 and the Sustainment Path Forward

TiC 2.0 builds on this foundation with a broader scope and deeper technological integration. It institutionalizes validated TiC 1.0 force designs while extending transformation to armored BCTs, Stryker BCTs, sustainment brigades, multidomain task forces, and Special Operations units.

TiC 2.0 incorporates systems like Next Generation Command and Control, cUAS, the Joint Tactical Autonomous Aerial Resupply System, and predictive logistics capabilities like Sustainment Enterprise Analytics, ParaLine (streamlined property accountability app), DISCOPS (disconnected operations app for maintenance) and DIGS (digitized preventive maintenance and diagnostics tool).

The future logistics fight will rely on autonomous resupply, resilient networks, artificial intelligence-driven predictive sustainment, and multidomain integration. TiC provides the framework to embed these capabilities at scale, ensuring logistics formations are as adaptive and decisive as their maneuver counterparts. The Army is investing in technologies to predict sustainment needs and to equip Soldiers with tools for better decision making in complex environments.

Conclusion: Transforming Sustainment to Win the Future Fight

The future battlefield will be dynamic, contested, and unforgiving. Static, slow, large, or digitally connected sustainment formations will be vulnerable. To win in LSCO and MDO, the Army must transform logistics in contact — not just logistics in the rear.

The TiC initiative is a logistics revolution, driving innovation through modularity, digital integration, and doctrinal change. By forging sustainment formations capable of delivering continuous combat power, the Army is positioning itself for success. Victory in future wars will depend as much on how and when support is delivered as on whose maneuvers are fastest. Logistics must move at the speed of relevance and evolve in lockstep with the maneuver force.

MG Michelle K. Donahue serves as the commander of the U.S. Army Combined Arms Support Command/Sustainment Center of Excellence at Fort Lee, Virginia. She has served as a sustainment brigade commander, support squadron commander, battalion executive officer, battalion support operations officer, battalion S-4, battalion S-2/S-3, and battalion and brigade S-1. She has also served as the 56th Quartermaster General and Commandant of the U.S. Army Quartermaster School at the Sustainment Center of Excellence; Deputy Director for Readiness, Strategy and Operations for the Army's Deputy Chief of Staff/G-4; and Special Assistant to the Director, Army Staff for the 2023 Army Transition Team. A Distinguished Military Graduate, she received her commission in the Quartermaster Corps from Duke University in 1996. She also holds advanced degrees from Georgetown University and the National Defense University.

DID YOU KNOW?

THE ARMY RESERVE'S EXPEDITIONARY PORT OPENING CAPABILITY

By COL Benjamin "Will" Buchholz, LTC Matthew R. Strickland, and CSM Daniel D. Fairfield

Large-scale combat operations (LSCO) differ from counterinsurgency (COIN) in several key ways, one of which is the contested nature of logistics from the homeland to the front line of combat. Commanders can no longer gradually build and deploy materiel with contracted solutions, which has become the norm under COIN. Moreover, a conflict with China would involve vast distances across the Pacific and a much more watery environment than the Army has faced since World War II. At that time, the Army fielded over 600 ships in the Pacific to build the iron mountain of logistics support, a task that the Navy and Marine Corps have not done since then.

Since World War II, the Army has moved 70% of its maritime assets into the Army Reserve (USAR). Subsequently, due to the high cost of maintaining ocean-going vessels, in 2018 the USAR divested its complete inventory of watercraft. The Army now has only 30% of its pre-2018 capacity. Though the vessels are gone, the USAR kept much of its expeditionary port-opening force structure, with 22 units with watercraft-related missions. However, due to the divestiture of vessels, the USAR can no longer train specialized individual and collective skills of Army mariner.

The USAR must be enabled to provide a global robust, resilient, and survivable port opening capability to the Army and the joint force to mitigate contested logistics. U.S. Indo-Pacific Command's (USINDOPACOM's) tyranny of ocean distance drives the demand for this capability, but — as demonstrated in Gaza this past year — the need for the capability extends across all combatant commands. Currently, units with port opening capabilities are scattered under multiple USAR commands that do not have the resources or bandwidth to provide meaningful training opportunities for this capability. Existing USAR collective training exercises are not well-aligned to support port opening-related unit missions or mission essential task lists. USAR participation in active-duty maritime logistics exercises, such as joint logistics over-the-shore (JLOTS), is fraught with issues of funding and unit availability. Finally, the idea that the USAR no longer supports port opening or watercraft-related operations has constricted mariner recruiting and schooling pipelines.

The USAR must be enabled to provide a global robust, resilient, and survivable port opening capability to the Army and the joint force to mitigate contested logistics.

All this adds up to a burgeoning problem: a lack of ability to produce or maintain a USAR capability that is an essential need in current competition and will be even more critical in any future LSCO fight.

Is the USAR Really Out of the Army Watercraft Business?

In fiscal year (FY) 2018, the Secretary of the Army ordered the divestment of vessels from the USAR to help fund the Army's modernization. The USAR has zero vessels on hand. The USAR may never own vessels again; however, 171 watercraft personnel authorizations remain in the USAR, spread across two theater support commands, eight expeditionary sustainment commands, five harbor-master detachments, and five theater movement control elements.

While this population of mariners struggles to maintain certifications and training opportunities, the requirement for port opening and watercraft capabilities may soon grow exponentially. Modeling by U.S. Army Combined Arms Support Command (CASCOM) and U.S. Army Pacific Command (USARPAC) suggests that the number of vessels and port opening capabilities must increase by a factor of 10 to support the current USINDOPACOM logistics footprint in a LSCO scenario, and by a factor of 100 or more if U.S. forces must retake the first island chain in a conflict with China.

Army Reserve Soldier guides a UH-60 Blackhawk helicopter off the motor vessel GREEN OCEAN as part of reception, staging, and onward movement at the port of Kalundborg, Denmark, April 20, 2024. (Photo by SSG Thomas Mort)

USINDOPACOM, U.S. Transportation Command (USTRANSCOM), USARPAC, 8th Theater Sustainment Command (TSC), 7th Transportation Brigade (Expeditionary) (TB[X]), 10th Regional Support Group, and the Maritime and Intermodal Training Department (MITD) schoolhouse, among other active-duty entities, desire to partner with the USAR. They want to fill their own critical watercraft shortages for missions and training opportunities through careful use of USAR annual training (AT) and active-duty personnel for operational support orders. When this need for USAR mariner support can fill a gap for an active component watercraft mission, these units indicate that the process for obtaining such support is often too burdensome, slow, and unclear, while the ability of the USAR to support their demands has declined since divestiture.

Operation Relevant Mariner

3rd TB(X) is the center of gravity for the USAR mariner population and has therefore worked to formulate three lines of effort to address the above-mentioned challenges:

- Develop a bridging strategy to help USAR mariners maintain certifications and licensing.
- Align and manage multi-component individual and collective training opportunities.
- Make senior leaders aware of these challenges and build a consensus on how to address them.

1: Individual Training to Maintain Licensing and Certification

USAR's lack of vessels poses critical challenges in maintaining certification and licensing for assigned mariners, akin to running a vehicle licensing program without vehicles. Since divestiture, almost half the remaining mariners in the USAR population have not been able to maintain their licenses or certifications. The Maritime Qualifications Division (MQD) of MITD currently tracks 146 USAR mariners with (or who previously held) certification. Of

these, 76 licenses expired at the end of FY 2024. The remaining 70 will, without sailing opportunities to attain licensing recency, vanish at a rate of 10 to 20 Soldiers per FY through 2028.

Army Regulation 56-9, Army Intratheater Watercraft Systems, outlines maritime qualification as a dual process consisting of a Marine Technical Examination (MTE) for certification and a vessel-specific duty performance test (DPT) for licensing. The MQD at the schoolhouse qualifies Soldiers in military occupational specialties (MOSs) 88L Watercraft Engineer and 88K Watercraft Operator and Warrant Officers in MOSs 880A Marine Deck Officer and 881A Marine Engineer Officer to operate and maintain Army watercraft.

Unit and activity commanders who own vessels establish training programs that support vessel-specific DPT licensing for maritime personnel. Certification is normally achieved by passing the MTE for each skill level. A maritime certificate remains valid for five years from the date of issue, and a 180-day grace period beyond expiration may be granted in some cases. Soldiers may apply for renewal by taking an open-book examination, unless they no longer have recency, defined as 90 or more days assigned to a vessel in the preceding five years. Soldiers who allow their certification to expire beyond the 180-day grace period must submit their application for recertification, which includes taking a complete, closed-book MTE for the level of expired certification. Licensing then follows by completing a vessel-specific DPT. These DPTs verify that an individual has the knowledge and ability to safely perform vessel-specific operational tasks.

A foundational program focused on certification and licensing must be established to address the number of licenses and certifications that have expired or that will soon expire for USAR mariners. Soon-to-expire certifications must be the priority, so the 10 mariners with licenses set to expire in FY 2025 should be given immediate opportunities to renew their licenses. This would prevent these mariners from having to take the more difficult closed-book MTE.

Tackling the individual training problems must be the first focus in restoring the USAR mariner program, since individual skills are required to build toward collective training and to ensure that watercraft and port opening experts in staff positions have more than just book and classroom experience.

2: Align and Manage Multi-Component Training Opportunities

Ideally, U.S. Army Reserve Command (USARC) must publish an operation order tasking all USAR units with assigned watercraft personnel to conduct a named port opening culminating training event (CTE), either as part of existing CTEs as part of USAR AT or for limited-time missions supporting active-duty organizations.

This tasking could be designed to work seamlessly within the Regionally Aligned Readiness and Modernization Model (ReARMM), since port opening units do not expect new equipment during mod years and can therefore cycle personnel through individual certification and licensing on watercraft in that phase, while year one provides an appropriate window for multi-component sailing opportunities in partnership with active-duty units that still possess watercraft. For the remainder of the ReARMM cycle, these trained mariners could conduct collective training events with their USAR unit and provide up-to-date and trained expertise, ensuring that the training pipeline for the specialized mariner skill set does not break unit collective readiness.

USARC could also establish a mariner management coordination cell staffed with five Active Guard Reserve non-billpayer temporary manpower allocations. 3rd TB(X) has undertaken a prototype proof-of-principle for just such a cell, using end-of-year funds and capitalizing on training opportunities in open space during MITD's program of instruction. A fully functioning mariner management coordination cell would coordinate missions and training opportunities for the entire USAR mariner population, reaching across formations to create awareness and facilitate participation in training and sailing opportunities.

3: Build Senior Leader Awareness and Consensus

Senior leader awareness of watercraft and port opening capabilities and challenges remains critical to reinvigorating this high-demand, low-density capability. Over the past few years, many leaders have come to believe that the USAR has abandoned the watercraft business since divestiture. Now that LSCO highlights the need for maximizing maritime logistics, senior leaders have begun to refocus on sustaining and possibly building up the remaining vestiges of this capability.

Translating awareness into action requires clear communication of demand along with provision of resources from the Army to the USAR. Requests for USAR mariner augmentation to missions and exercises and USAR support to multi-component crewing of vessels are currently being elevated from USARPAC through USINDOPACOM to the Army. Though USINDOPACOM has the most crucial demand, other combatant commands also require this capability. This was demonstrated by the active component's 7th TB(X), who provided JLOTS support to the Gaza humanitarian mission. This proves the demand for maritime logistics will not go away and must soon be codified and communicated by the Army.

In the meantime, one way to solidify and synchronize awareness and better facilitate the USAR's response to this forthcoming demand would be to reestablish a Reserve port opening training advisory board, an executive-level forum composed of representatives from customer commands and port opening and watercraft units, both USAR and active duty. 3rd TB(X) has scheduled just such an event, now set to occur at Fort Belvoir at the end of May 2025. Representatives plan to attend from USTRANSCOM, USINDOPACOM, U.S. Air Force, U.S. Navy, USARPAC, 8th TSC, USARC, 377th TSC, 316th Sustainment Command (Expeditionary), Deployment Support Command, 7th TB(X), U.S. Army Forces Command, CASCOM, 9th Mission Support Command, MITD Transportation School, and the USAR's new 319th TB(X).

The board will provide an opportunity for leaders in the maritime community to develop and review viable training strategies for port opening and watercraft units through the five-year training cycle, and to address issues and problems that prevent optimization of individual and collective training. It will also open lines of dialogue to coordinate and smooth the process for USAR participation in active-duty training opportunities and real-world missions.

Conclusion

In today's rapidly evolving threat environment, we must organize and prioritize our expeditionary port opening capabilities in the USAR. Although the 7th TB(X) has just completed its high-profile contingency mission in Gaza, other contingencies are likely to arise that require similar or even more robust resources. If LSCO begin in the Pacific, who is on the bench? Has this niche capability with strategic implications been adequately prioritized in training and are the units responsible ready to execute their missions? The sooner we, as an Army enterprise, begin to operate across the Active Component/Reserve Component and joint seams, the better we will be prepared to ensure throughput risk is mitigated when strategic failure is not an option.

COL Benjamin "Will" Buchholz is the commander of the 3rd Transportation Brigade (Expeditionary). He holds Middle East and Africa foreign area officer areas of concentration, having served as the senior defense official/defense attaché to Uzbekistan and Libya, the Army Attache in Yemen, and U.S. European Command J-2's senior liaison to Ukraine. He was a distinguished honor grad of the U.S. Army War College and holds a master's degree in Near East studies from Princeton University. He will serve as Combined Joint Task Force-Horn of Africa's J-4 upon completion of brigade command.

LTC Matthew Strickland currently serves as the deputy commanding officer for the 3rd Transportation Brigade (Expeditionary). He is a graduate of the Joint and Combined Warfighting School (Hybrid) and the Army Command and General Staff Officer Course and holds a Master of Arts degree in educational leadership from Saint Louis University.

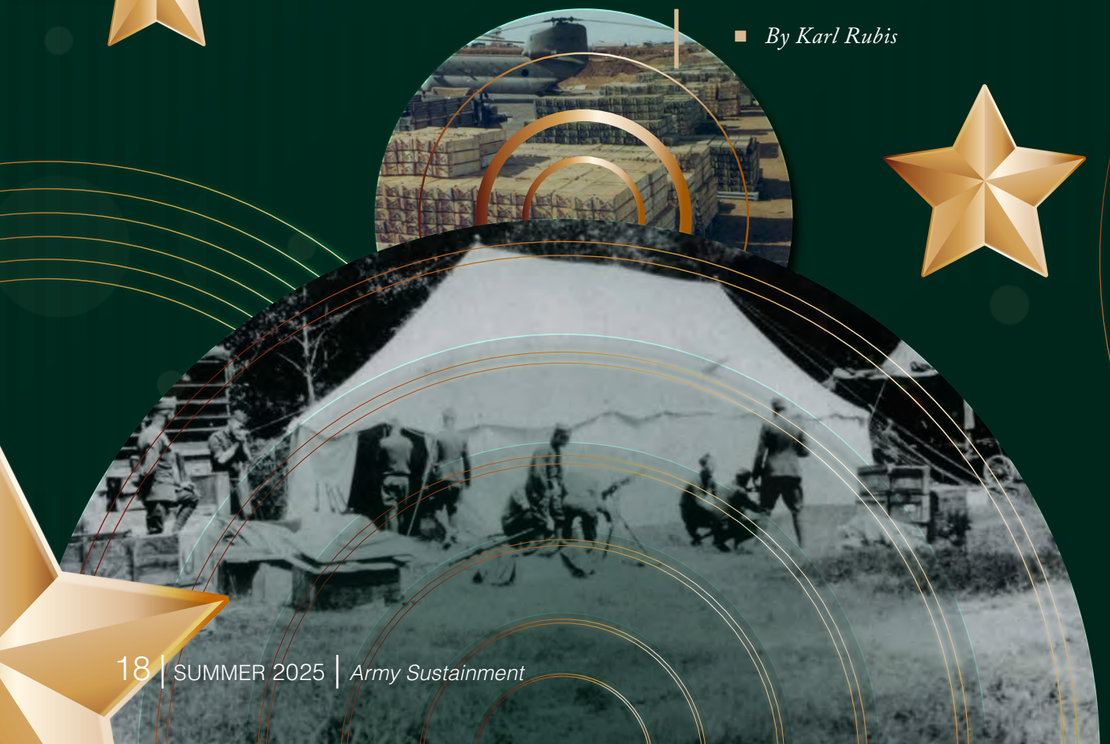
CSM Daniel D. Fairfield served as the command sergeant major of the 3rd Transportation Brigade (Expeditionary) from 2022 to 2024. He has coordinated and supervised joint port operations during combat training exercises for Reserve component service members and completed joint logistics over-the-shore training. He is a graduate of the Sergeants Major Course and holds a Master of Science degree from the University of Nebraska.

Featured Photo:
Over 920 individual pieces of Army equipment are inspected and staged after being offloaded from the motor vessel GREEN OCEAN as part of reception, staging and onward movement at the port of Kalundborg, Denmark, April 20, 2024. (Photo by SSG Thomas Mort)

250 YEARS

of Sustainment for the U.S. Army

■ *By Karl Rubis*



On June 14, 1775, the Continental Congress called for 10 companies of expert riflemen to be organized and sent to Boston to assist the militia facing the British. This was the birth of the U.S. Army. As these Soldiers gathered outside of Boston, they needed food, shelter, clothing, and all the other necessities for sustaining an Army in the field.

Two days later, on June 16, Congress established the Quartermaster Corps, Finance Corps, Adjutant Generals Corps, and the Commissary General of Subsistence to sustain this new Army — to clothe and house them, to pay them, to manage them, and to feed them. Quartermaster generals such as Thomas Mifflin, the 1st Quartermaster General, and later Nathanael Greene, brought order to the state and continental supply systems. By creating a structure of centrally managed supply depots and advance supply points, they supported the Army throughout the war.

To arm the men, the Continental Congress's Board for War and Ordnance created the Commissary General of Military Stores — the forerunner of the Ordnance Department — to harness the munitions necessary for the Revolutionary War. COL Benjamin Flower served as the Commissary General of Military Stores throughout the war and established munitions facilities at Springfield, Massachusetts, and Carlisle, Pennsylvania, for the production

African American Soldiers offload supplies from ships at City Point, Virginia, in support of the Petersburg campaign, circa 1864. (Courtesy of Library of Congress)

of arms, powder, and shot. These supplies were sent to the armies in the field whose personnel, Soldier and civilian, operated the travelling forge for maintenance of the weapons, the ammunition wagons, and the arms chests to support the Soldiers on the front lines.

This support enabled the rapid and efficient movement of the Continental Army and allied French Army in August and September 1781, when they quickly moved 400 miles from White Plains, New York, to Yorktown, Virginia, to lay siege to and capture the British force at Yorktown. This was the victory needed to establish American independence.

Civil War

With the onset of the Civil War in 1861, massive mobilizations challenged the Army's logistical systems in unprecedented ways. Unprepared for hundreds of thousands of troops, the sustainment branches initially struggled to equip the Union Army. By the end of the war, it adapted through victory and defeat on the battlefield to become one of the principal reasons for the ultimate success of the Union cause.

The new Quartermaster General, Montgomery Meigs, reorganized the Quartermaster Branch and instituted discipline in the system. Field commanders learned how to plan their operations in conjunction with logistical capabilities. They established a system of forward depots to support operations and employed diverse technologies, including railroads, telegraph, and steam transports. By the end of the war, City Point, Virginia, supported three field armies and operated as the busiest port on the Atlantic seaboard.

The Ordnance Department shared the initial challenges of the Quartermaster Department. Initially, infantry units were armed with a wide variety of small arms and artillery, and standardization suffered. However, as industrial expansion caught up to the needs of the Army, the Union Army Soldier was the best equipped Soldier in the world. The Ordnance Department furnished 90 million pounds of lead, 13 million pounds of artillery projectiles, and 26 million pounds of powder for a Union Army of 1 million Soldiers. In more than two dozen armories and arsenals, men and women labored to produce the munitions necessary to bring final victory in April 1865 at the Appomattox Court House.

World War I

On April 6, 1917, the U.S. entered World War I. Even though the war had been raging in Europe for nearly three years, the U.S. Army was woefully unprepared. It had a myriad of problems to solve in order to support the 2 million troops of the American Expeditionary Forces (AEF) fighting in France. However, during the war it quickly matured as an organization and adapted to modern, mechanized warfare. World War I thoroughly remade the American Army and the Services of Supply of the AEF that supported it.

The Quartermaster Corps had to support an army overseas and establish a support structure in France that included port operations, advanced depots, and salvage yards. This war also marked the beginning of modern war with the introduction of petroleum and repair parts to the logistician's load. Recognizing that personal cleanliness reduced the spread of disease, the Quartermaster introduced laundry and bath operations. The Quartermaster Corps transportation mission matured, as well, as it was soon managing rail, maritime, truck, and automobile operations.

The Ordnance Department established an embryonic system of echeloned maintenance. For major repairs, it established a system of Ordnance repair base shops in France. For maintenance support to the field, the Ordnance Department fielded the Mobile Ordnance Repair Shops and Heavy Artillery Mobile Ordnance Repair Shops. These units moved with the division and provided a wide array of support to the line. To train the new Ordnance Soldiers, the Ordnance Department established schools at numerous locations, including universities, civilian factories, armories, arsenals, and field depots.

To manage all these efforts in France, the first coordinated support organization was created, the Services of Supply. This organization ran all support operations in France and showed the value of coordinated, managed support to the battlefield. The oldest sustainment commands in today's Army date themselves to their creation in World War I.

World War II

World War II was unlike all previous conflicts in American history. Army logisticians had to support an Army of 8 million men and women organized into 90 divisions from the sand and heat of the African desert, to the snow and cold of Iceland, to the hot and dense jungles of the Philippines. To organize this effort, the Chief of Staff of the Army, GEN George C. Marshall, selected GEN Brehon B. Somervell to lead the Army Service Forces as the top logistician in the Army during the war. To achieve this goal, every sustainment branch ballooned in size to perform its mission and assumed new missions to achieve victory.

Around the globe, more than 3,000 Quartermaster units fed, clothed, supplied, and recovered Army Soldiers wherever they were. They moved and distributed every class of supply in every weather condition possible. When the Army broke out of Normandy in the fastest, farthest drive in northern Europe, Quartermaster units in the Red Ball Express pushed supplies to the advancing units up to the farthest point possible.

The Ordnance Department was responsible for roughly half of all Army procurement during World War II, $34 billion dollars. President Franklin Roosevelt's Arsenal of Democracy depended on the Ordnance Department to become a reality. During World War II, the Ordnance Branch gained its third core competency, bomb disposal (renamed Explosive Ordnance Disposal [EOD] after the war). By war's end, there were more than 2,200 Ordnance units of approximately 40 different types.

On July 31, 1942, the Transportation Corps was established as a separate branch due to its specialized skill set necessary to support the mission of maritime, rail, and vehicular transportation. During the war, it moved millions of Soldiers in the U.S. and around the world, including the two longest lines-of-communication in the war: the Burma Road and the Persian Corridor. In addition, these transporters sustained every Army amphibious operation over-the-beach.

Army Material Command

In 1962, Secretary of Defense Robert McNamara directed a study of the functions and procedures of the Department of the Army. This study, known as Project 80 or the Hoelscher Committee Report, recommended

significant changes in administration and organization along the lines of functionality vice the historical prerogatives of each of the branches. The seven technical services (which included Ordnance, Quartermaster, and Transportation) lost much of their autonomy and some of their missions and responsibilities. Research, development, procurement, production, storage, and distribution of most classes of supply and materiel were centralized in a new organization to stand at the top of the Army's logistical pyramid, U.S. Army Material Command (AMC).

AMC assumed control of the arsenals, proving grounds, depots, works, and plants. Combat development functions were transferred to another new organization, Combat Developments Command (CDC). Most of the technical service schools were transferred to an existing command, the Continental Army Command (CONARC). Yet, in 1973, many of the responsibilities of CDC and CONARC were merged into the new U.S. Army Training and Doctrine Command (TRADOC), including the combat developments mission and all technical service schools.

Finally, five of the seven chiefs of the technical services and their offices were eliminated. Only the Surgeon General and the Chief of Engineers remained. These positions, however, were reestablished in the 1980s to foster a greater sense of identity for those branches and to improve branches' personnel proponency missions.

Vietnam

In contrast to World War II, the Vietnam War was a decentralized, counterinsurgency war. In the early years, combat units were rushed to Vietnam at the same time, or ahead of supporting logistics units. Consequently, logistics infrastructure had to be built up while fighting was ongoing.

In April 1965, the 1st Logistical Command was established in Saigon to manage the highly fragmented logistics structure. The problem was not a lack of supplies, but a surplus of them. Quartermaster officers and Soldiers had to deal with this over-abundance of materiel, duplicate requisitions, and old-style manual accounting techniques, making it all but impossible to effect proper supply management. Yet, by 1967, a fully automated Inventory Control Center was established; with its newly introduced computer systems, it was better able to tabulate in-country requirements, establish priorities, curb duplicate requisitions, and stem the tide of unneeded supplies throughout Vietnam.

At the same time, Ordnance officers and Soldiers continued their core missions of ammunition handling, maintenance, and EOD. The dispersed nature of the fighting meant that maintenance units were spread thin. They lacked sufficient special tools, materiel handling equipment, wreckers, and recovery vehicles to support such dispersed operations. Moreover, the sabotage threat forced logistics units to spend a great deal of time preparing, maintaining, and manning defensive perimeters. Despite these challenges, equipment operational readiness rates continued to improve until, by 1969, they were better than operational readiness rates in previous wars.

Transporters were among the first units to deploy to Vietnam to facilitate the ever-increasing number of American Soldiers. Transportation units established and operated numerous logistics-over-the-shore sites and port facilities along the coast to facilitate the mountain of materiel coming into the country. On land, Transportation truck companies had to build gun trucks as a means of self-protection against the ever-present threat of convoy ambushes.

Desert Storm

In the 1980s, Army sustainment shifted toward multi-functional logistics in support of the new Army doctrine, AirLand Battle. The U.S. Army Logistics Center (now the U.S. Army Combined Arms Support Command) began this process by forming Forward Support Battalions. The success of this initiative led to the redesign of logistics support at the division and echelon-above-division level. The real-world test of this concept occurred in Operations Desert Shield and Desert Storm when the XVIII Airborne Corps and the VII Corps were deployed to Saudi Arabia for the invasion of Iraq.

Supporting this conflict presented some unusual problems for Quartermaster units. The latest generation of vehicles consumed huge quantities of fuel. VII Corps alone had 50,000 vehicles, including 6,000 armored vehicles. Total fuel consumption exceeded 2 billion gallons and required construction of 13 new petroleum facilities. The high temperatures and arid environment created unprecedented demands on water purification units. Tragically, a water purification unit suffered the highest number of casualties of any unit in Operation Desert Storm when a SCUD missile struck the barracks of the Soldiers of the 14th Quartermaster Detachment; 13 Soldiers were killed and 43 wounded.

Ordnance Soldiers had to move and disperse the tens-of-thousands of tons of ammunition, and maintainers had to keep the thousands of vehicles operating in all the dust and sand. To handle the EOD mission, the 1st EOD Group (Provisional) was established to handle the ordnance disposal mission in theater.

Transporters executed the largest deployment since World War II. The 7th and 32nd Transportation Groups played a critical role in opening the seaports and building up sufficient forces and mountains of supplies in Saudi Arabia to stem any further aggression. Next, they discreetly moved American forces to the west to prepare for the famous left hook maneuver that commenced ground operations on February 24, 1991.

Today

The focus for today's Army is large-scale combat operations against a near-pear adversary, a return to the objective of moving and sustaining numerous units in offensive operations using innovative technology to support Soldiers in the field.

To achieve this goal, the Army has established exercises to build this capability. Operation Pathways has become a forcing function for the logistical and sustainment enterprise to confront and work through a myriad of issues associated with the deployment and sustainment of units to the U.S. Indo-Pacific Command area of responsibility. Operation Defender tests the same capability, but in the other direction, toward the European theater and our allies in NATO.

Transporting our forces is only one aspect of the sustainment challenge. Once in theater, supplying and maintaining the troops are critical, and new capabilities are being developed to adapt to the modern battlefield.

3D printing will become a critical enabler for maintaining combat power and providing responsive sustainment to widely dispersed units by providing parts that can be quickly and efficiently manufactured at the place of need. It can reduce Class IX storage and distribution times and can also manufacture parts for obsolete equipment.

Autonomous aerial resupply can be used in situations where time, threat, terrain, weather, or priorities make other resupply methods unfeasible or unresponsive. Sustainers can load preconfigured supply packages, which will navigate to the supported Soldier's position, unload and return with materiel.

These and other technologies and capabilities will enable the best logistical and sustainment possible for today's Army. The past 250 years of Army history show that Army sustainment has always risen to the challenges, overcome the difficulties, and enabled the American Soldier to win the nation's wars.

Karl Rubis is the U.S. Army Combined Arms Support Command & Sustainment Center of Excellence Command Historian. He holds an M.A. degree in American History and Military History from the University of Kansas and a B.A. degree in History from Pepperdine University. He also has a Certificate in International Relations from Johns Hopkins University School of Advanced International Studies. He has published articles and book reviews in the Journal of Military History, Army History, Army Sustainment Professional Bulletin, the Ordnance Magazine, and various other volumes focusing on military history and military logistics. He has taught courses at the University of Kansas; University of California, Los Angeles; and Pepperdine University. In 2016, he retired from the U.S. Navy as a Naval Intelligence officer and is a graduate of the Naval War College.

Featured Photos:

Clockwise from bottom right:

MAJ Charity Adams Earley inspects members of the 6888th Postal Battalion in Birmingham, England, in 1945. (U.S. Army Photo, U.S. Army Women's Museum)

Mobile Ordnance Repair Shop of the 42nd Division, La Cheppe, France, July 4, 1918. (U.S. Army Photo held in CASCOM History Office Archives)

A forward ammunition supply point and a CH-47 helicopter being loaded with ammunition at Pleiku, South Vietnam. (U.S. Army Photo held in CASCOM History Office Archives)

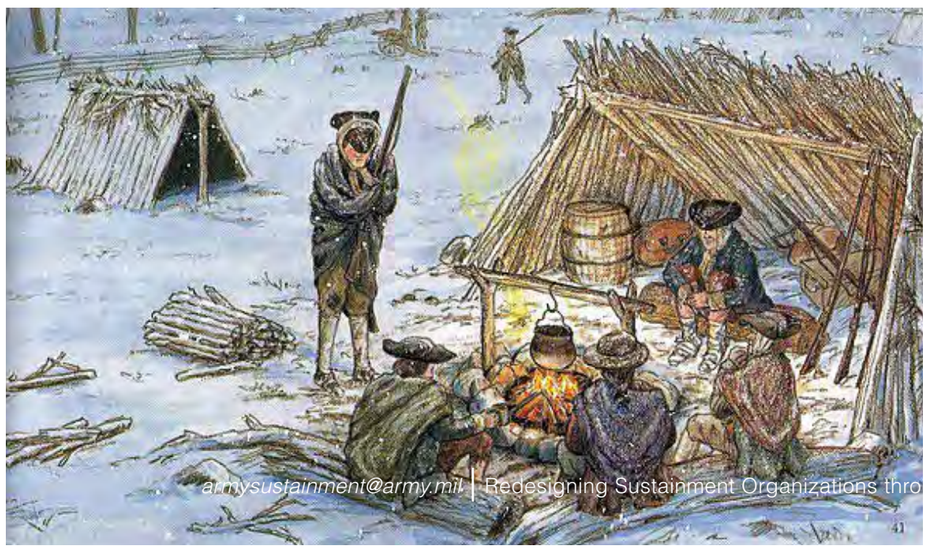
Soldier of the 531st Quartermaster Brigade, Fort Lewis, Washington, operates equipment to maintain a MOGAS and vehicle repair operation during Exercise Bright Star, November 1993, Cairo, Egypt. (U.S. Army Photo held in CASCOM History Office Archives, originally from Defense Visual Information Center)

M3 Medium Tanks Being Built at Detroit Tank Arsenal in World War II. (U.S. Army Photo held in CASCOM History Office Archives)

THE QUARTERMASTER CORPS AT 250

STILL SUPPORTING VICTORY!

■ *By Tim Gilhool*



Before there was a nation, there was the Army. The United States Army began on June 14, 1775, as the Continental Congress authorized enlistment of riflemen to serve the United Colonies for one year. Just days later they realized that someone must sign for the military equipment and supplies. In all seriousness, the Congress, and more importantly the Continental Army's commander, LTG George Washington, recognized the need to appoint an individual to plan and coordinate logistics. The first Quartermaster General (QMG) was Thomas Mifflin of the future commonwealth of Pennsylvania. Unfortunately, the unvarnished truth is that the mission of QMGs did not start off as smoothly as one would hope. Mifflin's tenure in the position came under intense scrutiny for his poor handling of the department, particularly its financial affairs. Multiple accusations of fiscal misconduct against Mifflin were made by Soldiers and civilians alike. He resigned his commission in February 1779.

Thankfully, he was replaced by more competent successors, including MG Nathanael Greene, who is credited with significant reforms of the Continental Army's supply situation. By the time of the Yorktown Campaign in 1781, Quartermaster officials were positioned across the 13 colonies. When LTG Washington and his French allies made the 680-mile march from New England to Virginia to confront Lord Cornwallis and his British troops along the York River, the Allied armies were well supported by experienced battlefield logisticians and more than adequate levels of supply.

Following the Revolution and formal establishment of the U.S. Army, the Quartermaster department was significantly reduced in size and scope. Intermittent combat against various First Nations tribes and even renewed conflict against the British during the War of 1812 did not significantly alter its methods or organizational structure.

This changed in 1861 with the coming of the American Civil War. The Army grew from a force of less than 17,000 regulars to approximately 1 million active Soldiers. The Quartermaster department, under the able leadership of MG Montgomery Meigs, greatly expanded its duties and responsibilities. Union logistics played a decisive role in ultimate victory over the Confederacy, with the Army incorporating the large-scale use of military railroads for distribution. Massive supply bases, such as the famous bastion at City Point (modern-day Hopewell, Virginia) supported LTG Ulysses S. Grant in the final campaigns against Richmond and Petersburg. These bases granted Union Soldiers logistical boons that far outshined those of their gray-clad foes.

The mismatch between the lethality of the weapons and asymmetrical tactics employed during the conflict also bestowed on the Quartermaster department another sacred responsibility. With over 110,000 battlefield losses and an additional 200,000-plus dead due to disease and other causes, graves registration became a significant task. The Quartermaster department, still under the leadership of MG Meigs until 1882, established federal cemeteries at Fredericksburg, Petersburg, and the largest in Arlington, Virginia. The fact that the Arlington National Cemetery was on land previously held by the family of their principal wartime foe, Robert E. Lee, held its own sense of both irony and closure. Quartermasters have continued to oversee this task to this day.

A critical point of understanding how Quartermasters did their jobs during the 19th century is that although there were Quartermaster officers and NCOs assigned to tactical formations, there were not necessarily separate Quartermaster units. Quartermaster depots existed, including across the American West and a large supply arsenal in Philadelphia, Pennsylvania, but the majority of supply activities were physically executed by a combination of contractors and Soldier details.

This teaming of a small number of Army logistics professionals augmented by external elements was the norm during the 19th century. This arrangement faced a major test near the end of the century with American involvement in Cuba and the Philippines. For Quartermasters, the 1898 Spanish-American War was far from a shining moment in our martial history. Army units suffered numerous supply challenges, from maintaining stockpiles to managing distribution, as we fought our first expeditionary campaign. Though ultimately winning in both the Pacific and the Caribbean, the Army's experiences in fighting for the first time overseas prompted significant reforms in doctrine, organization, and force structure over the next several decades.

Those changes came to our branch in 1912. The Army's Quartermaster department was converted into the Quartermaster Corps, reflecting a broader, more battlefield-focused orientation. In addition, it consolidated proponency for all quartermaster, subsistence, and paymaster functions under the leadership of the QMG. Paymaster separated again in 1920 with the establishment of a separate Finance Corps. The first formal Quartermaster School was also established at the Philadelphia depot in 1916. All these reforms came together just in time for the largest and most complex challenge to date: U.S. involvement in World War I.

Most of our current division-sized units trace their lineage back to 1917, as do the first separate logistics formations. These distinct Quartermaster units were needed because the technology of warfare had evolved.

American involvement in "the war to end all wars" came late in the conflict. The Allied powers around Great Britain and France had been engaged in vicious combat against Imperial Germany and the Central Powers since August 1914. Warfare involving massive armies and new technologies, including machine guns, poison gas, and fast-firing artillery, had produced both significant casualties and tactical stalemate across much of the Western Front. This was the situation when the U.S. Army received orders to deploy to France in early 1917, and it fell to the newly reformed Quartermaster Corps to receive, equip, and deploy the hundreds of thousands of people rapidly entering federal service.

It was during this conflict that the Army and the Quartermaster Corps became more recognizable to modern readers. Most of our current division-sized units trace their lineage back to 1917, as do the first separate logistics formations. These distinct Quartermaster units were needed because the technology of warfare had evolved. World War I saw the large-scale use of motorized trucks, necessitating both formal training on their operation and the infrastructure to support them. It is here that we see the introduction of specialized duty positions. In the 19th century, a Quartermaster NCO oversaw a range of supply-related tasks, but in World War I they needed Soldiers who were experts at specific tasks, such as driving and/or refueling vehicles. Over the coming decades, these tasks evolved into the military occupational specialties (MOSs) that populate the Quartermaster Corps today.

Though American involvement in fighting overseas was brief compared to the other combatants, it had enormous consequences for how the Army trained, organized, and equipped itself. In the years between the end of World War I and World War II, the Quartermaster Corps continued to evolve, both at Army level and in tactical formations. Given their ubiquitous responsibilities of supply management and field feeding, there were literally Quartermaster Soldiers in almost every type of unit in the Army, from infantry rifle companies to coastal artillery batteries. The Quartermaster Corps also found a new home, moving from the Philadelphia depot to a rapidly growing camp outside Petersburg, Virginia. Camp Lee, eventually Fort Lee, became the epicenter for all Quartermaster training and professional education.

To meet the needs of the huge armored and motorized force, the Army designed and fielded numerous specialized

Quartermaster units, including service companies, depot companies, railhead companies, petroleum supply companies, truck companies, bakery companies, salvage and repair companies, laundry and bath units, and graves registration companies. By the end of World War II in 1945, the Army had over 3,000 Quartermaster units, from detachment to group level. It is estimated that almost half a million Soldiers served in the Quartermaster Corps during the war, managing over 70,000 items and providing 24 million meals a day at the height of the conflict.

Though it has not returned to the massive size and scope it became during the 1940s, the Quartermaster Corps has continued to evolve and serve in both war and peace. During the Cold War, it gained proponency for additional battlefield functions: aerial delivery and water purification. These skills were practiced and refined in wars in Korea during the 1950s and Southeast Asia during the 1960s, though the role and function of the QMG changed significantly.

Traditionally, the QMG was one of the most powerful and influential leaders in the Army, working directly for the Secretary of Defense at various times. At the start of the Kennedy administration in 1960, Secretary of Defense Robert McNamara directed the establishment of U.S. Army Material Command as a central manager for sustainment and procurement. The chiefs of the technical services, including Ordnance, Transportation, and Quartermaster, were stripped of their responsibilities in research, development, and procurement, and the positions were abolished. The positions reappeared in 1983 under U.S. Army Training and Doctrine Command, but strictly in oversight for branch proponency. As of now, those positions have formally changed to school commandants with the rank of colonel instead of a general officer.

In the aftermath of Vietnam in the 1970s and early 1980s, the Army refocused on defending Western Europe from the Soviet Union. Throughout all these periods, Quartermaster formations and Soldiers continued to be present at all echelons. What was happening, though, was a trend toward grouping multifunctional logistics capabilities under brigade- and battalion-level formations. While there were still Quartermaster supply companies, they were assigned to a corps support, main support, or forward support battalion headquarters. Strictly Quartermaster battlefield functions, like petroleum, water, mortuary affairs, and aerial delivery, were kept at corps- or even theater-level organizations. By the early 2000s, this trend accelerated with the introduction of multifunctional forward support companies attached to the combat arms battalions. Quartermaster Soldiers were organic to these units but worked alongside Ordnance and Transportation MOSs.

Over the last several decades, Quartermaster Soldiers and units have continued to serve with distinction in both war and peace, overseas and at home. From peacekeeping in the Balkans to fighting the war on terrorism, anywhere the Army goes, Quartermasters are there. Today, as the Army continues to transform for the challenges of large-scale combat operations, the essential tasks that can only be accomplished by a 92-series MOS remain in good hands. From their homebase at the redesignated Fort Lee, Virginia, the fight to sustain continues. From 1775 to 2025, the Army and the nation know that Quartermasters are the key to supporting victory.

Tim Gilhool has served as a command historian for the U.S. Army Combined Arms Support Command and Fort Lee, Virginia, since 2019. He previously served as the battalion commander for the 782nd Brigade Support Battalion, 82nd Airborne Division, and the 71st Student Battalion (Provisional), Army Sustainment University. He is a graduate of the U.S. Army School for Advanced Military Studies. He holds a master's degree in history from the University of Richmond and a master's degree in military arts and sciences from the U.S. Army School for Advanced Military Studies.

Featured Photos:
Top Left: C-119 delivering airdropped supplies in Korea. (U.S. Air Force photo)

Top Right: Then-LTC Arthur Gregg, commander of the 96th Supply & Service Battalion, conducts a promotion ceremony for CPT Sandy Hertz while deployed to Cam Rahn Bay, Republic of Vietnam, circa 1967. (In The Leaven courtesy photo)

Bottom Left: Soldier from 11th Airborne Division conducting refueling operations, Alaska, circa 2024.

Bottom Right: Continental Army Soldiers at their winter encampment near Valley Forge, Pennsylvania, circa 1778.

FROM VACANCY TO VICTORY

Addressing Command Vacancies in the Army Reserve

■ *By CPT Alisha Wartluft*

U.S. Army Reserve (USAR) commanders play a crucial role in leading and managing Reserve units. Their leadership is essential for ensuring that units are deployment ready and prepared for combat operations. However, the heavy reliance on the Reserve component (COMPO 3), coupled with civilian job demands and family commitments, has led to ongoing vacancies of mid-career officers in the USAR. To meet Total Army force requirements, the USAR must address commander vacancies at company, battalion, and brigade levels by implementing strategic resources such as increased financial compensation for commanders, opening the Regular Army COMPO 1 centralized selection list (CSL) to USAR positions, and establishing a Total Army training school without quotas.

Compensating Commanders

USAR officers are more likely to volunteer for command positions if they receive financial compensation that covers the extra time commitments, effects on their civilian careers, and time spent away from their families. Currently, USAR officers have no financial incentive to take command positions; if anything, they are disincentivized from doing so, which is evident in the amount of command vacancies.

Unlike active duty (AD), the USAR lacks the competitive edge for assignment completions to influence promotions. Consequently, completing key developmental assignments like command does not lead to higher pay for USAR officers. Regardless of completing a command assignment, USAR officers face no greater opportunity for promotion than those who do not. In fact, officers who take on more challenging positions struggle to complete school and stay competitive in their civilian careers. Conversely, officers who only meet the minimum requirements or become quiet quitters receive promotions at the same rate, if not higher.

The USAR has long recruited on a 39-day requirement model. However, current officers within leadership positions are compensated for 74 days annually, with an additional estimation of 17.3 unpaid hours per month. From my 16 years with the USAR and experience as a company commander, I believe a fully engaged commander works an extra 5 to 10 hours per week. Company commanders are essentially on call 24/7 but receive zero pay for this non-duty time. This additional necessity for commanders to meet readiness and leadership requirements financially impacts them via their civilian employment through loss of income, use of vacation time, and missed promotion opportunities.

Although the motivations of those who serve in the military are commendable, no one joins with the expectation of working without proper compensation, and no one works for free.

Although the motivations of those who serve in the military are commendable, no one joins with the expectation of working without proper compensation, and no one works for free. Acknowledging the need for fair compensation, the 11th Quadrennial Review of Military Compensation proposed policies to utilize the USAR while considering the current labor market, aiming to create competitive personnel systems in terms of pay and benefits.

To supplement these financial losses from the civilian sector and ensure compensation for non-duty requirements, USAR officers must be compensated when they assume command with either a $30,000 dollar bonus or 2% of AD rate officer base pay. This additional compensation will attract the most competent and talented officers within the USAR to volunteer to fill command vacancies. This solution rewards talented Soldiers, promotes those willing to take on more responsibility, and encourages them to stay in the USAR as their civilian careers and families grow.

Broadening the CSL

Another solution to filling USAR command vacancies is to open the CSL to all Active Component (AC) officers, including Active Guard Reserve officers. This approach enables AC officers to complete their required key developmental time for promotions while providing valuable growth and mentorship opportunities to USAR officers from experienced senior officers.

The USAR has persistently been unable to fill command positions that the board changed from opt-in to opt-out. As a result, more lieutenant colonels and majors are opting out of senior roles, and those chosen for command positions may be ones who did not review their board files or who are simply available.

Opening the slating list benefits both COMPOs 1 and 3. AD senior leaders gain more command opportunities and development through exposure to other COMPOs, while Reserve officers benefit from the training and development by full-time officers for less experienced subordinates. This solution is financially beneficial for the USAR budget because it incurs no additional costs. In fact, department officials have already initiated a pilot program that places AD officers in USAR commands, aiming to address leadership gaps and enhance operational readiness.

Total Army Force Training

The Army can fill command vacancies by cultivating more leaders through a Total Army force program. This initiative removes COMPO-specific seats and prioritization for COMPO 1 officers, expanding opportunities for Reserve Soldiers at no extra cost.

The scarcity of seats available to USAR officers in the Basic Officer Leader Course (BOLC) has led to a lack of lieutenants. With only 3,200 annual BOLC seats and 4,000 ROTC graduates, there are not enough seats for USAR officers, since most quotas belong to COMPO 1.

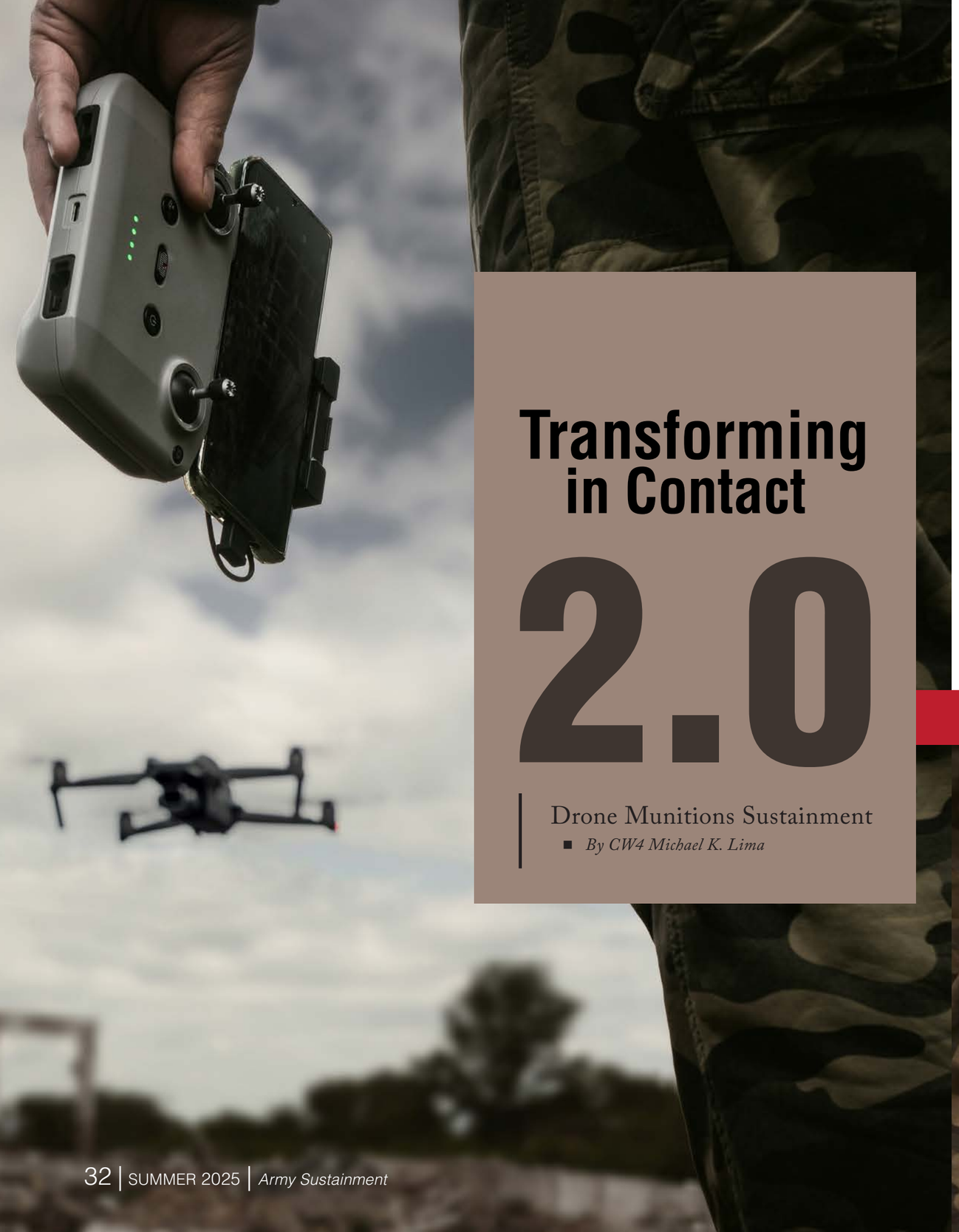
Equalizing the BOLC quotas would address the significant impacts seen in the retention of Reserve officers beyond the two-year mark. Currently, over one-third of USAR lieutenants fail to complete BOLC and are removed from the USAR. Increasing quotas would reduce this failure rate. Despite the USAR having over 200% of its lieutenant strength, the low BOLC completion rate causes shortages up to the O-5 level, with an 87% shortage of captains, a 71% shortage of majors, and a 67% shortage of lieutenant colonels.

The USAR must create its own leaders from within, starting at the junior officer level. The Army can achieve this by providing more professional development courses from BOLC to intermediate-level education for USAR officers, enhancing their training and education to prepare them for command positions.

Conclusion

In summary, USAR officers are hesitant to take on command roles due to a lack of financial incentives and career advancement opportunities. The shortage of mid-senior-level officers in the USAR has led to persistent vacancies in command positions. Uneven quotas among components have further impeded the development of senior officers in the USAR. To address this, the USAR must offer financial compensation for commanders, allow AD officers to fill USAR command positions, and create a Total Army program to train officers.

CPT Alisha Wartluft joined the Army Reserve in 2009 as a dental hygienist before commissioning as a chemical lieutenant in 2020. A 2014 graduate of the University of Mount Union, she has served in the Army Reserve for 16 years, assigned in leadership roles such as operations officer and commander of the 130th Chemical Company in Easton, Pennsylvania, and chemical, biological, radiological, or nuclear officer for the 316th Expeditionary Sustainment Command in Coraopolis, Pennsylvania. Her advanced military education includes the Pre-Command Course and the Company Leadership Development Course. She is currently a student in the Logistics Career Course at Army Sustainment University, Fort Lee, Virginia. She holds a master's degree in public health from Liberty University.



Transforming in Contact 2.0

Drone Munitions Sustainment

■ *By CW4 Michael K. Lima*

The Army Chief of Staff's initiative Transforming in Contact (TiC) used deployments and troop rotations to field-test commercial-off-the-shelf (COTS) equipment to allow units to be dynamic on the battlefield, emulating current tactical operations in the Russia-Ukraine War. TiC 2.0 has taken the concept further, expanding the contact effort to other formations, including two divisions, two armored brigade combat teams, two Stryker brigade combat teams, and additional formations in the Army National Guard and Army Reserve. One of the key aspects of TiC highlighted by GEN Randy George, the Chief of Staff of the Army, during a 2024 conference is that "At the end of this [fiscal year], every warfighting function, including protection and sustainment, will be part of our transformation efforts."

Authorized Drones

As part of the Integrated Tactical Network, the Army's network equipment is one of the many pieces being tested during TiC. However, no equipment has become more transformative to tactical operations than drone technology.

TiC units test COTS drones and technology, traditional loitering munitions, mortars, and other sensor equipment to encompass the sensor-to-shooter system. Commercial drones are used in conventional intelligence, surveillance, and reconnaissance capabilities to help Soldiers make decisions on the battlefield and degrade enemy formations. One of the outputs of testing has been additional companies that passed the vetting required for onboarding policy-compliant, commercial small unmanned aircraft systems (sUAS) through the Defense Innovation Unit and the Office of the Under Secretary of Defense for Acquisition & Sustainment, known as the Blue UAS Cleared List. The vendors listed are the top tier companies that offer small unmanned systems. These companies have drones listed for government partners for acquisitions and do not require a DoD exception to policy to procure or operate.

The two transformative drones are the Neros Archer and PDW C100 with the Multi-Mission Platform (MMP). The Archer is a high-performance, first-person-view (FPV) drone that allows the pilot to see what the drone sees. The Archer is designed and priced for large-scale deployment while optimized for long-range

missions and electronic warfare resistance. The PDW C100 MMP variant is a portable sUAS that supports multiple mission sets. The key feature related to drone munitions sustainment is the system's design around universal payload integration with a munitions-release device, setting the standard for DoD drone munitions. In contrast, there must be a DoD exception to the policy to operate approved Blue-UAS drones to act as lethal drones or carry lethal payload sUAS.

UAS training has already been overhauled at the Army's UAS Training Center, expanding curriculum from small Group 1 FPV drones to advanced Group 3 Future Tactical UAS systems. It is not a matter of whether sUAS will be lethal and carry lethal payloads but when the Army plans to organize and train for the inevitable. As seen on the frontline of Ukraine, drones are at the forefront of combat operations, along with the drone munitions they carry, to conduct loitering, drone-dropping, and drone-firing operations.

It is not a matter of whether sUAS will be lethal and carry lethal payloads but when the Army plans to organize and train for the inevitable.

Drone Munitions Standards

TiC 2.0 can catalyze Army sustainment formations to evolve with drone technology, just as combat arms integrate sUAS within their formations. This requires robust standards for integrating new technology. Using conventional munitions in drone delivery systems requires careful consideration to ensure appropriate munition-to-drone pairing for target selection. Drone-dropping munitions can be created from primary file formats used for 3D printing. It is crucial to have accurate and reliable digital files for drone-dropping operations. These files must contain 3D drone-specific munition models with security measures to prevent unauthorized access and manipulation. Importantly, drone munitions need certification and standardization of all 3D-printed parts and materials.

Additionally, drones now conduct loitering and attacking operations. Drones acting as loitering munitions are designed to remain airborne and engage targets of opportunity. Also, drones fire munitions at various scales, usually rockets or drone-designed missiles. Drones must have robust flight control systems to accompany the selected munitions being employed. Arming mechanisms for drone munitions are critical safety features that prevent accidental detonation during handling, transport, and flight.

Lastly, drones conducting drone-dropping operations use munitions-release devices. These devices must be designed to reliably and accurately release munitions from a drone platform. Drones with directional-dropping kits drop conventional munitions on targets. The kits ensure munitions achieve the desired impact angle and reduce dispersion.

To ensure consistent performance, the standards must address factors from the drone-munitions selection process, design, materials, and deployment mechanisms. Standardized drone munitions were demonstrated by Ukrainian Defense Industries at the International Defense Exhibition 2025, the largest defense exhibition and conference in the Middle East hosted in Abu Dhabi, United Arab Emirates. Moreover, with drone munitions standards in place, the work to sustain the drone munitions ecosystem can eventually be done at and by Army sustainment organizations.

Ordnance Units

The TiC 2.0 initiative is the chance to provide ammunition support activities throughout TiC formations to perform responsibilities directly related to munitions maintenance, renovation, and modifications. From the brigade ammunition transfer and holding point, modular ammunition transfer point, echelons above brigade ordnance companies, and Reserve theater ammunition battalions, TiC can provide sweeping change and a chance to practice lost skills in our ordnance organizations.

Doctrine and policy writers do not have to go far to find the current practice. Ukraine conducts clandestine production ordnance operations, supplying the Ukrainian military with drone munitions for the fight on the front lines. The ordnance organizations provide munitions on an as-needed basis. The frontline units arrive at the distribution points and select drone munitions that fit the drones they use for their missions. These munitions production facilities are an ingenious solution to a need and a continuously scarce munitions resource. The Ukrainian ordnance production facility receives and salvages various ammunition and missiles from the front that have been damaged and become unserviceable for combat use but still contain essential explosives and rounds. UNITED24 Media quotes the organizational commander as stating, "We can't afford to throw away ammunition like the U.S." The salvaged equipment is used to arm FPV drones for loitering operations or other drones for drone-dropped operations.

In recent history, munitions maintenance, inspections, and renovation and modification work procedures have not been done on a large scale by conventional ordnance units. Along with the necessary fielding of equipment, such as 3D printers, ordnance units need the proper training, skill set, and approved work procedures from the defense munitions industrial base. If TiC 2.0 wants to make a real impact, ordnance units have the potential to provide sustainment for their organizations and must provide drone munitions to joint forces throughout the area of operations. For context, during Operation Iraqi Freedom, between September 2003 and October 2004, the U.S. Army Corps of Engineers received and stored about 369,000 tons of captured enemy ammunition (CEA). At the same time, it destroyed nearly 165,000 tons of CEA and an additional 82,000 tons of CEA with the aid of coalition partners. Looking to the future conflict, with proper permission, knowledge, and expertise, all munitions could be turned into drones ready for front-line organizations to use as needed without drawing from their combat loads.

Conclusion

TiC 2.0 is expanding its transformation efforts, focusing on integrating drone technology. The initiative tests commercial drones and related equipment, leading to the adoption of munitions-ready drones. This exploration necessitates the development of drone munitions standards, which include loitering, drone-dropping, and attacking operations. TiC 2.0 offers ordnance units the opportunity to regain critical skills in munitions maintenance and modifications that provide drone munitions to joint forces. This fundamental shift requires individual and organizational training in new equipment, such as 3D printers, and creating work procedures to create a sustainable and responsive in-theater drone munitions supply chain.

CW4 Michael K. Lima currently serves as the senior expeditionary sustainment command (ESC) munitions officer with the Materiel Management Branch. He is assigned to Headquarters and Headquarters Company, 19th ESC, at Camp Henry, South Korea. He participated in the Training with Industry program with a prime missile defense contractor and was a training developer for the U.S. Army Ordnance Corps and School at Fort Lee, Virginia. He holds a doctorate in business administration from Baker College.

INTEGRATING SMALL

UNMANNED AIRCRAFT SYSTEMS INTO LOG BOLC

Enhancing Sustainment Training for Multidomain Operations

By CPT Alexander Herrera, CPT Michael Patacca, CPT Michael Ranger, and CPT Emerald Wright

Modern large-scale combat operations demand logistics leaders who can sustain the fight under contested, multidomain conditions. The Army's logistics branch recognizes that future battlefields — with peer adversaries capable of disrupting operations across all domains — require lieutenants to be agile, tech-savvy, and prepared for complex sustainment challenges. In response to this evolving environment, the U.S. Army Combined Arms Support Command (CASCOM) infuses realism and technology into training at its Sustainment Center of Excellence.

In January 2024, MG Michelle Donahue, CASCOM Commanding General, directed the Army Sustainment University's Basic Officer Leader Department (BOLD) tactics course to integrate small unmanned aircraft systems (sUAS) into the Logistics Basic Officer Leader Course (LOG BOLC). This initiative was aimed at driving timely decision making, improving understanding of sustainment decisions' effects, and better preparing newly commissioned lieutenants for contested, multidomain operations. The vision set by MG Donahue was clear: leverage modern technology to create more immersive training for logistics leaders at echelon. Incorporating sUAS into the tactics portion of LOG BOLC modernizes how lieutenants learn to sustain and protect the force on the battlefield. This forward-leaning directive acknowledges that young officers arrive at LOG BOLC having observed a changing operational landscape and that their institutional training must keep pace.

Training & Implementation

The tactics course is an intensive three-week program that builds foundational tactical skills for logistics officers. It begins with individual Soldier tasks followed by instruction on troop leading procedures, engagement area development, and convoy operations. This progression sets the stage for a week-long field training exercise (FTX) that simulates a contested environment aligning with a combat training center rotation. During the FTX, lieutenants operate in a realistic scenario where they displace from a brigade support area to a combat trains command post, conduct area defense, and execute tactical resupply missions. Class cohorts are organized into three platoons under a company headquarters, with each platoon leader being responsible for planning and executing sustainment missions while defending their platoon's area. This includes managing logistics packages, coordinating supply distribution to supported units, and maintaining situational awareness of both friendly and enemy activities.

sUAS training is embedded throughout all phases of the course. For example, students employ sUAS for leader's reconnaissance of key locations such as logistics release points (LRPs), supply routes, and future defensive positions. The students request sUAS operators to survey objectives, routes, potential LRPs or cache locations while maintaining their concealed positions. During defensive planning, lieutenants use sUAS to observe avenues of approach and adjust their positions with proper camouflaging of supply nodes and fighting positions based on the aerial perspective. Cadre members deliberately present scenarios that require drone support, from scouting a resupply route to monitoring the perimeter for threats, so that lieutenants build confidence and understand their perimeter's strengths and weaknesses in requesting and employing these assets.

One innovative aspect of the training is the added simulation of enemy aerial contact. Traditionally, students are trained to respond to three forms of enemy contact: visual, direct fire, and indirect fire. To reflect modern threats, the course introduced contact with enemy aerial platforms. Citing Field Manual (FM) 3-90, Tactics, the cadre define aerial contact as encounters with air-based platforms. During the FTX, opposing force (OPFOR) elements include enemy sUAS. Lieutenants must detect them and determine their intention (surveillance or directing fires against them). Adding this aerial threat dimension forces students to analyze and respond to a new challenge in real time. They learn to employ countermeasures to mitigate the aerial threat (e.g., improved camouflage, movement techniques, or reporting to higher authority for counter-UAS support). Incorporating sUAS in this way expands the tactical problems students face, honing their decision making under pressure.

The result is a more robust culminating exercise where logistics lieutenants not only execute resupply and defense but also manage real-time intelligence from above. For instance, during an area defense scenario, students position their sustainment assets and then launch friendly sUAS to scan their sector. The sUAS live feed might reveal an exposed fuel tanker or a gap in camouflage of their observation post and fighting position, prompting immediate corrective action. If OPFOR drones are detected, lieutenants take steps to relocate key supplies or increase security at likely enemy target points. By the end of the course, students have experienced using sUAS to support a mission from start to finish, integrating the drone into planning, execution, and after-action review and ensuring new officers leave LOG BOLC with practical understanding of how to employ sUAS in the field.

As the Army continues to modernize, the LOG BOLC sUAS initiative exemplifies how adapting training today prepares the sustainment warfighting function for tomorrow's fights.

Warfighting Function Alignment

Integrating sUAS into LOG BOLC directly supports multiple warfighting functions, reinforcing that sustainment is a critical component of combined arms operations. The training highlights how sUAS capability enhances logistics, protection, movement and maneuver, and intelligence functions in a tactical environment:

Logistics (Sustainment): sUAS bolster the sustainment warfighting function by improving visibility and management of the logistics network. Real-time aerial footage of supply points, convoys, and supply routes allows lieutenants to monitor distribution operations and infrastructure. Drones help young officers anticipate logistical needs or adjustments (such as rerouting a convoy around obstacles or choosing alternate LRPs), thereby increasing the efficiency and reliability of support.

Protection: The protection warfighting function is enhanced as lieutenants use sUAS to safeguard personnel, supplies, and facilities. Drones act as an extra set of eyes, extending the unit's security perimeter beyond what ground scouts can observe. During the FTX, logistics officers learn to deploy sUAS to detect enemy activity like ambushes or indirect fire observers before they threaten the unit.

Early warning from aerial surveillance enables quicker reactions — such as shifting unit positions, reinforcing defenses, or masking vehicle signatures. Additionally, recognizing and countering enemy drones is now a key training point. By learning to mitigate enemy sUAS observation, lieutenants directly contribute to force protection and the survivability of their sustainment formation.

Movement and Maneuver: Although sustainment units are not maneuver elements in the traditional sense, their operations are tightly linked to the movement and maneuver function. sUAS integration allows logistics leaders to support maneuver forces more effectively. In training, lieutenants use drones to conduct route reconnaissance for supply convoys, checking roads for obstacles or enemy presence. This enables safer and faster movement of supplies and personnel. Drones also help in positioning sustainment assets, e.g., scouting a new location for a refuel point that is concealed but accessible to maneuver units. By coordinating logistic movements informed by drone reconnaissance, sustainment officers enhance the overall freedom of maneuver for the brigade. The sUAS essentially become a bridge between the sustainment and maneuver plans, ensuring that logistics support keeps up with and enables the scheme of maneuver on the battlefield.

Intelligence: sUAS are invaluable for the intelligence warfighting function at the tactical level. Logistics lieutenants at LOG BOLC learn that they can do more than push supplies — they can also feed the fight with information. During exercises, students develop priority intelligence requirements (PIRs) related to sustainment (e.g., identifying where the enemy interdicts supply lines or finding suitable drop zones for aerial resupply). They then employ drones to gather information addressing those PIRs. Full-motion video or thermal imagery from sUAS reveals enemy troop movements, terrain trafficability, or battle damage to critical infrastructure. Lieutenants relay this information to their S-2 (intelligence staff) or higher headquarters. In essence, the course teaches that every sustainer can be a sensor. This mindset shift encourages junior officers to integrate with the intelligence enterprise, using aerial surveillance to improve logistics planning and the brigade's overall situational awareness. As noted in emerging sustainment doctrine, the ability of sustainment Soldiers to assist intelligence and protection efforts with real-time collection is a force multiplier. sUAS give logistics leaders a practical tool to fulfill that doctrinal vision on the ground.

Future Impact

The inclusion of sUAS in initial officer training will shape future sustainment operations. Army doctrine is already moving in this direction: FM 4-0, Sustainment Operations, highlights the importance of contested logistics and calls for decision dominance through better information and technology, while Army Techniques Publication 4-98, Army Sustainment Command Operations, underscores modern sustainment techniques at the operational level.

LOG BOLC's sUAS integration directly reflects these concepts by producing junior leaders comfortable with technology and capable of making faster, data-informed decisions in the field. We are likely to see these lieutenants apply this newly taught skill set in their first assignments, whether running a supply support activity, leading a distribution platoon, or serving in a combat sustainment support battalion as a platoon leader. They will plan resupply missions with an eye toward enemy observation capabilities, incorporate aerial surveillance into convoy security, and continually seek innovative ways to sustain the force under threat. As these officers progress in rank, their early exposure to multidomain sustainment challenges will inform unit tactics, techniques, and procedures Army-wide.

In short, this training initiative is building a generation of sustainment leaders who instinctively leverage aerial reconnaissance and other emerging technologies to solve logistics problems. The lessons learned from the Fort Lee pilot program are already informing broader Army efforts to institutionalize drone usage in sustainment units. Future BOLC classes will refine and expand on this foundation, keeping Army sustainment education on the cutting edge of realistic, combat-focused training.

Crucially, the impact of this program spans all components (COMPOs) of the total force (COMPOs 1, 2, and 3). Active-duty (COMPO 1) lieutenants bring these capabilities directly to operational units, enhancing immediate readiness and innovation in active COMPO sustainment brigades and battalions. National Guard (COMPO 2) officers, who often train alongside their active counterparts at LOG BOLC, return to their states with the same advanced skills. This parity ensures that National Guard sustainment units benefit from officers adept in drone employment and counter-drone measures. Army Reserve (COMPO 3) lieutenants likewise carry this experience into a wide array of sustainment roles across theater support commands, expeditionary sustainment commands, and logistic support units that augment active forces. By standardizing sUAS proficiency across all COMPOs, the Army strengthens its sustainment enterprise at every level. In the next conflict or crisis, it will not matter whether a logistics mission is led by an active or reserve COMPO officer — their baseline training in multidomain sustainment operations will be comparable and complementary. This integration across COMPOs reinforces total Army interoperability because units know their logistics leaders share a common understanding of how to use drones to support and protect the force.

As the Army continues to modernize, the LOG BOLC sUAS initiative exemplifies how adapting training today prepares the sustainment warfighting function for tomorrow's fights. New lieutenants who have practiced sustaining under persistent surveillance and threat will approach real-world missions with a mindset for innovation and adaptability. Their ability to coordinate logistics, protection, movement, and intelligence inputs will translate into more agile and resilient sustainment operations in the field. In an era of contested logistics and multidomain complexity, giving our junior sustainment leaders this kind of experiential edge is an educational improvement and a combat multiplier. The integration of sUAS into LOG BOLC is a decisive step toward a logistics force that supports the fight with precision, speed, and a full understanding of the operational environment, ensuring Army sustainment remains a strategic advantage on the multidomain battlefield.

CPT Alexander Herrera currently serves as the aide-de-camp to the commanding general at Fort Lee, Virginia. He was a Logistics Tactics Basic Officer Leader Course (BOLC) instructor. He holds a Master of Supply Chain Management degree from Virginia Commonwealth University and a Bachelor of Arts degree in psychology from the University of Miami. His previous assignments include commander of Fox Forward Support Company, 1-82nd Field Artillery, 115th Brigade Support Battalion, at Fort Hood, Texas; the executive officer for Support and Transportation Troop, 11th Armored Cavalry Regiment (ACR), Fort Irwin, California; and the assistant S-3 at the Regimental Support Squadron, 11th ACR, Fort Irwin.

CPT Michael Patacca is an armor officer who commissioned in 2016 from the University of Akron. He served as a scout platoon leader in 4th Squadron, 10th Cavalry Regiment, 3rd Armord Brigade Combat Team, 4th Infantry Division (3/4 ID). He deployed to Iraq in 2019 as a platoon leader in support of Combined Joint Task Force – Operation Inherent Resolve. Upon redeployment, he became the headquarters and headquarters company brigade executive officer for 3/4ID. At Fort Bliss, Texas, he served as the battalion S-4 during Operation Allies Welcome, managing humanitarian aid for 10,000 refugees. He now serves as a tactics instructor in logistics in the Basic Officer Leader Course.

CPT Michael Ranger is the course manager for the Tactics Course in the Logistics Basic Officer Leaders Course. He holds a bachelor's degree in chemistry from the University of Missouri - Kansas City. He commissioned as an Infantry officer in 2015 and transitioned to logistics in 2020.

CPT Emerald Wright serves as the executive officer to the Deputy Commanding Officer at U.S. Combined Arms Support Command on Fort Lee, Virginia. Her previous assignment was as an instructor in the Logistics Basic Officer Leaders Course (LOG BOLC). She recently co-authored "Integrating sUAS into LOG BOLC: Enhancing Sustainment Training for Multidomain Operations," an article detailing innovative methods for incorporating small unmanned aircraft systems into sustainment training to prepare Soldiers for multidomain operations.

Featured Photos:
Top left: SSG Jonathan Melvin, master trainer for small unmanned aerial systems for 2nd Cavalry Regiment, operates the Skydio X10D drone at Grafenwoehr Training Area, Bavaria, Germany, Feb. 13, 2025. (Photo by PFC Jolene Cintron)

Top Right: SFC Alfred Little, assigned to 188th Infantry Brigade, mans the Parrot ANAFI USA Small Unmanned Aircraft System during field training on Fort Stewart, Georgia, March 20, 2025. (Photo by SSG Marlana Cureton)

Bottom: A small unmanned aerial system deploys a simulated 60 mm mortar round during CAPEX2025 on Fort Bragg, North Carolina, April 3, 2025. (Photo by SSG Isabel Diaz)

FROM THE MILITARY EDITOR-IN-CHIEF

Lethality a Click Away with the LOGSTAT Podcast

■ *By CPT Garett H. Pyle*

A Void in Our Communication of Information

The technology age has given way to an immense amount of information readily available at our fingertips. No longer are we restricted to printed media to communicate our ideas and share information to increase our knowledge. The *Army Sustainment Professional Bulletin* (*ASPB*) took the first step in this direction when it became fully digital in the summer of 2023. But there was still a void in our communication of information, in our ability to directly speak with our audience and the sustainment enterprise.

I was selected as the Sustainment Center of Excellence Harding Fellow in the summer of 2024 and tasked with ensuring our professional bulletin provided content that is relevant, high quality, and accessible. The team here was already achieving that goal and doing excellent work conveying our messages to the force through professional writing. However, I wanted to find ways to expand our initiatives and increase our engagement with our audience. (For a complete understanding of the Harding Project and my path thus far with the fellowship, check out the article "The Harding Project Unlocks the Key to Knowledge: A Perspective from the First Sustainment Harding Fellow," in the winter 2025 edition of the *ASPB*.)

As a Harding Fellow, I have the opportunity to network and engage with a multitude of entities. One such opportunity was appearing on a podcast episode of *Revolution in Military Affairs* titled "The U.S. Army's Harding Project." As soon as I finished recording the episode, I thought to myself, "why aren't we doing something like this?" I realized this would be the perfect platform to make the transfer of information and content fully accessible.

In today's busy age, people consume their information while multitasking or while on the move. I found myself listening to audio books or podcasts while I worked in my woodshop or on long road trips. Thus, I knew that we could take this same concept and apply it to our mission.

Podcasts are growing at a steady rate. A 2023 Pew Research Center study found that half of Americans listened to a podcast in the last year. It is estimated that globally by the end of the year podcast listeners will reach 630.9 million. It was clear that this was an untapped market for us to reach into, to further engage our audience. I pitched the idea to our team and the Chief of Staff of the Army, and everyone loved the idea.

From the Ground Up

Once I got the idea for a podcast and our senior leaders approved it, I was off to the races with developing it. I soon found out it was not something that would happen overnight. I reached out to individuals who either run or have run a podcast. Their insight helped guide me in the development of our new podcast. One of the main things I learned with launching and operating our podcast is how it takes a full team to do a podcast. I was on my own but did not let that deter me from reaching my goal.

The first step was developing a concept and focus for the podcast. I knew we needed the conversations on each episode to spark discussions across the sustainment enterprise and to sharpen our skills and knowledge as sustainers. Thus, the focus would be on new developments, current trends, and how we can forge the path ahead for the next generation of sustainment Soldiers. The episodes would be designed to be short and packaged for quick consumption, since the market is so saturated with competing elements for our attention. In each episode, I, as the Sustainment Harding Fellow, would talk with leaders on a variety of topics in the sustainment enterprise. We had our purpose and direction for the podcast but still needed a name.

Our goal is to continue to support and educate sustainment enterprises all over the globe.

The goal for the name of the podcast had to be something that people recognized and easily drew the connection with sustainment. So, I reached out to my peers at the Captains Career Course for inspiration. After developing a variety of names, we decided on *The LOGSTAT*, which came from our resident infantry officer, CPT Mark VanKopp. This name meets all aspects that one looks for when naming a podcast. It provides clarity on the podcast theme, uniqueness that sets it apart from a very saturated market, brevity to help the audience remember, catchiness to make a lasting impression and encourage word-of-mouth promotion, and searchability to increase our discoverability. When Soldiers hear the word LOGSTAT (logistics status), they think of sustainment, especially those outside the sustainment community. That is exactly what we were looking for: short and to the point.

Next, I worked on building the structure for recording and editing the podcast. I quickly learned how podcasts normally have an entire team dedicated to developing, marketing, editing, and hosting them. I was a one-man team, learning all this on my own. Thankfully, after some networking, I connected with Dave Garrison at the Training Technology Division at U.S. Army Combined Arms Support Command (CASCOM) on Fort Lee, Virginia. His team provided the key to getting the podcast off the ground, with their ability to offer a studio to record and the ability to edit for publication. Jeff Peters took on the role of editing the podcast for us and brought all my ideas to life.

The foundation was built, and I started testing out the studio by recording the introduction, conclusion, and a teaser episode. But before we launched, we needed a logo, a symbol to catch people's eye. The *ASPB* team, Mike Griffth, Bob DelBane, and I worked through different concepts and our visual information specialist, Sarah Lancia, brought it to life. We now had the perfect logo that would be recognizable to the community.

Only one major step lay between us and publication: we had to establish how to build the actual podcast channel on all the different platforms. Thus, we went through DVIDS, who made the process very efficient for us to launch the podcast. We submitted our podcast name, logo, and description, which enabled them to build the channel for us. The only thing we had to do was upload the episodes after we prepared them for publishing, and they would publish them on each of the external platforms. The last part was coordinating with the CASCOM public affairs office for review and release authority for each of our episodes.

Going Live

After six months of development, *The LOGSTAT* podcast went live on February 18, 2025, with the teaser episode. There I discussed the creation of this new podcast and the way ahead for the *ASPB*. We publish on the following platforms: Apple Podcasts, Spotify, Pandora, Amazon Music, and YouTube Music.

The first episode I recorded was about company command with CPT Ulysess Laman. We discussed the challenges of company command from both a Reserve and active-duty perspective. While this was the first one, I recorded, this ended up being the third episode to publish. Then, I began the process of coordinating with guests and developing the topics. The first official published episode was with CPT Dave McKinney, in which we discussed the integration of combat arms and logistics on March 12, 2025.

In today's world, more and more people are using artificial intelligence (AI) to assist in their writing and development of ideas. As I discussed in my last article "Is Efficiency Worth Sacrificing Our Humanity?" in the spring 2025 edition of the *ASPB*, I still believe this is destroying our creativity and making us lazier. That is why I do not use ChatGPT, CamoGPT, or any AI-driven writing assistance programs to develop the titles, concepts, or overall flow for the podcast. This is solely from human creativity, and I want the content we deliver to be authentic dialogue.

When I first thought about the concept for the podcast, I never imagined the enormous demand that would occur in such a short time. I am beyond thankful and full of energy to continue to deliver cutting-edge dialogue as we tackle the sustainment topics that mean the most to the listener. As of June 13, 2025, after publishing seven official episodes, we have received 2,054 total views and have 202 followers across all platforms. Thus, to meet demand, we decided to move to publish weekly. Now we have double the content and a growing increase in our lethality.

A Click Away

Launching a podcast from scratch was truly an endeavor and no easy feat. However, all the time and energy were worth it. *The LOGSTAT* is the Army's official premier podcast on all things sustainment.

We reach Soldiers all over the globe with our weekly conversations. This podcast has opened the door for us to speak directly to our community with content that is most important to them. Our goal is to continue to support and educate sustainment enterprises all over the globe. The conversations provide information from articles that we further expand on with the authors or developments occurring across the formation with subject matter experts. Each episode is only a click away, which increases our lethality across the force at all levels.

We ask that you continue to leave reviews to increase our following so more Soldiers can find this content. If you have any feedback or if there is a topic you want us to discuss, please reach out to me. I am always looking for new content to expand our reach.

CPT Garett H. Pyle is currently the Military Editor-in-Chief for the Army Sustainment Professional Bulletin and has been selected as the first Sustainment Center of Excellence Harding Fellow at Fort Lee, Virginia. He joined the Army Reserves in 2012 as an 09R (Simultaneous Membership Program Cadet) where he simultaneously attended ROTC at Washington & Jefferson College, where he commissioned in 2016 in the Transportation Corps. He holds a Master of Arts degree in transportation and logistics management from American Military University. He is an Honor Graduate of both the Transportation Officer Basic Course and the Logistics Captains Career Course.

LOG BOLC

A Spearhead of Army Transformation Through Technology and Data

By CPT Michelle Lopez and CPT Justin Paramore

The modern battlefield demands a new breed of Soldier, one equipped not just with physical prowess but also with the ability to leverage technology and data to navigate complex operational environments (OEs). The Logistics Basic Officer Leader Course (LOG BOLC) stands as a prime example of how the Army is embracing transformation in contact (TiC), actively shaping the future of Army logistics through the integration of cutting-edge technology and data-driven decision making.

Recognizing the need to prepare logistics officers for the complexities of future conflicts, LOG BOLC has made significant strides in implementing virtual reality (VR) training. This represents a fundamental shift in training methodology.

Combat training center rotations and field feedback revealed that junior leaders lacked sufficient training to defend against adversaries equipped with emerging technologies. The VR base defense scenario directly addresses this gap, using an expansive 12 km x 12 km VR map, the largest of its kind, to provide a highly immersive and realistic training environment. This allows for diverse scenarios, from navigating challenging terrain to establishing defenses across vast operational areas, mirroring potential large-scale combat operations (LSCO) complexities.

Students progress through a crawl-walk-run approach, starting with basic VR navigation and culminating in a full-scale base defense exercise during the field training exercise (FTX). This iterative approach, coupled with the controlled VR environment, allows for constant feedback and refinement of skills. The success of the base defense VR scenario has paved the way for incorporating VR into other critical logistics training areas, such as joint logistics over-the-shore reception, staging, onward movement, and integration.

Throughout LOG BOLC, students are presented with an overarching operational scenario called SUPPORTING VICTORY, which progresses as they move through training modules. The scenario is based on the U.S. Indo-Pacific Command (USINDOPACOM) Decisive Action Training Environment (DATE). Practical exercises during lessons are nested within this scenario to reinforce logistics concepts and USINDOPACOM DATE OE variables. During LOG BOLC, students conduct larger, more deliberate exercises where they plan and brief a deployment exercise in support of this operation, taking an armored brigade combat team from fort-to-port and port-to-fort. Progression during VR and integrated base defense classroom instruction is centered around the emerging threats in the Pacific theater. The scenario follows a road to war that begins on day one of classroom instruction and builds through the weeks to the FTX when students deploy from the brigade support area to the combat trains command post.

LOG BOLC is also committed to data-driven decision making, leveraging the power of Power BI to analyze and visualize data and to improve training and resource optimization. Power BI dashboards track individual student performance across various training modules, including VR simulations. This data identifies areas where students excel or struggle, allowing for personalized instruction and tailored training programs. Analyzing data on training effectiveness, such as FTX performance metrics or feedback on VR scenarios, enables LOG BOLC to continuously improve the curriculum and ensure it aligns with evolving operational needs and Army modernization goals. Power BI also analyzes data on equipment usage, training schedules, and personnel requirements, ensuring efficient use of resources and maximizing training value.

In line with the Army's modernization goals, LOG BOLC recognizes the need to move beyond traditional training silos and embrace cross-functional integration. Cross-functional training of a base transportation officer, quartermaster officer, and ordnance officer exposes logistics officers to other perspectives and capabilities. By having an Armor officer in tactics, we expose our lieutenants to conversations of common issues seen in the force. By understanding the needs and constraints of other branches, logistics officers make more informed decisions that support overall operational objectives.

This training also equips logistics officers with a foundational understanding of the various domains (land, air, sea, space, cyberspace). Furthermore, it fosters adaptability by exposing officers to a wider range of tactical and strategic considerations, better preparing them to address unforeseen challenges and exploit emerging opportunities. This is essential for developing leaders who embody agility, a critical trait for success in the dynamic and uncertain environments of the 21st century battlefield.

Expanding cross-functional training at LOG BOLC involves the following:

- Implementing cross-functional exercises involving officers from various branches and simulating realistic scenarios that require interoperability and collaboration.

- Creating cross-branch exchanges, providing LOG BOLC students with opportunities to embed with other units and gain firsthand experience.

- Incorporating modules into the curriculum that provide foundational knowledge of other warfighting functions and branches, taught by subject matter experts.

LOG BOLC stands at the forefront of Army modernization. By embracing cross-functional training, LOG BOLC ensures its graduates are not just logisticians, but versatile and adaptable leaders ready to face the multifaceted challenges of the 21st century battlefield.

Way Forward for Fiscal Year 26

As LOG BOLC continues adapting to the dynamic nature of instruction and evolving operational requirements, several structural changes will be implemented to enhance training effectiveness and administrative efficiency. To alleviate common administrative hurdles, the first week of LOG BOLC will focus exclusively on in-processing, addressing challenges related to common access card issuance, finance, and personnel matters.

Following in-processing, the next two weeks will emphasize foundational leadership skills essential for new logistics officers. Instruction will focus on tactical decision making, troop-leading procedures, and sustainment planning to establish a strong leadership baseline. This phase will set the foundation for the subsequent two weeks, which will center on building platoon readiness. During this period, students will develop their platoon's mission essential task list, conduct convoy operations, and prepare for deployment. This phase will culminate in a deployment exercise aligned with the USINDOPACOM OE.

The latter portion of the course will maintain its emphasis on LSCO through logistics exercises and the FTX. These capstone events will reinforce key sustainment concepts and test students' ability to operate in high-intensity environments. As students near the conclusion of LOG BOLC, the curriculum will shift to a platoon-specific focus, preparing officers for their initial assignments. Training will be tailored to key logistics roles, including distribution platoon leader, maintenance control officer, and supply support activity platoon leader.

These structural adjustments will further align LOG BOLC with the Army's modernization efforts. By streamlining administrative processes, reinforcing leadership fundamentals, and integrating realistic training scenarios, LOG BOLC will continue to develop highly skilled officers capable of supporting the Army of 2030 and beyond.

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CPT Justin Paramore serves as an instructor/writer for the Logistics Basic Officer Leader Course at Army Sustainment University, Fort Lee, Virginia. He is a graduate of the Transportation Officer Basic Course, Logistics Captains Career Course, Ranger School, and Basic Airborne school. He holds a Bachelor of Science degree in health science from Columbus State University, Columbus, Georgia.

Surviving the Kill Web

Adapting Army Sustainment to the Precision Strike and Unmanned Threat Era

■ *By CPT Stephanie Torres*

A sustainment formation moves cautiously through contested terrain. It is carrying fuel, ammunition, and essential supplies needed to sustain operational reach and seize the initiative. The column inches forward along an exposed dirt road, with vehicles staggered to minimize losses from potential indirect fire. The operators remain alert, but overhead an enemy drone observes silently, transmitting their exact coordinates to a distant fire control center. Without warning, precision-guided artillery strikes erupt across the formation, reducing fuelers and cargo trucks to rubble. As survivors attempt to reposition, loitering munitions descend, hunting for command vehicles and other logistics assets. Communications collapse and the convoy is destroyed in place. Its equipment and personnel losses are catastrophic, and its cargo remains undelivered.

This is not a fictional vignette or a future scenario. These tactics were witnessed in Bakhmut, Kherson, and Russia's Kursk Oblast as recently as March 2025. Russian forces have repeatedly ambushed Ukrainian supply columns with coordinated drone surveillance and rapid sensor-to-shooter strikes, destroying logistics elements with lethal efficiency. Russian units have learned to wait patiently in concealed positions, exploiting the kill web to obliterate convoys before they reach the front lines. This is the reality of modern war: logistics formations are not only within reach; they are now deliberate, high-payoff targets.

The Russia-Ukraine War, along with other modern operations, has shown that sustainment formations are prime targets in an increasingly

lethal battlespace. While maneuver formations have rapidly integrated counter-unmanned aircraft system (C-UAS) capabilities to defend against drone threats, sustainment forces remain highly vulnerable. As adversaries refine their ability to detect and strike logistics nodes with precision, sustainment operations must focus on survivability. In today's environment, the need for sustainment forces to integrate dispersed logistics, reduce their footprint, and enhance mobility to remain effective in a contested environment grows at an alarming rate. By applying the same adaptability, survivability, and protection measures as maneuver units, coupled with lean and efficient supply chain models, sustainment formations can ensure the Army's ability to fight and win in future conflicts.

Sustainment in the Crosshairs

Recent conflict has shown how quickly supply chain disruptions can cripple military operations. Adversaries have used this information to their advantage, integrating long-range precision fires, drone swarms, and persistent intelligence, surveillance, and reconnaissance (ISR) to disrupt and destroy logistics formations before they can deliver combat power. The traditional model, built around centralized nodes, large stockpiles, and predictable resupply routes, is increasingly vulnerable. Future opponents are expected to sever sustainment lines to weaken U.S. forces' combat effectiveness. To address this, Army sustainment must shift to a mobile, dispersed, and survivable framework. Unmanned systems pose a persistent threat to logistics nodes, further reinforcing the need for agility, concealment, and active defense. Sustainment operations, force design, and doctrine must now evolve to remain effective in contested environments.

Decentralize & Disperse: Discard the Large Sustainment Nodes

First, we must consider a critical truth: in today's fight, traditional enemy bypass criteria are decreasingly a matter of command discretion. In the modern battlefield, rear-area formations are vulnerable to threats that can penetrate most physical security measures and strike deep with precision. Large, immobile sustainment nodes are easily identified and targeted, making them obsolete in future wars. To survive and function in this environment, the Army must adopt a decentralized sustainment model built around dispersed, mobile, and frequently shifting micro-nodes. These smaller logistics elements reduce detectability, increase agility, and minimize reliance on manned convoys. Transitioning to this model starts with learning from nations that have long operated without air superiority and have developed sustainment practices rooted in concealment and mobility.

Ukrainian logistics forces, under persistent threat from Russian ISR and long-range fires, have adopted small, mobile resupply points instead of centralized depots. They frequently relocate fuel and ammunition, often blending operations into civilian infrastructure like warehouses and trucks. Finland, shaped by its proximity to Russia, uses decentralized logistics supported by heavy concealment and deception to shield tactical nodes from detection. Similarly, Taiwan's dispersed logistics strategy leverages civilian and military infrastructure to sustain operations under the threat of blockade or air attack. These examples highlight an important principle: survivable sustainment relies not only on dispersion but on masking in plain sight. The goal is not just to move faster, but to become harder to find.

Leaner Footprints: Less is More

Large supply stockpiles and centralized depots create visible targets for enemy ISR and precision fires while reducing mobility. On a battlefield dominated by loitering munitions and artificial intelligence-driven targeting, static logistics nodes give adversaries easy opportunities to disrupt operations before they begin. To reduce this vulnerability, Army sustainment formations must adopt lean logistics focused on speed, mobility, and signature reduction. This starts with maintaining only mission-critical supplies forward while continuously identifying and removing excess materials through routine retrograde.

Retrograde must become a synchronized, daily function, not just a task at mission completion. Every distribution cycle must include a plan for pulling unused or low-priority items from forward positions to higher echelons. For instance, Class I rations from altered meal plans, excess Class IV construction materials, or low-demand maintenance parts must be routinely retrograded using returning convoys. This not only prevents logistical buildup but also improves movement speed, reduces transportation strain, and allows rapid node displacement when needed.

Additionally, just-in-time (JIT) logistics complements this approach by allowing sustainment units to meet operational needs without overcommitting resources forward. JIT logistics minimizes inventory and enables responsive, targeted resupply operations. However, to function effectively, JIT requires robust forecasting and communication across echelons. Predictive analytics and demand forecasting tools — when integrated into mission command systems — help sustainment planners identify the most frequently requested parts, anticipate shortages, and avoid overstocking low-demand items.

Soldiers from 2-130th Infantry Regiment hone their skills in counter unmanned aircraft systems training at McGregor Range, New Mexico. (Photo by SSG Raquel Birk)

Reducing the sustainment footprint enhances agility and survivability. In today's contested environment, logistics that stay light and mobile are far more likely to endure and deliver. Moreover, sustainment nodes must reduce their electromagnetic and physical signatures to survive in an environment saturated with sensors. This means minimizing radio transmissions, employing camouflage and decoys, limiting tentage, and using low-signature platforms to deliver and store supplies. By addressing both visibility and detectability, sustainment units become far harder to strike.

Train Sustainment Survivability: Defend, Displace, Conceal, Repeat

Sustainment formations must adopt a survivability mindset, treating themselves not as rear-area support but as forward-operating forces constantly under threat. Unlike past conflicts, logistics nodes can no longer assume they will operate in secure rear zones. Army sustainment must integrate defensive capabilities, deception, and mobility into their doctrine. Additionally, units must incorporate both active and passive defensive measures to mitigate drone threats. Embedded C-UAS assets within sustainment formations will be critical for defending logistics elements against drone and missile

attacks. To ensure survivability, these units must be equipped and trained in the same protection systems afforded to maneuver formations. These capabilities must be embedded into resupply movements and sustainment-node defenses to proactively counter aerial threats.

Controlling electromagnetic emissions is essential to survivability. Beyond traditional radio discipline, sustainment formations must enhance spectrum awareness and apply deliberate emission control measures to avoid detection. Additionally, the future battlefield demands a shift to mobile sustainment platforms that remain loaded and displace rapidly, rather than relying on tentage, static infrastructure, or downloaded supply points. Soldiers must be trained in deception techniques, terrain masking, and countermeasures to evade and disrupt enemy ISR systems.

The Path Forward

Sustainment doctrine must evolve to treat logistics as a combat enabler, not a passive support function. This shift demands a new operational mindset where logistics formations move, survive, and deliver in contested environments. Sustainment must transition from static hubs to dispersed, mobile networks that are autonomous and operate independently. Brigade support areas must no longer exist as singular, centralized nodes but as collections of mobile sustainment teams (MSTs) that displace frequently, adapt quickly, and align with maneuver formations. Logistics packages (LOGPACs) must become dynamic, responsive to shifting unit locations, and timed with windows of reduced threat based on ISR and operational tempo. Unit survivability in this model relies on speed, concealment, and constant movement.

Central to this transformation is the institutionalization of an embedded retrograde battle rhythm. Every LOGPAC, convoy, and resupply operation must incorporate retrograde of excess or unused supplies to reduce footprint and maintain agility. Lean logistics, underpinned by JIT principles and predictive analytics, must become standard. By using operational data and forecasting tools, sustainment planners anticipate demand, minimize excess, and ensure that only mission-critical supplies move forward. This enables smaller supply nodes, faster displacement, and lower electromagnetic and physical signatures. Sustainment units must also maintain rapid displacement readiness and rehearse standard operating procedures for movement, including terrain masking, deception measures, and integration with maneuver and protection forces.

To operationalize the way forward, Army leaders must begin incorporating mobile sustainment principles into doctrine, training, and force design. We must test MST employment, mobile node configurations, and embedded C-UAS capabilities in real-world conditions. Combat training centers must expose sustainers to contested logistics environments, complete with persistent drone surveillance, precision fires, and denied communications. Acquisition priorities must shift toward scalable platforms and low-signature support systems that replace traditional infrastructure. Above all, commanders must ask themselves hard questions: Can our formations displace under threat? Are we retrograding supplies daily? Do we train to sustain under fire?

These tactics are no longer theoretical. Current conflict has demonstrated the enemy's commitment to hunt and destroy logistics formations. Convoys will not be spared, and static nodes will not be overlooked. In the next war, sustainment forces will find themselves inside the kill web. The formations that survive will be those that move rapidly, stay hidden, and sustain while under fire. Is your formation ready?

CPT Stephanie Torres currently serves as the First Army Division West commanding general's aide-de-camp. She served as operations officer, 15th Brigade Support Battalion; commander, H Forward Support Company, 1st Battalion, 8th Cavalry Regiment; and as logistics officer, United Nations Command Security Battalion-Joint Security Area in Panmunjom, South Korea. She deployed to Iraq and Afghanistan in 2007 and 2009, and has conducted two Regionally Aligned Forces missions to U.S. Indo-Pacific Command and U.S. European Command. She holds a Master of Business Administration degree in supply chain management from the Florida Institute of Technology.

Featured Photo: Artificial intelligence-generated photo based off the first paragraph of article.

Practice Makes Perfect

Training Sustainment in the Era of Contested Logistics

■ *By LTC Boyce J. Newton III*

The decades long war on terrorism resulted in a near total loss in critical fieldcraft skills Army-wide. With limited training time, units singularly focused on deployment to established theaters with static operations from forward operating bases (FOBs). Now that the war on terrorism is in the proverbial rearview mirror, sustainment units must accelerate their training to meet the demands associated with large-scale combat operations (LSCO) in a contested and austere environment. The National Training Center (NTC) continues to serve as the crucible that exposes shortfalls and celebrates strengths in our Army's armored and mechanized formations as they face off against the vaunted 11th Armored Cavalry Regiment's opposing force (OPFOR). The only way to achieve victory in this exercise, and ultimately in real combat, is to conduct realistic and quality training regularly.

Contending with Contested Logistics

The modern battlefield is plagued with pervasive surveillance and a multitude of sensors. The result is that operations, particularly logistics operations, are contested throughout their entirety. So how do we contend with contested logistics in the close fight? There are several areas in which units have begun training in their efforts to create a more survivable sustainment enterprise. The success seen in recent conflicts, such as the war in Ukraine, with the myriad of small unmanned aircraft systems (sUAS) as both weaponized and collection assets, should give pause to sustainment leaders. The brigade support area (BSA) and division support area (DSA) footprints are, by far, the largest stationary nodes on the battlefield. They will inevitably be discovered if they remain in a single location too long. These footprints must encourage Soldiers to look to the sky and remain vigilant. When they have countermeasure systems available, they must place them logically throughout the footprint. At the NTC, many units draw counter-UAS and keep them consolidated near their main command post. By the time Soldiers

identify an sUAS threat and send the messages to higher authority for action, the sUAS have either dropped their payloads or loitered long enough to provide data to enemy artillery for action. Placing capabilities toward the perimeter increases the likelihood that the sUAS will be neutralized prior to collecting or engaging the Soldiers on the ground. As additional early warning and countermeasure systems become available, it is critical to allocate them to large sustainment nodes and maneuver forces.

The incorporation of sustainment nodes, like the BSA/DSA, onto the defended asset list (DAL) allows for assets to be aligned against the defense and survival of critical sustainment assets. This can include a multitude of assets ranging from UAS platforms to counterfire artillery coverage and everything in between. The investment in the survivability of sustainment nodes serves to ensure extended operational reach. Incorporation onto a DAL is not a silver bullet solution for sustainment node commanders, but it is a powerful deterrent once an enemy force realizes their actions will not occur without repercussions and a potential loss of critical assets.

Another critical method for ensuring the survival of both commodities and sustainment Soldiers is to displace rapidly and frequently. Smaller sustainment nodes like combat trains command posts (CTCPs) must displace every 24 hours, at a minimum, due to their proximity to the forward line of own troops (FLOT). The unit maintenance collection points (UMCPs) must balance displacing with their ability to generate combat power. If they are not encumbered with active maintenance operations, they must displace at the same frequency as the CTCP. Otherwise, the UMCP must utilize the surrounding terrain and camouflage to the best of their ability until they are able to relocate. It is critical for UMCPs to move as soon as they reach a natural pause in maintenance operations. At the NTC, units who force the UMCP to displace with the CTCP suffer significant maintenance shortfalls, and the unit operational readiness rate (ORR) declines. It is simply not tenable for a UMCP to displace every 12 to 24 hours and still conduct maintenance. Units who separate the UMCP from the CTCP and assess their current maintenance workload based on parts on hand have significantly better outcomes with both ORR and evading enemy action.

The larger sustainment nodes require a different plan of action because they are far too cumbersome to manage a daily displacement while still providing support to maneuver forces. The benefit larger nodes have is that they can remain further away from the FLOT, which affords them the ability to remain stationary longer. Regardless, the BSA must relocate every 72 hours at a minimum to prevent being targeted by enemy forces. When arrayed as base clusters, BSAs can execute survivability moves within the immediate area as a mitigation strategy to prolong the brigade support battalion's (BSB's) presence in a specific area. This strategy relies on the BSB being highly mobile and somewhat mirrors the way artillery batteries operate within position areas for artillery. The DSA is likely to remain well outside of the enemy's conventional artillery range. If the enemy's air force and/or rocket artillery threat is diminished or destroyed, then the DSA will not need to displace frequently.

A final, but certainly not unimportant, area of focus for contending with a contested environment is engagement area (EA) development and site selection. It is a resounding fact that indirect fire and weaponized sUAS are the primary threats to sustainment nodes. As such, units must adopt a dig or die mentality. It is an unfortunate reality that many Soldiers no longer appreciate the importance of digging fighting positions, survivability pits, or using sandbags for protection. The counterinsurgency era and its abundance of concrete bunkers and barriers on well-established FOBs resulted in a massive atrophy in the art of fortifying positions using only shovels and basic building materials. This is further complicated by the often highly restrictive limitations on digging at many Army installations.

The process of digging a machine gun position is labor intensive, but it is the difference between life and death when the king of battle begins raining down steel on your location. It is vital that units return to a culture that stresses the importance of continually improving your fighting position until you displace to the next location. Initial occupation must be closely followed by digging expedient fighting positions. If the unit remains more than 24 hours, then more extensive fortifications are required. Prolonged occupation must prompt requests for engineer assets to assist with improvements and EA development. Sustainment units must do more than lay out concertina wire and sit on a berm if they hope to survive an enemy attack. The BSB must use the terrain and any materials at their disposal to influence where they engage enemy forces. This includes obstacles for denying the enemy avenues of approach, delaying their progress, or turning them. The most effective BSBs in this category have leveraged the expertise of engineers from their brigade combat teams (BCTs).

Training Shortfalls: Bring Back Proficiency

The most common trend that is seen among sustainment units coming to the NTC is a lack of collective training between the BSB and the forward support companies (FSCs), which are attached to supported units. It is rare to oversee a unit that has trained the establishment of the BSA more than once prior to their rotation. It is even more rare to see units that have integrated all the FSCs into their BSA training. The establishment of the BSA is a significant undertaking and requires considerable planning to execute as part of home station training. However, it is a necessary undertaking. Units that have not trained the full echelon of sustainment from the FLOT back to the BSA and beyond are doomed to struggle, if not fail, in LSCO. Most sustainment units do not struggle with proficiency at the individual Soldier level. They struggle with collective proficiencies and integrating skills to accomplish tasks efficiently.

The majority of BSBs have struggled to exercise their systems to maintain situational awareness of the BCT's current fight. This inevitably leaves the BSB commander in the dark and unable to make decisions in a timely and informed manner. There is a myriad of factors that play into poor battle tracking among BSB staffs. Among the most challenging factors is a lack of proficiency on the limited beyond line-of-sight systems organic to the BSB. The most effective BSBs over the course of the last three years have doubled down on communications training and rehearsed multiple scenarios within the command post throughout their training. Additionally, successful units have maintained robust battle tracking products in both digital and analog formats. This use of redundant tracking mechanisms is critical because digital-based products inevitably experience outages. There are several products that are critical to empowering the BSB commander to exercise mission command and sustain the BCT. The BSB staff must develop and maintain a common operational picture (COP), a logistics COP, a synchronization matrix, a decision support matrix, and a commander's critical information report matrix. Without the information contained in these products, the BSB commander is unable to make informed decisions regarding adjustments to the concept of support and/or the need for emergency resupply to the warfighter. It is incumbent on the BSB executive officer and the support operations officer to work in tandem to ensure their staffs provide quality information to populate their respective products.

The integration of air assets into sustainment operations is a rare occurrence at the NTC and even when it is utilized it is poorly executed. Upon further exploring the reasons, nearly every BSB over the past three years has reported that they had limited opportunities to train with the aviation elements at their home station. The use of rotary wing assets to move repair parts and personnel replacements has the potential to vastly improve the efficiency and responsiveness of sustainment operations. To be successful, units must practice communicating with aircraft, standardizing marking cargo, and routinely communicating with the aviation element to leverage their aircraft. The use of external cargo transport via slingload also carries the potential to allow larger bulky loads to be transported forward. However, BSBs routinely lack trained personnel and the equipment needed to rig slingloads. The incorporation of these capabilities may not be considered the ultimate game changer for sustainment operations. However, each incremental improvement to the sustainment enterprise allows for gained efficiencies in other areas. These domino effects associated with small improvements carry the potential to form an unstoppable sustainment operation.

The displacement of the BSA is arguably the most complex and challenging undertaking for the BSB.

The BSB must contend with the fact that even if they were manned and equipped at 100%, they would still be unable to displace in a single lift. BSBs must train to become nimbler and to work around this reality. In the modern battlefield, a static unit is a dead unit, and there are no exceptions for sustainment formations. At the NTC, every BSB struggles to prioritize loads and to displace their BSA in a reasonable timeframe. Countless BSBs lack prior training for this undertaking. This is apparent through observation because each iteration of displacement takes on a different sequence, load plan, and timeline. As with most topics, repetition is the key to mastering the task. Every BSB must develop a baseline plan for displacement that includes detailed load plans. Additionally, they must assess their loads and eliminate excess items. The combined effects of these efforts will not eliminate the need for BSBs to execute their displacements in multiple lifts or with external support. However, they will expedite the process and gain efficiencies overall.

Ultimately, most units are proficient in their assigned individual tasks. For example, the mechanics repair equipment, and the fuelers know their craft. The two areas where sustainment units struggle are tactical tasks and fieldcraft. The vast majority of sustainment units observed at NTC are not proficient when it comes to emplacing their various weapon systems and/or preparing sectors of fire. Additionally, the use of range cards and sector sketches is lacking. At the individual level, Soldiers know how to operate their weapons, but when it comes to controlling multiple weapon systems to engage an enemy, there is significant room for improvement. Skills like regulating the rate of fire for machine guns or establishing interlocking fields of fire have rarely been practiced. When asked, most Soldiers state that they had adequate time on a range to qualify on the weapon, but they have not trained beyond that. The only way to hone fieldcraft is to practice it, and most sustainment Soldiers have rarely, if ever, prepared fighting positions or employed camouflage systems. Units must seize every opportunity to practice these skills at home station because their lives depend on it in LSCO. Training these proficiencies does not require multi-day field training exercises. Units must take advantage of Soldier/Sergeant's Time Training to build proficiency over time.

The first time many sustainment units have executed a base defense live fire is at the NTC. Furthermore, training events using blanks and OPFOR at home station are similarly lacking. Sustainment units must train in a similar fashion to their maneuver counterparts. Our maneuver formations are proficient because they progress from individual training and culminate at the company or battalion level with live fire operations prior to the NTC or deployments. The BSBs and other sustainment formations must be afforded the same level of emphasis to hone their Soldier skills.

Conclusion

The adage train as you fight is more relevant now than ever before. The modern battlefield is evolving daily as we observe the tenacity and cunning of both our adversaries and friends currently engaged in conflicts worldwide. It is incumbent on leaders at every level to correct training deficiencies and train beyond individual level skills to collective tasks and integration of capabilities. Lastly, leaders must never forget that modern technologies mean that the logistics enterprise is contested, and vigilance is the key to overcoming constant surveillance. Sustainment leaders at every echelon must bolster their capabilities and ability to defend themselves by seeking innovation within their formations and communicating their lessons learned after every training event. There are a multitude of venues where these lessons are desperately needed to fuel modernization and drive a culture of continuous improvement. Take advantage of the resources available through the Center for Army Lessons Learned, the Sustainment Center of Excellence, and the combat training centers. Additionally, share your voice with Army Futures Command entities like the Sustainment Capability Development Integration Directorate and the Contested Logistics Cross-Functional Team who drive continuous transformation efforts to modernize sustainment capabilities for the Army of 2040 and beyond.

LTC Boyce J. Newton served as the brigade support battalion support operations officer and executive officer observer controller/trainer for the Goldminer Team, Operations Group, at the National Training Center from June 2021 to June 2024. He currently serves as the chief of operations for the Contested Logistics Cross-Functional Team, Army Futures Command. He graduated from the U.S. Military Academy and has a graduate degree from Syracuse University.

Is your formation working on new, cutting-edge initiatives or developments that could significantly impact the entire sustainment enterprise? Your work is crucial, and we want to hear from you!

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LOGISTICS SCENARIO EXERCISE

Aerial Delivery Operations

By CPT Jon Davidson, CPT Thomas Johnson, and CW2 Jordan Jones, Captains Career Training Department

Situation

You are serving in the transportation section of a division sustainment brigade (DSB) support operations (SPO) staff. It has been identified that a rifle company from 2-160th Infantry, 1st Brigade, has received a change of mission after seizing OBJ VARSITY. They are now tasked with establishing deliberate defensive positions. The supporting brigade support battalion SPO is requesting a throughput resupply of Class IV due to supply shortages at the battalion and brigade Class IV yards.

Mission

Working with your senior airdrop systems technician, you are tasked to generate an aerial delivery option to resupply the rifle company.

Coordinating Instructions

Division G-2 has stated that the enemy's immediate anti-aircraft capability has been destroyed, and there is a limited threat to friendly fixed or rotary wing aircraft within the division's area of operation. The supporting combat aviation brigade has confirmed there are two CH-47s available in vicinity of the division support area (DSA) that are airdrop and sling-load capable. The DSA is approximately 100 km from the rifle company's AO. The Air Force has one C-130J available at the joint security area (JSA) with a crew that is airdrop certified. The JSA is currently 50 km from the DSA. There are no suitable field landing strips in the vicinity of the rifle company, but there is space that facilitates rotary wing operations.

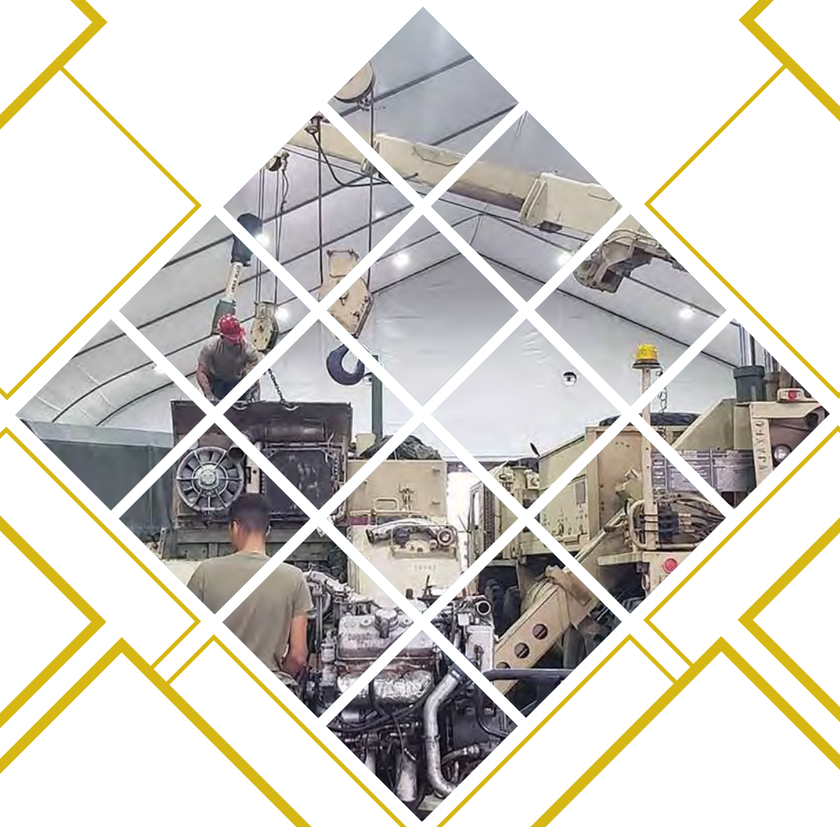
The rifle company requires 1 x combat configured load (CCL) 3 (Class IV - Company Defense) which consists of the following:

- 120 x rolls of C-Wire (56 lbs per roll)
- 19 x reels of barbed wire (91.5 lbs per roll)
- 486 x Long Pickets (10 lbs per)
- 208 x Short Pickets (4 lbs per)
- 1200 x sandbags (0.25 lbs per)
- 6 x sheets of 4'8" x 3/4" plywood (65 lbs per)

Question

What method of aerial delivery would be the most effective in distributing the Class IV, and what platforms or items of equipment are required to execute this?

One Thousand and One Priorities



The Principles of Mission Command are Essential to FSCs

By CPT Sarah McCann and 1LT Mark Fitzpatrick

Forward support companies (FSCs) are the front lines of logistics and sustainment in a typical armored brigade combat team (ABCT). The purpose of an FSC is to support the maneuver battalion to which they are attached. In the case of a Foxtrot FSC, that battalion is a field artillery (FA) battalion, responsible for destroying, defeating, or disrupting the enemy with integrated fires while supporting maneuver commanders. A Foxtrot FSC in an ABCT consists of three basic supporting elements. If you break down each platoon or section of an FSC into its service provided, it totals approximately 14 sections and functions.

The FSC commander is the senior logistician in the battalion and is responsible for the performance of all sections. But one person can only do so much and keep track of so much at a time. The same can be said for commanders of all branches, specialties, and echelons. This is solved through the Army's philosophy on mission command.

Army Doctrine Publication 6-0, Mission Command: Command and Control of Army Forces, defines this philosophy as the "exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of mission." The principles of mission command are then further broken down to build cohesive teams through mutual trust, create a shared understanding, provide a clear commander's intent, exercise disciplined initiative, use mission orders, and accept prudent risk.

Army doctrine provides a framework for leaders at all levels to manage their personnel and tasks effectively by giving subordinates clear guidance while also communicating left and right operational limits. This allows subordinates to make their own decisions and frees up leaders and commanders to supervise a variety of tasks or efforts at once. The volume of tasks that an FSC must complete to conduct daily operations requires the use of mission command. This was especially true for Fearless FSC, 3rd Battalion, 29th Field Artillery Regiment (3-29 FA), 3rd ABCT, Fort Carson, Colorado, during their rotation to Poland in 2024 in support of Operation European Assure, Deter, and Reinforce.

In March 2024, Fearless FSC deployed to the European theater for a Poland rotation. Because the unit is attached to an FA battalion, they were stationed at Forward Operating Site (FOS) Torun, Poland, which is home to the Polish military's artillery training school and their artillery training area. This FOS is located approximately 240 kilometers from the closest brigade asset, located at the Drawsko Pomorskie Training Area (DPTA), and approximately two hours from the closest U.S. base, located at Powidz, Poland. The ammunition supply point (ASP) is about six hours away. One firing battery was located four hours away at the Bemowo Piskie Training Area (BPTA) as part of the NATO enhanced Forward Presence Battle Group Poland and still required FSC maintenance support. There is no bulk water supply located on the FOS, and when the unit first assumed their FOS Torun mission, fuel was provided through bulk-to-bulk transfer supplied by the Defense Logistics Agency (DLA).

Artillery units have been rotating to Torun for years. 3-29 FA has personnel who have rotated to Torun multiple times, most recently in 2022. The life support on the FOS was almost entirely provided by KBR, a U.S. company responsible for providing logistics support to the U.S. military around the world. This, however, only held true for the start of the rotation.

At the beginning of the rotation, the FSC was able to coordinate with the support operations (SPO) section of the brigade support battalion (BSB) to request fuel. SPO then scheduled a DLA fuel truck to conduct a bulk-to-bulk Class III transfer in the FSC footprint of FOS Torun. This system, though now exercised in a forward environment, was very similar to how Fearless FSC was accustomed to operating at Fort Carson: if a support problem arose, they called SPO and allowed them to resource it.

In late June, approximately three months into the rotation, this system changed. Senior leaders ordered that the KBR contract for FOS Torun support be phased out and that Poland Provided Logistics Services (PPLS) provide all FOS support. Concurrent with this transition, funding for commercial line-haul movements was halted throughout the European

Taken at Swietzko Ammunition Supply Point, Poland. Operation Big Dunnage concludes as a forward support company convoy arrives at the ammunition supply point, Poland, July 2024. (Photo by 1LT Patrick Hann)

theater. While these changes affected all FOS Torun tenants, the FSC was the only unit that experienced a major operational impact. The FSC relied heavily on American-based contracts to support their assigned battalion, and the standard operating procedure for Class V ammunition draws was to line-haul munitions due to the distance between the ASP and the FOS.

Normally, if the FSC hits a resourcing roadblock, SPO is the first call. In this case, SPO was unable to assist. SPO was able to provide guidance on the new systems, but they were located approximately four hours away at DPTA and had their own transitional problems. Fearless FSC was virtually on its own, but this is what FSCs are designed to be.

The daily maintenance demands in an ABCT had an increased level of complexity from being forward deployed. These maintenance demands competed with leadership's ability to focus on addressing the rapidly changing life support, fuel, and ammunition situations. The maintenance control section was headquartered at FOS Torun, but had representatives at the Powidz Supply Support Activity and BPTA. These representatives had to independently coordinate with the 1221st Transportation Company to provide Class IX parts to Bull Battery. They also had to identify high-priority parts to be hand carried by the maintenance control section from FOS Torun to BPTA to repair pacing items essential to maintaining readiness on NATO's eastern flank.

Routine missions from FOS Torun to Powidz, BPTA, and the BSB had to be co-opted to support communications and electronics maintenance; test, measurement, and diagnostic equipment maintenance; and recoverable and repairable items management. The nearest laboratory for the Army Oil Analysis Program was in western Germany over 12 hours away, and each time samples were dropped off, the maintenance control section coordinated additional functions such as medical device services, transporting Soldiers to Landstuhl Regional Medical Center, or a high-priority parts pickup. Without leaders in the maintenance control section who could independently foresee and react to obstacles, addressing changing mission requirements and maintaining the fleet in the forward environment would have been impossible.

The first issue for the FSC to solve was fuel. The fuel section still had approximately 5,000 gallons of fuel from their last fuel draw, but with no scheduled refuel it was only a matter of time until they ran out, especially with artillery live-fire exercises approaching

quickly. The fuel section of the BSB was approximately six hours away and had tenant units collocated at DPTA that needed Class III(B) services. The BSB was unable to help. How then would the FSC provide fuel to the batteries they served?

The distribution platoon leader for Fearless FSC and the fuel NCOIC were tasked by the commander to fix this issue. They were given an end state: "figure out how to get fuel to support artillery tables VI-XIV as well as support day-to-day operations." They were directed to speak with the mayor cell, the local U.S. Government employees hired to manage the FOS. The mayor cell typically worked with KBR exclusively but were also transitioning to PPLS and had been working with the local Polish government much longer than had Soldiers local to FOS Torun.

The distribution team worked with the mayor cell to find a local army airfield approximately 35 minutes away that could provide fuel. The only problem was that no one had ever done it before. Therefore, it was up to the distribution team to contact the local nationals, plan a route, coordinate a timeline, and conduct the movement to and from the airfield. The team returned and briefed the FSC commander, and Operation Big Gulp was born. Operation Big Gulp supplied fuel to all units stationed at FOS Torun, to approximately six logistics units conducting convoy operations throughout Poland, and to artillery units outside 3ABCT conducting training for the remainder of 3-29 FA's stay in Poland.

Mission command was the main reason for Operation Big Gulp's success. The distribution team knew what they had to do, but they had no idea how to do it. No guidebook was available to them, and no system was in place. This was not the only issue brought up by the imminent contract transition, and higher-level leadership had no time to be closely involved with the process of securing Class III(B) for the battalion. They had to make their own system and process to accomplish the mission. Junior leaders were empowered to make decisions, and the command was freed to deal with other issues.

At Forward Operation Site, Torun, Poland, Soldiers line up to receive brunch from the containerized kitchen for Operation Big Eatz, September 2024. (Photo by CPT Sarah McCann)

One such issue was Class V ammunition draws from the Swiettzko ASP. Swiettzko is at least four hours away from Torun. Most Class V movements before May 2024 were made using commercial trucks to pick up and drop off ammunition. In late April to early May 2024, funding for 3ABCT line haul operations, and for most line haul operations throughout the European theater, was cancelled. Units now had to use military vehicles for most movements. For a majority of 3ABCT units this was not an issue. The BSB conducted most supply runs using Alpha Distribution Company's fleet of M1120 Load Handling Systems and SPO's network of contacts to coordinate movements. Fearless FSC was once again on its own, and the company executive officer (XO) and the distribution platoon were left to coordinate the receipt and transportation of ammunition and its turn-in for 3-29, a unit that is almost useless without ammunition.

Once again, the principles of mission command played a crucial role. The company commander was unable to personally coordinate the movement, so the platoon leader and XO were left to coordinate with outside entities such as the 21st Theater Sustainment Command and the movement control battalion to secure clearance for movement of hazardous goods in Poland. Such a key high-visibility mission generally requires command emphasis, but for an FSC it was just a normal Tuesday.

The FSC field feeding section generally flies under the radar. Their job is to provide food to the supported battalion. A good field feeding section is the most well-liked section of any maneuver battalion. Fearless FSC had one such section for the Poland rotation. Even though the section had few NCOs, this had no effect on its mission performance, and the transition from the KBR to PPLS dining facilities (DFACs) heightened the importance and visibility of the food services operations on FOS Torun.

After PPLS assumed DFAC responsibility, many Soldiers complained of unsanitary DFAC conditions, uncooked or inedible food, or stomach issues from their meals. To solve this problem, the local DLA contracting agent and the PPLS DFAC manager, the Polish military officer in charge, and the 3ABCT's preventative medicine officer worked with the Fearless FSC's field feeding NCOs to assess the DFAC and outline guidelines for the Polish civilian and military personnel working in the DFAC. This situation was monitored closely by U.S. Army Fifth Corps and the 1st Cavalry Division, the headquarters in charge of the units rotated to Poland. Important personnel appeared on the FOS for DFAC and transitional updates, and the junior NCOs of the field feeding team were called to assist with making decisions that affected diplomatic relations with the Polish military. Just as with fuel, ammunition, and maintenance operations, personnel were given an end state and guidelines but were allowed to operate as they deemed best.

While other military units are often faced with undefined problems such as this one, very rarely does it fall to such low-level leadership to solve issues that adversely affect an entire FOS. Typically, a unit commander or a battalion operations section is involved in implementing a new operating system for a renewed diplomatic agreement.

FSCs operate like this regularly. Low-level leaders are responsible for missions and tasks that are answerable at the battalion and brigade echelons. The FSC commander, while responsible for the entire company, cannot manage all the FSC's functions and must rely on mission command to empower their subordinates to complete the FSC's missions.

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1LT Mark Fitzpatrick serves as the executive officer of Fearless Forward Support Company 3rd Battalion, 29th Field Artillery Regiment, Fort Carson, Colorado. He was commissioned as a lieutenant of Transportation in 2022 and attended the Transportation Basic Officer Leaders Course. He has a Bachelor of Science degree in mechanical engineering from the U.S. Military Academy.

Featured Photo:
Soldiers from Cannon Field Maintenance Team and F Forward Support Company perform services on an M1068 Standard Integrated Command Post System using the crane from a maintenance platoon wrecker in a maintenance bay at Forward Operation Site Torun, Poland, June 2024. (Photo by MAJ Michael Dunn)

Intra-Theater MEDEVAC Risks During LOCE

By MAJ Robert Gipson

Multiple documents identify the Army's intra-theater medical evacuation (MEDEVAC) capability as insufficient to meet the challenges of multidomain operations (MDO) and large-scale combat operations (LSCO) against near-peer threats. This inadequacy is distinctively evident in the U.S. Indo-Pacific Command (USINDOPACOM) area of responsibility. Due to the large number of casualties sustained during the invasion of Normandy, the Battle of Iwo Jima, and the mass casualty events predicted during littoral wargames, the U.S. military must modernize and develop MEDEVAC capabilities uniquely suited for amphibious operations.

Since World War II, multiple military revolutions have transformed warfare, the weapons used, and the types of injuries sustained. Technological advancements have produced equipment capable of vertical lift at high speeds, night vision, advanced navigation and global positioning, and medical devices with advanced life support capabilities that sustain critically injured patients for extended periods. However, while civilian aeromedical services modernized and expanded, it took the Army 11 years of the war on terrorism to matriculate its first Critical Care Flight Paramedic (CCFP) class. This delay followed a 2012 study cited in the Journal of Trauma and Acute Care Surgery that revealed that patients' risk of 48-hour mortality when treated by National Guard CCFPs was 66% lower than when treated by the traditional MEDEVAC system.

Once developed, the Army's CCFP program demonstrated that specially trained 68W combat medics, providing pre-hospital critical care on dedicated air MEDEVAC platforms, increased survivability by 25%. Within five years of implementing the program, casualties during Operation Enduring Freedom who reached Role 3 medical treatment facilities (MTFs) alive had a survival rate of over 98%. This indicates that CCFPs equipped with portable, advanced life support equipment on dedicated and highly mobile MEDEVAC platforms are essential to reducing mortality. It also emphasizes the importance of MEDEVAC system mobility.

As shown in Joint Publication (JP) 4-02, Joint Health Services, the essential principle of mobility "ensures medical assets remain within supporting distance of maneuvering forces" so they can promptly transport patients from the point of injury to forward care facilities. As outlined in Army Techniques Publication (ATP) 4-02.55, Army Health System Support Planning, and ATP 4-02.2, Medical Evacuation, the mobility and proximity of medical assets allow medical teams to clear casualties from the battlefield and facilitate freedom of movement (FoM) and maneuver for tactical commanders. FoM then supports and is supported by air superiority.

Unfortunately, the air dominance and air MEDEVAC capabilities experienced in the war on terrorism are unlikely to persist during LSCO due to MDO's constraints on FoM and adversarial anti-access and area denial systems' ability to degrade air capabilities. Prolonged casualty care (PCC) is often proposed as the solution to these limitations, but PCC is not suitable or acceptable at Role 1 and 2 MTFs due to the logistical burdens it imposes and the associated risks to battlefield mobility for patients and medical personnel.

As we prepare for conflicts with contested logistics, the military must learn from the experiences of the war on terrorism and apply these lessons to develop capabilities suited for the next generation of warfare and MDO. To increase patient survivability, the joint force must develop amphibious MEDEVAC platforms and expand paramedic training for use during en route combat casualty care (ERCCC). By undertaking these initiatives, the military enhances interoperability, modernizes its forces, and stands prepared for littoral operations in a contested environment (LOCE).

Possible Approach

Integrating established air and ground MEDEVAC systems into existing ship-to-shore connectors is one approach to accelerate the development and fielding of a new amphibious MEDEVAC platform. As part of its Force Design 2030 initiative, the U.S. Marine Corps (USMC) is replacing its tracked Amphibious Assault Vehicle with the Amphibious Combat Vehicle (ACV). However, the ACV lacks a medical-specific variant.

By equipping a standard ACV with medical equipment from platforms such as the HH-60 Blackhawk, M1133 Stryker Medical Evacuation Vehicle (MEV), and the M1284 and M1285 Armored Multi-Purpose Medical Evacuation (AMEV) and Medical Treatment (MT) vehicles, the capability gap for amphibious MEDEVAC is solved. Additionally, using feedback from the production and deployment of ACVs and the systems aboard HH-60s, MEVs, AMEVs, and MTs significantly reduces the development time of an ACV-MEDEVAC (ACV-M) variant. This feedback also increases the ACV-Ms' suitability for amphibious MEDEVAC and makes their creation more feasible through targeted development and reduced production costs.

Given the maturity of existing ACV platforms, the need for extensive parameter and attribute development is reduced, with contemporary vehicles meeting most key

performance parameters and system attributes. These include net-centric communications systems that are interoperable in a joint environment; protection against light cannon fire, shrapnel, and 14.5-millimeter armor-piercing rounds; a mine-resistant hull and energy-absorbing seats; smooth operation during Sea State 3 conditions; heating, ventilation, and air conditioning; internal and external blackout lights for nighttime operations; amphibious movement (rated at top speeds of 65 mph on land and 6.9 mph on water); and a combined amphibious-land range of 13.8 miles and 250 miles.

Future requirements must focus on medical-specific modifications and enhancements to optimize treatment and evacuation capabilities. These include counter-drone and improvised explosive device systems; medical equipment sets that meet established standards of care for primary surveys; and reconfigurable compartments that allow for three crew members and six ambulatory or four litter patients, or three crew members and a combination of three ambulatory and two litter patients. Once complete, ACV-Ms provide land component commanders with an expeditious amphibious MEDEVAC capability that enables battlefield clearance of casualties from the littorals to higher levels of afloat medical care with adequate defense, protection, and patient survivability during LOCE. ACV-Ms also increase FoM and improve the amphibious forces' ability to continually deliver landing teams, vessel waves, and logistics over-the-shore operations.

Operational and Organizational Concept

As a concept, during an amphibious assault, a MEDEVAC is required. Landing-force ACV-Ms travel from amphibious assault ships in the rear area across the maritime environment using defilade provided by deep waters to reduce the risk of decisive enemy engagement. Upon arriving at the beachhead (close area), littoral casualties are collected and evacuated to casualty receiving and treatment ships. As landing teams push beyond the beachhead, their ACV-Ms follow in support or remain with shore-based battalion aid stations (Role 1) once established.

Army Role 2s, equipped with ACV-Ms and embarked on amphibious task force (ATF) ships, remain in the rear area supporting Role 1 to Role 2 MEDEVAC until they can establish shore-based MTFs. Role 3 field hospitals or hospital ships located in the support areas of maritime environments or on neighboring islands retrieve casualties from Role 2s via division-organic air MEDEVAC assets. During periods of low threat or when increased speed is necessary, ACV-Ms are delivered directly to beachheads or conduct maritime ambulance exchanges via light maneuver support vessels and other landing crafts, reducing MEDEVAC travel time.

Concept of Change

The need to "sustain the fight across long distances" is one of six operational imperatives highlighted by former Defense Secretary Christine Wormuth to provide a "survivable, agile, and responsive" joint force during her remarks at the 2023 McAleese Annual Defense Programs Conference. This modernized force is critical to deterring Russian aggression, maintaining a free and open Indo-Pacific, and outpacing the People's Republic of China. Integral to this is the emerging need to prepare for anticipated contingencies by developing an amphibious MEDEVAC solution. To facilitate such a platform's rapid development, production, and deployment, commanders in USINDOPACOM and U.S. Army Pacific must recognize this joint operational need and have it validated by the joint staff. These steps will ensure emergency funds are allocated for the materiel and that the joint force receives the capability in two years, allowing units to maximize the materiel's integration and training before armed conflict arises.

If LSCO occur, the Army can expect most casualties to die of wounds before they arrive at a Role 2 facility, as demonstrated through war on terrorism data. Of these casualties, roughly 25% will die of potentially survivable injuries. The mortality rates could be even higher if the Army does not resource this solution and provide improved combat care to Soldiers. This statement is supported by World War II data recorded in ATP 4-02.55, tables D-4c, d, and f, which depict amphibious operations accounting for the most casualties in Europe and the Pacific. Such high casualty rates will destroy the morale of America and deny her victory over her adversaries.

Impacts

If adopted, ACV-M fielding requires updates to existing Army doctrine due to present limitations. Current Army doctrine detailing shore-to-ship ERCCC is narrow in scope, with no field manuals or ATPs addressing amphibious MEDEVAC operations. ATP 4-15, Army Watercraft Operations, contains limited information on patient movement and only provides a paragraph on casualty evacuation (CASEVAC). ATP 4-02.2 identifies Army helicopters as the primary means for shore-to-ship MEDEVACs without specifying their role in support of amphibious operations. JP 3-02, Amphibious Operations, states landing forces must maximize patient movement through "use of ground and surface means," though it notes that "the preferred mode [is] via aircraft." This preferred mode involves non-medical "lift(s) of opportunity," since ATFs lack dedicated MEDEVAC platforms. While these CASEVACs may include Marine En Route Care System personnel, this is not explicitly stated.

Despite these doctrinal updates, ACV-M manning, sustainment, and deployment integrate seamlessly into current ambulance and evacuation teams' organizational structures, leaving them relatively unchanged and demonstrating the materiel solution's suitability and acceptability. Equipping, stationing, and training Soldiers on the vehicles require detailed planning to minimize friction during force integration. Units can begin training medical personnel and maintainers on the equipment now through the USMC Assault Amphibian Center of Excellence at Camp Pendelton, California.

Maritime and land components may update Service-specific policies to detail platform integration and usage across the joint force. Additionally, educating Army leaders on the employment, capabilities, and limitations of ACV-Ms is necessary. Facilities to house the platforms are not needed, but updates to maintenance bay equipment may be necessary as dictated by the platform's maintenance requirements and capabilities. Being amphibious, ACV-Ms must be organized into all land-based MEDEVAC and ambulance teams, prioritizing divisions where MEDEVAC is more likely from ashore to afloat roles of care. These include light and joint forcible entry airborne and air assault divisions, which are in development.

Readiness

This synchronized execution of ACV-M integration preserves Army readiness through the Regionally Aligned Readiness and Modernization Model, providing predictability and stability through deliberate modernization, training, and missions. This materiel solution fulfills the strategic goals of the DoD. ACV-Ms also immediately enhance military training and mission readiness by sustaining MEDEVAC capabilities and enabling tactical-level commanders to conduct a range of military operations across the competition continuum. ACV-Ms may also face momentary cultural resistance to integration, since most 68Ws are unfamiliar with the Army's mariner culture.

Despite their enduring presence aboard logistics support vessels, as a primarily land component, combat medics may struggle to identify with operating across maritime environments. In the long term, this paradigm shift toward amphibious operations increases warfighter readiness and cultivates agile formations. ACV-Ms will also conserve fighting strength and reduce mortality in the long term, supporting the Army's medical operational planning factors by saving lives, clearing battlefield casualties, and ensuring an early return to duty. These objectives depend on external support from the USMC and the Navy, who by design assist in the deployment of Soldiers to and from maritime environments, thus fostering and developing joint interoperability between the Services to ensure mission success.

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Featured Photo:
A flight medic with the Combat Aviation Brigade, 1st Armored Division, raises a hoist with rescue seat carrying two Soldiers during an air medevac training exercise at Grafenwoehr Training Area, Germany, April 16, 2025. (Photo by CPT Leanne Demboski)

Offensive Logistics

Transforming Sustainment into a Weapon

■ *By MAJ Tony Grajales*

Imagine an operational environment in the near future. Inside a main command post, a decision is made quickly but agonizingly. Over a radio net and the Maven Smart System, the division commander receives two competing reports. First, a maneuver brigade task force, en route to the final line of objective to set conditions for the end state, moves toward terrain under enemy counterbattery fire. Second, the division support area (DSA), buried in a thicket of trees and hastily fortified, is receiving coordinated fires from an enemy artillery group to the northeast. Both elements are exposed. Both are essential. But only one can be covered by the division's limited counterfire and protection resources.

The commander makes his decision. "Support the maneuver," he says without hesitation. "Tell the division sustainment brigade to displace."

Reviewing military history, this is not a new kind of choice. It is a familiar scenario, often framed as prioritizing the offense over the support. The forward over the rear. But what if that dichotomy is wrong? In his monograph *Bringing Order to Chaos: Historical Case Studies of Combined Arms Maneuver in Large-Scale Combat Operations*, retired LTC Dr. Peter J. Schifferle warns that the wars of the future will be waged not just with firepower but with a mindset accustomed to uncertainty. He urges leaders to embrace unpredictability rather than recoil from it. Yet, within the realm of sustainment, chaos is not merely a condition to be managed but a weapon to be wielded. For too long, military logistics has adhered to a defensive paradigm. It is a system of predictability, cycles, and vulnerabilities waiting to be exploited by the enemy. But what if sustainment forces could do more than endure the enemy's disruptions? What if they could turn logistics into an offensive capability, one that disrupts, disintegrates, defeats, or isolates the enemy's sustainment networks before they ever become a threat? What if the support is the offense? What if the sustainment force is not just the enabler, but the disrupter?

As the Army reorients toward large-scale combat operations against peer threats, the division sustainment brigade (DSB) cannot remain tethered to a defensive mindset. Survivability alone will not preserve freedom of action. Sustainment formations must be weaponized and capable of shaping, deceiving, fixing, and even striking. In short, the Army must sustain in contact through offensive logistics.

The Problem with Survival as Strategy (A Negative Goal)

DSAs, designed as mobile sustainment hubs, have traditionally relocated to avoid detection and maintain responsiveness. However, in today's environment of persistent intelligence, surveillance, and reconnaissance (ISR), long-range precision fires, and electronic warfare (an imperative of operations), mere movement is no longer a shield.

The problem is not just the enemy's reach, but our predictability. Sustainment operations, including convoy schedules, fuel cycles, and ammunition drops, often follow set rhythms and rely on fixed nodes. This predictability becomes a vulnerability, exposing logistics units to preemptive targeting. Proof of this lies in much analysis of the Institute for the Study of War's Russian Offensive Campaign Assessment, which shows that Ukraine continues to target sustainment nodes to great effect.

As Clausewitz noted, defense may be stronger, but only offense imposes will. The OODA loop (observe, orient, decide, act) reminds practitioners that if the enemy can observe and anticipate our actions, then they can act faster, seizing the initiative. Thus, logistics must evolve. To merely endure is to fall behind. The future of sustainment lies not in reactive defense, but in disrupting the adversary's capacity to threaten logistics forces at all.

Offensive Logistics: A New Paradigm (A Positive Goal)

Offensive logistics is not a break from doctrine, it is a transformation. It reframes logistics as more than a supporting effort, and it becomes a means to impose operational pressure and disrupt the enemy's ability to fight. By weaponizing sustainment, commanders gain a new lever of influence.

At its core, offensive logistics targets the enemy's ability to maneuver, sense, and sustain. Field artillery units, for example, rely on predictable patterns of resupply,

recovery, and displacement. These dependencies become exploitable vulnerabilities that a sustainment unit can attack. Rather than simply defending friendly logistics nodes, sustainment forces can exploit the enemy's logistics nodes.

This new philosophy is defined by four core functions:

- Disrupt enemy supply lines before they reach the fight.
- Disintegrate sustainment cohesion through deception, interdiction, and precision strikes.
- Defeat logistics capabilities by rendering supply nodes and convoys untenable.
- Isolate combat forces by cutting them off from fuel, ammunition, and reinforcement.

History offers powerful reminders of this type of practice. GEN Sherman's March to the Sea devastated Confederate logistics, accelerating the collapse of resistance. In Desert Storm, the targeting of retreating Iraqi forces on the Highway of Death severed their sustainment lifelines. In both cases, logistics was not just an enabler of combat, it was offensive and decisive.

Applying Offensive Logistics

While not a maneuver unit in the traditional sense, the DSB possesses mobility, contracting, intelligence, engineering, fabrication, and data capabilities that can be directed offensively. Offensive logistics during a Transformation in Contact (TiC) 2.0 environment requires a fundamental shift in how sustainment forces are employed. It must be less predictable, more mobile, and deeply integrated into operational planning. Sustainment must move beyond support to become a shaping force on the battlefield. That means embedding logistics planners in targeting cells, integrating cyber and AI tools to reduce predictability, and enabling sustainment formations to execute deception, interdiction, and precision disruption against enemy logistics. This is not just a refinement of doctrine, it is a convergence of maneuver and sustainment into a unified, offensive-minded strategy.

The DSB is uniquely positioned to operationalize this shift. By employing logistics deception nodes that mimic DSAs, the DSB can fix enemy fires into kill zones. Through counter-logistics raids, sustainment assets can exploit gaps and directly deny enemy forces the ability to rearm or refuel. Predictive targeting, driven by logistics data trends, can identify enemy resupply actions before they happen, cueing division fires to interdict convoys in motion. Recovery ambushes and terrain denial operations use classic sustainment tasks like recovery, fabrication, and mobility as offensive tools. Even cyber integration allows logisticians to disrupt enemy sustainment digitally, injecting confusion and friction into their operations. Together, these actions redefine logistics not as a passive necessity, but as an active instrument of operational advantage.

In a fictional operational environment, a DSB can starve a High Mobility Artillery Rocket System (HIMARS) battalion by targeting its Class V (rocket) resupply. Instead of pursuing mobile launchers, sustainment planners analyze firing patterns to predict resupply windows and routes. Forward positioned maintenance recovery teams deploy ISR sensors disguised as maintenance assets near enemy ammunition supply points (ASPs). Engineers crater key main supply routes while decoy convoys and dummy ASPs distort enemy logistics routing. Sustainment informed target decks, fed to the division targeting cell, prioritize reload vehicles and mobile ammo handling sites over launchers. Simultaneously, electromagnetic spectrum teams jam logistics command and control nets, isolating the HIMARS from its supply nodes. Deprived of rockets, the battalion becomes inert. Offensive logistics turns sustainment into a weapon that deceives, disrupts, and denies the enemy, while friendly convoys maneuver freely, delivering multiclass resupply to American forces.

Creating the Offensive Logistics Cell

To fully operationalize offensive logistics, DSBs must establish a dedicated offensive logistics cell within the support operations (SPO) section. This cell synchronizes planning, targeting, deception, and sustainment capabilities to support the division's shaping and maneuver operations. Composed of a mobility officer or warrant officer, an S-2 planner focused on enemy sustainment, allied trades and fabrication leads, a cyber or signal liaison, a deception planner, an engineer officer, and a fires integration officer linked to division G-3 and fires, the offensive logistics cell transforms sustainment from a support role into a combat multiplier. Its mission is to weaponize sustainment operations. This is not about moving beans and bullets faster, it is about using them to create dilemmas for the enemy.

The Future of Offensive Logistics

Future combat, whether in the European, Pacific, African, or Middle Eastern theaters, demands more than survivability, it demands initiative. For too long, defensive logistics has defined our posture. Sustainment nodes are too big and predictable to rely on maneuver units for protection, especially during dynamic task organizations. The future belongs to sustainment forces that impose friction, disrupt enemy timelines, and shape the operational environment. Offensive logistics is that future. Army leaders must recognize that logistics is not just a back-end function, and that it can also be a forward leaning tool of influence. Sustainment formations must be agile, unpredictable, and ready to act offensively. Adaptability must replace predictability. With this new paradigm, this logistics transformation does not just support the fight, it helps win it.

Conclusion: Bringing Sustainment to the Chaos

The fictional division commander is not wrong to prioritize maneuver, but in future combat, that decision must no longer come at the expense of the DSB. A sustainment force postured for offense does not just survive, it helps eliminate the threat. This is the transformation demanded by the TiC 2.0 initiative. With new technologies, Army structure changes, and a mindset that adapts to the operational environment, sustainment operations can lead to an end state congruent with the theater's strategy. This is not a call to abandon doctrine, but to transform it to wield logistics not just as support, but as strategy.

Offensive logistics reframes the sustainer as a combat enabler and combatant. Through deception nodes, predictive targeting, recovery ambushes, and cyber-logistics integration, sustainment becomes a second front. Operations that dislocate, disintegrate, defeat, and isolate. A dedicated offensive logistics cell, embedded within SPO, makes this possible. This team ensures logistics is no longer an afterthought in targeting but a source of targets.

As Dr. Schifferle writes, "Our mindset, our values, and our culture on training, education, and unit readiness must continue to adapt to the changing operational environment." That is why offensive logistics is an idea worth considering. It targets the systems that hold the enemy together. It changes the operational environment in our favor by doing so, and it gives sustainment commanders something they rarely possess, initiative in offensive operations.

In this new paradigm, sustainment does more than keep the fight going. Sustainment shapes, deceives, denies, and wins. Victory will not go to the side that moves the most, it will go to the side that starves the other of the chance to fight at all.

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SUSTAINMENT IN THE DATA AGE

Embedding Adaptability into Curriculum and Culture

By LTC Ryan Miller and MAJ Brian Johnson

The competition is open quarterly to current ASU students and faculty. Visit the ASPB website for more information.

From the contested landscapes of Eastern Europe to the vast expanses of the Indo-Pacific, today's Army confronts a complex and ever-changing operational environment. Meeting these diverse challenges demands a future-focused approach to sustainment, one where data-centricity is not a destination but a journey of continuous learning and adaptation. While the Army's modernization efforts, including the Integrated Personnel and Pay System-Army and the forthcoming Army Data and Analytics Platform, promise unprecedented data capabilities, they also underscore the need for continuous transformation within our training and education systems. The Army must build on the concepts of data literacy and cultivate a culture that embraces lifelong learning. Embedding adaptability into sustainment curriculum fosters a growth mindset, which allows sustainers to master not just today's tools but the tools of tomorrow.

Building a Digital Data-Centric Sustainment Force

The Army Data Plan and DoD Data Strategy laid the foundation for treating data as a strategic asset, leading to increased training and integration efforts across the force. Initiatives like West Point's Data Literacy 101: Train the Trainer program have played key roles in percolating data literacy skills throughout the Army by empowering representatives to educate their respective formations. Building on these efforts, Army Sustainment University (ASU) executes a multitiered data education strategy, which maps data literacy skills to sustainment warfighting functional requirements.

Currently, this education is delivered through two levels: Level I (foundational), a 16-hour course covering basic data literacy, computational methods (spreadsheets), and math concepts (statistics); and Level II (intermediate), a 40-hour course building on foundational concepts and covering skills such as data wrangling, exploratory analysis, and data source management. In addition to foundational courses, ASU offers the 10-day resident Data Analysis and Visualization Course, which builds on foundational concepts and provides more in-depth training on tools like Excel and Power BI for data-driven logistical problem solving. To expand access to data education, ASU is also developing a 16-hour asynchronous Data Education for Logisticians Interactive Multimedia Instruction course, slated for release in October 2025. This self-paced online format will provide data training to a wider audience, including new civilian hires, and will enable sustainers to revisit specific data education skills when the need arises for implementation at their respective units.

These initiatives provide a solid foundation, but to truly empower a data-driven sustainment community, ASU focuses on bridging the gap between software proficiency and the development of enduring, adaptable analytical skills. This requires a deliberate focus on cultivating habits of mind that transcend specific tools and technologies, while ensuring academic rigor aligns with the practical demands of data-driven decision making in a rapidly evolving technological landscape.

Developing Enduring Data Skills

While the Army's commitment to data literacy is a vital first step, cultivating a data-centric force requires enduring data skills that extend beyond tool proficiency. While current systems like Excel or Power BI are important, sustainers must develop adaptable, analytical habits of mind — the ability to strategically approach data challenges regardless of the software systems or tools. Building on the foundation of data literacy, education curriculum must balance software proficiency with the development of these enduring competencies, ensuring sustainers can adapt to new technologies and evolving mission demands throughout their careers.

The Operations Research and Systems Analysis (ORSA) Military Applications Course (MAC) offers a valuable model. ORSA MAC maintains a dynamically updated online supplement to its curriculum, ensuring students, graduates, and the broader ORSA community have access to the current tools and, more importantly, the latest approaches or techniques. The ORSA curriculum focuses on technology-neutral objectives — for example, "answer a research question through hypothesis testing"

— allowing instructors to select appropriate software while teaching fundamental ORSA techniques. Most importantly, students are encouraged to combine classroom instruction with outside research to solve ill-defined problems. This approach is further cultivated by the feedback provided by operational ORSAs external to ASU during validation exercises.

As a result, the curriculum remains agile and relevant, empowering students of today to meet the demands of the rapidly changing environment.

Cultivating a Culture of Continuous Learning

To foster this culture of continuous learning and adaptability, a robust knowledge-sharing ecosystem must be established within the sustainment community. This begins with a centralized digital repository, modeled after those common in academia, where faculty, students, and sustainment professionals contribute to and access data-related research, case studies, and best practices. This repository will provide a valuable resource for sustainers seeking to expand their knowledge, apply proven methodologies to new challenges, and contribute to the growing body of knowledge in data-driven sustainment. The community could leverage existing platforms such as the Center for Army Lessons Learned (CALL), expanding its scope to include a dedicated focus area for data-related lessons learned from sustainment operations. By capturing and disseminating these insights, sustainers ensure that valuable knowledge gained in the field is readily accessible to the sustainment community.

While the Army's commitment to data literacy is a vital first step, cultivating a data-centric force requires enduring data skills that extend beyond tool proficiency.

Opportunities for sustainers to connect and collaborate in person will complement the digital repository. Regular workshops, potentially held at organizations like ASU or during major training exercises and training centers, will provide dynamic learning environments where participants engage in hands-on exercises, share best practices, and explore emerging data analysis tools and techniques. These workshops could be tailored to specific sustainment functions (e.g., logistics, maintenance, transportation) or focus on broader data analysis themes, such as predictive modeling, data visualization, or risk analysis. The interactive nature of these workshops will allow sustainers to learn from each other's experiences, build professional networks, and gain practical skills applicable to their unique operational contexts.

These workshops and the digital repository could be further enhanced by leveraging the content and audience of the *Army Sustainment Professional Bulletin*. The bulletin already features articles on data-driven logistics, supply chain optimization, and predictive logistics. Collaboration between the sustainment community and *Army Sustainment* would amplify this impact by focusing on in-depth case studies of successful data-driven projects and explorations of emerging analytical techniques and technologies. These articles would provide practical examples and actionable insights for sustainers seeking to apply data analysis within their own operational contexts. By highlighting these real-world applications of data analysis, a community of continuous learning among sustainment professionals is fostered.

A Soldier with 510th Human Resources Company, 10th Division Sustainment Troops Battalion, 10th Mountain Division Sustainment Brigade, familiarizes themselves with the Integrated Personnel and Pay System as part of the company's quarterly 'Regulator University' at the Education Center on Fort Drum, New York, Aug. 23, 2023. (Photo by SFC Neysa Canfield)

Conclusion

As the Army continues to transform into a digitally data-centric force, ASU plays a vital role in equipping sustainers with the skills and mindset needed to navigate this evolving landscape. Building on the foundation of data literacy, ASU is well positioned to embrace an increasingly agile and adaptable approach to data education, one that balances software proficiency with the cultivation of enduring analytical skills. By fostering a robust knowledge-sharing ecosystem, leveraging existing resources like CALL and *Army Sustainment*, and creating opportunities for collaboration through workshops and conferences, the sustainment community empowers its members to become not just consumers of data, but also insightful analysts and innovative problem solvers. This transformation is essential for ensuring the Army's logistical readiness and strategic advantage in an increasingly complex and data-driven world. Investing in the continuous learning and adaptable capabilities of sustainers ensures that the Army remains equipped and ready to prevail on any battlefield.

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LOGISTICS SCENARIO EXERCISE SOLUTION

Answer

CCL 3 space requirement is 8 x pallets positions and weighs approximately 14,864 lbs.

There are multiple correct answers.

1. Sling load – 1 x CROP - CH-47
   a.(40 minutes from DSA with planning speed of 80 knots)
2. Airland – CH-47
   a.(29 minutes from DSA with planning speed of 110 knots)
3. Airdrop – Type V Platform – C-130J
   a.(36 minutes from JSA with planning speed of 135 knots)
4. Airdrop – 8 x Low-Cost Aerial Delivery System (LCADS) Bundles – C-130J
5. Airdrop – 8 x Container Delivery System (CDS) Bundles – C-130J
   *** The number of bundles will differ depending on configuration.

Analysis

The three methods of aerial delivery are air drops, sling load, and airland. For the scenario, all three are feasible solutions. Given the scenario on the ground, space available, and assets across the division and higher, both aerial platforms can be used. The aerial delivery method that best suits the situation will be dependentdepend on the supported unit and division commander's assumption of risk. The DSB SPO transportation staff officers will have to effectively communicate the risk associated with each method.

All three methods of aerial delivery have advantages and disadvantages but all are all affected by weather considerations. Airdrops shorten time of delivery, reducing exposure to air assets, and distribute the Class IV across the drop zone. However, the downsides to airdrops are they require significant planning with the Air Force, require dedicated rigging teams, and do not allow for pinpoint accuracy. Advantages to both sling loads and airlands are the reduced planning time, pinpoint distribution, and gives the supported unit backhaul capability. for the supported unit. However, the downsides to both methods include the requirement for sling -load inspectors, exposure time for an aircraft due to either picking up or dropping off equipment, and the recovery of equipment.

Advantages of sling-load operations for this mission set include reduced planning time, pinpoint distribution, and provides backhaul capability. Disadvantages include potential weather impacts, the requirement for sling -load inspector-certified personnel, and recovery of sling-load equipment. Advantages for airdrop for this mission set include speed of delivery, reduced air asset exposure, ability to distributedistribution of the Class IV across the drop zone, and no requirement to recover LCADS will not require recovery. Disadvantages of airdrop include longer planning timeline with the Air Force, dedicated rigging teams, notno pinpoint delivery, and no backhaul capability.

References

Army Techniques Publication 4-48, Aerial Delivery
Training Circular 3-21.220, Static Line Parachuting Techniques and Training
Technical Manual 3-34.85, Engineer Field Data
Technical Manual 4-48.02, Airdrop of Supplies and Equipment: Rigging Airdrop Platforms; Airdrop Derigging and Recovery Procedures; Reference Data for Airdrop Platform Loads
Technical Manual 4-48.03, Airdrop of Supplies and Equipment: Rigging Containers
Technical Manual 4-48.12, Airdrop of Supplies and Equipment: Rigging Typical Supply Loads

Logistician Takeaways

Aerial delivery is an under-utilizedused method to provide sustainment to the warfighter. Given our training priority shifting to large-scale combat operations, the threat to aircraft will increase due to advanced anti-aircraft weapon systems and availability of aircraft. However, as a logistician, creative thinking will have you identifying multiple courses of action to solve the most complex sustainment problem sets given certain situations. Use your subject matter experts and do not discount the different methods you have available to you.

Army Sustainment Command's LSE-D

and Extending the Division's Operational Reach

By LTC James "Jim" Fager and MAJ Benjamin Myhren

How does U.S. Army Materiel Command (AMC) impact the tactical fight? The ability to leverage the entirety of the U.S. supply chain, from the commercial and organic industrial base all the way to the forward edge of battle in large-scale combat operations (LSCO) is essential. So, if the integration of the strategic sustainment enterprise capabilities at the tactical level is of critical importance in LSCO, how can that be accomplished? This question resonates with maneuver and sustainment leaders alike. To answer this, AMC already has an element that executes this mission: the logistics support element-division or LSE-D.

To truly integrate sustainment from the strategic through the tactical level, the LSE-D must be integrated with the division at the division sustainment brigade (DSB), division G-4, and deputy commanding general-support (DCG-S) levels. Integration goes beyond the historical Class IX (consumable repair) parts-searching as in the days of the brigade logistics support team, which was the norm during the war on terrorism. To be relevant, the LSE-D must apply a more holistic support construct across warfighting functions. This goes beyond simply pulling data and fulfilling support requests, because that is insufficient to meet the maneuver commander's requirements in LSCO. It necessitates the LSE-D to be proximal to tactical conversations to identify sustainment options at the operational, theater strategic, and the national strategic levels to influence the pace of battle. To do this effectively, LSE-D members must be uniquely familiar with the theater and capabilities available and apply that knowledge creatively. The LSE-D must find solutions that the supported unit did not even know they needed, and did not necessarily know to request. This is no small task, and if done correctly, the LSE-D can be a true force multiplier to the supported division. To lay out this concept out effectively, it is necessary to explain the genesis of the operational framework, highlight the validation effort so far, and identify a pathway to full implementation.

The Genesis of this Concept

The current doctrinal framework for the LSE-D is described in Army Techniques Publication (ATP) 4-98, Army Sustainment Command Operations, and ATP 4-70, Assistant Secretary of the Army for Acquisition, Logistics, and Technology Forward Support Team Operations. The baseline mission states that the LSE-D must deploy with the supported division to provide sustainment support. This gives neither a framework for support nor expectation management for the supported division in a LSCO environment. It is necessary to define roles and responsibilities in combat. To get closer to this, here is a proposed alternate mission statement that supports an LSE-D construct:

Mission Statement: On order, the Army field support battalion logistics support element-division (LSE-D) is a scalable command node that integrates planning though all operational phases; provides Classes of supply II, III, V, VII, VIII, Medical Materiel, IX, and X sourcing solution support; visibility of operational, strategic stocks (theater and national); and mission command of all AMC capabilities in assigned area of responsibility to enable execution of the supported command's mission worldwide.

The LSE-D LSCO Construct

From a practical application perspective, the necessary construct for LSE-D support in LSCO operations is not currently replicated at either combat training center (CTC) rotations or in Operation European Assure, Deter, and Reinforce (EADR). CTC rotations have a distinct focus on building combat power and sourcing Class IX from the enterprise level. Additionally, there is usually an overabundance of Life Cycle Management Command (LCMC) logistics assistance representatives (LARs) at CTC rotations that are not replicated in LSCO. While the LAR scarcity in Europe for Operation EADR gets closer to replicating LSCO, the mission does not replicate the operational stressors of combat. These gaps prepare neither the LSE-D members nor train the supported division for LSCO. This LSE-D construct sets out to address these shortfalls by developing a single concept that integrates all AMC capabilities in support of a division across the full range of military operations.

This LSE-D framework meets the AMC leadership's intent to integrate strategic capabilities. Specifically, this concept provides relevant information to divisional leadership and provides expanded planning efforts through a strategic sustainment capabilities lens. The LSE-D construct is scoped to specific Class II (general supplies), III (fuel, visibility only), V (ammunition), VII (major end items), VIII (medical material), IX (repair parts), and X (humanitarian aid) items. This framework also includes providing visibility of theater Logistics Civil Augmentation Program capabilities (contracted food service options, mortuary affairs, internally displaced persons camps, etc.), materiel availability, and Army prepositioned stocks status, while simultaneously

providing visibility of the supported divisions sustainment requirements to the enterprise. To accomplish this level of integration requires the LSE-D to have visibility from tactical, up through the operational, theater, and national strategic levels to understand the holistic scope of support possibilities in LSCO.

The LSE-D has a bifurcation in mission focus, both providing visibility and options to the supported division and providing the sustainment enterprise visibility of tactical requirements in LSCO. In a multi-division or a multi-corps fight, this becomes invaluable. LSE-D integration paired with access to the division's running estimates provides essential data to the sustainment enterprise. LSE-Ds must also provide necessary options to help the division fight through in phase transitions (forward passage of lines, wet gap crossing, etc.). This also requires the LSE-D to not only provide in-phase support, but also to look two phases ahead of divisional operations. Needing to understand what is needed to support reconstitution/replacement operations and anticipating the transition to phase IV of operations requires the LSE-D to initiate and, if necessary, drive those conversations with the supported division.

This is no small task for an element that consists of only eight personnel (four military and four Department of the Army Civilians). LSE-D members bring a wide range of knowledge and expertise that is essential for translating enterprise sustainment options that could impact tactical decisions of the supported division. The key piece about the LSE-D is that it operates as the central point of information/knowledge for enterprise statement capabilities. Conceptually, the LSE-D is the Google Translate of the sustainment enterprise, designed to extend the division's operational reach to meet the commanding general's (CG's) mission objectives.

If the LSE-D is to effectively support a divisional fight, it is necessary to have transparency in regard to readiness and sustainment requirements. The LSE-D works exclusively with the sustainment systems of record because it is the only way to maintain visibility across all members of the sustainment enterprise. This must be understood at the division level because if a requirement is not in the system of record, the enterprise cannot support the requirement, because in essence the requirement does not exist.

The LSE-D integrates at the division level to enable the division to see what the sustainment enterprise sees. The division must identify where there is a discrepancy between unit reporting and the system of record. Simply put, ego and readiness are not compatible. Units must be ruthless about entering faults into the system of record if they hope to maintain the tempo of the fight.

To provide this essential support relationship in LSCO, the LSEs must be integrated at echelon to provide requirement validation as the division submits their request up through the corps and theater levels. At the corps level, the LSE-Corps (LSE-C) provides integration under the same LSE construct, while the theater Army field support brigade (AFSB) provides strategic sustainment enterprise integration across the joint security area. This allows sustainment requirements to be simultaneously viewed and interpreted at the operational, theater strategic, and the national strategic levels, allowing the enterprise to action materiel solutions based on geographic combatant commander priorities more effectively. This, in turn, allows the LSE-D to relay strategic and operational capabilities, materiel, and priorities directly into the division CG's decision cycle. The LSE-D is the strategic plug to provide enterprise solutions for the LSCO fight.

LSE-D Integration

LSE-D integration with the division sustainment; protection; fires; signal; chemical, biological, radiological, nuclear, and explosives; finance; and contracting functions is a necessity to be effective in LSCO. This integration occurs in the division's rear command post in the proximity of the division sustainment leaders: DCG-S, assistant chief of staff sustainment (G-4), DSB support operations officer, and the DSB commander. This collaboration allows the LSE-D to be involved in proximal conversations to understand challenges and tactical changes to identify possible enterprise sustainment solutions. It requires more than co-location and integration to be effective. The LSE-D must have established relationships to anticipate requirements as a key partner in sustainment discussions. These relationships must be built and strengthened with the division staff and the DSB prior to conflict. The cultivation of these relationships and integration framework must be fostered at home station battle rhythm events and during the divisions' training progressions during command post exercises (CPXs), warfighter exercises (WFXs), and divisional CTC rotations. The LSE-D applies the strategic lens to help the division see itself for LSCO only by understanding the plans, policies, and running estimates provided by the supported division by leveraging relationships effectively.

The Way Ahead for the LSE-D Concept

This LSE-D concept has been tested and validated during 1st Infantry Division's (1ID's) CPXs and a WFX in fiscal year 2024 by Army Field Support Battalion-Riley. To fully validate this concept, the LSE-D culminated this test with 1ID's divisional rotation 25-03 at the National Training Center, Fort Irwin, California, in January 2025. The validation sought to operate with the 1ID headquarters in the dirt, providing mission command to replicate LSCO in a more practical way than CPXs or WFXs can simulate. This division CTC rotation was where lessons learned from two years of development, experimentation, and execution of this concept all came together. Additionally, this rotation furthered the 407th AFSB's efforts to expand LSE-D's data and analytics and artificial intelligence (AI) capabilities integration, with a focus on Class IX descriptive analytics to help 1ID to more effectively see themselves and integrate the sustainment enterprise. This model will help address decisions such as Class VII reconstitution/replacement operations and how global materiel availability can impact decisions at the tactical level. All these efforts are geared toward changing the way we think about divisional readiness and strategic sustainment support to help prepare the wider force for LSCO regardless of when they occur in the future.

Requirements to Move this Concept to Full Implementation

There are several steps required to get this concept out of the realm of discussion and into employment beyond the limited example of a singular validation:

- Validate decisions that the LSE-D seeks for the supported division during LSCO.
- Codify the LSE-D tactical standard operating procedures.
- Codify in doctrine the LSE framework and responsibilities during LSCO.
- Expand this concept to the LSE-C level to create reinforcement at echelon.
- Expand the integration of data analytics and AI to create opportunities for the LSE-D.

This LSE-D concept allows AMC to better integrate sustainment enterprise capabilities and resources at echelon to directly impact LSCO. This concept does not just enable the supported division to see themselves, but highlights enterprise sustainment options to impact the battle. In the end, it is about relationships, integration, and a willingness to find options to support future combat operations across the full range of military operation to help the U.S. fight and win future conflicts.

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MAJ Benjamin Myhren serves as the executive officer for Army Field Support Battalion-Riley at Fort Riley, Kansas. His most recent assignment was as the support operations officer for Army Field Support Battalion-Riley where he served as a logistics support element-division officer in charge for multiple operations. He is a graduate of the Theater Sustainment Planners Course, Eisenhower Leadership Development Program, and the Command and General Staff College. He holds a Master of Science in project management from Florida Institute of Technology and a Master of Arts in organizational psychology and leadership from the Teacher's College at Columbia University.

Feature Photo:
Army Joint Light Tactical Vehicle and a Bradley Fighting Vehicle, assigned to the 1st Cavalry Division, III Armored Corps, conduct convoy operations on Fort Hood, Nov. 13, 2024. (Photo by SGT Joshua Tanner)

DEPLOYING

AN EXPEDITIONARY SUSTAINMENT COMMAND

By BG Vivek Kshetrapal

An expeditionary sustainment command (ESC) performs sustainment operations for field armies and corps. It encompasses 74 military occupational specialties (MOSs) and 40 sections and branches. Preparing such a complex and multifaceted unit for deployment demands a careful strategy that optimizes time, resources, and personnel. This article presents a systematic approach to achieving this objective.

Get Guidance and Give Guidance Often

With few exceptions, most Army deployments have either been conducted before or closely resemble similar mission sets executed by units and leaders. As a rotational ESC to U.S. Central Command, we drew on the experience and insights of leaders from the previous decade. Leaders generously shared their knowledge and lessons learned. This information, along with discussions with the current chain of command and experienced Soldiers, informed a written, published, and version-controlled commander's planning guidance.

Field Manual 5-0, Planning and Orders Production, states that the commander's "planning guidance outlines an operational approach, which is a description of the mission, operational concepts, tasks, and actions required to accomplish it." Given the wide variety of MOSs and functions performed by an ESC, along with the staffing challenge of adding team members throughout the deployment timeline, we found that broadly shared written planning guidance enabled Soldiers and leaders to identify the specified, implied, and essential tasks for their sections and to ensure these tasks were reflected in collective training events. Furthermore, it helped Soldiers quickly get up to speed with the command's planning as the unit onboarded them. As we continued to gain insights from others, including challenging previously held beliefs, we published updated guidance to the entire formation.

Train as You Fight — Master the Battle Rhythm

The primary weapon system for an ESC is its battle rhythm. A headquarters battle rhythm consists of meetings, briefings, and other coordinated activities with specific times and purposes. It represents a deliberate daily cycle of command, staff, and unit activities to synchronize current and future operations.

Synchronizing 40 branches and 253 personnel to sustain a dynamic theater requires extensive practice with the battle rhythm. Fortunately, the Sustainment Exercise and Simulation Directorate, a subordinate unit of the Combined Arms Center located within the U.S. Army Combined Arms Support Command, was available to assist us. Through their Sustainment Simulation Staff Training program, we developed a low-overhead simulation to replicate deployment battle rhythm events during home station battle assemblies.

By creating detailed seven-minute drills for these boards, bureaus, and working groups, we began to understand the types of running estimates and information required as inputs for these meetings and the outputs and visualizations we needed to create. This training also helped shape our ideas about the sequencing and frequency of the meetings that constitute the battle rhythm.

Pre-Mobilization Training Design and Considerations

Filling out a deployment manning document for an organization as large as an ESC is a complex process that does not occur overnight. The organization's manning strategy may not always align with its training strategy. Major subordinate commands schedule deploying units for command post exercises (CPXs), warfighter exercises (WFXs), and other events, even if the unit is not at full strength or consists of personnel who will not deploy.

It is crucial to tailor training objectives to the available personnel and for sections to manage any misalignment. This approach implies that while achieving mission essential task (MET) proficiency during the training event may be impractical, the focus can shift to critical steps and supporting collective tasks within those METs. An extended training plan is also necessary to ensure that understaffed sections catch up. As a Component (COMPO) 3 organization, we introduced monthly virtual academic sessions to offer additional training repetitions and to onboard new personnel.

When an external organization or trainer initiates collective training using a master scenario event list (MSEL), balancing the number of injects with the time needed for practical staff work is essential. While multiple injects engage the staff and create the intense atmosphere necessary to evaluate Soldiers and leaders before deployment, they often impede the staff's ability to complete the operations process as they swiftly transition from one inject to another. My failure to limit injects in our organization meant the staff did not receive adequate practice in executing the entire operations process, developing and revising running estimates, and creating operational visualizations for the commander. As a result, we spent the initial months of deployment learning to develop those skills.

Given the size and capabilities of the ESC staff and limited training time, we must seize every moment as a training opportunity. We leveraged the military decision-making process and the orders process, culminating in a rehearsal-of-concept drill for our movements to annual training and other administrative moves. This strategy provided multiple sections with extra training repetitions before deployment.

Leverage Available Training Resources

Fort Knox, Kentucky, is an exceptional training ground for ESCs. It houses the well-equipped Fort Knox Mission Training Complex (FKMTC) and the 1st Theater Sustainment Command (TSC)

main command post, both of which facilitate training METs.

The FKMTC allows ESCs to task-organize as they would in a deployment. They can set up a current operations information center or a sustainment operations center and perform various battle rhythm events. The tactical training network within the FKMTC helps ESCs develop their knowledge management plans and organize information to enhance their operational effectiveness.

While the FKMTC is the foundation of the training experience, the expertise provided by the 1st TSC at Fort Knox is the catalyst to enhance collective training. As the only TSC with a permanently deployed operational command post and a rotational ESC, the 1st TSC main command post addresses strategic and operational sustainment challenges daily.

The 1st TSC provides a wide range of training support, from theater academic sessions to hands-on training by section, while ESCs conduct training at the FKMTC. They help shape MSELs and input based on real-world challenges faced by the rotational ESC in the field. MG Eric Shirley, commander of the 1st TSC, makes the following comments.

"TSCs own the theater distribution plan and the logistics synchronization support for setting the theater in support of the Army service component command. In order to accomplish critical theater opening and sustainment actions, the TSC must fully visualize, describe, and direct the training strategy and certification plans for supporting ESCs prior to employment. In the case of COMPO 2 and 3 units, this 'Road to War' validation is achieved in coordination with First Army and U.S. Army Forces Command. For COMPO 1 ESCs, regularly scheduled corps CPX and WFX events allow multi-echelon opportunity training to introduce theater-specific training requirements."

Deliberate Talent Management

Building and training an ESC requires a strategic approach to talent management. Talent is defined as the unique intersection of knowledge, skills, behaviors, and preferences inherent in each Soldier. To optimize the ESC's performance, it is essential to consider more than simply matching an MOS to a specific position. The operating environment may require the ESC to accomplish its mission differently than traditional doctrine, emphasizing the need for diverse skill sets that can be used in distinctive ways throughout the organization.

Identifying and assessing each Soldier's strengths, weaknesses, and preferences are essential. While some Soldiers appear qualified on paper, they may not demonstrate proficiency in practice. Conversely, Soldiers from COMPOs 2 and 3 often possess civilian-acquired skills that are more beneficial for mission success than their official MOS.

Understanding Soldiers' preferences and empowering them to take on roles or additional responsibilities that align with their interests can greatly enhance the ESC's performance. However, there may be times when the alignment between a Soldier's duties and their skills is not ideal.

To prevent isolating individuals, we should conduct multiple talent management sessions throughout the deployment. During these sessions, senior leaders can collaborate on personnel realignments. When Soldiers observe that the unit values these reviews, talent management realignments are less likely to have a negative impact on morale and the unit's climate.

Conclusion

While an ESC provides comprehensive sustainment capabilities to the corps commander, preparing them for deployment demands a deliberate yet flexible approach guided by clear directives from the commander. This is reinforced through practical collective training that uses available resources, emphasizes the development of a battle rhythm, and maximizes organizational talent.

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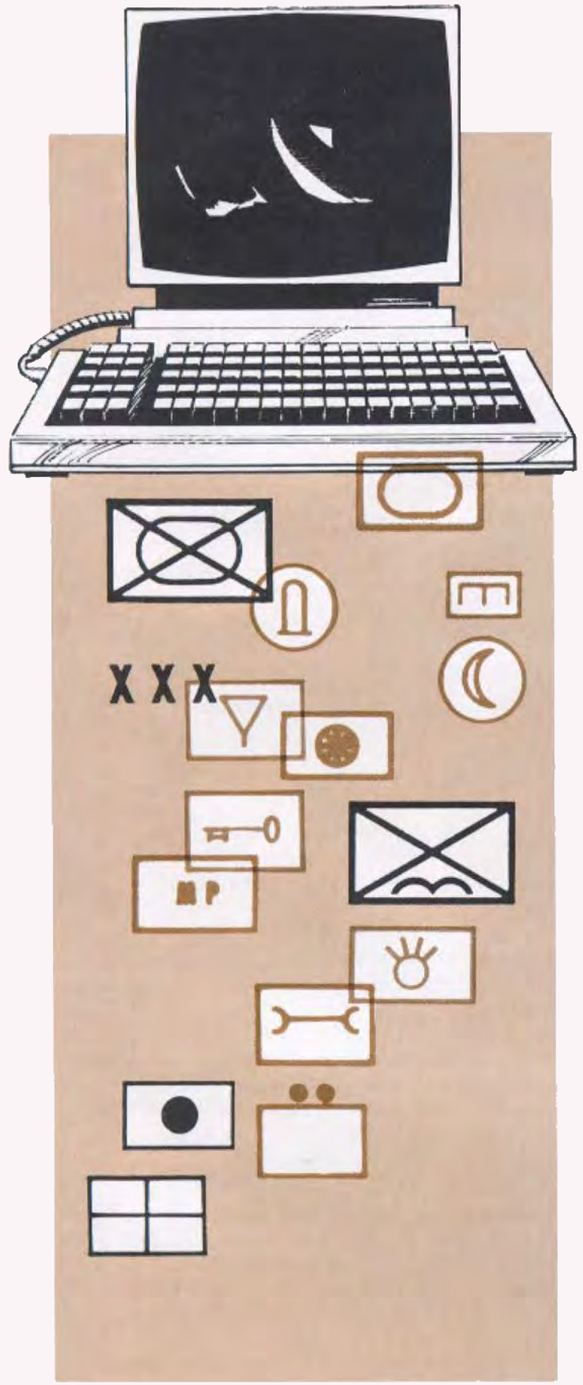

Force Structuring for Combat Service Support

■ *By Joe A. Fortner*

[Editor's Note: This Blast from the Past article was originally published in Army Logistician (the former title of Army Sustainment Professional Bulletin) in the January-February 1989 issue, pages 12–15, which can be found here: https://www.dvidshub.net/unit/Army-SustainmentBulletin.]

One of the most critical and difficult tasks confronting Army logisticians is that of determining the number and types of combat service support (CSS) units needed to sustain the combat forces in performing their warfighting missions. The function that logisticians perform in making those determinations and allocating CSS forces is called force structuring. Combat forces must, obviously, be structured also, but that is not the province of the logistician; the logistician accepts the combat force structure as a given and develops the CSS force structure to meet the requirements of the combat forces.

CSS force structuring takes the major Army combat forces and, based on a particular scenario, develops the combat service support and general support forces needed to sustain them. This is accomplished using a process called Total Army Analysis (TAA).

TAA is a partly quantitative, partly qualitative analytical process involving virtually every level in the Army hierarchy from the unit level to the Army Chief of Staff. TAA results in a description of the program force for a given year. This description includes the number and types of units, as well as each unit's organization level and component category. Unit types are designated by the standard requirement code (SRC), which is virtually equivalent to a table of organization and equipment (TOE) number.

The most current fully analyzed TAA cycle is for analytical year 1993. In the past, the process has been annual, but it is changing to a quadrennial cycle, with warfighting simulations conducted in primary years and sensitivity and excursion analyses conducted during intermediate years. TAA 93 is already being carried forward, virtually unchanged, to TAA 96.

The first phase in the TAA process is the preparation phase [see chart in the original publication on page 14]. During this phase, the Army Training and Doctrine Command (TRADOC), U.S. Forces Command, TRADOC integrating centers and service schools, and other major Army Command's (MACOM's) review the Defense and Army force sizing guidance that is contained in a classified document called the Army Force Planning Data and Assumptions (AFPDA), discussed in detail in the article "Help for Army Force Planners" by Dianna Woody (*Army Logistician*, JAN-FEB 1989 [starting on page 16 in the original publication]). The AFPDA — which is updated and published annually — is one of the most important source documents used in the TAA process.

The product of the first phase is a set of allocation rules, which are constrained by the AFPDA assumptions; these rules drive the rest of the force structuring process.

There are two types of allocation rules. The first type consists of workload rules, which state TOE capabilities in quantifiable terms that are understandable to computer simulation models. For example, a warfighting requirement to move a quantity of Class I supplies will generate a requirement for a portion of a motor transport company. The second type consists of existence rules, which add force structure for reasons not directly related to workload. For example, the accumulation of a specified number of motor transport companies (workload requirements) will generate an existence requirement for a motor transport battalion. Some existence rules are even farther removed from any workload requirement. For example, the existence of a theater automatically generates a requirement for a theater movement control center. Existence rules are always controversial and intensely debated. These allocation rule proposals and debates are conducted during a Department of the Army-chaired force structure conference (FSC I), and the results are presented to a general officer steering committee (GOSC I) for approval.

The logistician accepts the combat force structure as a given and develops the CSS force structure to meet the requirements of the combat forces.

The second phase of the TAA is the quantitative analysis phase (see chart in the original publication on page 14). It is conducted by the Concepts Analysis Agency (CAA). Using a variety of computer models, CAA performs wargame simulations to determine the requirements for supporting the warfighting forces. These requirements then become input for a model known as the force analysis simulation of theater administrative and logistics support (FASTALS).

FASTALS computes the time-phased support force requirements for the CS and CSS forces needed to support the warfighting forces. The output of the FASTALS process is the minimum number of units required to provide doctrinal support to the deployed combat forces. The overall results of these analyses are called the design case.

The design case is only as accurate and realistic as the simulation models can make it. Though the models are highly sophisticated and have been refined over several years, they can cope with only a few of the thousands of variables and with none of the numerous nonquantifiable intangibles that define day-to-day reality. The quantitative results of the models, therefore, must also be qualitatively analyzed.

Qualitative analysis (see chart below [page 15 in the original publication]) begins by accepting that the support forces included in the design care are doctrinally sound but unconstrained. There are always more requirements for support forces than there are resources to meet them. The design case must therefore be modified to fit within constraints, the most significant of which are congressional budget and manpower limitations.

Although the requirements change with each TAA cycle in response to changes in operations plans, warfighting scenarios, allocation rules, or the dozens of other variables that enter the analysis, there are always more requirements than resources. The shortages must be allocated to produce the least risk. MACOMs are particularly important in determining "acceptable risk." A MACOM commander might, for example, determine that, given the current scenario, he needs one more Transportation Corps truck company and is willing to give up a Quartermaster Corps petroleum, oils, and lubricants pipeline company to get it.

Support forces are allocated by component (Compo). The components are —

- Compo 1, Active Army.
- Compo 2, Army National Guard.
- Compo 3, Army Reserve.
- Compo 4, Unmanned and unequipped requirements.
- Compo 7, Direct host nation support (HNS) offsets, HNS reserve units that will activate as required to support U.S. forces.
- Compo 8, Indirect HHS offsets, HNS commercial assets that have been designated for support of U.S. forces.
- Compo 9, Logistics civil augmentation program offsets, HNS commercial assets contractually obligated to support U.S. forces.

The TAA process affects all components. A change in any unit-Compo combination must have an offsetting change in some other unit-Compo combination. The maximum allowable total of all unit or Compo combinations is the constraint imposed by Congress plus the total host nation support unit equivalents available.

One of the most visible and attention-getting components in the TAA process is Compo 4, the unresourced requirements. In general terms, Compo 4 represents the difference between requirements and resources. Compo 4 is the shortfall, a measurement of what needs to be done but cannot be done with available resources; it is expressed in terms of U.S. unit equivalents to reflect the quantity of mission capability shortfall.

The most critical point regarding Compo 4 "units" is that they do not exist. There are no designated flagpoles around which otherwise-inactive forces will rally in the event of a call to arms. Compo 4 is simply an accounting mechanism to describe the force shortage in terms of unit mission capability.

After CAA has finished the modeling process and developed the design, a second force structure conference

(FSC II) convenes to review the design and to recommend a force for the program objective memorandum (POM). All interested parties (MACOMs, Service schools, etc.) attend and, as before, their debate can be (and usually is) intense. The objective of the second force structure conference is to allocate resources.

Allocating resources to meet requirements is the most dramatic aspect of the TAA and force structuring process. Although TAA is concerned with the total Army, theater and limited war concerns are never overlooked. This is the most qualitative portion of the analytical process. All Compos are involved.

Compos 1, 2, and 3 are evaluated concurrently and allocated Army-wide. Debate is intense, and controversial decisions have to be made regarding the distribution of type units (by SRC) within the Army. Compos 7, 8, and 9 are allocated only within the theaters in which they are available; however, the availability of a Compo 7 truck unit equivalent in one theater frees up a Compo 1, 2, or 3 truck company for allocation to another theater. Allocation of a Compo 7, 8, or 9 unit can only be made against a like Compo 1, 2, or 3 unit.

The second force structure conference must always deal with the existence of Compo 4 and will make every effort to reduce or eliminate it; because of the systemic constraints, however, this is usually not possible. The focus of the effort therefore becomes one of minimizing the impact of the Compo 4. The conference prepares recommendations for forwarding to the general officer steering committee (GOSC).

The recommendations of the second force structure conference are briefed to the second GOSC. This steering committee attempts to resolve any issues remaining and, along with participants of the second force structure conference, conducts a force program review for the Vice Chief of Staff of the Army, acting for the Army Chief of Staff.

The Vice Chief is normally the final authority for resolving any issues the steering committee is unable to resolve. Alternatively, the Vice Chief may provide additional guidance and reconvene the steering committee to address unresolved issues.

Once the Vice Chief accepts the steering committee's recommendations, the results are presented to the Army Chief of Staff in a decision brief, and this completes the basic force structuring process for a POM year has been completed. The process then starts again the next TAA cycle.

All force structuring efforts are oriented toward the future — usually 6 to 8 years into the future. Although there is continuity of process and many parameters do not vary significantly from one cycle to the next, each TAA cycle is independent of previous TAA cycles. A change in a major parameter (such as a major change in an operations plan) or the accumulation of numerous small changes (such as progressive improvements in technology) can significantly change requirements for a type of unit from one TAA cycle to the next. Changes in requirements necessarily subtend changes in force structure allocations.

The final product of the TAA and force structuring process is a POM force for a given year. That force, being virtually fixed, becomes a baseline for force development planning. This includes planning for unit activations, deactivations, or conversions. For this reason, once a POM force is defined, no changes are permitted until the next TAA cycle. The net effect of this is that a POM force, even though it is planned for approximately six years into the future, is history once the planning cycle is complete.

In summary, the TAA process provides a fixed-time, phased-changed management tool that permits force developers at every level in the Army to plan for changes in the future force. One of its greatest strengths is that it accommodates changing circumstances incrementally and those increments are focused several years into the future. This minimizes turmoil in the planning efforts for the Army of the future yet permits enough flexibility to accommodate anticipated changes.

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