THE ARMY'S OFFICIAL PROFESSIONAL BULLETIN ON SUSTAINMENT

FALL 2025

ARMY SUSTAINMENT

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BUILDING AND SUSTAINING COMBAT READINESS

LSCO

IN LARGE SCALE COMBAT OPERATIONS

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ON THE COVER

Building and Sustaining Combat readiness in LSCO is the theme of the fall 2025 issue of *Army Sustainment Professional Bulletin*. Soldiers load equipment onto a logistics support vessel at Joint Base Pearl Harbor-Hickam, Hawaii, Jan. 23, 2025. (Cover photo by SSG Tristan Moore)

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.

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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.

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!

DID YOU KNOW?

Our new "Did You Know?" section is a platform for units and service members to showcase initiatives that enhance formations and operating procedures. By sharing your successes, you're not just highlighting your hard work, but also helping other units avoid duplicating efforts.

Let's make sure no one has to reinvent the wheel.

THE DATA ADVANTAGE

Transforming Army Sustainment

■ *By LTG Christopher O. Mohan*

The demands of large-scale combat operations are clear: our warfighters at the tactical edge require consistent, reliable, and timely support to maintain a decisive advantage. The pace of the world requires continuous transformation. Speed changes the character of warfare. Sustaining combat readiness in theater means delivering the right capabilities at the right time to maximize freedom of action, operational reach, and prolonged endurance for the joint force commander.

With increasingly constrained resources, contested networks, and an accelerated operational tempo, successful sustainment demands a greater reliance on automation and data-driven insights. To meet this challenge, Army sustainment must transform into a data-centric enterprise, leveraging advanced analytics and artificial intelligence, or A3I, to streamline processes, maximize resources, and implement new tactics, techniques, and procedures.

Information is no longer just a support function. It is central to everything we do. Using data to build and sustain combat readiness starts at home with streamlining and improving property accountability. We are aiming beyond incremental improvements to fundamentally change how we account for and manage equipment, and two new applications are helping us achieve that goal. The Soldier Equipment and Asset Management (SEAM) system automates the removal of obsolete organizational clothing and individual equipment from a Soldier's record. SEAM introduces automated inventory tracking and record management and relieves Soldiers from carrying, managing, and moving with excessive, outdated gear. Meanwhile, U.S. Army Materiel Command (AMC) directed the design of the ParaLine app to improve the accuracy of our property records, integrate with existing Army systems, and most importantly, cut in half the time it takes our Soldiers to inventory equipment. ParaLine is already freeing up Soldiers' time, ensuring units have the gear they need without unnecessary administrative delays.

Complementing this effort is the establishment of select equipment redistribution and divestiture sites, which provide immediate property accountability relief for units undergoing force structure redesign as a result of Transformation in Contact learning demands. These sites allow for rapid processing and redistribution of equipment from the unit to the enterprise.

Another game-changing platform developed by our own sustainment community is Weapons System 360. The system provides a real-time, end-to-end view of the Army's supply chain, allowing us to proactively identify and address bottlenecks before they become a problem for our units. We can now identify bottlenecks down to the part and supplier level. Weapons System 360 allows leaders at echelon unprecedented visibility of the global supply chain to help them make data-informed decisions that strengthen our sustainment capability.

We are also reimagining how sustainers drive operational readiness. The Operational Readiness Program (ORP) is a pilot program that proactively embeds maintenance teams from the organic industrial base directly with tactical units preparing for deployment. They provide onsite expertise, facilitate targeted fleet vehicle exchange, and teach skills to keep equipment running reliably, empowering our Soldiers to attain and sustain operational readiness throughout their deployment cycle. AMC works with the units to prioritize and select ORP equipment candidates using data integration and analytic tools. By leveraging the power of AI and machine learning, we support corps sustainers as they balance priorities and resources across their formation in preparation for demanding exercises like the National Training Center. This also allows us to proactively prepare the supply chain and ensure our forces are prepared to deploy, fight, and win anytime, anywhere.

Underpinning initiatives like SEAM, ParaLine, Weapons System 360, and ORP is a commitment to data-driven decision making, powered by A3I. Sustainers at all levels are proactively and organically developing end-to-end supply chain integration tools to provide units with the actionable information needed to make informed readiness decisions.

These efforts are reshaping the Army sustainment enterprise's commitment to building and sustaining combat readiness. By aggressively leveraging existing data, streamlining processes, and empowering Soldiers with intuitive tools, we ensure our ability to sustain our troops in a contested global environment at the speed of war.

LTG Christopher O. Mohan currently serves as the deputy commanding general and 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. 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.

Sustaining combat readiness in theater means delivering the right capabilities at the right time to maximize freedom of action, operational reach, and prolonged endurance for the joint force commander.

CONTINUOUS TRANSFORMATION

Sustainment Professionals Leading the Charge

■ *By LTG Heidi J. Hoyle*

Transforming the Army for a New Era — The Logistician's Perspective

As we reflect on decades of relative stability, the ground beneath the Army is shifting, shaken by technological leaps, geopolitical tremors, and the looming specter of near-peer adversaries. The nature of warfare is evolving, demanding a decisive and comprehensive transformation to maintain our position as the world's premier land force, ready for large-scale combat operations (LSCO). This is a fundamental reimagining of how we equip, train, and deploy our Soldiers.

To maintain its position as the world's premier land force, the Army is undergoing a comprehensive and decisive transformation. This is the driving force behind the Army's continuous transformation, a sweeping effort led by the Secretary of the Army and the Chief of Staff of the Army, designed to ensure our Soldiers remain equipped, trained, and ready to win in any environment, especially in LSCO.

Enabling Lethality: Delivering Warfighting Capabilities at Speed and Scale

Continuous transformation aims to fundamentally transform how the Army equips its formations, implements policy, and uses emerging technology to dominate in the future fight, particularly in the context of LSCO. This requires a shift from traditional acquisition processes to more agile and responsive models that can rapidly integrate emerging technologies and adapt to evolving battlefield conditions.

The Army is committed to fielding next-generation capabilities. This includes the transition to the M1E3 Abrams tank, featuring a diesel-electric hybrid engine, active protection systems, and modular, software-enhanced architecture. Logisticians will be instrumental in establishing forward repair capabilities and ensuring the supply chain can support this advanced platform. The Future Long-Range Assault Aircraft program represents another critical area, demanding innovative maintenance strategies to ensure high operational readiness rates for this next-generation vertical lift capability. Leveraging advanced manufacturing to produce critical spare parts at the point of need will be vital. Long-range precision fires systems such as the Precision Strike Missile will be able to strike land and maritime targets. These systems will require sustainers to develop new ammunition-handling procedures and ensure adequate magazine depth.

A recent Secretary of War memorandum emphasizes the need to achieve drone dominance over our adversaries while rapidly fielding new drone technology. The Army is driving the initiative for joint force drone dominance and is focused on ensuring U.S. military advantage through coordinated development of full-spectrum unmanned aircraft system (UAS) capabilities and accelerated innovation via agile acquisition. Complementing this strategic push, the Army G-4 is actively streamlining burdensome property accountability procedures for Group 1 and 2 UAS losses, which previously deterred proactive drone use due to fear of costly Financial Liability Investigation of Property Loss investigations. New guidance, including revisions to Army Regulation (AR) 735-5, Relief of Responsibility and Accountability, will empower commanders to use abandonment memos for non-negligent Group 1 and 2 UAS losses based on dollar thresholds, fostering a culture that encourages the necessary employment of drones in modern combat and accepts combat-related losses as an operational reality.

Artificial intelligence (AI) will power next-generation command-and-control nodes to enhance decision speed and maintain the initiative on future battlefields. Logisticians will leverage AI-powered predictive maintenance tools, such as those being developed under the Project Convergence initiative, to anticipate equipment failures and optimize maintenance schedules. This includes integrating AI into logistics operations to streamline supply chain visibility and optimize distribution networks. Agile funding models will ensure faster delivery of critical capabilities by shifting focus from programs to operational outcomes.

Adapting to Change: Optimizing Force Structure for the Future

Continuous transformation demands a streamlined, more combat-capable force structure with a focus on eliminating redundancies, streamlining command and control, and maximizing combat power. Sustainers will be directly impacted by these changes and must be prepared to adapt to new organizational structures, roles, and responsibilities.

The merger of Army Futures Command and U.S. Army Training and Doctrine Command into the Army Transformation and Training Command will require logisticians to integrate their operations and processes across these newly consolidated organizations. This includes aligning sustainment doctrine with future force design concepts and developing training programs that prepare Soldiers for the challenges of the modern battlefield. The evolution of U.S. Army Forces Command, U.S. Army North, and U.S. Army South into Western Hemisphere Command will require sustainers to adapt logistics support models to optimize responsiveness on a global scale.

The restructuring of the sustainment enterprise within U.S. Army Materiel Command, including the integration of the U.S. Army Joint Munitions Command and Army Sustainment Command, aims to optimize operational efficiency and streamline support capabilities. This requires logisticians to embrace new technologies, processes, and organizational models. This may involve adopting new supply chain management techniques, leveraging data analytics to improve inventory management, and implementing automation to streamline maintenance processes.

Resource Stewardship: Eliminating Waste and Maximizing Impact

Continuous transformation requires a relentless focus on eliminating waste, divesting from legacy platforms, and canceling or re-scoping outdated or inefficient programs. Sustainers will play key roles in ensuring that these platforms are properly recycled or transferred to other organizations while minimizing impact and maximizing resource recovery. The Army is aggressively divesting from legacy platforms that no longer meet the demands of future conflict, such as the AH-64D Apache attack helicopter, the M10 Booker assault gun, and the Humvee. Every dollar saved from outdated programs represents a dollar reinvested into capabilities that are needed now.

Continuous transformation emphasizes a shift away from outdated systems like the Humvee toward modern solutions. The Humvee, a 40-year-old vehicle, faces diminishing survivability in the face of ubiquitous sensing drones. In contrast, the Infantry Squad Vehicle (ISV) represents a new acquisition pathway. The ISV, prioritizing speed

and maneuverability over heavy armor, offers a different approach, where modular configurations may be modified for different operational environments.

At the Soldier level, ALARACT 056/2025 updates the disposition and disposal of unneeded organizational clothing and individual equipment (OCIE) items and outlines the process for removing legacy and end-of-life OCIE items from Soldier OCIE records. Central issue facilities will remove OCIE items listed as valueless from Soldier records during appointments, a process that will be automated in the future through the new Soldier Equipment and Asset Management system. Soldiers will be authorized to dispose of some items after removing patches/insignia and destroying infrared tabs. In accordance with these changes, the G-4 will update AR 700-84, Issue and Sale of Personal Clothing, and Common Table of Allowances 50-900, Clothing and Individual Equipment, to reflect these new processes.

Empowering the Technician: The Right-to-Repair Initiative

A key aspect of continuous transformation is the emphasis on right to repair, empowering Soldiers to maintain and repair their own equipment. This initiative, based on the 2024 Servicemember Right-to-Repair Act, addresses the frustrating situation where Soldiers are unable to fix equipment due to contractual restrictions, even when they possess the skills and tools to do so. Secretary of the Army Daniel Driscoll has stated it is highly detrimental to concede the right to repair to private industry. By regaining this right, the Army aims to increase readiness, reduce downtime, and save money.

For logisticians, this means increased responsibility, because mechanics in the field will have greater autonomy to diagnose and repair equipment, reducing reliance on external contractors. The Army must secure access to the necessary maintenance tools, software, and technical data to enable Soldiers to perform repairs effectively. The ability to advance-manufacture parts on-demand will be crucial for rapid repairs and reducing downtime, significantly improving operational readiness during LSCO.

Guiding Principles: Key Takeaways for Sustainment Professionals

Continuous transformation stands as a pivotal response to an evolving global landscape, fundamentally reshaping our forces. This comprehensive endeavor encompasses the rapid integration of next-generation capabilities like the M1E3 Abrams, Future Long-Range Assault Aircraft, and AI-powered systems, demanding logisticians innovate supply chains, maintenance, and support. Simultaneously, continuous transformation is optimizing force structures through significant command consolidations and the restructuring of the sustainment enterprise itself, requiring unparalleled adaptability from sustainment professionals. A focused commitment to resource stewardship drives the divestment of legacy platforms, the cancellation of underperforming programs, and the prioritization of agile, cost-effective solutions. Sustainers will oversee the crucial transition and recovery of assets. Finally, the right-to-repair initiative empowers Soldiers and logisticians in the field and reduces our reliance on external contractors.

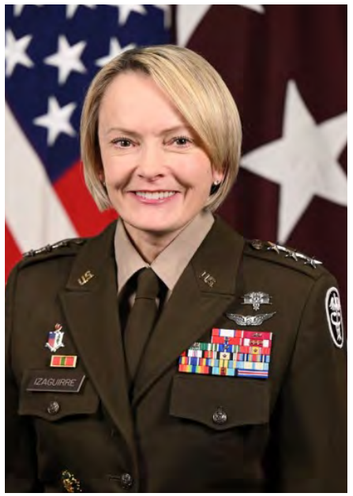
Throughout this profound transformation, sustainers will actively lead the charge by embracing new technologies, adapting to new organizational models, streamlining resource allocation, and championing the empowerment of the warfighter, ultimately forging a more lethal, agile, and globally dominant Army for the challenges of tomorrow. By adopting the key principles of continuous transformation, sustainers will play critical roles in transforming the Army and ensuring that it remains capable and ready to meet the challenges of the next 250 years. Ultimately, the Army will remain the dominant global force, capable of deterring aggression and achieving victory in any environment. Let us seize this opportunity to build a more lethal and agile Army, together.

Be All 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.

U.S. ARMY MEDICAL COMMAND

Combat-Ready Care



■ *By LTG Mary K. Izaguirre*

Picture yourself as an infantry Soldier on the front lines in large-scale combat. Unlike your predecessors in the war on terrorism, who enjoyed freedom of maneuver and air superiority, you fight on a battlefield made transparent by drones. Moving forward, you are spotted and hit by an armed, small, unmanned aircraft system (sUAS) controlled by an enemy miles away. Gravely wounded but alive, you administer self-treatment and signal for evacuation. Knowing that medical personnel are a prime target, you are not surprised when the autonomous robotic vehicle deployed by your unit arrives, with friendly sUAS providing overwatch. Having drilled autonomously supported self-extraction, you pull yourself into the robotic vehicle, which delivers you to a protected casualty collection point. The on-site medic uses novel technologies to stabilize you for the next 72 hours until evacuation to a subterranean surgical team.

This is not the future. This is the reality of combat in Ukraine today. It is a significant departure from how the U.S. Army has operated over the last 25 years. The above-mentioned capabilities reflect how we are adapting to prepare for the next fight. Grounded in our why and with large-scale combat operations (LSCO) in mind, the Army medicine enterprise (AME) is continuously transforming to ensure we deliver combat-ready care to the Army and the joint force.

Continuous Transformation

AME is continuously transforming to ensure Soldiers receive world-class care on the battlefield, to return Soldiers to the fight, and to overcome contested logistics. In LSCO, gone are the luxuries of rapid medical evacuation from the theater of operations back to the continental U.S. This influences AME's approach to adapt doctrine, organization, training, materiel, leadership, personnel, facilities, and policy to win at the pace of change. AME provides critical capabilities in both the sustainment and protection warfighting functions. The sustainment warfighting function includes medical treatment, medical evacuation, hospitalization, and medical logistics. The protection warfighting function provides operational public health, combat and operational stress control, dental services, laboratory services, and veterinary services. Medical command and control ensures effective and efficient management of medical resources and operations to support the overall mission.

Brilliant at the Basics: Elevating Training and Equipping

Effective treatment at the point of injury is the decisive factor in successful combat care. Prolonged evacuation times, contested logistics, and large numbers of casualties require all personnel to operate at the top of their abilities to deliver medical support. All units must train and equip Soldiers to deliver life-saving self-aid and buddy aid. Organic medics must train and sustain clinical decision-making and procedural skills to optimize survival of their fellow Soldiers. Timely initial assessment and proficiency with triage must be decisive to clear the battlefield, preserve life, and maximize return to duty.

Army educators are experimenting with virtual, augmented, and mixed reality to bring the next generation of medical simulation training to increase medical competencies for all Soldiers. The Army recently graduated its first class of enhanced combat medics, who are prepared to handle prolonged care, disease, and non-battle injuries, and to provide whole blood at the point of need. We will scale that capability across the force. We also continue to increase the number of paramedic-trained combat medics across our formations who have expanded scopes of practice.

Leveraging Partnerships: Health Security Cooperation

LSCO will present challenges for Role 2, 3, and 4 medical capabilities and capacity. To address this shortfall, AME is building a robust medical network through our theater medical commands across the total force. Multilateral meetings with partner surgeons general build trust, opening the door for cooperation, with the goal of achieving interoperability. Global health engagements during competition support theater security cooperation, laying the foundation for theater management of prolonged casualty care, evacuation, and convalescent care. This ability to treat wounded far forward reduces strain on personnel replacement systems while keeping experienced Soldiers in the fight.

Evacuation and Treatment in Contested Environments

Multimodal casualty and medical evacuation capabilities must operate across contested ground, air, and maritime domains. Our military treatment facilities will modernize to be mobile, protected, and employed in novel ways, such as underground and concealed locations.

Adapting Combat Stress Control to Evolving Challenges

Lessons learned from Ukraine tell us that a new paradigm of combat stress has emerged with the sound of drones constantly overhead and medical facilities, equipment, and personnel indiscriminately targeted. LSCO will challenge medical personnel with triage, who will make the hard decisions of applying limited medical supplies to maximize the return-to-duty potential of the wounded. This requires agile, adaptive, and realistic training to indoctrinate our forces to the realities of modern combat.

Overcoming Contested Logistics

To deter our adversaries, the Army must have sufficient "magazine depth" to sustain and prevail in conflict. Adopting the term from our combat arms brethren, medical magazine depth describes the availability of fully staffed and equipped hospital beds, blood products, evacuation platforms, and medical supplies. AME's logisticians are working diligently with our joint partners to improve interoperability and resilience in the medical supply chain. We are prioritizing redundancy, strategic stockpiling, and partnerships. Observing medics in the Armed Forces of Ukraine as they use non-Food and Drug Administration-approved medications to successfully treat their wounded, we will seek safe avenues to provide cutting-edge therapies and devices to save lives.

Bio Surveillance and Counter Measure Developments

America's Army prides itself on its expeditionary capabilities to engage our enemies away from the homeland. Multiple drug-resistant bacteria now infect almost 100% of Ukrainian casualties. Active screening for

The Army recently graduated its first class of enhanced combat medics, who are prepared to handle prolonged care, disease, and non-battle injuries, and to provide whole blood at the point of need.

and early notification of bacterial infections acquired from combat are an integral part of force health protection. To prevent a microbial attack on the homeland, we will invest in rapid novel therapy development and infection prevention and control for drug-resistant bacteria.

Rethinking Casualty Reception

As our wounded return to the homeland through an inter-theater air medevac system, battle tested and continuously refined since World War II, they will flow into Department of War (DOW) and Department of Veterans Affairs hospitals. The National Disaster Medical System (NDMS) employs civilian hospitals to provide additional capacity if additional casualty reception is required. AME is urgently working with our sister Services, the Joint Staff, the Defense Health Agency, the Uniformed Services University, and the Department of Health and Human Services to ensure the NDMS is ready to receive the tens of thousands of casualties projected for LSCO in Europe and the Indo-Pacific.

Decision Advantage Through Integrated Sensing

Underlying all our transformation is a robust data strategy to enable commanders to make decisions informed by the AME. The Army does not need a medical common operating picture. Instead, medical equities must be integrated with the Army's Next Generation Command and Control as part of the integration, data, and application layers.

Our Why

AME is integral to mission success. From accessions at military entrance processing stations, to ensuring the medical readiness of Army formations, to inspecting the food that Soldiers and families consume on military installations, to taking care of DOW's military working equids and dogs, to the unwavering commitment and bravery of our men and women who run to the sound of the guns to take care of our nation's wounded, AME keeps faith with the all-volunteer force.

The Army will bring its exquisite medical capabilities to the joint fight. AME strengthens the will to fight by inspiring warfighters to trust that the best care in the world is with them and their families at home and on the battlefield.

AME is continuously transforming to deliver combat-ready care.

This We'll Defend.

LTG Mary Izaguirre is the 46th surgeon general of the U.S. Army and the commanding general of U.S. Army Medical Command, Joint Base San Antonio-Fort Sam Houston. Previously, she served as commanding general of U.S. Army Medical Readiness Command, East. She deployed multiple times to Iraq and Afghanistan. She is a doctor of osteopathic medicine, board-certified in family medicine, and is a Fellow of the American Academy of Family Physicians. She has three master's degrees: one in public health from the University of Washington, one in military arts and science from the U.S. Army Command and General Staff College, and the third in national security and resource strategy from the Eisenhower School for National Security and Resource Strategy.

THE FUTURE OF READINESS

AI-Enhanced Dashboards

■ *By CPT Kyle Weinerth and Chris Lovato*

The Army Data Plan emphasizes that access to the right data, at the right time, and in the right place empowers faster, better decisions at all echelons, enabling us to out-think and out-pace any adversary. U.S. Army Combined Arms Support Command (CASCOM) has significantly modernized tactical sustainment analytics in fiscal year 2025. Its Sustainment Enterprise Analytics (SEA) program has exceeded expectations in speed, accuracy, and presentation. SEA leverages universally available Microsoft Power BI and real-time data from the Global Combat Support System-Army (GCSS-Army) and has received strong support from Army leadership and the field. CASCOM is further expanding its analytic capabilities exponentially through a new Microsoft Azure cloud computing and data staging environment, operational since late July 2025.

The Azure environment combines 12 years of GCSS-Army transactional data with the power of cloud computing to develop artificial intelligence (AI)-powered predictive analytics, enhancing tactical commanders' ability to build and sustain combat readiness. Initial efforts include predicting fleet readiness based on projected supply conditions and maintenance resources and forecasting future demand for long-lead-time parts based on mission and environmental factors. CASCOM collaborates with U.S. Army Forces Command, U.S. Army Special Operations Command, Department of the Army G-4, and various division G-4s to prioritize the development of at least 10 AI models. Furthermore, CASCOM integrates data from the Integrated Personnel and Pay System-Army and the Automated Terminal Information Service to create a comprehensive combat power analytic tool, providing a near-real-time common operating picture critical for tactical decision making. This immediacy is vital. While strategic decisions benefit from broader data trends, a division commander's decisions during large-scale combat operations (LSCO) require current data to determine optimal courses of action.

Professional Development Opportunities

To ensure the enduring success of this effort, CASCOM is building a dedicated team of technical experts, actively recruiting and developing talent through direct commissioning, branch transfer, the Voluntary Transfer Incentive Program, skill identifiers, and a Master of Decision Analytics degree with Virginia Commonwealth University.

Go to https://talent.army.mil/job/logistics/ for more information on these opportunities. CASCOM recognizes the importance of internal expertise, moving away from sole reliance on contractors to deliver advanced AI-driven analytics and new enterprise capabilities for future LSCO.

CPT Kyle Weinerth serves as the personnel proponency officer for the Logistics Proponency Office at Army Sustainment University on Fort Lee, Virginia. He holds a Master of Supply Chain Management degree from Virginia Commonwealth University. His previous assignments include commander of Fury Forward Support Troop, 3rd Squadron, 2nd Cavalry Regiment; operations officer for the Regimental Support Squadron, 2nd Cavalry Regiment; and the executive officer for Juliet Forward Support Company, 1-8 Infantry Battalion, 3rd Armored Brigade Combat Team, 4th Infantry Division.

Chris Lovato currently serves as the assignment chief of Workforce Integration Division, Enterprise Systems Directorate, U.S. Army Combined Arms Support Command. He is an Army veteran, a former Quartermaster and Cavalry officer. He has completed the Civilian Education System Advanced course.

TECHNOLOGY AND PROGRAM PROTECTION

Shielding the Army's Technological Advantage

■ *By Bernard Rhoades and Thomas Quigley*

The early adoption of dual-use, disruptive technologies is increasingly pacing today's competition for global supremacy. The stakes have never been higher for program managers (PMs) and product support managers to anticipate how adversaries might subvert, compromise, or steal from our national technology and industrial base to diminish military advantage. The recent update of Army Regulation (AR) 70-77, Technology and Program Protection, and the maturation of the Army Protection Collection Management Board (PCMB) provide a framework for a more proactive, concerted, and adaptive technology and program protection effort. This framework aims to develop and maintain effective protection plans at all phases of the system development lifecycle to address the evolving threat landscape.

Program protection is a flexible, multi-disciplinary process used to maintain technological advantage for the warfighter from concept development to system disposal. It drives the implementation of system security engineering and supply chain security countermeasures focused on sensitive technical information, mission-critical components (e.g., software and microelectronics), and advanced technical know-how against cyber threats, espionage, sabotage, unauthorized technology transfer, and battlefield loss. Coupled with the integration of intelligence support, program protection informs risk management decisions.

AR 70-77 serves as the Army's capstone acquisition policy for technology and program protection. The updated regulation aligns program protection with War Department (DOW) acquisition reform, supply-chain risk management (SCRM) initiatives, and other new security policies issued since the original 2014 publication. These improvements involve initiating risk management as early as basic research, reinforcing protection through logistics and contracting, reprioritizing intelligence and security resources, establishing protection training standards, and continuously measuring and improving effectiveness.

The Army's Science and Technology Reinvention Laboratory (STRL) must now develop, maintain, and transfer approved science and technology protection plans (S&TPPs) before transitioning research to an Army PM. The S&TPP process starts when fundamental research yields technical information that warrants control or classification due to its maturity and application to military use. STRLs leverage the Army Research and Technology Protection Center to conduct assessments using standardized methods. The main goal of the S&TPP is to provide PMs with assurance that the prototype technology has already implemented adequate protection measures. This ensures the PM does not waste resources protecting technology that is already compromised while jump-starting the protection process.

The updated AR 70-77 also mandates program executive offices to appoint trained program protection leads to manage program protection plans (PPPs) for their respective portfolios. This creates a network of Defense Acquisition University-credentialed experts, ensuring consistent implementation of program protection policies and best practices at the Acquisition Category II, III, and IV levels.

Previously, PPP updates and reviews only occurred during milestone decision events and annually for significant changes. Additionally, supply-chain risk assessments in the PPPs represented a snapshot in time without considering the lower tiers of suppliers from countries of special concern. Now, PPPs are reviewed every five years by the Deputy Assistant Secretary of the Army for Sustainment (DASA(S)), and PMs use SCRM illumination tools and software bills of material to ensure their relevance. As a result, the PPP provides system security engineers, logisticians, and supporting intelligence professionals with the ability to continuously adjust efforts based on evolving threats, modernization, and amorphous supply chains.

In recent years, the DOW has emphasized the need for enhanced intelligence in support of materiel and capability development activities. In response, the Department of the Army, led by the Assistant Deputy Chief of Staff for Intelligence (G-2) in partnership with the DASA(S), established the PCMB. This board meets quarterly to address intelligence and security issues related to Army modernization priorities and the DOW's critical programs and technologies (CP&T) list. The PCMB framework and partnerships facilitate a structured, collaborative approach to align strategy, plans, and actions; synchronize the delivery of current and estimative intelligence to Army senior leaders; and oversee and assess collection and protection activities based on acquisition community requirements.

The PCMB has already yielded valuable outcomes, including a process to measure the effectiveness of intelligence products in achieving desired acquisition or protection effects. The Counterintelligence Support Plan (CISP) and the Multi-Discipline Counterintelligence Threat Assessment (MDCITA) are essential for informing the development of PPPs that involve critical program information or technology elements on the DOW CP&T list. CISP development and implementation have improved significantly since the assignment of an Army Counterintelligence Command liaison embedded within the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology. This ensures that PMs receive the CISP before initial PPP staffing for approval. The MDCITA is undergoing continuous transformation to streamline production and delivery processes.

In conclusion, the Army's multifaceted approach to technology and program protection, as outlined in AR 70-77 and facilitated by the PCMB, represents a significant step forward in safeguarding the Army's technological advantages. By integrating risk management early, emphasizing continuous improvement, and fostering collaboration between intelligence, acquisition, and sustainment communities, the Army is better positioned to maintain its competitive edge in an increasingly complex and contested global environment. This proactive and adaptive strategy is crucial for ensuring that warfighters have access to the most advanced and secure capabilities.

Mr. Bernard Rhoades is the program protection director for the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology. He previously served as the program protection policy lead and provided network and system security engineering contractor support for various War Department programs. He served four years as an Army signal officer. He is Life Cycle Logistics (Advanced) certified with a Master of Science degree in information technology security from Capella University.

Mr. Thomas Quigley serves as a Research, Development, and Acquisition program protection specialist for the Deputy Assistant Secretary of the Army for Sustainment in the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA[ALT]). He is a retired Army officer with numerous combat arms and staff positions throughout his career. He was an Army Acquisition Corps professional for a combined 16 years. His tenure at ASA(ALT) included serving two years on the Office of the Under Secretary of War Protecting Critical Technology Task Force, developing processes and procedures for enhanced protection. He has a Master of Business Administration from Troy University, a Master of Arts from the Naval War College, and is a graduate of the Eisenhower School of Strategic Studies.

COMBAT READINESS THROUGH SUSTAINMENT PARTNERSHIPS

Leveraging Contracting in the Indo-Pacific

■ *By CPT Alexander E. Anderson*

Combat readiness in large-scale combat operations (LSCO) is not defined solely by the maneuver capabilities of forward formations. It is forged in the docks, rail yards, and logistical nodes that power the fight. The tempo of operations hinges on our ability to scale throughput, secure infrastructure, and synchronize sustainment across borders. As recent conflicts and exercises have revealed, victory is often shaped long before the first shot is fired. Robust infrastructure, such as roads, rails, ports, and effective sustainment partnerships, is foundational for projecting and sustaining combat power in the Indo-Pacific.

Allied Infrastructure as a Readiness Enabler

U.S. Army Pacific Command conducts a wide array of annual exercises that stress-test our sustainment posture and contracting capacity. Exercises such as Cobra Gold, Pacific Pathways, and Lightning Strike mirror the logistical focus of the European Deterrence Initiative, developed to increase U.S. presence and readiness in Europe after Russia's 2014 annexation of Crimea. These events validate maneuver readiness and logistics readiness. They leverage prepositioned stocks, enhanced port facilities, acquisition and cross-servicing agreements (ACSAs), and multinational

coordination mech-anisms to ensure contracted support is operationalized, throughput is opt-imized, and sustain-ment remains res-ponsive in contested environments.

These exercises underscore a key point: infrastructure is a combat enabler, not just terrain. The ability to integrate host-nation capabilities, manage contract logistics support, and conduct port operations at scale must be as rehearsed and refined as much as the maneuver plan itself. Partnered infrastructure must be treated as part of the operational framework, not an afterthought.

The Sustainment Challenge in LSCO

Modern infra-structure is highly vulnerable and ex-ploitable. Russia's strikes on Ukrainian ports and logistics hubs in late May 2025 demonstrate how rapidly supply chains can be disrupted. Even absent a kinetic threat, bottlenecks can emerge from bureaucratic friction, incompatible rail systems, commercial delays, and cyber vulnerabilities. In LSCO, the complexity of multinational sustainment exceeds what the Army can generate organically.

To close this gap, we must train to contract effectively, integrate with allied logistics networks, and overcome the legal and procedural hurdles that delay delivery. Our logistics enterprise must be interoperable, forward leaning, and resilient, built to operate under duress, not just in peacetime conditions.

Procuring material, services, and equipment in-theater through vetted vendors or partner militaries reduces transportation costs, lead times, and administrative complexity.

Contracting and ACSAs as Combat Multipliers

Contracting is not a contingency tool. It is a combat multiplier. Prearranged contracts for fuel distribution, inland haul, security, and maintenance represent the connective tissue between strategy and execution. Contracting officers (KOs) must be embedded in operational planning from the outset, ideally at the mission analysis phase, to ensure that their market knowledge, legal expertise, and vendor insight shape courses of action and mitigate sustainment risk.

In tandem, ACSAs offer a framework for sharing resources, capabilities, and lo-gistics services across coalition partners with-out the need for lengthy contracting processes. These agreements are especially critical in early-entry or austere environments where speed and interoperability are paramount. From tables and chairs to mobile command platforms, ACSAs have served as a practical and diplomatic mechanism to bridge sustainment gaps, showcasing how pre-coordinated logistics agreements can generate operational flexibility and cost efficiency during multinational exercises and real-world operations.

A case in point is Cobra Gold 2025, where contracting and ACSAs jointly enabled the sustainment backbone of the exercise. Contracting facilitated essential life support, such as power generation, water supply, shelter, and sanitation, while ACSAs provided access to allied capabilities that would have otherwise required shipment from the U.S., including tactical equipment, power converters, and translator support. The synergy between U.S. contracts and ACSA-enabled host-nation support streamlined operations and reduced logistical strain, proving essential to enabling rapid, coalition-based maneuver in Thailand's complex operating environment.

Transporting sustainment supplies the continental U.S. (CONUS) to Indo-Pacific forward locations imposes significant costs on the joint force. Strategic lift, whether by sea or air, consumes time, fuel, personnel, and opportunity, and is also vul-nerable to disruption or delay. In contrast, leveraging regional contracting and ACSAs offers a far more economical and operationally flexible alternative. Procuring material, services, and equipment in-theater through vetted vendors or partner militaries reduces transportation costs, lead times, and administrative complexity. During Cobra Gold 25, using local vendors and ACSAs eliminated the need to ship bulk construction and life support supplies from CONUS, resulting in significant savings of money and critical movement assets for higher priority cargo. These cost-saving measures enable the force to reallocate resources toward lethality and readiness while enhancing theater responsiveness.

Joint and Multinational Integration

Sustainment success in LSCO begins during the earliest stages of exercise and operational planning. Incorporating KOs, contracting officer representatives, and ACSA managers during the initial planning conference and initial site survey phases is essential to building realistic, cost-effective logistics plans. Early collaboration enables planners to identify sourcing options, compare in-theater procurement with CONUS-based shipment costs, and initiate long-lead contracting actions before the window of opportunity narrows. By bringing these stakeholders into the planning cycle from the beginning, units develop more agile and economical support concepts, reduce reliance on last-minute contracting, and mitigate risks associated with shipping delays or infrastructure shortfalls.

During exercises like Cobra Gold 2025, this proactive integration has allowed planners to leverage regional vendors, access host-nation support through ACSAs, and avoid unnecessary expenditures associated with overseas bulk shipments. The result is a leaner, faster, and more interoperable sustainment posture that maximizes combat readiness and fiscal responsibility.

Multinational sustainment inter-operability must be treated as a mission-essential task, not a supporting activity. Exercises must not only validate maneuver concepts but also confirm our ability to deliver contracted and ACSA-supported sustainment across jurisdictions, currencies, and regulatory systems. In the Indo-Pacific, where distance, diversity, and diplomatic nuance create immense complexity, coalition sustainment capabilities must be as decisive and integrated as any fires capability.

Combat readiness begins long before deployment. It begins with the contracts, agreements, and infrastructure that set the theater. Building sustainment depth requires investing in allied infrastructure, developing regional vendor networks, leveraging ACSAs, and embedding contracting into the joint fight. Recent examples, such as successful maintenance operations in Korea and coalition sustainment during Cobra Gold 25, demonstrate that these tools are not supplementary but are essential elements of expeditionary readiness.

As we shift focus toward competition and conflict in the Indo-Pacific, we must ensure that the foundation of our sustainment enterprise, ports, contractors, coalition networks, and ACSAs is ready to support the fight and win tonight.

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A HOUSE OF CARDS

TiC and the Fragile Foundations of LSCO Sustainment

By MAJ Sean McLachlan

Transformation in Con-tact has fundamentally changed the Army. The new mobile brigade combat team (MBCT) is more lethal, agile, and technologically enabled than ever before, but it is also logistically fragmented. From drones to power generation to fielded vehicles, units increasingly rely on commercial off-the-shelf systems and proprietary civilian supply chains. These systems fill critical operational gaps but expose a growing disconnect between what the brigade employs in combat and what the Army can fuel, repair, and resupply.

As the Army prepares for large-scale combat operations (LSCO), it must confront a critical paradox: battlefield capability without the means to sustain it is a liability, not an advantage. The fragmented supply chains and energy diversity within today's brigade combat teams (BCTs) require more than incremental fixes; they demand deliberate investment in centralized sourcing, modular logistics infrastructure, and updated sustainment doctrine.

The Supply Problem

The MBCT has embraced emerging technologies to enhance survivability, reconnaissance, and tactical mobility across dispersed terrain. From small unmanned systems to light vehicles and modular power sources, the MBCT reflects the Army's push toward agility and adaptability in complex operating environments. But every capability gain has come with an invisible cost: non-standard sustainment. Many of these systems are commercially sourced, lack full Class IX (CLIX) integration, and require civilian vendor support to repair or replace components. The result is a brigade that fights with modern tools, but relies on fragile, external supply chains to keep them operational. Two highly visible examples of this supply chain problem are first-person view (FPV) drones and the Infantry Squad Vehicle (ISV).

While the Army can fabricate FPV airframes through the Allied Trades enterprise, the components that make these drones combat effective (batteries, charging systems, and firmware) must still be sourced from the commercial sector. Each drone variant relies on different power sources and software configurations, none of which are standardized or stocked within the Army supply system. There are no national stock numbers, no CLIX lines, and no centralized provisioning for these critical components. Sustaining these systems in combat still depends entirely on commercial access, which is a fragile proposition in a contested theater.

The FPV drone example is only the leading edge of a much larger challenge: the mass employment of drones in LSCO. Unlike legacy systems with predictable failure rates, drones will be lost, expended, or destroyed by the hundreds or thousands per day. Some are designed to be fire-and-forget while others are recoverable but require immediate refurbishment or component replacement to rejoin the fight. Yet the Army currently lacks a concept for volume-based

drone sustainment. BCTs are experimenting with 3D printing and small-batch fabrication using Allied Trades teams and the Metal Working and Machining Shop Set, but these efforts are not scaled for sustained operations. A three- to five-person Allied Trades shop equipped with a single printer can support prototyping or ad hoc repairs, but it cannot keep pace with the replacement demand of high-intensity drone warfare.

There is no forward stockage plan for drone parts, no doctrinal construct for surge fabrication of batteries or flight controllers, and no modular CLIX node that consolidates the gimbals, micro-controllers, or firm-ware updates these systems require. While limited components can be fabricated in the field, the Army lacks the expeditionary manufacturing capacity, technical repositories, and sourcing authority needed to mass-produce complete systems at the scale BCT operations demand. In practice, this means brigades will "go black," not due to poor tactics, but because the industrial base to regenerate combat power was never positioned forward. Until drone sustainment is treated with the same seriousness as fuel or ammunition, these platforms will remain finite assets with no viable replenishment plan.

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A parallel cha-llenge exists with the ISV. Designed to enhance dis-tributed mobility for infantry squ-ads, the ISV fills a critical operational gap, but its sustainment architecture is still catching up. Of the roughly 500 CLIX lines needed to fully support the platform, only about 300 are currently loaded into the Global Combat Support System-Army (GCSS-Army), and even fewer are provisioned for rapid issue. If LSCO began today, most units would be unable to sustain their ISV fleets in contact. At the tactical level, there is a limited supply of CLIX lines to fill shop stock lists, and even fewer lines to provide the redundancy required for authorized stock-age lists (ASLs). Without a robust CLIX foundation, battalion- and brigade-level sus-tainers cannot build the stockage depth needed to support ISV readiness during high-tempo operations.

When ISV com-ponents fail, units face two un-acceptable choices: cannibalize another vehicle or attempt direct coordination with the commercial manufacturer. Neither option is viable in a contested environment. There is no theater-based vendor support, no established maintenance pipeline, and limited technical depth within the formation.

To be clear, the Army has taken steps to prepare maintainers. Many 91B Wheeled Vehicle Mechanics have undergone new equipment training (NET) on the ISV. But this training often occurred before the vehicle was widely fielded or a comprehensive technical manual (TM) was available to guide sustainment tasks. In garrison, faults have been minimal due to the platform's newness. But in combat, under real conditions, with terrain-induced wear, enemy fire, and accelerated usage, maintainers must learn on the fly. That is not impossible, but it is a significant burden when most Soldiers received their NET before any diagnostic baselines or repair doctrine had matured.

In the event of a conflict, the ISV program manager and the Army will undoubtedly surge support and rapidly expand CLIX integration. But that will be cold comfort to the first unit into the fight. Without a ready, operational stockpile already resident in the unit's ASL, early-entry formations will face critical mobility losses when they can least afford them. The Army cannot wait for sustainment to catch up to lethality. The ISV must be supported from day zero.

The Fuel Problem

While parts availability is one half of the sustainment challenge, the other half is fuel. As brigades adopt more commercially derived platforms to increase tactical mobility, they also inherit non-standard fuel requirements, chief among them being motor gasoline (MOGAS). This second fuel type must now be stored and distributed in large quantities across the formation, creating a growing distribution dilemma. Every gallon of MOGAS carried reduces the brigade's jet petroleum 8 (JP-8) fuel capacity, impacting mission-critical systems like generators and tactical vehicles.

With no increase in fuel transport or storage assets, fuel bifurcation reduces the brigade's overall days of supply and compresses resupply timelines. Sustainment formations must support two fuel types without additional equipment, force structure, or doctrinal guidance. The result is a dangerous tradeoff: fuel endurance is sacrificed for platform mobility. At the tactical edge, this means tighter resupply windows, diminished operational reach, and increased risk during high-tempo operations. Unless the Army invests in modular fuel infrastructure or enforces fuel-type commonality, brigades will continue to face a distribution burden they are not equipped to carry in LSCO.

The Power Problem

Alongside fuel, power has become one of the most under-appreciated but critical forms of sustainment on the modern battlefield. Nearly every system in the MBCT, from individual Soldier equipment to mission command platforms, sensors, and unmanned systems, requires a continuous supply of portable electrical energy. Yet unlike fuel, water, or ammunition, power is often treated as an individual Soldier issue rather than a logistical one. Power generation is not one of the 10 classes of supply.

As a result, brigades face a sprawling and uncoordinated power ecosystem: dozens of incompatible battery types, ad hoc charging setups, limited distribution plans, and no standard approach to power resupply. When batteries die, the tactical edge loses more than convenience: it loses communications, targeting, intelligence feeds, and freedom of maneuver.

Power must be treated as a core class of supply. This means developing operational-level plans to store, transport, and distribute charged batteries with the same rigor applied to fuel or water. Sustainment units must be equipped with mobile charging stations, battery resupply kits, and renewable energy platforms that can operate forward in contested environments. Brigade S-4s and support operations officer sections must incorporate power distribution into operational planning cycles and logistics estimates, ensuring pre-charged assets are staged at brigade and division support areas and pushed forward as predictably as food or ammunition.

The People Problem

Another symptom of this fractured system is the lack of organic repair capability for commercial platforms. When an ISV or any other commercially procured system breaks down in the field, units often hit a

sustainment dead end. There is no TM in the Army system, no qualified mechanic trained to diagnose or repair the platform, and no CLIX lines for even the most common replacement parts such as axles, brake systems, or engine sensors. These are not exotic failures; they are standard wear-and-tear issues that, on legacy systems, would be fixed by a field maintenance team in minutes. Instead, even minor damage on a commercial platform can result in a total loss, with no means of repair at the company, battalion, or even brigade level.

This generates a compounding loss of mobility and combat power that degrades a formation more rapidly than enemy contact. The Army has built tactical units that depend on systems they cannot fix under fire, undermining the very flexibility these platforms were meant to provide. To be clear, this is not solely a training failure: it is a modernization gap. The Army cannot reasonably train every 91B on every emerging system. Instead, it must equip maintainers with tools that extend their reach. That means fielding modern maintenance support devices (MSDs) that can interface with legacy and commercial systems and institutionalizing tele-maintenance as a core function of field-level sustainment. A single 91B with the right diagnostics and reach-back support can sustain what entire teams cannot sustain if left isolated. Until part provisioning, platform integration, and SME connectivity catch up to procurement, the Army will continue to field formations that can drive to the fight but cannot keep fighting once they get there.

The Way Forward

To close these gaps before LSCO, the Army must act decisively across several critical areas of sustainment reform.

First, the Army must centralize sustainment for commercial systems by accelerating CLIX integration and establishing a dedicated clearinghouse for non-standard end items and parts. This effort must go beyond simply loading CLIX lines into GCSS-Army; it must create a scalable infrastructure that identifies, catalogs, and provisions high-demand commercial components across all echelons of support. That includes batteries, sensors, firmware modules, and other non-standard repair parts associated with platforms such as the ISV, FPV drones, and mobility systems.

This clearinghouse must function as a digital repository and a logistical node, bridging the gap between rapid acquisition and long-term sustainment. It must incorporate real-time unit feedback, operational usage data, and failure rates to prioritize provisioning. More importantly, it must insulate tactical formations from having to engage directly with commercial vendors or the strategic industrial base during combat operations. If a part is employed in the BCT, it must be supported by the Army supply system.

Second, the Army must revise its fuel and power distribution architecture to reflect the operational reality of multi-fuel and multi-battery dependence. Most BCTs now rely on a blend of JP-8 and MOGAS to power vehicles, generators, and small platforms, yet lack the modular storage and distribution equipment to manage both effectively. Also, nearly every tactical system requires tailored power, from lithium-ion drone batteries to AA batteries for sensors, and proprietary packs for radios and optics.

This fragmentation demands a shift in how we think about energy sustainment. Fuel and electrical power must be treated as co-equal classes of supply. Units must be equipped with multiple fuel distribution systems that can handle MOGAS and JP-8 concurrently, and sustainment doctrine must expand to include power generation, charging, and battery resupply as deliberate logistical tasks. Otherwise, BCTs will continue to face operational risk from running out of gas and running out of charge.

Third, the Army must doctrinally define the tactical echelon responsible for drone fabrication and concentrate Allied Trades and additive manufacturing capability at that level. While BCTs are already experimenting with small-scale 3D printing and limited fabrication, they lack the manpower, technical depth, and throughput to sustain drone fleets during high-tempo operations. This is a matter of innovation and a force design problem.

If the division sustainment brigade (DSB) is identified as the nexus for drone production, then the bulk of Allied Trades personnel and 3D printing equipment must be aligned under that formation. Centralizing drone sustainment at the DSB will enable higher-volume fabrication, more consistent quality control, and better coordination with CLIX provisioning and repair workflows. It will also allow subordinate brigades to request, receive, and employ drone systems without having to generate them internally.

This is a doctrinal and a force modernization line of effort. The Army must formalize the role of Allied Trades in drone sustainment and ensure additive manufacturing systems are fielded at the right echelon, not scattered across formations where they cannot achieve scale. Drone production must become an industrial capability.

Fourth, the Army must accept that it will never train every 91B mechanic on every piece of emerging technology, but it can empower tactical maintainers through smarter connectivity and diagnostic tools. This begins with institutionalizing tele-maintenance as a core enabler of field-level sustainment. Tactical maintainers must be able to rapidly connect with subject matter experts, whether at the DSB, program office, or original manufacturer level to receive real-time technical assistance.

At the same time, the Army must modernize its MSDs to ensure they can interface with every assigned platform, manned and unmanned, military and commercial. Today's MSDs are often unable to connect to newer systems, particularly commercial vehicles, drones, and autonomous platforms. Without functional MSD compatibility, even a well-trained maintainer is left guessing. Rather than pushing every system-specific skill down to the lowest echelon, the Army must equip the lowest echelon with the tools to reach up. Telemaintenance and interoperable diagnostics turn a single 91B into a distributed node on a network of sustainers, engineers, and technical experts. In LSCO, connectivity is capability.

Conclusion

The true danger of fragmented sustainment is not administrative: it is operational. In LSCO, a brigade that cannot source parts, generate power, or repair its systems must depend on fragile commercial networks that will not survive first contact. What begins as a capability gap quickly becomes a combat liability. The result is a force unprepared for battlefield endurance.

LSCO will punish fragmentation. A BCT juggling multiple battery types, fuel variants, proprietary platforms, and disconnected sustainment tools risks collapsing under its own logistical entropy with no enemy strike required. To prepare for LSCO, the Army must confront hard truths: we cannot train every Soldier on every system, but we can connect them to experts. We cannot print drones everywhere, but we can produce them at scale where it matters. We cannot simplify the battlefield, but we can simplify how we sustain it. That means standardizing parts, consolidating distribution, modernizing tools, and recognizing that power generation must be co-equal classes of supply and planned equally in combat operations. The future of sustainment is not just about moving supplies; it is about connecting Soldiers to the means of survival. If we do not build that network now, we may arrive at the next war ready to fight, but unable to finish.

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Feature Photo:
The Transportation Section from the 524th Division Sustainment Support Company, 25th Division Sustainment Brigade, moves the 225th LSB Common Authorized Stockage List from Schofield Barracks to Dillingham Army Airfield, Oahu, during Nakoa Fleek, August 2024. (Photo by MAJ Sean McLachlan)

FORGING AMERICA'S 21st CENTURY DEFENSE INDUSTRIAL BASE

Applying Lessons from the Arsenal of Democracy to Modern Great-Power Competition

■ *By COL Eric A. McCoy*

The Russia-Ukraine War has served as a profound strategic shock, exposing a dangerous chasm between America's defense strategy and its underlying industrial reality. The conflict's staggering consumption rates of munitions and low-cost drones have stress-tested the U.S. defense industrial base (DIB) and found it wanting. At peak intensity, Ukraine's daily need for 155 mm artillery shells could exhaust pre-war U.S. monthly production in just over a day, while its monthly consumption of 10,000 drones could deplete the entire U.S. inventory in weeks.

This industrial fragility is the direct result of decades of policy choices favoring peacetime efficiency and just-in-time logistics, which are ill-suited for great-power competition. Compounding this is an acquisition system that takes nearly 12 years to deliver a new capability, a pace incompatible with modern conflict. To rebuild its industrial might, the U.S. must look to its past. The Arsenal of Democracy of World War II was not a miracle but the result of deliberate strategic choices. By applying five critical lessons from that era, the U.S. can forge a resilient 21st century arsenal.

Lesson One: A Coherent National Demand Signal — The War Production Board Imperative

A core element of World War II mobilization was a clear, unified demand signal from the government to industry. Today, the DIB suffers from a chaotic and unpredictable budgetary environment that stifles investment.

President Franklin D. Roosevelt's War Production Board (WPB) held supreme authority to direct the national industrial effort, converting civilian factories and allocating scarce resources. This centralized control created a single, coherent demand signal, assuring companies that if they retooled to build bombers and tanks, the government would guarantee the necessary materials and contracts. This certainty eliminated market risk and unleashed the full power of the American economy, enabling the production of armaments equivalent to over $2.4 trillion today.

The modern DIB operates under weak and chronically unpredictable demand signals. The most damaging instrument of this uncertainty is the persistent use of continuing resolutions, which freeze spending at previous levels and prohibit new programs or production increases. This budgetary paralysis delays critical modernization of the nuclear triad, halts multi-year munitions contracts, and stops new military construction. For industry, this instability makes long-term planning, investment, and workforce retention impossible. Our major adversaries face no such fiscal dysfunction.

The most effective way to replicate the WPB's stable demand signal is through the aggressive use of multi-year procurement and block-buy contracting. These tools allow the War Department (DOW) to commit to long-term purchases and provide certainty and investment security to industry. This makes the government a reliable partner willing to pay for an effective industrial base.

Lesson Two: Quantity Has a Quality All Its Own — Designing for Mass Production

America won World War II not only with superior technology but with overwhelming mass. The Arsenal of Democracy understood that a good enough weapon in enormous quantities was often strategically superior to a perfect

weapon in insufficient numbers — a lesson the modern DIB has largely forgotten.

Between 1941 and 1945, American shipyards built 2,710 Liberty ships, a feat made possible by a design for production philosophy. The goal was not to build the most advanced ship, but a good-enough ship that could be mass-produced to overwhelm the enemy. The design was simplified, using welding instead of riveting and prefabricated modules to slash construction time from over 230 days to just 42. By 1943, three Liberty ships were completed daily, a rate that proved decisive in the Battle of the Atlantic.

The F-35 Joint Strike Fighter is the antithesis of the Liberty ship model: an exquisite, technologically complex platform whose lifecycle cost is projected to exceed $2 trillion. The pursuit of technological supremacy has imposed a massive sustainment tax, with annual operating costs per jet far exceeding targets and fleet availability rates consistently falling below goals. To stay within budget, the military had to reduce planned flying hours by 21%, a direct trade-off between cost and combat readiness. The jet's complexity has become a primary driver of unreadiness.

The Russia-Ukraine War has revalidated that quantity has a quality all its own. The DOW must institutionalize a tiered acquisition pathway that rewards designing for mass production, modularity, and ease of sustainment, valuing producibility on par with technological performance. The U.S. must design a force that can absorb attrition and fight at scale, which means relearning the lesson that the best weapon is often the one you have in sufficient numbers.

Lesson Three: Embracing Big Bet Innovation — The Manhattan Project Model

The race to develop the atomic bomb was a paradigm of radical, risk-tolerant innovation, a model that stands in stark contrast to the risk-averse, slow-moving acquisition system of the modern DOW.

The Manhattan Project was a high-risk gamble to develop a war-winning weapon under extreme pressure. Its management, led by GEN Leslie R. Groves, made a critical strategic choice: they funded multiple parallel approaches to the same problem, fully expecting some to fail. For instance, the project pursued three uranium enrichment methods simultaneously, while also developing a separate plutonium pathway. This big bet model recognized that in a high-stakes technological race, the greatest risk is not failure but delay.

The modern DOW acquisition system is a bureaucracy that stifles innovation. Promising new technologies perish in the valley of death — the gap between a successful prototype and a funded program of record. This valley is created by a linear, program-centric system where cost and schedule are locked in years in advance, making it difficult to insert new technology without a lengthy re-budgeting process. The result is a system where the average program takes nearly 12 years to deliver an initial capability.

To compete in rapidly advancing fields, the DOW must replicate the Manhattan Project's management model by creating empowered innovation vanguards. These organizations, like the Defense Innovation Unit, must be given flexible funding and risk tolerance to pursue high-reward projects and rapidly transition new capabilities to the warfighter, bridging the valley of death.

Lesson Four: Mobilizing the National Talent Base — The Rosie the Riveter Precedent

Advanced weapons are meaningless without the skilled hands to build and maintain them. World War II mobilization recognized human capital as a strategic resource, while today the DIB faces a threatening workforce crisis.

The iconic Rosie the Riveter campaign was the public face of a deliberate, government-led national effort to solve a systemic labor crisis as 16 million Americans went to war. This massive recruitment campaign brought millions of women into industrial jobs. By 1943, women comprised an incredible 65% of the U.S. aircraft industry's workforce, up from just 1% before the war.

The DIB faces a human capital crisis of similar magnitude today. The manufacturing workforce is aging rapidly, with a quarter of employees at or near retirement age, creating a severe shortage of skilled trades such as welding and machining. With over 800,000 open jobs in U.S. manufacturing, the skills gap could impact gross domestic product by over $1 trillion by 2030. This is a national security challenge that requires a national-level response.

Rebuilding the DIB's human capital requires a 21st century successor to the Rosie the Riveter effort: a digital arsenal national workforce strategy. This would be a modern patriotic messaging campaign to rebrand skilled trades as national service, massive investment in vocational education and apprenticeship programs, and improved pathways for veterans to transition into DIB careers.

Lesson Five: Integrating Allied Industrial Power — The Lend-Lease Strategy

The Arsenal of Democracy did not arm America alone. A core component of its success was the strategic integration of allied industrial power, a lesson more critical than ever in an era of globalized competition.

The Lend-Lease Act of March 1941 was a strategic masterstroke, empowering President Roosevelt to supply Allied nations with critical materiel without requiring immediate payment. This made America the industrial backbone of the coalition against the Axis powers. The program was vast, dispensing over $50 billion in assistance (nearly $1 trillion today) to over 30 countries, providing everything from tanks and planes to food and fuel. Soviet Premier Joseph Stalin admitted, "Without the machines we received through Lend-Lease, we would have lost the war." Lend-Lease was a policy of integrated industrial deterrence, recognizing that an ally's strength is a direct force multiplier.

Today, the U.S. system for defense cooperation is often crippled by bureaucratic barriers that treat allies more like risks than partners, chiefly the International Traffic in Arms Regulations (ITAR) and the foreign military sales (FMS) process. These regulations, born from a Cold War mindset, create a labyrinthian and slow system that disincentivizes allied participation in joint programs and encourages them to buy elsewhere. This undermines the goal of joint co-development of advanced capabilities.

To compete effectively, the U.S. must treat the industrial bases of its closest allies as a strategic extension of its own. This requires aggressively breaking down bureaucratic barriers by expanding ITAR exemptions and reforming the FMS process to be faster and more responsive. The goal must be a seamless ecosystem for co-development and co-production.

The Path Forward

America's DIB is at a critical inflection point. The Russia-Ukraine War has provided an undeniable warning: the arsenal optimized for peacetime is dangerously fragile for great-power competition. The hollowed-out supply chains, unpredictable funding, risk-averse acquisition culture, and looming workforce crisis are symptoms of a systemic failure to adapt.

The lessons from World War II offer a strategic mindset for revitalization. Rebuilding our industrial might requires adopting the same core principles: a unified national strategy with stable demand signals; a focus on production at scale; a culture of bold, rapid innovation; a mobilized national workforce; and the full integration of allied industrial strength. By implementing these principles, the U.S. can transform its industrial base into a resilient, 21st century arsenal capable of deterring conflict and, if necessary, securing victory.

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Feature Photo:
2nd Cavalry Regiment showcases the future of warfare with a lineup of drones on August 7, 2025, at Balli Army Airfiled, Germany. (Photo by SSG Dylan Bailey)

LETHAL LOGISTICIANS

The Need for Sustainment Soldiers to Master Basic Combat Skills

■ *By CSM John Oldroyd*

Sustainment Soldiers must receive comprehensive training in basic combat skills to meet the evolving demands of modern warfare. Historically, support units have been vulnerable when forced to engage in direct combat, as demonstrated by examples from the Korean War, the Vietnam War, the Iraq War, and the ongoing Russia-Ukraine War. These instances highlight the increasing likelihood of logistical personnel operating in contested environments and the necessity of self-defense capabilities. Preparing sustainment troops to operate effectively in large-scale combat operations (LSCO) and defend critical supply lines is crucial for overall mission success and force resilience.

In an era where global conflicts continue to evolve, so too must the preparedness of every Soldier, including those in support and sustainment roles. Historically, sustainment troops have often been situated behind the front lines, focusing on providing logistics, supplies, and essential services to the fighters at the front. However, history has shown time and time again that these lines are not impenetrable. From World War II to the present-day Russia-Ukraine War, instances where support units are forced to engage in direct combat are numerous. This article argues that sustainers must be trained in basic combat skills such as those taught in the Special Forces Basic Combat Course - Support (SFBCC-S).

Historical Context

Throughout military history, areas believed to be secure behind the lines have been overrun or penetrated. This proves that all Soldiers must be capable of self-defense. This vulnerability was demonstrated during the initial stages of the Korean War when North Korean forces quickly broke through United Nations and Republic of Korea Army defensive lines and forced them to retreat. This pattern continued in the Vietnam War when Viet Cong and North Vietnamese Army forces, though suffering terrible losses in the process, temporarily penetrated heavily defended areas, including cities and forward operating bases, during the 1968 Tet Offensive, forcing all personnel, not just combat troops, to engage the enemy.

The invasion of Iraq in 2003 starkly highlighted these vulnerabilities starkly. The 507th Maintenance Company, which came under attack during an ambush in Nasiriyah, saw only a few individuals returning fire, resulting in significant casualties and several Soldiers being taken prisoner. This incident revealed serious shortcomings in basic combat training among sustainers and underscored the importance of ensuring that support troops are as proficient in combat skills as their combat arms counterparts. We cannot afford for sustainers to believe they are not warriors.

Contemporary Lessons from Russia and Ukraine

The ongoing Russia-Ukraine War has reinforced the need for all Soldiers to be trained in combat skills. In the face of geographically dispersed battles, small mobile teams often find themselves isolated and operating independently, making them vulnerable to ambush and requiring them to be self-reliant. With the need to secure supply lines in an environment marked by constant shelling, drone surveillance, and cyber warfare, Ukraine's logistical units have had to be agile, capable of rapid relocation, and, above all, equipped to defend themselves. On the opposing side, Russia has reportedly lost upward of 90 resupply trucks each month. Losing not only the supplies but the vehicles transporting them has caused devastating effects on Russia. The tyranny of distance would make such losses completely unsustainable if the U.S. were to go to war in the Pacific theater.

Implications for LSCO

In a LSCO environment, support units must function in geographically dispersed, highly mobile teams. These teams will be tasked not only with providing logistical support but also with defending themselves in hostile territories where frontlines may blur and threats can emerge from any direction. As seen in modern conflicts, supply chains are increasingly vulnerable, and sustainers must be prepared to defend these critical lifelines. The protection of critical supplies like food, water, ammunition, and medical supplies will be paramount on the future battlefield.

To meet these demands, sustainers must be trained to operate independently in smaller, mobile teams. This requires a focus on basic combat skills such as marksmanship, movement, communication, medical skills, and close-quarters combat techniques for securing and holding buildings in hostile areas. The world population is becoming increasingly more urban. More than 55% of people live in cities, and this number is expected to increase to 70% by 2050. Naturally, combat will become more urban and sustainers must adapt to that reality. Sustainment personnel may be required to strong-point buildings or other structures, providing them with a defensible position should in their vehicles become disabled.

The Warrior Ethos: Instilling Combat Readiness Across All Roles

A critical component of ensuring combat readiness is fostering a warrior mentality in all Soldiers. Regardless of military occupational specialty (MOS), every Soldier must understand that they are a warrior first and must be prepared to engage in combat if required. No Soldier should ever think, "I'm just a (insert any combat service support MOS), so I'll never see combat." This warrior ethos is essential not only for survival but also for ensuring mission success. When sustainers understand that they are integral to the fight and capable of responding to threats, they contribute to a more resilient and adaptable force.

It is no secret that sustainers are seen as soft targets by adversaries. This view does not improve much with our own force, and many combat arms Soldiers see their sustainers as liabilities in a gun fight. Training all Soldiers to be proficient in basic combat skills ensures they can handle any challenge that arises, creating confidence that enhances overall morale and resilience.

Specific Training

Courses like SFBCC-S must become commonplace. SFBCC-S is a training program designed to equip sustainers in special operations with the combat skills necessary to operate effectively in high-stakes combat scenarios. The course aims to prepare support units to engage in direct combat, should they be forced to do so, by teaching them essential combat skills such as marksmanship, tactical combat causality care, and mounted and unmounted tactics. By providing sustainers with this training, the SFBCC-S enables them to defend themselves and their units, even in the most hostile environments, and to contribute to the overall success of the mission. Although each class caters to the needs of the Soldiers in the course, it is clear that the SFBCC-S plays a critical role in fostering a warrior mentality among special operations forces support troops and ensures they are prepared to face the challenges of modern warfare. 1st Special Forces Command (Airborne) directs this course be conducted within one year of assignment to a special forces unit and before each deployment. A similar schedule for conventional forces must be considered. Training all Soldiers within one year of assignment will help cement unit standard operating procedures and team cohesion. Additionally, it will give the combat Soldiers more confidence in the abilities of their enablers.

The ability to navigate with a map and compass is a critical skill that is often overlooked in the age of GPS. However, in a combat environment where GPS signals may be jammed, or unavailable, logisticians must be able to rely on basic navigation skills to find their way. Furthermore, they must be aware that even encrypted GPS is still vulnerable to being spoofed if compromised. Navigating with analog methods requires training and practice, and logisticians will need these skills to operate effectively in hostile environments.

In the future, logisticians must be able to use drones to scout ahead and gather intelligence and to employ them in an offensive manner to defeat threats before they materialize. This requires training in drone operation and maintenance and in the ability to integrate drone-based intelligence into their decision-making processes. Additionally, logisticians must be able to defend themselves against drone attacks, using their knowledge of drone capabilities and vulnerabilities to inform their defensive strategies.

The use of drones is just one example of how logisticians can leverage technology to enhance their combat effectiveness. Other examples include the use of advanced communication systems, such as satellite communications and tactical networks, to stay connected with other units and headquarters, even in environments with degraded communications. In addition to analog methods, logisticians must also be trained to use advanced navigation systems, such as GPS and inertial navigation, to ensure they can navigate effectively in unfamiliar terrain.

Conclusion

The nature of modern warfare necessitates that all Soldiers, regardless of role, be prepared to engage in combat. Historical and contemporary conflicts alike demonstrate that logistical and support lines can, and often do, become front lines. Training sustainers in basic combat skills, instilling a warrior mindset, and fostering combat readiness across the force ensure that every Soldier is capable of facing battlefield challenges head-on. A course similar to SFBCC-S must be developed for all sustainers to hone these skills. This commitment to comprehensive readiness will allow sustainers to execute their critical roles effectively, even in the most hostile environments. A force where every Soldier is a warrior not only strengthens defense capabilities, increases safe passage of critical supplies, and builds confidence in our combat arms partners, but also reinforces the Army's ability to adapt and succeed in the complex realities of LSCO.

CSM John Oldroyd serves as the command sergeant major of Group Support Battalion, 19th Special Forces Group (Airborne) (SFG(A)), and the G-3 sergeant major for the Utah Army National Guard. He enlisted in the active Army in 2001 as an 88M Motor Transport Operator and served at Fort Carson, Colorado, before joining the 19th SFG(A) in 2007, where he progressed through roles including mechanic, detachment sergeant, and first sergeant. He also served as the G-4 senior logistics NCO, first sergeant for Headquarters and Headquarters Company 489th Brigade Support Battalion, and operations sergeant major for multiple commands. He is a graduate of all levels of the Noncommissioned Officer Education System, including the Nominative Leaders Course. He holds a Bachelor of Science degree in psychology. He has completed three tours to Iraq and participated in exercises in six countries.

Feature Photo:
1SG Ronaldo Branch, the 414th Signal Company first sergeant, Special Troops Battalion, 3rd Infantry Division Sustainment Brigade, fires an M4 Carbine during a stress shoot in Provider Stakes, April 3, 2019, on Fort Stewart, Georgia. (Photo by SGT Elizabeth White)

GETTING SMALL TO WIN BIG

Equipping the LSB to Fight and Win in LSCO

By MAJ Sean McLachlan

Joint Pacific Multinational Readiness Center (JPMRC) rotation 25-01 offered a sobering glimpse into the logistical realities of future conflict in the Indo-Pacific. For the 225th Light Support Battalion (LSB) of the 2nd Light Brigade Combat Team, 25th Infantry Division, the exercise reinforced a hard truth: our current distribution platforms are poorly suited for the terrain, threat environment, and distribution requirements of a contested island campaign. Despite advances in mission command systems and refined support relationships under the prototype LSB, our trucks are too large and too heavy to sustain a fight that is dispersed, degraded, and atypically non-linear.

If the Army is to succeed in a multidomain fight across the Indo-Pacific, it must embrace a tiered distribution model that retains large-capacity platforms at higher echelons while empowering support battalion and company-level sustainers with smaller, more agile vehicles. These smaller platforms must be light enough to maneuver through restrictive jungle terrain and compact enough to sling-load. These platforms are not merely convenient. They are essential to waging large-scale combat operations (LSCO) in the Pacific theater.

The Terrain Is the Enemy

The Indo-Pacific is fundamentally a maritime theater. It is characterized by chains of small islands separated by vast ocean, covered in thick vegetation, and defined by minimal infrastructure. Many of the operational areas under consideration, such as the Philippine islands of Batanes, Palawan, or Fuga, lack developed roads, formal ports, or even operable airstrips. In such terrain, the Army's traditional workhorses, such as the Palletized Load Systems (PLSs), Heavy Expanded Mobility Tactical Trucks (HEMTTs), M978 fuelers, and M984 wreckers, struggle to remain relevant. These platforms require wide, hard-packed roads and large turning radiuses. They are difficult to recover without similar-sized vehicles, and they present large thermal, visual, and acoustic signatures. Simply put, they are designed for high-throughput movement on well-maintained infrastructure, not for navigating jungle trails or other restricted terrain typical of the Pacific theater.

What JPMRC Taught Us

At JPMRC 25-01, the 225th LSB supported a dispersed, multi-island exercise across the Hawaiian island chain (200 miles distant) that mirrored likely conditions in a Pacific fight. Key observations included the following:

- Access Denied by Terrain: On multiple occasions during JPMRC 25-01, large sustainment platforms were physically unable to reach forward elements due to narrow trails, dense jungle terrain, and weight-restricted infrastructure. Units operating just 5 to 10 kilometers beyond the brigade support area (BSA) were effectively cut off from ground-based logistics support by these terrain limitations. Doctrinally, the field trains command post (FTCP) and logistics release point (LRP) must be separated by several kilometers, enabling sequential and echeloned distribution from FTCPs to combat trains command posts (CTCPs), CTCPs to LRPs, and LRPs to the forward line of own troops (FLOT). In practice, however, the terrain collapsed these doctrinal layers: the BSA and LRP became one and the same. No viable ground routes existed beyond that point for anything larger than a Humvee, and in some cases, only Infantry Squad Vehicles (ISVs) could traverse the terrain. For instance, a key bridge on the main supply route could not support vehicles heavier than a Humvee, while all the alternate routes were too narrow even for that.

  This effectively eliminated the sustainment structure between the BSA and forward maneuver companies. The result was a breakdown in echeloned logistics. There were no functioning field or combat trains capable of bridging the gap between the BSA and the LRP. The inability to project sustainment beyond the BSA meant that infantry companies had to assume the responsibility for distributing supplies across 5 to 10 kilometers of contested terrain. In other words, the company trains extended from the BSA to the FLOT. Critical bulk water distribution systems like the 400-gallon Water Buffalo, 800-gallon Camel II, and 2,000-gallon Hippo were unusable due to size and weight constraints. With no way to push these systems forward by ground, the LSB was forced to resort to high-risk sling-load operations using full Water Buffalos, an approach that is increasingly vulnerable in a drone-saturated environment. Other resupply methods included aerial delivery via Container Delivery System (CDS), low-cost, low-altitude bundles, and ISVs to transport durable water bags and legacy water jugs. However, this last option came at a cost. Designed for rapid tactical movement, infantry task force ISVs were pulled away from tactical operations to compensate for the absence of dedicated small distribution platforms in the support battalion and forward support companies (FSCs). In short, the sustainment architecture collapsed under the weight of terrain restrictions, and infantry forces were left to shoulder the burden of their own resupply, an unsustainable model in prolonged or high-intensity operations.
- Lift Constraints: During JPMRC 25-01, strategic and tactical airlift capacity was significantly limited by the operational environment, particularly by the short length of available airfields during the island chain campaign. Despite the availability of C-17 aircraft capable of transporting most sustainment platforms in an LSB under normal conditions, the primary airfield on the objective island had a limited runway length, requiring a 75% reduction in allowable cargo weight. This restriction prevented the delivery of essential logistics vehicles, including the M978 fueler, tank rack modules, 800-gallon Camels, 2,000-gallon Hippos, load handling systems (LHSs), and M984 wreckers. The largest platform deliverable by fixed-wing airlift was a Light Medium Tactical Vehicle (LMTV) paired with a 400-gallon Water Buffalo. As a result, the infantry battalion conducting a long-range air assault across 200 miles of ocean was initially supported by the few LMTVs they could posture

Soldiers from a combat logistics platoon in the General Support Company, 225th Light Support Battalion conduct resupply sling load operations at Dillingham Army Airfield, Oahu, during Nakoa Fleek, August 2024. (Photo by CPT Kevin Davies, GSC Commander)

forward. Establishing a larger airfield or amphibious entry point to enable full-platform sustainment would have taken several weeks. In the absence of bulk fuel and water, or any dedicated recovery capabilities, the LSB relied heavily on CDS bundles and platform aerial delivery to sustain the island task force across all classes of supply. The lack of scalable, air-transportable logistics platforms at echelon constrained initial-entry forces, degrading early operational reach and reducing the tempo of support during the critical opening phase.

- Signature and Survivability: Large sustainment platforms generated substantial visual, thermal, and acoustic signatures. While such signatures at the BSA are expected and unfortunately still required with the large volume of supplies required to support a brigade combat team, the presence of M978 fuelers, M984 wreckers, LHS/PLS, and other legacy platforms at the FTCP and CTCP created an outsized footprint that degraded survivability for maneuver elements. In multiple cases, terrain-induced immobility forced FSCs to stage large vehicles away from their infantry battalion command posts and away from security elements, where they became high-value targets with limited organic firepower for defense. Sustainment operations reliant on massed vehicle platforms lacked the flexibility and stealth required for distributed, low-signature maneuver. Without a shift to smaller, more agile sustainment systems at the tactical edge, FSCs will remain disproportionately vulnerable in future LSCO. These challenges are not unique to JPMRC; they are endemic to Pacific sustainment. They cannot be mitigated through better planning alone.

Doctrine Meets the Jungle

Army Doctrine Publication 4-0, Sustainment, defines sustainment as the provision of logistics, personnel services, and health service support necessary to maintain operations until mission accomplishment. Within this definition lie three critical tenets: endurance, operational reach, and freedom of action. However, these concepts collapse when distribution assets cannot physically follow the fight. The LSB construct is modular, tailorable, and optimized for decentralized base cluster operations, but its effectiveness depends on its mobility. When combat and company trains are equipped with vehicles that cannot reach the point of need, the sustainment model fails to deliver. This is not a call to eliminate our heavy platforms. M978 fuelers and M984 wreckers provide vital capabilities. Sustainment in LSCO and expeditionary environments requires a flexible mix of large-capacity platforms with small-footprint, highly mobile platforms. Matching platforms to echelon and environment must become a cornerstone of how we field, employ, and fund the distribution force.

A Tiered Distribution Model

To achieve this, the Army must reevaluate echeloned sustainment from an equipping perspective.

Combat and Company Trains: In the Indo-Pacific, dense jungle, steep gradients, limited infrastructure, and disconnected island topography routinely render traditional distribution platforms ineffective. These conditions make it exceptionally difficult for FSCs (soon to be combat logistics companies) to fulfill their roles without fundamentally rethinking mobility. Current FSC vehicle density is dominated by legacy systems that are too large, too road-dependent, and too difficult to recover or displace forward in jungle or littoral terrain. This leaves FSCs dangerously exposed and unable to meet the needs of maneuver elements in distributed operations. To preserve operational reach and survivability, FSCs must be equipped with a family of small, lightweight, all-terrain vehicles capable of supporting immediate Class I (subsistence), Class III(P) and III(B) (fuel and packaged petroleum, oils, and lubricants), and Class V (ammunition) pushes. These platforms must be optimized for modularity, sling-load compatibility, and rapid deployment via CH-47, C-130, or external lift assets. They must also be capable of navigating narrow trails, degraded infrastructure, and other terrain where M1083s, M978s, or M984s cannot maneuver.

Emerging solutions already exist. The ISV, for example, offers a proven mobility platform that can be adapted for logistics roles. Potential variants include the ISV power variant, the ISV pallet carrier, and the ISV tank variant. These configurations would allow FSCs to build flexible, tailorable logistics packages aligned to mission variables and terrain. By enabling low-signature, rapid displacement sustainment operations at the support-company level, these platforms fill the critical mobility gap between the BSA and the FLOT. Without this shift to smaller, modular sustainment platforms, FSCs will remain a strategic liability in expeditionary operations.

Field Trains and BSA: Traditional heavy platforms such as the LHS, M984 wrecker, and HEMTT family remain indispensable to sustainment in LSCO and must be retained within the BSA. These vehicles provide essential capacity for long-haul distribution, equipment recovery, and refit operations that underpin the broader sustainment architecture. Their high payload, lifting capability, and integration with standardized containers and flatracks make them ideally suited for bulk resupply, transloading, and transportation from seaports or airports of debarkation to and from the BSA.

However, the complexity of the Indo-Pacific terrain and the distributed nature of tactical operations require that even LSBs be equipped with a limited set of smaller, air-transportable logistics platforms. These lighter vehicles enable throughput distribution when forward units are separated by terrain, enemy action, or degraded infrastructure. During periods of emergent need, the LSB must be capable of pushing Classes I, III, V, or maintenance support directly to a forward company or battalion using agile platforms that do not require improved road networks or route clearance.

Integrating ISV variants into the LSB's internal distribution modified table of organization and equipment provides a critical mobility option. For example, an ISV tank variant loaded with a 200-400-gallon water or fuel pod can be internally transported by a CH-47 and delivered directly to a remote island node. That same aircraft can conduct immediate backhaul by recovering a like-item FSC ISV. Essentially this reinvents the concept of a trailer transfer point but uses small vehicle exchanges instead.

This push-pull model increases operational tempo and responsiveness while minimizing the exposure of large convoys to enemy observation and fires. It also preserves heavy platforms for their intended purpose at the BSA, while extending the reach of sustainment through modular, scalable distribution. The result is a more flexible distribution network that bridges the gap between bulk cargo sustainment and tactical breakbulk delivery in contested, austere environments. Equipping the LSB with at least a platoon-equivalent package of light, configurable vehicles provides the agility needed to maintain momentum across all three levels of brigade combat team trains, especially when roads are compromised, airstrips are short, or units are spread across multiple islands.

Conclusion

The absence of small logistics platforms is not merely a tactical inconvenience. It is a strategic vulnerability, especially in the Indo-Pacific. While large sustainment systems continue to play a vital role at the brigade and division levels, they are insufficient for closing the last tactical mile in a distributed, contested environment. Overcoming this challenge requires a tiered sustainment architecture. Victory in the Pacific will not go to the formation with the most trucks, but to the one that can consistently deliver fuel, water, ammunition, and repair parts to dispersed units regardless of infrastructure, weather, or enemy action. That level of operational reach demands more than adaptation. It demands new platforms and a fundamental reimagining of echeloned sustainment in the context of LSCO.

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Feature Photo:
Soldiers conduct company trains resupply in Oahu, Hawaii, August 2024. (Photo by MAJ Sean McLachlan)

DID YOU KNOW?

A Blueprint for HR Professionals

World-Class Customer Service Inspired by Industry Leaders

■ *By MAJ Rita Failes*

Every successful project begins with a meticulously crafted blueprint. Whether you are building an impressive structure, designing an innovative system, or revolutionizing an organization's customer service model, these blueprints act as dynamic strategic roadmaps. Just as thriving organizations and franchises build on standard models to ensure a positive customer experience, the most successful companies adhere to these architectural guidelines. The Army embodies these principles. Each unit adds its distinctiveness, yet Soldiers rightfully expect a foundation of excellence within their S-1 shops, from streamlined processes to essential customer support.

The Adjutant General (AG) Corps is already laying the groundwork for advances in enhancing our human resources (HR) blueprint through the Integrated Personnel and Pay System-Army (IPPS-A), a game-changer that streamlines HR efforts while maximizing accessibility. However, there is even more potential to reinforce our HR model by placing customer service at the forefront. Imagine constructing a robust Army HR structure by channeling the winning strategies of industry giants like Amazon, USAA, and Chick-fil-A. By embracing these proven methodologies, we can create a customer service experience that is not only more consistent and efficient but also precisely engineered to our Soldiers. This approach will build trust and responsiveness across all S-1 shops.

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Laying the Foundation: Why Customer Service Matters in Army HR

Blueprints are not just about lines on a page. They ensure stability and function. In Army HR, customer service is the foundation, the load-bearing beams that hold up the entire personnel support system. Personnel support is not just an administrative task. It directly impacts the careers, well-being, and morale of every Soldier. While IPPS-A has automated many functions, the heartbeat of HR still lies in human interaction. A 2024 Five9 study revealed that 75% of people prefer speaking with a live representative when dealing with customer service issues. That rings true for Soldiers who seek real-time, face-to-face support when navigating complex personnel matters.

A well-executed HR experience builds trust, reinforces morale, and elevates Soldier satisfaction. Conversely, a weak foundation, marked by delays, miscommunication, and impersonal interactions, creates cracks that lead to frustration, decreased unit cohesion, and diminished retention rates. The Army's direct, mission-focused culture often contrasts with the empathy required in HR functions. AG Corps professionals must become masters of precision and compassion, ensuring every Soldier feels heard, valued, and supported. By integrating best practices from industry leaders, Army HR can construct a service-first framework that enhances the Soldier experience at every level and strengthens the Army's foundation for future readiness.

Blueprints from Industry Leaders: Building Blocks for Army HR Excellence

In the competitive landscape of customer service, industry giants meticulously draft detailed blueprints that emphasize efficiency, comprehensive training, and genuine engagement. Three exemplary models serve as invaluable sources of inspiration for Army HR in its quest for excellence. USAA stands out with a blueprint that intricately understands the military culture, crafting personalized service that resonates deeply with its members. Chick-fil-A adopts a different schematic, prioritizing proactive engagement and a service-first mindset, ensuring every customer feels valued and prioritized. Meanwhile, Amazon revolutionizes the service blueprint through its innovative integration of artificial intelligence (AI) technology and self-service options, optimizing efficiency to keep customers satisfied and engaged.

By delving into the strategic plans and practices of these trailblazing organizations, Army HR can refine its own blueprint for personnel services and can guarantee that Soldiers receive exceptional support, regardless of the circumstances. A steadfast commitment to high-quality service will ultimately build a stronger, more resilient community dedicated to serving those who serve us all.

USAA: The Pillars of Empathy and Problem Solving

Let us embark on a journey with the insurance titan USAA. Picture a structure meticulously built on empathy, efficiency, and proactive problem solving. Each of these pillars resonates with the mission of Army HR. Just as a master architect breaks ground with a solid foundation, USAA employees are rigorously trained in active listening, emotional intelligence, and swift decision making.

Now, imagine if Army HR took a page from this blueprint. By integrating customer service training into advanced individual training (AIT) and unit-level sustainment programs, Army HR can lay the groundwork for a team ready to handle real-world personnel challenges. Through scenario-based exercises, HR professionals can prepare to confront and resolve issues with confidence and foresight.

What if we also empowered first-line NCOs to wield greater decision-making power? Much like USAA empowers its workforce, this move could dismantle bottlenecks and expedite personnel solutions. USAA also thrives on a culture of immersion, where many employees are veterans or military spouses, and those who are not dive deep into intensive training to grasp the nuances of military life. Army HR professionals can harness this same spirit, embedding themselves within the operational environments they serve, visiting training sites, participating in field exercises, and uncovering the unique challenges faced by each unit. This hands-on engagement builds trust and fortifies HR's role as an essential enabler of readiness.

To take this blueprint to new heights, HR teams must launch regular training cycles where professionals rotate through different units, gaining firsthand insight into the various operational demands they face. Establishing mentorship programs between seasoned HR experts and junior HR Soldiers further enriches institutional knowledge. As Army HR embraces this dynamic, hands-on approach, it not only fulfills its mission but also inspires a new era of readiness and resilience in service to our military family.

Chick-fil-A: The Framework for a Service-First Mindset

Imagine stepping into a world where every meal is not just about sustenance but an unforgettable experience.

Chick-fil-A has mastered this art, consistently topping charts for customer satisfaction through its meticulous attention to hospitality. At the heart of their success lies what they call the Core 4 Model, where eye contact, a warm smile, a friendly tone, and a personal connection create a vibrant tapestry of service that sets a gold standard. Not to be outdone, their HEARD Model (Hear, Empathize, Apologize, Resolve, Delight) ensures that every customer's concern is handled with the utmost urgency and care.

Now, picture Army HR professionals applying this same transformative blueprint to their own service framework. A simple greeting to Soldiers, combined with eye contact and clear communication, weaves trust into the fabric of routine HR transactions.

Additionally, one of the standout principles that Chick-fil-A embodies is proactive engagement. Their employees do not wait behind the counter. They leap into the drive-thru lane, cutting wait times and enhancing efficiency. This dynamic approach paints a vivid picture for Army HR, suggesting the use of mobile HR stations in busy areas, whether at unit footprints, training sites, or motor pools. By bringing personnel support directly to Soldiers, disruptions to training schedules are minimized. Moreover, these mobile HR teams could proactively address recurring personnel issues before they snowball into larger concerns. To solidify this service-first ethos, HR teams can track and analyze the common concerns voiced by Soldiers, creating a continuous improvement cycle for customer service training and personnel policies. A feedback loop system can be incorporated, encouraging Soldiers to share real-time insights about their HR interactions. Through this elevated blueprint of service, the AG Corps can redefine the Soldier experience, ensuring every interaction is not just a transaction, but a testament to dedicated service.

Amazon: Engineering Efficiency Through Technology

Amazon has set an exhilarating gold standard for efficiency. With a relentless focus on the customer-first approach, Amazon stands apart from traditional businesses that often rely on manual interactions. Instead, it has perfected a dynamic system that empowers customers to resolve issues quickly and independently, only reaching out to human representatives when absolutely necessary. This exciting hybrid model of automation and human expertise serves as a powerful blueprint for Army HR. IPPS-A marks an important step toward adopting this groundbreaking approach, but there is still so much more potential waiting to be unlocked.

Amazon goes beyond mere automation. Every facet of its system is meticulously crafted with the user in mind. We now live in a world where Soldiers can effortlessly check the status of their personnel action requests and update personal records. What if we advanced this technology further? What if Soldiers had access to AI-driven support that provided accurate, regulation-backed responses in real time? This could transform the experience for our Soldiers.

Moreover, Amazon uses robust data analytics to elevate service delivery to new heights. Army HR can harness this principle by actively tracking common personnel issues and employing data-driven trends to proactively tackle bottlenecks before they escalate into larger problems. By weaving machine learning into HR processes, the Army could unleash the power of predictive models that anticipate personnel needs and transition HR teams from reactive problem solving to forward-thinking personnel management.

And let us not forget how Amazon continually refines its self-service tools to amplify user experience. Army HR can mirror this strategy by ensuring that IPPS-A remains not only intuitive but also adaptive. Imagine a future where AI-powered HR assistants are seamlessly integrated into IPPS-A, guiding Soldiers step-by-step through personnel actions, similar to how Amazon's support systems expertly navigate customers through complex transactions. By adopting Amazon's visionary model as a motivating framework, Army HR can cultivate an ecosystem where efficiency and Soldier support thrive together.

Building a Soldier-First HR Culture

So, how can we build a Soldier-first HR culture? The answer is straightforward: a robust plan and a strong foundation are essential. A thoughtfully crafted blueprint guarantees that each beam, bolt, and foundation stone fits seamlessly, resulting in a lasting structure. In Army HR, this means enhancing customer service at every level to construct an unwavering support system that Soldiers trust. From their first encounter with HR in AIT to continued engagements throughout their careers, every interaction must reinforce a culture of professionalism, efficiency, and care.

To cement this culture, the Army must lay the groundwork early. Just as apprentices study blueprints before they ever set foot on a construction site, HR professionals must receive comprehensive training in customer service fundamentals at the U.S. Army Soldier Support Institute at Fort Jackson. Teaching skills such as active listening, de-escalation, and problem solving from the outset ensures that HR Soldiers are equipped to handle personnel matters with the same level of expertise as a seasoned tradesman following an architectural plan. But a structure is not built in a day. Ongoing reinforcement is essential. Customer service training must be embedded into annual courses. Aligning these efforts with IPPS-A training updates ensures HR remains adaptive, responsive, and future-focused.

The key to Soldier buy-in is not just training: it is ownership. When Soldiers understand that excellent HR service is not just about paperwork but about readiness and support, they begin to see themselves as critical architects of the Army's success. Leaders must empower HR Soldiers to take initiative and allow them to propose solutions, improve efficiency, and actively contribute to a culture of service-first HR. Recognizing and rewarding outstanding service reinforces good practices and motivates professionals to uphold high standards.

By shaping a workforce that values service as much as precision, Army HR will transform from an administrative necessity into a trusted pillar of Soldier success. Just as USAA builds trust through its deep understanding of military culture, just as Chick-fil-A thrives on proactive engagement, and just as Amazon sets the gold standard in efficiency, Army HR must combine these strengths to create an exceptional customer service model.

Conclusion

The AG Corps is on the brink of a thrilling transformation. By embracing the powerful, empathy-driven strategies of USAA, the proactive engagement of Chick-fil-A, and the unrivaled efficiency of Amazon, Army HR is poised to provide world-class customer service dedicated to serving Soldiers with unmatched precision and heartfelt care. While our analysis of methodologies from Amazon, USAA, and Chick-fil-A is illuminating, it is just a glimpse into the vast ocean of innovative strategies waiting to be explored. To truly craft an HR system that evolves alongside the needs of our Soldiers, we must embark on a continuous quest to uncover new industry best practices, dive into emerging technologies, and adopt visionary strategies from diverse sectors. Through comprehensive training, cutting-edge technology, and an invigorating culture that cherishes customer service as fiercely as mission readiness, our HR professionals emerge as trusted architects shaping Soldier success. This transformation is not merely an improvement. It is a bold commitment to excellence.

The blueprint is drawn, and the materials are primed, but true excellence demands relentless refinement and adaptability. By nurturing a vibrant culture of continuous improvement and innovation, we will position Army HR as a beacon of personnel support, ever changing and always ready to serve our Soldiers in new and exciting ways. Now is the moment to breathe life into this vision, one dynamic interaction at a time.

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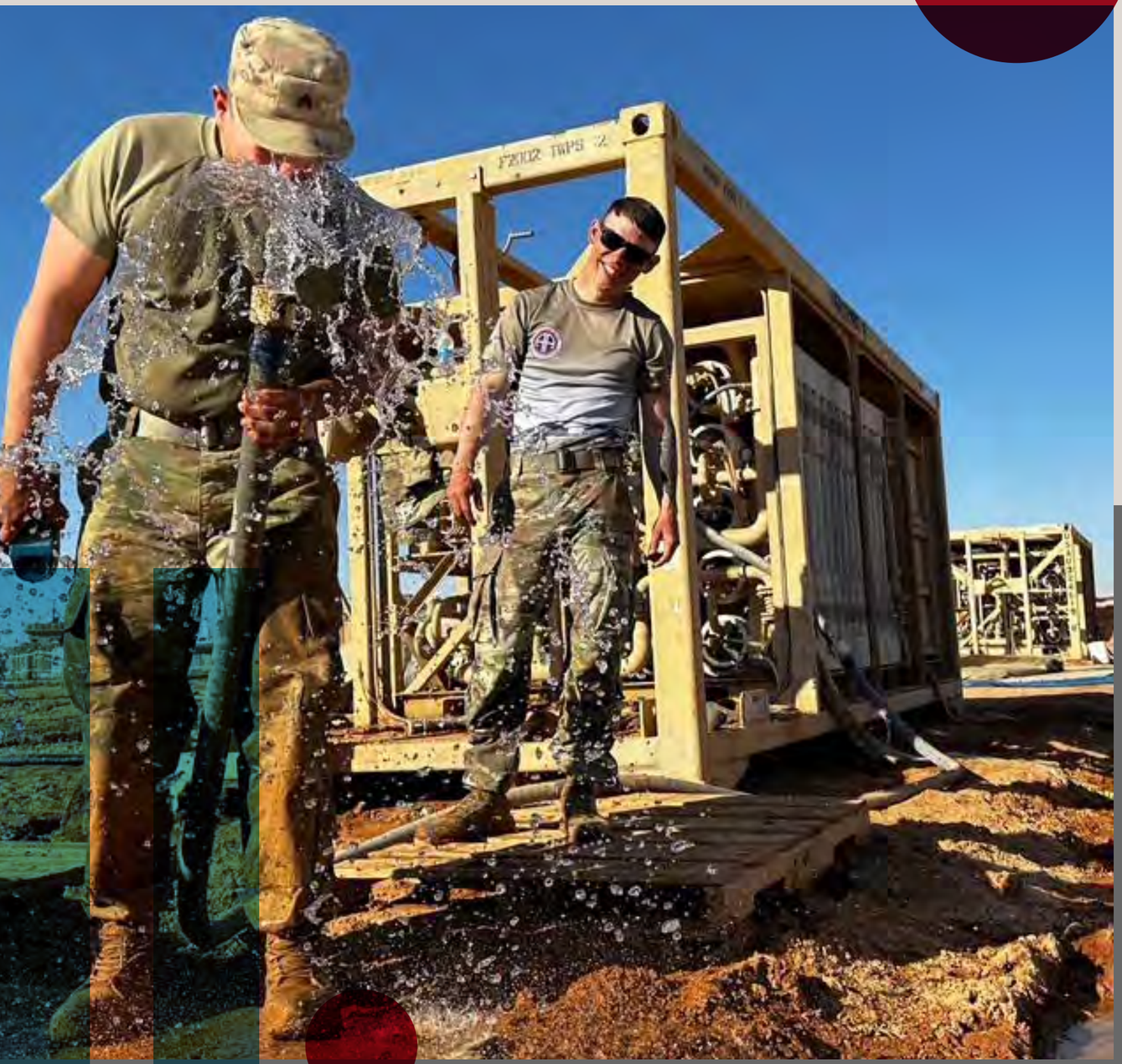

BRIDGING THE GAP

Water Purification in LSCO and the Return of the 92W

By CW2 Johnny E. Frambo II and SSG Ramon Negron Ortiz

The 92W Water Treatment Specialist has been stifled by years of counterinsurgency (COIN) operations, underscoring the relevance of the occupational specialty, devaluing their need to be implemented in the evolving battlespace, and further crippling their ability to perform operational functions consistent with occupational necessity. This article provides critical analysis into real-time purification operations, the avoidable shortcomings linked to ongoing operations, how these shortcomings tie into decisive failures at echelon in the emerging battle space if not rectified, and a tiered plan of action to mitigate the risk of losing at the hands of sustainment. Any failure to acknowledge and follow-up with decisive action will certainly cause a loss in future wars.

A New Fight, An Old Requirement

Over the last two decades of COIN operations, the role of the 92W has been quietly underused. With contract support readily available in mature theaters, purification in theater became an exception rather than the norm. In most locations, logistical capabilities or host nation support replaced the need for expeditionary water production. However, over the past three years, 92Ws reemerged as critical players in sustaining the force in austere and undisclosed locations. Ongoing operations in theater boast the capability of 92Ws and their ability to sustain life support daily. Rotationally, water purification units are embedded in austere environments with the expectation to produce, maintain, and distribute potable water to sustain the force, which would otherwise be incapacitated. Amid the steady shift from COIN to large-scale combat operations (LSCO), outlined in Army Doctrine Publication 3-0, Operations, Field Manual (FM) 3-0, Operations, and FM 4-0, Sustainment Operations, the demand for organic water purification has surged. As global conflict evolves, so must our enabler posture. 92Ws are no longer a luxury: they are a necessity. The 92W military occupational specialty (MOS) must be re-postured to meet this challenge.

In these forward environments, life support operations have become a matter of survival. Without contractor support unavailable, the Army defaulted to internal capabilities, 92Ws. Unfortunately, many units are unprepared to assume these missions due to limited training, degraded purification systems, and a garrison mindset rooted in stability operations. As LSCO become the dominant operational framework, this gap between capability and requirements represents a significant threat to operational readiness.

The Risk of Readiness Gaps in Water Support Operations

Without reliable organic water purification, operational reach becomes dangerously limited. Units are restricted to resupply lines; movements become lethargic; and medical readiness degrades. In LSCO, where maneuver forces are spread thin and enablers are operating within a secure rear area, this becomes a critical vulnerability. Water has proven to be a logistical constraint. However, it is also a tactical one. If 92Ws fail in their essential purification task, troops fail. A single purification site can support thousands of Soldiers only if it is functional. If not, entire operations may grind to a halt. This is portrayed in real time when most rotational units arrive in theater without having conducted basic chemical maintenance on purification equipment. The garrison training environment is riddled with red tape and environmental considerations, rendering the conduct of basic skill-level tasks impossible. Distribution has never been managed in hundreds of thousands of gallons, so product management is a foreign concept. Worse still, equipment maintenance is sparse because the COIN fight has taught that contracts will be readily available to support the warfighter.

Doctrine and the Problem of Atrophy

Water support has been degraded by years of underuse. Many 92Ws have not conducted water purification operations since initial-entry training. Soldiers are technically qualified but operationally untrained. Purification equipment is inoperable or stored indefinitely. In COIN, this shortfall was masked by an old reliable route: the overuse of municipal water or contractor-supplied bottled water.

When the opportunity for training is presented, it is not uncommon for the water operations plan to consist of simply performing bulk-to-bulk transfers, which is distribution and setting up retail points from Hippos prioritizing the movement aspect, which fails to capture a fraction of what 92Ws are expected to execute. The failure to provide realistic training to 92Ws exacerbates the problem. They are critically unprepared for real-world challenges, because they never train on mission essential task list (METL) tasks. Most 92Ws have been reconstituted to being proficient wheeled vehicle operators, dedicating time to perfect basic Soldier tasks like establishing fighting positions and setting up perimeters. The occupational requirement of purifying and maintaining potability standards, reading and interpreting data logs, and managing daily issue logs to forecast water consumption has been neglected. Soldiers often request to reclass after multiple situational training exercises that fail to capture their relevance.

Many 92Ws are assigned to alternate duty positions where purification is rarely conducted because bulk water is conveniently accessible. The scope of their responsibilities consists of weekly preventive maintenance checks and services of bulk distribution equipment. But LSCO would remove this safety net and would confront 92Ws with real-world challenges that would require technical expertise, attention to detail, critical thinking, and experience. Despite their lack of training, when 92Ws are thrust into an austere environment, they are expected to perform. Unfortunately, the COIN mindset is the perfect excuse to neglect or postpone relevant training. Commanders do not accept "I don't know how" as an answer to the inability to perform MOS-related tasks.

With the "train as you fight" mentality, the focus must be centered on the enabler who must produce potable water under fire, under pressure, and under mission-critical conditions. Purification operations are decentralized, expeditionary, and continuous. Soldiers must conduct raw water site reconnaissance, set up Reverse Osmosis Water Purification Units (ROWPUs), and produce water within tight timelines to enable the warfighter. They are expected to manage consumption rates. Every gallon of potable water counts when 92Ws operate independently in small teams, supporting battalion-level or larger formations under logistical and environmental stress. Purification sites must be secured, sustained, and regularly relocated, placing increased logistical and operational demand on sustainment units. In a LSCO fight, logistics will be a kinetic operation.

Doctrinal Misalignment and Cultural Inertia

Despite updated doctrinal publications like ADP 4-0 and FM 3-0, there remains a significant misalignment between current sustainment practices and the requirements of LSCO. Many unit-level tactics, techniques, and procedures (TTPs) still reflect the realities of COIN, where water purification was often supplemented by external sources such as contracted services and the availability of bottled water. This is evident when bulk-water planning focuses on retail water operations and does not address purification operations. This type of operational planning must exist in echelons no higher than the forward support company. However, in sustainment brigades and corps sustainment commands where the purification assets are embedded, this level of planning dangerously fails to meet the intent. In contrast, LSCO demand a self-sufficient approach, where organic sustainment capabilities must be able to operate in austere and contested environments without reliance on external support. This type of exposure requires proficient 92Ws who can identify and meet the challenges that purification sites require for short- or long-term potability. Units must develop schedules for cleaning and maintenance, jumping purification and distribution sites to follow the fight, and responding in the event of total equipment failure. These procedures are not captured verbatim doctrinally. Rather, they become a function of realistic training to standard.

The merging of doctrine interpretation and operational practice is paramount. The profession requires leaders who possess an array of experience, including the process of purification and an equal balance between the technical knowledge acquired through institutional training and the tactical expertise that comes from repetition and exposure to different mission sets. How do the operators know that pH (potential hydrogen) levels are directly correlated to the chlorine residuals? How can site NCOICs prepare for an increase in days of supply when the number

SPC Alex Leahy of 24th Composite Supply Company, 13th Combat Sustainment Support Battalion, 593rd Corps Sustainment Command, I Corps, prepares to mix calcium hypochlorite at Al-Tanf Garrison, Syria. (Photo by SSG Ramon Negron Ortiz)

of personnel supported is increased from 100 to 1,000? Only through tough, realistic training. The need to be proficient in all spectrums of operational capability is paramount. While tedious in planning and execution, this process highlights why leaders at every level must understand equipment capabilities and the theory of operations. Units must prioritize efficiency and take a proactive approach to preserve the equipment and sustain operational readiness.

In COIN, sustainment planning assumed that rear areas would remain secure and accessible, enabling access to municipal water sources, bottled water, or logistical water capabilities. This assumption no longer holds in LSCO.

Furthermore, doctrinal guidance versus practice persists, particularly when doctrine directs potable water certification, necessitating the availability of preventive medicine for water testing. Technical Bulletin (Medical) (TB MED) 577 mandates that water must be tested for safety before consumption. However, the coordination for a certifying specialist often faces logistical challenges in remote, austere environments, especially given that preventive medicine teams are often needed elsewhere or are unavailable on short notice. Additionally, the requirements consistent with the maintenance of potability standards, as with primarily every other function regarding water support operations, are tactically ineffective due to the underuse of water production at scale. This doctrinal friction impedes units from preparing and executing water purification operations efficiently.

Bridging the Gap: A Doctrinal Roadmap.

To close the critical water sustainment gap in LSCO, the Army must institutionalize water readiness as a foundational sustainment capability. This integration begins with formally designating water purification as a mission essential task within the Digital Training Management System. Water operations must be deliberately incorporated into METLs, field exercises, and rotations at readiness training centers. Validation of hands-on proficiency, comparable in rigor to gunnery tables or combat lifesaver certification, must become the standard.

Alongside training, equipment fielding and sustainment must be elevated to a command-level priority. Many units currently face readiness issues with ROWPUs. These systems are frequently stored, unserviceable, and provide diminished water support capability. Fleet-wide equipment audits must be mandated to identify readiness gaps. Partnerships must be established with original equipment manufacturers and field service representatives, facilitated by agencies such as U.S. Army Combined Arms Support Command, who can provide targeted MOS-specific maintenance training and troubleshooting. We must consider establishing protocols for regional equipment rotation pools to enable Soldiers to train on purification systems, regardless of organizational equipment readiness.

Additionally, water sustainment must be incorporated into operational planning. Water treatment specialists and sustainment staff must participate in pre-deployment surveys, sustainment working groups, and synchronization meetings to ensure water considerations are embedded in the concept of support plans. To ensure alignment, staff planners such as support operations and S-3s must receive formal training in water support requirements and considerations, using TB MED 577 and other joint water doctrine as core planning references. This doctrinal grounding would ensure water production and potability verification were treated with the same urgency and foresight as food service, maintenance, and ammunition.

Finally, the institutional Army must modernize its professional military education and doctrinal content to reflect LSCO conditions. Current programs of instruction at the Advanced Leader Course, Senior Leader Course, and unit-level training events often remain rooted in COIN-era assumptions. Therefore, training scenarios must simulate degraded logistics networks and include realistic constraints on water access and certification. Cross-training between water specialists, medics, and engineers must also be expanded to cover chemical/biological threats, water security, and field-level testing. Units must be encouraged to create and share TTPs for decentralized purification in contested terrain, ensuring adaptive practices are spread across the operational force. They all play key roles in the operation, and it is imperative they understand what each element does.

Conclusion

In LSCO, sustainment is not only an enabler: it is decisive. The Army cannot maneuver without fuel, ammunition, or water. And unlike fuel and ammo, water cannot be stockpiled in the same way. It must be produced, tested, and secured in real time, under real pressure.

The 92Ws must be rebuilt for this fight. It starts with doctrine, by achieving a ready on day one mentality. But the fight tonight continues through training. And it ends with victory sustained by Soldiers who can purify, secure, and deliver water on the move. Water is the Army's most forgotten battlefield skill and our most vital. Sustainment is combat power, but water is its lifeblood.

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SSG Ramon Negron Ortiz enlisted in the Army in 2014. He completed basic combat training at Fort Jackson, South Carolina, and advanced individual training at Fort Lee, Virginia, where he became a 92W Water Treatment Specialist. His military education includes the Advanced Leadership Course. He is currently pursuing a Bachelor of Science degree in criminal justice from the University of Maryland Global Campus. His combat and operational experience includes two deployments in support of Operation Inherent Resolve in Iraq and in Syria.

Feature Photo:
SGT Diego Gonzales and SGT Saber Jones of 24th Composite Supply Company, 13th Combat Sustainment Support Battalion, 593rd Corps Sustainment Command, I Corps, taste-test freshly produced water after Preventive Medicine certification at Al-Tanf Garrison, Syria. (Photo by SSG Ramon Negron Ortiz)

The Death of Creativity and Critical Thinking

By CPT Garett H. Pyle

What we viewed as science fiction only a few years ago has now become reality in terms of the power of artificial intelligence (AI). Our society has been fully inundated with AI from simple search engines, wearable fitness trackers, music and product recommendations, directions and route planning, and now fully AI-generated media and writing. It is becoming increasingly difficult to differentiate between what is human generated and what is AI generated. For example, just scroll through your reels on any social media. You might not notice them at first, but I bet you find some AI accounts. Some of the more popular ones have Bigfoot or storm troopers from Star Wars going on adventures. While they may be entertaining, without an account citation that it was AI generated, you cannot tell the difference. Many argue there is no harm in products like this. However, people's lives have been destroyed with the rise in deepfakes.

In the simplest of terms, a deepfake is when AI is used to manipulate or create images, video, or audio of people or situations that never happened. This can lead to misinformation, defamation, and erosion of trust in different organizations, which presents a huge risk to national security. In essence, AI or someone directly using AI could use this technology to create a situation or crisis that never happened, which could drive misinformed decision making. The Department of Homeland Security has recognized this threat and compiled a guide on how to identify deepfakes using some notable examples and the risks they carry.

The risks posed by deepfakes are significant, but I argue there is one that is even greater that is currently being used to develop ourselves out of existence. The Generative Pre-trained Transformer, simply known as GPT, is the newest technology that if left unchecked will leave our Army void of any creativity or critical thinking.

What is GPT?

As we continue exploring GPT and the impacts it is having on us, I strongly recommend that you read the article, "Is Efficiency Worth Sacrificing Our Humanity?" from the spring 2025 issue of the Army Sustainment Professional Bulletin. In that article, I presented an overview of the development of AI and the current situation of some of the benefits and dangers that exist, while exploring how our humanity is being lost to efficiency.

According to IBM, GPT was developed by OpenAI and comes from a family of large language models (LLMs) that use a transformer deep-learning technique to generate human-like text based on user prompts. An LLM is an advanced AI model that is trained in immense amounts of data, which enables it to be capable of understanding and generating natural language. This ability enables them to perform a wide variety of tasks.

According to IBM, GPT generates this new data from the generative pretraining. This is the process of training the LLM on unlabeled data through a form of unsupervised learning so the system can make sense of it on its own. These parameters enable it to draw conclusions from patterns that it detects. The transformer model is the aspect that specializes in processing and understanding natural language, enabling the system to process the inputs it is given.

This technology is not foolproof. It can produce an inaccurate output based on the parameters that have been set. It can also detect patterns in the data that do not exist and reproduce bias from those who created it. Therefore, it does not distinguish between what is accurate or inaccurate and cannot detect even biases in the information it receives. Thus, you might ask the system, "what is the most effective form of resupply during large-scale combat operations?" If the parameters were off or were not linked in with the most updated doctrine, GPT could produce an inaccurate response. Also, there could be bias from the one who created it regarding which resupply methods are better than others, which could affect the results.

Understanding AI, LLM, and GPT can become very technical, and the intent of this article is to provide a basic understanding of what they are so we can further understand the impact that GPT is having. I will refer to the most common form of GPT, which is

ChatGPT, or the Army-authorized one for use, CamoGPT.

Current Landscape of Generative AI

Throughout society and even within the ranks of the military, generative AI, especially GPTs, are being advertised as a safe, precise, and reliable tool to increase productivity, efficiency, and accuracy. Some of the tasks that GPT conducts include answering questions, drafting emails or messages, scheduling appointments and managing your calendar, generating reports or summaries, and providing recommendations. This begs the question, "if the GPT is conducting all this work, then why are you even needed in the position?" As I heard one individual say, "I will just have my GPT talk to your GPT, and I will go home for the day."

We even see this technology finding its way into academia. Policies differ between every educational institution, but the common theme is to ensure students acknowledge anytime they use generative AI. This is the same procedure for anything a student would refer to outside of their own thought. However, this can easily be abused. I have witnessed students turning in papers with most of the content generated by AI. They cited everything, but they did not produce any of the analysis or reasoning, completely negating the value of the assignment. Far too often we see people just copying and pasting the information that GPT produces without understanding the information. If the student does not do the right thing and cites their use of AI, how can the institution know if the student produced the work? Do you really want a medical examination from a doctor who made it through medical school using GPT for all their papers and research? These are just some of the questions we must ask ourselves with this technology and how we approach education.

For reference, using AI tools such as spell check or grammatical mechanics is not included in these policies. They are simply tools used to improve writing. However, they also come with their own set of problems when it comes to critical thinking.

The message that is being pushed is that the more we use these systems in our daily lives or operations, the more benefits we can expect. The push is to use GPT for routine tasks to free up time for more critical and precise work, which would in theory reduce human error.

Even with all the advertisements and marketing to use these programs, the argument in my previous article "Is Efficiency Worth Sacrificing Our Humanity?" still stands. GPT is hindering our ability to think for ourselves, destroying our creativity and critical thinking skills, and making us lazier. I have also heard many comments that there is no harm in using these programs and that my thoughts are not based on any data. Well, studies now are starting to reveal the data that supports my claim.

GPT and Your Brain

The Massachusetts Institute of Technology (MIT) released a preprint study in June 2025 that analyzed the brain when using GPT to write several essays. The study involved 54 participants, 18 to 39 years old, who were then divided into three groups. One group used ChatGPT, another used Google's search engine, and the last one used nothing at all. They used an electroencephalogram to measure and record each writer's brain activity. Following the study, they found that the group who used ChatGPT had the lowest level of brain engagement and got lazier with each successive essay. Many resorted to just copying and pasting directly from the ChatGPT answers. The group that used Google's search engine fell next. Those that used nothing at all had the highest level of brain engagement.

While this paper has not been peer reviewed, the main author, Nataliya Kosmyna, thought it important to release the findings to increase awareness about the use of ChatGPT, since our society is using it with ever-increasing frequency. As this awareness increases, more studies will be conducted to see the impact of using this technology. For instance, another study between OpenAI and MIT discovered a link between higher chatbot usage and loneliness. This is only the beginning of the research that is underway that highlights how this technology negatively affects our brains.

GPT Effects in the Army

As I discussed previously, there is a big push across our society to use generative AI, including in the Army with CamoGPT. My biggest fear is that we are going to create a generation of ineffective leaders who rely so heavily on technology that they will not be able to function without it. If we cannot do simple things like write an email, draft an award, or write a weekly situation report without GPT, then how can we be expected to go through the military decision-making process and build an order? This may seem like a rash statement, but let me explain.

Performing these simple tasks is like going to the gym for your brain. You keep it exercised with increased intellectual engagement, which leads to stronger problem-solving skills, increased critical thinking, and more creativity in your writing and thought. Like in the gym, you cannot expect to barbell squat 200 pounds unless you work up to it. You will break your back if you try to do this without any training. The same goes with your brain. We must do the simple things every day to keep our minds sharpened and ready for the complex problems that we are going to be tasked to solve in large-scale combat operations.

With the amplified focus on professional writing through the Harding Project, we know how vital writing is to increasing our lethality across the force. It is how we share ideas, increase our knowledge, and sharpen our individual skills. Our brain is the ultimate weapon, and it must be trained every day. We cannot lose the ability to think critically and creatively. Our nation depends on those simple skills.

Way Ahead

As more research is conducted, I believe the evidence will continue to show that GPT inhibits brain function and decreases brain activity,, which will result in the death of creativity and critical thinking. As I mentioned in my previous article, we are constantly seeing the results of these effects due to our overreliance on technology.

I was recently at a store buying a drink and the young cashier, who was probably in their early 20s, could not calculate my change when I paid in cash. The bill was $3.49, and I gave them $3.50. They had to use the calculator on their phone to figure out the change was only one cent! I was completely baffled by the experience. This is not an isolated case. I have witnessed multiple cases where people could not read an analog clock or do simple calculations in their head.

I believe that GPT is not a step forward in human development but is instead a giant leap backward. Yes, it is a tool that could have some benefits if used in the right manner, such as research assistance or very limited use in condensing writing, but the tool itself can still be flawed, as discussed previously. It can give incorrect or biased results.

Additionally, GPT will begin to erode the trust in our institutions and cause Soldiers of all ranks to question everything. How will they know what is real and what is AI generated? We consistently see the errors that GPT produces as we discussed previously and the risks that have arose from deepfakes. We need to pump the brakes and not dive headfirst into full GPT usage in every task of our lives. We owe it to our nation and the Soldiers we lead to generate critical and creative thinking with our own brain power.

We are in an age of heavy reliance on digital technology. Every new technology comes with its own set of benefits, but there are always costs associated. We cannot ignore the negative impact and damage that GPT is having on our society. Thus, I leave you with this simple question: Is the alleged increased efficiency with using this technology worth sacrificing our ability to think critically and creatively?

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OPERATIONALIZING THE DEPLOYMENT PROCESS

By Dr. Stewart W. Bentley

"Train as you fight, fight as you train" is an old Army truism. It is similarly true for the deployment process: "Plan your deployment, deploy your plan." Deployment planning itself is a form of command and staff training that must be operationalized and not simply pushed aside as a logistical or support function. In addition, deployment planning must be included as part of the military decision-making process since the process is essentially the same.

One of the more troubling deployment trends observed in warfighter exercise (WFX) and combat training center (CTC) rotations is how little time and effort are spent on preparing units and Soldiers for mobilization and deployment. Most operational planning is focused on what happens when units cross the line of departure and begin combat operations. The issue here is that a failure to account for mobilization and deployment ignores the complexity of those functions. How did the unit get to the line of departure, and what could be learned in examining those functions?

The current WFX structure includes a series of command post exercises that culminate in the penultimate event when the unit executes large-scale combat operations (LSCO). A review of a recent WFX timeline and associated training objectives indicates that the unit focus was on the warfighting functions with no mention of the deployment process.

The CTC rotation after action reviews (AARs) for the past several years repeat the same trend. However, it bears noting that while the WFX structure does not include large movement of equipment and Soldiers, CTC rotations do. This planning entails the scheduling and prepositioning of transportation resources and deployment enablers. The focus of the AARs is on how the units performed various combat functions once they crossed the line of departure.

A recent Joint Readiness Training Center (JRTC) symposium about LSCO did not address the issue of mobilization and deployment either. Instead, it focused solely on warfighting functions. Similarly, a JRTC Crucible podcast featuring the commander of the XVIII Airborne Corps had the same focus on warfighting.

Within Component 3, an Army National Guard division conducted a staffing exercise in 2023 to determine how long the mobilization and deployment of the unit would take from armory to port. The division planners estimated that from mobilization day to the ready load date on the maritime shipping conveyance (beyond rail) would take 47 to 50 days and then an additional 14 to 21 days for transshipment to theater. Note that this timeline was done in an uncontested homeland environment.

There is a certain irony here. As an institution, the Army relies on deployment planning and resourcing before any training exercise or real-world deployment. The actual process is completed before any move, whether to a local training area or to a CTC. The issue is that it is not evaluated for effectiveness. While a unit may meet the established deployment timeline, there is no evaluation of how the unit functioned. If the Army treated deployment as an operation, that process would receive the same command priority and attention as standard plans and exercises.

A review of existing publications is revealing. While Field Manual (FM) 3-0, Operations, addresses deployment at length, beyond planning, it only highlights the need to conduct deployment readiness exercises at the unit level. Chapter 4 of FM 4-0, Sustainment Operations, devotes only one paragraph to deployment and then one sentence to planning: "Corps and division staffs examine all deployment possibilities and conduct parallel planning." This brief treatment leads one to conclude that since deployment is addressed elsewhere — namely in Army Regulation 525-93, Army Deployment and Redeployment, in Department of the Army Pamphlet (DA Pam) 525-93, Army Deployment and Redeployment Processes and Procedures, and in Army Techniques Publication 3-35, Army Deployment and Redeployment — the planning process does not need to be included.

In the staff hierarchy, bringing the mobility warrant officer (MWO) and the unit movement officer (UMO) into operational planning is critical. The MWO provides the knowledge and experience to make the process efficient. The UMO, even when not school trained, learns by experience how the planning and execution process works.

Changing the institutional mindset is a process. A useful starting point would be to add deployment to the list of warfighting functions in Army Doctrine Publication 3-0, Operations. Most would argue that deployment is a sustainment function, but this misses the point of how units conduct mobilization and begin the process of getting to the line of departure. Next, deployment concept drills should be added to unit training, from the general to the specific. This should be done in the ascending form of leader's recon, tabletop exercises, and rehearsal-of-concept drills across the spectrum, from deployment readiness exercises, field training exercises, CTC rotations, and the WFX structure. During the latter, third-party evaluators, similar to CTC observer controllers, could observe and assess the process efficiency and provide objective feedback. The evaluation task checklists are in Appendix C of DA Pam 525-93.

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ASU WRITING COMPETITION WINNER

THE CHINOOK IN LSCO

By CPT Christopher Wise

For the last two decades, the CH-47 Chinook has dominated the counterinsurgency environment. Maneuver commanders value the platform for its versatility — not only as a cargo platform, but also as an air assault ship, rapid refueling asset, gun-slinging platform, and casualty evacuation ship when needed. Chinooks have provided ground commanders with rapid, flexible means to move mass. However, the uncontested skies of previous wars are no longer guaranteed. Army Aviation now faces future contested environments where U.S. air supremacy may not exist, and aircraft may not be able to participate in direct action. This shift presents an opportunity for the Chinook community to serve a new mission: directly supporting the sustainment commander.

The sustainment community faces a unique capability gap in future conflict. In an immature theater, Air Force air mobility assets like the C-130 must land closer to the theater sustainment command (TSC) in the joint security area (JSA). Air mobility needs runways, which provide adversaries with fixed targets, adversaries who can now use massed, cheap, one-way drones to cripple combat power. With this new reality, the time and space required to resupply a rapidly developing front will be extended to preserve air mobility combat power. This means that the Army must conduct resupply over unforgiving terrain against enemy action. To cross a river, convoys need a bridge. If the enemy removes that option, cargo is delayed, and the front suffers. Recent examples in the Russia-Ukraine War have provided

striking lessons of what happens when maneuver elements cannot be resupplied. Between the JSA, corps support area, and division support area (DSA) is a commodity flow chokepoint that enemies can exploit to sever supply trains and reclaim U.S. territorial gains.

The lessons from Ukraine also pose a possible solution. The conflict has seen renewed contest over the air littoral. The lower air littoral, in this case 200 feet and below, is largely where Ukrainian and Russian helicopters and unmanned aerial vehicles are forced to operate. This band of sky is too low to be effectively targeted by large anti-air assets and difficult for small arms to target. The solution is for sustainment commanders to own assets to exploit the air littoral in the rear while the theater matures to the point where air mobility can land closer to the forward line of own troops (FLOT). The answer is the Chinook.

Field Manual 3-04, Army Aviation, divides Army Aviation across three operational models: deep, close, and rear operations. All models have aviation assets working for the corps combatant commanders or below. While the need for heavy lift assets supporting maneuver commanders is critical, sustaining these forces is equally critical. Maneuver commanders need a blank check for ammunition, fuel, food, and Soldiers as they fight to mature the theater. Sustainment commanders in echelons above brigade (EAB) need the ability to rapidly shift the depth of magazine (the ammunition stockpile) to keep up with frontline demand.

A single CH-47 can take as many pallets as a Container Roll-In/Out Platform (CROPS) or flatrack, though with more weight and dimension requirements. These pallets can be delivered anywhere, not just airfields. As DSAs and brigade support areas (BSAs) displace with maneuver elements, sustainment commanders at the operational level can use CH-47s to ensure commodity throughput and supply train continuity. It also means that DSAs and BSAs are not confined to areas with runways, which increases their survivability. As Role 1s and Role 2s become overwhelmed, these flights can provide immediate reverse-throughput of mass casualties to Role 3s.

Access to this tactical cargo asset can also help theater commanders by providing a layer of deception. While it might be obvious that a buildup of ammo and fuel indicates future combat operations, sustainment commanders can bank these commodities at the JSA by way of pre-made logistics package (LOGPAC) pallets. When the time comes to execute, pre-made pallets already sized to fit a CH-47 can be rapidly shifted around the battlefield to support the combat trains via tail-to-tails faster than enemy intelligence can track.

There are several advantages of keeping Chinooks in the backline with sustainment efforts. First, crews are closer to the folks who build the LOGPAC pallets. Non-rated crewmembers can ensure pallets fit the customer requirements with the Chinook limitations. As a downstream result, CH-47 units at the DSA receiving these pallets do not have to spend time sizing or rejecting pallets, which improves overall throughput.

As the FLOT extends farther from the TSC and the port, lines of communication become more vulnerable to attack from latent enemy units in the rear. This is how peer/near-peer adversaries plan to weaken U.S. campaigns. Retaining aerial reaction force assets behind the DSA can enable the rapid deployment of quick reaction force assets to sustain lines of communication to mitigate the threat.

Crew rest is a limiting factor for CH-47 operations across the battlefield. The more maximum duty days and extensions crews get, the more worn out they become. This increases the Class A, B, and C accident rates. A CH-47 sustainment mission in the rear allows a better level of daily consistency and the ability to rotate crews to mitigate exhaustion.

Phase maintenance — routine inspections after set flight hours — adds further complexity. Aircraft that go into phase maintenance are rendered immobile and therefore vulnerable. The best option would be to have multiple phase lanes in the JSA. The maintenance, maintenance test flights, phase throughput, and theater aircraft rotation can be managed by Chinook units in the rear. Aircraft close to phase can be rotated to the rear and exchanged for fresh aircraft. Sustainment commanders can maximize the hours on low-time aircraft more consistently and predictably to control when an aircraft drops.

As the FLOT pushes forward and enemy anti-air capabilities degrade, the theater matures. This coincides with increased need for CH-47 capabilities at the maneuver corps and division levels to exploit the fractures in enemy lines. Because some CH-47 combat power has been used in the rear up to this point, fresh combat power can be surged as needed. Additionally, with the maturation of the combat theater, air mobility can get closer to the FLOT. As this happens, more CH-47s can hand off the sustainment mission to join the front. Table 1 is a theoretical breakdown of how to shift Chinook assets by theater maturation and what is gained by doing it.

To make this maneuver-sustainment ecosystem work, several actions must be taken before the next conflict.

First, the Logistics Captains Career Course must be offered to aviation officers rated in the CH-47. This would offer three advantages. One, CH-47 commanders would develop a background in the sustainment paradigm, becoming better able to integrate CH-47 units with EABs executing the sustainment mission. Two, this would improve the logistical expertise within combat aviation brigades because these officers are uniquely equipped to serve as battalion and brigade S-4s. Three, it would integrate the overall force by developing cross-branch relationships among junior staff officers and allow CH-47 officers to meet their future primary customers.

Second, we must increase personnel in the support operations mobility shops, specifically for the purpose of solving points of friction. This would be a low-cost change. These would be CH-47 non-rated crew members. Teams would move around the theater, identify inefficiencies in the CH-47 supply train, and work to fix them. For example, if LOGPAC pallets were built to go on a CROPS, but the ground train were disrupted, these teams could reconfigure pallets for Chinooks. The teams could also work with Chinook units at the DSA or BSA to improve systems and processes in the rear.

Third, we must start detailing Chinook companies to sustainment commanders to define their operational niche. This would be another low-cost change. Should they be a direct asset for expeditionary sustainment commanders? Would they work better as an independent rear-oriented theater taskforce? As a point of order, any Army sustainment unit that adopts Chinooks as an asset must be supplied with 463L pallets for improved cargo flow.

Since the 1960s, the CH-47 Chinook has been helping warfighters win wars. Its legacy is one of excellence. Its continued excellence may lie in supporting the sustainment paradigm through air littoral exploitation. While current conversations surround drones, artificial intelligence, and the next generation of warfare increasing levels of airspace denial, there is at least one thing that will not change: Soldiers are needed to take and hold ground, and those Soldiers will need beans, bullets, and bandages to be successful. The Chinook's future lies in serving these Soldiers.

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Feature Photo:
ACH-47 Chinook helicopter carries a sling-loaded Humvee during air assault rehearsals in preparation for the Joint Force Entry exercise ahead of Mountain Peak 25 at Division Hill, on Fort Drum, New York, May 8, 2025. (Photo by SGT Salvador Castro)

REDESIGNING SUSTAINMENT TO BUILD COMBAT READINESS IN LSCO

Lessons from the Indo-Pacific

■ *By CSM Eduardo I. Carranza*

As the U.S. sharpens its focus on large-scale combat operations (LSCO) in the Indo-Pacific theater, shaped by strategic competition with China, it is presented with a unique set of challenges. LSCO readiness in this region demands more than lethality. It requires an adaptable sustainment architecture capable of surviving in dispersed, contested, and degraded conditions. China's military modernization, economic coercion, and territorial assertiveness — especially in the South China Sea — are not only indicators of rising tension but direct threats to the logistics networks that underpin combat power.

Transformation in Contact 2.0, as defined in U.S. Training and Doctrine Command Pamphlet 525-3-1, The U.S. Army in Multi-Domain Operations, is the Army's commitment to adapt formations and capabilities during contact with peer threats. Sustainment cannot wait for calm phases to modernize. It must evolve in stride with maneuver forces under fire.

Sustainment organizations play a pivotal role in shaping operational outcomes before the first round of fires. In an era defined by precision strike threats, information warfare, and political friction, the ability to sustain forward-deployed forces directly influences combat readiness and deterrence. This article examines how China's rise impacts LSCO preparedness in the Indo-Pacific and recommends how U.S. Army sustainers can transform their posture to ensure survivability, agility, and operational reach in tomorrow's fight.

China's Rise and the Logistics Challenge

Over the past decade, China's official defense spending has increased by approximately 75%, rising from around $150 billion in 2014 to over $270 billion in 2024.

This sustained investment underscores Beijing's goal of fielding a force capable of countering U.S. power projection. Through the Belt and Road Initiative, China has also established a significant economic presence across Asia, Africa, and Latin America. While Chinese officials claim peaceful intent, their actions in the South China Sea suggest otherwise. The construction of artificial islands, military outposts, and the harassment of regional navies indicate a strategy focused on dominating critical sea lanes and logistics corridors.

The South China Sea, through which more than 30% of global trade flows, is a linchpin of global logistics. Control of these waters provides economic leverage and the means to threaten U.S. and allied sustainment operations. In future LSCO scenarios, traditional hub-and-spoke logistics models would be at significant risk from precision fires, maritime interdiction, and

cyber attacks. This important fact requires that we rethink how we build and sustain combat readiness.

Sustainment in a Contested Indo-Pacific Battlespace

China's ambitions have forced a fundamental shift in how the U.S. envisions its sustainment operations. The old assumptions of stable bases, secure ports, and uncontested airlift no longer hold. Transformation in Contact 2.0 requires sustainment structures that can adapt in real time, survive in degraded environments, and support forces operating far from traditional logistical hubs. The adaptability of these structures must ensure the country's preparedness.

Sustainment Priorities for Transformation and Combat Readiness

To meet this challenge, sustainment transformation must prioritize dispersion, artificial intelligence (AI) and predictive logistics, ally and partner capacity, and resilient communications. We must break large hubs into smaller, mobile nodes. Data-driven tools can anticipate supply needs. Integrating logistics with Japan, Australia, and the Philippines enables shared sustainment loads and a broader operational reach. Secure, redundant communications systems ensure that units maintain command and control despite electronic warfare and cyber attacks.

Ideologically, China's motivations stem from a desire to reclaim historical dominance in the region. Nationalist narratives, particularly the Century of Humiliation (mid-19th century to the mid-20th century), justify expansionist policies and inform the People's Liberation Army's operational posture. These motivations result in an adversary focused on shaping the operational environment to their advantage by denying access, sowing doubt among regional partners, and targeting sustainment infrastructure. For logisticians, the battlefield begins well before the enemy fires the first shot.

Taiwan: The Ultimate Sustainment Test

Taiwan remains a flashpoint in U.S.-China relations. It represents both a symbolic and strategic threshold. If hostilities were to break out, Taiwan would become the most demanding logistics challenge in recent history. Forward-deployed forces would require agile resupply under constant surveillance and potential missile attacks. Cyber disruption, space-based interference, and disinformation campaigns would further complicate the process of sustainment. Taiwan is the only issue that could realistically escalate into a major power conflict.

Meeting that challenge will require rapid force projection through prepositioned equipment, maritime and aerial resupply via low-signature platforms, and reliance on commercial and host-nation capabilities for flexibility and scale.

During previous moments of strategic tension, such as U.S. support to Taiwan during early Cold War confrontations, rapid strategic mobility and resilient supply lines were central to deterrence. For example, the 1958 Taiwan Strait Crisis highlighted the crucial role of logistics in supporting allies under threat. In the modern context, sustaining joint forces across the first island chain, a strategic arc stretching from the Kuril Islands north to Borneo in the south, will demand greater creativity, technology integration, and multinational cooperation. This geographical reference is essential to understanding the strategic challenges in the Indo-Pacific region.

Additionally, Operation Desert Storm offers a clear historical example. Prepositioned materiel in Saudi Arabia enabled the U.S. to build combat power rapidly. Sealift and airlift ensured continuous flow even under potential Scud missile threats. Similarly, during Operation Iraqi Freedom, commercial logistics partnerships expanded throughput, moving vast volumes of fuel and ammunition to forward units.

In a future LSCO against China, these lessons will be even more critical across the vast Indo-Pacific region. Host-nation agreements, resilient commercial shipping, and joint force sealift will underpin the ability to sustain maneuver forces scattered across island chains.

Redesigning Sustainment to Counter Economic and Political Coercion

China's rise is not limited to military advancements. Its dominance over global supply chains, rare earth materials, and international lending institutions gives it considerable coercive power. This economic influence directly affects the material landscape in which the U.S. military operates. China is an investor and a power broker in many regions, such as central and southern Africa. Perceptions of Chinese engagement vary widely, creating opportunities for the U.S. to strengthen relationships through logistical support missions that align with humanitarian needs and capacity-building efforts.

Sustainment in this context becomes a tool of strategic competition. Delivering supplies, building host-nation logistics capacity, and operating transparently can reinforce trust with partners and allies. This reality is particularly critical in the Indo-Pacific, where nations may be reluctant to side openly with either superpower but are more likely to support those who contribute to regional stability.

Strategic Recommendations

To prepare for sustainment operations in this evolving environment, the Army must do the following:

- Develop agile sustainment task forces designed for rapid deployment and modular support. These formations must be able to scale based on mission variables and operate in decentralized environments, without waiting for established static infrastructure.
- Expand Army prepositioned stocks (APS) across dispersed island chains to reduce dependency on a few vulnerable locations. Placing APS in the Philippines, Palau, and northern Australia could offer rapid access to equipment and materiel during a crisis.
- Invest in sealift, unmanned logistics platforms, and aerial resupply technologies to bypass chokepoints and damaged infrastructure. Small-watercraft logistics, vertical takeoff drones, and autonomous vehicles must supplement traditional systems.
- Institutionalize logistics wargaming to test real-world scenarios where degraded communication and mobility exist. Lessons from exercises like Talisman Sabre, Cobra Gold, and Defender Pacific can help validate sustainment concepts under stress.
- Create formal agreements for host-nation support, including warehouse access, local contracting, and mutual logistics interoperability. Sustaining success depends on relationships built long before conflict begins. Agreements must focus on real-time access, not just diplomatic frameworks.
- Modernize sustainment information systems to integrate securely and efficiently with joint, interagency, and multinational partners. Global Combat Support System-Army and similar platforms must evolve to incorporate coalition-level visibility and AI-powered decision tools.
- Expand the role of sustainers in multidomain operations. Logisticians must be trained and empowered to operate across cyber, space, and information domains, not just in physical space. Sustainers must understand how logistics actions affect the tempo of information warfare and deterrence.

Conclusion

The rise of China and the contested nature of the Indo-Pacific require a new paradigm for sustainment. Transformation in Contact 2.0 is not an abstract vision, but an urgent necessity. As great power competition intensifies, logistics must be treated as a critical warfighting capability. China's strategy of targeting logistical vulnerabilities makes it clear that: our ability to sustain the fight will determine our ability to win it.

The Army can maintain the initiative by redesigning sustainment organizations to operate effectively in contested, dispersed, and politically sensitive environments. Today's logisticians must be more than suppliers. They must be planners, innovators, and leaders in strategic competition.

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BUILDING AND SUSTAINING COMBAT READINESS IN LSCO

A Pacific Theater Perspective

By CPT Taylor Anderson-Koball

Large-scale combat operations (LSCO) in the Indo-Pacific demand more than traditional logistics. The region's sheer scale, its island geography, and the range of operational environments require a completely different approach, one that blends strategic foresight with adaptable, distributed sustainment. The tyranny of distance makes even basic resupply challenging, let alone sustaining tempo and survivability during combat. In this context, combat readiness is not a box to check, but something we must build deliberately over time and work to maintain under contested conditions. Sustainment is not a supporting function. It is the decisive factor that enables tempo, endurance, and survivability in LSCO.

Historical Lessons and the Pacific Theater's Unique Demands

The challenges of sustaining operations in the Pacific are not new. During World War II, the Army had to quickly figure out how to keep troops supplied across thousands of miles of open ocean. The island-hopping campaigns depended on massive logistics efforts that touched nearly every part of the theater. The Army played a key role in setting up and running logistics hubs across Australia, New Guinea, the Solomon Islands, and the Philippines. These efforts supported major campaigns like Guadalcanal, Leyte, and Luzon. It was not just about moving supplies. It meant building forward bases, depots, and transportation networks to keep operations going across a chain of remote islands. Bases in Hawaii and Australia and forward hubs like Guadalcanal were part of a larger system built to support sustained combat power. Those lessons still matter today. They remind us that shaping the battlefield with Army prepositioned stocks (APS), forward infrastructure, and assured regional access must happen long before the first shot is fired.

Prepositioning and Distributed Logistics

One of the most direct ways we build readiness before the fight is through APS. APS 3, also known as APS Afloat, for example, provides a scalable, responsive option to rapidly support combat operations without overcommitting forces or resources. Ships can be repositioned as the situation evolves, giving planners flexibility when timelines are tight.

Forward logistics nodes help reduce resupply timelines and extend operational reach. They cannot be fragile. These locations must be hardened, redundant, and camouflaged to endure enemy action. Their construction supports endurance during conflict and signals a serious investment in pre-conflict preparedness. This is a foundational component of combat readiness.

Joint theater distribution centers (JTDCs) are essential in tying this architecture together. They do not

just move cargo. They orchestrate the entire sustainment network while countering the adversary's capability to contest logistics. Strategically positioned, JTDCs manage multimodal distribution, sort materiel, and connect directly with host-nation infrastructure. When done correctly, they transform logistics from a burden into an advantage and are key to building and sustaining tempo in LSCO.

Army watercraft are often overlooked in discussions about distributed logistics. These platforms are uniquely suited to the Indo-Pacific, where long distances and limited infrastructure make fixed ports a liability. Army watercraft provide intra-theater mobility, enabling sustainment deliveries directly to austere or degraded shorelines. They support logistics-over-the-shore operations, reduce dependence on vulnerable port infrastructure, and extend the reach of forward logistics nodes. When integrated with modular sustainment packages and coordinated through JTDCs, they give the joint force a level of flexibility that is hard to match by land or air alone.

Working Jointly in the Indo-Pacific

We do not get to choose our neighbors or our terrain. In the Pacific, joint and allied logistics are not optional; they are foundational. The Army does not operate in a vacuum. Our ability to fight and sustain the fight depends on close integration with Navy sealift, Air Force mobility, Marine Corps distributed operations, and partner nations across the region. We must build joint sustainment from the outset.

Exercises like Talisman Sabre and Cobra Gold give us the chance to practice interoperability under real-world conditions. They help us work through potential friction points, such as learning whose comms do not lineup, who cannot share fuel, and who needs lift support. They also build trust, an intangible yet essential component of readiness.

One recent example that illustrates this is Salaknib 2025 in the Philippines. During the exercise, a combined joint force successfully executed a full-scale joint logistics over-the-shore operation, moving vehicles and sustainment supplies ashore without access to a fixed port. In an environment where ports may be denied or degraded by the enemy, that kind of capability is not a luxury, it is essential. Salaknib showed that with partners by our side, we can move and sustain the fight when it matters most.

Soldier assigned to Charlie Company, 3rd Battalion, 25th General Support Aviation Battalion, 25th Combat Aviation Brigade, 25th Infantry Division, conducts hoist training at Fort Magsaysay, Philippines, June 27, 2025. (Photo by SPC Aiden O'Marra)

Sustainment in a Contested, Multidomain Fight

Combat readiness in LSCO cannot assume permissive conditions. Modern sustainment operations must account for persistent threats across cyber, space, air, and maritime domains. It is not just about delivering supplies. It is about doing it while under pressure and constant observation. That means we need supply chains that can adapt. We need decentralized routes, duplicated nodes, and mobile fuel and water systems. Sustainment must be resilient by design, not by luck. Sustainers must be trained and ready to operate through disruption, not around it.

Leveraging new technology can help. Artificial intelligence (AI) has the potential to significantly improve logistics forecasting and to give commanders better visibility across the supply chain. One example is Project Maven. Originally designed to process large amounts of video and imagery for intelligence, its capabilities are proving increasingly relevant to sustainment operations. In a logistics context, Maven can monitor route traffic in real time and recommend alternate paths before congestion or threats materialize. It can flag infrastructure degradation at forward logistics hubs before systems fail. It can also track equipment movement across domains to maintain accurate asset visibility across a dispersed theater. Maven's integration with sensors and logistics systems contributes to a more dynamic, real-time logistics common operational picture.

Beyond AI, autonomous resupply vehicles, 3D-printed parts at forward locations, and mobile water purification systems reduce dependency on long convoys or vulnerable infrastructure. But these technologies do not matter if they are not built into our plans and rehearsed in conditions that reflect real-world constraints.

Sustaining Tempo Through Persistent Readiness

Building combat readiness begins at home. Maintenance reporting, inventory discipline, and Soldier-level sustainment tasks must be executed with the same seriousness as field training. LSCO stress every echelon, and only disciplined sustainers keep up. Leaders are just as important as the platforms they run. Sustainment officers and NCOs must be trained to operate jointly, think strategically, and make fast, sound decisions under ambiguous or degraded conditions. Their judgment is what preserves tempo and protects survivability.

What we once called exercises are now rehearsals. These are full-scale efforts to stress-test our systems, expose weak points, and refine logistics processes before they are tested in combat. The goal is not just training. It is making sure that when the fight comes, we are not learning in real time.

Conclusion

Building and sustaining combat readiness in LSCO is not a one-time effort. It is an ongoing investment in posture, in infrastructure, in leaders, and in partners. APS, forward nodes, JTDCs, Army watercraft, emerging technologies, and integrated rehearsals all form the backbone of a resilient sustainment enterprise.

Victory in LSCO belongs not just to the most lethal force, but to the one that is sustained, day after day, island after island. In the Pacific, we will not fight from what we imagine. We will fight from what we sustain.

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Feature Photos
***Top left:** SGT Selena York, 5th Battalion, 3rd Field Artillery Regiment (Long-Range Fires Battalion), 1st Multi-Domain Task Force, repairs the electrical connector pins on a High Modility Artillery Rocket System during Operation Maneuver, as part of Salaknib 25, on Fort Magsaysay, June 17, 2025. (Photo by SPC Matthew Keegan)*

***Bottom Left:** Soldiers from the Transformation in Contact-enabled 2nd Mobile Brigade, 25th Infantry Division, pull security after exiting a CH-47 Chinook while conducting an air assault exercise during Operational Maneuver at Camp Dela Cruz, Philippines, June 19, 2025. (Photo by SPC Aiden O'Marra)*

***Top Right:** Soldiers work alongside Philippine Army Soldiers to offload equipment on the 8th Theater Sustainment Commands LCU to conduct overseas movement during Operation Maneuver, the culminating event of Salaknib 25, on June 22, 2025. (Photo by PFC Jose Nunez)*

AGILE PHOENIX

A Reimagining of the Army Reverse Logistics Pipeline — A Practical Application of the Army Transformation Initiative

■ *By COL Albert Davis, MAJ Dan Amato, MAJ Jerryl Randolph, and MAJ Michael Smith*

The Army Trans-formation Initiative (ATI) demands a leaner, more efficient force. A critical component of this transformation is addressing the growing backlog of excess repair parts that weigh down units and drain resources. As Secretary of the Army Daniel P. Driscoll recently told the War on the Rocks podcast, the Army must move beyond parochial interests and prioritize Soldier readiness. This article explores a practical application of the principles outlined by Secretary Driscoll and Army Chief of Staff GEN Randy George, focusing on the Agile Phoenix initiative: a scalable, enterprise-level solution to address the growing backlog of excess repair parts. This bottom-up initiative exemplifies ATI's core principles of optimizing for Soldiers, cutting waste, and reinvesting resources into modernization.

The Challenge: Fleet Modernization, Operating Tempo, and Limited Surge Capacity

As the nation's rapid global response force, XVIII Airborne Corps formations are often deployed across the world at a moment's notice. XVII Airborne Corps is home to some of the most experienced combat divisions, including 82nd Airborne Division, 101st Airborne Division, 10th Mountain Division, and 3rd Infantry Division (3ID). The 406th Army Field Support Brigade (AFSB), an execution arm of U.S. Army Sustainment Command (ASC), integrates, synchronizes, and executes U.S. Army Materiel Command (AMC) capabilities to deliver readiness and power projection globally around the clock. The 3ID is the mechanized powerhouse of the East Coast. The division frequently deploys to Europe to reassure NATO allies and deter potential threats. These deployments, combined with rigorous training and modernization efforts, have led to a significant buildup of excess repair parts and supplies.

Excess materials accumulate due to various factors, including returning units bringing back extra materials, misrouted parts, and issues with shipping and inventory management. Additionally, end-of-year spending or other periods of high activity can stress a supply support activity's (SSA's) ability to support near-term readiness, which results in the reverse pipeline being de-prioritized.

Modernization efforts, such as 3ID ditching legacy Humvees and upgrading its Abrams tanks, are significant sources of excess. When 3ID transformed, repair parts supporting legacy systems went from an enabler to an anchor weighing down the unit. Leaders must realize that tactical SSA or installation SSA (ISSA) manning authorization documents have never considered surges in volume that are triggered by transformations. To achieve ATI's vision of leaner and lighter formations, units at the tactical edge must be able to shed legacy parts quickly.

The Limits of ISSAs

ISSAs are a critical node in the Army's reverse-logistics pipeline because they prepare repairable parts for shipment to depots, store serviceable excess for redistribution across the Army, and interface with the Defense Logistics Agency whenever items require special disposal.

The shift from centralized installation supply activities to brigade-focused models over the past decade has reduced capacity, leading to a decrease in workforce and resources dedicated to handling the reverse pipeline. Army Field Support Battalion (AFSBn) Stewart's ISSA workforce decreased from 42 personnel in fiscal year 2022 to an authorization of just nine personnel, of which three are dedicated to the reverse pipeline. Given the limited number of employees, there is an estimated capacity to process 100 lines and little flexibility internally to surge. Surging capacity via overtime was tried for a one-month period at an estimated cost of $36,000 in overtime, which only yielded 800 additional lines of throughput. The overtime was determined to be both inefficient and unsustainable.

Typically, materiel received by ISSA is transported from tactical SSAs, which receive retrograde materiel from their supported units. The tactical SSAs and customers directly supported by ISSA generate approximately 108 recoverable/repairable lines a day, which theoretically leaves no capacity for serviceable excess.

A Scalable Solution: Agile Phoenix from Sierra Army Depot

Agile Phoenix offers expeditionary, depot-level retrograde support capable of retrograding within days rather than months or years. The team brings packaging, accountability, and shipping resources directly to the point of need at the tactical edge, removing excess materiel from the supply chain, returning serviceable items to Army level accountability, and generating credit for the supported unit. This initiative eliminates investment in obsolete systems and frees up resources for modernization.

Based on system of record data from Global Combat Support System-Army, 3ID has almost 23,000 lines (items) of serviceable excess that can be processed at a theoretical rate of 42 lines per day. If the current network remains the only path to leaner and lighter units, and if there are no future force-structure transformations, it will take more than two years to rid 3ID of its serviceable excess. Given that the serviceable excess supports helicopters and vehicles still in use by the Army or partner nations, the inability to retrograde excess quickly means the Army is wasting taxpayer money ordering material from vendors that it already owns. As Secretary Driscoll noted in the War on the Rocks podcast, the Army has historically prioritized parochial interests over Soldier readiness, and this backlog is a direct consequence of that approach. The current reverse pipeline does not support the Army as a large enterprise business or as a warfighting machine.

With over 3,300 lines due for processing from tactical SSAs, AFSBn Stewart and 3ID required a more scalable, strategic solution that would not degrade ongoing support to tenant and regional Reserve and National Guard forces located in the Southeastern U.S. Leveraging the command relationships within 406th AFSB headquarters specifically through the U.S. Army Tank-automotive and Armaments Command (TACOM) senior command representative operational control to the brigade, TACOM's Agile Phoenix team from Sierra Army Depot (SIAD) provided that solution. 406th AFSB is the entry point for bringing AMC enterprise support to XVIII Airborne Corps units at the tactical point of need.

In April, on two weeks' notice, members of the Agile Phoenix team performed a site survey in conjunction with 3ID and offered their services to address on-record excess at the division's SSAs (3,300 lines due into the ISSA), at the unit level (23,000 lines), or with off-record excess. To become leaner and lighter, 3ID elected to go after off-record excess left behind by an armored brigade combat team that deployed to Europe.

In four days at Fort Stewart, Agile Phoenix retrograded approximately 6,000 lines of supply and repair parts, the volume that would have taken AFSBn Stewart's ISSA approximately four to six months to handle if it had ignored repairable and recoverable items. Those 6,000+ lines were packed in 16 x 20-foot containers. The estimated cost to 3ID was approximately $64,000, covering temporary duty (TDY) and container retrograde costs back to SIAD, while the division is anticipated to receive over $106,000 in credit.

A Complete Case Study and Inside Baseball

In April 2024, an Agile Phoenix team went to Fort Carson, Colorado, to assist a Stryker brigade in 4ID with off-record excess. The team collected 1,739 lines of serviceable excess valued at $1,792,772. Processing the serviceable excess would have cost ~$105,000 at the Fort Carson ISSA. The total value swing for the Army working capital fund (AWCF) supply management activity group, which provides the Army with an inventory of spare and repair parts, was $1,898,438.

Within one month, $1,026,310 of the inventory added back to the AWCF inventory was redistributed to other SSAs or issued to repair equipment. Any time operations and maintenance funds are used to buy recapitalized excess, the result is an AWCF surplus because the Army as a business will have only purchased the item once but sold it twice. Since the AWCF must be revenue neutral from year-to-year, excess proceeds are redistributed in the form of a lower cost recovery rate that gets added to the cost of Army managed inventory the following fiscal year. In simpler terms, by returning excess parts to the system, the Army avoids having to buy new ones, creating savings that are passed on to units in the form of lower prices for future repairs.

From the unit's perspective, they were able to off-load an amount of serviceable excess that would have taken the typical tactical SSA five to six years to process.

Soldiers from various brigades and units throughout the 101st Airborne Division (Air Assault) properly secure equipment brought in to the Division Excess Consolidation Point, November 20, 2019. (Photo by SSG Caitlyn Byrne)

Additionally, the unit praised the Agile Phoenix team's low-density training on conducting inventory, identifying items, and building load plans. As Secretary Driscoll emphasized in the War on the Rocks podcast, we must get experts to the point of need to help units solve problems and build capacity. The expertise was brought to the tactical edge for less than the cost of hiring contractors capable of providing similar services over a one-year time horizon. 4ID spent $53,651 in operations and maintenance funds for the Agile Phoenix team's TDY and shipment of excess compared to $105,000 for contractors, avoiding $51,349 in expenses to achieve the same endstate.

To address concerns about the potential for unclaimed serviceable credit from leadership within U.S. Army Forces Command, SIAD members set aside off-record excess that had credit so the unit could conduct retro-transactions and request credit. As a result, the unit claimed $316,485 in credit, which meant they had $262,834 more in funds after becoming better trained and leaner. The unit used the savings to increase its supply of repair parts to support its newly transformed fleet. Since the Army grants serviceable credit only when there is a national need, maximining credit retention for transforming units minimizes waste associated with maintaining legacy equipment while also supporting the industrial base for the newest equipment.

The case study demonstrates that sections of the Army that operate as a large enterprise business and a warfighting machine can achieve win-win outcomes, but there is still some friction. One concern from the recent 3ID collections is that on-record excess was mixed in with off-record excess in the unit's zeal to get leaner and lighter. While the end state for off-record and on-record materiel is the same, there are different auditability requirements, which necessitate a slower process for on-record turn-ins. Since data analytics can be used to identify on-record unit parts for immediate redistribution (i.e., AWCF supply management sales), AWCF managers must consider funding TDY travel for Agile Phoenix teams to process on-record excess.

Funding SIAD's TDY would leverage existing depot capacity and reduce the need for costly ISSA surges or contractor support. This approach aligns with the ATI's emphasis on right-sizing the Army by maximizing the use of existing resources, rather than creating new bureaucratic layers, as Secretary Driscoll outlined in the podcast. However, if units want SIAD to slow down their internal process by setting aside excess credit, they should pay shipping costs. This approach embodies the ATI's call for a more enterprise-minded approach to logistics.

Conclusion: Strategic Lessons for the Sustainment Community

The Agile Phoenix model is a proven, scalable, and efficient capability that must be considered by units confronting unmanageable excess or retrograde backlogs. Rather than adding billets or relying on contractor assistance, Agile Phoenix allows Army units to streamline materiel disposition processes, reduce storage needs, reinject serviceable items back into the supply chain, and maximize financial resources for the transforming unit.

The collaboration between 406th AFSB, ASC, TACOM, SIAD, and AMC highlights a broader lesson for the sustainment enterprise: enduring challenges require adaptive solutions. Two units from the 406th AFSB, AFSBn-Drum and AFSBn-Stewart have used SIAD Agile Phoenix as a tool to reduce excess across XVIII Airborne Corps. By leveraging existing enterprise resources in innovative ways, the Army can sustain its formations more effectively while remaining agile in support of large-scale combat operations and contingency deployments.

In 2025, Army logisticians are celebrating the Army's 250th birthday and marking 242 years of fighting the war on excess — a challenge as old as the nation itself — on the anniversary of the Treaty of Paris, which ratified the independence of the U.S. Colonies. This milestone serves as a reminder of the enduring nature of logistical challenges and the need for continuous innovation and adaptation.

To fully realize the vision of ATI, it is imperative that the Army conducts a deliberate study on how to maximize the Agile Phoenix process. This includes streamlining the handling of on-record excess, centrally funding TDY travel for SIAD teams, and optimizing the reverse-logistics pipeline for Soldiers. By doing so, the Army can accelerate its transformation toward a leaner, more agile force.

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MAJ Michael Smith is an operations research systems analyst at U.S. Army Sustainment Command. He has served as the 62nd Quartermaster Company commander and led previous Operation Clean Sweep efforts at the Hunter Army Airfield and Fort Hood, Texas. He commissioned into the Transportation Corps from the U.S. Military Academy and has a Master of Science degree in supply chain management from the Massachusetts Institute of Technology.

Feature Photo
Soldiers from various brigades and units throughout the 101st Airborne Division (Air Assault) sort through excess supplies and equipment brought to the Division Excess Consolidation Point, November 20, 2019. (Photo by SSG Caitlyn Byrne)

UNLOCKING HOLISTIC HEALTH AND FITNESS' POTENTIAL

A Multifaceted Approach to Education, Collaboration, and Soldier Buy-In for Holistic Health

■ *By CPT Alberto Pelaez*

The Holistic Health and Fitness (H2F) program was introduced in 2020 to combat a plethora of health conditions that plague the Army. The H2F program has not been fully implemented but aims to be available across the entire Army by 2030. The program aims to improve physical readiness, nutritional readiness, mental readiness, spiritual readiness, and sleep readiness. However, H2F is presently showing signs of challenges on its journey to becoming the standard Army-wide holistic health program because of a lack of understanding about the program. To overcome widespread misunderstanding of the H2F program, the Army must educate Soldiers, ensure Soldiers collaborate with the H2F personnel, and inspire motivation to embrace the program's health benefits.

Educating Soldiers on the Fundamentals of H2F

Educating Soldiers on H2F is necessary to help the program succeed across the Army. A study conducted on soldiers attending Israeli Army basic training demonstrated that implementing a nutritional education program in two months of training showed an increase in nutritional knowledge and an alteration in eating habits. Early education helps Soldiers not to feel overwhelmed by the subject matter and more likely to engage with a program's components. Early education of Soldiers at basic training will help Soldiers understand the H2F program because it will give Soldiers the time to absorb the complexities of the program within their training environment.

Educating Soldiers on the health benefits of the H2F program will financially benefit the Army. In 2023, the War Department spent $1.25 billion on health care. By understanding the health benefits of the H2F program, Soldiers will improve their knowledge of health and apply those learned habits. However, educating Soldiers on the H2F program will require about an hour per day of instruction.

Collaborate with H2F Personnel

Collaborating with H2F personnel is essential in helping Soldiers understand the H2F program. In his army.mil article "Optimizing Performance and Reducing Injury in Infantry OSUT," LTC Michael B. Moore observes that when Soldiers collaborate with H2F personnel by learning and implementing programs for their units, they acquire "knowledge and habits to maintain their physical readiness, contributing to longer, healthier careers." Trained H2F personnel serve as guides and coaches for Soldiers and ensure the H2F program is properly understood. In Moore's article, Infantry Soldiers successfully created workout plans for their units alongside H2F personnel. In addition, H2F personnel are trained experts in their fields and can simplify difficult health concepts for Soldiers. When Soldiers are guided on tasks, they learn from mistakes, implement corrections, and learn even the hardest tasks.

Injuries cost the Army $970 million to $1.8 billion per year. Understanding how to properly exercise through the H2F program leads to fewer injuries. The Army will have to allocate at least one H2F representative per battalion to collaborate with Soldiers.

Inspiring Motivation to Embrace the H2F Program

The use of competition is necessary to motivate Soldiers to engage with the H2F program and understand its benefits for health and readiness. In a study discussed by C.M. Frederick-Recascino and H. Schuster-Smith in their article "Competition and Intrinsic Motivation in Physical Activity: A Comparison of Two Groups," published in the Journal of *Sport Behavior*, participants were placed into a competitive sports group and a non-competitive sports group. Those in the competitive sports group were "positively related to higher levels of intrinsic motivation." Competitive environments create a reason for Soldiers to better themselves; they also motivate Soldiers to understand the rules of the games they play so they can ultimately beat their competition. Posting H2F workout times and scores on a unified app or platform helps units compete with one another and outperform one another. Soldiers can use the H2F app to post their scores to compete with one another. This brings recognition to the Soldier and the unit.

Increasing motivation through H2F will help the Army improve motivation levels and possibly retention rates. Increasing motivation will cost the Army an extra 30 minutes per day for Soldiers to complete the competitive workout within their scheduled morning physical activity routine.

Conclusion

The Army can reduce widespread misunderstanding of the H2F program by educating Soldiers, collaborating with H2F personnel, and motivating units to explore its health benefits. Soldiers must be educated as early and frequently as possible on the H2F program so they are more likely to engage in it. In addition, Soldiers must collaborate with H2F personnel to ensure there is a proper understanding of the program. Lastly, leadership must focus on having Soldiers compete for the best H2F workout results. This, in turn, could increase Soldiers' desire to understand the program. Overall, the H2F program must be understood by Soldiers to achieve its desired results and to be properly implemented in the Army by 2030.

CPT Alberto Pelaez is currently a student in the Captains Career Course at Fort Lee, Virginia. He previously served as a platoon leader at Camp Casey and executive officer at Fort Stewart, Georgia. He was commissioned as an Ordnance lieutenant at Officer Candidate School. He has a Master of Science degree in sports and fitness and is a Doctor of Education. He is currently working on a Master of Divinity degree.

Featured Photo:
Participants and facilitators from the U.S. Army, U.S. Air Force, and Columbian military conduct physical training with Holistic Health and Fitness Academy instructors at Fort Jackson, South Carolina, August 12, 2025. (Photo by SGT Joshua Taeckens)

THE DEPLOYMENT PROCESS MODERNIZATION OFFICE

Answering Ever-Changing Deployment Questions

By Dr. Stewart W. Bentley

The Deployment Process Modernization Office (DPMO) is an integrated team committed to leading with excellence in deployment readiness and execution in the strategic environment. The team is active across the doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) spectrum. Its goal is to improve the deployment readiness of units and installations across the Army and the joint force.

It is chartered by Headquarters, Department of the Army (HQDA) G-3/5/7 and G-4, as lead for the Army's deployment/redeployment process. DPMO collects, consolidates, analyzes, validates, and integrates deployment requirements across the Army and develops solutions for their resolution to satisfy current and evolving total Army deployment and redeployment requirements. DPMO guides the integration of deployment and distribution. It does this by identifying and developing corresponding policies, concepts, doctrine, training, deployment and distribution automated information systems, and enablers. It also does this by conducting experiments, analyses, and studies to enhance deployment and distribution capabilities.

The office represents the commanding general (CG) of U.S. Army Combined Arms Support Command (CASCOM), the CG of U.S. Army Transformation and Training Command, and the Chief of Transportation (COT) on all issues concerning deployment and redeployment of Army forces and the integration with joint services across DOTMLPF-P.

DPMO serves as a member of the U.S. Army Forces Command's assessment team that conducts the Chief of Staff of the Army-directed Emergency Deployment Readiness Exercise program in support of the Army's Deployment Readiness Exercise program.

DPMO coordinates with the Future Force Integration Directorate-Enterprise Systems Directorate Transportation Branch to support U.S. Transportation Command and HQDA G-4 in developing Army requirements and functionality in support of the Joint Transportation Management System.

The office produces the DPMO newsletter for worldwide distribution in support of the COT. This newsletter publishes articles on various deployment issues to educate the force, share lessons learned, and disseminate best practices across the Army. In addition, DPMO provides matrixed support across CASCOM/Sustainment Center of Excellence and the schools as required for all matters pertaining to deployment, redeployment, deployment/transportation information systems, movement control, reception, staging, onward movement, and integration.

DPMO is organized into two branches. The Deployment Standards Branch is the proponent for the Army's deployment process and provides recommendations to HQDA G-3/5/7 and G-4 on deployment doctrine, regulation, policy, and process. This branch also serves as the lead Army agency for incorporating deployment tools and products into the training and education system and maintaining the Deployer's Toolbox.

The Deployment Analysis Branch serves as the office of primary responsibility for the Army-level proponent for the Command Deployment Discipline Program and as the program manager for the Deployment Excellence Award program. This branch also manages the Deployment Trends Program to collect, analyze, and synthesize deployment-related challenges and best practices to inform other DPMO efforts.

DPMO continues to seek opportunities to engage with the deployment community and improve the Deployer's Toolbox and other resources for the Army. We encourage deployers to check out the toolbox and take our surveys. Feedback and recommendations from the field are always welcome.

Dr. Stewart W. Bentley is a military analyst with U.S. Army Combined Arms Support Command's Deployment Process Modernization Office. A former infantry and military intelligence officer, he has a Master of Strategic Intelligence degree from the National Intelligence University. His previous publications include articles in the Studies in Intelligence Journal, Army History Magazine, the Military Intelligence Professional Bulletin, the U.S. Army Training and Doctrine Command's Mad Scientist Laboratory blog, and the U.S. Military Academy's Modern War Institute website.

RISK VS. REWARD

With Vehicle Unit Deployment Lists

By 1LT Patrick Donovan

The leadup and outload for a major training rotation is a stressful time. Condensed timelines and a large number of moving parts make it a whirlwind few weeks. Individual packing lists must be gathered, tough boxes packed, and mission planning completed. A massive piece of the outload process is the maintenance and upload of vehicles that are on the unit deployment list (UDL).

From my perspective as an engineer company executive officer during the outload for the Joint Pacific Multinational Readiness Center (JPMRC) rotation in Alaska this past winter, a ton of effort from mechanics and vehicle operators was put into getting UDL vehicles to a full-mission-capable (FMC) status. Many UDL vehicles were not fixed in time for outload, and some that were fixed broke down in the preliminary stages of the exercise. Was the juice worth the squeeze? Was the amount of effort expended to fix vehicles that gave us no value during the exercise justified? Is there a more proactive way to determine what to focus on during the outload process?

Getting the Most Value Out of Your Time and Effort

Each vehicle on the UDL is critical to the mission in some capacity, whether it be as a troop mover, an asset hauler, or a piece of engineer equipment. Scratching any vehicle on that list introduces risk to the unit's ability to effectively complete the mission. Alaska's harsh climate, dynamic operational tempo, and the hard miles already put on these vehicles make keeping them FMC throughout the year a substantial challenge.

In my company's case, only six out of the 15 total vehicles on the UDL were FMC once the outload truly began for JPMRC, which was about a month before the exercise started. That month consisted of long hours at the motor pool trying to fix as many vehicles as possible and to get them uploaded via rail, commercial linehaul, or convoy. We fixed 10 out of the 15 in time for upload, but three of those 10 broke down before even entering the box. Another three vehicles broke down during the box. Other companies had similar numbers.

Despite the huge amount of time and effort invested into getting certain vehicles into the fight, many served little or no purpose toward the mission and created more of a headache trying to get them back to home station because they were broken. It is difficult to cut ties early and make the decision to scratch a piece of equipment you have already spent a lot of time trying to fix. At the company and possibly battalion level it is simply not an option to tell your higher headquarters you are scratching a vehicle, except at the very last minute. But at the end of the day, if the goal during the outload process is to be as efficient as possible with our time, we must spend the most time on the vehicles that are going to give us the most value. In the next section we look at ways to determine which vehicles will do that.

Machine Learning to Aid Decision Making

A more proactive approach to determining which vehicles to focus maintenance efforts on may be found using machine learning, which is a subfield of artificial intelligence that uses results from historical data to make predictions on the outcome of input data. In LTG Christopher O. Mohan's recent article in the *Army Sustainment Professional Bulletin* titled "Predictive Logistics is the Way of the Future," he writes, "Predictive logistics represents a shift from traditional, reactive sustainment models to a proactive, data-driven approach that allows us to position supplies to ensure the right resources are available at the right time and place." Just as predictive logistics is the next step for allocating supplies on the battlefield, predictive maintenance is the next step for allocating resources into fixing vehicles and equipment.

For this to work, we must first understand what problem we want to solve. Should we try and fix this vehicle to bring it to the fight, or should we scratch it because it is not worth the effort? Second, we must collect data that helps determine when vehicles may break down. Readings from vibration sensors on wheel bearings and temperature gauges on engines are examples of the data that paints a picture of when a machine is in good shape and when it is about to break. We must train the complex machine learning network by feeding it that sensor data and whether the associated machine broke down. We must also feed it important information like outside temperature and the type of roads the vehicles were driving. Lastly, we must attach some sort of weight to the importance of each vehicle, like what the Army does when they say that certain vehicles are pacers and others are not. For example, a High Mobility Engineer Excavator is going to be more important to the mission than a Humvee. The system places vehicles into two categories. Vehicles in the first category will receive precious time and resources for repair, while vehicles in the second category will not because the risk that they will break down is too great compared to their potential value.

Conclusion

Organizations traditionally use predictive maintenance to decide when to do maintenance on an engine, not whether to do maintenance. This is a worthwhile goal to achieve eventually. For example, when a piece of important engineer equipment is conducting obstacle emplacement during the defensive phase of an operation, a trained machine learning network can determine the remaining use of the vehicle from its sensor data. Just as LTG Mohan points out, this represents a more proactive approach that allows maintainers to fix important equipment before having a critical shortage of it at a very inopportune time. As for recommendations to implement predictive maintenance initially, the vibration sensors and temperature gauges mentioned earlier must be included in all newly procured Army equipment. The data from those sensors must go into a centralized system such as Global Combat Support System-Army so that we can start gathering data that can train a machine learning system with measurements that are associated with vehicles breaking down.

1LT Patrick Donovan is executive officer for B Company, 6th Brigade Engineer Battalion (BEB), 2nd Infantry Brigade Combat Team (Airborne), 11th Airborne Division, at Fort Richardson, Alaska. His previous role was as a sapper platoon leader in A Company, 6th BEB. He graduated from the University of Massachusetts Lowell in 2021 and subsequently attended Army Officer Candidate School and Engineer Basic Officer Leadership Course.

Culinary Warriors

A New Era of Battlefield Readiness

By SGM Kelvin E. Windham

The Army is transforming in contact, building and sustaining combat readiness for large-scale combat operations (LSCO). The role of culinary specialists in the Army is undergoing a profound transformation, driven by a shift in focus from traditional garrison feeding operations to enhanced field feeding proficiency. This evolution is not merely a response to changing needs. It is a strategic redefinition aligned with the Army Warfighting Concept, aimed at preparing 92G food service specialists for LSCO while simultaneously improving their battlefield readiness.

Embracing Change: Modernizing the Army's Food Service Program

The Army's food service program has embraced modern trends and innovative strategies to meet the evolving expectations of Soldiers. Recent initiatives, such as the launch of the Army's Culinary Outpost Food Trucks, the introduction of kiosks, and the implementation of credit card machines in dining facilities, reflect a commitment to modernization. Perhaps most notably, the Army Meal Prep Program has emerged as a significant advancement that uses a hub-and-spoke method, allowing Soldiers to order and pick up meals at centrally located dining facilities or kiosks, offering greater flexibility and convenience. It aims to improve Soldier nutrition and readiness by providing healthy, pre-made meal options.

However, these enhancements have also highlighted core proficiency gaps in field feeding operations. Time constraints have hindered training opportunities, leading to gaps in the abilities of 92Gs to effectively manage their responsibilities in the field. These field feeding proficiency gaps raise critical questions about the dual roles of 92Gs: the provision of food service in garrison versus the essential task of battlefield feeding.

Addressing Gaps: Leadership and Realignment

The Army Food Program strategy, overseen by a board of directors (BOD), including the U.S. Army Materiel Command (AMC), Headquarters, Department of the Army G-4, and the U.S. Army Combined Arms Sustainment Command, is actively addressing these challenges.

The BOD aims to refocus 92Gs' priorities on field operations by emphasizing the field-specific skills of culinary Soldiers. This strategic focus is designed to enhance the competencies of 92Gs and provide them with the necessary skills and confidence to succeed in combat situations. The BOD produced a comprehensive plan that has initiated changes in phases to transform the culinary specialist culture. This gradual approach aims to shift the mindset of culinary Soldiers away from traditional practices toward a more adaptive and responsive operational framework.

Phase I: A Cultural Shift

The first phase of this transformation involved a subtle yet significant cultural shift. The renaming of Culinary Labs to Culinary Arts Readiness Training Centers invites all culinarians to engage in training and development. This move encourages a departure from the outdated mindset of "we have always done it this way."

Phase II: Tactical Field Readiness Training Centers

The most impactful change occurred in Phase II with the establishment of the Tactical Field Readiness Training Centers (TFRTCs). These centers are designed to hone skills related to squad-level mission-essential tasks that may have been overlooked in everyday garrison operations. By fostering battle-focused training, 92Gs practice their skills under realistic conditions, preparing them for various conflict scenarios.

This tactical approach emphasizes the importance of real-time training, supported by resources and Soldier training publications, which guide 92Gs through both theoretical instruction and practical execution. Performance measurement tools will further ensure that Soldiers are proficient in their tasks, providing commanders with confidence in their food service teams' capabilities.

A Future-Oriented Vision

CSM Jimmy J. Sellers, an AMC senior enlisted sustainer, expressed optimism about the future of sustainment within the Army, stating that TFRTCs will significantly enhance field feeding operations. By certifying field feeding teams in equipment handling and the logistical elements of military operations, the Army is investing in a more capable and confident culinary force in preparation for LSCO.

However, this evolution will not happen overnight. It requires a commitment to continuity and an understanding that growth is a process. Five divisions were originally selected to pilot the transformation, with lessons learned being communicated to ensure a successful rollout to the broader force. The rollout of the TFRTCs has begun across the Army.

Conclusion: Redefining the Role of Culinary Specialists

The evolution of culinary specialists within the Army signifies a crucial shift in how food service is approached in garrison and combat settings. By redefining their roles and enhancing training, the Army is preparing its culinary personnel to excel in challenging environments.

As the new culinary specialists are trained to navigate the complexities of LSCO and adapt to future battlefield demands, they will embody a renewed vision of readiness and service. This transformation will not only improve individual competencies but will strengthen the Army's overall operational effectiveness in the face of evolving challenges. The future of Army food service operations looks promising, with a focus on adaptability, proficiency, and a commitment to excellence in every meal served.

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WINNING AT THE Joint Multinational READINESS CENTER

Sustainment Survivability

By LTC Mark Galloway and MAJ Paul Owens

Rotational training units at the Joint Multinational Readiness Center (JMRC) often struggle to counter enemy threats in the rear area, particularly in the brigade support area (BSA). The deactivation of brigade engineer battalions (BEBs) has significantly shifted the responsibility for rear area security to brigade support battalions (BSBs), which must maintain overall mission command of brigade (BDE) sustainment operations. Even before the removal of BEBs from BDE task organizations, BSBs have consistently struggled to remain undetected from enemy forces, establish a cohesive and congruent defensive plan, and manage BDE sustainment operations in a survivable mission command construct. This article highlights the challenges observed in U.S. BDE rotations hosted by the JMRC from 2023 to 2025.

A common challenge for BSBs operating in rotations at the JMRC is remaining undetected from enemy forces in the air, on the ground, and in the electromagnetic spectrum. To reduce the physical signature of BSAs, BSBs often occupy terrain using the cluster method rather than contiguously, with each cluster comprised of two to three bases each

typically company organic. However, even in a dispersed configuration across multiple locations in the BDE rear area, company leaders struggle to reduce their formations' physical signatures. This can be attributed to a lack of driving proficiency, inadequate use of fielded camouflage systems, and limitations in the Integrated Tactical Network (ITN) fielding, restricting BSBs' ability to use the Tactical Scalable Mobile (TSM) ad hoc network waveform. Company-level bases, even in light support battalions, may have up to 50 pieces of rolling stock that require concealment from enemy ground and air detection. Nevertheless, heavy vehicle operators often lack the necessary proficiency to move their equipment off main and alternate supply routes and into vegetation where they can maximize natural cover and concealment. When natural cover and concealment is limited, doctrine dictates that units use fielded camouflage systems to obscure visual signatures horizontally and vertically. Although BSBs typically have sufficiently fielded camouflage systems, they often underuse them due to difficulties in employment and the need to preserve crew capabilities for rapid displacement. In recent rotations at the JMRC, BSBs fielded with ITN have often lacked sufficient TSM-capable radios to equip every vehicle or command and control (C2) node. As a result, BSBs rely on legacy radio systems that use frequency modulation, making them more susceptible to direction finding by enemy electronic warfare systems.

To address this challenge, BSBs must implement the following courses of action into unit training plans and during combat training center (CTC) rotations:

- Incorporate drivers training in restricted terrain into unit training plans to improve crew proficiency in concealing large vehicles.
- Conduct camouflage net training during support operations (SPO) at home station, focusing on rapid employment and storage at the crew level, and capture validated tactics, techniques, and procedures (TTP) in unit standard operating procedures (SOPs).
- If faced with ITN fielding shortfalls, deliberately choose which vehicles are equipped with ITN-capable mounts to maximize the use of the TSM waveform for communication between company and battalion headquarters elements. Validate capabilities and limitations of chosen ITN-capable vehicles during home station training and refine SOPs to define how far the BSB can stretch across the battlespace.

BSBs routinely use the BSA cluster method to increase sustainment survivability, but this approach further challenges the security of the BSA. The absence of a cohesive and congruent defensive plan in the BSA that complements the BDE's rear area security plan poses increased risks to forces during large-scale combat operations. The BSA often struggles to secure itself organically, as most BDEs do not allocate additional combat power or capability to the BSB. Consequently, security efforts must come from within the sustainment formation, forcing senior commanders to trade logisticians conducting sustainment functions for security efforts. Each node within the BSA often lacks situational awareness of friendly forces in any direction, and communication with tenants within each base is also problematic. For instance, the BSB base company may not be directly tied in with the field trains command post (FTCP) at the same location. This has led to fratricide from one static security position to another or from static positions on friendly units approaching the BSA perimeter. BSBs struggle to establish a coherent defensive plan, which often lacks essential elements of defense, as outlined in Army Techniques Publication (ATP) 3-21.10, Infantry Rifle Company, and ATP 3-21.20, Infantry Battalion. The lack of orientation of heavy weapons in fighting positions, the increasing trend of not establishing deliberate entry control points, and the disconnected C2 architecture within the BSA have led to routine fratricide events. BSBs often fail to conduct defense rehearsals, preventing their leadership from identifying weaknesses in the overall BSA defensive plan. The opposing force can exploit these weaknesses, allowing them to walk or drive into a BSA unopposed.

To address this challenge, BSBs must implement the following courses of action into unit training plans and during CTC rotations:

- Incorporate engagement area (EA) development into BSA defense plans per ATP 3-90.1, Armor and Mechanized Infantry Company Team, ensuring that EA development is taught and well understood at the platoon leadership level and above prior to entering a CTC rotation.
- Familiarize platoon-level leaders with company-level perimeter defense, as outlined in ATP 3-21.10, and incorporate this into unit training plans.
- Prioritize heavy weapons training at the section level and below to maximize collective proficiency.
- During rotation, ensure that FTCPs are incorporated into the base defense plan and have a clear understanding of security expectations while occupying space within the BSA. This integration must be captured in SOPs and rehearsed during home station training prior to arriving at JMRC.
- Continue to increase pace/frequency of survivability displacement operations with continued appreciation of these outlined considerations.

BSBs often compromise their ability to C2 BDE sustainment operations by dispersing C2 elements to promote survivability in the rear area. A common TTP observed at the JMRC is the deliberate geographical dislocation of the BSB staff (executive officer, S Shops) and the BSB SPO cell, with separation varying from 500 meters to multiple kilometers. Although this dislocation promotes the survivability of the BSB's mission command, it often compromises synchronization and shared understanding between the BSB staff and SPO. Common operational picture (COP) management between geographically separate mission command nodes proves extremely difficult even for units outfitted with the Army's newest COP management software and equipment. The lack of synchronization and shared understanding between these entities results in the BSB commander being unable to make informed decisions related to sustainment on behalf of the BDE. Roles and responsibilities are often unclear and not understood between these BSA nodes, particularly in the event one of the nodes is compromised.

To address this challenge, BSBs must implement the following courses of action into unit training plans and during CTC rotations:

- If deliberately dislocating SPO from the BSB staff, ensure each section understands the changes to their roles and responsibilities if the other is compromised.
- Employment of liaison officers from SPO to BSB staff and vice versa serve as an effective way to close the information gap between each element.
- Conduct battalion-level command post exercises, ensuring a split mission command construct between SPO and staff is rehearsed leading up to the CTC.

In conclusion, the challenges faced by BSBs in remaining undetected, establishing a coherent defensive plan, and managing BDE sustainment operations in a dispersed construct are significant and routinely observed at the JMRC. BSBs can address these challenges by integrating austere drivers training to increase equipment survivability, exercising the staff/SPO in a geographically dispersed environment with degraded communication, and emphasizing unit defense tactics at the company level and below. Incorporating these objectives into unit training plans will increase the survivability of sustainment personnel and equipment within BDEs, ultimately contributing to the prolonged endurance of warfighting formations at echelon.

LTC Daniel "Mark" Galloway is the senior sustainment observer/coach/trainer at Joint Multinational Readiness Center. He enlisted in the Army as a military policeman in 1991. After four years he joined the U.S. Army Reserve and served Hampton, Virginia, as a police officer. He is a Distinguished Military Graduate from Austin Peay State University and was commissioned a second lieutenant in the Infantry in 2001. He holds a master's degree from Central Michigan University in Public Administration. His military education includes the U.S. Army Drill Sergeant School, Infantry Officer Basic, Air Assault School, Airborne School, Jumpmaster School, Aerial Delivery Management Officer's Course, Logistics Captains Career Course, Joint Planners Course, and NATO Planners Course.

MAJ Paul Owens serves as the support battalion S-3 observer/coach/trainer at the Joint Multinational Readiness Center. He is a Distinguished Military Graduate from Texas A&M University where he earned a Bachelor of Business Administration and was commissioned as a second lieutenant in the Transportation Corps in 2015. His notable military education includes the U.S. Army Ranger School, Jumpmaster School, Pathfinder School, Basic Airborne Course, Air Assault School, and Logistics Captains Career Course.

Featured Photo:
Soldiers with the General Support Aviation Battalion, 1st Combat Aviation Brigade, take cover and provide security during Saber Junction 21 at the Hohenfels Training Area, Germany, Sept. 24, 2021. (Photo by CPL Shawn Pierce)

429TH BSB PIONEERS

MULTIFUNCTIONAL LOGISTICS CONCEPT TO SUPPORT ARMY'S FUTURE FORCE

By CPT(P) Alec B. Hulbert

As the Army prepares for large-scale combat operations (LSCO) in contested, multi-domain environments, it must revolutionize sustainment to match the agility and dispersion of its maneuver forces. Nowhere is that effort more evident than in the 429th Brigade Support Battalion (BSB), aligned under the 116th Infantry Brigade Combat Team (IBCT), which is the first Army National Guard unit selected to convert to a mobile brigade combat team. In parallel, the 429th BSB is transforming into a light support battalion (LSB), designed for mobility, survivability, and responsiveness under fire.

At the heart of this evolution is the battalion's innovation of the multifunctional logistics company (MFLC), a modular formation that integrates distribution, maintenance, recovery, and supply support activities into a single unit. The MFLC was first employed during their Exportable Combat Training Capability (XCTC) 25-04 rotation at Fort Pickett, Virginia. It represents a significant shift away from functionally aligned sustainment companies and toward clustered, mission-tailored nodes designed for modern warfare.

Meeting the Demands of LSCO: Dispersed, Resilient, and Modular

The traditional brigade support area (BSA), a centralized sustainment hub, has long been a cornerstone of tactical logistics. But its size and static nature make it a single point of failure in the modern battlespace, where long-range fires, drones, and electronic warfare increase the vulnerability of massed formations. The MFLC model, by contrast, enables LSBs to deploy multiple smaller, self-contained sustainment nodes across the battlefield, each capable of independently supporting maneuver forces while maintaining cohesion and command integrity.

During XCTC 25-04, the 429th BSB fielded two MFLCs across an 11-kilometer (6.8-mile) battlespace, supporting 116th IBCT operations on multiple fronts. The A MFLC in the southern cluster sustained 1st Battalion (BN), 116th Infantry Regiment (IR), and 1st BN, 111th Field Artillery, alongside the Role 2 medical company, while the B MFLC in the northern cluster supported 1st BN, 149th IR, and 3rd BN, 116th IR. This dispersed posture ensured uninterrupted sustainment while enhancing survivability, enabling the BSB to dynamically reposition and reallocate resources across shifting lines of effort.

Despite operating at only 62% strength across the battalion, 429th BSB successfully executed mission command, sustained maneuver, and preserved combat power throughout the rotation. Their results affirm the viability of the MFLC concept under realistic, resource-constrained conditions.

Principles of Sustainment Realized

The MFLC construct directly advances several of the Army's principles of sustainment outlined in Field Manual 4-0, Sustainment Operations:

- **Responsiveness**: MFLCs enable faster delivery of critical supplies by reducing the distance and coordination required to reach supported units.
- **Continuity**: When one node becomes degraded or compromised, others continue to sustain operations without interruption.
- **Survivability**: By dispersing sustainment assets, MFLCs eliminate single points of failure and reduce the unit's targeting signature.
- **Flexibility**: MFLCs scale capabilities up or down based on mission requirements, which enables lean, tailored logistics support.

By applying these principles through an integrated task organization, the 429th BSB demonstrates how doctrine drives innovation and how formations execute it under realistic battlefield conditions.

Institutional Lessons: Cross-Training, Security, and Communication

The success of the MFLC model at XCTC 25-04 highlighted several systemic challenges and corresponding recommendations for the Army sustainment community at large.

Tactical Logistics Proficiency

With personnel shortages across key military occupational specialties (MOSs), Soldiers cross-trained in various functions (e.g., mechanics operated load-handling systems; truck drivers pumped fuel; and water purification specialists trained others on Hippo systems). This adaptability was critical to mission success. The 429th BSB now recommends the establishment of a dedicated tactical logistics additional skill identifier (ASI) and standardized cross-MOS training for 88M Motor Transport Operator, 91B Wheeled Vehicle Mechanic, 92A Automated Logistical Specialist, 92F Petroleum Supply Specialist, and 92W Water Treatment Specialist Soldiers in brigade (BDE) and below sustainment formations.

Dedicated Security Assets

As BSA clusters multiply, so does the demand for perimeter defense and convoy security. During XCTC 25-04, the 429th BSB successfully integrated military police support to harden the BSA and enabled sustainers to focus on logistics. This validated the need for either an organic D Company in the LSB or the regular assignment of external security elements.

Modernized Mission Command Systems

Operating two MFLCs across the battlespace exposed critical gaps in the battalion's communication systems. Frequency modulation radios, joint battle command platforms, and limited satellite communications could not maintain continuous mission command. The unit relied on nonstandard solutions to stay connected, including limited BDE networks, to stay connected. To close this gap, the 429th BSB advocates for rapidly fielding C2 Fix and other beyond-line-of-sight platforms to support decentralized sustainment operations.

A Model for the Future Force

The MFLC structure does not just reorganize logistics: it represents a new sustainment philosophy, one that is agile, modular, and tailored for distributed operations in a high-threat environment. While doctrinal revisions are still pending, the 429th BSB's findings offer actionable recommendations across doctrine, organization, training, material, leadership and education, personnel, facilities, and policy:

- Institutionalize MFLCs as the standard A and B companies within LSBs.
- Retain the four-company structure: headquarters and headquarters company, A MFLC, B MFLC, and C medical company.
- Include MFLC sustainment planning and mission command in professional military education at the Basic Officer Leader Course, intermediate-level education, and the Senior Leader Course.
- Cross-train logistics Soldiers and implement a tactical logistics ASI.
- Equip LSBs with scalable communications and modular, mobile sustainment platforms tailored for dispersion and mobility.

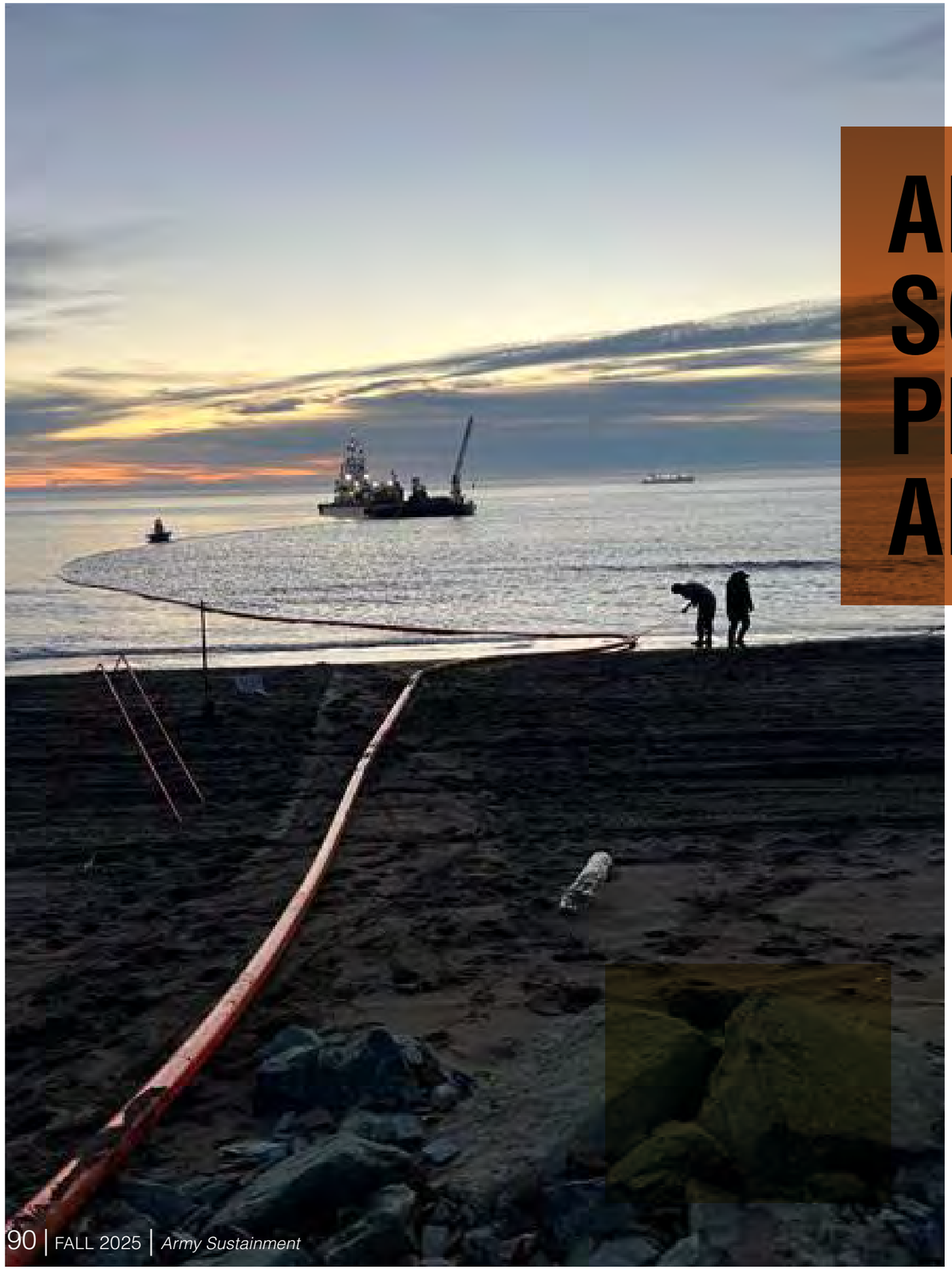
Shaping the Future Fight

The battalion's success during XCTC 25-04 shows that distributed, multifunctional sustainment is not just possible but necessary. The Army must now move with urgency to update doctrine, field the right equipment, and train leaders to execute this model at echelon. As the 429th BSB has demonstrated, the MFLC enables sustainers to do more than keep pace with maneuver forces — it allows them to shape tempo, mitigate risk, and win in the decisive fight.

CPT(P) Alec B. Hulbert is the support operations officer at the 429th Brigade Support Battalion, 116th Infantry Brigade Combat Team, 29th Infantry Division, Virginia Army National Guard. He previously served as the S-3 operations officer in the 529th Combat Sustainment Support Battalion, which included a nine-month deployment to Poland in support of Operation Atlantic Resolve. He holds a Master of Business Administration degree from Liberty University and has an active Certified Public Accountant license in the state of Virginia. He works as a financial controller for a fuel and energy company in the Charlottesville, Virginia, area.

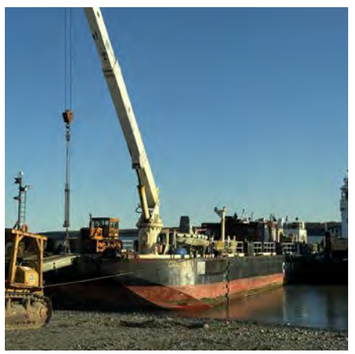
Featured Photos:
Left: Soldiers of India Company, 429th Brigade Support Battalion, 75th Troop Command, pose for a photo in their containerized kitchen during the Regional Philip A. Connelly Field Feeding Competition at the Harlold L. Disney Training Center in Artemus, Kentucky , on June 14, 2023. (Photo by Andy Dickson)

Right: SPC Adam Bwesi Ntedika from I. Co. 429th Brigade Support Battalion, Kentucky Army National Guard, cooks meals during annual training, Fort Knox, Kentucky, July 19th, 2024. (Photo by SFC Ryan Wilhoit)



APPLYING COMMERCIAL SOLUTIONS AND BEST PRACTICES TO ARMY LOGISTICS

■ *By CPT Kelsey E. Hofmann*



There is a need for specifically designed marine vessels to service littoral deliveries in austere locations globally, particularly in U.S. Indo-Pacific Command (USINDOPACOM). My exposure to Crowley's large Arctic littoral fleet of tugs and barges has provided a unique perspective on solutions and best practices for large-scale joint logistics over-the-shore (JLOTS) capability gaps across the Service components.

The Secretary of War codified U.S. Transportation Command (USTRANSCOM) as the War Department's (DOW's) single manager for global bulk fuel management and delivery in 2023. This allowed USTRANSCOM to support future operations by synchronizing the efforts of multiple bulk fuel stakeholders and the regional combatant commands in support of their operational plans and emerging warfighter concepts. This synchronization addressed known gaps in the joint petroleum enterprise with the movement and distribution of bulk fuel before and during crisis. USTRANSCOM identified that history has shown that our success on the battlefield depends on the strength of our industrial base and our relationships with the commercial sector. Incorporating our commercial partners, like Crowley Fuels, into these conversations is imperative to DOW's success.

Enhancing Army Petroleum Operations through Training with Industry at Crowley Fuels

A crucial piece to this is the Training with Industry (TWI) program, which is a unique broadening opportunity that enhances a Soldier's knowledge of industry capabilities and methods within their occupational specialty. This unique opportunity provides engagement with cutting-edge innovation within the civilian sector while enhancing the warfighter's skills in leadership, management, and specialized corporate and industry knowledge.

In 2024, I was honored to be appointed as the TWI fellow at Crowley Fuels in Anchorage, Alaska. This opportunity allowed me to gain firsthand exposure to their advanced commercial logistics practices. These experiences provided key insights that the Army can apply to modernize its Class III(B) petroleum operations and improve sustainment effectiveness across multidomain operations (MDO), along with collaboration with inter-service agencies worldwide.

The Army must continuously evolve its sustainment capabilities to remain agile and effective in contested, remote, and infrastructure-limited environments. One of the most critical components of sustainment, Class III(B) petroleum distribution, requires innovative approaches that mirror operational challenges. Since Crowley Fuels operates extensively throughout coastal Alaska, it offered me a unique opportunity to observe and apply cutting-edge over-the-shore (OTS) fuel delivery practices. Embedding a logistics officer as a TWI fellow at Crowley Fuels provided unmatched exposure to modular, scalable systems and processes, and expeditionary logistics strategies that align with the Army's JLOTS and Inland Petroleum Distribution System (IPDS) operations.

Crowley's resupply missions involve transporting millions of gallons of fuel to remote villages, often requiring ship-to-shore transfer. These operations are conducted in austere environments with minimal port infrastructure, challenging terrain, and extreme weather conditions nearly identical to those faced in military operations in the Arctic, Indo-Pacific, or disaster-relief scenarios. Being assigned during this critical fuel delivery season allowed me to gain invaluable experience in the planning, deployment, and recovery of floatable hose systems, as well as environmental risk mitigation, use of lightweight modular equipment, and coordination with small boat teams and local support assets.

The insights gained from this experience can directly inform Army sustainment modernization efforts, especially as the Service pivots to large-scale combat operations (LSCO) and contested logistics under MDO. This industry immersion and knowledge transfer can influence acquisition strategies, training programs for petroleum specialists (92F), and doctrine updates related to expeditionary fuel support. It can also enable the Army to identify commercial-off-the-shelf technologies with immediate application to forward fuel distribution. The continuous placement of assigning a fellow to Crowley Fuels is a strategic investment in the Army's future sustainment force. It bridges the gap between commercial innovation and military execution, ensures relevance in dynamic operational environments, and enhances the Army's ability to deliver fuel wherever and whenever it is needed.

Crowley Fuels: A Strategic Logistics Partner

Crowley Fuels supports over 90 DOW and federal sites via multi-modal refueling operations. Using OTS and ship-to-shore methods, their capabilities align closely with the Army's need for JLOTs and remote sustainment operations. Their Arctic fleet, manned by experienced mariners and optimized for shallow-draft and littoral logistics, provides a working model for operating in infrastructure-limited regions. The need is greater than ever to modernize the Army's watercraft fleet and integrate commercial logistics industries into planning cycles to ensure access and responsiveness during joint and multinational operations. This is a critical component of the contingency support plans as the sustainment enabler of the joint force, particularly in the Indo-Pacific area of operations. Crowley's littoral and blue water fleet is built to overcome challenges in the Pacific and Arctic oceans, such as uncharted locations, shallow river navigation, and limited infrastructure berths. Their shallow-draft tugs and combination fuel and deck cargo barges (with a 270,000-gallon capacity), combined with skill and local expertise of experienced mariners, allow Crowley to reach otherwise-inaccessible locations to provide JLOTS solutions across commercial and joint force customers.

The Army's watercraft systems provide critical logistic capabilities to the joint force and require long-overdue modernization to support strategic lines of effort in the Pacific Rim.

Bridging Capability Gaps in Army Watercraft

The Army is pursuing changes to effectively execute LSCO in multidomain environments. Sustainment faces the challenge of effectively modernizing its force and capabilities to maintain pace with a transforming Army. Future sustainment forces must be prepared to effectively operate across maritime domains from a strategic distance. The Army's watercraft systems provide critical logistic capabilities to the joint force and require long-overdue modernization to support strategic lines of effort in the Pacific Rim. If the Army neglects this effort, it will be hyper-dependent on commercial entities to provide these capabilities, which may come at a heavy price for services in contested areas and combat zones.

Commercial companies have assets that can support the joint force in contested logistics planning. It is essential to bring in those commercial experts early as advisors at the Service or combatant command-level to ensure strategic military planners (J5s) are accurately building contingency support plans that capture the

broad commercially available resources. This may present complicated contracting lines of effort if those same experts exist at companies that own the assets. However, there are mechanisms to prevent contract pollution and still have commercial expertise available to lead planners. The Army could leverage smaller contract opportunities for subject matter experts (SMEs) to provide education at required leadership schools, exercise planning events at the theater level, or provide SME support to real-time planning efforts across the joint, interagency, intergovernmental, and multi-national (JIIM) environments. The Army must leverage these SMEs to prevent military planning from being done in a vacuum and without consideration of commercial sustainment expertise.

Integration of Commercial Equipment into Joint Petroleum Over the Shore Operations

Incorporation of commercial best practices, specifically Crowley Fuels' employment of Alaska Rubber Group (ARG) floatable fuel hoses, into the DOW's OTS Class III(B) operations, would enhance modularity, responsiveness, and operational flexibility in austere environments. Crowley Fuels conducts OTS fuel delivery operations throughout coastal Alaska and the Canadian Arctic, operating in some of the most logistically challenging and infrastructure-deficient environments in North America. These operations rely on floatable, high-durability hose systems provided by ARG. The company routinely conducts ship-to-shore transfers via hose laydowns from offshore tank barges to remote beachheads and inland fuel bladders or tanks. This system can mirror the DOW's JLOTS, IPDS, and future Early Entry Fluid Distribution System (E2FDS) operations, though with enhanced commercial agility, simplified modular components, and reduced logistical burden.

I saw that Crowley's floatable hose systems are designed for rapid deployment and recovery using minimal personnel and equipment. The Army can adopt this model by modernizing it to lightweight, modular float hose reels, and quick-connect couplings compatible with existing tactical, IPDS, or E2FDS configurations. This would allow more agile theater opening operations with reduced time and footprint. ARG hoses used by Crowley are rated for Arctic and coastal environments, including resistance to saltwater corrosion, cold weather brittleness, and ultraviolet degradation. Integrating similar commercial-grade hoses into the Army's supply chain will enhance the survivability of systems in USINDOPACOM and Arctic areas of responsibility (AORs).

Operational Efficiency

Crowley's use of small boat teams to guide hose laydowns, coupled with simple anchoring or tension systems, minimizes port infrastructure dependency. The Army should incorporate small-craft deployment tactics, techniques, and procedures to guide OTS hose placement, particularly in littoral and contested environments. Crowley Fuels' proven model for fuel delivery in remote Alaskan environments offers scalable, tested practices highly applicable to Army and DOW fuel operations. Adopting commercial floatable hose technologies will enhance capabilities in expeditionary logistics, particularly in Arctic and Pacific littoral AORs.

By witnessing Crowley's lean logistics approach, I can better translate commercial efficiencies into military doctrine and operations, supporting future modernization of IPDSs and theater logistics plans. This assignment's observations ensured a critical transfer of knowledge that will enhance Army readiness, improve fuel distribution resiliency, and modernize expeditionary sustainment doctrine.

Fuel Simplification and Quality Assurance: A Path Forward for Army Logistics

In an era defined by distributed operations, contested logistics, and expeditionary sustainment, the Army must evolve its petroleum distribution methods to remain responsive and effective in any theater. Crowley Fuels offers valuable insights into fuel simplification, field blending, and mobile additization processes. These capabilities, if adapted to Army Class III(B) operations, would significantly improve agility, reduce risk, and enhance fuel readiness in support of joint logistics and MDO.

In these logistics-challenged environments, the company has refined its approach to fuel management through a deliberate strategy of simplification. Rather than transporting multiple grades of fuel, Crowley minimizes fuel types by leveraging multi-purpose grades that satisfy a broad spectrum of end-user requirements. This reduces handling errors, simplifies storage requirements, and decreases the risk of fuel contamination. The Army can benefit from this approach by further institutionalizing the "single-fuel-forward" concept, prioritizing the use of F-24 fuel across both ground and aviation platforms, both inside and outside the continental U.S., when mission profiles and equipment allow. Simplifying fuel types in-theater would reduce the logistics burden and allow for more efficient distribution node design.

Beyond simplification, Crowley regularly conducts field-scale fuel blending operations to meet environmental or regulatory requirements. For instance, blending No. 1 and No. 2 diesel fuels allows Crowley to create cold-weather optimized blends that prevent fuel gelling in sub-zero temperatures. These blends are often prepared at coastal terminals or directly aboard transport vessels. For the Army, developing mobile blending capabilities would enhance adaptability during forward operations. Petroleum units equipped with blending modules could tailor fuel to the climate and mission demands of a particular theater, ensuring sustained equipment performance and reducing dependency on multiple refined fuel shipments. Training 92F Petroleum Supply Specialists in blending techniques would support this capability and create a more self-sufficient sustainment force.

A third critical capability is Crowley's use of mobile additization systems. These trailer-mounted or skid-based units inject corrosion inhibitors, lubricity enhancers, cold flow improvers, and anti-static agents directly into bulk fuel during transport or at forward staging points. This flexibility enables Crowley to tailor fuel characteristics on demand, enhancing fuel performance and compliance with environmental standards. The Army should adopt similar mobile systems to enable fuel to be treated closer to the point of use. Doing so would improve readiness across varying environmental conditions, from Arctic cold to tropical heat, and support interoperability with allied forces whose platforms may require different fuel specifications.

Conclusion

Crowley Fuels offers critical commercial logistics insights applicable to modernizing Army Class III(B) operations, particularly in contested, austere, and littoral environments. Through the TWI program, firsthand exposure to Crowley's OTS fuel delivery, fuel simplification, blending, and mobile additization revealed scalable, modular practices directly aligned with JLOTS and IPDS needs. Crowley's Arctic-capable fleet and agile hose deployment methods address key capability gaps in Army watercraft and fuel distribution. Incorporating these commercial solutions enhances Army sustainment readiness, supports MDO, and ensures logistical agility in the Indo-Pacific, and Arctic theaters. These capabilities are particularly critical in support of the Army's emerging Arctic Strategy and the shift toward expeditionary logistics under MDO. Crowley's commercial model provides a realistic and proven framework for operating in contested and infrastructure-deficient areas, exactly the conditions under which future conflicts are likely to be fought.

CPT Kelsey E. Hofmann is a logistics officer currently assigned to the 953rd Theater Petroleum Center at Fort Bragg, North Carolina. She is a 2017 graduate from the United States Merchant Marine Academy, where she received her commission as a second lieutenant in the Ordnance Corps. She has experience working with Naval Sea Systems Command, Military Sealift Command, and civilian maritime companies. She has a Master of Science degree from Kansas State University in adult learning and leadership. She completed a TWI fellowship with Crowley Fuels Alaska. Her military education includes Ordnance Basic Officer Course, the Logistics Captains Career Course, and Support Operations Course. Her experiences bridge tactical logistics execution with strategic sustainment planning across the joint force.

Featured Photos:
Left: Pilot boat and crew deploying the floatable hose at Point Lay, Alaska, to begin discharging fuel over-the-shore. (Photo by Chris Hargrave)

Left Center: Crowley tugs and barges in Point Lay, Alaska, conducting marine fuel delivery over-the-shore in an austere environment with limited infrastructure. (Photo by Chris Hargrave)

Right Center: Crowley Pup Trailer, a critical equipment asset, located in North Pole, Alaska, which delivers up to 6,000 gallons of fuel year-round to the Fairbanks region, ranging from Fairbank's urban centers and surrounding boroughs, covering about a 50-mile radius. (Photo by CPT Kelsey Hofmann)

Right: Crowley tug and barge in Naknek, Alaska, preparing for winterization operations, including storage and maintenance, which absorbs the entire focus of the team to ensure the fleet is ready for operational season from April to October each year. (Photo by CPT Kelsey Hofmann)

How to Succeed in Logistics

by Lieutenant General Richard H. Thompson

The Army's recently appointed Deputy Chief of Staff for Logistics offers career advice to young Army officer logisticians.

[Editor's Note: This Blast from the Past article was initially published in Army Logistician (the former title of Army Sustainment) in the SEP-OCT 1981 issue. The career advice provided by the then Deputy Chief of Staff for Logistics to young Army officer logisticians still holds true today.]

The Army's recently appointed Deputy Chief of Staff for Logistics offers career advice to young Army officer logisticians.

"What should I do to be competitive in my Army career?"

I am asked this question during virtually every visit that I make to the field. Young, energetic Army officer logisticians are concerned about the kinds of things they should do to improve their competitive edge in vying for career development opportunities.

Having served on a number of selection boards for various coveted opportunities, I have given considerable thought about how to answer that often-posed question. I would like to share some of those thoughts with all of you logisticians who have pondered that question.

First, we need to understand our Army, not only its missions and functions but also its values and beliefs. Our Army is in transition, just as our society is in transition, but the element of transition has always been present. At no time in our Nation's history have the opportunities, challenges, and satisfactions for Army logisticians been greater. It is a "super" time to be serving our Nation.

Regardless of your current position or experience there are going to be occasions when your seniors will be perplexed, or even dismayed, by some of your attitudes. There is, indeed, a generation gap; but there are also core values and beliefs that you and your seniors can jointly embrace and build a lifetime of service around. I think there are three beliefs that can be universally shared:

1. The Army Is a Profession. It is a profession that requires dedication, sacrifice, and commitment. Service to our country, in the highest and finest sense, is the principal reward.
2. The Army Is People. The Army is not an impersonal assembly of sophisticated weapons of destruction linked by high-speed electronics. It is people, and the people — comrades, family, friends, and countrymen — are whom the Soldier is willing to die for.
3. The Army Is Opportunity. The Army, as perhaps no other institution, offers the opportunity to serve, to develop, to grow, to share, and to contribute.

Our Army is in transition, just as our society is in transition, but the element of transition has always been present.

These, then, are some of the beliefs that I think are mutually shared. I also think there are some fundamental values — values steeped in our Nation's heritage and culture — that can be mutually shared. Among those values are:

- Honesty and Integrity. These words describe specific, recognizable values, not hazy concepts. They mean "tell it like it is" and "be willing to stand up and be counted."
- Dedication. This, too, is a recognizable value, manifested in our willingness to defend our free society and its constitutional guarantees.
- Pride. This value is perhaps our most obvious and is demonstrated by the pride we take in our Nation of free men, women, and children; in our profession that helps keep our Nation free; in our Soldiers and our leaders; and, most of all, in ourselves.
- Enthusiasm and Optimism. This value is reflected in our attitude that we can and will do the job.
- Respect. This value is demonstrated in our dealing equally with our fellow Soldiers regardless of race, sex, age, or station in life.

After recognizing these fundamental values and beliefs, let me share with you some things that I think a young logistician can do in charting their career to maximize their contributions and to achieve their potential. I offer these in no particular order of importance.

- Go after the tough jobs. Contrary to popular belief it can be beneficial to volunteer. Assert yourself and as a logistician assert your service to your customer.
- Stay physically and emotionally fit with a healthy appetite for work and a positive attitude toward mission accomplishment.
- Serve with troops as early and as often as possible.

You will keep that vitality and sense of urgency that is so important to a small unit's success.

- Learn to praise openly, counsel wisely and honestly, and chastise privately, impersonally, and without emotion.
- Do not work toward efficiency reports and scores; give each job your best and the reports and scores will take care of themselves.
- Learn to speak and to write expressively, understandably, and concisely. Be articulate without being verbose.
- Be active — a competitor and a doer — guided by technical knowledge, logical thought, and common sense. Do not do anything stupid.
- Understand and learn from your mistakes. You will make mistakes and correct them or be corrected, but maturity comes from understanding them.
- Remember your obligations to our taxpayers and to our Army and be ruthless in your efforts to weed out fraud, waste, and abuse.
- Study war and understand it — it is our profession. Learn from the triumphs and tragedies of our past leaders. Make their logistics successes and mistakes pay off for you.
- Do not get bogged down in the technical minutia and jargon of our logistics systems. Realize their importance, learn their critical points, and measure their effect on the combat units that you support.
- Learn to communicate with the commanders and staffs that you support in their language and thought patterns. Your knowledge is an important asset to them.
- Care of your Soldiers — the good ones and the not-so-good ones. Help, nurture, and defend them; for they will be what they think they are and what you think they are.
- When you evaluate subordinates, emphasize the importance of their jobs in plain, simple language. If they have done well, say so. We logisticians tend to understate things.
- Do not plan your retirement at the 10th year of service. Pursue assignments that provide continued professional growth, not necessarily those that will be the most marketable at your 20th year.
- Learn when to listen and when to speak up. It has been said that you cannot listen your way into a problem, but it is equally true that you cannot listen your way out of one either.
- Study your career opportunities and actively participate in managing your own development. Review and update your officer record brief and microfiche.
- Know your career manager at the Military Personnel Center. Talk with them. Tell them your goals, aspirations, and hopes and follow up in writing so that they do not forget. Use the preference sheet
- Let your boss help you, just as you help your Soldiers. Learn to communicate your needs to them and let them watch you grow in responsibility, knowledge, assuredness, and maturity.
- Do not be afraid to ask for help or information when you need it, but do not be foolish enough to "shoot from the hip." Do not be afraid to say, "I do not know," but then go find out.

Remember, logisticians are important members of the Army team. There is a bright future for you on that team. Attune yourself to become a more vital part of that team, drawing upon the emerging regeneration of America's defensive strength.

LTG Richard H. Thompson was a former Deputy Chief of Staff for Logistics, Department of the Army from 1981-1984. In his 42 years of service, he achieved the rank of general and became the first Quartermaster officer in the corps' history to hold the rank of full general while still on active duty. He was inducted into the Quartermaster Hall of Fame in 1991 for his lifetime of contributions to the Quartermaster Corps.

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