THE ARMY'S OFFICIAL PROFESSIONAL BULLETIN ON SUSTAINMENT

SPRING 2023

ARMY SUSTAINMENT

HIP-POCKET GUIDE

SUSTAINING UNIFIED LAND OPERATIONS

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COMMANDING SUSTAINMENT FORMATIONS

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IN THIS ISSUE

Publication Announcement:

Our next issue (Summer 23) will be the last printed edition. We are transitioning to digital format, which can be viewed and downloaded from our home page at https://alu.army.mil/alog/ or https://www.army.mil/armysustainment. Don't forget to follow us on Facebook, Twitter, and LinkedIn for additional content. Links can be found on the back of the bulletin and our home page.

Editor's Note:

There are several changes within this issue that the editorial team wants to bring to the attention of our readers.

Our Board of Directors has been updated to include the Deputy Chief of Staff, G-1, U.S. Army. Our Ex Officio team now includes the Medical Center of Excellence commander. We welcome the input of both of these leaders.

Additionally, several installation names have been changed to reflect the redesignation efforts in accordance with Sec. 370 of the 2021 National Defense Authorization Act. All installations that have completed their transition and those scheduled have been changed.

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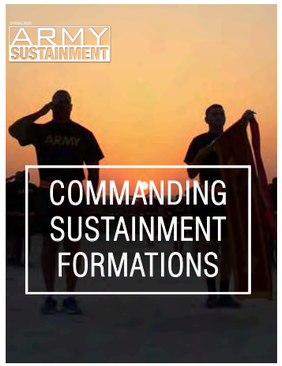

ON THE COVER

Commanding Sustainment Formations is the theme for the Spring 2023 Army Sustainment Professional Bulletin. Soldiers of the 595th Transportation Brigade, 1173rd Transportation Battalion, and 840th Transportation Battalion render a salute during reveille before a 1st Theater Sustainment Command's commanding general run, June 6, 2019, at Camp Arifjan, Kuwait. (Photo by Claudia LaMantia)

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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Delivering Predictive and Precision Sustainment for the Joint Force

■ *By Gen. Charles R. Hamilton*

I am honored and humbled to take the reins as the Army Materiel Command (AMC) commanding general and, in that role, the Army's senior sustainer. As a career logistician and the previous Army Deputy Chief of Staff for Logistics, G-4, and AMC's Deputy Chief of Staff for Operations, G-3, I know firsthand the criticality of our Army Sustainment Enterprise (ASE) from the joint strategic support area (JSSA) to the tactical point of contact.

Our sustainment mission has evolved exponentially in the last few years. We are synchronizing our efforts with all stakeholders across the ASE to deliver sustainment warfighting capabilities in support of the Army and joint force of 2030 and 2040. The end state of our effort is posturing the Army to provide logistics and sustainment support for the joint force in a contested multidomain operational environment. Most recently, the ASE continues proving its operational value with crucial, time-sensitive support to Ukraine with staging, loading, and transporting materiel halfway around the world. Sustainment and logistics have always been the strategic advantage of our Army, and that continues to be true on the world stage today.

I intend to continue the innovative transformation efforts of my predecessors to operationalize our sustainment support, exploit predictive and precision logistics, and deliver sustainment warfighting function capabilities to achieve the Army of 2030 and design the Army of 2040.

The theme of this issue is Commanding Sustainment Formations. The pages that follow explore the challenges, best practices, concepts, theories, and ideas of those who have led our formations through some of the nation's most challenging times and those newer to the career field with fresh perspectives. The best sustainment leaders have always been agile, dynamic, and responsive to needs. As we continue transforming the ASE alongside Army modernization efforts, sustainment leaders of the future must be able to understand and employ the knowledge and power of data and information as critical readiness assets to inform future sustainment actions reliably and rapidly as combat multipliers.

The Army is aligning itself as a data-centric organization, and so must our sustainment formations. Transforming our sustainment information systems, processes, and procedures reinforces data as a readiness asset and forms the foundation of predictive logistics (PL) — from the JSSA to setting the theater to the tactical point of contact — by establishing resilient sustainment mission command. We must exploit data to provide sustainment solutions, maintain readiness, and ensure required weapon system availability rates. The core outcome of PL is delivering sustainment before expected shortfalls in any operational environment. This ensures commanders can sustain combat power on the battlefield absent a demand signal.

The ASE's pivot to data-enabled sustainment and PL will ensure we deliver precisely what's necessary before it's needed under limited time constraints and across vast distances. While the future fight will be more complex and challenging than ever before, our sustainment enterprise will ensure the warfighter is postured for decisive victory across all domains.

The future of sustainment will demand both predictability and precision to deliver sustainment capabilities across a contested multidomain operational environment. I am confident our ASE and those who have the distinct honor to command our sustainment formations will rise to the challenge. I look forward to all we will continue to accomplish on behalf of the Total Army and joint force!

Gen. Charles R. Hamilton currently serves as the commanding general of Army Materiel Command. Hailing from Houston, Texas, Hamilton enlisted in the U.S. Army. Upon completion of basic and individual training, he was assigned to Fort Cavazos, Texas. In February 1988, he graduated from Officer Candidate School as a Distinguished Military Graduate and was commissioned as a second lieutenant in the Quartermaster Corps. He earned a Bachelor of Science in business administration from Virginia State University and masters' degrees in public administration from Central Michigan University and military studies from Marine Corps University. He is also a graduate of a Senior Service College Fellowship — Secretary of Defense Corporate Fellows Program.

While the future fight will be more complex and challenging than ever before, our sustainment enterprise will ensure the warfighter is postured for decisive victory across all domains.

Commanding Future-Ready Sustainment Formations Requires Balance to Enable Predictive and Precision Logistics

Editor's Note: Maj. Gen. Heidi Hoyle currently serves as the Military Deputy to the G-4 and its Director of Operations, G-4 3/5/7.

At last fall's Association of the United States Army's Annual Meeting and Exposition in Washington, D.C., Army senior leaders unveiled the most recent update to our central operational doctrine, Field Manual (FM) 3-0, Operations. This revision establishes multidomain operations as the Army's operational concept, with a clear focus on large-scale combat that will define the future battlefield environment and shape how we deliver sustainment support to the warfighter where and when it is needed. Defined by smaller dispersed units serving in potentially austere points of need, the transition from counterinsurgency to large-scale combat operations — and with it, a parallel transition from the brigade to the division as our primary unit of action — comes with a shift in our sustainment approach and its surrounding assumptions.

The critical infrastructure comforts we as a military have been used to in past conflicts may not be as readily available, and it will be the sustainment commander's responsibility to instill an ethos of agility and adaptability that most effectively balances the art and science of sustainment mission command. Success in competition, crisis, and conflict against a near-peer adversary with similar modernized capabilities demands a persistent state of readiness that has historically been achieved without constant contestation and observation.

The Army's logistics posture during World War II serves as a great example of our once-strategic status quo. While a commander's strategy in theater was certainly complemented or constrained by their force's logistics capabilities, the most foundational logistical task was force projection and stable aggregation from an uncontested homeland. By the war's end in 1945, it became clear that, in the European theater, the United States mobilized its industrial base more effectively than Germany in battles dominated by materiel readiness. A captured German soldier put it best while being marched by a series of supply repositories along Normandy, claiming he knew America's secret to victory: we simply piled up supplies and let them fall.

In the past, we had the luxury of pushing what we needed well before, or even just before, we needed it, but the next fight will necessitate a transition from push-to-pull logistics. Instead, as FM 3-0 asserts, we must be ready to sustain forces that can aggregate and disaggregate with speed and agility. Piling up supplies and letting them fall represents an outdated approach that may only obstruct our warfighters and limit their kinetic endurance. Of course, stockpiles are not comprehensively irrelevant, and production based on a static demand forecast is not useless. However, we cannot rely on past practices to sustain modern maneuvering, placing greater emphasis on our drive towards logistics that is both predictive — meaning we know what the warfighter will need before they need it — and precise — meaning we will be holistically efficient in delivering logistics support at echelon.

Impactful and future-ready sustainment formations will operationalize this strategic guidance with doctrine as their foundation while leveraging the wide range of knowledge, skills, and experience resident within their Soldiers, officers, and warrant officers. To be both predictive and precise, our formations must maintain a mastery of the science of logistics through continued training and education that realistically replicates our new operational context. For example, suppose we are to be agile and adaptive to meet the varying needs of our warfighters dispersed across contested spaces. In that case, we must maintain a mastery of the art of maneuver to anticipate future needs in support of their missions. In this edition of Army Sustainment, we hear from our teammates in the field — including five brigade commanders across the Total Army — about how to successfully strike the delicate balance between art and science within sustainment mission command. Doing this at every echelon ensures we, as an Army Sustainment Enterprise, can carry out those critical tasks outlined as part of our warfighting function while proving logistics will remain a key strategic advantage for the United States Army now and in the foreseeable future.

In the past, we had the luxury of pushing what we needed well before, or even just before, we needed it, but the next fight will necessitate a transition from push-to-pull logistics.

Maj. Gen. Heidi J. Hoyle currently serves as the military deputy to the G-4 and director of operations, G-4 3/5/7, Office of the Deputy Chief of Staff, G-4. Hoyle has a Bachelor of Science in engineering management from the United States Military Academy, a Master of Science in systems engineering from the University of Virginia, and a Master of Science in national resource strategy from the National Defense University. Hoyle 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.

Better Questions: Preparing to Survive, Sustain, Win

■ *By Maj. Gen. Mark T. Simerly*

Today's Army is amid its most significant transformation in 40 years. While we spent the first two decades of this century focusing on counterinsurgency operations in southwest Asia, our peer adversaries narrowed and, in some cases, eliminated the many advantages that make us the world's preeminent land power. To reestablish those advantages, the Army is developing capabilities at every echelon to deploy, fight, and win. Here at the Combined Arms Support Command (CASCOM), we primarily focus on sustainment at the division echelon because it is the Army's principal tactical warfighting headquarters during large-scale combat operations (LSCO).

During these operations, Army divisions command brigades, synchronize various enablers, and combat multipliers to converge rapidly upon enemy formations and win battles and engagements. As part of the division's warfighting team, the division sustainment brigade (DSB) integrates and distributes the capabilities necessary to provide maneuver forces with the speed, range, and endurance necessary to achieve victory. The changing character of warfare increases the difficulty of that mission, particularly because of DSB vulnerabilities across multiple domains: air, land, space, maritime, and cyber. Thus, we are simultaneously growing the DSB's ability to move, shoot, and communicate while protecting our operations from multidomain threats.

By 2030, Army divisions will be ready to conduct successful multidomain operations (MDO), which Field Manual (FM) 3-0, Operations, defines as "the combined arms employment of joint and Army capabilities to create and exploit relative advantages that achieve objectives, defeat enemy forces, and consolidate gains on behalf of joint force commanders." Given the growing lethality of our adversaries, the increased complexity of future battlefields, and our formations' emerging capabilities (and growing logistical requirements), where should DSB leaders focus their energies to ensure success?

An old saying suggests better questions produce better answers. Of course, we cannot definitively say when or where the Army will fight its next campaign, but DSB leaders and staff officers must consider the following questions as we prepare our Soldiers for battle.

Is the DSB ready to support the division?

Readiness, of course, includes both subjective and objective factors. While some of these, such as morale and discipline, can be difficult to judge, others provide specific metrics. Does the DSB have enough personnel assigned, for example, and are they in the correct military occupational skills? Do Soldiers have the right equipment to perform their mission, and is that equipment operational? Are Soldiers and subordinate units trained on the individual and collective tasks necessary to survive and sustain in an MDO environment?

This last metric, collective training, may pose the most significant challenge to DSB leaders due to the time and energy necessary to conduct and assess full-scale collective training events. For now, warfighter exercises and rotations at dirt combat training centers offer the most realistic collective training opportunities. Still key leaders at every echelon must create and exploit informal training opportunities whenever they present themselves.

As commander of the 2nd DSB in Korea, for example, Col. Rob Montgomery quickly recognized the importance of being able to disperse and move his brigade on the battlefield to reduce its signature, enhance survivability, and generate redundancy. As a result, he overcame limitations on time and training areas by exercising his command posts quarterly, even if those exercises simply involved relocating from one corner to another on Camp Casey.

Whom are we supporting?

The division's mission dictates its task organization and the task organization dictates the DSB's sustainment requirements. To anticipate those requirements, DSB staff must work closely with the division staff to pursue information and monitor any changes in the division's troop list while articulating the need for additional capability within their formations. The division's requirements and capabilities will likely change between phases of an operation as higher headquarters attach and detach enablers to support the mission. When demand exceeds capacity, the DSB staff must highlight and communicate those capability gaps and their associated risks.

How and when do we deploy?

For forward-deployed units, this question may simply address how and when DSBs move forward to occupy their designated tactical assembly areas. For units based in the continental United States, however, overseas deployments challenge commanders and their staff to synchronize and accomplish dozens of critical tasks within a constrained timeline.

Packing equipment, loading rail cars, and moving to ports of embarkation constitute major muscle movements that compete with the DSB's obligation to prepare individual Soldiers and their families for the upcoming deployment. In addition, the DSB may retain home-station support requirements as it prepares for movement. Meanwhile, the likely attachment of additional units and individual personnel generates its own challenges. Finally, our adversaries have already demonstrated the ability and the will to attack our communications networks, power grids, and other critical infrastructure within the continental United States. These threats further complicate the DSB's deployment process.

Where do we get support in theater?

The DSB has limited organic transportation, supply, and maintenance capabilities available to support attached units and the main effort within the division area of operations. As a separate and equal responsibility, however, the DSB commander and staff must also integrate and synchronize external support from multiple agencies to ensure responsive and effective sustainment of units assigned and attached to the division. These agencies include theater and expeditionary sustainment commands, the Army field support brigade, the contracting support brigade, the theater medical command, the Defense Logistics Agency, and the United States Transportation Command. The DSB staff must know what help is available and how to access those capabilities in a timely manner.

How do we accomplish the mission during LSCO?

During LSCO, the DSB faces two complex challenges: sustainment and survival.

The lethality, scale, and speed of LSCO place extraordinary demands on the DSB's ability to support, especially in the demands for water, fuel, ammunition, and repair parts. The increased lethality of this battlefield damages or destroys more equipment and inflicts more significant casualties on divisional units, challenging the DSB's ability

to repair weapons systems, treat and evacuate wounded Soldiers, and provide replacements in a timely manner. The immense scale of these operations extends lines of communication (LOCs) within the division's area of operations and between the divisional support area and sustainment nodes in the rear area. These extended and contested LOCs stress information systems and increase the time and vulnerability of resupply operations, especially in a maritime environment. Finally, the speed of these operations challenges the DSB staff to see the battlefield better, anticipate changes earlier, and make decisions more quickly.

Fortunately, we are fielding new and improved equipment, such as the tank rack module and the autonomous transportation vehicle system, to increase battlefield sustainment units' speed and capacity. We are also reorganizing capabilities within the DSB to add greater operational flexibility to its organic sustainment support and special troops battalions. At the same time, we are fielding business information systems to enable more rapid and effective decision-making earlier in the decision cycle. Capabilities such as predictive logistics and the sustainment transport system will help commanders see the future more clearly and make better, faster decisions.

Improved access to meaningful data coupled with advanced decision support tools powered by artificial intelligence and machine learning capability will allow us to achieve decisive dominance if we develop skilled data users in our ranks. For example, during the drawdown in Afghanistan, Col. Erin Miller's 10th DSB was the last Army sustainment brigade in theater. Her command post eventually shrank to three dozen skilled Soldiers. Yet they managed to synchronize and execute the retrograde of American military supplies and equipment worth billions by leveraging machine learning and data analytics to maintain situational awareness.

Unfortunately, the multidomain threats that characterize LSCO degrade communications, disrupt supply lines, and threaten the very survival of the DSB. Command posts must conduct distributed operations, staff sections must relearn the ability to perform their responsibilities in an analog environment, and subordinate units must exercise appropriate initiative in the absence of communications with higher headquarters.

The enemy's ability to destroy whatever it can see also puts a premium on communications security, signature management, and movement control. Convoys, for example, may move only within windows of opportunity based on enemy satellite reconnaissance. Meanwhile, our information systems must remain productive while operating during planned offline periods.

Conclusion

In November 2022, the Army published Army Techniques Publication 4-91, Division Sustainment Operations. This publication, developed and written by CASCOM in coordination with stakeholders across the Army Sustainment Enterprise, addresses many of the issues discussed above. In addition, our doctrine division is revising our capstone doctrinal publication, FM 4-0, Sustainment Operations, which will address the challenges of 2030 in further detail.

The increased lethality of future battlefields makes warfare more difficult and sustainment more critical than ever. As the division's integrating headquarters for all elements of sustainment, the DSB plays an essential role in success or failure. Therefore, the key leaders in every DSB must know their business and prepare their organizations to survive, sustain, and win the next war.

Maj. Gen. Mark T. Simerly serves as the commanding general of the Combined Arms Support Command at Fort Gregg-Adams, Virginia. He previously served as the commander of the 19th Expeditionary Support Command. He was commissioned as a lieutenant of Air Defense Artillery and awarded a Bachelor of Arts degree as a Distinguished Military Graduate from the University of Richmond. He holds a Master of Science in national resource strategy from the National Defense University and a Master of Military Arts and Sciences Degree from the Army Command and General Staff College.

KNOW YOUR ROLE

Insights on Readiness at Echelon from Sustainment Brigade Commanders Across the Total Army

By Mike Crozier

While executing transformational change in preparation for future operational challenges is not a foreign process to the Army, the Service finds itself at a critical inflection point in the face of near-peer adversary capabilities beyond those encountered during counterinsurgency (COIN) operations throughout the last two decades. From the development of Air Land Battle in the 1980s to counter Europe's Warsaw Pact forces to the recent doctrinal codification of multidomain operations for large-scale combat readiness, the transformation

process is, paradoxically, both revolutionary and evolutionary in nature for the Army's sustainers. While warfighters' operational conditions are in constant and revolutionary flux, the logistics and sustainment tasks imperative to mission success remain predominantly similar, even if they may be marked by evolutionary change over time.

To explore the future of logistical readiness in that operational space, *Army Sustainment* sat down with five brigade commanders from various geographies across the Total Army to discuss how they are adroitly preparing their formations for both immediate and future sustainment success:

- Col. Angel Estrada commands the 16th Sustainment Brigade (SB) in Baumholder, Germany, as part of the 21st Theater Sustainment Command (TSC).
- Col. Christopher Jones commands the 1st Cavalry Division Sustainment Brigade (DSB) at Fort Cavazos, Texas.
- Col. Carrie Perez commands the 36th SB as part of the Texas Army National Guard.
- Col. Gina SanNicolas commands the 25th Infantry DSB at Schofield Barracks, Hawaii.
- Col. John Stanley commands the Army Reserve's 55th SB at Fort Belvoir, Virginia.

How is the sustainment brigade you're charged with leading operationalized within your area of operations?

Estrada: Unlike a DSB, the 16th SB is aligned to a TSC, the 21st TSC in our case. We're primarily responsible for theater opening — all aspects of reception, staging, onward movement, and integration (RSOI), and deployment to home station — and subsequent distribution — including all classes of supply — for all forces entering and exiting Europe and Africa. We comprise one, but soon to be two, combat sustainment support battalions, one special troops battalion, one finance battalion, and one transportation battalion. Until recently, the 16th was the only SB in Europe or Africa, but with Russia's invasion of Ukraine came the positioning of a rotational DSB to support V Corps. The nature of our work necessitates constant synchronization with the Defense Logistics Agency (DLA), the greater joint logistics enterprise, and our allies and partners.

Jones: The 1st Cavalry DSB is fortunate to be co-located at Fort Cavazos, Texas, with the III Armored Corps and the 13th Expeditionary Sustainment Command (ESC), so staying synchronized as we reorient ourselves around the division as the primary unit of action has been rather seamless. In our day to day, we place a large emphasis on synchronization through realistic training and warfighter exercises to bolster that operational readiness. Our close relationships with the 13th ESC, corps enablers, and the III Armored Corps DSBs in the 1st Armored Division, 1st Infantry Division (ID), and 4ID (with the 4DSB forward in European Command) have been critical in ensuring we share the same operating picture as we sustain within the corps battle space.

Perez: The 36th SB is a proud part of the Texas Army National Guard's 36th ID, a division that traces its combat roots back to World War I. In the fall of 2022, we completed our most recent deployment to Camp Arifjan, Kuwait, in support of Operations Spartan Shield, Inherent Resolve, and Freedom's Sentinel throughout Central Command. For that deployment, we maintained our collective readiness through deliberate training alongside our strategic partners in the 135th ESC, 1st TSC, and our allies in Kuwait.

SanNicolas: Anyone assigned to the 25th ID or the 25th DSB will assert that we live in the tyranny of distance, and the Indo-Pacific area of operations simply demands that recognition. With that comes a slew of highly complex problem sets when considering the sustainment needs of such a geographically dispersed region. For the 25th DSB, we emphasize regional exercises, such as Pacific Pathways, which are iterative in nature and ensure we're exercising those critical operational and tactical sustainment frameworks.

Stanley: Since 2006, the 55th SB has been headquartered at Fort Belvoir, Virginia, assigned to the 310th ESC in Indianapolis, Indiana, under the 377th TSC within the Army Reserve. We provide command and control (C2) of 17 units comprising three battalions across four states. In contrast to a DSB in components 1 or 2, the 55th isn't aligned to a specific area of operations. Rather, we're designed to provide sustainment in an area of operations defined by an ESC or a TSC. To operationalize our unit, we focus on our readiness to mobilize, deploy, and conduct our wartime mission. Starting with the end state in mind, we focus on our pacing threats in near-peer competition. If our supported forces are ready to throw the first punch and maintain a positional advantage, then we've done our jobs. As Reservists, we're highly intentional with how we train to mobilize, deploy, and conduct our wartime mission. We convene monthly from far and wide to converge on our equipment and train. Good units do this routinely, but great units master the basics of how it's done.

Today's sustainers and sustainment leaders are called to look beyond just the solid and dashed lines in task organizational charts and identify those relationships critical to mission readiness. How do you foster those relationships within and beyond the sustainment community?

Estrada: I mentioned earlier that our work is enabled by close, consistent collaboration with a wide range of fellow stakeholders. From the DLA to host nations, we must develop and maintain relationships within and beyond the sustainment community. We actively engage with our maneuver formations and higher headquarters to ensure the non-sustainment community sees us wherever they are and are aware of our contributions to the entire operations process. This helps us anticipate our requirements to deliver our sustainment support prior to need. Doing this can build inherent trust in our capability and capacity.

Jones: I believe many nuances exist in how a DSB commander develops and builds their most critical relationships. Each may spend a varying percentage of time on the up and out versus the down and in. My team and I spend much of our time on the down and in to ensure we plan and execute our work from a solid doctrinal foundation. Some of the best commanders I've served placed an outsized emphasis on clearly defining their unit's role in each context that's rooted in doctrine. With that as a guiding principle, you can effectively manage expectations for what your unit can and should be doing to enable an exercise or mission. You can't decide, act, and assess your actions if you don't have that spelled out upfront. Further, without that definition, you'll find it tough to work alongside other key stakeholders, both within and beyond the sustainment community.

Perez: The Army's move from modularity to the division as the primary unit of action ensures our DSBs are aligned where they can best function. We rely on deliberate staff training to help us identify our key stakeholder base and enhance relationships we know are imperative to mission readiness. Whether we're interfacing with the 1st TSC or one of our brigade combat teams, the bottom line is that we emphasize understanding our doctrinal role within that broader ecosystem to ensure we're meeting operational needs. This understanding is important at all levels of leadership within a brigade, from its commander down to its most junior Soldiers and officers.

SanNicolas: Something that's become increasingly clear to us in the 25th DSB due to our Pacific Pathways exercise series is that logistics challenges in a theater like the Pacific can only be solved if the entire sustainment team is synchronized. There's no room for error. To counter that, our goal is to empower formations and their junior leaders to innovate and tackle those wicked problems head-on through integration and synchronization. You need to be ready to work with the broader sustainment community to solve operational problems. Every person in our ranks plays a key role and should have a firm grasp of our most critical stakeholder and partner base. I ask our team to clearly understand who the key organizations are in our purview. Who are we nesting with and supporting? Who's looking to us for guidance and execution? If you have that visibility, getting everyone around the table to set the flow of sustainment capabilities across the theater is a bit easier.

Stanley: In the 55th, we emphasize that sustainment is more journey than destination. As you look at that sustainment journey in delivering readiness and lethality

to our joint force in any area of operation, there is a wide range of situational awareness and relationship-building that must be managed for mission success. To do that effectively, we must see ourselves at each node and juncture, from the fort to the objective and everything in between. As a Reserve command, our partner network is critical and is one we must prime every month through collaborative training with our mission partners across components and services. The reserve centers where we aggregate our disaggregated forces serve as the Army's connective tissue to the American public. We operationalize our ability to mobilize when we pull our Citizen Soldiers out of their jobs for weekend volunteer positions each month. When you mobilize an Army Reservist, you also mobilize the community where they reside. We leverage nongovernmental organizations and civilian aides to the Secretary of the Army to help us nurture those relationships to ensure our sustainability to continue delivering for our armed forces.

Some of the best commanders I've served placed an outsized emphasis on clearly defining their unit's role in each context that's rooted in doctrine. With that as a guiding principle, you can effectively manage expectations for what your unit can and should be doing to enable an exercise or mission.

The Army updated Field Manual (FM) 3-0, Operations, just last fall. From your foxhole, how will that edition impact your brigade's ability to sustain the Army of 2030?

Estrada: These updates challenge leaders to understand concepts once common to our fighting force while incorporating ideas and terms many have never had to employ. The major bottom line for sustainers is that we, as a community, must look beyond our own warfighting function. Sustainment's interaction with the broader multidomain environment will surely be more complex as we prepare for a near-peer adversary. Every leader at echelon should be having conversations with their junior officers and Soldiers so everyone is familiar with these current changes outlining our future operational environment.

Jones: Three words come first to mind when considering the new FM 3-0 and its sustainment impact at all echelons: integration, observation, and dispersion. It is clear in FM 3-0 that you must always operate as if you're being observed, marking a distinction between past adversaries and the near-peer ones we are preparing for now and in the future. Army senior leaders repeatedly message this with our industry and academic partners. Still, we'll have to be more agile, resilient, and synchronized with our maneuver teammates to aggregate and disaggregate with the greatest impact.

Perez: Codifying multidomain operations into doctrine outlines the criticality of sustainment to mission success while emphasizing the importance of integration across warfighting functions. I don't necessarily think the foundations of sustainment at the tactical level have shifted drastically, but I do believe the most impactful sustainers will need to operate with an even clearer understanding of the art and science of logistics. This way, they can adeptly apply that working knowledge within the world of maneuver to the greatest effect, ensuring decision space for commanders in the field. Sustainment dominance of a multidomain environment will require an intricate balance between our grasp of doctrine across echelons and new capabilities that enable those requirements as we modernize for 2030 and, down the road, 2040.

SanNicolas: These updates emphasize our ability to conduct large-scale combat operations (LSCO), even though much of the preparation for that has been part of our day to day for some time. In the Pacific theater, we have to frame our approach to LSCO more holistically than just seeing that as a massive swath of land separated by water. The complex geography makes our partnership with the greater joint force much more critical as we now set conditions to synchronize planning and ensure sustainment is delivered at the right time and place. FM 3-0 makes it clear we must be ready to aggregate and disaggregate faster than before to best enable maneuver commanders, who may need access to reliable communications to instantiate tactical resupply, which is an inherent challenge to sustainment operations in the Pacific. The conditions are evolving, but our purpose remains the same. We're now working on training to be more agile and versatile in providing sustainment.

Stanley: We must prepare, and actively are preparing, our force to sustain the joint force in distributed and disconnected operational environments, but we can no longer expect to do this from fixed sites as we were accustomed to in the past. Our speed to set and reset the theater, mobility to deliver resources from positional advantage, and redundancy in lines of communication will be critical. To truly operationalize the sustainment needs of FM 3-0, we must have better visibility into our sustainment picture to reduce dependencies on vulnerable, centralized, in-theater sustainment nodes. To accomplish this, we must secure our logistics systems and increase our workforce's digital literacy to take advantage of the progress made in the artificial intelligence and machine learning spaces to support autonomous and multi-capable distribution platforms.

Future warfare against a near-peer adversary in varying contested environments presents itself as a massive departure from COIN operations. How are you working alongside your company and battalion commanders to prepare for that shift? What have been some of the most and least surprising challenges in this preparation?

Estrada: One of the most interesting challenges is maintaining the functionality of our various sustainment and C2 nodes while remaining small, agile, and flexible. The days of massing sustainment capabilities in one location alongside C2 elements are probably over. We can't assume units, dispersed over vast spaces, will be able to communicate needs or concealment, so that's a novel problem set when you couple those environmental dynamics with a near-peer adversary. In the 16th SB, we're preparing by adding similar stressors into our operations and exercises, so we train on how to communicate, move, and sustain in that type of environment.

Jones: From my foxhole, breaking that mold from COIN does not need to be an arduous, mind-shifting process. The plurality, if not the majority, of our junior officers and commanders have been tracking this shift. Much of this stems from rather exhaustive top-down communication about our priorities and where we are headed as an enterprise. Put succinctly, I do not believe anyone felt surprised when we began posturing for this shift in both the environmental and adversarial context.

Perez: When the 36th SB is forward deployed, we bridge the critical gap between strategic and tactical sustainment, and the critical tasks surrounding that role have stayed the same over time. However, our operational conditions will surely evolve within more complex constraints. From our purview, we can best prepare for that shift through precise and targeted training that ensures we're flexing all the right logistics

muscles in preparation for those deployments. Back in 2021, we participated in Operation Northern Strike, where we were tasked with running a division support area in a highly dynamic and complex environment. We were to assume the presence of a near-peer opposing force with lethal threats across all domains. Training precisely for the conditions we expect to face has eased that shift across our ranks.

SanNicolas: I mentioned this earlier, but so much of this preparation comes from empowering our junior leaders to wrestle with those complex problem sets throughout exercises alongside our joint and international partners. Unsurprisingly, they're rising to the task, but that's not because it's easy. There's a common understanding that what worked in the past may not lead to success in the future. However, sustainment leaders must leverage the problem-solving framework to ensure our agility and resiliency is still relevant.

Stanley: Given our limited training timelines, we must focus on speed, mobility, and redundancy. Years and years of COIN have partially atrophied unit muscle memory on how to fight their way out of the motor pool. The surprising part of this is the emphasis on small unit leadership, as you must know your people and equipment while merging the two to deliver the necessary capabilities to the point of need. Tough, realistic deployment readiness exercises are great measuring sticks to help companies see themselves through each node they touch in the sustainment process. Returning to the doctrinal basics in developing those plans and assessments is key to their ability to deliver readiness and lethality quickly.

How do you successfully integrate each aspect of sustainment, such as human resources and financial support, across the entire brigade?

Estrada: Our human resources processes are somewhat unique. Most theaters conduct RSOI operations at a singular intermediate staging base where personnel are in-processed and sent forward a few days after receiving them. However, our personnel accountability teams deploy to more than 20 approved aerial ports of debarkation within just 12 hours of notification to process waves of flights into the theater. As you can see, human resource functions are integral to sustainment. Additionally, our finance battalion contracts millions of dollars each quarter to enable RSOI operations and exercise support. This means we can weaponize those resources. Our ability to rapidly generate purchasing power in remote locations sends a clear message about our capabilities.

Jones: I think the best approach to this integration is simple: each aspect of sustainment is a critical cog in the broader warfighting function, so it's imperative they're weighted as part of the main effort appropriately. In the 1st Cavalry DSB, we're thinking critically about health service support and personnel movement for casualties based on estimates derived from what we believe successful sustainment operations in LSCO will demand. We train and operate with each aspect of sustainment front of mind so we're ready in the holistic, fully integrated sense.

Perez: Our human resources and finance capabilities resident in our special troops battalion is essential to our holistic sustainment structure. I think a great example of successful integration is a well-executed RSOI process. Higher staff coordination elements, such as the 36th SB's S-1, S-4, and human resources operations branch, absolutely must work in tandem to enable that end-to-end process, as implementing force flow into a theater or area of operations is an effort that is best resourced across the entire brigade without question.

SanNicolas: I talked earlier about being highly intentional and adding the right amounts of stress to how we train, and that extends to the entirety of the sustainment warfighting function. Sustainment's complete involvement in our training exercises naturally inculcates an integrative approach to how we provide that across a theater, from maintenance to finance.

Stanley: This can vary greatly across components, but for us in the 55th, human resources and finance are managed just like any other commodity on the battlefield by commodity managers in the support operations section. Within the special troops battalion, the financial management support company comprises six platoons distributed throughout our area of operations to support pay actions, so they're executed the same as at home station.

Knowing what you do now as a brigade commander, what advice would you offer yourself during your days as a second lieutenant or even company commander?

Estrada: Spend your time learning Army doctrine and broadening your understanding of the larger context of the profession. Open your aperture to learn more about what lies outside of your immediate area of expertise. Doctrine is important, but so, too, is being well-rounded. I'd also offer that relationships are everything, so you should foster them with every person you meet. In the end, people don't care how much you know until they know how much you care. Spend time to understand the people you serve alongside by being an active listener and building those key relationships from a healthy, strong foundation.

Jones: Something I've held onto throughout my career — sometimes to my advantage, sometimes to my detriment — is that you always need to think critically and scrutinize decisions before they're acted upon. Conditions change and they change rapidly, so being complacent in how you think, decide, and act will only hold you back. I'll also offer that our sustainment noncommissioned officers are truly the backbone of the Army Sustainment Enterprise. Employ them effectively and trust their operational expertise.

Perez: Seek out challenging training opportunities when they arise and advocate for their continued execution regularly. This will ensure you and your sustainment formation face realistic, challenging conditions so you're exhaustively prepared when called upon.

SanNicolas: Be intentional in everything you do and get to know as much as you can about the people you will synchronize with to do your job well. Learn to think outside the box within your current environmental constraints, so you can contribute to solving the Army's most complex sustainment challenges, and then have confidence in your knowledge and ability to execute. Learning doctrine is important, as it serves as your foundational framework, but you shouldn't let it box in your thought processes as you train and prepare for growth throughout your career.

Stanley: Don't hide in the easy jobs. Go volunteer for challenging positions that may stretch you beyond your military occupational specialty. This seems simple, but you should show that you care about what you do and how you do it because doing so tends to be contagious.

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"The responsibility for planning is inherent in command. Commanders are planners — they are the central figures to effective planning." — Field Manual 5-0, Planning and Orders Production, May 2022.

Leading Sustainment Formations

Focus on Military Decision-Making Process, Leader Counseling to Improve Mission Command, Leader Development

■ *By Brig. Gen. Steven L. Allen*

As a former commander and staff officer supporting previous commanders at various echelons, I recognize, understand, and appreciate the critical role all steps in the Army design methodology and the military decision-making process (MDMP) contribute to effective planning. In this article, I focus on two steps of the MDMP from a sustainment formation perspective. At the conclusion of this article, I challenge readers to be experts in MDMP Step 1, Receive the Mission, and Step 2, Mission Analysis, along with all 18 substeps.

Opportunities to learn, understand, and apply the MDMP are reinforced up front and early in the leader development process. Key to leader development is receiving direct feedback from commanders. Leveraging initial and periodic counseling and progress reviews (for civilian employees) to reinforce the MDMP in subordinates is well worth the time invested. To be effective, these counseling and progress reviews must go beyond the MDMP training and include, among other pertinent topics, discussions on Sexual Harassment/Assault Response and Prevention, suicide prevention, training management, personnel turnover, and professional development. Instilling the importance of the MDMP and adherence to other key programs early in a leader's career is essential to development, must be ongoing and continuous, and never be simply a one-time discussion to check the box.

The role of the commander is vital in the MDMP. "The commander is the most important participant in the MDMP. More than simply decision makers in this process, commanders use their experience, knowledge, and judgment to guide staff planning efforts." — Field Manual (FM) 5-0.

Learn the process; follow the process.

As a former expeditionary sustainment command (ESC) commander, I recognize and appreciate both the chief of staff and G-3 were integral parts of the MDMP. These leaders thoroughly understood the MDMP and could orchestrate the synchronization for the organization. In a normal scenario, the MDMP starts upon verbal notification or written order with Step 1, Receive the Mission. During this step, the chief of staff and G-3 would typically provide me with the background of the sustainment mission, a copy of the guidance or order, and any other known information, including a timeline to execute. Depending on the time available, the decision to do the entire MDMP or abbreviated MDMP would be given. To prepare the team and focus our efforts during this step, I would review and have my G-3 publish Warning Order 1.

From my perspective, being an expert in Step 2, Mission Analysis, of the MDMP is essential for both commanders and staff. If done thoroughly and in detail with running estimates, collaboration, and coordination across the staff, this step identifies areas in planning to examine further known and unknown information required to execute the tasks. Additionally, this step allows the commander to hear from all staff sections, not just the G-2, G-3, distribution management center, and support operations officer. Being prepared to do mission analysis (all 18 substeps) prevents the urgency from moving straight into developing courses of action (COAs), let alone producing an operation order (OPORD) and making decisions with little to no staff collaboration and coordination.

A question for the readers: have you ever been in an organization with archives on a shared file where a similar task was going to be performed, and the unit would simply copy, paste, edit, and publish an OPORD with limited, if any, mission analysis? And a follow-on question: has this failure to perform a complete mission analysis led to erroneous mistakes, incorrect conclusions, or even the need to produce amended orders due to the publication of an incomplete/inaccurate OPORD? Unfortunately, rushed publication mistakes frequently happen when all 18 steps of mission analysis are not performed.

Inside the 18 substeps, the commander receives the mission analysis briefing from the staff. This is an opportunity to allow adjacent and subordinate units to attend, facilitate parallel planning, and allow personnel to provide comments that enhance or clarify planning. At the end of the mission analysis briefing, the commander provides comments and guidance. A technique I have used and still use is the "concur, concur with changes, and nonconcur" slide at the beginning and end of the mission analysis briefing. This slide is used at the beginning of the briefing to identify what decisions are being presented to the commander and at the end to capture in writing those comments with my signature or initials and date. This technique can also apply to other planning events unrelated to the MDMP or exercises.

Early in my career, I was often told: "Memories fail, write things down." Utilize this simple technique of the concur, concur with changes, and nonconcur during the MDMP or other issues requiring a commander's decision. Gain that decision or guidance in writing, then hand it off to your chief of staff, G-3, or secretary of the general staff and keep it as part of the archived mission analysis for commander accountability and historical records. This technique also avoids the ambiguity of those in the briefing that may have filtered comments differently. Upon completion of the MDMP step 2, review and publish Warning Order 2.

"Army, corps, and division staffs support the process by determining, validating, and communicating support requirements to the sustainment headquarters … Operational and sustainment commanders and staffs should synchronize requirements to ensure responsive support … the distribution management center (theater sustainment command (TSC) and ESC) or support operations staff (combat sustainment support battalion (CSSB), division sustainment support battalion (DSSB), and brigade support battalion (BSB)) passes the plan to the G-3/S-3 to be included in the orders process."— Army Techniques Publication 5-0.2-1, Staff Reference Guide Volume I Unclassified Resources, December 2020.

The corps/division/brigade combat team G-4/S-4s are integrated into all steps of the MDMP. Typically, there are an ESC, division sustainment brigade, and brigade support battalion support operations planner in the MDMP as well. Further, I encourage sustainment organizations to reach outside their immediate unit for input into the MDMP, as appropriate, and involve the totality of the joint logistics enterprise (JLEnt). Critical JLEnt units I have come to rely on for expertise when conducting the MDMP include but are not limited to all service components, Defense Logistics Agency subordinate commands, medical supply units, and leaders from Army Materiel Command subordinate commands.

The sustainment organization's entire staff must be agile and ready with running estimates to execute steps 1 and 2 (and all 18 substeps) of the MDMP regardless of higher headquarters' issuance of any formal warning orders or execution orders. Parallel planning should be allowed and encouraged with higher, adjacent, and lower operational and sustainment headquarters to ensure the sustainment level commander's staff develops and builds current and future operational plans and sustainment requirements to allow for timely decisions. It's better to have an 80 percent product with appropriate risk assessment applied and an execution order published versus waiting for the 100 percent product after the mission has started.

The staff reference guide also states, "the distribution management center (TSC and ESC) or support operations staff (CSSB, DSSB, and BSB) passes the plan to the G-3/S-3 to be included in the orders process." This passing action does not occur until a distribution synchronization board, chaired by the sustainment level commander, has reviewed the next 24-48-72-96 hours of commodities scheduled to move by air, sea, and ground. Leaders from the intelligence, force protection, engineer, and subordinate commands are critical members of this board to give the commander near real-time assessment of the threat and air, sea, and road conditions of the distribution network. Once the assessment has been presented, the commander approves the plan. Once approved, the plan goes to the G-3/S-3 to be included in the orders process and tracked as current operations from the night battle captain/major. At the commander's morning update, the sustainment staff covers the 24-48-72 hours, including the distribution plan, through mission completion.

If our supported forces are ready to throw the first punch and maintain a positional advantage, then we've done our jobs.

Use the process and take the time to practice.

Although the MDMP seems like a lot of work, it becomes part of your normal battle rhythm, after your team completes it once. It also helps each staff section write their

portion of the OPORD. Depending on multiple COAs or a directed COA, OPORD publication and OPORD briefing are next presented to subordinate commanders, followed immediately by a 5- to 10-minute verbal confirmation brief. Subordinate commands are then allowed time to conduct their analysis and present a back brief later to the commander to ensure they fully understand their tasks and purposes. This back brief further allows the commander to understand the tactical situation to influence the operational and strategic levels for resources or additional coordination as required. The mission is not done until the after action review (AAR) is complete and in writing. The AAR becomes the baseline for planning the next event.

"Lifelong learning is a professional obligation for all Army professionals that includes actively offering and accepting coaching, counseling, and mentoring." — Army Doctrine Publication (ADP) 6-22, Army Leadership and the Profession, July 2019.

Take the time during counseling to discuss the MDMP and why it is important.

There are two publications normally on my desk: the MDMP Handbook, dated May 2015, from the Center for Army Lessons Learned, and a battle staff reference book I use during initial and periodic counseling or progress reviews. Each staff section has a part during the MDMP, and it is important to provide a clear understanding of my expectations up front to those I rate and senior rate. I added this discussion in the counseling sessions to explain everyone participates in the MDMP and should be prepared to participate with their running estimate and to highlight how the MDMP reduces the stovepipes across the staff. Finally, I explain how the MDMP allows for cross communication and collaboration among the staff and provides opportunities to learn together.

Soldiers assigned to the 716th Maintenance Platoon, 3rd Division Sustainment Brigade, 3rd Infantry Division stand in formation as part of an activation ceremony for the new maintenance unit Dec. 16, 2022, at Fort Stewart, Georgia. (Photo by Spc. Elsi Delgado)

From my perspective, verbal and written counseling are continuous processes, and I make a concerted effort to complete semi-annual formal counseling for each of the 50 to 55 military and civilian personnel I rate or senior rate. A technique I use is the 3/3 method. The first 1/3 is the initial written digitally signed counseling. Approximately five months later comes the 2/3 follow-up and periodic counseling. Finally, the 3/3 includes the draft of their military or civilian evaluation followed by officer evaluation report/noncommissioned officer evaluation report/DOD performance management and appraisal program counseling or appraisal review. I learned a long time ago that attempting to counsel everyone within a 30-day period does not work and does not hold true to my word to provide ample time for each person. Using the 3/3 method allows me to complete my counseling duties in a timely and professional manner that is most beneficial to both the people and me I rate/senior rate.

"With effective counseling, no evaluation report — positive or negative — should be a surprise. A counseling program includes all subordinates, not just those thought to have the most potential." — ADP 6-22.

Effective counseling also aids in the talent management process.

The opportunity to engage personnel early on to identify strengths, previous schooling, or training and to discuss opportunities allows time to shape opportunities or requests for follow on assignments for unit or location. During counseling sessions for graduates of intermediate level education, planners course, Senior Service College, advanced civilian school for coded additional skill identifier 96 positions, the United States Army Sergeant Major Academy or Battle Staff Course, the discussion focuses on leveraging that schooling to lead their staff sections as well as across the rest of the staff. For those that have been in operations or logistics staff, the discussion during counseling is on opportunities for advanced civilian schooling, Training with Industry, intermediate-level education interagency fellowships, or the School of Advanced Military Studies, as well as the process to attend any one of these.

From a mission command and leader development perspective, understanding the MDMP is essential to planning and is a key part of leader development. Periodic touchpoints with the commander early on and throughout the process allow for better understanding and communication between the commander and staff as well as adjacent and subordinate units. Being an expert in the first two steps in the MDMP is essential to facilitate staff synchronization. Clearly understanding and completing all 18 substeps in mission analysis creates better staff cross-coordination and collaboration. Gaining a commander's concurrence with any comments verbally and in writing reduces the chance of misunderstanding and assists the staff as it progresses through the remaining steps of the MDMP with clear guidance. Concluding the mission with an AAR ensures both positive and negative outcomes are captured and serve as the baseline for planning the next event. Conducting continuous initial and periodic counseling is essential to leader development, and taking the opportunity to emphasize the MDMP and other topics provides better communication and builds unit cohesion and trust where personnel can reach their maximum potential.

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Feature Photo
Soldiers assigned to Bravo Company, 87th Division Sustainment Support Battalion, 3rd Division Sustainment Brigade stand in formation during a welcome home ceremony Nov. 1, 2022, at Fort Stewart, Georgia. (Photo by Sgt. Elorina Charles)

Fueling Change

Restructuring Theater Petroleum Center Improves for Army 2030 Vision

By Master Sgt. Antadius Smith

The nature of war requires warfighters to integrate their plans with sustainment planners to achieve success. Bulk petroleum remains one of the critical requirements during sustainment operations. Future large-scale combat operations (LSCO) will require an enormous amount of bulk petroleum. Currently, the Department of Defense requires 4.6 billion gallons of fuel annually to support the joint force (JF). The ability of the Army to support a nine-division fight will demand millions of gallons of fuel each day to support the warfighter's prolonged endurance. Petroleum and water planning occurs at all levels of war, with the most critical requirements at the strategic level assigned to a single organization for support to the JF.

The Theater Petroleum Center (TPC) is an Army strategic planning organization responsible for supporting combatant commands (CCMDs) in identifying requirements for bulk petroleum and water in theaters. The organization synchronizes the petroleum and water functional planning requirements across the total force. The development of this organization bridged strategic planning gaps identified in 2017. Storing and distributing bulk petroleum logistically challenges the JF. The strategic requirement for planning bulk petroleum and water for the JF encounters different challenges dictated by the conditions of the operating environment.

Petroleum Planning History

The history of petroleum planning organizations supports the emergent requirement to change the current structure of this organization before future wars. Strategic petroleum planning gaps arose following the inactivation of the 49th Quartermaster (QM) Group in 2012. The 49th QM Group served as the Army's senior petroleum organization for petroleum planning and distribution. The modified table of organization and equipment (MTOE) for the 49th QM Group provided eight times the personnel assigned to the TPC today. During its time, warfighters presented questions regarding petroleum and water through the petroleum group. The inactivation of the 49th QM Group supported force reduction requirements experienced during counterinsurgency operations in 2009. Today, the U.S. Army Reserve Command (USARC) maintains over 90 percent of the Army's petroleum and water capabilities. USARC also manages the remaining three petroleum, oils, and lubricant (POL) groups that support the total force's operational and tactical requirements for petroleum and water, which relies on the capabilities of the TPC.

Theater Petroleum Center Capabilities

The TPC supports the global management of bulk petroleum and water in the joint environment by assisting with the planning for each geographic combatant commander (GCC). A joint petroleum officer (JPO) assigned to the joint staff requires the support of the TPC during joint fuels coordination boards, which are recurring meetings of joint and coalition partners, along with stakeholder personnel. The JPO designates sub-area petroleum officers to support large geographically dispersed areas during these meetings. A shared understanding of multiple elements during the collaboration of forces supports simultaneity. The JPO validates the requirements of the JF and assigns a priority to petroleum distribution throughout the theater. The JPO and TPC both provide planning support to the TSC and expeditionary support command's ability to identify requirements and reduce theater shortages of bulk petroleum.

The joint environment requirement for bulk petroleum and water demands a broader battlefield scope than POL groups and QM petroleum liaison detachments' planning requirements. LSCO requires the plan for bulk petroleum to remain enduring to support all services dispersed across multiple theaters. The petroleum planning of multiple theaters requires different planning and coordination based on the conditions of the operational environment. For example, one theater's planning requirements and constraints require collaborative training, experienced personnel, and a forward and rear element to support the warfighter plans, highlighting problems supporting multiple theaters. Re-examining the utilization and MTOE of the TPC will support future requirements of LSCO.

Theater Petroleum Center Utilization

The potential of wars between two

The petroleum planning of multiple theaters requires different planning and coordination based on the conditions of the operational environment.

world powers in the present and future challenges all actors involved. The U.S. military must prepare for wars on two fronts potentially fought in contiguous and noncontiguous environments. The 2022 National Security Strategy predicts that in 2030, current actors' modernization and diversification efforts will require the nation's deterrence of two nuclear powers. The Army's potential engagement in wars on two fronts presents challenges to the TPC due to its limited size and capability to support multiple theaters simultaneously. The organizational structure requires an analysis of its current assignment, personnel, and experience.

The TPC's mission of supporting all CCMDs requires experienced and capable strategic planners. The organization lacks the experience to participate in various training exercises conducted by each GCC. The current mission of the TPC requires adequate guidance for staffing regarding the assignment's process to identify the right talents and skills for the organization. Acquiring School of Advance Military Studies graduates with previous experience will best serve the TPC's ability to support a war on two fronts.

Organization Constraints

Budgets display challenges for the organization to maintain a worldwide focus. Funding constraints occasionally hinder the support of training exercises, which significantly reduces the ability of each planner to gain critical knowledge of war plans. GCCs set focus priorities during training exercises, and each theater of operation requires different planning horizons and considerations. The organization's constraints in supporting important training exercises sometimes result in the lack of GCCs requesting the TPC as an asset during war planning events. Budget constraints also hinder the ability to afford training opportunities for newly assigned personnel.

The potential for conflict across multiple theaters requires TPC personnel to prioritize and resource multiple operation plans. The current training shortfalls present challenges for an organization to conduct decentralized operations simultaneously. The lack of universal awareness across the force challenges the TPC to access different opportunities to understand all war plans. The current structure of this organization experiences gaps in knowledge levels due to the need for assigned personnel with solid backgrounds as strategic planners. Identifying the right balance of experience and talent for the TPC remains a significant challenge for the organization. The gaps identified in capabilities and training reduce the overall readiness for bulk petroleum and water planning to support theaters, which require concrete training solutions.

Training Solutions

The solution to training shortfalls requires assigned personnel to attend institutional training to build a foundation. The updates to the training guidance of the organization will support all individuals to attend schools. The talent management framework for strategic petroleum managers outlines a deliberate, continuous, and progressive career path for petroleum planners to serve the TPC best. An additional recommendation supports updates to the training guidance of the TPC to support all critical training exercises conducted by all CCMDs. The Army's petroleum and water capabilities composition across USARC requires partnership training between the total force to increase readiness. Providing support during USARC's annual Quartermaster Liquid Logistics Exercise (QLLEX) in a joint planning capacity will reduce knowledge gaps in the total plan. Institutional and experiential knowledge gained during training supports the organization's capability to function independently within different theaters of operations.

Structure

The current structure of the TPC has personnel assigned grades of O-6, O-5, O-4, W-4, E-9, E-8, two E-7s, and two E-6s. The solution for knowledge gaps experienced in the organization requires the increase of grade plates. The current O-4 requires an upgrade to O-5 and two E-7s to E-8s. The increase in grade plates will combat the identified knowledge gaps in strategic planning. Adding another O-5 enables the director to align two personnel to each CCMD. The alignment of two personnel to each CCMD advances the training support coverage and internal training for all assigned personnel. Additionally, assigning two Department of the Army Civilians would support the organization's continuity.

The solution for personnel shortages requires a comprehensive review of the sustainment community to identify the right talent to fill TPC manning gaps. The deliberate process of developing petroleum and water planners must start early and be sequential throughout leaders' careers. Assigning individuals with strategic planning experience will support the organization's ability to manage multiple theaters simultaneously. The mission of the TPC requires six of the 10 assigned personnel to obtain Top Secret security clearances to support the wartime planning requirements of GCCs. Updates to the organization's structure will support manning guidance of the organization to reduce issues of personnel shortages. Effectively manning the TPC will support mission requirements, and the update to the policy will support utilization shortfalls.

Policy

The policy update outlining the TPC's critical contribution to total force exercises will increase the partnership with USARC. The TPC's role in sustaining a high-conflict fight in the future requires updates to its current structure and alignment. The organization's critical capability to the JF requires adequate resources to support all GCC's mission requirements. The primary emphasis of solutions for the TPC will focus on doctrine, personnel, policy, training, experience, and organizational structure. Incorporating executive summaries for all training exercises provided to the total force will increase GCC's awareness. A better understanding of the TPC roles and responsibilities of the TPC versus those of USARC regarding exercises will raise awareness necessary to validate petroleum and water units.

Conclusion

The current utilization of the TPC hinders its ability to sustain a war on two fronts. Re-evaluating and restructuring the TPC will posture the organization to support the 2030 vision of the Army. The mission to help CCMDs identify their petroleum and water needs requires strategic planners with experience and broad sustainment capabilities. Increasing the recommended grade plates supports the organization's ability to focus efforts worldwide with experience across a broad range of strategic planning capabilities to support a war on two fronts. Preparing for future conflicts supports the adequate staffing and utilization of the TPC to fight and win in complex environments.

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Feature Photo
A Petroleum Quality Analysis System-Enhanced at the 77 Quartermaster Group's Quartermaster Liquid Logistics Exercise at the Armed Forces Reserve Center Aug. 12, 2020, in El Paso, Texas. (Photo by Master Sgt. Antadius Smith)

AVIATION

FOWARD SUPPORT COMPANY ANALYSIS

Increase POL MTOE to Improve Combat Operations

■ *By Capt. Dustin C. Smith*

In a forward support company (FSC) attached to an assault helicopter battalion (AHB), the Class III petroleum, oils, and lubricants (POL) section's agile makeup provides unique challenges for company commanders.

AHB FSCs contain a headquarters platoon, maintenance platoon, and distribution platoon. Per the modified table of organization and equipment (MTOE), which outlines the disposition of a unit, the POL section falls under the distribution platoon along with motor transport operators (military occupational specialty (MOS) 88Ms). The POL section comprises petroleum supply specialists (MOS 92Fs). As a 92F in an AHB, fuelers are held to the highest standard of expertise while operating a wide range of equipment to distribute petroleum to multiple aircraft types.

The challenge for commanders is the MTOE design of the 92Fs in the POL section. They are authorized less than 20 Soldiers, including

section chiefs, noncommissioned officers, and junior enlisted Soldiers. The 92Fs are required to support an AHB with two assault platoons with ten helicopters assigned to each. The POL section's primary responsibility is fueling, but there are two types of fueling, one much more taxing than the other.

In terms of aircraft refueling, there are two ways to supply fuel. One is known as cold fuel, and the other is hot fuel. Cold fueling uses a Heavy Expanded Mobility Tactical Truck (HEMTT) tanker to fuel a turned-off aircraft. This process is relatively simple and safe. Hot fueling is operating a forward arming and refueling point (FARP). Refueling an aircraft with a running engine and a spinning rotor is a much more technical operation that requires knowledge, experience, and manning.

The ability to successfully provide FARP operations to an AHB provides pilots and logistical planners much more flexibility while planning missions. A FARP is a mobile gas station that can be set up virtually anywhere, allowing helicopters to refuel quickly and extend their flight time to continue their mission. Imagine having to refuel your car at the same gas station every time you needed fuel. This would limit you on how far you could go and what you could accomplish. Without FARP operations, helicopter crews would have limited options to refuel and decreased capability to complete mission requirements.

The FARP can be set up with two or four points, depending on the pilots' training requirements. Fuel lines are run from the HEMTT to each point, and when the aircraft lands, the fuelers bring the fuel nozzle to the aircraft refuel point. To successfully operate a FARP, a minimum of five Soldiers must be present to operate a two-point FARP. A four-point FARP requires double the personnel, putting 10 Soldiers in the POL section at the FARP site. The duration of the requested FARP is what creates the challenge for an FSC commander. The POL section cannot organically support a request if 24/7 operations are requested with a four-point FARP.

Soldiers assigned to Headquarters and Headquarters Company, 1st Battalion, 214th Aviation Regiment (General Support Aviation Battalion), 12th Combat Aviation Brigade (CAB) execute a hot refueling as the sun ducks under the horizon for a CH-47F Chinook helicopter from 1-214th, 12 CAB during exercise Falcon Autumn 22 at Vredepeel, Netherlands, Nov. 5, 2022. (Photo by Staff Sgt. Thomas Mort)

In addition to these challenges, many fuelers are attached to deploying AHPs. At 100 percent end strength in the POL section, a split section drastically limits the fuelers' ability to stay proficient in their mission essential task list (METL). As Soldiers get attached to deploying units, maintenance personnel or wheeled vehicle drivers are typically tasked to assist POL with maintaining their refuel requirements. This cross-tasking has second and third-order effects for a command team as they are forced to pull from other sections to accomplish the refuel mission, which, in turn, shorts the maintenance or drivers' teams' ability to accomplish their missions. Increasing the MTOE could alleviate this, and each section would have sufficient manning and leadership to maintain its METL.

Expanding the end strength for the POL section and creating their own platoon would allow leadership to train fuelers and remain proficient and provide 24/7 operations whenever requested. This change would allow a 92F40 E-7 platoon sergeant and a quartermaster platoon leader to oversee refueling operations and provide proper troops to task during FARP operations. In addition, the distribution section would become its own platoon with an 88M40 E-7 platoon sergeant and a transportation platoon leader assigned.

Separating the 88Ms and 92Fs into their own distribution platoon and POL platoon would increase the FCS end strength by roughly 30 percent, a manageable number for a command team. This would increase training opportunities and allow leadership to focus on their mission-essential tasks, as they would have the leadership and support to train junior enlisted Soldiers successfully.

This change would allow for increased leadership and training and provide proper career progression for each respective MOS. The current MTOE does not provide an opportunity for an E-7 88M in an aviation FSC, and this hinders a Soldier's promotion potential within the organization.

From the officer's perspective, this makeup would allow junior officers to experience each branch of logistics within one company by providing separate platoons. It is a rarity in logistics for junior officers to see quartermaster, ordinance, and transportation branches operating jointly to achieve mission success. This base of knowledge would set officers up for future success as they move on to take command of other organizations that may be limited to only one of the three logistics branches.

The changes outlined throughout the article would give aviation FSC commanders more flexibility when planning for missions, provide the ability for flight companies to run continuous operations, and allow Soldiers to focus on their MOS-specific METLs. In addition, it would provide an unparalleled level of opportunities for both enlisted Soldiers and officers to gain an understanding of a full spectrum of logistical operations.

Capt. Dustin C. Smith serves in the Virginia Army National Guard and is currently the commander of Echo Company 2-224 Assault Helicopter Battalion. He previously served as the 1030th Headquarters and Headquarters Detachment commander in Gate City, Virginia. He has a bachelor's degree in industrial technology from the University of Northern Iowa and a Master of Business Administration from Liberty University.

Feature Photo
Soldiers assigned to Alpha Company, 46th Aviation Support Battalion, 16th Combat Aviation Brigade operate a forward arming and refueling point, Jun. 22, 2022, at the Chehalis-Centralia Airport, Washington. (Photo by Capt. Kyle Abraham)

Logistics Support

Army Field Support Battalions Enable Installation, Unit Readiness

■ *By Lt. Col. Troy Johnson*

Whether you know it as an Army field support battalion (AFSBn) or logistics readiness center (LRC), when units at Fort Cavazos, Texas, need logistics support, they know whom to call. Knowing is half the battle, and according to Army Techniques Publication 4-91, Division Sustainment Operations, the AFSBn provides direct support sustainment functions to each division installation. The AFSBn enables readiness with backup field level maintenance, supply support (such as central issue facility (CIF), fuel, ammunition, and dining facilities), and support to power projection platform (PPP) and mobilization force generation installations (MFGIs). Fort Cavazos and Fort Bliss, Texas, are the Army's only active MFGIs.

AFSBns are unlike most Army battalions with large Soldier presence. The unit primarily consists of contractors and Department of the Army (DA) Civilians, along with four military personnel: battalion commander, executive officer, support operations officer, and battalion sergeant major. AFSBns provide logistics solutions by integrating and synchronizing Army Materiel Command (AMC) worldwide-level capabilities, which increases deployment and operational readiness at the tactical points of need. Additionally, the battalion finds adaptive and creative ways to support the warfighter in the strategic support area and across the battlefield.

AFSBn-Cavazos, The Tusker Battalion, supports the largest corps and division in the U.S. Army, the III Armored Corps and the 1st Cavalry Division. AFSBn-Cavazos is a high-performance organization that serves as the installation's conduit for AMC's full portfolio of logistics support and services. Whether receiving individual equipment from the CIF, enjoying a meal at a warrior restaurant, drawing ammunition from the ammunition supply point (ASP), having a seemingly unrepairable vehicle repaired to like new condition, shipping personal property to your next duty station, or deploying and redeploying through one of the installation deployment nodes, our battalion directly impacts every Soldier and unit on Fort Cavazos through our supply, maintenance, transportation, and modernization displacement and repair site (MDRS) divisions.

Supply and Service Division

The supply and services division delivers baseline logistical support for the warfighter. It provides our Soldiers with requisite individual clothing and chemical defense items for training and deployment through a CIF. The division operates the installation food service system, ensuring delivery of rations to dining facilities and available for field training exercises. They manage the installation supply support activity (SSA), Phantom SSA, for 16 nondivisional III Armored Corps separate units, Class VII yard, central turn-in point, and weapons warehouse through the retail supply branch. The division includes the installation property book office (IPBO) as baseline services. Finally, it administers the Defense Logistics Agency's energy bulk fuel contracts, limited laundry contract support, and the administration and oversight of the ASP and ammunition delivery contracts.

The CIF is a contract-operated function that provides organizational clothing and individual equipment (OCIE) to more than 138,500 Soldiers, including the issue of more than 553,000 pieces of OCIE. During this past year, the office recovered, through the turn-in process, more than 810,000 pieces of OCIE. The IPBO maintains accountability of installation property consisting of 72 active storage locations for AFSBn-Cavazos, predeployment training equipment, and the Fort Cavazos garrison. The installation property book team manages 84,951 items valued at $512,750,286.78. For fiscal 2022, the IPBO executed 1,500 lateral transfers valued at $32,760,226.68. They issued 7,517 items valued at $25,320,468.57 and processed 9,950 turn-ins valued at $21,832,026.84.

Maintenance Division

The maintenance division is a multidimensional organization operating within a 35.5-acre military industrial park. Its core mission is repairing, rebuilding, and retrofitting base operations commercial equipment for the garrison. Additional maintenance support is provided to all tactical units based at Fort Cavazos to maintain combat power. The division also supports Fort Cavazos' PPP and MFGI mission strategy by supporting deploying and redeploying forces for ground combat, combat service, and combat service support units across all three components (active duty, Army Reserve, and National Guard). The maintenance division completed over 5,000 work orders and expended 150,000 man-hours repairing equipment in the past calendar year. There was also an additional 1,100 work orders and 20,500 man-hours used to repair Army Reserve equipment reset.

Transportation Division

The transportation division is responsible for delivering baseline services to Soldiers, family members, and civilians by managing the shipment and storage of household

goods (HHG) and personal property; planning, coordinating, and executing unit deployments/redeployments by air, rail, line haul, and sea; and providing nontactical vehicle support to Fort Cavazos and mobilizing units.

The Personal Property Processing Office processes HHG shipment applications, provides quality assurance inspections of customers' HHG deliveries and pickups, manages long- and short-term storage for permanent change of station, separation, retirement, special deployment storage and DOD employees on official movement orders in Fort Cavazos' area of responsibility as well as certifies invoices for these moves. For the past year, the Personal Property Processing Office supported 30,732 customers, completed over 8,096 shipment applications, and inspected 8,506 deliveries or pickups while managing an average of 2,600 stored lots. It also certified more than 5,874 nontemporary storage invoices.

MDRS Division

The MDRS division executes a streamlined and efficient one-stop operation for receiving excess equipment from Fort Cavazos and selected units from Fort Sill, Oklahoma, relieving them of property accountability, increasing Army readiness across all three components of the Army, and providing platforms for depot production lines in support of the Army's Regionally Aligned Readiness and Modernization Model (ReARMM). MDRS delivers retail parts through wholesale-level supply, maintenance, and transportation services to the units at Fort Cavazos and selected Fort Sill units by providing immediate property accountability relief, reimbursable maintenance, and coordinating transportation as required to expedite equipment displacement for redistribution or divestiture. The end state enables all units to enter their modernization phases with minimal legacy equipment on hand to maximize new equipment training and new equipment fielding, focusing on readiness synergy.

Lines of Effort

To deliver AMC's full portfolio of logistics support and services to Fort Cavazos units, the battalion team has developed several lines of effort, which are the foundation of the unit's campaign plan. These lines of effort protect the force, 1st Cavalry Division readiness, installation logistics, and MDRS.

Protect the Force

AFSBn's most effective combat multiplier is its workforce. At AFSBn-Cavazos, less than 1 percent of the workforce is military, 27 percent are DA Civilians, and the remaining 72 percent are contractors. Without the world's most dedicated workforce, of which 90 percent are veterans themselves, this mission would stall. The AFSBn-Cavazos safety office is the proponent for the Voluntary Protection Program (VPP), an Occupational Safety and Health Administration (OSHA) effort to promote worksite-based safety and health. In VPP, management, labor, and OSHA representatives establish cooperative relationships at workplaces that have implemented a comprehensive safety and health management system. Approval into VPP is OSHA's official recognition of the outstanding efforts of employers and employees who have achieved exemplary occupational safety and health. AFSBn-Cavazos achieved OSHA's highest safety ranking, the Star rating, in 2018. To date, AFSBn-Cavazos is the only AFSBn in the Army to have achieved this coveted rating.

Safety has been critical to the battalion's success. The battalion continued to champion and improve upon the organization's OSHA VPP Star among Stars site status by reviewing every aspect of the operation. Part of the review embraced two VPP fundamental principles that are the foundation for our safety program and drive the tremendous safety accomplishments we continue to attain: management and leadership involvement and team member participation.

AFSBn-Cavazos leadership is committed to the safety and well-being of DA Civilians, Soldiers, contract employees, and family members by providing safe and healthy working conditions and implementing safe work practices. Across the battalion, no task or work process that we perform is so important we cannot devote the necessary time and resources to do it safely. Employees maintain this culture regardless of the capacity in which they work. They assume responsibility for safety awareness, committing to maintaining safe conditions and performing duties in accordance with safe work practices. The battalion has included Fort Cavazos' industrial hygiene, occupational health, and emergency services in all hazard assessments. This practice has proven to be invaluable in achieving our safety goals.

1st Cavalry Division Readiness

AFSBn-Cavazos fully implemented the division logistic support element (DLSE) tactical standard operating procedures, which are the foundation for DLSE operations during training exercises and deployments. The DLSE synchronizes AMC enterprise-level support and strategic enablers to build and enable combat power in direct support of the division. It conducts weekly equipment readiness working groups for wholesale backorder analysis and status while identifying sourcing solutions for items not found locally. The DLSE also projects Life Cycle Management Command presence (logistics assistance representatives) forward across the battlefield for the Tank-automotive and Armaments Command, Communications-Electronics Command, and Aviation and Missile Command. The battalion's DLSE proof of concept was solidified as it deployed to the National Training Center (NTC) in support of two consecutive 1st Cavalry Division NTC rotations, NTC 22-05 and 22-06.

Installation Readiness

By DA policy, AFSBns and LRCs provide base operations support (BASOPS) to AMC garrison table of distribution and allowance units with BASOPS equipment. Army Sustainment Command policy further stipulates AFSBn deputies and LRC directors are the points of contact for U.S. Army garrison commanders, providing direct oversight of the S-4, property book officer, and maintenance management functions. AFSBn-Cavazos serves as the garrison commander's primary staff officers for key logistics and readiness support on Fort Cavazos. We provide logistics and readiness support to all units deploying through Fort Cavazos; logistics support in installation materiel maintenance for Class I, Class II, Class IV, Class V, and Class IX; as well as installation transportation support. AFSBn-Cavazos oversees the Army's most active PPP/MFGI, deploying over 3,740 units last year. This accounts for over 83,500 Soldiers and 18,500 short tons of equipment from all Army components.

MDRS

As explained earlier, the AFSBn-Cavazos MDRS division executes a streamlined and efficient one-stop operation for receiving excess equipment from Fort Cavazos and selected Fort Sill units, relieving them of property accountability in support of Army ReARMM efforts. Last year, AFSBn-Cavazos MDRS division received 4,172 proposed sourcing decisions and processed 17,285 pieces of equipment from Fort Cavazos and Fort Sill units. This trend has continued into 2023.

Summary

At AFSBn-Cavazos, the team takes immense pride in completing tasks that support tactical, operational, and strategic missions. Over the years, this battalion has become adept at moving and receiving brigade combat teams and corps headquarters on and off Fort Cavazos; receiving, relieving, processing, and shipping thousands of excess Class VII equipment through our MDRS division; supporting multiple NTC rotations every year with our DLSE; feeding Soldiers at our warrior restaurants; and working materiel management tasks and pass back maintenance work orders to enhance unit readiness at our maintenance work bays. Our four divisions (supply and service, maintenance, transportation, and MDRS) are our backbone, and all are committed to warfighter excellence. Our phenomenal workforce is fully integrated and synchronized with Fort Cavazos sustainment and the AMC enterprise in sustaining and enhancing installation and unit-level readiness.

Lt. Col. Troy Johnson currently serves as commander of the Army Field Support Battalion-Cavazos, 407th Army Field Support at Fort Cavazos, Texas. He holds a bachelor's degree in business management and an MBA. He is a graduate of the Quartermaster Basic Course, Air Assault School, Airborne School, and the Command and General Staff College. He is scheduled to attend the U.S. Army War College this summer.

Feature Photo
Maintainers assigned to the Installation Maintenance Division make final preparations to remove the failed engine from the Fire Department's Engine BRUSH 2 at Fort Cavazos, Texas, on Jan. 20, 2023. (Photo by Michael Beauregard)

Predictive Logistics

Initiative Revolutionizes Equipment Management

By Benjamin Moyer

The security environment is saturated by technological advancements, creating an imperative to increase the speed with which the Army Sustainment Enterprise generates and maintains combat power as the world enters great power competition. To meet these threats, the Army is advancing its predictive logistics initiative. Army Forces Command (FORSCOM), supported by Army Materiel Command (AMC), Army Futures Command, Training and Doctrine Command (TRADOC), and the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) (ASA (ALT)), leverages technological advancements in artificial intelligence and predictive analytics to inform advancements to better operate as part of the joint force to compete, penetrate, disintegrate, and exploit adversaries in a multidomain environment.

The Spartan Brigade, 2nd Armored Brigade Combat Team (2ABCT), 3rd Infantry Division (3ID) at Fort Stewart, Georgia, was selected by FORSCOM to demonstrate predictive maintenance to observe, evaluate, and inform requirements for Enterprise Business System — Convergence and platform capability development documents. Central to the demonstration is Soldier feedback in the operational force driving the observations and informing the generating force. This approach allows the generating force to speed up the acquisition process.

Due to the breadth and depth of predictive logistics coverage, the Army takes a pragmatic approach to demonstrate the end-to-end process by leveraging various existing Army equipment and experimenting with repurposing equipment in new ways. In this process, observations are documented on the strengths and weaknesses of interfacing equipment. Positive outcomes have been realized because of repurposing existing equipment, including potential deep cost savings, as well as improved warfighting and business processes. Thus far, the demonstration includes garrison operations and a National Training Center rotation at Fort Irwin, California, to obtain insights from the complexity of a field environment.

AMC tasked the U.S. Army Tank-automotive and Armaments Command to facilitate the end-to-end demonstration within 2ABCT, 3ID in concert with ASA (ALT) program management (PM) offices and the TRADOC Sustainment Center of Excellence. The brigade demonstration enables the discovery process to capture observations for lessons learned. These consolidated observations are directly delivered to authors of requirements documents, informing them of requirements for ASA (ALT) PMs. The Program Executive Office Command, Control, Com-munications-Tactical (PEO C3T) was selected by ASA (ALT) as the office of primary responsibility for materiel development for predictive logistics and predictive maintenance. PEO C3T is actively engaging and coordinating with platform and communication PMs to synchronize effects to deliver the Army of 2030 and design the Army of 2040.

Predictive maintenance is a maintenance strategy that uses data and analytics as well as artificial intelligence and machine learning (AI/ML) algorithms to predict when equipment is likely to fail so maintenance can be performed proactively before the failure occurs. This approach can significantly improve equipment availability, reduce maintenance costs, and extend the lifespan of the equipment. Predictive

maintenance is a sub-component of the Army's predictive logistics strategy and Class III (fuel) and Class V (ammunition) distribution.

The predictive maintenance process involves five key stages of the end-to-end data flow process: collect, distribute, store, analyze, and visualize. All five stages are wrapped by military-grade encryption, enabling a zero-trust architecture to protect the network and the data. These stages work together to turn data from equipment sensors into actionable insights that can be used to improve the Army's equipment management.

The first stage of the process is collecting data from sensors placed on the vehicles as well as operators' preventative maintenance checks and services (PMCS) process. The sensors gather data on various aspects of the equipment's performance, such as engine temperature, oil pressure, and fuel consumption, and the operator PMCS tablets capture the faults that aren't discoverable by a system sensor.

The second stage of the process is distributing data via a transport mechanism such as satellite communication or cellular networks to get the data to a centralized repository. This enables the data to be accessed and analyzed by AI/ML algorithms that make up the next stage of the process. The use of Joint Technical Data Integration (JTDI) to synchronize data across tactical and enterprise nodes ensures the correct data is sent where necessary with minimal consumption of valuable bandwidth. JTDI is a Navy program of joint interest that supports the interoperability required for multidomain operations.

The third stage is storing the data in a centralized repository. This enables the data to be organized and analyzed, helping identify patterns and trends. Storage and analysis of data are intended to occur at multiple echelons, from the tactical to the strategic level. Governance of data is critical throughout this data distribution process.

The fourth stage of the process is analyzing the data using machine learning algorithms. This is where the predictive maintenance magic happens. The algorithms look for patterns and anomalies in the data, using the information to predict when equipment will likely fail.

The final stage of the process is visualizing the data, making it easier to understand and act upon. The Army uses dynamic and multilayered dashboards and visualizations to monitor the performance of the equipment, identify potential issues, and schedule maintenance.

Predictive maintenance has many benefits for the Army, including:

- Increased equipment availability: By predicting when equipment is likely to fail, the Army can perform maintenance proactively, keeping its equipment in top condition and increasing its availability.
- Reduced maintenance costs: Proactive maintenance reduces the costs associated with unscheduled maintenance, such as repairs, replacement parts, and labor.
- Improved equipment lifespan: Predictive maintenance helps extend the lifespan of the Army's equipment by identifying potential issues before they become major problems.

The Army's experimentation with predictive maintenance is a major step forward in its equipment management strategy. The current demonstration efforts are focused on maintenance data automation as a key building block to start the foundation for maneuver and sustainment mission command planning. Mission analysis is underway to integrate data flows from maintenance, ammunition, and fuel distribution business processes into mission command data pathways.

Senior leaders are engaged with stakeholders from the tactical to strategic levels to drive implementation for the Army. The end-to-end data flow process of collecting, distributing, storing, analyzing, and visualizing transforms data at the tactical level into actionable insights for all echelons, posturing the Army to be responsive where needed.

Benjamin D. Moyer serves as the supervisory logistics management specialist of the Predictive Logistics Section at the Tank-automotive & Armaments Command (TACOM). He previously served as chief of plans within the TACOM G-3 and as an integrated logistics support manager within the Joint Program Office Mine Resistant Ambush Protected vehicles. He was an honor graduate of both the basic and advanced 915A Automotive Maintenance Warrant Officer Courses at the Technical Logistics College. He is pursuing a Bachelor of Science degree in data management and analysis at Western Governors University.

Contingency Sustainment

Deployment Mindset Essential to Success in Expeditionary Sustainment Command

■ *By Col. John (Brad) Hinson and Lt. Col. David Alvarez*

The 3rd Expeditionary Sustainment Command (ESC) is the only ESC in the Army aligned to the XVIII Airborne (ABN) Corps, and its mission is to be ready to support deployment operations and overseas named operations while supporting home station requirements. The geographical location of the 3rd ESC is unique because it is the only active ESC on the Atlantic coast, strategically located close to Pope Air Force Base and the Port of Charleston in South Carolina. These two strategic nodes allow the 3rd ESC to immediately support outload operations for the XVIII ABN Corps, 82nd ABN Division, and various units to support planned or emerging operations.

Having to support quick response units, the 3rd ESC leaders developed the mindset to be adaptable as they must be ready to deploy or support the deployment of large-scale combat operations (LSCO) in any theater at a moment's notice. Having a deployed operational mindset ensures sustainment leaders are ready to deploy to support LSCO based on the 3rd ESC's geographic location, its unique sustainment capabilities, and the ability to find materiel solutions for corps commanders.

While some ESCs are more aligned with one operation plan (OPLAN) or theater, the 3rd ESC must be ready to support and deploy anywhere in the world. In addition, to support LSCO and overseas operations, the 3rd ESC also must be ready to support the Defense Support of Civil Authorities (DSCA) and Northern Command with declared emergencies while working with agencies like the U.S. Agency for International Development, Federal Emergency Management Agency (FEMA),

Department of State, the Red Cross, and other intergovernmental and non-governmental agencies. The East Coast is directly at risk during hurricane season, and the 3rd ESC stands ready to support with troop transport and water purification capabilities. In 2017, this command established a unified effort with FEMA and DSCA leaders to support relief operations for Hurricanes Harvey, Irma, and Maria in Puerto Rico. In 2010, 3rd ESC deployed to Haiti to support earthquake relief packages and assumed the role of a joint logistics command while supporting over 18,000 Soldiers, Sailors, Airmen, Marines, and Coast Guardsmen. This unique ESC capability for a joint logistics command continues to be studied at Combined Arms Support Command to determine the feasibility and shortfalls for ESC headquarters (HQs) to act as a joint logistics command in an LSCO environment. It is based on all these rapid deployment capabilities and experiences within the 3rd ESC that make the 3rd ESC the critical ESC in the Army to rapidly deploy and establish operations in any theater.

Being located in a strategic geolocation for deployment is unique, but the 3rd ESC has some unique down-trace capabilities and experiences that it also brings to a corps commander. The 127th Quartermaster Company is the only active duty bulk water distribution company in the Army. Its mission is performing bulk water issue and water distribution operations during offense, defense, stability, and DSCA. This unit actively provides bulk water support to combat training center rotations and garrison support and is prepared to support defense chemical, biological, radiological, and nuclear response force missions; NATO response forces; hurricane response task forces; and emergent operations under dynamic force employment (immediate response force, crisis response force). This unit comprises reverse osmosis water purification units, a tactical water purification system, and Hippos for water distribution. Based on the unit's total capability, it can provide up to a maximum of 450,000 gallons of bulk water per day and has a storage capacity of 219,000 gallons. As the Army continues focusing on LSCO, the necessity of setting a theater with immediate bulk water storage and distribution is a vital commodity for our Soldiers in any theater.

Another unique capability of the 3rd ESC under the XVIII ABN Corps is the alignment of the 7th Transportation Brigade (Expeditionary) (TB(X)). The 7th TB(X) is the only watercraft brigade in the Army and allows the Army to operate user seaports, coastal and inland waterway main supply routes, and theater rail and line haul terminals, allowing for the reception, staging, onward movement, and integration of joint and/or combined forces into a theater. While the 7th TB(X) is directly aligned under the XVIII ABN Corps, the 3rd ESC oversees its readiness, administration requirements, and operational tempo in conjunction with the XVIII ABN Corps. Corps HQ is not authorized or assigned a vessel master warrant officer or Marine Deck Officer (880A) to advise leadership and commanders on how best to utilize Army watercraft systems (AWSs). The technical and tactical expertise for AWS falls under the 3rd ESC support operations shop, ensuring the readiness, administration, and best military advice to the ESC commanding general and the corps commanding general. The 3rd ESC is the only ESC in the active Army that assists and engages daily on AWS challenges to increase the AWS readiness within the Army. These experiences and ties with the AWS enterprise make the 3rd ESC the best command to support Indo-Pacific Command and other combatant commands with AWS.

The 953rd Theater Petroleum Center (TPC), which serves as the senior petroleum advisor to geographic and functional combatant commands, is another unique capability under the 3rd ESC. The 953rd TPC is aligned under the 3rd ESC during garrison operations and co-located in the ESC HQ at Fort Liberty, North Carolina. The purpose of this organization is to build theater bulk petroleum readiness for theaters while validating theater concept of support plans and their OPLANs. By being aligned under the 3rd ESC, this command has greater insights into the strategic petroleum problems and solutions to set theaters for LSCO. This unit also allows a direct link from the 3rd ESC to various sustainment partners for DSCA support, Defense Logistics Agency (DLA)-Energy, and joint operations to allow commanders better awareness and synchronization of operational and strategic solutions across the bulk fuel enterprise.

Ensuring the readiness of all separate XVIII ABN Corps divisional and corps units during deployed and home station operations necessitated the creation of a corps materiel readiness center (CMRC) to ensure the materiel solutions for XVIII ABN Corps. In July 2022, the command established the 3rd ESC CMRC to find materiel solutions with the sustainment enterprise of all corps units located at Fort Drum, New York; Fort Campbell, Kentucky; Fort Eustis, Virginia; Fort Stewart, Georgia; Fort Liberty, North Carolina; and various other locations. In the past, ESCs rarely supported units outside of their garrison home station. Based on the 3rd ESC commander's philosophy, the CRMC actively communicates and finds readiness solutions for the 101st Air Assault, 10th Mountain, and 3rd Infantry Divisions, despite not being located at Fort Liberty.

The CMRC comprises maintenance and materiel subject matter experts to help identify corps-level trends and problems in order to find materiel solutions for units. While working with the Army field service brigade and DLA, the CMRC actively identifies long lead time part challenges so the sustainment enterprise can provide alternate solutions or adjust strategic priorities to support priority units for deployed operations. The CMRC supply and service teams conduct causative research across the Army at the Plant 2000 and 2001 locations to find parts for these priority units. Examples of success include medium tactical vehicle tires being shipped from Kuwait, transfer of a part from a National Guard Plant 2001 shop stock in Grand Rapids, Michigan, and working with corps staff to improve additive manufacturing capabilities for long lead time parts. In addition to finding solutions for materiel readiness, the CMRC advises and finds solutions for all other commodities to allow units to make informed sustainment decisions regarding Class I, Class IB, Class IIIB, Class V, operational contract support, human resources operations branch, and mobility support operations. The CMRC is a critical asset for ensuring the corps is ready to deploy and support combatant commands across the globe while also finding materiel solutions at home station.

The 3rd ESC is the premier operational sustainment command that is ready to deploy to support the XVIII ABN Corps commander and combatant commands with synchronized sustainment operations in a forward-deployed theater. As the only ESC aligned to the Army's "Contingency Corps," the 3rd ESC has unique attributes and capabilities, ensuring lethality is quickly delivered to any theater conducting reception, staging, onward, and integration operations and continued offensive operations. For our Army to be ready for these operations, ESCs must ensure they provide materiel solutions to corps commanders while linking the strategic sustainment enterprise to the forward deployed commander's operational requirements. Further doctrine, organization, training, materiel, leadership and education, personnel, and facilities changes will continue shaping how the 3rd ESC will be better prepared to support OPLANs and emerging operations for combatant commands.

Col. John B. Hinson serves as the commanding general of the 3rd Expeditionary Sustainment Command at Fort Liberty, North Carolina. He previously served as the brigade commander for 528th Special Operations Sustainment Brigade (Airborne), 1st Special Forces Command; the chief of staff, Installation Management Command, Army Materiel Command, Fort Sam Houston, Texas; J-4, NATO Special Operations Component Command/Special Operations Joint Task Force, Afghanistan; battalion commander, 725th Brigade Support Battalion (Airborne), 25th Infantry Division. He attended the Dwight D. Eisenhower School for National Security and Resource Strategy Senior Service College. He holds a master's degree from the Air University, Maxwell Air Force Base, Alabama, a Master of Science in national security and resource strategy from the National Defense University, and a Bachelor of Arts in political science.

Lt. Col. David Alvarez serves as the support operations officer of the 3rd Expeditionary Sustainment Command at Fort Liberty, North Carolina. He previously served as the battalion commander of the 87th Division Sustainment Support Battalion (DSSB), 3rd Sustainment Brigade, Fort Stewart, Georgia, and in staff positions on the joint staff J-4, Combined Arms Support Command, Quartermaster School and the commander of the 87th DSSB. He holds a bachelor's degree in electrical engineering from Tulane University, a master's degree in strategic studies from Marine Corps War College – Marine Corps University, Quantico, Virginia, and a certificate as a Demonstrated Master Logistician from The International Society of Logistics.

MATURING THE EASTERN FLANK OF EUROPE

Lessons Learned from a Deployed Divisional G-4

By Lt. Col. Christopher M. Richardson

Deploying to the European theater as an armored divisional G-4 offered a unique opportunity to contribute to developing and maturing the theater's eastern flank. Several senior leaders have stated the center of gravity of Europe has shifted eastward, and we must adjust our way of thinking regarding sustainment operations across the sustainment enterprise. This shift requires sustainers to take a hard look at our current practices and our understanding of the operating environment, provide realistic inputs to operational plans, and focus on the end-state of an enduring presence along the eastern flank of NATO.

Serving in this theater in a variety of positions for nearly seven years gives me a unique perspective. My experience includes my time as an enlisted Soldier in the 7th Corps Support Group, the G-4 for the first mission command element within Poland, the commander of the Regimental Support Squadron, 2nd Cavalry Regiment, which rapidly deployed along European Command's (EUCOM's) southeastern area of responsibility (AOR) in response to Russia's incurrence into Ukraine, and now as the G-4 for the 1st Infantry Division (1ID), the first Army division to deploy to the eastern flank of NATO. As a result, I have a great appreciation for the complexity of operating across eight sovereign nations and a myriad of steady-state and multidomain operation options.

Based on my experiences, I collected several lessons learned and best practices that can aid with further maturing this theater of operations.

As sustainers, we must understand the precision of command relationships (COMRELs) and the importance of personal influence. We must be able to execute sustainment operations beyond a line in a block chart and fully understand the differences between operational, tactical, and administrative control, as well as direct and general support relationships for both NATO and U.S. forces. It is critical to understand these relationships, as they clearly outline authorities and responsibilities. It is also essential to understand the impact of influence, primarily shaped by personal reputation, ability to communicate effectively, and personal experiences. Both appropriate COMRELs and personal influence are required to be an effective sustainer along the eastern flank of NATO.

A critical lesson learned is relationships genuinely matter. We have heard the adage "relationships matter" and understand it is a little cliché. However, relationships are the bedrock of NATO, and we must cultivate positive relationships with our counterparts. I have always held personal relationships in high regard, and personal relationships are critical to our NATO allies. Many of our partners have been in the same position for several years and may rapidly accelerate from their military position to higher positions of responsibility and leadership. Relationships developed at the

tactical level grow into strategic level relationships. All NATO relationships must be genuine and pure. Sustainers must establish and cultivate meaningful relationships across all partners. I have several meaningful relationships that have endured deployments or assignments and assist with navigating much of the bureaucracy within our theater.

A challenge with managing regionally aligned forces (RAF) is the high personnel turnover and dynamic operating environment. EUCOM is a theater that requires a detailed familiarity developed over years of working in Europe. Operating across as many as ten sovereign nations yields a level of coordination (bureaucracy) with which most sustainers struggle. For example, any large military or movement of fuel and munitions requires authorization. This can take 5 to 30 days to gain approval, and the transportation mode affects the timeline and approval process. This is manageable, but one must acknowledge most actions within Europe are slower and require deliberate planning to execute than what may seem to be a simple action within Forces Command.

We cannot forget the basics — fundamentals win championships! This is a very complex theater with several moving pieces, and we must conduct detailed plans and analysis, similar to a combat training center effort. As needed, we must fully understand our organic and external capacities, requirements per the steady state operations, exercises, and the posture for contingency operations. We must develop and maintain daily staff estimates and integrate them into the operational planning process. These basic staffing actions are paramount, especially along the eastern flank of NATO, as we constantly compete with the threat rapidly transitioning to contingency operations. It is critical sustainers break down complex problems into the basics. We have successfully tackled the most complex problem sets by identifying the basic issues, framing the solution within doctrinal guidelines, and developing feasible and acceptable solutions. We must leverage the eight principles of sustainment within the operational art framework, ensuring prolonged endurance and operational reach to enable freedom of action. I am not saying we have the perfect solution every time, but no mission fails due to tactical logistics.

Another point I would like to highlight is we must be creative. The sustainment community in Europe is uniquely positioned to lay the foundation of an immature theater that will significantly aid follow-on forces and strengthen our relationship with our NATO partners. Although we use doctrine as a handrail, there are several opportunities where creativity is encouraged and required. For example, in deploying the 101st Division Sustainment Brigade (DSB) within the Area of Operations Victory, we had to revisit current practices, roles, responsibilities, and expectations and integrate greater capability across the enterprise. We conducted a sustainment conference to review our practices, policies, and understanding of the AOR and to develop the way forward as we mature NATO's eastern flank.

Currently, 1ID leads several working groups, meetings, and a sustainment conference with representatives across the sustainment enterprise. These efforts pay dividends in solidifying our concept of support and sustainment architecture.

Being the first RAF division yields several opportunities. We established all policies, procedures, practices, and common operating pictures (COPs). A COP must capture current capabilities by location and serve as a baseline for informed decisions. As previously discussed, our ability to preserve the commander's decision space is vital. A solid COP aids with planning and shapes higher echelons in decision-making and planning efforts.

Sustainers must break the current mindset of dependence upon contracted support. Our first option must always be a tactical solution or available assets. Unfortunately, we often default to a contracted solution while having idle Army assets. This dependency will not cease overnight. While we cannot forgo the benefits of contracted solutions, as contracts are a key part of our sustainment portfolio, those solutions take time to realize.

Contracts per Army Sustainment Command take 120 days to award. This is ideal within a garrison-type environment, but within a forward-deployed environment, this is roughly 50 percent of a nine-month deployment. It requires a fundamental shift from a red carpet, turnkey solution to leveraging our equipment. With a sudden shift to the eastern flank of NATO, we had to shift forces to demonstrate a credible combat force to aid with further deterrence of hostility against NATO. As the G-4, we must develop life support from an austere state to semi-permanent and permanent states. Contracts are tools in sustainers' tool kits that take time to develop requirements and execute properly. These critical actions are needed to develop a contract correctly, but operation timelines may not allow for the contracted support. I have found great utility in leveraging our organic maintenance tents, military tents, and host nation assets until we can develop more semi-permanent or permanent life support. For example, with our RAF aviation brigade requiring critical space for aircraft, we leveraged host nation assets and infrastructure, the units' organic assets, and a contracting solution. We also coordinated existing assets from other locations and repurposed them for the current needs. This was a byproduct of relationships built with external agencies and an accurate COP. The effort saved upwards of $3 million with minimal staff work.

The RAF DSB brought a wealth of experience and assets from materiel management to transportation management. However, the proper integration of this organization into the greater systemic enterprise was not easy. This forced the team to challenge current methodologies and practices.

We had to rethink our current boards, bureaus, centers, cells, and working groups (B2C2WG) to ensure we control and synchronize efforts across the AOR. We must ensure the proper allocation of resources per our national and commanding general's priorities. Although introducing an RAF DSB into the European theater was a huge win for our community, there are not enough assets to afford unfettered freedom of action across ten nations. We must provide the proper allocation of assets. More importantly, we must be transparent with the process to ensure the greatest understanding across the sustainment and operational enterprise. Our B2C2WG must include operational oversight and proper package decisions at the appropriate echelon.

To highlight the significance of our AOR, it is equivalent to operating across the western seaboard of the continental United States. We ask all sustainers to plan, execute, and mission command to sustain operations that span the size of California.

We plan to integrate the movement control battalion (MCB) into our RAF sustainment brigade to aid with this challenge. Although doctrinally, an MCB can be integrated into sustainment brigade and higher echelons, as needed.

Not all rotational DSBs have worked with an MCB, but we must integrate this critical asset into the DSB. The movement control teams and MCB are crucial in navigating transportation challenges with moving equipment and personnel across eight sovereign nations. In addition, MCBs can allocate or task common-user land transportation (CULT) assets. This is critical as we assign CULT assets, coordinate movement authorization, and synchronize the assets with the operational requirement. Each nation's administrative requirement is unique, as rules for moving hazardous material, equipment, and personnel through their country differ.

Although we have yet to master this process, we must remain great teammates and partners with our NATO allies. It seems simple, but if not done correctly, it will have political and operational impacts.

In closing, sustainment is fundamental to the success of all operations. Europe offers the real opportunity to establish a solid support foundation that endures. The coordination, integration, and synchronization of resources and captivities enable ready forces, sustains combat power, and maintains endurance in the conduct of operations.

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TRAIN TO FIGHT

Building Sustainment Readiness Through Competition

By Lt. Col. Joel M. Machak and Maj. John B. Raynor

While conducting an initial commander's assessment after assuming command of the 308th Brigade Support Battalion at Joint Base Lewis-McChord, Washington, in 2021, It was observed that Soldiers were generally proficient at their individual sustainment military occupational specialty (MOS) tasks — in garrison. However, they were far less skilled at performing these same tasks in a tactical setting, including the effective employment of our equipment. This is partially due to the brigade's (BDE) force structure and the way it deploys at the platoon level across the Indo-Pacific Command area of responsibility. At that time, the Army was on the heels of more than a year of COVID-19 mitigation measures, which limited collective training at all echelons. To build sustainment mastery in a tactical setting, the command team had to create training opportunities.

As the assessment period ended, the command team challenged the support operations (SPO) team to create a quarterly brigade-wide sustainment competition and test a cross-section of sustainment Soldier skills and field equipment often neglected in garrison. At the time, boards determined which Soldier would be named the brigade's Sustainer of the Quarter. However, anyone can study, don Army green service uniforms, and answer some questions. A venue was needed to test Soldiers' mastery of their MOS skills and acumen to succeed under pressure in unfamiliar settings — in other words, to win at the point of contact. Most importantly, the command team wanted the Soldiers to know they and their teams could do it.

Part of the challenge in designing a Sustainment skills competition is the sheer breadth of skillsets within the BDE. Like most support battalions, ours has more than 40 different MOSs assigned per the modified table of organization and equipment, most of which are considered low density. Between our SPO section and select members of the BDE staff, the team possessed the requisite subject matter expertise to design and execute such a competition. By using the training and evaluation outlines (T&EOs) associated with each competition task, participants understood the standard of performance for the competition and beyond.

After a full year of planning and executing these competitions, it yielded a transformation in our sustainment Soldiers that grew confident in their skills and prowess. As a second year of competitions begin, the scope of sustainment functions will expand to include unit movement officers, air and rail load teams, chaplain assistants, and medical personnel.

Sustainment Best By

A field artillery (FA) High Mobility Artillery Rocket System (HIMARS) brigade support battalion (BSB) differs from a brigade combat team in capability and structure. Key differences include the force structure of the brigade and that forward support companies (FSCs) are not assigned to BSBs. Each FSC is its own unique organization, designed to provide support to its parent HIMARS battalion in its mission. The same MOSs exist within a brigade combat team, just fewer in quantity. The only way to adequately determine the best was a sheer head-to-head competition based on speed, technical prowess, and tactical soundness.

To ensure all participants received value-added training, the competition encompassed a cross-section of low-density sustainment tasks executed in a field setting. Each iteration of the competition encompassed the primary Soldier skills of shoot, move, communicate, and survive simultaneously. Assets organic to each hardware systems command and FSC were what the competition centered around. If you cannot deploy and do your job with what you have, then are we actually ready to fight? In addition to using equipment organic to each company, cohesive scenarios were created to generate the requirements of each task and were evaluated on T&EOs. All selected tasks required extensive coordination in grading, resourcing, and timing. The quarterly competition was named the Sustainment Best By, honoring competitions already ongoing with determining the best firing battery in each battalion.

Invention and Experimentation

The command climate in the brigade allowed the unit to try something new to enhance overall sustainment readiness. We experimented with incorporating numerous areas of readiness. Combining basic Soldier tasks, sustainment-specific tasks, and low-density MOS tasks is what each

Sgt. Jabari Prempeh, combat medic, 684th Medical Company, 371st Special Troops Battalion, 371st Sustainment Brigade, plots points for the night land navigation event at the 2023 Ohio Army National Guard State Best Warrior Competition March 31, 2023, at Camp James A. Garfield Joint Military Training Center in Newton Falls, Ohio. (Photo by Spc. Benhur Ayettey)

competition encompassed.

The First Competition

On the day of the first competition, the culmination of four months of planning and experimentation unfolded. With three competing companies, the competition spanned four training areas with a start point assigned to each company. Each company completed a specific task at each point in a round-robin fashion and returned to the start point. The task at hand was simple: plot the grid given using the analog method, travel to that grid, complete the task, and convoy to the next point, repeat. To make each convoy realistic, the scenario given to each company involved problem sets experienced in actual deployments (setting up a fuel point at a logistics release point, dedicated recovery, rocket pod distribution, etc.). Communication between teams and the start point (from where all grids were given) was over a 1523-E radio. At the command of go, each team assembled their 1523-E radio and established comms at the start point. If a team did not correctly assemble and operate their radio or failed to provide adequate batteries or hand mic, their ability to begin the competition was delayed. At the conclusion of the first iteration, valuable lessons were learned by both participants and cadre, and it was obvious a solid product was created.

The Second Competition

The focus for the second iteration involved forward repair system (FRS) operations and vehicle recoveries. To focus on maintenance readiness, teams plotted the grid for the setup of their FRS, then located an M1097 to recover using a towbar to the FRS. Upon arrival, teams utilized capabilities of the FRS to change a tire. Once completed, all vehicles and equipment convoyed back to the start point to complete the competition. During this iteration, some teams used shortcuts while operating their FRS. Shortcuts included not fully opening the FRS and utilizing the crane to maintain the recovered vehicle versus utilizing jack stands. These actions indicated this was a common occurrence when conducting tire change operations for their supported battalion. While unsafe actions were immediately halted, these shortcuts provided a training point opportunity for routine maintenance operations. Following the second iteration, breakdowns en route to or from the Yakima Training Center at Joint Base Lewis-McChord (JBLM) involved towbar recoveries. This marked an increase in adherence to like vehicle recovery, resulting in a dramatic decrease in dependence on dedicated recovery, thus multiplying a unit's ability to recover organically.

The Third Competition

Within the brigade, Global Combat Support System — Army operations were rarely utilized outside of supply rooms or motor pools. Teams now had to correctly set up the very small aperture terminal (VSAT), complete and sign a vehicle dispatch, add an item onto the equipment status report, and perform a record of emergency data update. All these functions were often conducted using hard-wired Non-classified Internet Protocol Router (NIPR) lines within a brigade/battalion S-1 shop or a maintenance control office or motor pool. In addition to performing these tasks, communication requirements were expanded. Instead of receiving grid locations utilizing a common 1523-E radio, teams were required to establish their NIPR telephone that accompanies the VSAT and call back to the headquarters sixteen miles away. If a step was missed, like a cable not properly connected or a VSAT facing the wrong direction, teams were not able to get to their next location and proceed. This competition was unique in that, for instance, the NIPR VSAT telephone was just another item that was seen during cyclic or change of command inventories but seldom exercised in garrison.

The Final Competition

To close out the year, the battalion combined everything they trained on for the entire year into one massive "Super Bowl" competition. New events included the joint battle command platform (JBCP) for communication and land navigation and introduced a company-level evacuation and recovery team segment as an event. Mortuary Affairs is a key facet of sustainment that is often overlooked. While stationed or deployed abroad, there is always a possibility a Soldier may become a fatality and will need to be recovered. When adding a unique and time-consuming event, bottlenecking of the teams occurs as teams arrive to accomplish the task. Normally something like this negatively affects the competition. But it was used to emphasize the importance of attention to detail. Time penalties for missing items were assessed, and teams were not allowed to depart if any infractions occurred. For those in 17th FA BDE, a realistic problem set was solved by

To ensure all participants received value-added training, the competition encompassed a cross-section of low-density sustainment tasks executed in a field setting.

Soldiers assigned to the Division Sustainment Troops Battalion, 3rd Division Sustainment Brigade, 3rd Infantry Division demonstrate a leg splint using an M4 carbine for a simulated casualty during a base defense live fire exercise March 29, 2023, at Fort Stewart, Georgia. (Photo by Pfc. Destiny Husband)

achieving readiness enhancement that had far-reaching capabilities for our formations. Through deliberate planning, meticulous coordination, and creative thinking, success was achieved.

Reflections

While reflecting on what we created with Sustainment Best By, the SPO team conducted an after action review (AAR) immediately following each iteration. Critical data was gathered from each AAR and used to modify future iterations, strengthening the consistency of difficulty while maintaining focus on getting more proficient in sustainment tasks. The evolution of the program to explore other tasks and lessons learned through planning is worth sharing. Below are a few key takeaways:

Speed and Proficiency. At its core, Sustainment Best By is a race. The first company to complete all tasks and cross the finish line is declared the winner. In terms of readiness, sustainers in 17th FA BDE must be able to provide the needed support to their supported units quickly. A high payoff target fire mission, such as immediate survivability moves to another position area of artillery or opportune HIMARS rapid infiltration operation, requires a unique level of speed for execution to be seamless. None of these operations can be interrupted due to supporting elements not being ready. Sustainment Best By showed the unit that winning the competition and winning the fight comes down to the balance between being technically and tactically proficient and being able to execute a mission in unfamiliar settings. Teams can never just have one or the other. They must possess both because, ultimately, success or failure hinges on it. Taking time to effectively ingrain the importance of speed and proficiency in every task aided our ability to enhance readiness of participants. This balance defines success and failure not only in competing against peers but also while supporting armed conflict.

Every failure is an opportunity to learn. Sustainment Best By, being a competition, produces winners and losers. As we iterated on developing the competition, we were able to observe marked changes in the teams. Nobody wants to come up short when performing their role, especially when it matters most. It was obvious who took their previous failures and made the necessary corrections to ensure they were not repeated. That one cable that keeps your communications from working or missing that one pin needed for towing an M1097 were regular occurrences early on. Both of which were deciding factors determining the winner. It isn't equipment that wins or loses; it is the quality and the determination of the personnel competing. This forced all teams to become better, become more ready, and take on the challenges in each competition. Teams ran preventive maintenance checks and services of their equipment like never before. Communication equipment such as 1523-E radios and JBCPs were exercised as if the competition was a deployment. Consistently recognizing the importance of proficiency in that forum resulted in an added emphasis on readiness by the lieutenant and supported battalion commander leadership. At the end of the day, winning matters.

Trust. Trust is a critical part of relationships. Within the Army, trust is between commanders, subordinates, and units at all echelons. Commanders trust their intent is being executed, and all perform their roles at the highest standard. Often, losing or breaking that trust is irreversible. Sustainers cannot break trust with their supported unit. One bad experience, missed timeline, or readiness failure plants seeds of doubt as to whether a unit, commander, or leader can execute their role. Safeguarding that trust is paramount in everything we do as logisticians. Through Sustainment Best By, we strove to showcase skills that supported battalion and brigade commanders rarely get to see. While observing the Sustainment Best By, commanders were able to see firsthand what it takes to deliver ammunition, set up a VSAT, and perform maintenance in the field in an autonomous setting. Their observations served to build confidence and trust in their support organizations that they can achieve success in supporting their higher headquarters' intent.

Synchronization and Coordination. Legendary football coach Lou Holtz said, "You're either growing, or you're dying." If you are not seeking to learn, if you're not challenging yourself, then you are, in fact, dying. In addition to observing the competitors grow, the SPO team grew as well. With our SPO peers on JBLM, coordinating and executing the Sustainment Best By is well outside the scope of a normal SPO section. We found coordination and synchronization are nonstop. Once a competition concluded, the coordination and synchronization for the next iteration began immediately. The SPO team became better at synchronizing efforts and coordinating resources. We became better at asking pertinent questions, thinking through problems, and mitigating risk. We grew to become a better organization to achieve results and solve complex sustainment issues for the brigade. Our planning became more stringent in our ability to backwards plan. It is easy to have synchronization and coordination degrade given operating tempo and other activities competing for your efforts. However, if you remain focused on readiness and placing the betterment of our sustainment units first, a quality competition is achieved.

Lt. Col. Joel M. Machak currently serves as the battalion commander of the 308th Brigade Support Battalion at Joint Base Lewis-McChord, Washington. He holds a master's degree in supply chain management from the University of Kansas, a master's degree in public administration from Troy University, Alabama, and a bachelor's degree in criminology from Indiana University of Pennsylvania.

Maj. John B. Raynor currently serves as the 17th Field Artillery Brigade support operations officer. He commissioned in the Army Transportation Corps in 2009 from Sam Houston State University ROTC, Texas. He earned a Master of Arts in military history from Norwich University, Vermont.

Feature Photo
Sgt. James Nyamweya, a motor transport operator assigned to Headquarters Support Company, 308th Brigade Support Battalion, 17th Field Artillery Brigade, assists in the ammunition transfer holding point setup and teardown scenario during Lion's Strength ,July 29, 2020, at Joint Base Lewis-McChord, Washington. (Photo by Staff Sgt. Kyle Larsen)

Spc. Steven Hough, a wheeled vehicle mechanic assigned to Headquarters Support Company, 308th Brigade Support Battalion, 17th Field Artillery Brigade, treats a simulated casualty with a head wound during Lion's Strength July 29, 2020, at Joint Base Lewis-McChord, Washington. (Photo by 1st Lt. Madison Richmond)

Putting People First in the

1st Theater Sustainment Command

By Command Sgt. Maj. Albert E. Richardson Jr.

On May 11, 2022, I assumed the roles and responsibilities of the 1st Theater Sustainment Command (TSC) senior enlisted advisor. Mission requirements have taken me to the farthest reaches of U.S. Army Central's area of responsibility (AOR), including, but not limited to, Combined Joint Task Force – Operation Inherent Resolve and Task Force Sinai in Egypt. I've observed how our noncommissioned officers and Soldiers at every echelon support missions around the world with a shared understanding that, at any given moment, we could be called to respond to a crisis or conflict on behalf of our nation.

I'm honored to serve and be charged with the responsibility of leading the Soldiers of the 1st TSC. As the senior Army logistics command in theater, I understand the command is a modular organization tailored to meet the specific requirements of the Central Command (CENTCOM) AOR, set the theater in support of the western sustainment network, and maintain support to troops in contact.

The 1st TSC has over 14,000 Soldiers, civilians, and contractors operating across 11 countries in support of Operation Spartan Shield, Operation Inherent Resolve, Multinational Force and Observers in the Sinai, and other U.S. security interests alongside our joint and coalition partners. Four strategic joint logistics enterprise partners and 11 subordinate commands encompass the complete spectrum of sustainment operations. The team is organized to maximize the 1st TSC's ability to collaborate, confirm, execute, and validate across a full spectrum of operations, from humanitarian assistance and disaster relief to crisis and contingency operations. In a 2022 article, Maj. Gen. Michel M. Russell Sr. wrote that by "investing in our people first, and seeking innovative ways to satisfy wicked problems, identifying and leveraging opportunities along with proactive preparation for emerging challenges, 1st TSC continues to make significant gains towards optimizing sustainment throughout the AOR."

My observations have given way to a clear understanding of the current leadership challenges across our vast formation. With the imminent challenge of resetting the theater after the withdrawal from Afghanistan, the movement forward of the western sustainment network, the effects of COVID-19 lingering within the organization, and remaining nested within the Army's initiatives of continued optimization, I deduced the best way forward is addressing these challenges with collaborative and interconnected initiatives. I feel it's important to capitalize on our collective strengths, mitigate shortfalls, and leverage opportunities to build interoperability within our vast formation. It's my experience that this is best done by the process of collecting, analyzing, and reporting information pertaining to the performance of Soldiers, teams, and the organization.

The lasting effects of COVID-19 drove massive changes in society and impacted cultural change in the organization, forcing leadership to adapt. Gaps formed between the cohesiveness, readiness, and trust among our leaders, exposing weaknesses in our formation. I've established a clear picture of the periods of disruption, such as canceled training, exercises, and troop development, and I know we can make a difference. Comprehensive and consistent measures are needed in place to protect readiness, maintain the training pipeline, and enhance the quality of life for our Soldiers.

As an essential component of personnel and unit readiness, quality-of-life initiatives are integral parts of the Army's major plans to improve the force. Quality of life for Soldiers and their families must remain the focus of ongoing investment in housing, healthcare, childcare, and employment opportunities for spouses. The 1st TSC and Army's ability to retain talent is key, and success depends heavily on initiatives targeting these areas. The 1st TSC enhances the quality of life for 1st TSC Soldiers and families by using working groups to explore new programs and review existing ones. The goal is to enhance the well-being of Soldiers and their families, increasing readiness and retention.

As a leader, it's my belief one must first determine how to lead a unit in its best capacity by first observing

how the unit and its Soldiers perform. Maj. Gen. Michel M. Russel Sr., 1st TSC commanding general, seeks improvement over several areas within the formation: quality of life, standards and discipline, empowering the NCO Corps, and building cohesive teams. During my assessment of the unit, I identified areas that needed extra emphasis. We work to achieve results by initiating the 1st TSC senior enlisted initiatives program, comprised of a comprehensive and concentrated effort focused on developing our junior Soldiers and NCOs. Promoting emotional and physical well-being is critical. Quality of life is complex and difficult to measure.

The 1st TSC quality of life senior enlisted council discusses initiatives in line with the Army People Strategy and ways of enhancing our organization for Soldiers. As a guide for future decisions, our organization's command sergeants major and sergeants major sync bi-weekly to propose and discuss ways of benefiting the organization. These bi-weekly meetings assist the efforts to improve Army housing, both barracks and Army-owned family housing, the permanent change of station move experience, healthcare, childcare, and employment for spouses.

The 1st TSC elicits feedback from Soldiers via the strong Soldier council, which represents the voice of more than 400 Soldiers to inform senior enlisted leaders on enlisted force matters, including family, morale, and policy changes affecting the readiness of the enlisted Soldiers. The 1st TSC enlisted spouse seminar provides support for spouses of senior enlisted leaders within our organization by preparing them for leadership support positions within the military community.

NCO empowerment is job centric with a technological basis and includes the capability to develop the profession of arms in the enlisted ranks and increased competence and adaptability on the modern battlefield. Operating during COVID-19 revealed the need to build teams, communicate, create trust, and lead by direct example. Leadership done correctly creates empowered leaders capable of delegating decision-making to the lowest possible level.

The 1st TSC's standard operating procedure (SOP) standardizes the counseling process, ensuring every Soldier, regardless of the component (active duty, Army Reserve, or National Guard), receives regular and purposeful counseling. Quality counseling explains the task, gives purpose, provides scope of duty roles, and requires preparation and time from both parties. A Soldier should leave a counseling session with a solid understanding of what they have done well, where they can improve, and how the leader and subordinate will work together to meet those goals while achieving the mission. Leaders should leave each counseling session with a better understanding of their Soldier's concerns, problems, goals, successes, and expectations giving this standardization process a total force perspective. Most importantly, our SOP ensures counseling sessions occur regularly.

The 1st TSC junior enlisted professional development (JEPD) program derived from the Army's "This is My Squad" initiative. Furthermore, the JEPD is nested within U.S. Army Central's "strong sergeants build strong Soldiers" campaign. The JEPD trains, educates, and develops Soldiers to instill Army Values, understand Sexual Harassment/Assault Response and Prevention and equal opportunity policies, increase suicide awareness, and develop compassionate leaders increasing overall combat readiness. The JEPD assists with developing and leading Soldiers and units in a complex and challenging multidomain environment.

The 1st TSC NCO professional development (NCOPD) program reinforces essential knowledge for our leaders, consisting of formal and informal training programs, one-on-one groups, coaching, and instruction and is fully integrated into the overall training program. The 1st TSC believes NCO development is achieved through a progressive sequence of local and Army-level education, unit and individual training, and assignments of increasing scope and responsibility. NCOPD sessions also support the commanding general's priorities and Army Central Forces Command lines of effort.

Command Sgt. Maj. Albert E. Richardson Jr., senior enlisted advisor, 1st Theater Sustainment Command, shakes hands with Soldiers from the 18th Financial Support Center who are preparing to deploy Oct. 5, 2022, at Fort Knox, Kentucky. (Photo by Spc. Cecilia Soriano)

The 1st TSC senior enlisted leader seminar (SELS) is held quarterly to educate and develop sustainment senior enlisted leaders through open dialogue and interactive training. We do this by hosting a two-day event. Senior leaders across various sustainment commands provide insight into current and ongoing initiatives. 1st TSC senior enlisted leaders receive the opportunity to understand the visions, priorities, and intents of commanders and the U.S. government. SELS entails a joint senior enlisted seminar serving as a forum to review best practices for enhancing multidomain operational effectiveness through collaboration between all branches of service. Senior enlisted leaders start with professional relationships that develop into effective collaboration, an important aspect in building interoperability, with the end goal of greatly improving the ability of all senior leaders to advise commanders while leading organizations across the Army.

My goal is to assist the team in the continued effort to drive the 1st TSC into the front line of innovation and to continue improving the quality of life, standards, and discipline, empower the NCO Corps, and build cohesive teams. I'm establishing team-building programs within all my initiatives and within the organization that have a direct impact on the establishment of trust.

Command Sgt. Maj. Albert E. Richardson Jr. currently serves as the senior enlisted advisor for the 1st Theater Sustainment Command, Fort Knox, Kentucky. He has served as command sergeant major of the 299th Brigade Support Battalion, 2nd Armored Brigade Combat Team, 1st Infantry Division, Fort Riley, Kansas, and command sergeant major of the 23rd Quartermaster Brigade. He has served in posts across the United States and in overseas assignments, including Korea, Italy, Germany, and Poland. He has also deployed to Iraq. He has an associate's degree in applied science from Columbia Southern University, Alabama, and a bachelor's degree in business from Excelsior College, New York.

Feature Photo
Command Sgt. Maj. Albert E. Richardson Jr. speaks to a group of second lieutenants during a leader professional development Aug. 16, 2022, at Fort Knox, Kentucky. (Photo by Spc. Cecilia Soriano)

Sustainment Warfighter

Lessons Learned from One Division Sustainment Brigade's Exercise

By Col. Kevin W. Agness and Maj. Heath A. Bergmann

Designed as the capstone training event for corps and divisions, the warfighter exercise (WFX) simulates realistic scenarios that test and strain the capabilities of staffs at echelon to execute multidomain operations against near-peer adversaries. At this scale, brigade headquarters can be incorporated to replicate effects for their supported formation. For division sustainment brigades (DSBs), there is no better exercise to test the brigade staff's ability to integrate and synchronize sustainment across echelons. Additionally, the WFX is an excellent venue for the DSB to exercise its relationship with warfighting function sections at the division level.

The 4th Division Sustainment Brigade (4DSB), assigned to the 4th Infantry Division (4ID), participated in WFX 23-01 in the fall of 2022. The exercise included U.S. Army Pacific, I Corps, 4ID, the 25th Infantry Division, the 593rd Expeditionary Sustainment Command (ESC), and various joint partners. In addition to 4DSB, 4ID was task organized with two Stryker brigade combat teams (SBCTs), one armored brigade combat team, one infantry brigade combat team (Airborne) (IBCT), a combat aviation brigade, a division artillery (DIVARTY) brigade, and a maneuver enhancement brigade (MEB). 4DSB was tasked with organizing its organic division sustainment troops battalion and division sustainment support battalion, as well as an additional combat sustainment support battalion.

During WFX 23-01, elements of 4ID conducted joint forcible entry operations, including an airborne assault, an air assault, an amphibious assault, and large-scale combat operations (LSCO) against a near-peer adversary in a multidomain environment. The intent of this article is to socialize key lessons and observations from 4DSB's warfighter progression.

Task Organize for the Fight

In the LSCO environment, sustainment organizations must task organize for the fight and remain agile and adaptive while searching for creative ways to build reach, endurance, and freedom of action in depth. WFX 23-01's initial sustainment estimates revealed the IBCT and two SBCTs would have less than two days of supply for fuel and bulk water within their formations. Estimates also revealed the DIVARTY field artillery battalion forward support companies could not execute supply point operations from the division support area (DSA). These estimates triggered 4DSB to organize sustainment packages to augment each maneuver brigade support battalion (BSB) and to develop a BSB in direct support of the DIVARTY. These task organization changes increased operational endurance within the supported formations and reduced the frequency of distribution operations in a restrictive operating environment.

Joint Forced Entry Prioritized Vehicle Listing

4ID prioritized key assets across its airborne assault, air assault, and amphibious assault, developing balanced load plans across all warfighting functions to rapidly

build combat power. The inclusion of sustainment assets across each load plan enabled the rapid buildup of sustainment combat power and prevented the culmination of maneuver forces during the early stages of the operation. Key sustainment capabilities by operation included:

- **Airborne Assault.** Shortly after seizure, bulk packages of fuel, munitions, and water were dropped onto a secured airfield. Additional fuel assets, materiel handling equipment, medical equipment, and transportation assets were air-landed on the second day. This approach enabled the establishment of a sustainment node, an arrival/departure airfield control group, and a limited role II medical facility (with forward resuscitative surgical team augmentation). The ability to seize, hold, and manage an aerial port of debarkation provided 4ID a critical gateway to deliver sustainment assets, expand the lodgment, and build combat power.
- **Air Assault.** Elements of 4DSB's early entry command post (EECP) participated in the air assault as the quartering party for the DSA. This enabled the main effort brigade combat team (BCT) to focus on security and lodgment expansion while the DSB assumed command and control of port operations, preparing to receive forces during the amphibious assault while setting the conditions to begin commodity buildup at the DSA.
- **Amphibious Assault.** A forward logistics element and the remaining elements of 4DSB's EECP were integrated into the first two amphibious squadron movements, encompassing mission command capability, bulk fuel storage, material handling equipment, ammunition storage, and movement control capabilities. This enabled 4ID to establish a sustainment foothold at the seaport of debarkation, build stockages of critical supplies, and posture for the reception of bulk resupply from follow-on vessels.

Casualty Tracking

Prior to WFX 23-01, 4ID casualty operations were trifurcated across the 4DSB support operations (SPO) officer, the 4ID surgeon cell, and the 4ID G-1. This approach generated three different operational pictures and proved disruptive to air and ground casualty movement operations. Once the 4ID and BCT surgeon cells were assigned the proponent for casualty visibility, 4DSB was free to plan and synchronize movement, while the 4ID G-1 maintained visibility of personnel movement and replacement requirements.

Distribution Redundancy

In the early stages of the exercise, 4DSB was over reliant on sea-based resupply operations. When sea-based resupply operations were delayed or subject to convergence windows (also known as pulse windows, which are relatively short windows of time during which multidomain assets are employed to protect moving forces), it had a direct impact on 4ID's operational endurance. This impact was amplified when the Air Force ceased air-land operations after two days. Effective distribution operations in support of LSCO require redundancy. 4ID achieved this effect through the combination of air-land operations, aerial delivery operations, dedicated rotatory wing operations, ground distribution operations, sea-based operations, and local procurement activities. Success requires this type of multifaceted approach to distribution operations.

Convergence Windows and Joint Risk

The joint force did not assess risk the same as 4ID units in contact. Army risk did not always equate to joint risk, and vice versa. Two days after our airborne assault, units were in dire need of bulk fuel and critical munitions. Additionally, the division had more than 800 casualties requiring evacuation to high-level medical care. 4ID assumed because Soldiers were in contact, the joint force would follow. This was not the case, especially outside convergence windows or when there were known anti-aircraft threats. Unfortunately, this is the reality the ground force must be comfortable operating in. The crucial mitigation technique is to maximize all available platforms for distribution options and patient backhaul while understanding and articulating unacceptable risk.

Supply Chain Visibility and Velocity

Tactical and operational endurance in LSCO is directly tied to the visibility and velocity of commodities from the strategic support area to the forward line of troops. Within two days of 4ID's initial assault, the division was running out of several critical munitions. Initially, logistics leaders were unaware of munitions stockages in the theater of operations and could not articulate when or where resupply operations would occur. This awareness was only generated after contacting the 8th Theater Sustainment Command and the Joint Munitions Command. Informed by national-level stockages, production rates, and distribution rates, 4ID sustainment leaders were able to project operational endurance and risk. Throughout WFX 23-01, 4DSB experienced similar challenges with fuels, medical supplies, repair parts, and major end items. Understanding supply chain stockages and the associated velocity is critical to identifying opportunities and risks.

Finance Operations

Money is an enabler in LSCO. Using field ordering officers and class A agents, 4ID enabled each of the brigades to locally procure items like fuel or construction and barrier materials. Units were also able to compensate local nationals for the use of materiel handling equipment, commercial line haul and refrigeration assets, hospital facilities, and warehouses. The key to leveraging money as a weapon is understanding the commodities and services available in a particular theater. The 4DSB S-2, in conjunction with counterparts from the support operations section, must fight to understand the assets available as they conduct sustainment preparation of the operational environment.

Sustainment Preparation of the Operational Environment

The Army's sustainment forces will be unable to meet all requirements during LSCO. Units can mitigate the impact of limited commodities and degraded distribution operations by having a thorough understanding of what might be locally available. This assessment should account for capabilities like hospitals, fuel supply depots, seaport and airport capacities, the availability of construction materials, local industries, availability of humanitarian assistance items, and even bottled water. Local procurement reduces the burden on the military supply chain and enables leaders to focus on military-specific items like munitions and repair parts.

4ID Sustainment Fighting Products

LSCO generates a lot of logistical data. To maintain tempo and reduce staff churn, 4DSB operated off five primary fighting products. These included:

- **Operational Graphics.** Understanding the scheme of maneuver, down to the battalion/squadron-level, was maintained by the 4DSB S-3 and the division rear command post (RCP) battle captain (CPT).
- **Priority Information Requirements.** Specifically, commander's critical information requirements to understand decisions the 4ID commanding general (CG) was making and friendly force information requirements to help us see ourselves were maintained by the 4DSB S-3 and the RCP battle CPT.
- **Sustainment Decision Support Matrix.** This was generated by the 4DSB SPO officer and maintained by the 4DSB S-3 and the RCP battle CPT and was used during the RCP sustainment decision board when required.
- **Sustainment Distribution Synch Matrix.** This was maintained by the 4DSB SPO officer and used across 4ID to integrate and synchronize air and ground movements within 4ID and between 593 ESC and 4ID units. This document was the critical driver of 4DSB's current operations and enabled common-user land transportation asset management.
- **Sustainment Battle Update Assessment (BUA).** This was a commodity or service-specific running estimate maintained by the 4DSB SPO officer that helped identify opportunities, risks, and culmination points.

Sustainment Targeting

Using a process like the fires community's decide, detect, deliver, and assess framework, 4ID sustainment leaders employed a

series of working groups, boards, and decision briefs to ensure the sustainment community remained focused on generating the right effects at the right time. Using a targeting approach, the team systematically anticipated, integrated, synchronized, and executed sustainment operations up to 120 hours out. Key events of the 4ID sustainment critical path included:

- **4ID Logistics Synchronization (assess and detect).** Hosted by the 4DSB SPO officer with participation from all the brigades, this engagement aimed to validate on-hand status and capture future requirements.
- **4DSB Sustainment BUA (assess and detect).** This was hosted by the 4DSB SPO officer to identify opportunities, risks, and culmination points for the 4DSB commander.
- **4ID Distribution Working Group (detect and deliver).** This was hosted by the 4DSB SPO officer with participation from all the brigades and the RCP. This engagement aimed to integrate and synchronize commodities with distribution assets in space and time.
- **4ID Sustainment Decision Board (detect and decide).** Hosted by the 4ID G-4 with participation from the G-1, surgeon cell, protection cell, MEB, and 4DSB, this engagement aimed to present the deputy commanding general-sustainment with opportunities, risks, and recommendations.
- **4DSB Operations and Plans Sync (deliver).** Hosted by the 4DSB S-3, with participation from the MEB and 4DSB units, this engagement aimed to synchronize distribution and protection operations in time and space.
- **4ID Sustainment Visualization (detect and decide).** Hosted by the 4DSB planner, with participation from the 4DSB commander, 4DSB SPO officer, G-1, G-4, and surgeon cell, this event aimed to incorporate the 4ID CG's visualization for the next 96-120 hours and identify sustainment opportunities, risks, and recommendations.

Five Standing Questions

In prosecuting the sustainment fight, 4ID sustainment leaders continually reviewed the following five questions:

1. How are we leveraging all resources in the environment to generate options for commanders?
2. Are we seeing and controlling distribution operations?
3. Are we task organizing for the sustainment fight?
4. Are we anticipating requirements, anticipating transitions, and setting conditions?
5. Are we maintaining the sustainment critical path?

A considerate and ruthless application of the principles of sustainment, coupled with the lessons outlined above, proved key to success during LSCO. Integration and synchronization of the DSB with the division staff allow the sustainment team to focus on applying these principles and lead to a level of concinnity that most effectively enables readiness, promotes endurance, and drives tempo on behalf of the division. During LSCO, this collaborative approach proved critical to our ability to fight, sustain, and win!

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Feature Photo
Ivy Soldiers train under the Milky Way during a warfighter exercise Sept. 24, 2022, at Fort Carson, Colorado. (Photo by Spc. Scyrrus Corregidor)

Evolving Readiness

Train to Support Future Sustainment Operations

■ *By Maj. Antonio Randolph*

Readiness is an aspiration, and like most preferred states, it is both fleeting and unsustainable. In an actionable sense, it is ultimately the responsibility of respective commands to ensure their Soldiers are trained and equipped, leveraging all the Army's training domains, such as institutional, operational, and self-development, with critical capabilities that can be operationalized within combatant battle spaces. The operative actions are training and equipping the unit, individually and collectively, with the goal of aiding friendly forces with winning in contested environments. Through these two courses, readiness is actualized to the greatest extent possible.

For sustainment, the fruition of general readiness can be accomplished via a blend of training themes, including building core competencies rooted in foundational knowledge and doctrinal understanding; empowering sustainers with effective decision-making

tactics, techniques, and procedures (TTP) for the employment of a more decentralized approach to authority; and finding utility in the latest sustainment methods and technologies. All training and resource support mechanisms and organizations must recognize, stay abreast of, and address gaps related to these objectives.

Historically, fundamental knowledge of sustainment spacing and execution in the deep, close, and rear fights is an imperative taught and reinforced through the curriculums of the centers of excellence. This is both the starting point for readiness and a warfighter mindset. From here, the basis of shared understanding is developed and embedded in Soldiers' logic. This thought process serves as a quick reference and default when the fog and friction of war interject and provides a Soldier's instinct the opportunity to assert itself after years of instruction and exercise iterations. For instance, one way of sustaining operational reach and combat power projection is to provide an appropriate level of support from the forward line of troops and the company trains rearward through to the seaport/airports of debarkation in theater in a linear fashion. In non-contiguous battle spaces, however, creating nodes and links with configurations that align with the core principles of doctrine and incorporate pre-positioned stock and airdrop locations can be ideal. In both cases, common sustainment rationale serves as the grounds for cross-functional planning considerations. All sustainment entities, including logistics, financial management, personnel services, and health service support, should first attempt to match their activities in scale and scope with established guidance from military publications and manuals like Field Manual 4-0, Sustainment Operations.

As time becomes a significant variable in the decision-making process, higher echelon's intent must be the driving force employed by lower echelons to make determinations and commit resources. Complexities and complications created by combat scenarios likely lead to moments when mission command becomes the pervasive choice for conducting military operations, particularly when communications are reduced or degraded during conflicts. Being ready for these moments involves establishing general guidelines for managing through, at minimum, the most likely and most dangerous situations. Guidance born of deliberations made in training scenarios and battle-tested in the escalating operating tempo of the crawl, walk, and run phases of events should be codified in the form of standard operating procedures and reinforced with battle drills for any of the collective to quickly apply. Another aid that any unit can use is the graphical common operating picture, which can be used as an assessment tool to provide a visual depiction of where forces-in-need reside versus where classes of supply are stationed in bulk versus the number and type of assets available to package and move these items in logistics packages from point A to point B. Moreover, predictive technologies housed on digital platforms can assess standing and imminent conditions across all the sustainment disciplines. They can also prescribe suggestions for coordinating the flow of materials and support from points of storage/staging to points-of-use, which can ultimately supplement human intelligence and analysis, especially during compressed decision-making cycles.

The value of infusing novelty and uncertainty into activities includes a greater probability of attaining favorable results. Two ways to do this are changing the order of use of a tactic or introducing new sustainment creations.

Outcomes of innovation can provide a competitive advantage. The unannounced entry of a new procedure or product can leave an adversary without a relevant response for some unknown period. Relying too heavily on past precedent to support future fights is risky. The value of infusing novelty and uncertainty into activities includes a greater probability of attaining favorable results. Two ways to do this are changing the order of use of a tactic or introducing new sustainment creations. Where else can unique methods come from? The civilian sector and commercial worlds offer the opportunity for the Army to find resourcefulness in processes and procedures that have already been appraised. Further developments in categories such as protection (communication and cyber transmissions between supply, transport, and demand points/elements) and military deception (moving products most efficiently and performing services with a virtually undetectable footprint) are impending breakthroughs that will require a revamp and introduction of complimentary sustainment TTPs. A culture that encourages and supports such product or process progression is key, and the bottom-up feedback portion of the communication loop should be the channel for good ideas coming up from ground zero to reach the high-level capability and integration discussion forums.

Equipping the force is a significant enablement piece of the readiness equation. Soldier capacity can be exponentially increased by technology that enhances productivity. A training plan that draws the line from familiarization with the use of machinery to expertise in using it in a reasonable timeframe is critical for readiness. Another crucial dimension is demand reduction: eliminating excess resulting from redundancies using effective health monitoring (via sensors) and enterprise resource systems for timely maintenance, supply, and funding tracking. The cycle from concept to budgeting, as well as the subsequent prototype and minimum viable product stages, can prove to be both protracted and cumbersome. In the interim, building the best force with the best assets the force has at its disposal is the specified, implied, and essential requirement. In part, this entails working to routinely bring non-mission capable assets, such as heavy equipment transport systems, back on station faster and upgrading digital underwriters, like Global Combat Support System — Army and Advancing Analytics, with the latest-and-greatest software patches for improved overall network and system effectivity.

The essence of readiness is training and equipping a unit. The sustainment function and supporting institutions have created the infrastructure to teach and train for what was. Still, the challenge is devising and refining the ever-changing how for what will be. Prevailing logic supports the notion that time will be the most relevant variable in the battlefield decision-making equation. With minimal oversight from higher echelon, sound judgments will be a battlefield differentiator for all warfighters and joint collaborations. Managing the ambiguities surrounding both the addition of innovations and the relationship between a Soldier, the function, the tools, and the appropriate use and measure of all facets simultaneously will be key. To make matters more challenging, scarcity will be a force constraint; security must be skillfully integrated to protect the recommended modes and parameters for the transport of all resources and commodities; and leadership from the enlisted and officer ranks, especially middle management, must work diligently to adhere to the standard proximity and allocation rules for the establishment of supply and service support areas within the battle space. In the end, sustainment must continue evolving, and the schoolhouses, units, and enabling systems must continue staying ahead of the tasks and be up to the challenge.

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OPERATION PATHWAYS

Dynamic Employment of Army Pre-position Stock Tested in the Indo-Pacific

- *By Col. Erik C. Johnson and Maj. Mark A. Yore*

It is no secret the Indo-Pacific presents complex challenges for logistics and requires growth, repositioning, and changes to how we traditionally implement sustainment. As leaders identified the need to shift focus to the Pacific to counter growing regional threats, logisticians across the Pacific responded by continuing to develop creative solutions to set the theater dynamically. The commander of the U.S. Indo-Pacific Command has challenged his leaders across the component commands to think, act, and operate differently. Whether a policy requires an exception or laws need to change, leaders should be open and think outside the box while searching for feasible solutions to set the theater. As a land component in the Pacific, the Army understands the requirement to create interior lines to enable a dynamic theater distribution and sustainment system to set the theater. Leaders in the sustainment enterprise have taken the lead by utilizing Operation Pathways, the U.S. Army Pacific Command's (USARPAC's) annual operation involving thousands of Army forces rehearsing strategic movement, operational maneuver, and tactical employment of land forces throughout the Pacific, and the dynamic employment of Army pre-position stock (APS) to rapidly test our ability to receive, distribute, exercise, and regenerate our equipment. The 8th Theater Sustainment Command (TSC) and the Army Sustainment Command (ASC) executed precise coordination between multiple sustainment headquarters to support this effort.

Coordinated Effort

Utilizing APS is more complex than drawing equipment from a combined training center. Approvals, coordination, and timely movements have to occur seamlessly for USARPAC to receive APS to employ during Operation Pathways. Fortunately, during last year's Operation Pathways, USARPAC, with the support of the 8th TSC and ASC units, conducted a proof of principle (POP) in the Philippines, exercising a small sample of APS. Building on observations learned from the POP, the 402nd Army Field Support Brigade (AFSB) — serving as the theater AFSB — led the coordination efforts on behalf of the ASC, synchronizing with teammates from the 403rd and 404th AFSBs, who played vital roles in the execution of reconfiguration and handover of equipment to USARPAC units. The 402nd received USARPAC's demand signal for APS, and command and staff at echelon looked for creative ways to optimize employment while simultaneously creating the multiple dilemmas we would ultimately face in crisis and conflict. Army Field Support Battalion-Charleston seized the opportunity of resetting APS on the USNS Watson to reconfigure the vessel stow plan to allow for the dynamic employment of the requested equipment for Operation Pathways. This process enabled a seamless and efficient download at Pearl Harbor, Hawaii. Multiple rehearsal of concept (ROC) drills were conducted to synchronize enterprise support, culminating with the ASC ROC drill conducted in Rock Island, Illinois. This collaboration allowed the commanding generals from the 8th TSC, ASC, Military Surface Deployment and Distribution Command, Army Contracting Command, and the sustainment enterprise to receive briefs from their staffs and ensure conditions were established for a successful operation.

Knowing the battlefield and the capabilities and limitations of the multiple locations in the Indo-Pacific we could operate from during crisis and conflict is vital to our ability to rapidly scale our distribution and sustainment networks before the time of need.

Multiple Dilemmas

Creating multiple logistics dilemmas was one of this operation's training objectives. Crisis and conflict require full utilization of troop labor, underscoring the importance and ability to source and leverage vital strategic contracting capabilities. Requirements to utilize the Logistics Civil Augmentation Program (LOGCAP) in support of Operation Pathways were generated to exercise the process and test the capabilities and limitations in the theater, including, but not limited to, the preparation of equipment for the Australian Department of Agriculture, Fisheries, and Forestry, and inspections before Talisman Saber 23. Although LOGCAP was utilized in previous Operation Pathways, every location has unique challenges, such as the amount of skilled labor available, maintenance, and storage facilities. Knowing the battlefield and the capabilities and limitations of the multiple locations in the Indo-Pacific we could operate from during crisis and conflict is vital to our ability to rapidly scale our distribution and sustainment networks before the time of need. Exercising our contract capabilities and agreements enables leaders to confirm or deny assumptions to better inform our plans and allow leaders to properly resource requirements to continuously set the theater of operations. For example, suppose an Acquisition and Cross-Servicing Agreement, Logistics Exchange Memorandum of Agreement, or a Mutual Logistics Support Agreement is exercised and deemed adequate. In that case, leaders can shift potential military construction projects or contracting resources to another location to ensure our limited resources are used to maximize sustainment in the Indo-Pacific.

Conclusion

Demonstrating the ability and willingness to employ APS rapidly reinforces Army resolve in the Indo-Pacific theater. It sends a clear message to our allies and partners of our commitment to respond during crises and conflicts. Furthermore, it displays the Army's ability to continue creating the interior lines required to support a robust and dynamic distribution and sustainment network required in the Indo-Pacific theater. Leaders from the 8th TSC and the ASC are committed to thinking, acting, and operating differently to support the Army and the joint force. Most importantly, rapid and seamless sustainment efforts, such as the dynamic employment of APS, provide a constant deterrent to our potential enemies. In a radio address to the nation on the observance of Armed Forces Day on May 21, 1983, President Ronald Reagan stated, "The most fundamental paradox is that if we're never to use force, we must be prepared to use it and to use it successfully." These words remain true today, and logisticians in the Pacific continue displaying the fortitude, willingness, and tenacity required to deter those who seek war and conflict in the Pacific.

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Maj. Mark A. Yore serves as the brigade executive officer for the 402nd Army Field Support Brigade. He has a bachelor's degree in speech communication from Southern Illinois University Carbondale and a master's in global and international studies from the University of Kansas. He is a graduate of the Army Command and General Staff College.

Feature Photo
Page 70: Col. Eric C. Johnson describes APS download and reconfigure operations to Gen. Charles A. Flynn, commanding general of USARPAC, from the USNS Watson overlooking the pier at Pearl Harbor, Hawaii, Nov. 30, 2022. (Photo by Capt. Robert N. Rendle)

Page 71: Vehicles downloaded from the USNS Watson at Pearl Harbor, Hawaii, are lined up for onward movement Dec. 1, 2022. (Photo by Capt. Robert N. Rendle)

Wartime Storage

Munitions Safe Storage, Operation Essential in War, Peace

By Chief Warrant Officer 3 Michael K. Lima

The Russia-Ukraine conflict has provided many lessons for novice military observers and think tanks alike, regarding usability of drones, military aid packages for a proxy war, and the vulnerability of a force lacking an NCO corps. One lesson highlighted is the susceptibility of ammunition support activities in open areas to quickly be targets for off-the-shelf drones with innovative munitions-dropping mechanisms.

Armed conflict occurs when a state or non-state actor uses lethal force as the primary means to satisfy its interests and can range from irregular warfare to conventional warfare or combinations of both. The vulnerability of munitions storage in open areas requires advanced overhead protection and concealment techniques still being developed. Moving away from open areas brings us closer to inhabited areas during armed conflict.

Armed Conflict

Battles in urban environments are not new. Examples include the battles of Manila (Philippines), Hue (Vietnam), Mogadishu (Somalia), and Fallujah (Iraq). One key difference in the current Russia-Ukraine conflict is that forces do not have the freedom of movement in support areas as in past conflicts. Field Manual 4-0, Sustainment Operations, indicates adversary activities include surveillance of U.S. military installations, unit movements, ports of embarkation and debarkation, and staging areas to identify potential targets for ballistic missiles and long-range fires.

Adversaries challenge the days of massive uncontested build-up with inexpensive capabilities. One of the most vulnerable targets is the joint security area (JSA), which facilitates the protection of joint bases and the connecting lines of communications that support joint operations. The JSA is inside or immediately adjacent to an operational area where significant forces and sustainment from two or more services are positioned to support operations.

The sustainment warfighting function incorporates support activities and maximizes available urban infrastructure. The function ensures freedom of action, extends operational reach, and prolongs endurance. Commanders must understand how the environment and local population impacts sustainment support. If munitions cannot be in the open for combat operations, they need to be closer to the warfighter and out of sight to avoid being an easy target. Commanders require deviation from explosives safety separation distance, known as quantity-distance, as dense urban terrain enhances sustainment, having numerous features that offer both attackers and defenders operational advantage, such as roads, concealment, and additional civilian manpower.

One aspect of the severity of damage or injury to Soldiers from an explosion is dependent upon the distance between the potential explosion site and the exposed site, which includes the inhabited building distance, intermagazine

The Army must provide the proper guidance and equipment in addressing the new threats to ammunition support activities that conduct planning, preparation, and execution of operations across all levels of warfare.

distance, intraline distance, and public traffic route distance.

Explosives Safety Regulations and Standards

When minimum explosives safety standards cannot be met due to strategic or operational necessity, DOD Directive 6055.09E, Explosives Safety Management, requires combatant commanders base their decisions concerning military munitions risk on the methodology and requirements prescribed in related issuances and DOD explosives safety regulations and standards. In addition, the Chairman of The Joint Chiefs of Staff Instruction 4360.01C instructs commanders outside the United States to use applicable international agreements and implement host-nation or multinational explosives safety regulations when they are equivalent to or more strict than applicable U.S. regulations. One example of these agreements is NATO.

Allied Ammunition Storage and Transport Publication, NATO Guidelines for the Storage, Maintenance, and Transport of Ammunition on Deployed Missions or Operations (AASTP)-5, authorizes the use of field distances (FDs). An FD refers to the distance between two potential explosion sites (PESs) whereby prompt sympathetic detonations are avoided or the distance between a PES and an exposed site where the FD maintains adequate protection levels. While these distances are for NATO operations, U.S. requirements precede others if they are more protective.

The leading DOD regulation for explosives, the Defense Explosives Safety Regulation 6055.09, provides additional guidance for a maneuvering force engaged with the enemy or movement to support operations. The risks and consequences are addressed and managed by the appropriate commander with the operational mission requirements. For the Army, commanders use the correct safety distances in combat operations before they defer to deviation from applicable regulations.

Wartime Operations

Department of the Army Pamphlet 385-64, Ammunition and Explosives Safety Standards, Chapter 10, Wartime Operations, guides the safe handling, transportation, and storage of ammunition during wartime and contingency operations. Based on the acceptance of ever-increasing degrees of risk, the pamphlet provides options to the commander faced with additional ever-changing battlefield hazards that may outweigh explosives safety. The wartime explosives safety standards include the following two levels of protection:

- **Asset preservation distance.** The distance that prevents propagation or reaction between PESs, allowing assets at the exposed site to be usable following an incident.
- **Minimum separation distance.** The distance that prevents prompt propagation; however, late propagation of reactions between PESs is possible, which may impair mission capability.

A Marine Corps Hero-400 loitering munition drone is staged before flight May 25, 2022, at San Clemente Island, California. (Photo by Marine Corps Lance Cpl. Daniel Childs)

Use of peacetime explosives safety standards should be followed as extensively as possible. Only after assessing the risks against the mission should the less restrictive guidance of the Wartime Operations chapter be used. For example, the distance between a billeting area and ammunition/explosives operations with 9,000 pounds of net explosives would require 1,250 feet in a garrison environment. Under wartime operations, commanders could use an asset preservation distance of 499 feet. In a tactical situation, commanders may require deviation from even these less restrictive standards and procedures. The senior commander should apply the Army risk management process and protect personnel and assets to the maximum degree possible.

Conclusion

Sustainment commanders must adapt to changing operational environments to provide munitions support. The Russia-Ukraine conflict has shown us how the role of sustainment has changed for munitions handlers in providing munitions to supported units. The Army must provide the proper guidance and equipment in addressing the new threats to ammunition support activities that conduct planning, preparation, and execution of operations across all levels of warfare. Our adversaries will use every capability, including loitering munitions, to degrade our ability to apply lethal force and provide effective, synchronized, and safe ammunition on the battlefield. As ordnance Soldiers, we must be prepared for the acute threats and our pacing challenges we face as a nation.

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Feature Photo
Pallets of munition await shipment at an ammo supply point at Camp Arifjan, Kuwait, in late 2015. (U.S. Army Photo)

ORDNANCE WARRANT OFFICER MISASSIGNMENT

The Atrophy of Expertise

By Chief Warrant Officer 5 Alex Taylor, Chief Warrant Officer 5 Michael Theroux, and Chief Warrant Officer 4 William Wencil

The current misassignment of ordnance (OD) warrant officers (WOs) is causing the atrophy of key knowledge, skills, and behaviors (KSB) required for those leaders to remain subject matter experts (SMEs) and develop into senior SMEs. If there are no deliberate changes in how commanders manage these WO military occupational specialties (MOSs), it will degrade their ability to maintain equipment during potential large-scale combat operations (LSCO).

The current personnel management process for OD WOs, based on a legacy promotion system, has caused significant gaps in the technical understanding of the OD cohort. Commanders still manage the four 91 career management field (CMF) WO MOSs based on the idea that all 91 CMF MOSs merge to 915E, Senior Automotive Maintenance WO, at chief warrant officer 4 (CW4). This process of personnel management directly contributes to the perception of WOs no longer being SMEs and, if allowed to continue, will lead to irreversible atrophy of key skillsets, adversely affecting OD MOSs and the Army's ability to sustain combat power for LSCO.

Commanders regularly allow the assignment of OD WOs to positions outside their primary MOSs without complying with the approval requirements in Army Regulation (AR) 614-100, Officer Assignment Policies, Details, and Transfers, due to vacancies. This averts key developmental assignments and experiences outlined in Department of the Army Pamphlet (DA PAM) 600-3, Officer Professional Development and Career Management, and the professional development model needed to build depth in these primary MOSs, creating gaps in critical sustainment capabilities on the future battlefield.

Career managers and senior OD WOs must advocate for the correct utilization of junior WOs. DA PAM 611-21, Military Occupational Classification and Structure, must be updated to clarify ambiguous duties for these MOSs. Commanders and senior OD WOs must acknowledge that vacancies in 915A positions should be mitigated by utilizing 91A maintenance control officers (MCOs), 91X4O maintenance control sergeants (MCSs), and 91X4O maintenance section sergeants (MSSs). Lastly, commanders must enforce the procedures outlined in AR 614-100 to ensure WOs develop the KSBs that enable them to become the senior technical SMEs required in the future.

The OD corps is comprised of five 91 CMF and two 94 CMF WO MOSs, each with specific expertise.

An Armament Systems Maintenance Warrant Officer (MOS 913A) is the resident SME in all small arms, field artillery, and armament systems and, from WO1 to CW3, manages an armament shop in a field maintenance company (FMC) or support maintenance company (SMC), supporting all armament systems within the brigade (BDE) and/or echelons above brigade (EAB) supported units.

An Allied Trades Warrant Officer (MOS 914A) is the resident SME in precision machining, welding, fabrication, and vehicle recovery operations and, from WO1 to CW3, manages an allied trades shop in the FMC or SMC, supporting all precision machining, welding, and fabrication requirements within the BDE and/or EAB supported units.

An Engineer Equipment Maintenance Warrant Officer (MOS 919A) is the resident SME in all engineer, ground support, and heating, ventilation, and air conditioning (HVAC) equipment and, from WO1 to CW3, either manages a ground support equipment shop in the FMC or SMC, supporting all engineer, ground support equipment, and HVAC maintenance within the BDE or manages an engineer battalion (BN) motor pool.

An Electronic Systems Maintenance Warrant Officer (MOS 948B) is the resident SME in communications equipment and, from WO1 to CW2, manages a communications and electronics shop in the FMC or SMC, supporting all radio, radar, computer, electronic data processing, controlled cryptographic items, television, fiber optical, radiological, and related communications equipment requirements within the BDE and/or EAB supported units.

An Electronic Missile Systems Maintenance Warrant Officer (MOS

948D) is the resident SME in the Army's missile systems and associated equipment and, from WO1 to CW2, manages a missile repair shop in the FMC or SMC, supporting all missile systems and associated equipment requirements within the BDE and/or EAB supported units.

In BDE level units, only one 913A, 914A, 919A, 948B, and 948D each is assigned, and they are the commander's only experts for this commodity. They should track and advise on all facets and issues of their respective specialties across the BDE.

An Automotive Maintenance Warrant Officer (MOS 915A) is the resident SME in ground vehicles and, from WO1 to CW3, manages a BN motorpool providing SME expertise for ground vehicles.

In BDE level units, there are multiple 915As (generally one for each BN). When properly utilized in their assigned authorizations, the 915A can leverage the 913As, 914As, 919As, 948Bs, and 948Ds to assist in the maintenance of the unit's low-density equipment.

A Senior Automotive Maintenance Warrant Officer (MOS 915E), a CW4 or CW5, is a maintenance warrant officer within a BDE or higher who manages the unit's maintenance program and advises the unit commander on maintenance requirements to support the mission.

History of OD WO Merging

Before 2009, each MOS was tracked from WO1 to CW5. The smaller MOSs had very small populations at the top (one or two CW5s) to conform to the Average Grade Distribution Matrix requirements. In 2009, the OD branch merged the 91 CMF MOSs at CW4 into the 915E MOS. The consensus from senior logisticians was that the specialty did not matter at this level as the individual was just managing maintenance. This led to less-than-optimal results. Some prior 913As and 914As excelled, some failed, and some were just mediocre. For more than seven years this continued, and in 2016 the discussion about demerging the MOSs was brought up again due to the perception from senior leaders that OD WOs had significant loss of technical expertise. The OD branch decided to demerge the 913/914As at CW4 but continue to have them merge at CW5. This change was approved in 2019 and fully implemented in fiscal 20.

Unintended Consequences

One of the biggest factors of success as a 915E was the 915A's background in managing BN motorpools, since these individuals already had years of experience. This led senior OD WOs to recommend junior 913As and 914As be assigned to 915A positions earlier and earlier to help develop them. All too often, 913As and 914As are assigned to 915A positions immediately after the Warrant Officer Basic Course, for which they have no training. This can potentially result in career-ending officer evaluation reports (OERs). This approach inadvertently underwrites the collapse of all the specialties by taking personnel out of their MOS during their key developmental years.

The MOSs were demerged in 2020. Some commanders and even senior OD WOs who were hesitant to change the WO management culture inside their formations continue to allow and even advocate for this misassignment. Junior OD WOs frequently discuss broadening in this fashion because they have been convinced that by being assigned to 915A positions they are becoming multifunctional technicians. The reality is they are watering down their own specialty. Many senior OD WOs recommend all six MOSs be used interchangeably, and commanders continue accepting these recommendations. This is especially apparent due to current shortages of 915As across the Army as leaders look to fill these vacancies with a WO.

Regulation Requirements

Slotting WOs outside their primary MOS is against Army regulations. AR 614-100 states WOs are only authorized to be slotted outside their primary MOS with approval from the Human Resources Command (HRC) commanding general (CG). WOs have a separate section in this regulation for a reason. WOs must serve in MOS-authorized assignments to develop the KSBs to perform their specialty at the next higher echelon as they progress. If these personnel are not placed in positions to develop, the result will be the lack of senior low-density warrants who have the requisite KSBs to fill key positions such as instructors, trainers, and capabilities developers. This causes the degradation of required knowledge across the board and increases reliance on contracted logistic support and field support representatives.

Staff Sgt. Ryan Voss, explosive ordnance disposal technician with Kosovo Force Regional-Command East EOD, briefs Chief Warrant Officer 3 Elisa Locke, 2nd Battalion, 135th General Support Aviation Regiment, Colorado National Guard, on the uses of the Med-Eng EOD-8 bomb suit during EOD Day Sept. 27, 2020, at Camp Bondsteel, Kosovo. (Photo by Staff Sgt. Amberlee Boverhuis)

Systemic Problem

There is a huge disparity in the total number of active-duty WOs across these six MOSs. Removing a handful of low-density MOSs from their qualified positions drastically affects the entire MOS. About 87 percent of 915As, 81 percent of 948Bs, 79 percent of 948Ds, 68 percent of 914As, 61 percent of 913As, and 48 percent of 919As are assigned within their MOS. The actual rates are likely much lower because rates are based on the unit assigning the WO to the position. Unless a unit has multiple low-density MOSs, it normally doesn't officially slot them so they can continue showing the vacancy.

Logical Replacements

A 915A vacancy should be filled by an MCO, MCS, and MSS. There is a major shortage of 915As, and this MOS is at 75 percent strength. The old approach of interchangeability between the MOSs pushes many commanders to assign MOSs in 915A positions to fill voids based on the recommendation of some senior OD WOs. The problem is 913As, 914As, 919As, 948Bs, and 948Ds cannot, should not, and, more importantly, are not qualified to fill this void. They are not technical experts in automotive systems maintenance.

To get a WO accession packet approved by the OD office, an applicant must prove technical expertise in a feeder MOS. Current business practices of misassigning WOs negates this mandated accession requirement.

The MCO, MCS, and MSS are the next logical replacements for a 915A. Most motorpools are authorized these same three maintenance leaders. When a vacancy exists in one position, commanders in that unit

Warrant Officer Juan P. Renteria, assigned to Brigade Support Battalion, 173rd Airborne Brigade, calls commands during sustained airborne training Jan. 26, 2023, at Aviano Air Base, Italy. (Photo by Cpl. Genesis Miranda)

must balance the talent among the personnel in each subordinate unit.

The 913As, 914As, 919As, 948Bs, and 948Ds should not be assigned to 915A positions because they should fill the BDE-level commodity manager role for their specialty. If a 913A works as a 915A, they are focused, understandably, on their BN alone rather than serving the remaining BNs within the BDE to support their organic armament systems.

Commanders must understand they underutilize and gamble with critical SME careers and Soldier safety when they make these risky decisions. Too often this issue is dismissed, and senior leaders assure SMEs they will be taken care of when it comes time for their OER. In this case, we falsely guarantee the promotion of these individuals who may or may not have the KSB required to secure their next promotion. This only allows the perception of substandard WOs to persist among senior leaders.

Detrimental Misassignment

The resulting single biggest issue is the removal of WOs from positions critical to developing specific KSB, which they will need as senior SMEs in their commodity. Additionally, WOs may be unfairly and adversely affected by a bad or mediocre OER while working outside their MOS. WOs generally only have a few OERs between promotion boards, so one bad OER can disrupt their career. In the past ten years, promotion rates for CW3 914A have been between 25 to 40 percent. Due to the competitiveness of these promotions, commanders gamble with WOs' careers when making these decisions.

This misassignment is detrimental to the unit. The unit has no true SME in the position. A 913A, 914A, 919A, 948B, or 948D in a 915A position has no more technical expertise in automotive maintenance than the MCO. Unit readiness depends on having an SME ensure correct faults are identified and fixed and installation is completed and inspected correctly. The unit continues to deplete time, effort, and fiscal resources without improving readiness.

This misassignment also hurts the Army. Misassignment of WOs contributes to a significant loss of subject matter expertise in these specialties. The Army requires WOs to develop within their craft, ensuring they are prepared to provide this expertise when needed. When WOs are placed in positions outside their primary MOS, leaders take their ability to develop in their primary MOS away from them. This is the main contributor to skillset atrophy within these MOSs.

Improper utilization of WOs is particularly harmful to low-density MOSs. Assigning a small number of low-density MOSs outside authorized positions will prove detrimental in the near future when these personnel move to subsequent ranks of even smaller densities.

Vacancies in low-density WOs from their authorized position also create a developmental and training gap in the enlisted MOSs that feed into the WO MOS. This practice has resulted in vacancies in units for years with no 913As, 914As, 919As, 948Bs, or 948Ds in their respective sections, which translates to 91 and 94 Soldiers without technical mentors to develop future WOs.

Innovation Stifled

Lastly and specific to 914As, if they are unable to maintain their proficiencies, the Army will never see a return on investment in innovation and advanced manufacturing efforts. The Army has invested heavily in advanced manufacturing during the past 10 years, with efforts in computer numerical control precision machining, 3D printing, RAPTOR database, digital thread, and others. The Army has finally fielded the metalworking and machining shop set across most of the force, but in many units, these machines lay dormant because 914As fill 915A roles. Senior Army leaders continue to ask why so few individuals use the additive manufacturing digital thread. One reason is the MOS misassignment of OD warrants. If the Army expects to develop SMEs who can produce parts on demand, complete field expedient repairs, and repair hulls on tanks during LSCO, we must support the development of those individuals now. This is not a capability that can be developed overnight. These skills take years to develop, so allowing 914As to work within their MOS is critical.

Recommendations:

- Enforce regulatory guidance within AR 614-100, which only allows WOs to work outside their primary MOS with approval from CG HRC.
- Commanders and senior WOs must acknowledge vacancies in 915A positions should be mitigated by utilizing 91A MCOs, 91X4O MCSs, and 91X4O MSSs.
- Ensure career managers understand the regulatory requirements to correctly advise their WOs on navigating the misassignment.
- Ensure commanders and senior OD WOs understand this problem and how imperative it is to allow junior WOs to develop the KSB required to become SMEs as senior WOs.
- Senior commanders must review the current assignments of the WOs inside their formations to ensure they are being utilized in their current MOS.
- All leaders must empower OD NCOs to operate at a higher level, make readiness decisions, and manage unit maintenance when there is a vacancy in the WO MOS.

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Feature Photo
Chief Warrant Officer 2 Veronica Jarnagin, 664th Ordnance Platoon ammo warrant officer, discusses ammunition supply point operations with Col. Jake Kwon and Command Sgt. Maj. Ricardo Saunders, 77th Sustainment Brigade command team, Lt. Col. Adam Seibel, 77th Sustainment Brigade support operations officer, and Maj. Jason Detwiler, 529th Support Battalion support operations officer Aug. 12, 2019, at Camp Taji, Iraq. (Photo by Staff Sgt. Roger Jackson)

TEAM EFFORT

Enhance, Enable Army Medical Logistics by Capitalizing on the Army's Force Structure

By Chief Warrant Officer 4 Kevin E. O'Reilly and Chief Warrant Officer 3 Dae K. Kim

The medical logistics force structure, along with its accompanying information technology and business processes, has been separate from the broader Army sustainment community since the conclusion of the Vietnam conflict. The separation of these two logistics systems results in diminished economies of scale pertaining to many logistical concepts such as transportation, maintenance, and stock management, thus diminishing interoperability between the Army sustainer and the Army customer. Subsuming the comparably small medical logistics force structure into the broader Army sustainment community would assist in developing a single-team logistical structure that is more efficient and better positioned to support the Army at war.

Since the Army Medical Logistics Command activated under the Army Materiel Command in 2019, medical technology management has realized significant advances by adopting the Global Combat Support System-Army (GCSS-Army) and its accompanying best business processes. This adoption of Army sustainment systems and processes has rectified many long-standing and systemic gaps associated with medical equipment maintenance and property accountability within the medical logistics system. However, this advancement in capability revealed new gaps. Most notably, the enterprise nature of a modern logistics environment, now realized by the Army, requires the full integration of all skillsets, such as automated logistics, supply management, and property accountability in the proper numbers and with adequate oversight to optimize the medical logistics operation, a benefit not provided to many medical logisticians located throughout the Army's force structure.

Overall, the medical logistics force structure consists of the medical logistics company (MLC) and the brigade medical supply office (BMSO). The BMSO is assigned to a brigade combat team's (BCT's) brigade support battalion's (BSB's) medical company, affectionately named Charlie Med. Depending on the makeup of the BCT, one Biomedical Equipment Specialist (military occupational specialty (MOS) 68A) and two to three Medical Logistics Specialists (MOS 68J) are assigned to this office. Currently, a single junior enlisted 68A is expected to manage the BCT's medical maintenance operation from the Charlie Med's BMSO without the management and command oversight enjoyed by his maintenance peers. Relocating this single 68A to the maintenance section of the BSB, along with generating a shop within the BSB's maintenance activity, would enhance this Soldier's capabilities as a technician, maintenance leader, and sustainer by enabling the full functionality of medical maintenance production control throughout the entire BCT. Moreover, relocating the 68J to the BSB's supply support activity to leverage existing stock control functions found within GCSS-Army, coupled with cultivating medical materiel requirements within the Federal Logistics Information

As the Army refocuses its efforts to a division-centric model to address a large-scale combat operation, leveraging more resilient logistics capabilities within the larger Army sustainment community would provide a greater reach to the Army medical customer.

Cpl. Thien Nguyen, left, medical supply technician with the 551st Medical Logistics Company, and Karl Posley, a general supply specialist with the U.S. Army Medical Materiel Agency, prepare shipments of medical supplies at the Army pre-positioned stocks site July 1, 2022, in Germany. (Courtesy Photo)

System, would allow the medical supply system to manage medical stock integration with the medical customer's automated requirements. A capability presently unrealized within the current medical supply system.

The concept of subsuming the logistics functions housed within the BMSO into the BSB's logistical infrastructure could be applied to echelons above the brigade by subsuming the MLC into the theater sustainment command (TSC) and the expeditionary sustainment command (ESC). The MLC is staffed with MOSs 68J, 68A, and a 68Q Pharmacy Specialist, along with authorized standard support equipment, such as refrigeration or vault management, to facilitate supply and maintenance management functions. Subsuming the MLC's capabilities into the TSC or ESC would capitalize on many logistics enablers, such as transportation and stock management integration, as described by subsuming the BMSO into the BSB. Moreover, the medical equipment maintenance community would benefit from integrating with other maintenance enablers such as electronics, welding, additive manufacturing, machining, and automated logistics capabilities offered by these robust logistics commands.

As the Army refocuses its efforts to a division-centric model to address a large-scale combat operation, leveraging more resilient logistics capabilities within the larger Army sustainment community would provide a greater reach to the Army medical customer. This reach would provide a more efficient and expedited projection of logistical capability since the combatant commander would have the ability to leverage a single logistics construct integrated under his direct command instead of the current parallel system that is separate and detached from the broader Army logistics infrastructure.

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Chief Warrant Officer 3 Dae Kim currently serves as the property book officer for the 65th Medical Brigade. He has deployed to the United Arab Emirates with the 108th Air Defense Artillery Brigade and to Iraq with the U.S. Army Security Assistance Command and the 10th Mountain Division. He holds a master's in business administration from Fayetteville State University, North Carolina.

Feature Photo
Soldiers and local nationals work together to stock life-saving medical supplies at the Army Medical Logistics Command's medical materiel center June 23, 2022, in South Korea. (Photo by Ellen Crown)

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