

APRIL-JUNE 2020

ARMY SUSTAINMENT

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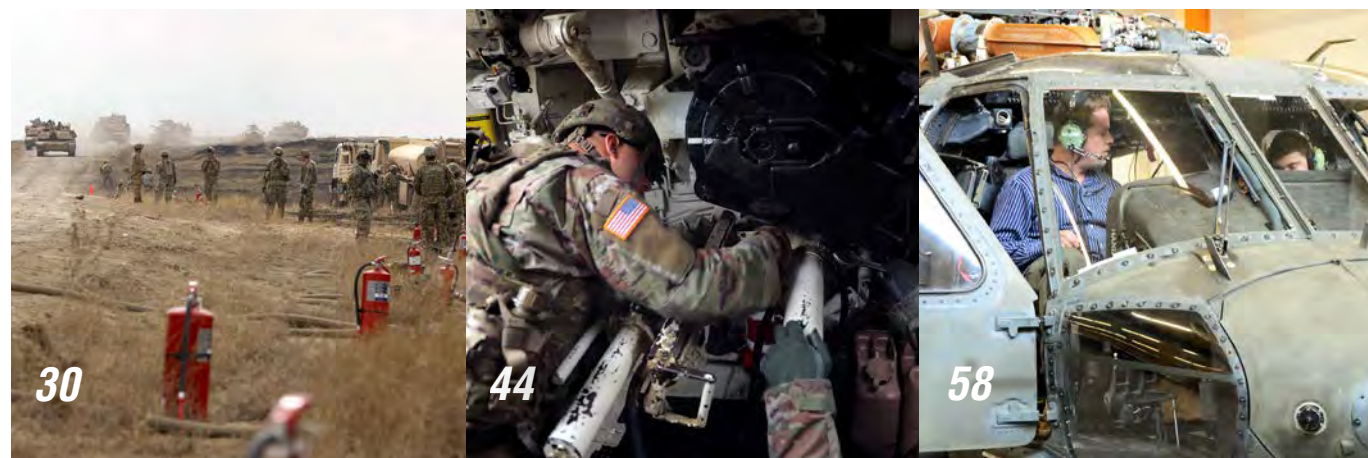
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BUILDING STRATEGIC READINESS

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**"Mobilizing,
deploying,
and sustaining
a globally
engaged
Army requires
synchronization
and integration
across the
entire materiel
enterprise to
effectively
move troops
and equipment
at scale and
speed."**

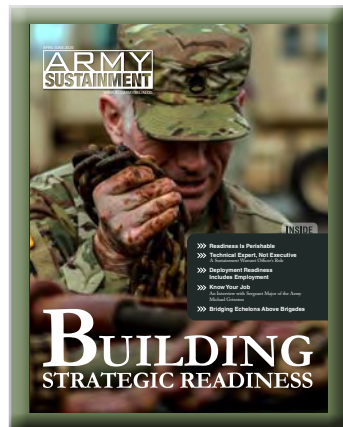
Gen. Gustave "Gus" Perna

U.S. Marines wait as U.S. Army Vessel SP4 James A. Loux (LSV-6), a logistics support vessel, prepares to unload vehicles onto the pier in the United Arab Emirates during Native Fury 20 training exercise, March 14. Native Fury 20 is a recurring joint exercise to strengthen relationships and interoperability between the U.S. and the UAE military forces. (Photo by Spc. Travis Teate)

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ON THE COVER

A Soldier in the California Army National Guard (CANG) prepares an M-878 truck to convoy during Operation Patriot Bandoleer 2018, held at Military Ocean Terminal Concord, Calif., March 2, 2018. Operation Patriot Bandoleer is an ongoing training mission that CANG coordinated with Army Materiel Command, Army Sustainment Command, and Military Surface Deployment and Distribution Command to facilitate multicomponent integration of the transport of munitions throughout the continental United States. (Photo by Eben Boothby)

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**ARMY
SUSTAINMENT**

Call for Submissions

Army Sustainment is seeking articles on techniques, tactics and procedures; emerging trends; lessons learned; and other experiences.

The editorial staff from *Army Sustainment* is seeking submissions from the community. As with all content submitted to *Army Sustainment*, it should be sustainment focused, provide professional development information, and should not contain any classified or sensitive information.

Submissions should be well-developed narrative articles and can be opinions, techniques, tactics and procedures (TTPs), lessons learned, exploration of new technologies or emerging trends, or other similar content of a valuable nature to fellow sustainers.

General public affairs style coverage or content on units, exercises, initiatives and events that do not otherwise hold additional professional development value are typically not as strong as those submissions that offer real, actionable sustainment information.

The topic for the October-December 2020 issue of *Army Sustainment* is Modernizing Sustainment.

Articles on the subject should answer some of these questions:

How will enterprise-wide reform affect day-to-day operations of sustainers? How does the sustainment community tie into the Army's modernization strategy? What do the various sustainment units of 2028 look like? All submissions should be reviewed for operational security, and should contain no classified information.

While the editorial staff here at *Army Sustainment* do conduct our own review and editorial process and have authority to approve content submitted to us for public release, we recommend at least some basic professional coordination between the submitting author and their organization's public affairs or public information office, especially for U.S. personnel working in NATO or other multinational organizations.

Army Sustainment chooses new topics for each bulletin and accepts contributions from the sustainment field. Check out our social media, including our page on Facebook, to learn about upcoming topics.

Find more information: www.alu.army.mil/alog/submissions.html

Materiel Enterprise Is the Foundation for Building Army Strategic Readiness



■ By Gen. Gustave "Gus" Perna

While our combat troops have always been the foundation of our Army, our strategic advantage has been our ability to mobilize, deploy, and sustain our force—what Chief of Staff of the Army Gen. James McConville has described as strategic readiness. From mobilization operations and deployment, to sustainment in the field and redeployment, Army sustainers and logisticians have a significant role in building and delivering Army strategic readiness.

Mobilize

Strategic readiness starts with mobilization operations on our Army installations. Army sustainers and logisticians are critical to ensuring barracks, motor pools, maintenance facilities, Supply Support Activities, and Logistics Readiness Centers

are not only operational, but functioning effectively and seamlessly to support mobilization efforts.

Deploy

Installations are also the foundation of our strategic power projection capability, which enables us to deploy our people and equipment rapidly and efficiently. Our railheads, roads, airfields, and ports are how we get to the fight. Our enemies know the best way to defeat the greatest Army in the world is to stop it from ever leaving its own territory. We must ensure the critical infrastructure that moves our force from fort to port, port to port, and port to foxhole is not only ready today, but modernized to support next generation platforms, and secure to withstand cyber or physical threats. We must also continue to build the skills and reinforce the critical infrastructure that comprises our strategic power projection capability to move even more equipment, more quickly.

Sustain

Soldiers cannot fight and win on the battlefield without weapons to fire, tanks to drive, food to eat, and the logistics support to ensure those necessities get to the right place at the right time. For that reason, sustaining the force, from the industrial base to the battlefield, is also a key tenet of strategic readiness. Our end state is ensuring the right commodities are already in place

when commanders and their Soldiers need them, and frontline Soldiers never have to wait on logisticians to catch up to their movements. To help accomplish this, we will rely on logistics information to see ourselves across the entire materiel enterprise. We must be able to leverage our enterprise resource planning systems for critical data that allows commanders and logisticians to make predictive, real-time, and informed decisions.

Mobilizing, deploying, and sustaining a globally engaged Army requires synchronization and integration across the entire materiel enterprise to effectively move troops and equipment at scale and speed. We cannot rely on Industrial Age processes and systems to deliver Army readiness. We must ensure our resources—not just funding, but time, people, and infrastructure are aligned and precisely executed to build strategic readiness today. From weight to size and ease of mobility to cyber, we must be considering the factors that impact our ability to mobilize, deploy, and sustain our force, and modernize accordingly now. Every sustainer has an essential role in building and maintaining strategic readiness.

Gen. Gustave "Gus" Perna is commanding general, Army Materiel Command, Redstone Arsenal, Ala.

Readiness Is Perishable



■ By Lt. Gen. Duane A. Gamble

The most important phrase I have my G-4 team focused on like a laser right now is: strategic readiness. That's our ability to project and sustain our troops, anywhere in the world, in a harsh and austere combat environment. We do not deploy Soldiers to participate, we deploy them to win. Maintaining combat power and enabling strategic and operational reach, speed, and endurance through sustainment is decisive to winning, especially in large-scale combat operations (LSCO).

Our ability to achieve strategic readiness has not always been a given, especially since we've been optimized for counterinsurgency (COIN) operations for the past 19 years. In 2010, about 10 years into our COIN fight, I was part of the initial no-notice

deployment to Haiti in response to the devastating earthquake that killed 300,000 people. At the time, the Army was engaged in rotational, forward operating base, theater-provided equipment, and Logistics Civil Augmentation Program (LOGCAP) enabled deployments in both Iraq and Afghanistan; operational and tactical readiness peaked but strategic readiness atrophied.

For Haiti, we were unprepared to project power at the speed of war and unprepared to sustain a brigade in our own hemisphere, with no enemy. The Army airdropped Meals Ready-To-Eat to sustain a brigade combat team (BCT) conducting humanitarian assistance missions because we could not efficiently and effectively deliver rations via ship to an island 800 miles away.

The Army is a learning organization and our own harshest critic. Then Army G-4, retired Lt. Gen. Mitch Stevenson, conducted an after action review to learn (and grow) from our strategic readiness challenges. We found that readiness was perishable; we went to work trying to improve it.

Fast forward 10 years to January of this year. When tensions with Iran escalated, the first plane carrying our Immediate Response Force (IRF), from 82nd Airborne Division, to the Middle East was wheels up within 20 hours. That's impressive by any

measure. We followed up by deploying enabler packages built to assist IRF sustainment and based on lessons learned from Haiti—incredible progress made in strategic readiness over 10 years.

In line with the National Defense Strategy, our emphasis today is on posturing in Europe and the Pacific to conduct LSCO as well as to continue support of combat operations in the Middle East. In each theater, we have sustainment commands that have been working for decades on operational missions to open theaters, establish distribution networks, and sustain the force.

As a result, we are well postured. Can we improve further? Absolutely. Here are four key issues we are undertaking right now:

First, we are working to better posture our Army Prepositioned Stocks (APS) so they are combat ready and combat credible. APS are no longer hermetically sealed and in deep-storage warehouses. We have operationalized those stocks into a configured-for-combat posture in order to enable a more rapid integration of forces in theater. The Army APS strategy centers on our ability to provide options in the form of strategically placed sets of warfighting equipment, afloat and ashore, in geographic combatant commands to enable the execution of operational

plans and support contingency operations. Equipment that is both ready and configured for rapid employment is key to achieving this purpose.

Second, we've changed our focus on long-term contractor support. For the last 10 years, we used LOGCAP IV, created while we were at war in Afghanistan and Iraq, to enable our endurance during almost 20 years of dispersed operations. We are now moving to LOGCAP V, where our emphasis is to set the-
aters and posture our Army for LSCO. Today, opening a theater cannot be done alone with Active, Reserve, and National Guard units. It must include government Civilians as well as contractors, and it is important to have them involved in the planning process.

From my experience, leaders know what needs to be done to set a theater to conduct LSCO, but the detailed planning to employ contracted capability to enable operational reach, speed, and endurance has not been done. With LOGCAP V, each theater will have contracted planning capability to help plan support for reception, staging, onward movement, and integration.

This will enable us to better balance what can be done by assigned forces, deploying forces, and contracted capabilities.

Third, we are reviewing options

to increase speed through better deployment systems on the home front. We are setting conditions to replace aging rail cars that take equipment from fort to port. We are investing in technologies, such as weigh-in-motion scale systems instead of using 20th century tape measures and scales, so Soldiers can rapidly and accurately determine weights and dimensions of deploying equipment. The Army is dependent on strategic airlift and sealift to move our equipment. Rapid and accurate weights and dim-

If we can project forces, but we don't have the tactically ready forces to project then we have not achieved strategic readiness.

ensional data will speed up load planning and the optimization of limited and precious resources.

Fourth, we must shift to a multidomain mindset. We used to call America our sanctuary because we had oceans and friendly neighbors on our borders, but I am not so sure that our contiguous 48 states will be a sanctuary in the next fight. Some domains transcend borders. We must prevent adversaries from disrupting our seaports or airports, shutting down our power grids, or swarming us with drones.

From the initial alert of units at home station through the entire de-

ployment in LSCO, we will be contested in domains we've historically dominated. As such, we are incorporating multi-domain threats into our exercises at garrisons and at our combat training centers. Over time, we will change our mindset and behavior to achieve increased preparedness.

Sometimes people talk about tactical readiness and strategic readiness as if they are binary. They are not. They are both part of a spectrum of readiness. We can't achieve strategic readiness without tactical readiness. If we can project forces, but we don't have the tactically ready forces to project then we have not achieved strategic readiness.

We must remain focused on tactical readiness. We recruit new Soldiers every year and they need to be trained.

But as we have learned in the past, strategic readiness also is perishable. We must balance strategic and tactical readiness. Thankfully as we observed earlier this year in our no-notice deployment to the Middle East, we're working to get the balance right.

Lt. Gen. Duane A. Gamble, Deputy Chief of Staff, Headquarters, Department of the Army, G-4, oversees policies and procedures used by U.S. Army Logisticians. He has masters of science degrees from Florida Institute of Technology, and Industrial College of the Armed Forces.

People First: Preparing Our Sustainment Leaders for Great Power Competition



■ By Maj. Gen. Rodney Fogg

People matter. We have to invest in people, our most important resource. We must drive readiness, maintain our edge, and compete against and dominate peer adversaries. The Army is transforming from an Industrial Age-based institution to an Information Age ready force competing in large-scale combat operations (LSCO) on a complex Multi-Domain Operations (MDO) battlefield. Leaders need to be innovative, mentally tough, and have a winning attitude. They need to pursue both institutional learning opportunities and self-development. They have to get after the academic rigor needed to build critical skill sets for their profession. The sustainment enterprise is supporting these concepts, and the 2019 Army People Strategy line of effort "De-

velop Talent," through numerous initiatives including intensive degree and industry-standard certification programs from various sources.

Where We Are

Did you know that captains can get a fully funded Master in Supply Chain management degree from Virginia Commonwealth University?

The Virginia Commonwealth University Master of Supply Chain Management program allows branch-qualified captains to enhance their understanding of strategic supply chain concepts and how to leverage data analytics in decision-making. The yearlong program improves data analysis and visualization skills, teaches forecasting methods, and develops an understanding of strategic and operational management. Opportunities exist for graduates to conduct follow-on utilization assignments at organizations across the enterprise upon completion of the graduate program.

Did you know the Industry Based Broadening Logistics Program (IB2 LOG) course applies industry best practices to achieve optimized logistic support?

IB2 LOG was developed in collaboration with Department of the Army, G-3, and the Institute

for Defense and Business. The key objectives of the course are to apply industry best practices to achieve optimized logistic support in your organization; learn how top organizations analyze and interpret complex data to support decision making; and a develop more broad perspective on the use of enterprise resource planning (ERP) systems in the military and government.

The IB2 LOG program is a three-week educational and experiential learning opportunity that includes classroom education sessions paired with on-site team benchmarking with local private sector companies. The program is open to personnel with experience in using Army ERP systems to manage logistics, such as Global Combat Support Systems-Army (GCSS-Army) and General Fund Enterprise Business System (GFEBS). Personnel interested in attending the program should be in the following grades:

- GS13 to GS15
- Captain to Major
- Chief Warrant Officer 3 and 4

Impact in the Operational Force

IB2 LOG is already paying dividends for operational units. In April 2019, Chief Warrant Officer 4 Brian Masters, the 18th Field Artillery Brigade Maintenance Technician at Fort Bragg, North Carolina,

conducted the IB2 LOG course through University of North Carolina Chapel Hill, which included working with industry partners such as General Electric, Volvo, Murano and Caterpillar. Utilizing the skills he accumulated through the IB2 LOG course, Masters developed a customizable and interactive maintenance readiness dashboard that is populated with real time data from GCSS-Army and analyzed and presented through the Microsoft Power Business Intelligence (BI) application (example provided in the below figure).

The results of optimized visualization over time helped drive significant changes in 18FA's maintenance program. In less than a year,

there were positive readiness impacts in numerous metrics, including reductions in both overdue wheeled services by 95% and reducing un-serviceable reports turn-in average turn-in time by 91%. This was not accomplished through "maintenance stand downs" or "surge maintenance" efforts, but rather through systematic changes driven by the unit's ability to see itself. Engaged leadership and exceptional management at the unit level made this possible. Data analytics and visualization gave a target for leadership to shoot for and metrics to measure, which contributed to the success.

"Data analytics is like the sand table before a battle," remarked Masters. "It takes all the inputs and

variables and provides the ability to build models to determine the outcome. Through data analytics, maintenance warrant officers can perform causative analysis through historic data and predict with a level of certainty the failure rate of equipment and the resources (soldiers, time, and parts) needed for future mission requirements."

This tool provides one example of how data analytics can help positively impact readiness and provide a sustainable and more predictable system for units. It is imperative that we take advantage of the opportunities offered through courses such as IB2 LOG and spread the knowledge throughout the operational force. Additionally, many of

these concepts are also being taught in the Ordnance Warrant Officer Advanced Course (WOAC) at the Army Logistics University (ALU) on Fort Lee, Virginia.

Did you know Department of the Army Civilians can earn the nationally recognized Master Logistician certification?

The Civilian Logistics Career Management Office (CLCMO) offers the Department of the Army Master Logistician Certificate (ALMC) program. Completion of the three-tiered program provides the Army with multifunctional logisticians who are well-trained and have operational experience in at least two of the three functional areas:

- Supply management
- Material management
- Transportation and distribution management

The ALMC program accreditation is with the American National Standards Institute (ANSI) and is nationally recognized. Upon earning the Master Logistician certificate, careerists will be able to use the "ML" designation.

Where We Are Going

The Army currently delivers world-class tactical and operational sustainment leaders. In order to generate forward momentum, we need to expand our breadth and depth of knowledge in big data analytics. We need to ask ourselves: How do we use big data and turn it into knowledge that a command-

er can use on the battlefield? Advancements in technology and the implementation of the Army's ERP systems—GCSS-Army, Logistics Modernization Program, GFEBS, etc.—have allowed Army logisticians unprecedented access to massive amounts of data. Our ability to find, analyze, interpret, communicate, and turn that data into knowledge will determine the level of competitive advantage we gain over our adversaries. The Army G-4 has implemented the logistics data asset management (LDAM) forum with several lines of effort to improve our systems and create a data-focused culture. ALU is leading the "Build Analytic Talent" line of effort and is developing courses to build this particular knowledge and skill set. Data analysis topics and techniques are also being incorporated into professional military education (PME) courses at all levels.

So, how are we preparing leaders to win on the battlefield?

Bottom Line

We need sustainers who can meet the demands of combatant commanders in time and space under dynamic conditions. We owe it to the nation to develop leaders throughout their career with the right knowledge, skills and behaviors to compete and win on the next battlefield. The institutional and operational training environments are important, but we need sustainment leaders that maximize self-development learning opportunities as part of the Army profession. Self-Development doesn't always come in structured programs,

but professionals seek opportunities to improve their craft while developing others. Engaged leadership provides the resources and tools necessary to allow leader development and talent management. Challenge yourselves, get after the professional rigor of institutional, operational, and self-development training environments, and spread the word to your Soldiers and leaders that opportunities exist across all domains. The investment on leaders will sharpen critical skills required to win against any adversary, at any time, any place.

Winning Matters!

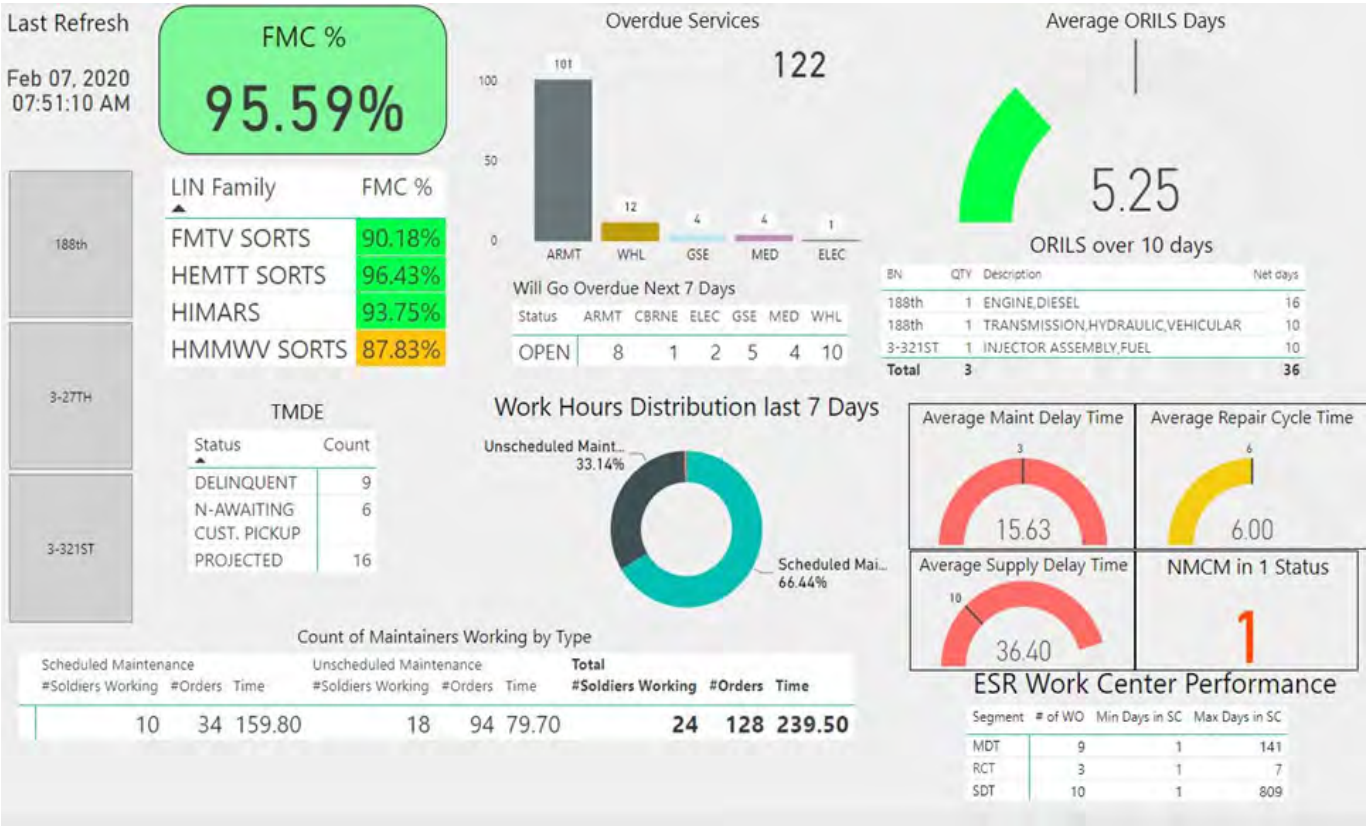
If you would like more information on these programs, please refer to the following points of contact:

Virginia Commonwealth University Master of Supply Chain Management: Carrie Vernon at carrie.vernon2.civ@mail.mil

Department of the Army Master Logistician Certificate program: Samantha Newman at samantha.newman3.civ@mail.mil

Industry Based Broadening Logistics Program (IB2): Army Civilians contact Ms. Samantha Newman at samantha.newman3.civ@mail.mil; military personnel contact Sgt. Maj. James Yuras at james.s.yuras.mil@mail.mil

Maj. Gen. Rodney Fogg, commanding general of Combined Arms Support Command, is a graduate of Quartermaster Basic and Advanced Officer Leadership Courses, Command and General Staff College, and the Army War College. He has a master's degree in logistics management from Florida Institute of Technology and a master's degree in strategic studies from the U.S. Army War College.



Chief Warrant Officer 4 Brian Masters developed a customizable and interactive maintenance readiness dashboard populated with real time data from Global Combat Systems Support-Army, and analyzed and presented through the Microsoft Power Business Intelligence application. (Courtesy graphic)



CHANGING TO 21st CENTURY SUPPORT WARFARE

The U.S. Army Finance & Comptroller Military Profession

■ *By Lt. Gen. Thomas A. Horlander*

Today's Army is undergoing the most significant transformational change since the 1970s. Every fiber of today's Army is changing, whether it is how we modernize for future warfare, train for a vast complexity of missions and combat environments, manage our people, or take care of our families. Few remember the days when the Army's five key weapons platforms (AH-64 Apache helicopter, UH-60 Blackhawk helicopter, M1 Abrams tank, M2 Bradley Fighting Vehicle and the PATRIOT air defense system) were shiny and new and Soldiers were doing physical training in combat boots. Those systems, while extremely capable and revered by our enemies for half a century, are now older and our peer competitors have caught up and, in some cases, surpassed some of the Army's current capabilities.

The Army has set a course for fundamental change in how we prepare and conduct war. As part of this process, Army Futures Command was established, and it realigned and integrated key components of the modernization continuum, nesting them into a single focused unity of effort that will accelerate and enhance the way we fight and equip our formations. To manage its people and their talents, the Army is transforming an Industrial Age Personnel Management System to an Information Age Talent Management System. To prepare for combat, the Army has refocused the enterprise from a singular focus on counterinsurgency operations in the U.S. Central Command area of operations to conducting large-scale combat operations (LSCO) and Multi-Domain Operations (MDO) against peer competitors, like Russia and China, while maintaining those competencies needed in the current fight in Southwest Asia.

Ongoing changes described above and those on the horizon should not be the only catalysts that drive change in our profession. While the U.S. Army Finance and Comptroller (FC) profession must change in order to support our commanders and remain a key and valued component of the joint force and the sustainment warfighter function, we must also embrace new competencies required by the Information Age. We must change or we will perish. To remain static in the 20th Century way of doing business is not an option. Our country and

our Army need us to be better. Better members of the sustainment warfighting function. Better stewards of the nation's fiscal resources. Better unified as a multi-functional, multicomponent (Active, National Guard, and Reserve) team that integrates the comptroller and financial operations competencies into a singular unity of effort that will optimize our contributions to the force and renders an even higher return on investment than what we currently have.

In the past 18 months, the leadership of the Army's FC profession has established a momentum for fundamental change and developed a framework to take our profession into the future. This requires a recalibration of the identity of the profession and a divestiture of the historic identity held by many that our main purpose to the Army is to be pay masters and manage military pay. As we all know, our profession has so much more to contribute to the warfighter.

The most important component to successfully changing any organization at any echelon is solid and talented leaders and Soldiers who, together as a team, support a singular unity of effort. Every leader and Soldier in our profession must embrace these transformational changes to our profession and focus on our future.

Progress to Date

So what have we done in the last two years? Thanks to the support and leadership of several key leaders across the enterprise: Effective Oct. 1, 2019, we changed the name of the profession and the branch to Finance and Comptroller to represent the true nature of our competencies and contributions to the force and to make clear to the whole Army that this profession covers a wide breadth of missions and functions.

1. Effective Oct. 1, 2019, we changed the name of the schoolhouse to the U.S. Army Finance and Comptroller School, again to represent the true nature of the school's mission and what it contributes to the Total Army.
2. In coordination with the Sgt. Maj. of the Army (SMA), we have established the senior sergeant

major (SGM) position for our profession (effective Oct. 1, 2019)—U.S. Army Finance and Comptroller Sergeant Major—a nominative assignment assigned to the Army’s senior military finance and comptroller position, a 3-star general officer. The SGM filling this position will serve not only to provide advice to the FC senior leaders across the enterprise, and provide guidance and leadership to the Army’s FC noncommissioned officer (NCO) and enlisted corps, but will advise the SMA on all things about our profession to include helping manage the talent of our senior NCOs.

3. We have started rewriting our doctrine to lay out how

we support how the Army fights and sustains the warfighter in LSCO and MDO in joint environments.

4. We have started

updating our force structure to better

support LSCO and MDO. Our current force structure of financial management support detachment, financial management support unit, and financial management support center is confusing and suboptimal. We are seeking to replace it with companies, battalions, and a colonel-/SGM-level element. We need our formations to be like Army formations across the force with captains and first sergeants at the company level, lieutenant colonels and command sergeants (CSM) major at the battalion level; and colonels and CSM/SGMs at the 06 level. This is a difficult task to accomplish; but this is the end state we must achieve to reduce confusion, maintain relevance, and support our commanders.

5. We have changed our core competencies to include:

- Counter threat financing
- Big data analytics
- Auditing

- Fiscal stewardship

And over time, when the Army has fully fielded the Integrated Personnel and Pay System–Army (IPPS-A) and as the human resource profession has assumed full responsibility for Soldier pay, we will fully divest ourselves of the military pay competency.

6. We have started changing how we employ our NCO and enlisted Soldiers, placing them in positions of greater responsibility across our G8/Comptroller formations, starting at the lower ranks. We owe this to our commanders and the Army. We also owe this

to our FC Soldiers who want to serve in our Army and make a valuable contribution to our country.

7. We have aligned the Army’s only FC general officer command—U.S. Army Finance Command—under

Army Materiel Command (AMC) to ensure we optimize and stay nested in the sustainment warfighter function, which is the responsibility of the AMC commanding general.

The Way Ahead

Change is hard at any level. It is especially difficult to simultaneously exact change at multiple levels. Transformation is exactly that, making a series of integrated changes that nest with one another to achieve a more optimal solution given a relatively fixed amount of resources. I have a full appreciation for the difficulty of making such a profound change to our profession but the future of our Army and our profession depends on it.

The next two years will be especially important to the joint force and for our Army on several fronts, including the transformation of the FC operations that support our commands and warfighters. The Army’s FC school commandant is leading the rewrite of our doctrine and the

forthcoming joint publication for sustainment operations. As we mature our four new core competencies, we will change what our officers, NCOs, and enlisted Soldiers will learn in our schoolhouse. The force design updates to change our company- and battalion-level formations is currently in staffing at the Army level; this is a ‘heavy lift’ but this change is fundamental to our success in how we support our commands and the role and functions we have in the sustainment warfighting function. We are also working to have more NCOs and Soldiers in the G8/Comptroller shops to manage budgets and perform more comptroller functions at the higher echelons, like U.S. Army Forces Command or Headquarters, Department of the Army.

The road ahead will not be easy. There will be setbacks. There will be course corrections. There will be interim solutions. But Rome was not built in a day. We must do this. While transformational change is dauntingly hard, the alternative is to become irrelevant and extinct. One thing will carry us to the top of the mountain: you!

Every leader in the FC profession has a role in this. Every Soldier has a voice. We cannot let the fog of change blur our vision. Our country depends on our ability to manage its fiscal resources at the highest proficiencies of stewardship. This is the calling of our profession: to be the best stewards of the taxpayer’s dollars and provide our commanders and Soldiers the best support we can to enable the U.S. Army to fight and win today and tomorrow.

Lt. Gen. Thomas A. Horlander serves as the Army’s military comptroller and military deputy to the Assistant Secretary of the Army (Financial Management & Comptroller). He has held numerous financial management and comptroller positions at every level throughout his career in the Department of Defense. He holds several master’s degrees in various disciplines, is a U.S. Army master strategist and linguist, and has published numerous books and articles. He is a sitting member of the American Society of Military Comptrollers CDFM Certification Commission.

Featured Photo:
American dollars are stacked in the vault at Camp Arifjan, Kuwait, Feb. 4, 2020. On any given day, U.S. Army Financial Management Support Center Soldiers are responsible for disbursing and managing around \$80 million throughout the U.S. Central Command area of responsibility. (Photo by Master Sgt. Jonathan Wiley)



1st Lt. Clarita Aviles Baez, deputy disbursing officer, 469th Financial Management Support Center (FMSC), counts money in a vault at Camp Arifjan, Kuwait, Feb. 4. The 469th FMSC and 18th FMSC conducted a full inventory of cash in preparation for 469th to assume the mission of providing theater-level financial management support operations throughout U.S. Central Command area of responsibility. (Photo by Master Sgt. Jonathan Wiley)



Collaboration, Communication & Cooperation

An Interview with Retired Gen. Ann Dunwoody

■ *By Arpi Dilanian and Matthew Howard*

Spc. Joe Benjamin, assigned to Army Evaluation Task Force, 2nd Infantry Battalion, 5th Brigade, 1st Armored Division, briefs Gen. Ann Dunwoody, former commanding general, U.S. Army Materiel Command, on the capabilities of the unmanned aerial system at White Sands Missile Range, N.M. Now retired, Dunwoody was the Army's first female four-star general. (Photo by Lt. Col. Deanna Bague)

Throughout her nearly four-decade career, retired Gen. Ann E. Dunwoody transformed Army sustainment at every step of the way. Hailing from a family who has served the nation continuously since 1862, Dunwoody's oversight of sustainment operations from force deployment through equipment retrograde—among the largest in history—was instrumental to operations in the Middle East. A career logistician, Dunwoody served as both the Commanding General of Combined Arms Support Command and Army's Deputy Chief of Staff, G-4, before breaking the military's brass ceiling as Army Materiel Command's 17th commanding general. Here are her perspectives on the evolution of strategic readiness across the Army.

What is 'strategic readiness' and how did we improve across the Army during your time in uniform?

To me, strategic readiness is the ability of the Army's senior leadership to influence readiness. That means having the tools to give real-time, actionable situational awareness; and thus the ability to redirect supplies, equipment, and people based on changes in operational demand. We have come a long way from trying to manage an over \$400 billion dollar enterprise on spreadsheets and property books. With today's systems that give us real-time asset visibility and readiness status, senior leaders can make distribution decisions to get the

right stuff to the right place at the right time.

From the time I was a property book officer as a second lieutenant, my goal was to modernize the way we accounted for property. As a major in Operation Desert Shield/Desert Storm, I witnessed thousands of containers shipped into the area of operations without radio frequency identification (RFID). I watched supply sergeants work like junkyard dogs trying to find their equipment in the ports. Over 20,000 containers were shipped back to the U.S., unopened, because no one knew what was in them. While we were very successful, operationally, it was a very expensive way of doing business.

Technology has precluded the old way of reordering supplies "just in case." In the old days, information was power; today, shared information is power. Throughout the entire supply chain, leaders now have the power to make prudent, strategic decisions because they have confidence that real-time systems provide reliable information.

You put a lot of energy into advancing logistics automation. Can you discuss how these efforts improved strategic readiness?

My passion for logistics automation and modernization only strengthened after my experiences in Desert Shield/Desert Storm. At that time, everyone said we needed total asset visibility (TAV), that in-transit visibility (ITV) was a must—but

the Army never funded it. When deployed in support of Operations Enduring Freedom and Iraqi Freedom as the commander of 1st Corps Support Command, we weren't any better.

As I became the Army G-4, I made it my number one priority to get the automation for TAV and ITV. We started a campaign within the Pentagon and throughout the sustainment community, but it was hard. Parochialism and bureaucracy were constantly the enemy. However, our case became so compelling that we had the opportunity to brief then-Chief of Staff of the Army Gen. Peter Schoomaker and his "three kings"—the Army G-3/5/7, G-8, and budget officer. Schoomaker decided to make funding logistics automation a top priority for the Army; and that was the real beginning of our journey to fix an antiquated, manual system in favor of an enterprise approach to managing materiel.

Take Global Combat Support System-Army today, for example, and look how far we've come. We were able to adapt a commercial-off-the-shelf product into an integrated tactical logistics system to manage materiel across the Army. The result? Commanders now have unprecedented, near-real-time TAV to verify readiness and better inform decisions. The system is truly a game-changer in logistics; and as we look to the future, I hope Army Futures Command continues to build upon this progress and deliver on being the leading edge for modernization.

From your experience, are there any deployment lessons learned that apply to today's force?

From 2002 to 2004, I had the privilege of commanding Military Traffic Management Command—later Surface Deployment and Distribution Command—during the largest deployment of forces since World War II. We had the mandated mission to support the surge and redeployment by moving eight of our 10 divisions and a Marine Expeditionary Force, all within a 90-day window. I discovered early on we were very stove-piped as an organization and heavily dependent upon the mobilization of our Reserve capability. As

a result, we needed a new holistic strategic approach to the operation.

In a way, it was like conducting an orchestra: making sure every unit and organization across the entire global distribution network—whether Army, Air Force, Navy, or commercial—knew the challenge and understood their role in delivering mission success. The most helpful exercise in doing so was the development of a complete sync matrix that identified every node of the deployment and redeployment distribution process and the requirements to make this feat possible. We had visibility of every ship available, timelines of deploying and redeploy-

ing units, and the number of berths available for on-load and off-load.

Who would've thought we'd need to negotiate more berths with the Saudis, or believed the long pole in the tent for redeployment would be a shortage of wash racks? Construction of the matrix brought light to these gaps and allowed us to then communicate shortfalls to the commander of U.S. Transportation Command. This ensured we pushed to fix them in the distribution system and was critical to make the operation possible.

One of the biggest lessons we were able to fix was to start loading cargo



Gen. Ann Dunwoody, former commanding general, U.S. Army Materiel Command, salutes the American flag during the playing of the national anthem at her retirement ceremony, Joint Base Henderson Hall, Va., on Aug. 15, 2012. Dunwoody was the first female in the Army to achieve the rank of four-star general and retired after 38 years of honorable service. (Photo by Staff Sgt. Teddy Wade)

by brigade combat teams (BCTs). In the old days, we tried to maximize efficiency by putting all like items on a particular ship to optimize space. When we started loading vessels by BCTs, we caught a lot of grief at first because our stow factors were not as efficient. However, doing so made the life of the brigade commander a lot easier: they no longer had to search for various equipment off of multiple ships. This significantly reduced the integration time in theater. And as every ship delivered equipment, we also had to be prepared to fill it with a redeploying unit—no dead heading.

How do other Services come into play as we think about strategic readiness?

I'm a big believer in joint, and in collaboration, communication, and cooperation. Relationships are incredibly important, and each service has to understand what the others bring to the table: what capabilities they have to offer, and what they can provide in a theater. Building trust in these relationships helps eliminate fears that these are power moves, or that someone is more important than someone else.

While the Army fortunately has an incredible arsenal of logistics, at the end of the day, it's all about being able to leverage joint capabilities. And not just in the time of need; every day. That means planning together, training together, executing together, and making it

the way we all do business.

The idea of a Joint Logistics Command (JLC) has come up frequently, but throughout my career, was met with a lot of resistance. There is a perception this concept equates to loss of control and power to one service or another. But in my mind, I always believed the idea of a Joint Task Force could only mean goodness. Depending on whoever was leading a particular operation being conducted, shouldn't that service serve as the JLC with support from the other services?

Despite great resistance, in 2002 we were actually able to stand up a JLC in Uzbekistan. Because of the tremendous capability it brought

to everyone at the table—all Services—it became the go-to place to get stuff accomplished for everyone. As we look towards a more complex, multi-domain battlefield in the future, our ability to think joint, plan joint, and sustain joint will only become more important.

How important are exercises like Defender Europe 2020 for stressing the agility and responsiveness of the joint logistics enterprise?

My experiences in sustainment simulations and exercises, to include the old Battle Command Training Program, was less than complimentary. In those days, we spent a lot of time preparing and training, but the simulations wished away logistics. We never ran out of anything.

In the real-world calculations, there were often shortfalls in fuel, medical capability, or ammunition, all of which would have precluded mission accomplishment. They were simply wished away. As our training and exercises evolve, we have to ensure they are as accurate and realistic as possible when it comes to the area of logistics. Deep dives should be conducted into how joint logistics will be played out and executed so people can't try to game the system. These exercises should expose real-world strengths and weaknesses so teams can learn and, ultimately, be better.

What were some of the key attributes to your success that young sustainment leaders today can emulate?

I was blessed to serve with many talented Soldiers—both noncommissioned officers and officers—and civilians across the Army and the joint community. They made the unimaginable happen. Because of them, the logistics capability of our entire military today is unmatched and cannot be replicated anywhere in the world. With the right collaboration, communication, and cooperation, sustainment leaders bring full-spectrum logistics—everything from tactical support to the power of the entire industrial base—to the battlefield and to the warfighter.

Every day, think about what you can do to make a difference in the lives of our deployed men and women and their families, and for those under your leadership. We ask an awful lot of our Soldiers and families. They deserve your best effort. Take care of your teammates, if you are a leader, do what is best for your Soldiers to help them be successful. If they know you really care, they will do anything for you. If you aren't yet a leader, be a good follower and you will soon have that opportunity to lead.

Most importantly, live and lead by a higher standard.

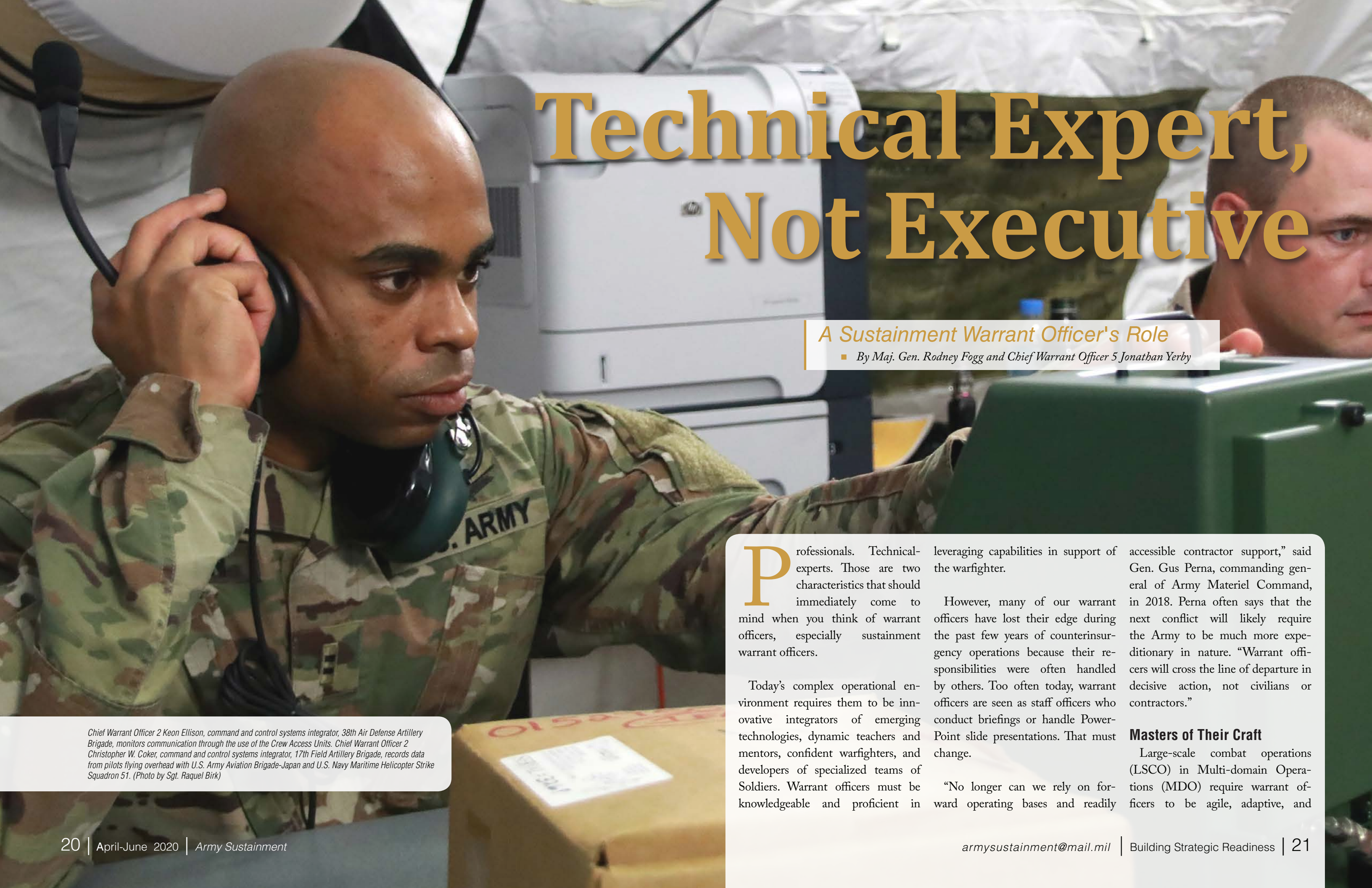
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Throughout the entire supply chain, leaders now have the power to make prudent, strategic decisions because they have confidence that real-time systems provide reliable information.



Retired Gen. Ann Dunwoody speaks with female Soldiers after delivering remarks during the 39th Airborne Award festival that celebrates all Airborne veterans, past and present, held at Fort Benning, Ga., on April 15, 2016. Dunwoody was the first female to command a battalion in 82nd Airborne Division, in 1992. (Photo by Spc. Zakia Gray)



Technical Expert, Not Executive

A Sustainment Warrant Officer's Role

■ *By Maj. Gen. Rodney Fogg and Chief Warrant Officer 5 Jonathan Yerby*

Professionals. Technical-experts. Those are two characteristics that should immediately come to mind when you think of warrant officers, especially sustainment warrant officers.

Today's complex operational environment requires them to be innovative integrators of emerging technologies, dynamic teachers and mentors, confident warfighters, and developers of specialized teams of Soldiers. Warrant officers must be knowledgeable and proficient in

leveraging capabilities in support of the warfighter.

However, many of our warrant officers have lost their edge during the past few years of counterinsurgency operations because their responsibilities were often handled by others. Too often today, warrant officers are seen as staff officers who conduct briefings or handle Power-Point slide presentations. That must change.

"No longer can we rely on forward operating bases and readily

accessible contractor support," said Gen. Gus Perna, commanding general of Army Materiel Command, in 2018. Perna often says that the next conflict will likely require the Army to be much more expeditionary in nature. "Warrant officers will cross the line of departure in decisive action, not civilians or contractors."

Masters of Their Craft

Large-scale combat operations (LSCO) in Multi-domain Operations (MDO) require warrant officers to be agile, adaptive, and

Chief Warrant Officer 2 Keon Ellison, command and control systems integrator, 38th Air Defense Artillery Brigade, monitors communication through the use of the Crew Access Units. Chief Warrant Officer 2 Christopher W. Coker, command and control systems integrator, 17th Field Artillery Brigade, records data from pilots flying overhead with U.S. Army Aviation Brigade-Japan and U.S. Navy Maritime Helicopter Strike Squadron 51. (Photo by Sgt. Raquel Birk)

innovative while physically being with our noncommissioned officers (NCO) and younger Soldiers. Commanders at all levels need warrant officers to identify problems as they arise at the squad level and recommend solutions to maximize combat effectiveness. Warrant officers should be teachers, coaches, and mentors to the Soldiers, NCOs, and officers around them.

For example, warrant officers need to be in motor pools trouble-

shooting equipment with NCOs and Soldiers, demonstrating their technical expertise and passing on their knowledge. Warrants should be the first thought—the “go-to person”—for our both enlisted and officers. The call of “Hey Chief, can you help me?” should be heard in motor pools instead of a Soldier asking for assistance from a logistics assistance representative, field service representative, or contractor.

The resurgence of technical pro-

ficiency in a warrant officer is paramount to the success of the Logistics Corps and the Army. Warrant officers are critical to our formations and must retake their place in our shops and motor pools; drive technological innovation needed to transform the Army. They must be part of the solution to our overreliance of contracted logistics in our units. Warrant officers must be engaged, invest in the profession, and develop future technical lead-



Chief Warrant Officer 3 Robert Hendrix, an engineer equipment maintenance warrant officer assigned to 1st Stryker Brigade Combat Team, 4th Infantry Division, fixes a power supply issue on an M123A4 MaxxPro Mine-Resistant Ambush Protected vehicle during motorpool maintenance at Fort Carson, Colorado, Feb. 10. (Photo by Sgt. Micah Merrill)

ers. Warrants should be on the very front edge of technology. They need to aggressively and continuously undertake self-development; demanding the additional training, if required, from the institution and themselves. Legacy thought processes and parochialisms need to be discarded.

Systems Integrators and Innovators

The Army is transforming from an Industrial Age-based institution to an Information Age-ready force. Warrant officers need to stay abreast of technology and help drive it in the direction we need.

Warrant officers must master both the systems and the associated data analytics to coach, teach, mentor, and advise others on how to improve readiness and predict requirements. Warrant officers are obligated to drive utilization of advanced technologies in innovations such as:

- Next Generation Automated Test System
- Additive manufacturing (3D printing)
- Tactical autonomous resupply
- Joint Battle Command-Platform mission command systems capable of displaying sensor data that provides commanders a common operating picture of the status of combat platforms, crews ready to launch, fuel, and ammunition

Warrant officers are critical to enhancing Army readiness and ma-

teriel management in the future. Maneuver commanders expect warrant officers to provide them the tools to make decisions.

Talent Alignment

The Army Talent Alignment Process applies to all warrant officers and Active Duty Officers Assignment Interactive Module Version 2 brings the Army talent management into the information age. Under the new system, an officer’s knowledge, skills, behaviors, and preferences are taken into account. It is crucial that warrant officers understand the process and participate. They need to help commanders with detailed duty descriptions of warrant officer positions for technical specialties as well as the unique knowledge, skills, and behaviors desired for these positions. Warrant officers should integrate into the process of interviews and assessments of the warrant officers in the marketplace. Participation, advice, and counsel are key components of the process. The Information Age-based talent alignment process ensures we continue to refine technical expertise, leadership development, and management skills through career progressive assignments and education.

Technical Leaders

Warrant officers must regain their title as the undisputed masters of their chosen trades and how they fit into an organization’s mission. Warrant officers are tactical-operational-level leaders who are experts in their units’ missions. They understand the commander’s

intent and priorities and how their specialties contribute to mission success. Warrants provide running estimates using the Army’s embedded Global Combat Support System-Army visualization capabilities to quickly and accurately provide commanders an understanding of combat power and the ability to positively affect readiness and battle-field decisions.

“Warrant Officers must take back ownership of their profession and reassume control as the Army’s technical experts, masterfully administering, managing, maintaining, operating, and integrating Army systems across the spectrum of Army operations,” Perna said.

As the Army transitions to LSCO on a MDO battlefield, warrant officers have never been needed more. It is essential that warrant officer’s capabilities and value they provide to commanders are firmly rooted in their specific technical specialty.

Bottom line: Warrant officers are the technical backbone of the Army, not its executives.

Maj. Gen. Rodney Fogg, commanding general of Combined Arms Support Command, is a graduate of Quartermaster Basic and Advanced Officer Leadership Courses, Command and General Staff College, and the Army War College. He has a master's degree in logistics management from Florida Institute of Technology and a master's degree in strategic studies from the U.S. Army War College.

Chief Warrant Officer 5 Jonathan Yerby is the chief warrant officer of Combined Arms Support Command. He holds an associate's degree in General Studies from Pierce College, Washington.



KNOW YOUR JOB

An Interview with Sgt. Maj. of the Army Michael Grinston

■ *By Sgt. Maj. Edward A. Bell, Arpi Dilanian, and Matthew Howard*

Since assuming duties as the 16th Sgt. Maj. of the Army (SMA), Michael A. Grinston has led the way to strengthen unit cohesion and build Army readiness. Across his thirty plus years in uniform, the career artilleryman has gained a reputation for being a Soldier's Soldier of the highest character. Grinston previously served as command sergeant major (CSM) of U.S. Army Forces Command (FORSCOM) and I Corps. Here are his thoughts on the role our noncommissioned officers (NCOs) play in building strategic readiness.

How does the backbone of our Army fit into the Chief of Staff of the Army's emphasis on building strategic readiness?

On one end of the spectrum there's strategic readiness and on the other tactical readiness. There's a bridge be-

tween the two, and NCOs, depending on the level, span both. We ensure our Soldiers are trained and ready to go, which leads all the way from tactical to strategic.

We're putting emphasis on strategic readiness and we often think this is a huge, overarching thing. As NCOs, we hear it a lot: You want to be a strategic thinker. But fundamentally, I need to know my job. It's the basis of everything we do. It boils down to an individual understanding their capabilities as an NCO especially when it comes to how we're looking at strategic systems, such as sustainment. If I don't understand my job, it could ultimately have a negative strategic effect.

The majority of our sustainment capabilities are in the Reserve components. Even just to mobilize for some sort of operation requires a lot of thought. If I don't know my job, I can't get mobilized, I can't get all the lift assets,

and so on. You can see how quickly the impacts amplify. It all flows from being ready as an individual up to the strategic level.

Can you elaborate on finding the right balance between strategic and tactical readiness?

It's a difficult balance. If I'm not grounded in the fundamentals of my core responsibilities of my military occupational specialty (MOS), it's difficult to communicate to the strategic level. So the balance starts with grounding yourself in your MOS; then you can start to understand the larger picture. On the other hand, if I only see the larger picture but I don't fundamentally know my job, I can't understand how my job impacts strategic readiness.

The balance also depends on level of responsibility. Take the 92-core MOS, for example. Anywhere at the battalion level and below, you really have to know the tactical readiness of your job. I'd probably want 80% to 90% of what you know to be focused within your MOS and 10% or 20% on how you fit into the larger picture. But if you're at the brigade level or higher, I expect you to understand how to bring all these pieces together to enable readiness.

The higher you go, we expect you to know less about your specific MOS. For that same 92-core MOS at the brigade level and above, I'd want 80% strategic readiness and only about 20% MOS; we have experts at the battalion level and below who know how to enable tactical readiness. At higher echelons, it's about how you integrate and synchronize this readiness to have a strategic impact.

Can you discuss some of the initiatives you are working on as we become a Multi-Domain Operations (MDO) ready force?

MDO is a concept where we really want to have long-range strategic effects. How do we support that? Again, if I'm not grounded in my job and don't understand my core responsibilities, it's hard to build an MDO taskforce. Whether it's public affairs or logistics, you have to be an expert in your job or you're not going to understand the effects in an MDO environment.

So how do we ground NCOs at their core level?

In recent years, we've put a lot of emphasis on how we get to the sergeants major level. We've looked at accessions.

We're going to build a 22-week one-station unit training. But what about our sergeants, staff sergeants, and sergeants first class? They are probably the most critical component of an MDO ready force. So I'm really trying to focus on enabling and empowering

our mid- to senior-grade NCOs.

Do we have the right level of tactical experience? Are we giving them all the information they need so there are no questions when they get put into an MDO environment?

These are the Soldiers who will be our subject-matter experts. If I turn to that logistics NCO, they have to be ready and able to give me that expert information because there may only be one in the formation.

How important is the sustainment community to our success on the battlefield?

On the maneuver side, we have a responsibility in

what we do. It's extremely hard and it's dangerous. But I can't do it without a logistician. We can't sustain ourselves; as a field artilleryman, someone has to bring me the ammunition. Someone has to make that round and it has to be shipped before I can even think about shooting it. If that process doesn't work, I don't care how good I am, I can't fire back and I will have no effect on the battlefield.

Understanding the whole process is critical. You don't want any lulls on the battlefield because you didn't forecast the ammunition. So we train this, continuously, at our training centers. Without getting the entire supply chain system aligned in the proper way, no one can do their job. You can go back to any battle in history and see that without the beans, water, and bullets to sustain the troops, there wasn't a victory.

Especially for this organization, I really appreciate the hard work and dedication of our sustainers. A lot of

times the glory will go to the pilots flying the helicopter that comes in to save you and not to the person who maintained it. The actions of our living Medal of Honor recipients are unbelievable and heroic and cannot be replicated. But each one had to be picked up, transported, and treated; behind each was an army of logisticians helping.

As you engage Soldiers, what's on their minds in terms of future sustainment needs?

It depends on who you talk to. For Soldiers, the biggest concern is, "am I going to get the parts when I need them?" For logisticians, the concern is, "once I have the request, am I going to get the funds approved to order the parts?"

Fundamentally, I'd ask everyone to remember we're all logisticians at some point. It's not my job to produce the rounds or bring them forward. But fundamentally, you



Sgt. Maj. of the Army Michael Grinston talks with deployed Soldiers during a surprise visit with Chief of Staff of the Army Gen. James McConville to Al Asad Air Base, Iraq, Dec. 19, 2019. Grinston recognized the accomplishments of the Soldiers currently supporting Combined Joint Task Force–Operation Inherent Resolve. (Photo by Spc. Derek Mustard and Capt. Terry Williams)

can't order a part if you don't know it needs to be ordered. At some point in time, we all have to be invested in the sustainment process and can't rely on someone else to do it. Often there's a sense of "that's somebody else's responsibility," but it is our responsibility. Every person in our Army has a part in the sustainment process.

The other caveat for our logisticians is adapting to the Global Combat Support System-Army. Anything new is a challenge. We are absolutely going in the right direction as we change the system of record and how we process information, but it takes some time to work through all of the kinks. To our logisticians, keep an open mind and keep that momentum going.

How important is mastering the fundamentals when it comes to training?

It's absolutely critical to do the small things right and

have a system in place. I don't know if you're about to run out of fuel if you don't tell me. If you don't master that in training, what happens when you're deployed in a real world situation? If you run out of fuel, you can't move to your objective. You have to train as you fight and be able to sustain yourself.

It takes both sides. Sustainers need to be ready to push based on predictive analysis: You've been out there for a certain amount of time, according to my chart you should be ready for fuel and water. From there, how do I package that and get it there? If I need ammunition, because I'm in a hot environment right now, what does that package look like? Does it get dropped off by a helicopter? Is it in some sort of container delivery system bundle? Or something else? We have to practice all of this and master the fundamentals.

On the other side, our maneuver folks have to be able



Then Command Sgt. Maj. Michael Grinston, U.S. Army Forces Command, helps carry a tactical litter during physical training at Sadowski Field A, on Fort Hood, Texas. Grinston is now serving as Sgt. Maj. of the Army. (Photo by Sgt. Ryan Rayno)

to pull and order parts and supplies. We have to train it over distance and time so it becomes routine. I can't get to combat only to figure out that I don't know how to order what's required to make mission.

If we don't train both sides, none of this is going to work. If I bring you water and you need fuel, well... thanks. We've certainly done some heroic things in combat, but we can't just expect this epiphany to work itself out. It's critical we have good, disciplined systems in place that have been practiced in training.

Can you discuss how cohesion at the squad level will ultimately lead to a more ready Army at all echelons?

"This is My Squad" is something I'm incredibly passionate about and my favorite topic to discuss. Wherever I am, I ask, "Who's in your squad"? It's not just about an infantry squad; everybody has a squad. Who do you turn to when you want to talk to somebody? Who do you look after? The whole premise is a very different and positive way of looking at things.

If you have that personal pronoun—it's my squad—it means you have some ownership of it. When I know you're in my squad, I know you as a person; I know your spouse; I know your strengths and weaknesses, and so on. When I have all that working, if there's a change, I'll recognize it. The ultimate goal is going from compliance to commitment.

I want people who are committed to their squad and to their organization: If we're a strong, cohesive unit, we're well trained, highly disciplined, and fit. We work at that all the time and then we truly know each other. That commitment to something bigger than yourself—to the squad, to the Army, and to the higher goal—creates the readiness that each higher echelon builds upon.

If you get hurt, we're going to rehabilitate you because you're in my squad. If something happens, we're going to get it fixed because you're in my squad. We're all in. That's incredibly powerful and I truly believe in it.

There's nothing we can't do together. Nothing. I'm committed to my squad; are you?

What is the biggest lesson you've learned throughout your career?

Since I became SMA, I've put a lot of thought into that question. I recently read a book called "The Slight Edge" that centers on choices in life: To do or not do something. How do you stay committed to something for 32 years? That's my biggest lesson and really defines who I am.

Believe it or not, the higher you go in the Army, there are choices. I have a choice to get up and do physical training (PT) every morning; some people don't have that choice. When you have a choice to do something—and it's not just about PT—are you committed for the long term? The person that reaches FORSCOM CSM or SMA, they've been committed to something bigger than themselves for decades. Every day, they get up and they do PT; every day, they try to read something and make themselves better. Nobody comes to my house and says, "Hey, did you do your PT or read that?"

It sounds really simple, but to be committed to something when no one is watching, and to be disciplined every day for 32 years? That's the greatest experience and probably the hardest to articulate.

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Feature Photo: Sgt. Maj. of the Army Michael A. Grinston speaks with awardees of the Army's new Expert Soldier Badge (ESB) during the Eisenhower Luncheon at the Association of the U.S. Army Annual Meeting and Exposition, Oct. 15, 2019. (Photo by Staff Sgt. Kris Bonet)

Bounding Forward

Focus on sustaining an MLRS Battalion in a Contested Environment

■ By Maj. Jack H. Benford, Capt. Peter V. Christensen, and 2nd Lt. Pake Davis

The 296th Composite Supply Company (CSC), 553rd Combat Sustainment Support Battalion, 1st Cavalry Division Sustainment Brigade, conducts a Refuel on the Move (ROM) to support 2nd Armored Brigade Combat Team during Pegasus Forge IV training exercise held on Fort Hood, Texas, Feb. 2, 2019. 289th CSC petroleum platoon established the 16-point ROM in about 11 minutes and refueled 34 track vehicles in about an hour. (Photo by Sgt. 1st Class Ashleigh E. Torres)

As we continue to hone our skills for large-scale combat operations (LSCO),

there are several ways to sustain a Multiple Launch Rocket System (MLRS) battalion in a contested environment. This article offers lessons learned from sustainment operations and methods to improve a battalion's sustainment techniques during LSCO. Forward logistics must incorporate a 24-hour battle rhythm, refuel on the move that allows distributed expedient and secure logistics, and implement a resilient recovery plan in place to maintain momentum and surprise on the battlefield. Incorporating these elements sustains units for

longer periods and enables them to be successful; LSCO is a marathon, not a sprint.

67th Forward Support Company (FSC) conducted support operations for 2nd Battalion, 20th Field Artillery (2-20 FA), during a scenario-driven exercise named Operation BOBCAT, from October 29 to November 6, 2019. This field training exercise tested the FSC's ability to provide vital Class I (subsistence), Class III (fuel), Class V (ammunition), and maintenance support to enable 2-20 FA's success in LSCO. 67th FSC significantly exercised three main tenets of sustainment during the operation: Petroleum distribution, ammunition

distribution, and vehicle recovery, and follow-on maintenance.

ROM Operations

Per Army Techniques Publication (ATP) 4-43, Petroleum Supply Operations, refuel on the move (ROM) sustainment operations are primarily used to extend the time U.S. forces can spend on their objective. ROM sustainment operations criteria are:

- Location selection
- Reconnaissance
- Alternate locations
- Rehearsals
- Staging/Marshalling areas

Focusing on ROM selection criteria provides all leaders with a clear idea

Tactical patience, followed by an understanding of forecasting classes of supply, allows sustainment to be deliberate and support the mission and commander's intent.

of the plan and enables them to refine the plan before and during the operation. The distribution platoon conducted three deliberate ROMs during Operation Bobcat. The ROMs the FSC executed allowed the Battalion to understand the flexibility of forward logistics and the criteria that best suit a ROM.

Site selection is dependent on security, proximity from high-speed avenues of approach, cover and concealment, and freedom of maneuver within the site. Freedom of maneuver within the ROM location is a priority and must be considered when selecting the site, either through map reconnaissance or the preferred “on-the-ground” leader’s reconnaissance. These criteria must be identified during the reconnaissance prior to occupation. Leaders who are critical to a recon, and if the mission allows, are the distribution platoon leader, FSC commander, and an experienced 92F (petroleum fuel specialist). During a ROM recon, leaders must know the scheme of maneuver, Class III requirement, and Class V locations and segregation. Furthermore, key leaders must be present to consider command and control within the ROM while selecting the site.

Occupation is heavily reliant on establishing security and emplacing vehicles within the ROM site. Once security and the petroleum fuel site are established, the distribution platoon leader must conduct a rehearsal. Rehearsing the operation ensures that the operators distributing supplies know the plan and

are included in any of its refinement. This allows Soldiers executing the ROM to assist with traffic flow and security. Any changes to the plan must be relayed through the FSC commander for approval and sent through appropriate battalion communications channels. 67th FSC executed three ROMs, each time implementing lessons learned that provided 2-20 FA with vital Class III and Class V support. ATP 4-43 dictates that “resupply must be flexible and innovative,” allowing for maneuver forces to complete their mission.

Before discussing 2-20 FA BN’s lessons learned, ROM and Rearm, refuel, refit supply point (R3SP) are two different terms. R3SP includes Class I, Class III, and Class V, whereas what 2-20 FA BN conducted was a ROM with an added ammunition resupply point.

Incorporating lessons learned from the distribution platoon’s first ROM site, on their second ROM site, 67th FSC sharpened its knowledge of the ROM criteria. The success of the ROM operation is predominantly attributed to proper site selection, recon, and rehearsal. Our site selections afforded enough space for a staging area, refueling station, and enough room to add a Class V reload point before the marshalling area. The recon occurred during daylight and enabled the recon team, which consisted of all key leaders, to rehearse the operation prior to occupation. These key leaders identified potential friction points and discussed the flow of traffic inside the ROM, and

subsequently refined the plan as needed.

Incorporating command and control elements at the battalion level and within the ROM ensured smooth execution throughout the operation. 2-20 FA incorporated command and control elements at three levels: the battalion tactical operations center (TOC)/tactical actions center (TAC), the FSC TOC, and the distribution platoon leader. These three levels ensured that both Class III and Class V were tracked at all echelons. From the battalion TOC/TAC, the battalion ammunition noncommissioned officer (NCO), Fire Direction Officer, and S4 (logistics)—who were co-located—communicated over BN administration and logistics operation center (ALOC) frequencies for initial loadouts, changes due to planned fire missions, and intelligence reports from S2 (intelligence). Resupply occurred once ammunition numbers at the firing platoon level reached a certain threshold, mainly due to fire mission frequency and the FSC’s ability to sustain as far forward as possible. Whenever the firing platoons hit a 60% threshold on ammunition, the platoon leader notified their battery operations center (BOC), triggering a reload point designated by the S4 and confirmed by the FSC commander/TOC. Once reload was complete, the BN TOC/TAC updated their tracker and repeated based on fire missions. Refuel triggers were logistic status (LOGSTAT) based, meaning the batteries and company sent up reports twice per day. The S4 tracked fuel consumption and resupply

missions based on percentages given from the batteries (70% was the trigger for resupply).

ROM sites must incorporate ease of access from the staging area to the marshalling area. During this ROM, the distribution platoon established a reception area where the distribution platoon leader briefed conditions for success. Providing a basic layout and brief of the ROM site prevented congestion inside the site. The first station consisted of the Class III resupply. Three M978 Heavy Expanded Mobility Tactical Trucks (HEMTT) were spaced out fifty meters apart, staggered on the left along a gravel path to allow two vehicles to stage between fuel trucks. Additionally, the M978s pushed far enough off the route to allow vehicles to bypass the fueling station. By creating a bypass area, the ROM enabled freedom of maneuver for vehicles not receiving fuel and allowed easier flow of traffic. Freedom of maneuver afforded the distribution platoon the opportunity and space to establish a Class V reload point after the Class III resupply.

The distribution platoon established the class V reload point approximately 100 meters past the fueling station and off the main route for bypass purposes. This reload point consisted of live Multiple Launch Rocket System pods. Per ATP 4-35.1, the live pods needed to be stored 163 feet away from any habitable area. In order to prevent any catastrophic losses in ammunition or fuel, we decided that the 100-meter distance between the fuel trucks and the live

pods, and we also established an additional supplementary route for the Class V reload point. Including an ammunition reload point into the ROM reduced the personnel required to run two separate points during the operation to distribute supplies and additional security for the ROM.

Security at the ROM addressed three aspects: Securing all high-speed avenues of approach where the ROM was established, the semi-open terrain surrounding the North side of the ROM, and the high ground located to the West and Northwest. The distribution platoon leader emplaced two M240B crew serve weapons at the entrance and exit of the ROM, while the platoon sergeant identified sectors of fire for each vehicle. Once the platoon sergeant collected sector sketches, both he and the platoon leader refined the security plan by emplacing a squad of eight Soldiers near the entrance as the quick reaction force should the ROM get attacked. The platoon sergeant then occupied the exit of the ROM to ensure all areas of the ROM had platoon leadership control. Once occupation and security were established, each Soldier was briefed on the challenge and password, aid and litter teams were identified, and Soldiers were notified of markings inside the ROM. Communications were relayed on the platoon’s frequency between the platoon leader and platoon sergeant.

Cross-training Sustainment MOSs

On the battalion’s third ROM operation, based off commander’s guidance to increase the platoon’s

ability to operate on a 24-hour battle rhythm, the distribution platoon cross-trained MOSs of Soldiers outside of their primary MOS, specifically 88M, 89B, 91B, and 92F. The distribution platoon certified two alternate ammunition noncommissioned officers, which established work/rest cycles and enabled safe 24-hour ammunition operations. Furthermore, it enabled each NCO more time to cross train their squad members and build depth.

The distribution platoon also established several reload points in support of the battalion during Operation Bobcat. The distribution platoon's 88Ms (Motor Vehicle Operators) and 92Fs (Petroleum

Supply Specialists) cross-trained on tasks outside of their MOS to enable 67th Forward Support Company's flexibility to accomplish its mission. Concurrently with the ROM, LRP cross-training Soldiers in tasks outside of their MOS promoted mission success, healthy work/rest cycles, and provided Soldiers the opportunity to learn skills they would not normally learn in their current MOS.

Recovery Operations

The maintenance platoon also sharpened their recovery skills which increased speed on the battlefield and ensured mission success during Operation BOBCAT. By cross-training and utilizing available equipment and personnel, the

maintenance platoon met their vehicle recovery mission. As per field manual 4-30.31, self and like recovery are the first course of actions selected to maintain speed on the battlefield and allow the maintenance teams, collocated with the firing batteries, more time to troubleshoot/repair and reach a FMC status. Most Soldiers outside the maintenance field do not understand the different types of towing equipment required for use on different vehicles, thus creating problems for recovery. By setting aside time for non maintenance Soldiers to practice vehicle recovery under the supervision of 91-series mechanic NCOs, we can identify and fill equipment shortages based on recovery needs and increase unit



Petroleum supply specialists, assigned to 289th Composite Supply Company, 553rd Combat Sustainment Support Battalion, 1st Cavalry Division Sustainment Brigade, perform Refuel on the Move (ROM) to support 2nd Armored Brigade Combat Team during Pegasus Forge IV on Fort Hood, Texas, Feb. 2, 2019. ROM enables maneuver units longer operational reach and provides combatant commanders battlefield endurance during long-distance movements. The 289th CSC petroleum platoon established the sixteen-point ROM in about 11 minutes, then refueled 34 track vehicles in about an hour. (U.S. Army Photo by Sgt. 1st Class Ashleigh E. Torres)

effectiveness in the field through streamlining the recovery process.

Throughout the operation the battalion overcame two recovery challenges. The battalion only had two M88 Hercules Armored Recovery Vehicles and a shortage of 91Hs (Tracked Vehicle Repairer) in the headquarters maintenance section. In order to overcome these challenges, we utilized our M984 wheeled recovery vehicle to recover tracked M1068 Combined Arms Battalion Mobile Tactical Command Posts, both of 67th FSC's M88s were forward and directly supported the two firing batteries. This meant that two-wheeled mechanics conducted recovery procedures for a tracked M1068s with their M984 Heavy Expanded Mobility Tactical Truck, which is generally outside the scope of their MOS. Due to the team's experience in a maintenance support team (MST), they knew the correct procedure for removing the prop shafts to tow the M1068. In general, a wheeled wrecker can pull a tracked vehicle, however a tracked wrecker can only recover a tracked vehicle, because of turning radiuses. Cross training is also often a result of absorbing the information from being around it; however, incorporating it deliberately into our training plan created a resilient recovery plan and

increased our ability to support the battalion and maintain speed on the battlefield.

The second recovery challenge came from retrograding recovered vehicles. Every effort should be made to repair vehicles at the lowest level. In order to support ongoing operations

and minimize negative impacts on maintenance equipment and personnel, it is important to clearly establish what events will trigger retrograding a piece of equipment, and where it will be retrograded to. The decision must be deliberate and timely. If the equipment can be repaired within a specified time frame, it can be fixed on site at the Battery Maintenance Control Point (MCP). If it is determined that it cannot be fixed within a given time frame, then the equipment can be retrograded to the rear to be secured. In a theater of operations, this would be the Brigade Support Area (BSA) where the BSB would be able to provide a higher level of maintenance support.

Retrograding vehicles to a higher level of maintenance is important to ensure recovery assets are not occupied with towing vehicles that will not be able to move under their own power for the duration of the operation, preventing them from conducting follow-on recovery missions. Retrograding vehicles either to a battalion MCP or another echelon frees recovery assets and provides the battalion with speed and the necessary resources to continue its mission and should only be used as a last resort. However, the downside to retrograding back to the battalion MCP exhausts personnel and vehicles until the downed vehicles are fixed and sent back to the unit. This process can be time consuming and potentially hinder unit abilities during LSCOs.

Conclusion

Forward logistics must incorporate a 24-hour battle rhythm, ROM's which

allow distributed expedient and secure logistics, and a resilient recovery plan in place to maintain momentum and surprise on the battlefield. 2-20 FA successfully accomplished its mission during Operation Bobcat due to the sustainment lessons learned and techniques implemented by 67th Forward Support Company; primarily the practicality in cross training Soldiers in different MOSs, effective refuel-on-the-move operations, and vehicle recovery methods. In contrast, an FSC with additional personnel and equipment could use a different method. Such as manning the Headquarters, Headquarters Battalion with a dedicated tracked and wheeled recovery team to only conduct recovery and not conduct maintenance, this could expedite recovery and maintenance operations. However, if a battalion is operating with reduced personnel and equipment, they can easily utilize these methods described to overcome challenges they confront in both training and operational environments.

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DEPLOYMENT READINESS INCLUDES EMPLOYMENT

Employed Troops Essential to Strategic Readiness

■ By Col. Ronnie Anderson, Maj. Rich Martinez, and Capt. Eli Rothblatt

In April 2003, 608th Ordnance Company (Ammunition) arrived in Kuwait and retrieved their rolling stock equipment from the seaport of debarkation (SPOD). They were task-organized under 3rd Infantry Division and immediately sent into their formations to support the initial attacks in Iraq. The company had been allocated to the division with one platoon supporting each brigade and the headquarters and one platoon supporting the main support battalion, as they were designed. Upon arrival at the SPOD, the unit had less than 72 hours to prepare to cross the berm into Iraq. With our experience as reference and the context of future large-scale combat operations (LSCO), it is more important than ever to consider strategic readiness as more than the deployment process itself, but rather ending when our units are employed into the theater of operations.

As written in Field Manual 3-0, Operations, “Speed is paramount; force projection is a race between friendly forces and enemy or adversary forces. The side that most rapidly builds combat power can seize the initiative.” Deployment readiness includes routine operations related to commander’s discipline programs, the deployment process, and the ability to rapidly enter the fray in the formation needed to enable operations. Leaders should develop readiness for deployment (getting *to* the fight) and prepare their subordinate platoons, sections, and teams for employment based on their doctrinally allocated mission (getting *into* the fight) in order to rapidly generate combat power and join the fight. Many companies will be employed by allocating a platoon, section, or team to a supported unit just as Field Feeding Teams support functional brigades and as Heavy Equipment Transport (HET)

companies may allocate a platoon to an Armored Brigade Combat Team.

Force Projection is the U.S. Strategic Advantage

The importance of deployment readiness as a strategic advantage is captured in the introduction of U.S. Army Training and Doctrine Command Pamphlet 523-3-1, The U.S. Army in Multi-Domain Operations (MDO). It states, “As a nation, we rely on our ability to project power from the Continental United States and to integrate the actions of the Joint Force globally. Our adversaries seek to fracture this capability and erode the United States’ strategic advantage—the greatest challenge to U.S. security, power, and influence to emerge in the 21st century.” Our strategic advantage is rooted in the basics of daily deployment readiness operations, which should be informed by how a unit is employed and

can be integrated into unit training, supply, maintenance, and administrative operations. The Command Deployment Discipline Program establishes the minimum requirement and metrics that are applicable to the entire force; but commanders are encouraged to tailor, and add to, this program to meet their specific mission needs. Commanders at all echelons must treat deployment readiness like combat readiness, ensuring all metrics are above an acceptable state.

Preparation for Future Large-Scale Combat Operations

To demonstrate why readiness for deployment and employment matters, we refer back to the MDO concept and a commander’s charge in Army Regulation 600-20, Army Command Policy. “In the MDO construct, expeditionary forces must be able to deploy, employ, and gain a position of relative advantage within days or a few weeks of alert. “The implication here for all unit commanders is the reinforcement of their responsibilities explicitly explained in Army Command Policy: The commander is responsible for ensuring “both Soldiers and equipment are in the proper state of readiness at all times” and developing “disciplined and cohesive units sustained at the highest readiness level possible.” Readiness levels are truly tested beyond home-station missions and preparing for deployment as a strategic move.

In 1st Armored Division, units periodically conduct deployment readiness exercises. These events challenge units to efficiently and

effectively move their personnel and cargo from the unit staging area to the strategic deployment node; pass inspections by either the local Movement Control Team or Logistics Readiness Center; and be loaded onto a mock-up or actual transportation mode.

On March 11, 2019, 1st Battalion, 6th Infantry Regiment, was in the middle of gunnery exercises in El Paso, Texas, when the call came in from division headquarters to deploy to Poland. A week later, 1,500 brigade Soldiers were bound for training grounds in western Poland for a deployment reminiscent of the Cold War, when no-notice mobilizations were a main feature of the military’s strategy for countering the Soviet Union. Commanders have to understand, anticipate, and set conditions for how their unit is most likely to be deployed and employed.

Commanders’ considerations of how the formation is employed drives discussions about how equipment is stored, maintained, sub-hand receipted, and packed. The speed of which we are able to employ our forces matters nearly as much as how fast we can move them. There may no longer be lengthy build-up periods or deterrence operations as units react to competitor aggression. In MDO, “Army expeditionary forces deploy from the homeland and other regions using joint strategic transportation and arrive at multiple points in theater, proceed forward along multiple routes, and then occupy dispersed tactical assembly areas within range

of enemy anti-access and area denial systems.” Units may not be afforded the time or uncontested space to unpack large containers and reconfigure into the desired equipment package needed for the mission. Unit commanders should start suborganizing equipment (and hand receipts), containers, prime movers, secondary loads, and ancillary equipment while at home station; and reinforce this alignment during training. Unit Movement Officers must ensure their due diligence in building plans in the Transportation Coordinators’ Automated Information for Movement Systems Version II (TCAIMS-II) that reflect their organization equipment list and later their unit deployment list.

One example for consideration is the modular ammunition ordnance company employment. A modular ammunition ordnance company normally consists of a headquarters platoon and three modular ammunition platoons, with the command and control capacity to expand to five. The modular ammunition ordnance company also includes a modular ammunition rough terrain container handler (RTCH) augmentation team, which may also be expanded as required. Due to the modular construct of the modular ammunition ordnance company, each platoon assigned can independently deploy and execute ammunition operations. An ammunition ordnance platoon is an element with a three-person leadership team, ammunition inspectors, a stock control noncommissioned officer, ammunition handlers, and a RTCH team.



Soldiers assigned to 606th Movement Control Team, 142nd Combat Sustainment Support Battalion, 1st Armored Division Support Brigade, scan containers with handheld devices at Port of Corpus Christi, Texas, in support of 1st Armored Division Combat Aviation Brigade's redeployment from Afghanistan. (Courtesy photo)

Each modular ammunition platoon can be employed in separate locations to conduct port operations, singularly execute ammunition supply point activities, or combine platoons to facilitate corps and theater storage area munitions operations. Each platoon requires the capability to communicate with the company leadership team via voice and data despite geographic dispersion. Aligning personnel is relatively straight forward for the equipment operators. However if the platoons are dispersed, the commander should ensure supply, maintenance, movement, and administrative capabilities exist with that platoon. It would increase unit velocity in building combat power to maintain these capabilities on a daily

basis at home as we would in the employed environment.

The modular ammunition ordnance commander should routinely sub-hand receipt the platoon equipment to the platoon leaders, who will further sign the equipment to subordinates in order to maintain accountability. An overlooked area in several units is aligning, sub-hand receipting, and packing ancillary equipment such as weapons, night vision devices, tents, generators, radios, ammunition tool kits, and battle command systems. Packing sub-echelon equipment as its employable module using triple containers or quadruple containers, as opposed to one 20-foot

military-owned, demountable container—known as a MILVAN—for company-level equipment movement and storage facilitates rapid employment of the modular ammunition platoon. Storage, accountability, and transportation of equipment aligned to mission sets reduces reconfiguration actions at the intermediate staging base or tactical assembly area.

The additional step that saves time and frustration in the deployed environment is requesting derivative unit identification codes (UICs) at home station; and aligning the storage locations (SLOCs) and UICs in Global Command Support System-Army to the element or unit most likely to be operating semi-independently.

The platoon must ensure they maintain 30 days of shop stock listing and bench stock listing while sustaining monthly inventories and ensuring stocks are mobile for rapid movement. This enables maintenance management, repair parts flow, and supply accountability at the lowest level.

Employment Readiness Applies to All Sustainment Formations

Elements of a sustainment brigade deploy differently than brigade combat teams (BCT). BCTs normally move as entire units. The organic brigade support battalions (BSB) and forward support companies (FSC) also conduct strategic movements as entire units. However, even though an FSC deploys as a company, it still gets further segregated even in a battalion fight. The FSC has company train command posts (CTCP) and unit maintenance collection points (UMCP) that may not be collocated. The CTCP's vehicles, tent, generator, radios, and additional support equipment can be hand receipted to the platoon leader who is going to be in charge of the CTCP. Everything can be staged together in the motorpool for efficient load out. In the same manner, UMCP equipment including the M88 Hercules armored recovery vehicle, toolboxes, Command and Control Vehicle, weapons, radios, tents, generators, and diagnostic equipment can be on the maintenance platoon leader's hand receipt; and appropriately stored and staged for how it will be deployed and employed.

Further back on the linear battlefield, the BSB operates the field trains command post, ambulance exchange points (AXP), and the brigade support area. All three units may not be collocated. Thus, each of their equipment sets should be hand receipted to the correct people in the task organization for each activity. Each activity's equipment set should be parked and staged together in the motorpool for efficient load up and roll out to be employed in the field. For example, the ambulance platoon leader should sign for all the AXP equipment which should be staged in the motorpool with the two ambulances. Every mission won't be the same, but staging vehicles and equipment for a roll out off a baseline with consideration for how they are actually employed in the field is much easier to tweak for missions than if they're assigned and staged without thought to how the equipment will actually be employed. The concept of preparing readiness for employment can be applied to all sustainment formations of all functions.

Rapid Employment is an Operational Advantage

Our military culture today is a by-product of persistent limited contingency operations spanning over 18 years that are heavily dependent on theater-provided equipment. Historically, battlefields in LSCO have been more chaotic, intense, and highly destructive than those the Army has experienced in recent decades. It is imperative to consider strategic readiness as more than the deployment process, but as an operation ending when our units are employed into the

theater of operations. The Deployment Process Modernization Office's Deployers Toolbox (found on the U.S. Transportation Corps website) is a dynamic online source of deployment and redeployment information and products offering the most current handbooks, pamphlets, standard operating procedures, lessons learned, best practices, and trends. The Sustainment Virtual Playbook, maintained on the Combined Arms Sustainment Command Sustainment Unit One Stop website, also provides an overview of the difficult tasks conducted during Reception, Staging, Onward Movement, and Integration (RSOI) to shape commanders' understanding of the initial phase of employment. Deployment readiness is an initiative that has to be practiced and monitored every week. It capitalizes on routine operations related to commander's discipline programs, the deployment process, and the ability to rapidly integrate into theater operations in the formation needed to enable operations and sustain readiness.

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Force Projection

Port Diversification Generates Strategic Readiness

■ By Maj. Gen. Stephen E. Farmen

If and when America goes to war, we will fight by, with, and through seaports. These critical nodes at home and abroad are key to projecting the nation's decisive military force, 85% of which is based in the homeland. The Military Surface Deployment and Distribution Command (SDDC) directly builds strategic readiness through a seaport diversification strategy that identifies and exercises mission critical seaports for brigade-sized deployments in preparation for large-scale combat operations around the world.

By expanding the portfolio of viable seaports, SDDC provides our military leadership with strategic options to project the force, deter our adversaries, and show commitment to our allies and partners while enabling the Army to rapidly deliver the decisive force capable of fighting and winning anywhere in the world.

In the words of Gen. Gus Perna, commanding general of U.S. Army Materiel Command, "In war, the difference between being ready and reacting will be measured by the number of lives lost. We must hold

Cpl. Dustin Jobe, noncommissioned officer in charge of lifting provisions, 647th Expeditionary Terminal Operations Element, U.S. Army Reserves, supervises the lifting of an M1A2 Abrams Tank assigned to 2nd Armored Brigade Combat Team, 1st Cavalry Division, over the pier ledge at the Port of Vlissingen, Netherlands, to be lowered onto a low-barge ship for transportation to another location within Europe, Oct. 12, 2019. (Photo by Sgt. Kyle Larsen.)

ourselves accountable to be ready.”

Therein lies the true profit margin of strategic readiness: We must be ready. We must turn a focused lens toward our military’s strategic readiness. If we expect to maintain our strategic advantage over our enemies, we must expand our options to take the fight to the enemy. Our nation’s readiness for war is critically dependent on our ability to project our forces across the Atlantic and Pacific oceans. To do this, we need ports to move equipment to the point of need.

While strategic airlift remains essential to quickly move personnel and small equipment packages, over 90% of military cargo in our war plans will transit via sealift. Airlift cannot match the shear capacity of sealift. One of our largest cargo vessels, a large, medium-speed roll-on/roll-off, commonly referred to as an LMSR, has the cargo capacity equivalent to approximately 400 C-17 aircraft. This reinforces the fact that, for any major conflict, we must fight by, with, and through seaports. Unfortunately, many of these strategic nodes have not seen military cargo in over a decade. We must continue to open the aperture and expand our competitive space at home and abroad to enhance readiness and keep our enemies guessing.

Gen. Stephen Lyons, commander, U.S. Transportation Command (USTRANSCOM), said during a recent visit to SDDC headquarters, “Warfighting readiness is our number one priority. We will maintain the global deployment networks, ready mobility capacity, and global command and control necessary to generate an immediate force; and seamlessly transition to a fully mobilized Joint Deployment and Distribution Enterprise to project a decisive force when required.”

Executing a vibrant seaport diversification strategy is crucial to maintaining these global deployment networks and projecting the decisive force. As Lyons commonly states, it is the nodes and the networks of the Joint Deployment and Distribution Enterprise (JDDE) which are the true strength and power of USTRANSCOM. Seaports, both in the U.S. and abroad, are key terrain for SDDC and our national security. We must own and dominate this space.

By further exercising this key terrain across all geographic combatant commands, we not only demonstrate our ability to rapidly deliver forces to the fight anywhere in the world, but we also show unwavering commitment to our allies and partners.

We must turn a focused lens toward our military's strategic readiness. If we expect to maintain our strategic advantage over our enemies, we must expand our options to take the fight to the enemy.

Port diversification produces several tangible and intangible positive outputs, such as sparking infrastructure investment at the ports and within the intermodal networks that feed the ports and take cargo inland; identifying port-specific requirements; gaining experience for future missions; and forging new relationships at the ports and with commercial partners who operate there. These outputs are powerful and generate strategic readiness, ensuring our first meeting engagement does not occur during a crisis.

While SDDC’s Transportation Engineering Agency conducts regular infrastructure assessments of our strategic seaports, there are always intangibles that can only be revealed and exercised by projecting combat forces through the nodes. A brigade-sized deployment can consume months of deliberate planning. The movement becomes more complex when deploying through untested seaports. That requires new relationships to be forged, recons to be conducted, and deployment rehearsals executed.

Over years of steady overseas unit rotations, the JDDE has made regular use of reliable seaports through which we deploy the vast majority of our combat power. A few examples include: Beaumont, Texas, in the Gulf; Charleston, South Carolina, on the East Coast; Bremerhaven, Germany, in Europe; and Busan in Korea. Over time, we have built notable efficiency and familiarity across these strategic nodes and their associated routes and infrastructure; however, their consistent use also makes them prime targets for conventional disruption and cyber tactics which makes us less flexible for projecting forces at scale. To maintain our strategic edge over our adversaries, we must play the long game by choosing to expand our portfolio of viable seaports over the immediate convenience of familiarity.

The good news is we are getting a lot of practice and opportunities to pressure test multiple ports, both inside and outside the continental U.S., to expand our competitive space, generate dynamic force employment options, identify vulnerabilities, smartly invest to mitigate risk, and form the relationships, partnerships, and friendships at all of these nodes so we can move at the speed of war and speed of trust. More than 40 brigade-sized elements will deploy over the Atlantic and Pacific Oceans in 2020. This rate has increased annually since 2014 as the enterprise returns to a culture of deployment readiness by directing units to deploy with their own equipment.

In 2019, the enterprise deployed units through more than a dozen previously untested seaports, the trend will continue in 2020.

At the operational and tactical levels, flexibility and readiness must be emphasized. Leaders can no longer assume their units will deploy via the same seaports year after year. The upfront cost of time and energy involved in diversifying seaports will pay dividends through the strategic effect and muscle-memory built over time.

Across the deployment enterprise, senior leaders must be prepared to support the use of alternate seaports as we continue to deploy forces in support of combat and

training operations. Using these nodes tests our ability to execute operational plans while also building tangible investments and relationships when executed in conjunction with our global partners and allies. We continue to get great support in operationalizing our port diversification strategy from U.S. Forces Command as we work together to enhance strategic readiness by looking out six to 24 months in our planning.

Through seaport diversification, SDDC rapidly delivers the Army’s credible and capable strategic land power to combatant commanders to prevent conflict, shape the environment, and win decisively. We build trust and assurance with our partner nations and deter our enemies by ensuring that our ability to project forces at the time and place of our choosing remains unmatched. In great power competition, speed matters—to win we must move at the speed of war, speed of assembly, speed of documentation and speed of trust. A vibrant port diversification strategy generates strategic readiness and keeps us in the right boxer stance to ensure Dynamic Force Employment and to ensure, when the time comes, we move at the speed of relevance! As former Defense Secretary James Mattis said during his visit to USTRANSCOM, “If you cannot move, you are not lethal.”

As we continue to send America’s men and women overseas into harm’s way, we maintain an inherent responsibility to collectively prepare for America’s worst day. The only way to project our decisive force is by, with, and through our strategic seaports. By diversifying our port usage now, we generate strategic readiness for tomorrow.

Maj. Gen. Stephen E. Farnen is the 21st commanding general of U.S. Army Military Surface Deployment and Distribution Command, the Army Service Component Command to U.S. Transportation Command and a major subordinate command to U.S. Army Materiel Command. He graduated from University of Richmond, Richmond, Virginia, in 1986 with a Bachelor of Arts in History and was commissioned into the Transportation Corps. He holds a master's degree in National Security and Strategic Studies from the Naval War College. His military education includes the Transportation Basic and Advanced Officer Leader Courses and the U.S. Naval Command and Staff College. He completed a Senior Service College Fellowship as the first military fellow at Massachusetts Institute of Technology's Center for Transportation and Logistics.



Soldiers assigned to C Battery, 2nd Battalion, 82nd Field Artillery Regiment, 3rd Armored Brigade Combat Team "Greywolf," 1st Cavalry Division, disassemble a breech in a Paladin self-propelled Howitzer during Sergeants Time Training, July 25. Greywolf Brigade is deployed to Korea as part of normal rotation of forces to support U.S. Allies on the Korean peninsula. (Photo by Capt. Scott Kuhn)

BUILDING A 10-20 FLEET

*Enable Readiness and Lethality with a
Deliberate Leader Development Methodology*

■ *By Maj. Allen Trujillo*

The 3rd Armored Brigade Combat Team (ABCT), 1st Cavalry Division (3/1 CD), known as "Greywolf," has transformed its operational readiness to more than 95% on combat platforms, resulting in nearly all of its M1A2 system enhancement package tanks and M2A3 Bradley infantry fighting vehicles arriving at combatant commands ready to fight and win.

Maintaining a high OR rate in an ABCT is challenging under the Army's Sustainable Readiness Model (SRM). Units often struggle to navigate the uncertainty of a high operational tempo, personnel, and leadership changeovers, aging systems, and the competing demands that consume Soldiers' time. The greatest challenge is the limited experience with and working knowledge of Global Combat Support System-Army (GCSS-Army). Critical maintainers assigned to ABCTs often arrive with no prior experience in these formations, which exacerbates the existing knowledge gap. As a result, it is incumbent on the unit to develop a comprehensive leader development program that trains and certifies the entire brigade maintenance Enterprise.

Maintaining an ABCT fleet is challenging in the current environment; however, improving a unit's fleet to meet the Army's 10-20 maintenance standard is an even greater task. To achieve this task, leaders must become experts in the eight components of 10-20 outlined in Army Regulation (AR) 750-1, Army Materiel Maintenance Policy, paragraph 3-2.

The first step to build the culture and systems to achieve the 10-20 maintenance standard is understanding the requirements. Once all leaders in the unit understand 10-20, the unit's maintenance Enterprise must develop and implement a methodology that effectively resources, executes, and accounts for each component of 10-20. To maintain or achieve 10-20, commanders at echelon must:

- Establish unit priorities
- Give maintenance guidance
- Conduct leader and technical certification
- Develop tracking and inspection mechanisms for the program
- Embed these elements within the unit's culture and standard operating procedures (SOP) as routine processes

This paper outlines the methodology used by 3/1 CD to improve the unit's maintenance posture to 10-20 in preparation for their deployment to the U.S. Indo-Pacific Command (INDOPACOM) area of operations. Using this methodology, Greywolf successfully delivered U.S. Forces-Korea (USFK) the most ready ABCT ever to arrive on the Korean peninsula; specifically, the brigade delivered over 99% of their organic combat platforms ready to Fight Tonight. Subsequently, Greywolf began resetting the armored brigade Korea enduring equipment set (KEES) to 10-20, applying the lessons learned at Fort Hood to further improve their maintenance Enterprise's systems and processes.

Establishing Unit Priorities and Maintenance Guidance

In order to develop Greywolf's maintenance priorities and guidance, the brigade commander and senior leader in the maintenance Enterprise reviewed 1st Cavalry Division's (1CD) operational framework through a maintenance lens.

In addition to these priorities, 1CD commander's annual training guidance (ATG) outlined the expectation of subordinate commanders to strive for excellence in the Command Supply Discipline Program (CSDP), maintenance, administrative processes, and leader development. These two sources informed the development of the brigade commander's guidance to the brigade maintenance Enterprise prior to deployment:

- Greywolf 10-20 maintenance guidance

- Develop a comprehensive plan and detailed methodology
- Develop services and 10-20 maintenance book
- Develop reporting requirements
- Establish weekly touch points (brigade/division)
- Establish a certification program
- Establish a Quality Assurance/Quality Control Team & checklist

The commander's maintenance guidance framed the brigade maintenance enterprise's efforts across three lines:

- Certification
- Reporting
- Inspection
- Quality control

Leader and technical certification, standardization and construction of the GWBs, and the brigade inspection team guidance were then sequenced to enable subordinates to execute. The progress of the guidance was relayed to the brigade commander through small working groups; the initial prioritization was given to leader and technical certification; the commander's guidance was updated when the unit arrived in the Korean Theater of Operations:

- GW6 10-20 maintenance guidance (KEES)
- All KEES fleets meet the Army's 10-20 maintenance standard outlined in AR 750-1, paragraph 3-2
- All KEES work orders (PB01s) built in GCSS-Army. Priority:

rolling stock; nuclear; biological, and chemical equipment; medical equipment; weapons; etc.

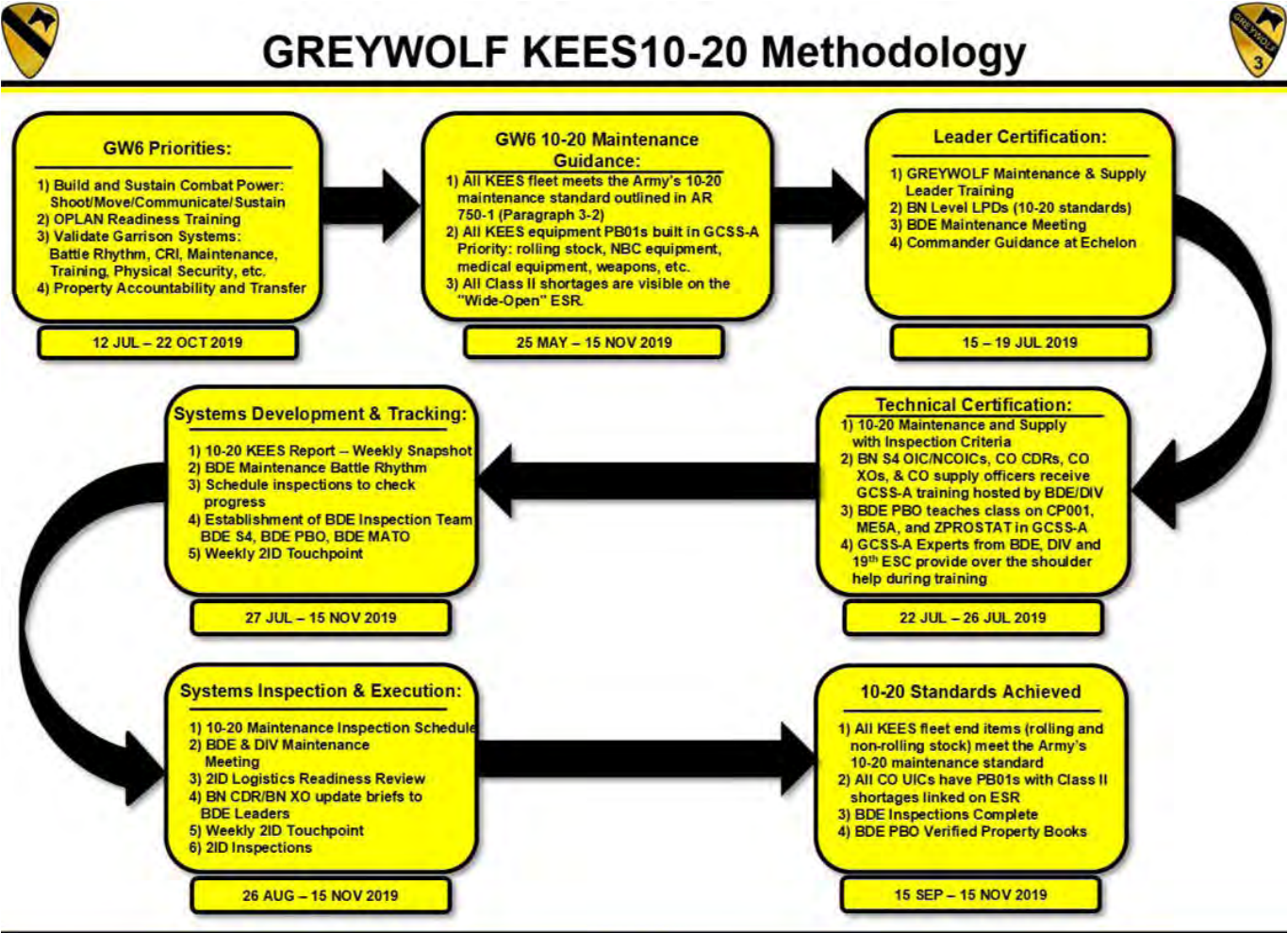
- All Class II and Class IX supply shortages are visible on the "wide-open" equipment status report

The most notable difference in this second set of guidance is the brigade commander's focus on PB01s; this metric was determined to be the best measure of performance in the execution of a 10-20 maintenance program. This shift to a more explicit form of guidance was enabled through the leader and technical certification conducted by the brigade maintenance enterprise.

In both cases, the commander's guidance, informed by his senior maintenance personnel, served to direct the brigade maintenance Enterprise's efforts and underwrite the costs of implementation. Additionally, effective communication with higher headquarters further reduced friction caused by competing demands on the unit.

Conduct Leader and Technical Certification

As the brigade developed its leader and technical certification courses, it became clear that there was a significant GCSS-Army knowledge gap for leaders and operators alike. It is alarming to learn that unit supply specialists (92Y) and automated logistics specialists (92A) only receive approximately 40-80 hours of GCSS-Army training during their advanced individual



Korea enduring equipment set (KEES) methodology used by 3rd Armored Brigade Combat Team "Greywolf", 1st Cavalry Division, to establish their 10-20 maintenance program. (Courtesy graphic)

training (AIT). It is incumbent upon the unit to develop their junior Soldiers and noncommissioned officers through a deliberate leader development strategy aimed at very specific outcomes. The expertise required to teach this level of GCSS-Army knowledge is most often found within the collective knowledge of the entire warrant officer community in an ABCT; therefore, the brigade maintenance enterprise developed a curriculum that enabled leaders at echelon to monitor the 10-20 maintenance status in their respective organizations.

Once the brigade commander's 10-20 maintenance guidance was distributed, the brigade maintenance enterprise developed a 10-20 certification course for company and battalion-level leaders. The purpose of the certification course was to teach the intricacies of the systems in Army's maintenance programs. More specifically, the course was designed to teach leaders how to ask the right questions when it comes to GCSS-Army. Leaders were shown how to access GCSS-Army and pull the reports required to track the 10-20 progress of their organization.

The certification course consisted of an overview of:

- 5988E: Execution and routing at the battalion level
- Equipment status report (ESR): How to read the ESR and learn variations
- Plant 2000/2001 reference document numbers
- Maintenance plans/services
- Modified work orders/Safety of use messages
- Bill of materials (BOMs) and shortage annexes
- Work order (PB01)
- Display of Purchase Requisition Training (ME5A)

and order status reports (ZPROSTAT)

- Parts tracking (FedMall, web-vlips, and integrated global convergence)

One key takeaway for all leaders in the 10-20 Certification Course is the ability to link PB01s built by 92Ys in company supply rooms to the ESR by 92As in the maintenance shop. The result of this process is what the brigade refers to as the "wide-open ESR." This

ESR shows all Class II and Class IX supply shortages in one document under each unique bumper number. The ability to link PB01s to the ESR allows company commanders to view their CSDP Program and command maintenance program in one coherent document; it allows them to simultaneously inspect their company per AR 750-1 and AR 735-5, Property Accountability Policies. Prior to this certification course, the brigade did not understand how to easily

view Class II and Class IX shortages. Through the intrapreneurship of junior leaders, the brigade maintenance Enterprise learned that PB01s could be linked. This key finding allowed Greywolf to push the limits of what had previously been done; it also enabled a shared understanding across the division that was not previously realized.

Once complete with leader certification, the brigade maintenance Enterprise focused on developing a technical course

for 92Ys and 92As. To develop a viable curriculum, Greywolf established two key outcomes for the course. The first outcome was that all shortages would be properly documented on a shortage annex (BOM) with valid requisition numbers. The second outcome was that all shortage annexes would have individual PB01s built per vehicle and linked to the wide-open ESR.

Specific items for technical certification that Greywolf developed to meet desired outcomes include:

- Technical certification (prior to deployment)
- 10-20 Maintenance Inspection Team with inspection criteria
- Division G4 hosts GCSS-Army training for battalion S4 (logistics) officers in charge (OIC)/noncommissioned officers in charge (NCOIC), company commanders (CO), company executive officers (XO), and company supply officers
- Brigade property book officer (PBO) teaches class on CP001, ME5A, and ZPROSTAT in GCSS-Army
- GCSS-Army field service representatives provide over-the-shoulder help during training (III Corps/1CD)
- Technical certification (KEES)
- 10-20 maintenance and supply with inspection criteria
- Brigade/Division hosts GCSS-Army training for

battalion S4 (logistics) OIC/NCOIC, CO, XO, and company supply officers

- Brigade PBO teaches class on CP001, ME5A, and ZPROSTAT
- GCSS-Army experts from brigade, division, and 19th Expeditionary Sustainment Command provide over-the-shoulder help during training

Systems Development, Tracking, and Inspection

In order to accurately track and report the 10-20 status of the vehicle fleet, Greywolf developed a set of reports and tracking mechanisms for the commander to set priorities and allocate resources. The brigade also created an inspection team that could be used to validate and verify the 10-20 progress of the organization.

Some of the tools Greywolf used include:

- Brigade and battalion maintenance meetings
- The brigade maintenance enterprise developed a standard battle rhythm with two brigade meetings and one battalion meeting per week

The following items are discussed in every maintenance meeting:

- Materiel maintenance officer notes/Division notes
- "X" ESR for all vehicles
- Standard pricing/Overaged Repairable Items Listings for credit and non-credit
- All scheduled services
- Army Oil Analysis Program and Test Measurement



Soldiers assigned to 3rd Armored Brigade Combat Team, 1st Cavalry Division "Greywolf," check oil levels in a High Mobility Multipurpose Wheeled Vehicle (HMMWV), known as a humvee. The vehicle is part of the Korean Enduring Equipment Sets that Greywolf has raised to a 90% operational rate in less than 90 days. (Photo by Capt. Scott Kuhn)

Building a 10-20 vehicle fleet is meticulous, tedious work that requires attention to detail.

and Diagnostic Evaluation validation

- Maintenance management information system (Modified work order/Safety of use message) validation
- 10-20 Weekly Report/Snapshot. The 10-20 Weekly Report is a table-based report of every vehicle in the brigade. Each vehicle has its own row with at least eight corresponding columns. The columns cover the eight components of the Army's 10-20 standard outlined in AR 750-1. Additional columns can be added at the commander's discretion.

The GWB is a binder with the following documents:

- Current 5988E and wide-open ESR
- Current shortage annex using the BOM from GCSS-Army
- Maintenance plan/Service packet

- ZPROSTAT
- Updated technical manual
- Current hand receipt page
- Clear modified work order printout from Modification Maintenance Information System
- U.S. Army Tank-automotive and Armaments Command Unique Logistics Support Applications (TULSA) gun card
- Current Army Oil Analysis Program report
- List of all special tools

The Brigade Inspection Team (BIT) is comprised of maintainers in the top 10% of their military occupational specialty throughout the brigade. The BIT officer in charge is the brigade's best maintenance technician. The officer in charge has two subordinate noncommissioned officers with expertise on the most critical vehicle fleets within the brigade.

In order to be part of the BIT,

members must:

- Pass an initial screening
- Be recommended by their chain of command
- Conduct an interview with selected senior leaders

Once the team is finalized, they validate:

- Wide-open ESRs
- Technical vehicle inspections and service packets
- GWBs Vehicle predeployment checklists; the actions of the crew
- Vehicles during transit between duty locations

Scheduled inspections, briefings, or required updates enabled shared understanding and allowed commanders to identify risks as well as communicate any issues or resources needed to meet 10-20. The brigade maintenance Enterprise outlined the following touch points to provide constant updates:

- Execute the published 10-20 standards inspection schedule

- (BIT validates data in GCSS-Army, TULSA, etc.)
- Biweekly 10-20 update at division maintenance meetings and division logistics readiness reviews
- Battalion commander monthly update brief to brigade commander
- Brigade maintenance Enterprise monthly update brief to the deputy commanding general-support (DCG-S)
- Weekly or biweekly written closeout reports to the DCG-S, brigade commander, sustainment brigade commander, division G4, and division material maintenance officer

10-20 Standards Achieved: What Success Looks Like

At the conclusion of the process, units must be able to validate key tasks to determine if the methodology helped meet the Army's 10-20 Maintenance Standard, such as:

- All company level unit identification codes have PB01s with Class II and Class IX supply shortages linked on 'wide-open' ESR
- All company commanders must have binders with printed property books and signed subhand receipts
- Shortage annexes with valid requisitions
- The entire company wide-open ESR Brigade inspections complete (inspections are ongoing at pre-scribed intervals)

- Brigade PBO verifies property books (property books are reverified for every company change of command)

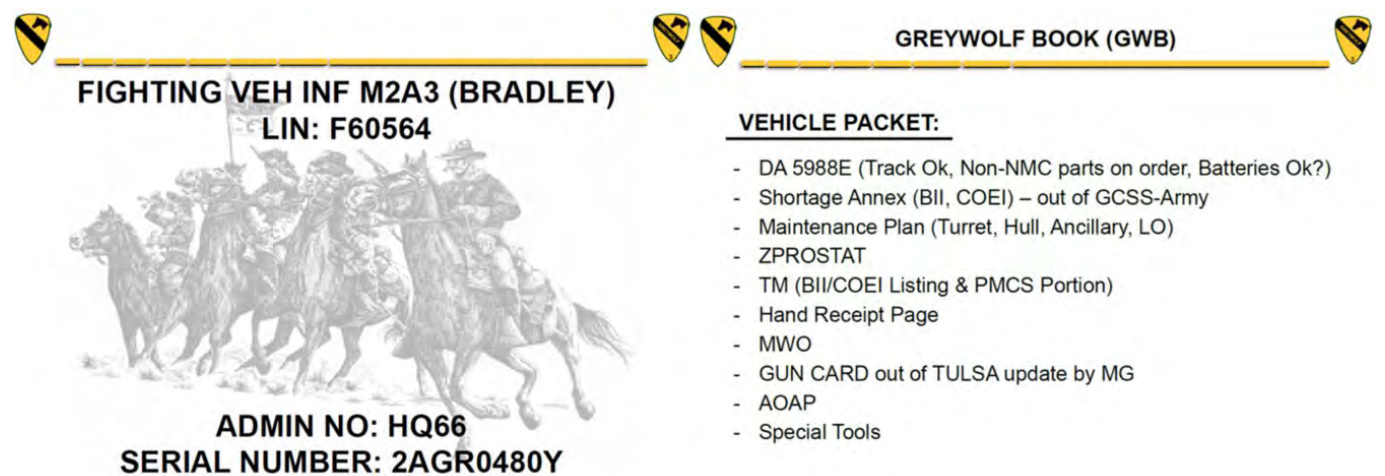
Once a company reaches 10-20, it is incumbent on the brigade maintenance enterprise to ensure the standard is maintained. There are a few options to consider in order to weave this process into the fabric of the organization. First, units must make the company change of command in-briefs and out-briefs an opportunity to inspect the 10-20 status of an organization. The wide-open ESR and the current ZPROSTAT must be verified against the shortages identified in the inventory period. Second, the BIT must be a tool the brigade commander can utilize at any moment in time. Lastly, the brigade maintenance enterprise must run quarterly leader and technical certification courses. Leader development is critical; knowledge is the gap units must close.

Chasing Perfection, Finding Excellence

Maintaining a 10-20 fleet under the Army's SRM is challenging and resetting a vehicle fleet to 10-20 can seem impossible. To maintain or achieve the Army's '10-20 Maintenance Standard', commanders at echelon must establish unit priorities, give maintenance guidance, conduct leader and technical certification, develop tracking and inspection mechanisms for the program, and embed these elements within the unit's culture and SOPs as routine processes.

Building a 10-20 vehicle fleet is meticulous, tedious work that requires attention to detail. Moreover, building a 10-20 vehicle fleet requires the support of the brigade commander as well as that of senior leaders in the division. The commander sets priorities and subordinates execute to meet the deadlines. Throughout the process, units resist the urge to skip or cancel any of the touch points within the brigade or from the brigade to a higher headquarters. Lastly, all units must report accurate data. During this process, it is likely that the information being collected and presented is not pleasant and potentially embarrassing. Weather the storm. As long as the appropriate level of funding is available, following this methodology will enable you to meet the Army's 10-20 Maintenance Standard.

Maj. Allen M. Trujillo is brigade executive officer for 3rd Armor Brigade Combat Team, 1st Cavalry Division, at Fort Hood, Texas. He has served as company commander, 4th Battalion, 6th Infantry Regiment, 4th Brigade Combat Team, 1st Armored Division, at Fort Bliss, Texas, and has served two tours in Iraq and Korea. He holds a bachelor's degree in Systems Engineering from the U.S. Military Academy and a master's degree in Operations Research/Industrial Engineering from University of Texas at Austin.



A sample of the 10-20 Weekly Vehicle Report snapshot for 3rd Armored Brigade Combat Team "Greywolf", 1st Cavalry Division, maintenance program. (Courtesy graphic)

Bridging Echelons Above Brigade

Logistics from the Sustainment Enterprise to Tactical Sustainment Operations at the National Training Center

■ *By Brig. Gen. David Lesperance and Maj. Adam Bolliger*

The 916th Support Brigade (SPT BDE) is a unique organization that exists to provide command and control to synchronize echelon-above-brigade (EAB) sustainment at the National Training Center (NTC), in Fort Irwin, California. In providing sustainment at NTC, 916th SPT BDE is uniquely organized to replicate theater sustainment commands (TSC), expeditionary sustainment commands (ESC), and sustainment brigades. In addition to the rotational division sustainment support battalions (DSSB), 916th SPT BDE has a support (transportation) battalion, aviation battalion, and contracted transportation battalion replicating host-nation support. As each geographic combatant command has a TSC serving as a sustainment expert of that theater, 916th SPT BDE is the sustainment expert for the NTC theater.

The 916th SPT BDE provides critical capabilities to bridge the sustainment enterprise with tactical operations by replicating or performing sustainment functions necessary for the Army's brigade combat teams (BCTs) and enablers to successfully complete NTC rotations.

Predeployment/Theater Opening

Before arriving to NTC, rotational units learn through several events how sustainment at NTC is conducted, including:

- Initial Planning Conference
- Rotational Support Conference
- Leader Training Program
- Concept of Support Teleconference

These events occur 210 to 45 days prior to each rotation's execution.

A best practice is to send the rec-

ommended leaders and sustainers from both the rotational BCT and DSSB to these events. BCTs and DSSBs that fully understand how sustainment at NTC supports the rotation are better prepared once their rotation begins. Frequently, units fail to attend or do not send the proper representative, causing the entire rotation to struggle logistically during their rotation. In addition to learning the sustainment systems available at NTC, these conferences allow for units who are not stationed together to physically meet and conduct planning activities.

More than 70% of the U.S. Army's sustainment assets are in the National Guard and Army Reserve components. The DSSBs that support each rotation are typically comprised of elements from all three Army components: Active Duty, National Guard, and Reserves. The conferences provide an opportunities for

the DSSB and company elements to get to know each other and understand their strengths and weaknesses to better prepare for executing sustainment. 916th SPT BDE staff also assist the DSSBs to understand the scope of responsibilities and conduct mission analysis. DSSBs leave these conferences with clear requirements regarding the equipment, training, and personnel necessary to fully support the rotational BCTs.

DSSBs' understanding of these requirements helps their leaders to resource shortfalls ahead of their rotation.

Two key aspects DSSBs evaluate are:

- Communications systems necessary for command and control

- Reception, Staging, Onward movement, and Integration (RSOI) tasks to build combat power

Rotational units bring equipment from their homestation and draw equipment from U.S. Forces Command prepositioned (PREPO) fleet at NTC. DSSBs must analyze what communication kits are installed on the PREPO fleet and what organic communications equipment can plug in the PREPO vehicles.

When rotational units arrive to NTC, their capability to successfully conduct more than 100 RSOI tasks requires a deliberate plan in order to build combat power in the allotted time. Units need to review the RSOI tasks ahead of arrival and select the necessary personnel and equipment

for each task. Units that wait until arrival to begin to analyze the RSOI tasks often find themselves behind the power curve. As theater opening begins for each rotation's arrival, a well-communicated and rehearsed RSOI plan enables the unit to effectively build combat power. The 916th SPT BDE provides specifically assigned planners to support each rotation as they prepare for their fight.

As each BCT and DSSB is assigned an NTC rotation, 916th SPT BDE assigns both a rotational coordinator and current operations officer. Rotational coordinators assist BCTs and DSSBs to plan their deployment to NTC, answer units' requests for information, provide points of contact, and plan for redeployment. Current operations officers assist units to develop plans to sustain their

fight and understand how rotational units plug into sustainment assets at NTC. The 916th rotational coordinator and current operations officer for each rotational unit are two of the most important individuals for units to collaborate with in order to conduct successful theater opening, theater distribution, and theater closing operations. As a rotation's "D-Day" nears, the focus turns to theater distribution once units start to arrive to their NTC rotation.

Theater Distribution

Synchronization of distribution is the most important sustainment function in large-scale combat operations (LSCO). This synchronization spans all commodities; the most critical are liquid logistics and Class IX, repair parts. The 916th SPT BDE is able to synchronize distribution using a robust support operations shop and a mixture of attached and organic battalions. The brigade support operations officer (SPO) uses all units in the brigade, organic and attached, to support a rotational unit. The support battalion provides movement control and heavy equipment transport.

The aviation battalion has a mixture of aircraft providing troop transport, opposing-force (OPFOR) attack aviation, real-world air medical evacuation, and unmanned aircraft systems. The contracted transportation battalion provides additional commodity transport to supplement the rotational DSSB, which provides commodity transport in support of the rotational BCT. The 916th SPT BDE's support operations shop, in

addition to the four battalions, allows the synchronization of EAB sustainment to tailor support to any rotational BCT.

NTC provides a realistic, complex environment and enemy for rotational BCTs to fight and train against. The problem set is seldom replicated at any other training that BCTs experience. These factors force rotational BCTs to think outside the box and execute plans not previously tested in order to fight and win. Learning and testing new plans does not only apply to the maneuver fight but to the sustainment supporting the maneuver as well.

The predetermined concept of support plans from the Brigade Support Battalion (BSB) within the BCT often change throughout the rotation. The 916th SPT BDE's support operations focuses on monitoring the BCT's requirements as forecasted by the BSB and synchronizing the distribution to support the BSB and BCT. The 916th SPT BDE works diligently with the commander of the Operations Group to ensure sustainment at NTC will not impede a rotational BCT's fight.

The 916th SPT BDE coaches and mentors sustainers on different factors that can affect sustainment operations at NTC and assists in planning to mitigate any disruptions in the distribution of commodities. The first, obvious disruption to address is that rotational units are consistently engaged by the OPFOR over multiple domains. Sustainers will see their convoys and

lines of communication targeted. The rigorous desert environment will also disrupt operations while traveling along sustainment lines of communication.

Drivers must be proficient at night driving using night vision devices with varying conditions of ambient lunar light. Most roads at NTC are hard-packed dirt or sand. Executing convoys on these roads requires drivers to extend intervals between trucks due to the dust rising from the road. Additionally, the mountainous terrain can make line-of-sight navigation difficult. Convoy operations within NTC environment will test even the best-trained Soldiers and can affect distribution operations by slowing or halting commodity movement. Units should expect for the planning, preparation, and execution of distribution operations to take longer than anticipated (by several hours) during LSCO.

The nature of decisive action against OPFOR in LSCO at NTC can also disrupt distribution. LSCO require rotational units to fight and travel across large distances at a fast tempo. The speed of this fight requires periodic displacement of sustainment support areas. Both the DSSBs and BSBs need to plan against conducting distribution of sustainment commodities while also displacing their support areas in order to shorten the line of communication between customers. Typically, a DSSB will displace the Division Support Area (DSA) every 72 hours based on mission variables. Displacing the DSA requires the DSSB to execute a deliberate plan.



Soldiers assigned to 30th Armored Brigade Combat Team, North Carolina National Guard, prepare to roll out to their exercise area against opposing forces, Army peers who mimic weapons and tactics of real-world threats, at the National Training Center, Fort Irwin, Calif., July 5, 2019. The Soldiers deployed to the NTC for Operation Hickory Sting to prepare for overseas deployment. (Photo by Sgt. 1st Class Robert Jordan)

916th SPT BDE coaches DSSBs to simultaneously execute a DSA displacement along with distribution of sustainment commodities to the BCT. DSSBs require a thorough knowledge of establishing a base defense and force protection measures. When displacing the DSA, DSSBs must understand what capabilities to establish, in what order, and when to stand down what capability. DSSBs benefit when their command post is mobile and easy to displace. Finally, DSSBs need to know how to maintain a logistics common operation picture of their sustainment operations while displacing.

Another key role 916th SPT BDE provides to rotational units is bridging the connection between strategic and tactical sustainment. At NTC, 916th SPT BDE owns and operates the bulk fuel farm, installation ammunition supply point, central receiving point, and installation Class IX warehouse. Additionally, 916th SPT BDE facilitates the issuing of Class I subsistence from the subsistence supply management office (SSMO) and bulk water points. Each of these enterprise commodity supply points is similar to other installations; several aspects of these supply points' operations have been adapted in order for 916th SPT BDE to provide this robust and unique support.

One adaptation is hours of operation. 916th SPT BDE evaluated the demands from multiple overlapping rotational BCTs and tenant units and extended the hours of operation at NTC supply points. For example,

the installation Class IX warehouse is open 16.5 hours per day, Monday through Friday, and 11 hours per day on weekends.

Another adaptation is the capacity to simultaneously support multiple overlapping rotational BCTs and tenant units. For example, 916th SPT BDE bulk fuel farm holds 500,000 gallons of F-24 and DS-2. Additionally, the installation ammunition supply point maintains 1,700 lines of Class V, valued at \$80 million, capable of supplying three BCTs' worth of ammunition for both live and blank Standards in Weapons Training (STRAC). Understanding the robust sustainment enterprise for bulk commodities, what do commodity consumption rates look like for a rotational unit?

The tempo and size of LSCO cause rotational BCTs conducting decisive action to consume large quantities of commodities. For example, most ABCTs consume 35,000 gallons of Class III bulk fuel each day while SBCT rotations consume 25,000 gallons. 916th SPT BDE commands and controls the EAB sustainment at NTC in order to echelon logistics from the enterprise base to the BSBs supporting the BCT. When elements of the 916th SPT BDE begin transporting 35,000 gallons of fuel to the BSB, the BSB needs to be able to receive the supplies. Forecasting the specific amount of fuel, and delivering the fuel when the BSB has the capability to receive the commodity, is a continuous operation. If a convoy arrives out of sync with the BSB—when

the BSB is not able to receive the fuel—then Soldiers' lives are put at risk for no reason and the transport assets were wasted.

For assets such as combat platforms and military vehicles, NTC has observed multiple units who fail to keep accurate accounts of the location of non-mission capable (NMC) equipment. Consistently, rotational units will leave NMC equipment at unit-maintenance collection points or leave equipment wherever the equipment broke down across the area of operation. Units do not execute a developed NMC equipment plan and thus lose accountability. This has caused sustainment at NTC to adapt in order to provide support.

916th SPT BDE's 2916th Aviation Battalion conducts aerial reconnaissance with either MQ-1C Gray Eagle unmanned aerial vehicles or UH-60 Blackhawk helicopters to locate and identify the quantity and type of a rotational unit's missing NMC equipment. Rotational units training at NTC need a suitable plan to track NMC equipment, and then actually execute it.

Theater Closing

From initial draw to final turn-in, maintaining the PREPO fleet vehicles is a task that most rotational units struggle to efficiently manage. PREPO vehicles are offered to each rotation for two main purposes:

- To provide rotational units with non-combat platform types of vehicles to save on transportation costs, eliminate shipping like-items from each

rotation's home station

- Drawing PREPO vehicles provides training to the rotational units by simulating drawing from Army Prepositioned Stocks. Units draw the PREPO vehicles at the fully-mission capable (FMC) plus safety standard, and must turn in the loaned vehicles at the same standard.

Maintaining the PREPO fleet vehicles at FMC plus safety appears to be a simple task: units use the vehicles for 19 days from RSOI one through the rotation's training days, and are afforded 12 days for regeneration (REGEN), repair, and turn-in. However, units generally do not conduct regular preventive maintenance checks and services (PMCS) on these vehicles during the training days. As a result, units fail to know when a vehicle is malfunctioning until the issue causes the vehicle to become inoperable. Additionally, when units do not conduct PMCS, and are not identifying vehicle faults, they do not order the necessary repair parts in a timely manner. Observations show that units view the rotation not as a moment in time during a longer LSCO campaign, but simply as 19 days of fighting.

This 'short-time' view causes rotational units to push the PREPO vehicles to the limit and skip standard maintenance practices. Normally, only once the rotational training days are complete and the unit enters the 12-day REGEN period do they finally begin conducting thorough PMCS, identifying

maintenance faults, and ordering repair parts. Most rotational units take eight to nine days to turn in the PREPO fleet vehicles at the FMC plus safety standard. NTC has seen several best practices to prevent culmination and to maintain combat power.

Rotational units who approach their fight as a long haul, frequently conducting maintenance on their vehicles and consistently ordering repair parts, have a much more smooth REGEN process. Units who deliberately plan out their maintenance systems and communicate this process across their BCT maintain a higher operational readiness rate on both their home station and PREPO vehicles.

The best deliberate maintenance plans include:

- Sequencing the early arrival of maintenance equipment
- Top-down enforcement of maintenance logistics information systems processes
- Robust presence of maintenance personnel through all phases of the rotation
- Practiced distributed maintenance meetings
- Keeping the unit's maintenance equipment sets at NTC until REGEN is complete

Conclusion

While performing theater opening, theater distribution, and theater closing operations, 916th SPT BDE has observed many lessons learned from past rotations and developed best practices for future

units. In working with the Observer Coach/Trainers within NTC's Operations Group throughout deploying, training, and redeploying ten rotational BCTs a year, 916th SPT BDE has many repetitions in monitoring each rotational BCT's performance across all warfighting functions. Coupled with an understanding of how the OPFOR affects the sustainment of these units, 916th SPT BDE has developed an advantage over other sustainment commands within other theaters.

This advantage allows 916th SPT BDE to forecast EAB sustainment in order to assist rotational units to prevent culmination and extend operational reach of BCTs at NTC. While every theater of operations is different, 916th SPT BDE is an expert at bridging enterprise and tactical sustainment within the NTC theater to provide the best support to rotational BCTs.

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Feature photo: Infantrymen assigned to 116th Cavalry Brigade Combat Team, Army National Guard, seize a town from the opposing forces at the National Training Center, at Fort Irwin, Calif., June 7, 2019. Seizing the key terrain enabled the unit to maneuver passed the previously contested area. (Photo by Sgt. Mason Cutrer)

WHAT SIZE IS THE RIGHT SIZE?

■ By Chief Warrant Officer 4 Brandon LaMothe

Army Materiel Command (AMC), under the direction of Gen. Gustave Perna, has begun the task of consolidating the expansive footprint of civilian employees while minimizing the decrement to military forces in the process. The information provided in this white paper discusses the logic behind the decision, the costs to commanders, and a way to reliably maximize echelon.

Increase in Civilian Support Personnel

Over the past 20 years of armed conflict, the Army has increased its operational readiness and lethality,

and extended its operational reach, thanks in part to the civilian support structure. These civilian personnel are commonly referred to as Logistics Assistance Representatives, or LARs. The LAR, and the Logistics Assistance Program (LAP), came to Army Sustainment Command (ASC) from AMC headquarters; the AMC mission came from the Department of the Army (DA), G4 (Logistics), mission.

Managed by ASC's LAP Directorate, LARs are civilian contractors serving in motor pools, hangars, maintenance shops, and offices, including those within combat zones. They bring 27 different specialty

skills to Army equipment readiness requirements. They are part of ASC's global network of Army field support brigades and battalions and are linked to every echelon of the Army.

The civilian support structure employed by AMC consists of approximately 37,700 military, DA Civilian, and contractor employees, impacting all 50 states and more than 150 countries.

The dependency of the Army on the civilian support structure provided by AMC degraded basic sustainment functions and skills that were routinely utilized, trained at garrison institutional locations, and employed

Donald Camp, a logistics assistance representative (LAR) with U.S. Army Aviation and Missile Command, and Spc. Damian Murry, C Company, 2-227th Aviation Regiment, 1st Cavalry Brigade, conduct main rotor system maintenance on a HH-60 MEDEVAC helicopter, at Katterbach Army Airfield, Ansbach, Germany. LARs work closely with units to support repairs, especially outside the scope of the technical manual. (Photo by Charles Rosemond)

by the service member prior to ever reaching out for assistance with sustainment operations. The skills employed by service members have atrophied. The sustainment of equipment listed on a unit's modification table of organization and equipment (MTOE) or table of distribution and allowances (TDA) is managed and accounted for by the commander. The commander relies on a myriad of personnel qualified in a sustainment military occupational specialty (MOS) within their organizations to provide innovative diagnostics and repair of equipment in order to perform their mission(s) and pass-back support structures such as AMC.

The ASC LAR was, and continues

to be, utilized as the technical link and reach back to major subordinate commands (MSC), while simultaneously providing invaluable training opportunities to sustainment Soldiers.

The anticipated return to garrison operations, coupled with the equipment and personnel drawdown from multiple theaters of operation, has propelled the reduction in LARs from within AMC and MSCs. The start of the reduction in LARs and military sustainment personnel within AMC can be traced back to 2012, with the removal of the brigade logistics support team (BLST) chief under the direction of Gen. Dennis Via, essentially removing the direct

military oversight and work assignment for LARS. Certain issues exist regarding these changes.

Issue #1: Loss of Sustainment Understanding and Troubleshooting

The military has had to do more with less personnel, money, and resources, but the Department of Defense U.S. proposed budget for fiscal year 2020 would add nearly 26,000 service members across the Active duty force, National Guard, and Reserves. The forecasted growth in personnel forced commanders to increase their training and school funding requests, while also having to complete predeployment and postdeployment training. But without adequate and

readily available training programs, and full funding available to a commander, sustainment personnel do not have the training opportunities to increase their knowledge base. Senior leaders throughout the Army frequently remark that combat vehicle maintainers have lost the institutional knowledge and experience that used to be passed from warrant officers to noncommissioned officers to Soldiers. This reliance on outsourcing has broadened the gap in the Army's institutional knowledge and experience and created a proficiency challenge.

U.S. military sustainment personnel have shown a loss of critical skills and capabilities due in part to the overreliance on LARs and similar civilian support personnel. The overreliance on civilian support personnel is due in part to the lowering of standards for entrance into the armed forces during the recruitment process in order to fill units prior to operational deployments and due in part to the various missions that require more personnel to accomplish due to mission creep and increased scope. The diverse mission-sets required personnel that were not only available, based upon their respective rank and MOS, but also for concentration of mass and personnel, removing sustainment MOS personnel from their primary sustainment functions and employing them in duties outside of their trained scope of work. Working outside of their trained sustainment MOSs, sustainers were and continue to be forced to reach out to LARs for the most basic of sustainment issues. Military sustainment

personnel utilize LARs 90% of time performing tasks that are inherent to a military sustainment MOS. LARs utilize their time with a unit through finding, expediting, shipping, and managing parts, with the remaining 10% of a LARs time is spent verifying condition codes of equipment, troubleshooting, and maintaining their own training requirements.

Sustainment and maintenance skills erosion for US military members can be traced to the short 'downtime' between deployments, typical turnover in personnel through force management requirements, and the increase in garrison workload requirements outside of a sustainment MOS's respective specialty.

Low readiness levels, therefore, typically affect nondeployed forces at their home bases. These forces would deploy if an emergency erupts that the forward-deployed forces cannot handle. The risk is that they would need to deploy before they can be brought up to a high level of readiness. There are a few viable ways forward that would be able to increase the current sustainment and maintenance tactics and techniques, without furthering the decline in actual unit readiness and deployability.

Issue #2: Loss or Reallocation of Civilian Support Personnel from Within the Sustainment Warfighting Function

The loss of civilian personnel and increase in military personnel is not without precedent for the U.S. armed forces. This has been ongoing for as long as there have been civilian

"When decisions come to me, it is not about me or about Army Materiel Command, it is about the Army, I came into command knowing we had to shape ourselves differently."

—Gen. Gustave Perna



Denny Caswell (right), logistics assistance representative, Army Field Support Battalion assists Spc. Jason Graves, 227th Aviation Support Battalion, 10th Mountain Division, to set up the Command Service Very Small Aperture Terminal, as Sgt. Justin Romero observes, during Operation Atlantic Resolve, Bulgaria, July 1, 2017. (Courtesy photo)

support personnel accompanying military members. The continuous plan of the DoD relationship with civilianization is the story of two opposing forces in an unstable equilibrium; internal pressure to replace military personnel with civilians to save money, and external pressure to reduce civilian staff across the DoD establishment, particularly in times of declining budgets and personnel downsizing.

The current loss and reallocation of personnel is attributed to right sizing the force by changing TDAs and MTOEs across the military force. On some installations, the change in TDA and MTOE resulted in a delta of available personnel, whereas other installations had an overage of civilian sustainment personnel. Those areas producing a delta of personnel now had to bring in civilian sustainment personnel in order to fill the shortages.

The personnel identified as an overage at one location were offered the opportunity to submit a “wish list” of locations they would be willing to move to at no cost to them. The list the civilian sustainment personnel would submit to AMC helped to craft job placement offers; AMC is still unable to move personnel to locations where there is no delta to fill. In essence, the new positions created by the TDA and MTOE right sizing, did not outweigh the over strength of personnel.

A handful of civilian sustainment personnel will inevitably have to look for other employment. The re-

quirement for a more agile, streamlined sustainment program is paramount moving forward and a must for the longevity of the force and the sustainment knowledge base. Through no fault of their own, LARs have been inadvertently supplanting for the military sustainer at all levels.

Current Plan of Action: Consolidation of LARs Under a Single Umbrella

LARs are the link between the Soldier/maintainer and the resources of AMC’s lifecycle management commands. In order to increase the proficiency of military sustainment Soldiers and resize the AMC support structure, LARs are realigned under their respective Army field support brigades (AFSB) instead of being embedded with each brigade combat team (BCT) or with each separate unit. The realignment affords ease of access to LARs at a centralized location instead of the LARs being displaced across military installations and large geographic locations. In addition to changes with its MSCs, AMC is continuing to reshape the structure of its headquarters and workforces. Within the headquarters of AMC, redundant positions have been eliminated. Some positions are in the process of being reclassified, shaping the output will help AMC and AFSBs remain relevant. In short, LARs will be brought back under the AFSB umbrella for a single location to request support assistance instead of being embedded with units.

Conclusion: Change Is Inevitable and Is Painful if You Fight it

The movement of LARs embedded within operational units has already begun. Perna’s vision of a more agile, streamlined, and elite support structure is moving forward. The consolidation is effective. Sustainment personnel at all levels must now accurately troubleshoot, diagnose and repair their command’s equipment while balancing the limited reach-back capabilities provided by seven Active component brigades, one Logistics Civil Augmentation Program, one Reserve, and one National Guard (NG) AFSB that are geographically located to provide support. The Reserve and NG field support battalions (AFSBn) perform similar functions to the active component AFSBs, but their skills are utilized differently due to the inherently different capabilities and mission types the NG and Reserve units perform.

A proven way to reduce sustainment costs is by applying commercial best practices to defense acquisition and sustainment. A civilian business model utilized when it comes to managing the maintenance, repair, and overhaul of major weapons systems and platforms is performance-based logistics (PBL). Unlike traditional fee-for-service or time-and-materials contracts, PBL works by specifying outcomes, not activities.

The consolidation of LARs back under the AFSB is a throwback to how AFSBs and AFSBns were originally utilized.

The consolidation of LARs does not mean they will no longer assist as

needed; instead, LARs will teach and coach as needed on a case-by-case basis. Units and sustainment personnel will not be left out or unassisted after training is done, instead, continual follow-up contact will be done until assistance is no longer needed. LARs will no longer spend 90% of their time performing tasks that are to be done at the lowest level by trained sustainment military personnel.

The basics of troubleshooting, diagnosing, and repairing must be at the forefront of sustainment operations. The bloat of civilian sustainment personnel is shrinking. The end state will show a loss of LARs at the BCT and unit level, a reliance on the sustainment personnel assigned to a unit based upon the MTOE or TDA and

commanders at all levels having to invest in their Soldiers. Commanders will have to balance training requirements set forth by higher command echelons and the sustainment of their assigned equipment and personnel.

The consolidation of LARs is inevitable. Using PBLs, a sergeant’s time training, filling all available Army Training Requirements and Resource System sustainment school seats, and getting back to the basics will slowly realign the sustainment knowledge base that has been lost over the better part of 20 years of armed conflict and overreliance on civilian support personnel. Additionally, with the implementation of the Unit Diagnostic Immersion Program (UDIP), a concerted effort between the Ordnance Center and School and U.S. Forces

Command, the DoD is leveraging the National Guard Sustainment Training Centers (NGB STCs). The NGB STC’s intent is to provide maintainers with the knowledge needed to rapidly diagnose problems and provide cost-effective solutions. Coupling the NGB STC training platform with PBLs, unit training, and external training sources, units will slowly start to get back on track and be self-sufficient.

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James Johnson, automotive-tactical logistics assistance representative, Army Tank-Automotive and Armaments Command, assists Soldiers with maintenance. (Courtesy photo)

READY PEOPLE, Ready Army:

| *An Interview with Lt. Gen. Charles Flynn*

■ *By Arpi Dilanian and Matthew Howard*

At an inflection point in the nature of war, the Army is building readiness for an uncertain future. As the Army Deputy Chief of Staff, G-3/5/7, Lt. Gen. Charles A. Flynn is at the helm of enabling current operations while shaping the force and global posture of tomorrow. In addition to four combat tours in support of Operations Enduring Freedom and Iraqi Freedom, Flynn previously served as deputy commanding general, U.S. Army Pacific, and commanding general, 25th Infantry Division. We sat down with him to discuss strategic readiness at echelons across the force.

What does 'strategic readiness' mean for our Army?

In my view, strategic readiness is actually having an

Army that's ready to deploy, fight, and win anytime, anywhere, against any adversary. It's the ability to move large numbers of people and materiel to sustain campaign-quality combat operations in the land domain. Whatever the point of contact is—whether it's a crisis, humanitarian assistance and disaster relief, or actual combat operations—the Army is responsive enough, with speed, to ultimately meet the demands of the combatant commanders at the time of need.

What do you see as the biggest challenge to building strategic readiness as we shift from predominantly counterinsurgency (COIN) operations to large-scale combat operations (LSCO)?

Balancing the trade-off between the readiness dema-



Lt. Gen. Charles A. Flynn, Deputy Chief of Staff for G-3/5/7, talks to Col. Phil Brooks, 1st Infantry Division Forward Commander, and his staff during a base visit on Dec. 16, 2019. Flynn was on hand to meet with leadership and tour the base. (Photo by Staff Sgt. Scott D. Longstreet)

nds of today and our ability to modernize the Army for the future. Throughout the Middle East in the COIN environment of the last two decades, we have gone from the known to the known: Known time, known location, and known unit going into a known location against a known threat. We likely won't have that luxury in the future. As we demonstrated in response to riots at the U.S. Embassy in Baghdad at the beginning of the year, that was reversed.

We went at an unknown time, from an unknown place, and into an unknown environment that was dynamic and constantly changing. From an operational perspective, the Army demonstrated global responsiveness through its strategic readiness.

At the strategic level, the Army is also the force provider. As always, our goal is to deliver the right capability to the combatant commanders at the time of need. One of the things I'm most proud of is the force structure work we've done over the last couple of years. Through the guidance of the secretary of the Army (SA) and the chief of staff of the Army (CSA), we have designed, and are beginning to develop, the force of the future. We've done a great job bringing all of the components together in the creation of Multi-Domain formations.

That being said, that force of the 2028 or 2035 timeframe will require some trades with existing capabilities so we can man, train, and equip those future formations. Requirements for LSCO obviously differ from those of COIN operations, but we have to stitch all of that together over time to maintain readiness. So as advanced capabilities to support the Multi-Domain Operations (MDO) concept come to fruition at Army Futures Command, we are connecting everything to the mid-term—the force-development period—to begin addressing some of those gaps; that will ultimately allow us to have that formation of the future.

At the end of the day, we're trying to create conditions where we are strategically predictable to our partners and allies, and, to a degree, even to our adversaries. We want them to know certain things about us and fear that; but at the same time, we want to be operationally unpredictable so we're able to do things with speed in a variety of environments and under any condition. I think our response to the riots in Baghdad is a great example of how we're working to maintain overmatch in the land domain, while balancing readiness with modernization so we can bring in future capabilities.

How will the Defender exercise series display strategic readiness?

The Defender series is going to be the Army's model for building strategic readiness, and then present MDO capabilities in priority theaters in Europe and the Pacific areas of operation. Through a whole host of exercises, our global posture is going to be tested and stressed: Everything from Army Prepositioned Stocks (APS) and our ability

to move munitions to our ability to sustain the force as a whole. What's our stance as an Army as we deploy, employ, and redeploy the force or move it along interior lines?

The exciting part of the Defender series is it's really going to take the total Army—all components and the entire en-

terprise—to be engaged to support exercises of that size and scale in those two theaters. We're going to perform the exercises every year to continue to stress our systems so we get repeated practice and truly demonstrate strategic readiness. A wide range of tactical actions will take place in these exercises that will solve a lot of operational and strategic problems for us.

What is the Army's role within the joint force to enable strategic readiness?

The Army provides foundational capabilities that only it provides to joint force commanders—things such as sustainment, signal and communications, intelligence, engineering, police, and inland water movement. These are absolutely essential to the global combatant commander's ability to be successful in the execution of their plans, both from a day-to-day perspective as well as their operational plans within the theater.

The Army has made significant investments across the globe to recalibrate our force posture, including over a billion dollars into our APS in the Pacific. When the crisis in Korea loomed large a couple years ago, we did extraordinary things by way of Army Materiel Command (AMC), and the whole host of sustainers across the enterprise, to provide what I refer to as “deterrence by positioning.” It changed a lot of the calculus in Korea and throughout the Pacific.

By providing those foundational capabilities to the joint force commander, we can transition more quickly from a state of deterrence or competition into, if required, a higher level of deterrence or conflict.

Can you discuss the importance of actions at the tactical level for enabling readiness at the strategic level?

Leaders must recognize that, more holistically than ever before, their readiness applies to every level. This is true for every leader at every echelon. Everyone needs to be able to see themselves, and their organization, and then take the initiative to provide the leadership, supervision, and ownership of the program to solve problems.

Leaders at the tactical level need to understand where

At the strategic level, the Army is also the force provider. As always, our goal is to deliver the right capability to the combatant commanders at the time of need.



Clarissa Lane, chief of international agreements for U.S. Army Europe, briefs Lt. Gen. Charles A. Flynn, Headquarters Department of the Army, G-3/5/7 (operations, plans, and training), and his staff during his visit to Powidz, Poland. (Photo by Maj. Olha Vandergriff)

their people and equipment are. They need to be able to alert, marshal, and deploy from their motor pools to the railhead. They need to be able to get to a line-haul position and move their equipment by road. They need to be able to get to seaports and airports, and be organized when they get there.

Most importantly, leaders need to be able to do it with speed and in those dynamic, unpredictable environments—both here and abroad—going from unknown into unknown. Solving operational and strategic problems requires skilled, proficient leaders at the tactical level.

Who is responsible for strategic readiness at echelon?

The CSA has made it clear that he and the SA are ultimately responsible for the strategic readiness of the Army. Having said that, they are also laser-focused on enabling commanders at every level to maintain tactical readiness, because they are complementary to one another.

Being able to conduct battle drills at the company, battery, and troop levels, or being able to execute your mission-essential tasks at the brigade and division levels, is incredibly important. If you want a campaign-quality Army, capable of conducting combined arms maneuver in the land domain, you have to be able to execute those missions and tasks at the tactical level. So the CSA and SA have empowered commanders at every echelon—especially in U.S. Army Forces Command (FORSCOM), U.S. Army Europe, and U.S. Army Pacific—to keep their tactical formations sharp.

That tactical sharpness and edge enables operational and strategic readiness because now you have ready tactical formations that can move with speed; they are familiar with their equipment and have it at the ready; and they can be delivered to the point of contact to address current threats or deter future aggression. They are able to be at the point of need for the global combatant commanders.

I think the CSA sees this as a very commander-centric

task. He is reliant on the commanders to maintain that tactical-readiness edge. At the same time, the enterprise has to come together through U.S. Army Training and Doctrine Command, FORSCOM, AMC, and the Army Service Component Commands to enable delivery of that tactical sharpness to those crisis points.

What is the key to success for all of our Soldiers in an uncertain future?

Leadership. I don't think that's any different from what we needed when I first came into the Army; the leadership of the formation is absolutely essential. At the end of the day, all of these problems are going to be solved by quality leaders who are trained and ready. That means being a fast learner, physically fit, and mentally alert. It means being deployable, knowing your position, and having the knowledge, skills, and attributes to understand the environment in which we're operating. Most importantly, it means being committed to your people, your unit, and to the mission.

As our CSA says: People are his number one priority. When I hear Gen. James McConville speak, I hear him say, "Ready people, ready Army." We are going to have our people ready. By investing in them, training them, and most importantly providing them high-quality leadership, we're going to have a ready Army. Leadership is a critical—maybe the essential—element of combat power. It's also our greatest strength. That "ready Army," through its ready people, is going to be able to fight and win anytime, anywhere, and against any adversary.

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IMPROVING SUPPLY SUPPORT ACTIVITY OPERATIONS

3rd Armored Brigade Combat Team, 1st Armored Division

■ *By Lt. Col. Charles Montgomery*

The Supply Support Activity (SSA) represents the epicenter of logistics within a Brigade Combat Team (BCT) regardless of tactical formation composition. The SSA serves as the critical link between tactical and national-level supply echelons; this link is vital to the overall level of unit readiness.

This fact mandates comprehensive system effectiveness combined with an in-depth knowledge of Global Combat Support System-Army (GCSS-A) to effectively navigate the supply architecture.

The phrase "strategic private" does not solely apply to tactical operations. Strategic privates and specialists at

the battalion clerk-level represent the origin of the supply demand signal for the entire Army. If these Soldiers are not properly trained, the entire supply chain management system will be adversely affected over time. This creates enormous ramifications within BCTs, and the level of proficiency of these Soldiers truly makes them strategic in nature during

Leaders within a BCT must search for ways to maximize logistics platforms and Soldiers with the explicit intent of holistically improving operations.

the execution of tactical and home station operations.

Organizations must wholeheartedly invest in data entry clerks to ensure the right supplies are ordered and arrive at the right time to sustain operations. The SSA must operate at the highest level of efficiency from origin (supply clerks at the battalion), to brigade/division (ZPARK managers), and finally the supply entry/exit point (SSA). The SSA accountable officer (AO) is the lynchpin during the execution of this entire operation.

Leaders within a BCT must search for ways to maximize logistics platforms and Soldiers with the explicit intent of holistically improving operations. 3rd Armored Brigade Combat Team (3ABCT), 1st Armored Division (1AD), Fort Bliss, Texas developed multiple solutions to increase operational productivity.

These solutions include:

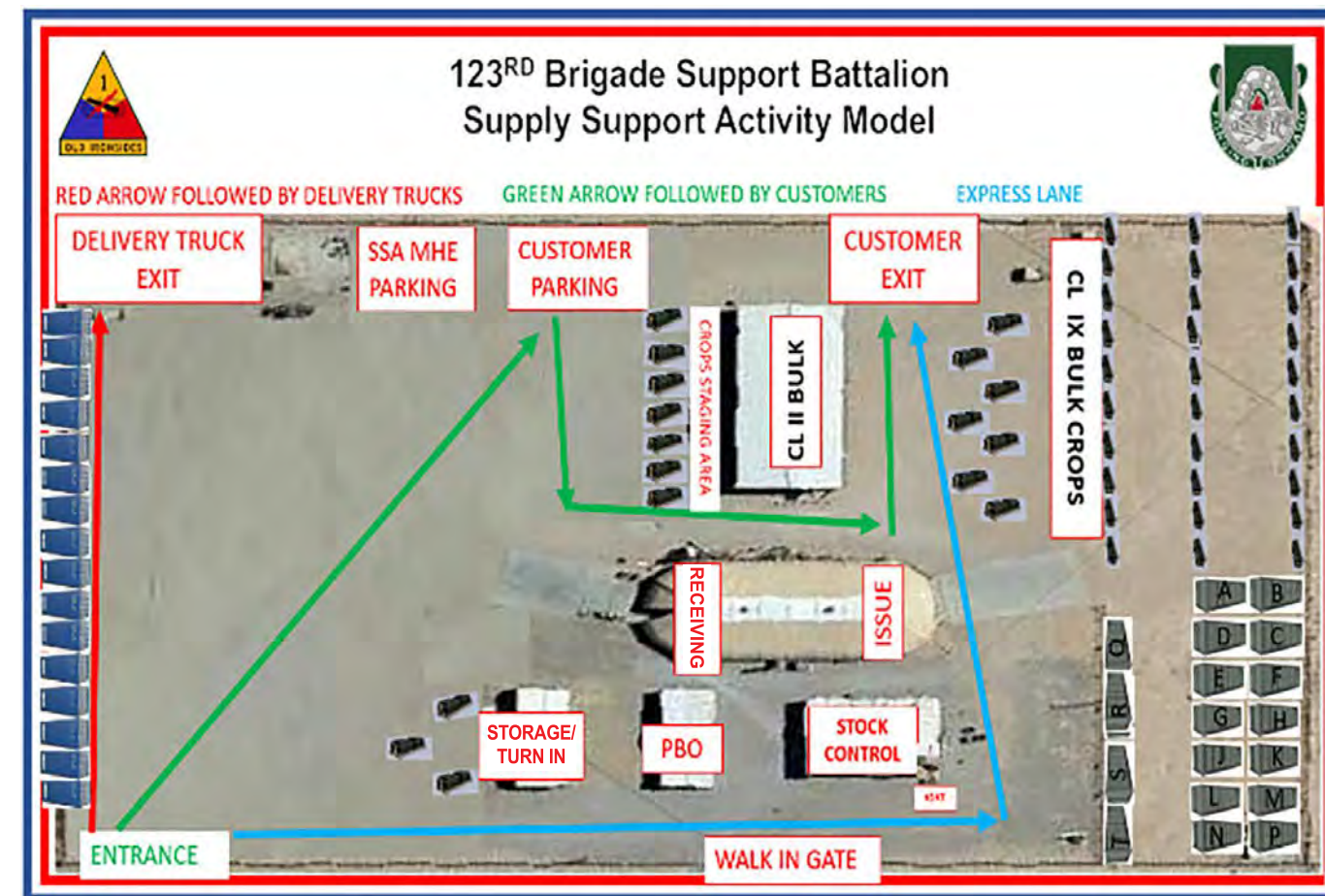
- Implementing a “Touch-It-Once Campaign”
- Express lane creation
- Daily Forward Support Company (FSC) Logistics Packages (LOGPAC)
- Overaged Repairable Item Listing (ORIL) management

The “Touch-It-Once Campaign” focuses on the arrival of supplies at the SSA, automated logistical specialists (92A) supply processing, and supply placement into supported battalion lanes. Historically, 92As were placing supplies into specified unit lanes and subsequently touching

the supplies a second and third time during the out-load process. Based on these actions, the entire process required two and a half man hours per document number.

To alleviate additional strain on Material Handling Equipment (MHE) and SSA Soldiers, the BCT implemented a Container Roll-In/Roll-Out Platform (CROP) exchange program which automatically reduced man hours by one and a third hours, from an aggregate perspective. Forward support companies and the brigade support battalion (BSB) base companies were assigned specific geographical areas within the SSA. Each company was tasked to place three CROPs at the SSA, which were controlled by the SSA AO for property accountability and management purposes. This system allowed SSA personnel to load unit CROPs once with required MHE, which increased the efficiency of the SSA and overall unit throughput.

Additionally, once FSCs transport CROPs back to their area of operations to facilitate supply downloading, overaged repairable item list (ORIL) items are backhauled to the SSA for processing on the same CROPs. The BSB Distribution Company is responsible for transporting ORILs to the Logistics Readiness Center (LRC), and bringing empty CROPs back to the SSA to start the cycle over again. The “Touch-It-Once Campaign” has increased efficiency within 3rd Armored Brigade Combat Team, 1st Armored Division (3ABCT, 1AD); it represents a method which can



Supply Support Activity Model for 123rd Brigade Support Battalion. (Courtesy graphic).

be replicated in field environments which enables our Soldiers to train as we will fight.

Categorically, the SSA has two types of customers: Those picking up bulk items from an external area and those securing smaller Class II and Class IX items from internally controlled areas based on the premise of potential pilferage. 3ABCT increased efficiency through the implementation of dedicated battalion pickup timeframes in order to focus on detailed requirements for all customers not just combined arms battalions. Although this increased proficiency overall by 19%, especially in the area of time on station, there

remained an opportunity to improve operations. The resolution to solve this gap manifested into the creation of an “Express Lane.”

Express lanes operate daily with no specific battalion assigned to daily pickup windows. The only management mechanism attached is units can only use this lane if they have ten documents or less at the SSA. In order to utilize the express lane, units employ three distinct methods of coordination which are: Telephonic, Very Small Aperture Terminal (VSAT)/Home Station (HS), and Non-classified Internet Protocol Network (NIPR)-(VSAT/HS). Each coordination measure has an associ-

ated tactical version to replicate the same sight picture during the execution of tactical operations in field environments. Once the unit makes contact with the SSA, the 92As immediately pull that specific unit's ten documents or less to expedite the process. The express lane navigates through the SSA to the open end of the issue clam shell where items are physically delivered to the customer. The goal is for the customer to utilize our Wi-Fi (CASI) capability to Post Goods Receipt the items on location directly following the SSA Post Goods Issue process. The creation of this lane allows units to pick up supplies multiple times daily. The immediate impact of creating this lane is depicted in a

customer wait time (CWT) decrease of 17%, which places supplies in the warfighter's possession faster and contributes to sustained operational readiness at the highest levels. Continuous improvement targeted to increase operational readiness directly contributing to greater lethality remains the overarching goal of all leaders within 3ABCT.

The ultimate test of any tactical-level organization is to have established systems which transfer

with ease between home station and field environments. The comfort and convenience of home station operations directly contribute to atrophied field craft skills required to defeat the enemy in severely degraded technological environments. The key mitigation measure is to train as we fight at home station, and this type of training will transfer with tremendously less friction. 3ABCT implemented daily LOGPAC operations from unit motor pool areas to the SSA in order to replicate tactical op-

erations. This also applied to all four companies within the BSB. However, the distribution company (Alpha Company) of the BSB assumed a dual role. Alpha Company has the responsibility, on a rotating schedule, to deliver supplies to supported battalions just like the company delivers supplies in field environments.

The implementation of daily unit LOGPACs produced the following effects:

- Significantly decreased CWT

- Increased FSC's ability to execute convoy operations
- Allowed more LOGPAC repetitions which increased Soldiers' confidence in execution of enhanced logistic release point operations through daily coordination between the BSB and FSCs which directly supports brigade support area execution
- Established a firm foundation on the execution of field trains combat post and combat trains command post operations

Sustainers and warfighters have an undeniable obligation to increase ORIL management effectiveness which directly impacts the Army enterprise and sustainable operational readiness from a limited parts production perspective. 3ABCT implemented a deliberate process targeted at reaching the Army's ORIL turn in standard of ten days (Army Regulation 750-1) while holistically improving the efficiency of SSA operations.

The T-Code in GCSS-Army that gives a detailed account of all recoverable items owed to the SSA is the ZOAREP report. As a BCT, there was an issue of matching items to the correct turn in codes which affected return credit. Clerks must utilize YOBUX (71-series documents) to synchronize open documents in the overarching ZOAREP report. If this does not happen, items systemically tend to get processed as Z-Excess, which in turn eliminates the potential return financial credit to the brigade/division. All recoverable items should

be processed and tied to the ZRL code to receive ORIL return financial credit. From an organizational perspective, it's our responsibility to get recoverable items back into the Army system to ensure the organization as a whole continues to operate at a high level of readiness.

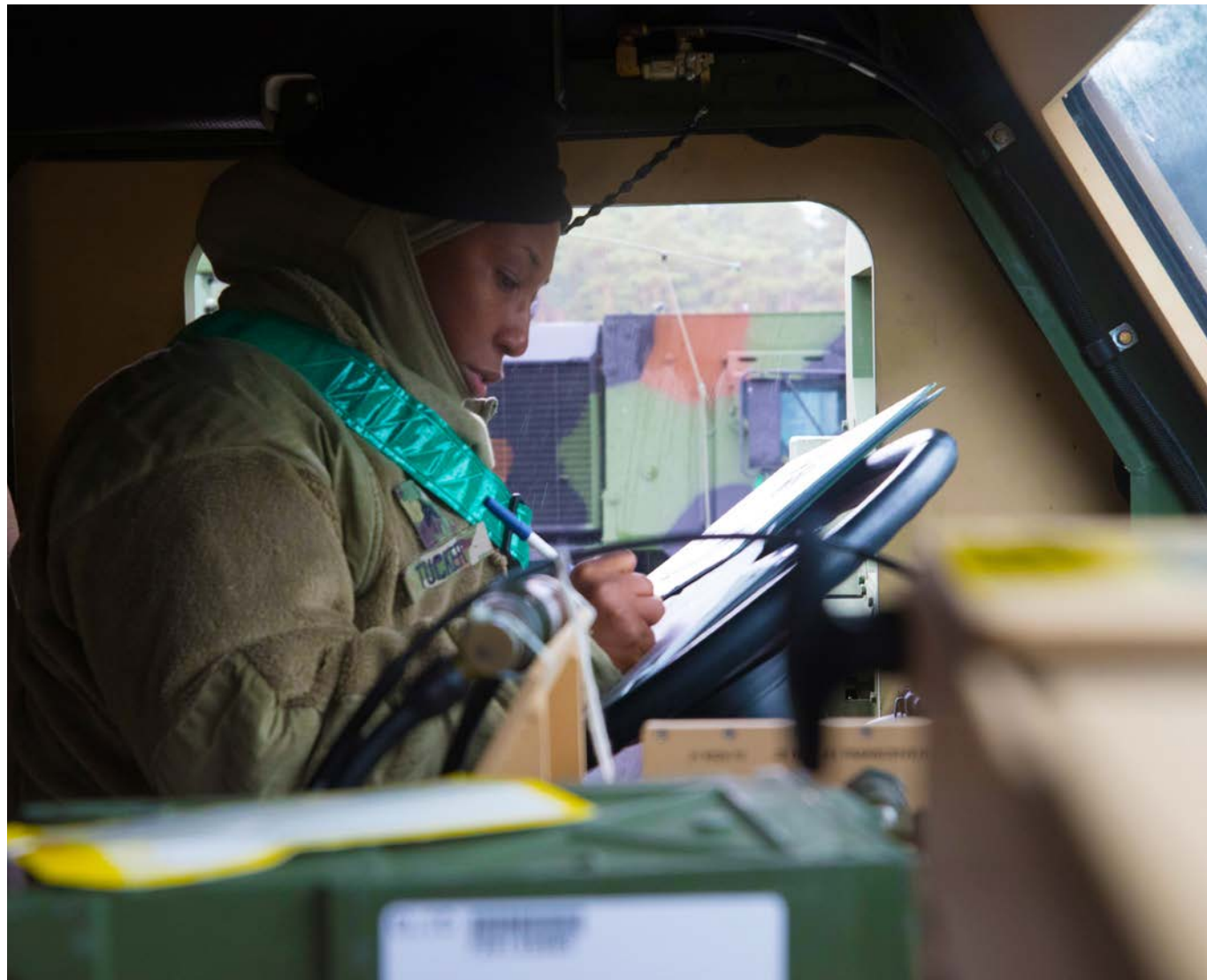
The Defense Working Capital Fund (DWCF) established under Title Ten, United States Code Section 2208, allows the Army to repair and purchase requirements for all supplies, maintenance, transportation, and other financial needs required to operate a professional organization. The generated ORIL credit helps the DWCF and our organization remain fiscally responsible to the American taxpayers. In addition to financial revenue generated, critically required parts that may not be on the assembly production line are repositioned into the Army system for refurbishment and returned to the warfighter. A myopic approach to returning repairable parts back into the system produces detrimental effects to readiness over time.

Secondly for a BCT, the return credit is essential to operate an armored formation. For illustration, an M1 Abrams engine costs \$903,498 and the return credit is \$361,781 representing a 40% return on investment of the entire cost. The final improvement measure concerned sending our 92As directly to maneuver battalions to process and approve recoverable items on site. From that point, FSCs delivered the items to the SSA and the transportation platoon

delivered the items to the LRC. This entire process with support from all leaders within the BCT has immensely improved ORIL management.

The SSA within any organization represents the nucleus of sustaining and increasing operational readiness to engage and destroy the enemy over a prolonged period of time. This endeavor demands engaged leaders at all echelons to ensure our formations remain committed to the execution and overall effectiveness of sustainment operations. The key is to design and implement systems which transfer without friction to field or austere environments that replicate the environments where we will engage our enemies. Low-density training for all 92As within the BCT is essential. This investment will mitigate skill atrophy over time. Leader professional development, combined with rotating the brigade maintenance meeting to the SSA footprint to increase the overall importance of the SSA among BCT leadership, represents another good technique to improve operations. The success or failure of an organization lies within the will of its leaders. Engaged leaders must develop viable solutions within the system of record, GCSS-Army, to keep our organization operating at a high level of readiness, postured to engage any enemy force within the world.

Lt. Col. Charles L. Montgomery serves as commander, 123rd Brigade Support Battalion, 3rd Armored Brigade Combat Team, 1st Armored Division, located at Fort Bliss, Texas. He holds a master's degree in operational art and science from the School of Advanced Military Studies. He is a graduate of the Army Pathfinder School, Airborne, Joint Planners, and Joint Firepower courses.



Sgt. Shredia Tucker, a water purification supervisor assigned to 504th Composite Supply Company, 553rd Combat Sustainment Support Battalion, 1st Cavalry Division Sustainment Brigade, conducts an inventory of items in a Light-Medium Tactical Vehicle, in Zutendaal, Belgium, Feb. 27. (Photo by Sgt. Elizabeth Clark)



Improved Capabilities Enable Joint Logistics for the Future Joint Force

■ By Army Maj. Michael J. "Mic" Martin, Air Force Maj. Stacey R. Kidd, and Navy Lt. Cmdr. Christopher B. Landis

An increasing number of countries are establishing and implementing 5G infrastructures to take advantage of the increased responsiveness and agility inherent in the technology. The U.S. Department of Defense (DoD) should invest resources into 5G to ensure its logistics depots, trusted

global supply chain, and joint force systems can operate on a secure 5G spectrum. This article will explore how 5G technology, in conjunction with appropriate physical and virtual infrastructure upgrades, can improve the DoD's ability to quickly and efficiently provide materiel and commodity solutions while simultaneously enhancing the Joint Lo-

gistics Common Operating Picture (LCOP).

5G Introduction

In the past decade, smartphone owners have become familiar with the power of 4G and 4G LTE mobile communication technology. The "G" in 4G represents the fourth generation of wireless mobile

communication technology. Starting in the early 1980s, the first generation (1G) was released to provide basic voice services over bulky and expensive mobile phones. Progressively through subsequent decades, generations of mobile communication technologies have incrementally improved, providing new capabilities and functionalities that have changed how we do business, how we communicate, and how we access information.

In 2019, Verizon and AT&T launched 5G wireless technology in four U.S. cities. 5G technology promises to "revolutionize" society by exponentially increasing data transmission capacity, enabling low-latency data sharing and real-time collaboration on immense scales. For example, a 5G device on a 5G network will be able to download a two-hour movie in three to four seconds whereas a

4G LTE connected device would require six minutes for the same download.

Although engineers have been developing 5G standards for years, 5G implementation is still in its early stages and is projected to occur through the 2020s. Logisticians across the U.S. Armed Forces could gain tremendous efficiencies from employing 5G to increase access and use of quantities of data previously too burdensome to amalgamate and process.

5G networks can improve the Joint Logistics Enterprise (JLEnt) of the future by enabling the growth and implementation of three interrelated technologies: The Internet of Things (IoT), supply chain automation, and artificial intelligence (AI).

Capitalizing on 5G through IoT, Automation, and AI in Joint Logistics

"The Internet of Things is a network of physical objects that are digitally connected to sense, monitor, and interact within a company and between the company and its supply chain enabling agility, visibility, tracking, and information sharing to facilitate timely planning, control, and coordination of the supply chain processes."

Harnessing IoT technology can significantly improve the JLEnt by informing the LCOP while operating on 5G networks that can sustain IoT proliferation and device loads. Military logisticians can gain efficiencies via automated systems and

AI for supply chain management. Automated guided vehicles (AGV), such as drones and forklifts operating in supply depots and warehouses, could collect and feed vast volumes of data to AI, leading to automatic reordering of supplies when stock objectives fall below a threshold. Logisticians could harness these data to conduct predictive analysis on what supplies will be needed, how many, and at what locations.

IoT in Inventory Management

Imagine having constant, real-time visibility of supplies in transit from the factory floor to the battlefield. Employing the IoT with 5G can make this a reality. The greater bandwidth [of 5G] can accommodate up to a million sensors within a square kilometer at speeds at least 10 times greater than anything else available. Small electronic tags with years of battery life can be affixed to items in the military stock system and communicate with a cloud-hosted tracking system. Logisticians can query the system at any time to determine the items' real-time location. IoT will allow the reduction in the time between data capture and decision making that enables supply chains to react to changes in real time allowing levels of agility and responsiveness never experienced before.

Supply Chain Automation

The supply chain has three major segments. The first is the stocking of appropriate quantities of supplies within a distribution center. Second is the local movement of supplies within distribution centers, including

to and from drop points for interfacing with delivery vehicles. The third is transportation of goods from the distribution center drop points to the end users. 5G, IoT, and AI technology can benefit all three segments.

For the items stocked in distribution centers, 5G combined with AGVs would enable rapid and precise inventories by scanning for electronic tags and continuously maintaining a cloud-hosted database. AVGs equipped with AI are able to plan their own movements based on warehouse layouts and humans, maximizing efficiencies of traversing the shortest paths and automatically keeping the inventory database current.

The retail giant Walmart provides an example of the benefits of AGVs

in inventory management. Walmart moves a tremendous volume of inventory each year to stock 75 million distinct products and support 11,300 stores, globally. Walmart invests in cutting-edge technological research for inventory management, which Walmart credits to its success. In 2016, Walmart began researching and developing drones for its warehouses. The drones were designed for canvassing a distribution center, scanning and reporting when stock reached low levels or was not in pre-designated storage locations. Moving forward, AGV applications enabled by 5G are likely to become the norm, providing efficiency and accuracy for large distribution centers.

Furthermore, 5G, when combined with the IoT, an automated supply chain, and AI, can enable Just-in-Time (JIT) logistics, a sys-

tem in which logisticians can lower stock levels while still accounting for fluctuations in demand. The ability to track inventories in near-real time would permit distribution centers to manage stock levels more efficiently. Thus, JIT logistics in this construct could minimize expensive overhead, globally, by reducing the need for excess inventory that warehouses currently retain to cover gaps in the LCOP.

Once stock departs the distribution center, near-real-time location updates from the same electronic tags are also possible during transit. Military supply chains can be long and the reliable receipt of parts can be critical. Such a tracking system, accessible from the DoD Information Network, would allow distributors and end users to track supplies en route, more accurately predict

when they will be received, and plan accordingly.

Currently, many items in the military stock system have barcodes that personnel manually scan to track the location of items. But that tracking data point is only current at the moment scanned. Leveraging IoT concepts with the connectivity of 5G would automate continuous tracking in real time.

In 2018, the Mediterranean Shipping Company (MSC) saw the potential in leveraging the IoT and outfitted 50,000 dry-cargo shipping containers with IoT devices. Now, in addition to real-time visibility of a container’s location throughout shipment, MSC is able to track when the doors open and close, providing tamper-status and security of the contents. To maintain connectivity at sea, MSC installed base stations on their ships to relay communications between the IoT devices and off-ship servers. These tracking and data collection capabilities provided MSC with multiple competitive advantages over non IoT-equipped companies.

Implementation of the IoT across the U.S. military services’ logistics systems could enable integrated joint warehousing. A unit’s supply request could be directed to and fulfilled by the most expedient distribution center location, regardless of service, increasing the speed of fulfillment.

Of the supply chain automation functionality described, there are limited practical applications via existing 4G, Wi-Fi, and wired net-

works. But 5G overcomes connection density and latency limitations of 4G, the interoperability challenges in transitioning between Wi-Fi instantiations, and mobility limitations of wired networks. In other words, 5G is a critical component to automating military logistics.

Artificial Intelligence (AI) in the Joint Logistics Planning System

The DoD defines AI as:

“... The ability of machines to perform tasks that normally require human intelligence—for example, recognizing patterns, learning from experience, drawing conclusions, making predictions, or taking action—whether digitally or as the smart software behind autonomous physical systems.”

Some experts tout AI as the “next Industrial Revolution.” In late 2018, the DoD established a Joint Artificial Intelligence Center to “accelerate the delivery of AI-enabled capabilities, scale the Department-wide impact of AI, and synchronize DoD AI activities to expand Joint Force advantages.”

Improving the JLEnt through the application of AI in supply chain management systems can lead to cost-effective and time-efficient re-supply and joint force sustainment. In 2017, the Logistics Support Activity (LOGSA) worked with International Business Machines (IBM) Corporation to apply AI in analyzing all of its repair parts shipping requests; from the efficiencies gained,

LOGSA projected a cost savings over \$100 million per year once the AI algorithms are fully implemented.

For AI to function well, it needs lots of relevant data. 5G networks would enable high-speed data throughput necessary for relaying massive volumes of data from the ever-growing number of devices connected to the network, including mobile phones, IoT devices (estimated to reach 20 billion by 2020), and AGVs. AI provides the methods to analyze and learn from the voluminous data.

Continued investment in and leveraging of AI in conjunction with 5G and the IoT within the Joint Logistics Planning System can lead to enhanced performance through gains in:

- Efficiency of data analysis
- Supply and maintenance prediction
- Shortened decision cycles
- Increased awareness of the operational environment

Risk Considerations

There are inherent risks that commanders should consider before employing 5G to support military logistics. These include detection of communications and subsequent enumeration of military assets, integrity and confidentiality of the data communicated, and continued availability of the radio frequency (RF) spectrum for 5G.

Risks in Telecommunications Equipment

The Chinese telecommunications

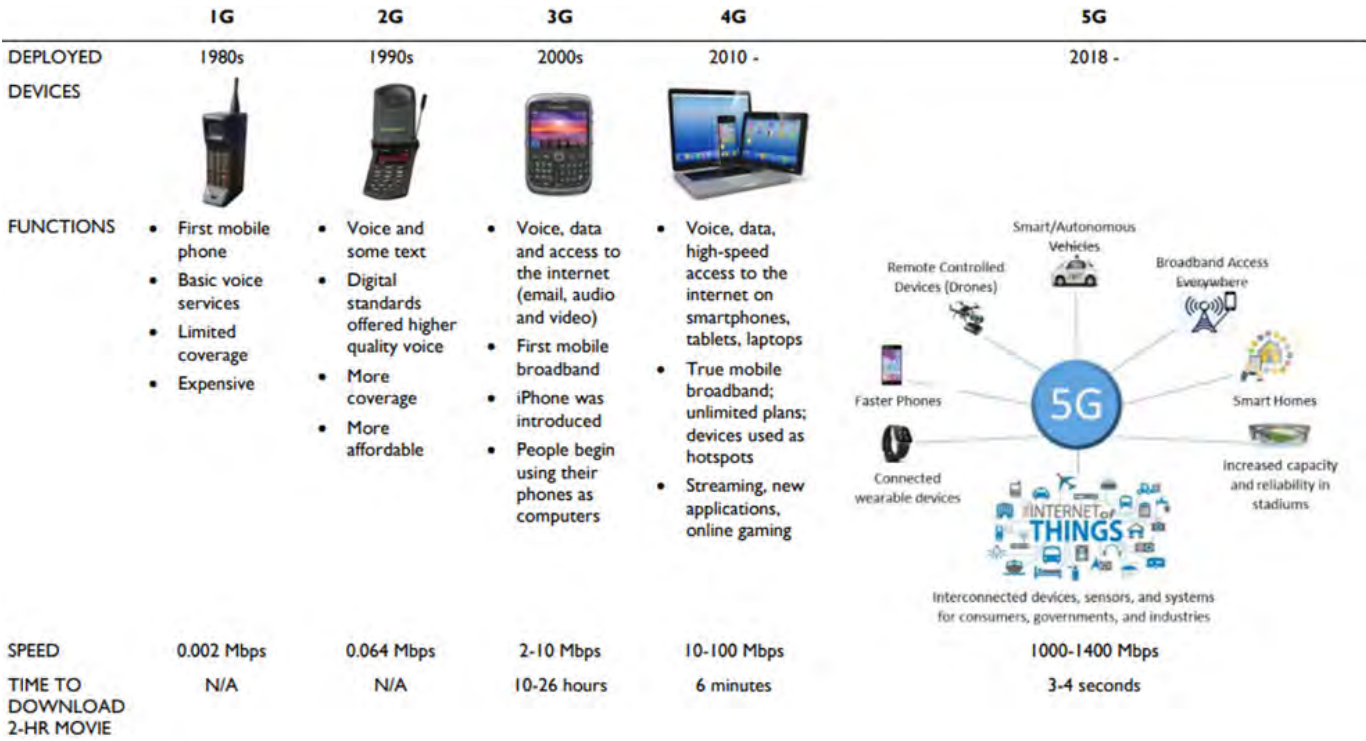
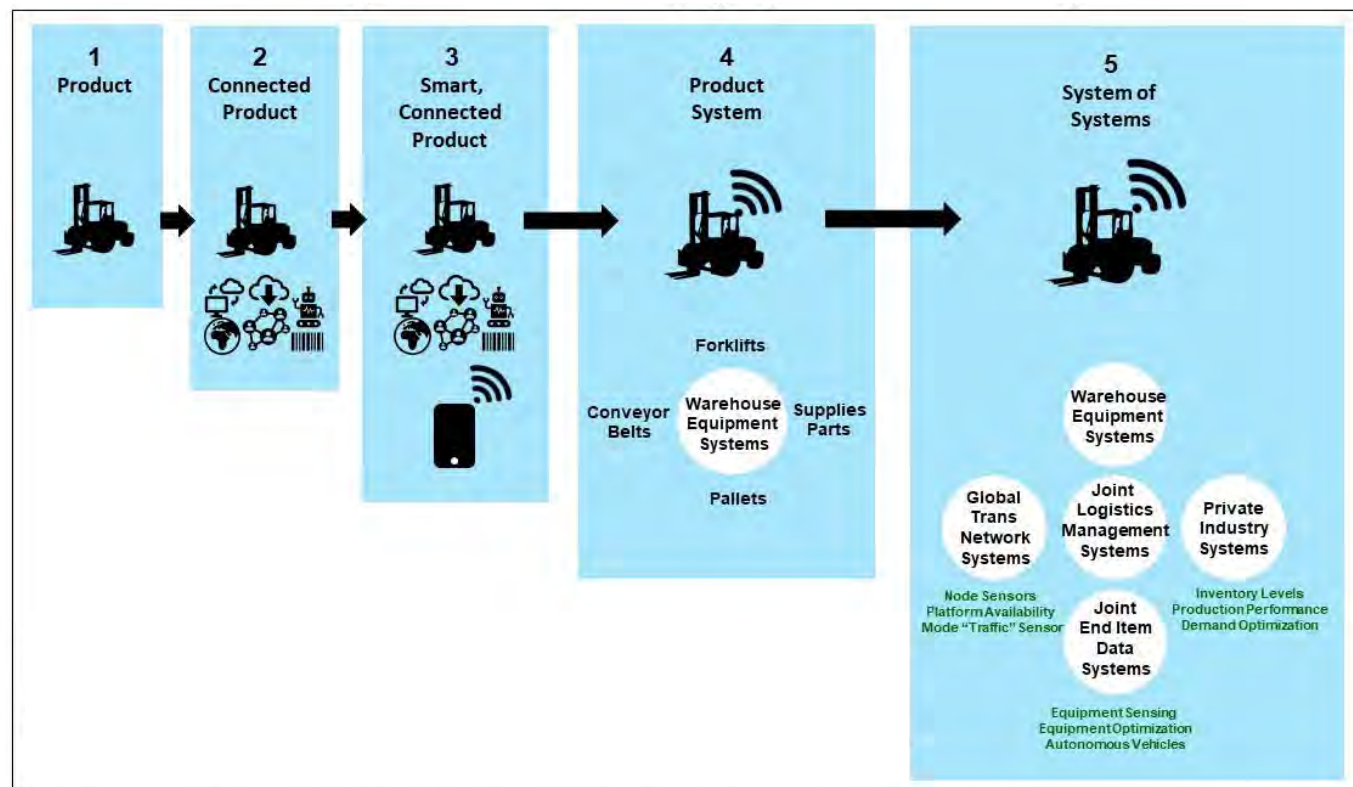


Table 1. Generations of mobile phone communication technologies. (Courtesy graphic)



The Internet of Things (IoT), small forklift example. Depiction of the evolution of a single product that enables access to data from a mobile device, to a product that is part of a larger system of interconnected products. A more powerful network, such as 5G, would be needed to support the expansion of IoT and IoT systems for military use. (This graphic was adapted by Mic Martin based on a model by M. Porter and J. Hepplemann, "How Small, Connected Products are Transforming Competition," Harvard Business Review, Nov. 2014, p. 5.)

company Huawei is highly suspected to be connected with and subsidized by the Chinese Government. As such, Huawei's systems likely contain virtual backdoors that China could exploit for espionage purposes or to affect telecommunications services. It is possible that U.S. forces would need to operate in an area with established Chinese-built 5G networks. This is not a reason to avoid 5G employment within the U.S. military but it is a necessary consideration when analyzing the operational environment and mitigating risk.

Detection and Enumeration

Whenever there is an active RF transmitter, there is a capability for both intended and unintended rec-

ipients to receive that signal. Essentially, any receiver can listen to a transmitted signal within range. In populated areas where there are relatively high concentrations of 5G devices, these military logistics devices would not stand out as something abnormal; however, a cluster of 5G devices that suddenly pops up in a remote location could draw attention. When operating in unfriendly or hostile areas, commanders should have the option to effect a transmit-inhibit state for any transmit-capable devices.

Data Confidentiality and Integrity

Data confidentiality can also be a concern given the prevalence of 5G network equipment coming from

companies with questionable motives, notably those suspected to be connected with or subsidized by foreign governments; however, the data can be encrypted relatively easily encrypted.

Having data integrity is like having a tamper seal on a container. If data integrity controls are in place, then the recipient can discern whether the data are changed from what the sender transmitted. If the signal was hacked and data corrupted, the data will fail the integrity checks and the receiving device should request retransmission. If the retransmitted data also failed the integrity checks, the transmission will be denied. Mitigating this type of vulnerability requires mostly engi-

neering-level improvements, specifications the DoD could require for its 5G device acquisition contracts.

Spectrum Availability

A significant hurdle in adopting 5G is the requirement for new infrastructure to operate in the radio frequency spectrum bands allocated for 5G communications. This hurdle will be overcome once telecommunications companies institute 5G network infrastructures. In the meantime and in any location lacking 5G coverage—including at sea, in the air, or where there is significant risk of adversary activity effecting a denial of service—the DoD could establish military-operated 5G intermediary base stations, converting the signal to another military communications medium, like a satellite communications signal.

5G and the U.S. Government

Encouragingly, the U.S. government has been attempting to create government structure and partnership with private industry to support the development of 5G, AI, and autonomous systems. The new Army Futures Command has partnered with Carnegie Mellon University on AI and robotics research and development. The efforts of Defense Advanced Research Projects Agency, through its \$2 billion investment in the AI Next Campaign and the Defense Innovation Unit, continues to conduct groundbreaking work on research and development.

The current Administration and Congress have demonstrated bi-

partisan support toward implementing 5G in the U.S. by introducing 23 legislative items in 2019 specifically addressing 5G.

The Defense Innovation Board released a report in April 2019 detailing the proposed adoption of 5G and the opportunities, threats, and strategic decision points that come with it. Before investing in 5G infrastructure and devices, the DoD must choose which of the two 5G frequency bands it will utilize. The decision may affect the cost of implementation, the time until 5G can be operational, and whether the U.S. standard will be interoperable with the worldwide standard. Cooperation with private industry and competitors is necessary to drive the quicker availability of viable 5G infrastructure and networks for DoD.

Conclusion

Implementation of 5G technology in the DoD can provide improved joint logistics responsiveness, accuracy, flexibility, and economy around the globe, both now and in the future, by enhancing inventory control, reordering, supply and maintenance analytics, autonomous warehouses, and the method by which the joint force conducts resupply. These gains collectively outweigh 5G limitations. As with any new technology there is a degree of risk, but the risk can be mitigated if networks, hardware, and devices are designed with the inherent risks considered and appropriately addressed. The DoD should make a concerted effort with

other government agencies and private industry to execute a viable way forward for 5G that can provide a joint logistics advantage for the U.S. when projecting power across the globe.

The unabridged version of this article received the General MacArthur Writing Foundation Award from the Joint Forces Staff College, Norfolk, Virginia, Nov 2019.

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NATIONAL Mail Call:

Army Keeps the Mail Moving!

■ *By Jim Harvey*

Mail Call has been a cherished moment for Soldiers, past and present, and most Soldiers are familiar with Army postal units. Mail delivery is an important sustainment function for the Army. However, at times the Army has conducted mail operations beyond the military itself. The Army even helped start the first post office air delivery program. This article will look at Army sustainment operations in starting airmail delivery, the Army air delivery of mail during the 1934 Air Mail Scandal and the Postal Strike of 1970.

Air Mail service began in the U.S. in May 1918 but the U.S. Post Office was unable to execute due to the lack of experienced pilots. The new U.S. Army Air Service took the mission until the Post Office was able to take over operations in August 1918 using its own pilots. The initial regular service had Army pilots flying mail from Washington D.C., Philadelphia, and New York.

By 1925, the increase of mail delivery nationwide prompted Congress to pass legislation known as the Kelly Act to allow the Post Office to contract airmail delivery services. In 1933, Congressional investigations began into alleged airmail contract fraud and collusion by officials of the previous administration of President Herbert Hoover. In February 1934, these concerns caused President Roosevelt to cancel, via executive order, all commercial airmail contracts. President Roosevelt then ordered the Army Air Corps to begin air-

mail service until new contracts could be awarded.

The Chief of the Air Corps during the operation was Maj. Gen. Benjamin Foulois and the Army project was labeled as the Army Air Corps Mail Operation (AACMO). The United States was divided into three zones for the operation: Western, Eastern, and Central zones. The Army would provide mail service at a reduced level with mission priority designated by the Postmaster General. The U.S. Army Air Corp was unprepared to assume the operation and it would cost the Army sixty six accidents, including twelve deaths during the operations from Feb. 19 through June 1, 1934. Not all of the deaths were from actual AACMO flights as twelve fatalities include those killed during other tasks related to the airmail operations. The Army planes and pilots were not prepared for the long flights or night operations. The pilots themselves were not as experienced since they did not know the routes or possess the flight time hours as the civilian contractors they had replaced. These two issues were often compounded by flying in horrible weather to include massive snowstorms and fog.

The Roosevelt administration became increasingly embarrassed after public and partisan attacks following the accidents and deaths. The embarrassment also came from public opinion especially from two of America's aviation heroes: World War I ace Eddie Rickenbacker, who called the flights "legalized murder," and Charles Lindbergh who called the

flights "unwarranted and contrary to American principles."

By March 10, 1934, continued deaths resulted in a meeting between Roosevelt, Gen. Douglas MacArthur, and Foulois; and resulted in what Foulois later called in his autobiography "the worst tongue lashing I ever received in all my military service." Following the meeting, all flights were suspended for a week until March 19, 1934, to allow the Army to reevaluate flight safety and impose risk-mitigation rules before resuming the AACMO operations until June 1934.

The average Army pilot suffered much in transporting the mail. Pilots endured flights in open cockpit aircraft in subzero weather, flying a plane using a map while wearing heavy clothing and gloves. Ground crews also endured suffering while repairing planes out in the open during cold and stormy weather. Additionally, living conditions were often less than satisfactory since life support was on local civilian flying fields. The officers and enlisted were forced to live on the local economy for their lodging and subsistence expenses which quickly exhausted enlisted Soldiers and put officers in a not better situation. It would not be until late March 1934 that financial relief for per diem was provided to those involved in the airmail operations.

While the operation was not as successful as regular postal delivery, the Army completed its mission in June 1934 and had prevented a com-

plete standstill of mail delivery. Later in 1941, federal lawsuits were settled by the companies who had their contracts canceled in which it was decided no evidence of fraud or collusion was discovered. Even more likely frustrating, considering the lost lives, was the companies that had their contracts canceled were not allowed to rebid, although they did so simply under a new corporation name and were legally allowed to do so.

On March 17, 1970, postal workers in New York began a strike over low pay that was aggravated by a federal worker six month pay raise delay ordered by President Richard Nixon to control inflation. Additionally this was after a recent Congressional pay raise of forty one percent. In

a precomputer-centric world, the strike threatened to shut the entire nation down. On March 21, 1970, during a press conference Nixon told workers there would be no negotiations during the strike but the workers did not return to work.

On March 23, Nixon declared a national emergency and ordered military forces into New York City to help deliver mail. The military began Operation Graphic Hand which involved personnel from the Active Army, Air Force, Navy, and Marines. Additionally, forces were used from the Army National Guard, Army Reserve, Air National Guard, and the Navy and Marine Corps Reserves. Total forces would reach almost 29,000 according to the U.S.

Army Graphic Hand After Action Report (AAR), August 1970. While the strike had spread nationwide as at one point around a quarter of the postal force went on strike, Operation Graphic Hand in itself was focused on New York City postal operations. However if the strike continued, there were plans to deploy troops to up to thirty four additional cities to keep the mail moving as part of Operation Graphic Hand.

Since postal supervisors remained on the job, Soldiers were quickly trained in postal activities. This included sorting and unloading mail and, in some cases, assisting at clerk windows as needed. They also made deliveries to businesses, but not residential areas, and transport-



People look at an Air Mail Plane on display in Times Square, New York City, Jan. 1, 1927. (Photo courtesy of U.S. National Archives)



Women in the Women's Army Corps (WAC) at the U.S. Army base post office in England sort mail by military unit number, 1944. WAC was created as an auxiliary unit, the Women's Army Auxiliary Corps in 1942, and converted to full status as the WAC in 1943. (Photo courtesy of U.S. National Archives)

ed mail to substations. While it can take a year for new Post Office employee sorters to learn address layouts, the Soldiers had to learn quickly, realizing they could not match the letters per minute accomplished by the average postal employee.

Despite this, the military was preventing a total shutdown of mail service until the involved parties could reach an agreement. Postal supervisors had been pleased with the support provided, according to the Army AAR. The government, union leaders, and postal workers were able to come to an agreement on March 25, 1970, ending the strike before a wider military response was needed. With the end of the strike, Active forces returned to normal duty and Reserve forces were rapidly demobilized.

The startup of the post office air-mail service in 1918 demonstrated the capability of the Army to assist civil authorities when required. Both the Air Mail Scandal of 1934 and Operation Graphic Hand demonstrated the Army could not conduct postal sustainment operations to the level of normal postal workers. However, Army forces could prevent complete shutdown of postal service so vital to the nation. Additionally, it serves as a reminder that the Army can be called to conduct many different types of sustainment missions at any given time or crisis and be expected to perform. As another example, the U.S. Marine Corps also was called to conduct mail train security operations in 1921 and 1926 to protect mail trains from robbery. Soldiers, as historically demonstrated, must

be flexible to conduct all operations in support of the nation. For further information on any of these topics, the National Postal Museum is a recommended source for the Operation Graphic AAR available on the World Wide Web.

Jim Harvey is a military analyst at Sustainment Division, Data and Analysis Center, Combat Capabilities Development Command, U.S. Army Futures Command, at Aberdeen Proving Ground, Maryland. He holds a bachelor's degree in political science from Towson State University and a master's degree in military science with honors from American Military University. He is a member of the U.S. Army Reserve as a lieutenant colonel in the Logistics Branch. He is a graduate of the Ordnance Officer Basic Course, Transportation Officer Advanced Course, Combined Arms Services and Staff School, and Command and General Staff College (Common Core).

Featured Photo:
A U.S. Postal Service mail bin rests on a transfer table at 39th Force Support Squadron Post Office, at Incirlik Air Base, Turkey, Nov. 20, 2019. (Photo by Staff Sgt. Eric Mann)

UNDERSTANDING the CONTRACTING ENVIRONMENT in the AFSB

■ By Capt. Christopher Carlstedt

Maintaining and achieving strategic readiness among our tactical and operational formations is principally achieved through the effective management of contracts in the Army Field Support Brigade (AFSB). The logisticians seeking to achieve effects through the maneuver of contracted solutions in the AFSBs, who consider themselves ignorant or inept in the practice of contract management, may find themselves creating strategic-level risk with global implications. Attributes of the most effective contract managers include mastery in tactical- and operational-level logistics; the desire to become experts in contracting; the analytical capacity to hold contractors accountable with quantifiable metrics; vigilance in quali-

ty assurance inspections; and a confident demeanor while engaged with corporate leaders. AFSB leaders recognize they are operating in a for-profit, business-oriented, corporate atmosphere; and they also understand the corporate leadership will be the first to notice ineptitude on the part of the government.

Overview

For those unfamiliar with AFSBs, Army Doctrine Publication 4-0, Sustainment, states: An AFSB provides materiel readiness focused support to include coordination of acquisition logistics and technology actions to Army operational forces, serving as Army Sustainment Command's (ASC) link to the generating force.

Contracted support is integral to the ability of the AFSB to accomplish this mission and impacts the lives of thousands of service members and their Families on a daily basis; often without the customer's awareness that these employees are members of AFSBs. A very short list of the contracted services provided might include pass-back field level maintenance support to tactical formations, dining facilities, household goods shipments, dress uniform tailoring and seamstress services at Basic Combat Training centers, emergency vehicle maintenance services, and contracted school bus drivers.

The 406th AFSB provides direct support to XVIII Airborne Corps with four battalions aligned to 82nd

Airborne Division, 101st Airborne Division, 10th Mountain Division, and 3rd Infantry Division. Additionally, 406th also provides direct support to 14 garrisons through 14 Logistical Readiness Centers across the Eastern United States. This is accomplished through the oversight of 85 service contracts worth approximately \$442 million. Two recent missions that highlight the importance of these contractors in building strategic readiness is the recent deployment of 82nd Airborne Division's Initial Response Force (IRF) and the divestiture of U.S. Army Special Operations Command's (USASOC) High Mobility Multipurpose Wheeled Vehicles for their fielding of the new Joint Light Tactical Vehicles. The personnel responsible for managing these contracts reside in the

Support Operations (SPO) Operational Contracting Support (OCS) cell. This team plays a critical role in resolving issues, assisting subordinate organizations, and ensuring the commander has the necessary information to make informed decisions.

Basics

A tactical logistician’s competency is judged by their ability to verbally communicate request/distribution processes, author and brief concepts of support, and achieve unity of effort across key organizations within a decentralized command-and-control environment. These same logisticians in the AFSB are also judged with respect to their contract management skills in a corporate business atmosphere at the strategic level where the language, tools, and stakeholders are drastically different.

Speak the Language

The first step in acquiring the necessary contracting knowledge to be successful in this new environment is to read the Performance of Work Statement (PWS), which is the foundation of the contract. It can be expected that the contractor has certainly read it and will quickly be able to identify those who have not. If you’re a battalion commander with 50 service contracts, read all 50 PWSs. The following paragraph, describing the elementary basics of the contracting process, can be utilized as a guide to determine current baseline knowledge of the subject. Multiple resources are available through Army Contracting Command (ACC) and Mission Installation Contracting Command (MICC) if a majority of the terms are foreign and new.

A unit or organization that identifies a shortfall requiring a contracted solution is referred to as the Requiring Activity (RA). The RA must clearly define the requirements which ultimately evolve into the PWS. Next, an independent government estimate (IGE) is created to determine potential costs used to compare against future bids. The PWS and IGE go through an approval process and, once approved, are sent to a contracting office for solicitation and contract award by the contracting officer (KO). The RA nominates a member of their organization to serve as the contracting officer’s representative (COR), as a liaison between the KO and the contractor (KTR). The COR plays a critical role as their primary duties include monitoring KTR performance, providing quality assurance, and cer-

tifying receipt of services. Quality is monitored by quality assurance evaluators (QAEs) in accordance with the quality assurance surveillance plan (QASP) developed from the specific tasks outlined in the performance requirement summary (PRS). The KTR provides a project manager (PM), outlined in the PWS as a counterpart to the COR, and both work closely to ensure mission success.

Understand the Stakeholders

Throughout the contracting process, a high degree of coordination and collaboration is necessary with ACC and MICC to achieve successful contract implementation and management. At its core, this relationship is based on the ACC or MICC providing the contract vehicles while the AFSB defines requirements and executes contract management upon award. Successful contract management depends on functional working

KTRs are very knowledgeable about the contracting process and the methods by which the Army provides contract management, however, the average senior Army logistician is not. For most of these senior Army logisticians, it's a matter of "when", and not "if", they find themselves involved in some capacity with contracts.



Contractors build an armored personnel vehicle intended for use by U.S. Army Soldiers. (Courtesy photo)

relationships between the AFSB (as the RA), the KO, and the PM. Each stakeholder plays a vital role to ensure the customer receives the contracted deliverables, the KTR is provided the necessary resources to execute the contract, and the KTR is being held accountable within the scope of the PWS.

Accountability

One of the most critical roles the AFSB plays is that of the RA holding the KTR accountable to the PWS and assuring the necessary quality control measures are in place. The RA provides the COR, who ensures QAEs are performing inspections to a standard outlined in the PRS and graded within the standards captured in the QASP. If inspections are not conducted to standard, there is no legal basis for holding the KTR accountable, thus any disciplinary action on the part of the RA will likely not withstand the scrutiny of litigation. It is the QAE’s responsibility to identify PRS tasks from the PWS, understand the established acceptable quality limits (AQLs), determine lot and sample sizes, conduct

appropriate types of inspections, and document deficiencies.

Contracting Battle Rhythm Events

There are multiple venues in which contracts are reviewed or discussed to ensure KTRs are adequately performing and contract cost is being effectively managed. Performance management reviews (PMRs) are conducted quarterly or semiannually within AFSBs and are always chaired by a commander. Attendees include the KO, COR, QAEs, PM, and corporate leadership. The purpose of these events is to provide the commander the opportunity to provide contract performance feedback directly to all of the key stakeholders. This is also an opportunity for the KTR to express concerns or issues that are negatively impacting their ability to execute the contracted services. Contract management reviews (CMRs) are also conducted quarterly by ASC; providing comprehensive performance and cost analysis across all the AFSBs service contracts. This provides commanders the information needed to take measured risks

in incremental funding environments.

When a KTR's performance falls below the established AQL, the commander's options include:

- Noncompliance reporting (NCR)
- Invoice deductions
- Negative or interim reporting on annual Contractor Performance Assessment Reporting System (CPARS) assessments
- Re-competing the contract before it expires to bring in a new KTR

It is critical that deficiencies are documented in NCRs when meeting with the KTR to discuss their performance so the KO can issue a corrective action request (CAR) to be annotated in the KTR's CPARS assessment. These assessments are archived by the government and can impact the ability of KTRs to compete for contracts in the future. All of these tools may be achieved through the AFSB's effective establishment of unity of effort across the stakeholders as previously discussed. AFSBs managing significant numbers of service contracts often employ all of these tools, simultaneously, across multiple contracts. Organizations that are not vigilant in the use of these tools will not be able to effectively manage their contracts and ensure the government receives the services for which they pay. This puts the AFSB at risk of being vulnerable to efficiencies taken by the KTR in an effort to increase profit margins.

Stewards of the Defense Industrial Base

While it is important to understand the business relationship we have with our contracted partners, it is equally important to remember they are important members of the strategic enterprise intended to deliver readiness to our fighting formations. Commanders at the battalion and brigade level in the AFSB must consider the impact of any invoice deductions or actions resulting in potential employee layoffs as it relates to the profit margin for the KTR and the health of the local economy. Employees that are laid off today might be needed tomorrow. Corporations and small businesses that cannot earn a profit do not tend to survive in the marketplace. It is important to take into consideration some of the difficult positions in which KTRs find themselves (short-notice hiring sus-

pense, downsizing workforces, forward deployed, etc.). It is the responsibility of the commander to take corrective action when appropriate and necessary, as there is an art to finding and providing the right balance.

Commanders have a role in maintaining the health of our Defense Industrial Base (DIB). They have a responsibility to support those corporations and small businesses that are contributing in a positive way to the DIB and to take corrective action against those that are not. This is difficult and complex government work that requires persistent vigilance and prudent decision making. This is why it is not a suitable task to be left alone on the shoulders of a COR or KO. Contract management is the business of a commander, who oftentimes must make decisions as if they are running a business instead of an Army unit.

Conclusion

In closing, if you are inept or ignorant in the practice of contract management, the KTR will be the first to notice and you risk them attempting to take advantage of the government. This is not the norm; a majority of the KTRs are valuable members of the Army team. KTRs are very knowledgeable about the contracting process and the methods by which the Army provides contract management, however, the average senior Army logistician is not. For most of these senior Army logisticians, it's a matter of "when", and not "if", they find themselves involved in some capacity with contracts.

This is a business. When some KTRs bid on a contract, they are banking on the government to fail to provide proper oversight. This is not a circumstance that is ideal for our Soldiers or Families, and directly impacts the strategic readiness of our Army.

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Feature Photo: Dave Schrader, an electronics mechanic at Tobyhanna Army Depot, leads a team to repair non-mission capable satellite transportable terminals during a two-week maintenance rodeo exercise to increase mission readiness of a National Guard unit. (Photo by Thomas Robbins)

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