

APRIL-JUNE 2021

ARMY SUSTAINMENT

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The Army's Strategic Role in Joint Operations

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"U.S. Army logistics will continue to be a required strategic enabler of the joint force. Our ability to project and sustain forces from a contested strategic support area to the tactical point of need must remain our global competitive advantage."

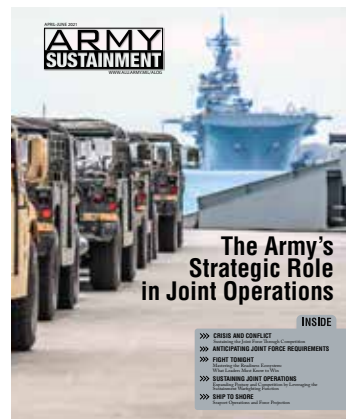
Lt. Gen. Duane A. Gamble

A U.S. Army Soldier ties off a rope aboard the U.S. Army Logistics Support Vessel Maj. Gen. Charles P. Gross, April 26, near the port of Durrës, Albania. During upcoming DEFENDER-Europe 21 Joint Logistics Over-the-Shore operations, the Army and the Navy will be working together, along with multinational partners and allies, to demonstrate the U.S. Army's ability to rapidly deliver troops, supplies and equipment quickly, anywhere in the world, in response to crisis. (Photo by Staff Sgt. Elizabeth O. Bryson)

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ON THE COVER

With the assistance of the local community and civilian contractors, Soldiers from the 2nd Brigade Combat Team (BCT), 25th Infantry Division load their vehicles and equipment for shipment to Fort Polk, Louisiana, at Joint Base Pearl Harbor-Hickam on Aug. 31, 2020. (Photo by Spc. Jessica Scott)

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PB 700-21-02
VOLUME 53, ISSUE 02
APRIL-JUNE 2021

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Army Sustainment (ISSN 2153-5973) is a quarterly professional bulletin published by the Army Logistics University, 2401 Quarters Road, Fort Lee, VA 23801-1705. Periodicals postage is paid at Petersburg VA 23804-9998, and at additional mailing offices.

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

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QUARTERS RD/FT LEE VA 23801-1705.



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General public affairs style coverage or content on units, exercises, initiatives and events that do not otherwise hold additional professional development

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

Crisis and Conflict

Sustaining the Joint Force Through Competition



■ By Gen. Ed Daly

Army senior leaders have consistently emphasized that we will not fight the next war alone; we will fight with a joint, multinational force in a multi-domain operational environment. Chief of Staff of the Army Gen. James McConville said at the recent AUSA Global Force Next, “Overmatch will belong to the side that can make better decisions faster. To meet emerging challenges, the Army is boldly transforming to provide the joint force with speed, range, and convergence with cutting-edge technologies that will be needed to provide decision dominance.”

Department of Defense doctrine designates the Army as the executive agent for sustainment in a joint environment, requiring sufficient capacity and capability to execute globally-integrated logistics in support of other services, allies, and partners. Joint Publication 3-0, Joint Operations, further prescribes that sustainment determines the depth to which the joint force can conduct decisive operations. The joint concept for contested logistics in support of the joint warfighting concept aligns our focus for the future, converging our capabilities to deploy, and sustain the joint force from the strategic support area to the tactical edge of the battlespace in support of national objectives.

For the sustainment enterprise, we must continue to be an enabler across competition, crisis, and conflict in all domains and continue to drive change through support of Army modernization priorities. The sustainment warfighting function provides the joint force the means to ensure freedom of action, prolonged endurance, and extended operational reach anywhere in the world. We must continue developing and improving Army sustainment capabilities at the

strategic, operational, and tactical level to execute our responsibilities as the lead service for logistics for the joint force.

At the **strategic** level, we are investing in power projection platforms and mobilization force generation installations to rapidly project forces and equipment globally. We are advancing means and capabilities to increase velocity across lines of communication and harden and protect key assets from threats across any domain, including cyber. And we are modernizing our depots, arsenals, and ammunition plants through transformational changes in the Army’s organic industrial base to assure capabilities for production, manufacturing, and maintenance.

Operationally, agile basing and bolstering our forward presence assures the U.S. position with allies and partners while deterring adversaries. We are setting theaters with sustainment and commodities and employing a 21st century Army prepositioned stocks strategy that ensures the right equipment is postured in the right regions for rapid employment. We must continue building partner capacity,

increasing collaboration, and enabling interoperability with both the joint force and allies and partners. Key to achieving this is improving airlift, sealift, and ship-to-shore logistics capabilities.

In the **tactical** battle space, efforts are focused on reducing the logistics tail, enabling speed and freedom of movement, and sustaining combat power forward at the tactical points of contact. This starts by reducing the demand for Class III petroleum, oil, and lubricants through electrification of platforms and alternate fuel sources. We are also progressing several initiatives to improve platform prognostics and predictive maintenance to further build combat power on the battlefield. Advanced manufacturing capabilities, at a minimum down to the corps and division levels, will keep equipment in the fight, and through advancements in fully autonomous air and ground resupply systems, we will reduce risk while reinforcing the U.S. Army’s logistics and sustainment advantage. Finally, through force design updates and adjustments to the sustainment organizational structure, we are reducing large-scale combat operations capabilities gaps in battlefield fuel distribution (Gap 4), tactical mobility with leader-follower implementation (Gap 10), and materiel management and maintenance support (Gap 17).

As our Army undertakes the largest transformation in more than 40 years, we must look

ahead to ensure the sustainment warfighting function modernizes alongside combat platforms. Key to our support to the future joint force is the sustainment enterprise’s role in Project Convergence, not just in 2021, but in 2022 and 2023 which address joint and multinational operations, as well. Project Convergence allows the Army to work across services and with partners and allies to digitally connect and tactically coordinate capabilities. Incorporating joint mission threads specific to sustainment ensures we understand requirements and develop capabilities needed for the Aim Point 2035 force.

Conclusion

The U.S. Army enables combatant commanders, and the Army’s sustainment enterprise maintains the joint forces’ strategic advantage. While we cannot and will not risk current readiness, we are also evolving sustainment in lock-step with Army modernization. Sustainment warfighting function capabilities are aligned to provide the joint force the speed, range and convergence required to win in competition, crisis, and conflict—in any theater across the globe.

Gen. Ed Daly serves as the commanding general of the U.S. Army Materiel Command. He served three years as the deputy commanding general of AMC in his previous assignment. He managed the day-to-day operations of the Army’s logistics enterprise, and also served as the senior commander of Redstone Arsenal, Alabama. He served as the commanding general of Army Sustainment Command at Rock Island Arsenal, Illinois, and as AMC’s deputy chief of staff, overseeing the roles and functions of the headquarters staff.

For the sustainment enterprise, we must continue to be an enabler across competition, crisis, and conflict in all domains and continue to drive change through support of Army modernization priorities.

Anticipating Joint Force Requirements



■ By Lt. Gen. Duane A. Gamble

Most good Army logisticians have developed an “anticipatory sense” for Army requirements. They seem to know, intuitively, what is needed before it is needed. The great logisticians then act upon that intuition and solve problems before they limit operational reach, endurance, or freedom of action of Army forces. They learn through training, which is guided by doctrine and reinforced by experience. Training is the seed from which intuition grows, and experience germinates that seed.

Over the years, I have cultivated a pretty good anticipatory sense, but my intuition remains Army-centric, which proved problematic when I was a theater sustainment command (TSC)

commander in Europe. I am concerned that our training and exercises remain generally Army-centric. We must develop an anticipatory sense for Army support to other services. In order to do that, we must change the way we teach and train.

In 2016, as a new TSC commander, we were planning the arrival of an ammunition vessel to a port in Germany. I understood, through experience, what needed to be done. After receiving briefs from the executing units, I went down to oversee operations. What I hadn’t anticipated was the fact the shipment included ammunition for the other services operating in United States European Command (USEUCOM). Trucks and personnel from my subordinate Army units were in place and ready to distribute across the region, including the movement of Air Force ammunition to several European storage locations. My anticipatory sense was limited to the “who, what, when, and how” of Army requirements and operations. I had not fully considered my responsibilities to our joint teammates in the European theater.

The Army’s TSCs are the overarching theater-level headquarters for executing such cross-service, cross-agency logistics responsibilities. Had the 21st

TSC not enjoyed the continuity of a robust augmented table of distribution and allowances consisting of tenured American and German civilians, we may have been surprised by our requirements to support the Air Force.

I’d like my shortsightedness to stand as a lesson for all Army sustainers. Recognize that large-scale combat operations conducted across multiple domains require the full capabilities of a joint force. Sustainment of that joint force relies on the convergence of our nation’s logistics assets and capabilities. If the Army, the foundational logistics provider to the joint force, is to fulfill its responsibilities, our logisticians must stretch our running estimates and expand our planning. We must extend our anticipatory sense to our sister services and military departments, learn what they need and when they need it so that we are prepared to step up as the lead service for logistics. That requires a full understanding of both the current and future authorities, responsibilities, and expectations for logistics support beyond our own institutional walls.

Army logistics is, and will be, foundational to joint operations in a multi-domain environment. We must be ready to provide the capacity and capability the joint force needs to deploy globally, maintain a forward presence,

and sustain operations that protect and advance U.S. strategic objectives.

The elements of Army logistics—maintenance, transportation, supply, field services, distribution, operational contract support, and general engineering—have long served as the backbone required to support joint operations. That support is empowered by way of three primary authorities:

- **Army Title 10 requirements.** Each service is responsible for the sustainment of the forces it allocates to a joint force. In other words, we must be prepared to support our own needs in a joint operation.
- **Executive Agent (EA) responsibilities.** A broad delegation of authority from the Secretary of Defense to service secretaries or combatant commanders to provide specific, mostly administrative, support to other U.S. Government agencies or service components. As the executive agent for seven glo-

bally integrated logistics responsibilities (see Figure 1), the Army ensures the other services have sufficient capacity and capability to execute their missions around the globe.

- **Combatant Commander (CCDR) authority.** When the Secretary of Defense directs the Secretary of the Army to assign forces to unified and specified combatant commands, the CCDR exercises directive authority for logistics and may assign lead service responsibilities, such as providing common user logistics support. The assignment of a lead service is beneficial in that it reduces logistics redundancies and the overall logistics footprint; however, this also requires new support relationships and joint operating procedures (see Figure 2).

External support responsibilities assigned to the Army fall under the non-doctrinal umbrella term Army support

to other services (ASOS). Historically, the logistics support provided to other services, agencies, multinational forces, and non-governmental organizations has included ground transportation (both personnel and equipment), fuel (Class III bulk and package), food and water, munitions, medical supply and services, veterinarian services (food safety), contract support, and supply services. The following are examples of specific Army support provided to the joint force:

- *Tactical water:* DOD Directive 4705.01E designates the Army as EA for the production, storage, and distribution of tactical water, with production being the most critical contribution to the joint force in a tactical environment.
- *Petroleum operations:* Although Defense Logistics Agency (DLA) is the EA for fuel, the Army is responsible (in accordance with DODD 4140.25) for all inland distribution of that fuel, especially

Logistics-Related Subject	Reference
DoD Detainee Program	DoDD 2310.01E
DoD Combat Feeding Research and Engineering Program/Board, DOD Nutrition Committee	DoDD 3235.02E
Management of Land-Based Water Resources in Support of Contingency Operations	DoDD 4705.01E
Military Postal Service and Official Mail Program	DoDD 5101.11E
Unexploded Ordnance Center of Excellence	DoDD 5101.13E
Explosives Safety Management	DoDD 6055.09E
DoD Personnel Support to the United Nations	DoDD 2065.01E

Note: A full list and description of Army EA responsibilities can be found at <https://dod-executiveagent.osd.mil/default.aspx>.

Figure 1. Army Logistics-Related Executive Agent Responsibilities. (U.S. Army Graphic)



Figure 2. Army as Lead Service for Logistics. (U.S. Army Graphic)

in a contested environment. When DLA is unable to provide support, the Army is responsible for fuel distribution from the high water mark to the point of need.

- *Mortuary Affairs:* Although there is no longer a designated EA for mortuary affairs, the Army is the lead service for such responsibilities for USEUCOM, United States Indo-Pacific Command (USINDOPACOM), and United States Central Command. As a result, the Army has the only active mortuary affairs capability to receive, store, process, and prepare remains for repatriation or internment. The Army is also the only service capable of safely receiving, storing, and handling contaminated remains.

- *Contingency contracting:* The Army has been appointed the lead service for contingency contracting by the combatant commander within USEUCOM and United States Africa Command, and the Army supports the Air Force in this role in USINDOPACOM.

The joint force already leverages Army resources and capabilities.

Within the evolving Joint Warfighting Concept (JWC), that reliance deepens. The JWC purposefully maximizes the complementary and reinforcing effects of each service through intentional interdependence. Under this future warfighting concept, the Army anticipates the assignment of lead service for logistics, requiring sufficient capacity and capability to execute globally integrated logistics in support of other military services, allies, and partners. To take on the expanded logistics requirements, we need to translate internal Army operations to better support the joint force. The Joint Concept of Contested Logistics (JCCL) is the instrument for that translation.

As one of the supporting concepts under the JWC, the JCCL is the framework for projecting, supporting, and sustaining the joint force in an environment that is contested across all domains, from the homeland to the combined or joint operations area. The desired end state of the JCCL is a U.S. force able to retain sufficient strategic advantage to deploy and sustain a joint force that functions effectively, responds decisively, and wins. The JCCL helps DOD senior leaders prioritize and make investment decisions about future

logistics capabilities as they balance risk and resources over force employment, force development, and force design horizons.

The JCCL relies on a convergence of assets and capabilities to deploy globally and sustain the joint force from the strategic support area to positions of advantage in support of national objectives. This includes establishing a forward presence as well as close cooperation with the national industrial base, commercial industry, and joint and multinational partners.

The Army will use the JWC and the supporting JCCL to define logistics investment priorities across the Army planning horizons of force employment (near-term), force development (mid-term), and force design (far-term).

Victory in a contested operational environment depends on the robustness of the Army's global posture and organic industrial base. To pursue a global posture that offers positional advantage and access to resources, the Army has taken steps to strengthen multinational partnerships and develop access, basing, and overflight (air base opening) agreements that will enhance global responsiveness, establish a benign presence, and expand the availability and

readiness of pre-positioned resources. The Army prepositioned stock program, likewise, enables the rapid build-up and movement of combat power and serves as a strategic deterrent by demonstrating our national resolve to support allies and partners.

The 26 depots, arsenals, and ammunition facilities that are part of our organic industrial base play a critical role in sustaining the Army and joint force. The combination of the facilities, funding, artisan workers, and a predictable and stable workload is crucial to maintaining capabilities necessary to one day support the war fight.

Future changes in the character of war demand full and continuous integration of national instruments of power and influence, which requires creative approaches to sustainment, highly effective coordination across services and with partners, and a deeper understanding of the implications of disruptive and contested logistics environments.

To prepare, I challenge the Army sustainment community to amplify its joint logistics knowledge through both training and exercise. Understand how all the pieces fit within the broader joint environment, then train and seek out opportunities to build the appropriate operational muscle memory.

Engage in joint workshops, field experiments, war games, tabletop exercises, and simulations so you know what our sister services require and how they operate. First, seek to develop an intuition for ASOS, then develop

strategies and possible workarounds for accomplishing the mission under persistent attack and across all domains.

The U.S. Army's recent logistics contributions to the joint environment highlight its foundational capability and strategic signaling. In 2018, we rapidly positioned supplies on the Korean Peninsula, which enabled joint force access during the competition phase and telegraphed to our adversaries our determination. And throughout the conflicts in Iraq and Afghanistan, the Army provided overwhelming logistics support to all forces. These operations are but two examples of our unique expeditionary logistics capability to provide an advantage during both the competition and crisis, as well as serve as a deterrent to conflict.

U.S. Army logistics will continue to be a required strategic enabler of the joint force. Our ability to project and sustain forces from a contested strategic support area to the tactical point of need must remain our global competitive advantage. We must develop and maintain a reflexive competence and intuition for sustaining a joint force in a multi-domain environment. Our training and exercises must be aimed at supporting the joint force in order to develop the anticipatory sense required to solve problems before they limit operational reach, endurance, or freedom of action.

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.

We must extend our anticipatory sense to our sister services and military departments, learn what they need and when they need it so that we are prepared to step up as the lead service for logistics.

SUSTAINMENT

The Advantage that ‘Wins’ in Contested Environments



■ By Maj. Gen. Rodney Fogg,
Brig. Gen. Michelle M.T. Letcher,
and Col. Kenneth W. Letcher

Despite the scenario, regardless of the theater, the U.S. Army will fight and win our nation's next war. From the industrial base to the point of contact, it is the Army's responsibility to leverage sustainment for the joint force. The foundation of sustainment will be central to the comparative advantage for the joint force commander in combat. As it has been throughout history, logistics remains essential to deter and win great power competition, de-escalate crises to avoid conflict, and identify opportunities to build cooperation.

The Army provides support to other services and common user logistics, while also serving as the executive

agency responsible to the joint force, interagency, and, when appropriate, allies and partners. Title 10 authorizes combatant commanders to use directive authority for logistics “to assign responsibility for execution of executive agent, lead service responsibilities and to make other special arrangements such as assigning common user support or common user logistics to a service or agency ... It includes peacetime measures to ensure the effective execution of approved operations plans, effectiveness and economy of operation, prevention or elimination of unnecessary duplication of facilities, and overlapping of functions among the service component commands,” Field Manual 4.0, Sustainment Operations. This effort reduces duplicated sustainment functions and maximizes freedom of action, operational reach, and prolonged endurance for the joint force commander.

Historically, the United States has enjoyed uncontested freedom of movement across multiple domains and, strategically, around the world. This advantage allowed the Army and the joint logistics enterprise to move personnel, supplies, and equipment around the globe to support operations since World War I. However, as the Army developed the multi-domain operations ready force, the global stage has continued to evolve. The demand to shoot, move, communicate,

and sustain forces over vast distances, through contested domains, in a competitive space with increased sustainment demands from the joint force has evolved the challenges of the joint logistics enterprise. Sustainment modernization concepts must be well nested across the services and require integration with an industrial base that is capable of meeting the challenges of competition and conflict. Sustainment is more than a warfighting function; it is the advantage necessary to win, and it must be integrated at all echelons, rather than merely deconflicted.

Joint Logistics in a Contested Environment

The joint logistics enterprise applies resources to the national defense strategy and delivers the capability to win. The Army's multi-domain operations (MDO) concept influences what the Army resources for modernization. However, and equally important, the MDO concept must support the Army's Title 10 roles and responsibilities as part of the joint force. As the force builds and sustains readiness from the strategic support area (SSA) to the tactical point of contact, the Army's support to other services takes on more importance during transformation and modernization, and impacts requirements in large-scale combat operations (LSCO). At the same time, the joint logistics enterprise must integrate our combined capabilities

understanding where one service's capability starts and transitions between services, industry, and domains. In both competition and conflict, with our joint, multinational, and industry partners, the joint force must be able to shoot, move, communicate, and win from the SSA to any location, with the expectation that the force is contested throughout the process, and is equally challenged with time, speed, and distance.

Three specific requirements support the joint logistics enterprise modernization efforts to deliver a calibrated force posture to sustain and project the force during MDO: resilient and integrated sustainment mission command and control, assured joint power projection, and the ability to sustain in a distributed environment.

Resilient and Integrated Sustainment Mission Command and Control

A commander's ability, at echelon, to use information across domains to deliver decision advantage over adversaries requires standardization, integration, and interoperability of information systems. Data is key to logistics. Data analytics, artificial intelligence, and machine learning improve our ability to reduce resource demands and deliver logistics on time. In the early nineties, it was enough for a commander to see and direct across the brigade or division battlespace, but today, commanders need to see across domains. Additionally, depending on the commander's location or responsibility, they may need to see across nations, multinational agencies, or national supply and distribution chains. This common operating picture must allow

commanders to access protected and secured data and information that delivers decision advantage.

The ability to collect, transport, analyze, decide, and act on data at the echelon, while protecting and securing that data, requires a capability that has resiliency in a contested environment. To inform a commander's decisions, a common operating environment must be established for all commodities, including medical logistics, across a multitude of information sources. To manage this, the joint logistics enterprise must integrate commercial, military, joint, and multinational data to provide a common operating picture.

Additionally, this platform and system sharing must be able to communicate between business and operational warfighter mission arenas. The solution must not only reside at the enterprise level but be available for commanders at all levels. The ability to aggregate the data allows the commander to leverage the technology to influence the environment, at the echelon, from the SSA to the point of contact.

Achieving the decision advantage allows leaders to make better decisions faster. Decisions based on accurate and relevant data provided by an integrated and decisive capability translate to a comparative advantage over our adversaries. As the department refines authorities, it enables effective execution of logistics activities across combatant commands. This global network has vulnerabilities that require the ability to disconnect and operate effectively in a denied, disrupted, intermittent, and limited (bandwidth) environment.

Finally, acknowledging the possibility of disconnected operations requires the ability to predict and push logistics to the joint force without communication. During disconnected periods, the force must be able to forecast through predictive analytics capabilities to provide support during intermittent windows of opportunity.

Modernization efforts from acquisition to current execution in the field include prognostic and predictive maintenance (Class III/V distribution, Sensors, Tactical Cloud, AI & Assured Data) to allow predictive analysis at echelon that achieves demand reduction, increases agility within the warfighting function, and reduces risk to our Soldiers. As data analytics mature, the force develops resiliency by integrating command post computing environments into the sustainment tactical network. Additionally, the work currently being done within the Army to modernize the enterprise business systems will improve our ability to manage data at echelon.

Assured Power Projection

Lethality is tied to the ability to project power around the globe, at speed, and without constraint. The SSA enables freedom of action and operational reach that supports MDO through the power projection of forces, materiel, and capabilities worldwide. Although the joint force currently operates uncontested in strategic deployments, the joint force must be ready to project forces from a contested homeland not only during competition and crisis but also during the conflict. This contested move requires rapid availability, a calibrated force posture,

As it has been throughout history, logistics remains essential to deter and win great power competition, de-escalate crisis to avoid conflict, and identify opportunities to build cooperation.

and close coordination with multiple agencies and authorities within the United States and with our allies and partners worldwide.

Rapid availability requires the joint force to be ready and available. The ability to visualize, understand, and rapidly respond optimizes the joint force to project power from a contested homeland and requires collaboration across government and non-government agencies to understand requirements, rehearse plans, and deliver lethality to the point of need. From a sustainment and distribution perspective, this visibility assists the joint force to protect DOD supply chains, the commercial transportation sector, and supporting infrastructures. Our total force approach to MDO, with visibility of rapid availability—left of conflict—allows senior leaders to understand limitations, mitigate risks to time, distance, and speed, and project power appropriately. This speaks to the importance of a calibrated force posture.

Calibrated force posture is a progression of global positioning and the flexibility to maneuver across multiple domains. It is the art of power projection as the joint force sets the globe. It is the Army's responsibility to position the right assets for the joint force to seize the initiative in large-scale combat operations. This sets the globe left of conflict and logistically minimizes the risk of time and distance, allowing improved response time as competition turns to the crisis. One example of Army support to this end is the establishment of mobilization force generation installations. These locations enable the mobilization and

demobilization of forces in support of joint force commander requirements worldwide.

Rapid availability and force posture require access outside the SSA. The ability to provide flexibility requires the authorities with allies and partners and the defense industrial base. Forward presence, expeditionary forces, and national-level capabilities require the ability and the authorities to operate in all domains at echelon to compete and win.

Sustainment for Distribution Operations

Distributed sustainment operations require the ability to be responsive and to execute in a disaggregated manner with the capability to disconnect and operate independently. This requires synchronized, anticipatory, and integrated logistics operations. Additionally, the ability to synchronize, sustain, and distribute logistics requires data-enabled capabilities to deliver the visibility for speed and freedom of action to the multi-domain force. This maximizes decision space and provides operational flexibility. The joint force must be set in competition and modernized to reduce the demand on tactical and strategic sustainment forces. Setting the theater, reducing demand, leveraging our allies and partners, and operating with the ability to rapidly recover requires a surge-capable industrial base to deliver operational endurance.

The ability to operate in a distributed manner begins with a theater that is postured or set to ensure freedom of action. This secures global access to regionally aligned, enduring, and

episodic sustainment infrastructures. The force must continually set the theater through activities such as multinational engagements to achieve agreements that enable access, basing, and forward presence through optimal force and equipment decisions of combat configured and ready Army pre-positioned stocks; rotational forces that are equipped and ready; and shared visibility and interoperability that leverages the joint, multinational and industrial force and protects enterprise systems as well as the distribution and supply network to enable the joint force.

As the DOD surges modernization efforts, requirements, and demands on logistics, distribution, and maintenance all increase without service-imposed constraints across the joint force. As a simple example, heavier equipment requires more fuel, different transport, and more maintainers. As the demand increases, the resources needed to sustain the force and protect the force also increase. Demand reduction results in extended operational reach; faster resupply of essential items; improved platform efficiency, speed, and time; reduced mission risk; greater lethality; less dependence on logistics support; and reduced requirements to secure the logistics movements of military and commercial moves. While host nation support and interoperability between services and nations increase sourcing options and decrease distribution requirements, it may also add demands in the agreement. The DOD must fundamentally reduce demands on logistics to succeed in competition, crisis, and conflict. Some examples of reducing demand are vehicle hybrid electrification, reducing ammunition weight and packaging, decreasing maintenance

repair time requirements, and reducing special tool requirements. These are all considerations in the acquisition process as the owner of the requirement sets conditions for program development.

As demand decreases, the requirement increases for the use of smaller, more attritable platforms for distributed operations that provide autonomous or semi-autonomous resupply capabilities across multiple domains (land, sea, and air). Some examples include moving towards a common tactical truck that increases the use of shared repair parts and maintenance tools or increasing the use of autonomous refueling and stock control capabilities. While the future of competition and conflict will require systems that use fewer logisticians, logisticians will still be required to move people, materiel, and supplies to geographically dispersed locations that support distributed operations, e.g., an Army Watercraft Strategy that enables a "ship to shore" capability regardless of the theater of operation.

Finally, the resiliency of the organic industrial base, in concert with the defense industrial base is the nation's insurance policy. The requirement to transition from an industrial-age organic industrial base built in the 1940s to an integrated and resilient base that has depth, speed, and can surge when needed on par with the commercial sector delivers the advantage necessary to win. Understanding capabilities, capacities, and requirements across the joint force, access to supply chains, and the ability to surge equate to speed that can counter the tyranny of distance across multiple domains. Understanding the depth and resiliency of the base allows the

development of options in times of surge. It also informs resources and investment decisions to address an antiquated base.

Conclusion

The sustainment enterprise provides the comparative advantage the joint force requires to fight and win our nation's wars. The Army delivers the joint force commanders options to leverage readiness. These options ensure effective execution of plans, the economy of operations, prevention or elimination of unnecessary duplication of facilities, and reduction of overlapping functions among the service component commands. Future concepts require resilient, integrated logistics mission command, assured power projection, and sustainment for distributed operations. Despite the scenario, regardless of the theater, the U.S. Army will fight and win our nation's next war. Logistics remains essential, providing the advantage, ensuring lethality, and delivering resources to win.

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The background image shows two large, grey US Army Landing Ship, Tanks (LSTs) docked at a concrete pier. The pier is on the left, with several yellow bollards and a few people visible. The water is a deep blue-green. The sky is bright blue with scattered white clouds. The LST on the right has "US ARMY LST-3" visible on its side. The LST on the left has "THE MILITARY SERVICE" visible on its side. The ships are both equipped with various antennas and radar equipment on their masts.

WATER CRAFT Sustainment

Navigating the Indo-Pacific to Strengthen the Force

■ *By Capt. Josiah R. Graham and Col. Theodore O. White*

On Nov. 19, 2020, USAV LTG William B. Bunker (LSV-4) returned to Joint Base Pearl Harbor-Hickam (JBPHH), Hawaii after completing 94 days of continuous operations at sea and culminating 20,000 nautical miles of operations. During its underway operations, it supported multiple Army and joint training exercises, conducted a proof of principle and experimentation tasks, and performed theater opening, theater distribution, and theater sustainment tasks. On July 18, the USAV Harold C. Clinger (LSV-2) sailed from JBPHH to Joint Base Langley-Eustis, Virginia, completing a 7,500 nautical mile sail and the longest point-to-point sail of an Army watercraft since World War II. Coordinating the movement through the U.S. Navy maritime operations center (MOC), the vessel traversed multiple fleet locations and the Panama Canal. The MOC synchronized the transition of overwatch between multiple maritime agencies.

The employment of Army watercraft began as early as World War II (WWII) and grew to a fleet size of approximately 127,000 watercraft of various types owned and/or operated by the Army. Before WWII, the majority of Army watercraft were troopships under the jurisdiction of the quartermaster general to transport personnel and cargo to ports all over the world.

After the bombing of Pearl Harbor on Dec. 7, 1941, the Japanese rapidly seized island chains throughout the Pacific. The Army had a significant capability gap in the Army fleet when it identified the need to bridge the “last

tactical mile.” The Army modernized the Army watercraft systems (AWS) initially by leasing, purchasing, and commandeering vessels. Fishing trawlers were used as landing craft, ketches used for logistics support in shallow waters, and large vessels to transport cargo in support of riverine operations. It was with these watercraft that Gen. Douglas MacArthur was able to rapidly deploy troops and supplies executing the first amphibious assault on Oct. 18, 1942, on New Guinea.

Strengthening the Pacific

AWS continues to play a pivotal role in the Indo-Pacific area of responsibility as a strategic force enabler for theater opening, theater distribution, theater sustainment, and operational maneuver. AWS are capable of delivering logistical support to thousands of established ports and unimproved beaches. With a Pacific fleet size of six operational watercraft and 35 remaining in Army pre-positioned stock (APS), the strategic footprint appears small at a glance. However, the impact of these six operational vessels on sustainment and maneuver support has been demonstrated through the support of multiple Pacific Pathways exercises throughout the first and second island chains of the Pacific.

The Pacific Utilities Logistic Support Enablers – Watercraft (PULSE-W) mission persistently provides critical logistics distribution, sustainment, and maneuver support west of the International Date Line (W/IDL) to III Marine Expeditionary Force, Pacific Air Forces, U.S. Army Japan, and U.S. Army Pacific (USARPAC) utilizing two landing craft utility (LCU) vessels. The PULSE-W watercraft operating

W/IDL significantly enhances joint interoperability by providing the 8th Theater Sustainment Command (8TSC) with assets capable of simultaneously supporting theater sustainment, theater distribution, and theater opening. AWS as a force enabler allows the 8TSC to support the theater joint force land component commander (TJFLCC) and fulfill the Army support to other services requirements for the operational plan (OPLAN) execution.

East of the International Date Line, four logistics support vessels (LSVs) are stationed at JBPHH. The vessels provide regular inter-island lift capability to the 25th Infantry Division and have extended their operational reach across the IDL to support the joint force and international partner nations.

AWS Support to Joint Maneuvers

During the summer of 2020, the 163rd Transportation Detachment (TD) maneuvered the USAV LTG William B. Bunker (LSV-4) throughout the Pacific demonstrating the importance and utility of AWS in the joint sustainment enterprise. The LSV-4 was critical to the successful employment of maneuver units and the proof of concept efforts including High Mobility Artillery Rocket System (HIMARS) deployment to a Pacific island W/IDL within the Second Island Chain to perform experimentation of beyond-line-of-sight targeting and redeployment of Marine Rotational Force – Darwin (MRF-D) assets to Japan.

Defender Pacific 20 (DP20)

Leveraging AWS to support the scheme of maneuver was given a high



U.S. Army and U.S. Marine M142 High Mobility Artillery Rocket Systems are staged onto Logistics Support Vessel-4 LTG William B. Bunker, 8th Theater Sustainment Command, at Kin Red Beach Training Area, Okinawa, Japan, on Oct. 31, 2020. Orient Shield 21-1 is the largest U.S. Army field training exercise in Japan that tests and refines multi-domain operations. (Photo by Maj. Elias M. Chelala)

degree of consideration while evaluating the options available to the USARPAC commander to deliver critical warfighter equipment sets to semi-permissive and degraded areas in the Pacific.

The 163rd TD supported the multi-domain task force (MDTF) commander by conducting joint beach landing analysis and maneuver of tactical long-range fires assets from Guam to a Pacific island W/IDL within the Second Island Chain. Army mariners and U.S. Marine Corps engineers met the MDTF commander's intent, and training objectives despite the challenging conditions of the selected beach-landing site. The concept of maneuver to project and emplace forces anywhere in the

Pacific, regardless of degraded port and aerial facilities, adds significant complexity for the sustainment and warfighting planners. Capability projection in the complex multi-domain U.S. Indo-Pacific Command (USINDOPACOM) Theater is a challenge that forces Army planners to seek Joint solutions to enable movement and maneuver, and sustainment operations during competition, conflict, or crisis.

Valiant Shield 20 (VS20)

Shortly after “hitting the beach,” the LSV-4 returned battery elements of the 17th Fires Brigade to Guam, refitted and loaded a mix of berthing modules, critical weather analysis equipment, and

24 additional personnel to support the USINDOPACOM J81 experimentation efforts during VS20. To establish and test interoperability with our joint partners, LSV-4 integrated into a tactical convoy with a Navy maritime prepositioning force formation to communicate, maneuver, and join the Navy vessels' formation while underway. This exercise proved that the LSV was a viable option to transport personnel and employ intelligence, surveillance, and reconnaissance (ISR) assets as part of a joint maritime force.

While executing VS20, LSV-4 was integrated into the shooter-to-target network with the MDTF as part of the larger Link-16 network providing

opposing force target support for the exercise. This was the first time the 8TSC integrated a vessel into a joint common operational picture via the link-16 network involving the MDTF, a Navy aircraft carrier, and submarine, as well as other ISR assets.

This proof of concept demonstrated successful execution of joint maritime integration between Army and Navy vessels and helped to redefine future missions to include communications interoperability testing. The vessel was not only capable of transportation but facilitated an adaptable command and control platform that provided an alternate option to the supported element for fire acquisitions while underway.

Marine Rotational Force – Darwin

After addressing critical equipment repairs to the main generator, the LSV-4 set sail again for Darwin, Australia, to support the redeployment of the MRF-D. The support to MFR-D showcased the LSV as a flexible and adaptable platform to transport critical assets W/IDL. Incorporating the LSV in its redeployment plan for MRF-D allowed III Marine expeditionary force (MEF) to realize the significant cost savings of AWS and conduct target of opportunity operations that traditional sealift transportation does not allow the Joint Force.

After delivering the MRF-D assets to Okinawa, Japan and with less than 24 hours’ notice, the LSV-4 was reallocated to support Orient Shield 21-1, a joint bilateral exercise between the U.S. Army Japan, III MEF, and the Japanese self

defense force. An Army PULSE-W LCU tasked to support the exercise experienced a catastrophic mechanical failure. The 163rd TD reconfigured Hawaii-bound III MEF equipment to make space on the deck to support the 3rd Battalion, 12th Marines, and 17th Field Artillery Brigade to exercise amphibious loading, deployment, and offload of their HIMARS and support vehicles. The flexibility of the crew and vessel ensured mission success for the Joint Warfighter and the bilateral exercise.

Distributed Logistics Network, Maintenance, and Successes via Contract Support

During the LSV-4 transit, in support of operation DP20 and VS20, MRF-D, and Orient Shield, Global Combat Support System-Army (GCSS-A) proved to be a valuable resource for the vessel engineers. The LSV-4 chief engineer and crew achieved an operational readiness rate increase of 10% during the exercises. This can be attributed to accurately monitoring maintenance/supply statuses, service data input, man-hour accounting, and reporting of deficiencies. Although the system has limitations regarding offline reporting, the chief engineer leveraged the S-4 and vessel support operations team to accurately report the change in maintenance status via chat surfer, maritime SECRET Internet Protocol Router Network, and updated logistics requirements for near real-time results. The following deficiencies were noted when leveraging the specific modules of the enterprise system during sustainment operations:

- Plant Maintenance
- Inventory Management
- Warehouse Management

LSV Maintenance Plan (Plant Maintenance). The plant maintenance module provides users with equipment readiness and enhanced personnel qualification management capabilities. GCSS-A configuration has been a hurdle for maritime sustainers as the fleet was manufactured over many decades, with sustainment level repairs and modifications made on a vessel-by-vessel basis. With the proper configuration, lessons learned during the execution of current operations have proven the standardization of the LSV maintenance plan is feasible. To provide the end-user with a snapshot of equipment readiness at strategically placed intervals ensuring mission success, the maritime community as a whole must develop a configuration for both garrison and high operations tempo organizations. This will set the stage for increased readiness by way of leveraging the greater logistics network through predefined requirements.

Z-Nonstandard (Inventory Management). The inventory and warehouse management modules together provide intelligent stock placement, full traceability, visibility, deliberate excess, repairable management, and proof-of-delivery capabilities. In the case of DP20, it was found that several Class IX repair items, that are not cataloged within GCSS-A, could be added with the Wave 2 ordering process (cage code, part number) which will enhance support capabilities. By identifying these items while in a garrison environment, organizations forward will have access

to a more robust solution set to address immediate and sometimes emergency repairs.

Additional Stockage Listing (Warehouse Management). In order to support the warfighter concept, the Army’s maritime community must create demand within GCSS-A. This includes adequate planning, forecasting, net asset computation, planned delivery times, and excess management capabilities, which meet or exceed the requirements of the watercraft community. ASL review should and must be conducted annually by the chief engineers and supply representatives to practice command supply discipline program and command maintenance discipline program functions.

During the 94-day sail, the crew dedicated numerous hours attending to the above-mentioned task within the GCSS-A interface. By leveraging the Army Field Support Brigade and Field Support Representatives support and coordinating through 8th Special Troops Battalion vessel support operations, both routine and emergency repairs were conducted simultaneously during DP20 and MRF-D redeployment. For the 6-month duration of DP20/VS20, the 163rd TD operated at a 90% operational readiness rate and accounted for over 10,000 man-hours.

Composite Watercraft Company (CWC) – Fielding for the Future

As the DOD looks toward the future of the USINDOPACOM AOR so does the Army as it plans to modernize its watercraft fleet. To increase joint operability, a capability gap was

identified in the current fleet’s ability to integrate into the joint force, defend itself as part of a naval maneuver force, and operate at the same speed as the naval fleet. As such, the development of the maneuver support vessel (Next) and maneuver support vessel (Light) began. The intent of the MSV(N) is to potentially replace the older Besson class LSV’s with a vessel that can deliver a similar payload while maintaining a high state of combat effectiveness and maneuverability. The MSV(L) will replace the current LCM’s with the same desired effect.

With this modernization, AWS will be able to truly bridge the “last tactical mile” allowing the Navy the freedom of maneuver in the “blue water” Pacific and the download of personnel and equipment virtually anywhere. Both vessels are equipped to maintain their beach landing ability making them a maneuver force enabler in the joint domain. Carrying approximately 8,800 sqft, the MSV(N)’s ability to maneuver at the speed of Naval and Military Sealift Command vessels means the next AWS fleet will have the capability to deliver brigade- and division-size units to any number of island chains in the Pacific. In the joint domain, this last tactical mile will give the combatant commander the option of deploying larger Navy assets in tandem with AWS to ensure Soldiers, Marines, and their equipment are delivered per the TJFLCC Commander’s plan and on his timeline to fight at a moment’s notice.

To provide C2 and sustainment, the Army is currently fielding CWCs. As proposed by Maj. Gen. John P. Johnson, when he was the USARPAC deputy commander in 2019, the CWC’s

“enhance the watercraft mission command, maritime operations, and maintenance capabilities while providing flexibility and rapid response during LSCO.” The current structure of the CWC will include 5 LCU’s, 2 Small Tugs, 4 MSV(L), as well as a harbormaster operations detachment tasked with providing maintenance support to both internal and external AWS organizations in the AOR. Fielding the CWC will take what was once a disjointed maritime operation and centralize sustainment support and orders execution. As a rapid ready force in the Pacific, the CWC’s will ensure AWS always maintains a high state of readiness IOT provide both the sustainment commander and combatant commander freedom of action to conduct theater opening, distribution, and sustainment and provide maneuver support options enabling OPLAN execution to maintain the freedom of navigation in an open and free Pacific.

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Featured Photo
USAV LTG William B. Bunker (LSV-4) returning to dock at Joint Base Pearly Harbor-Hickam after completing its Defender Pacific 2020 voyage at sea. (U.S. Army Photo)

FIGHT TONIGHT

Mastering the Readiness Ecosystem: What Leaders Must Know to Win

■ *By Brig. Gen. Michelle M.T. Letcher, Chief Warrant Officer 5 Danny K. Taylor,
and Command Sgt. Maj. Petra M. Casarez*

The Army is laser-focused on modernization efforts that will ensure an agile, lethal, and ready force capable of winning across multiple domains by the year 2035. However, with our eyes fixed on the future, we cannot lose sight of our readiness posture in the near-term and how it significantly impacts an organization’s ability to “fight tonight.”

Numerous contributing factors can increase or decrease equipment readiness rates for a company, battalion, or brigade. Addressing only one or two of them will not yield optimal results. Leaders at all levels must recognize, understand and address the readiness ecosystem to have a consistent impact on building and sustaining readiness. This team of teams extends beyond the owning unit and involves numerous stakeholders including Headquarters Department of the Army, Army Materiel Command (AMC), Training and Doctrine Command, program/project managers, and Defense Logistics Agency.

While recognizing this readiness ecosystem, leaders must continuously strive to achieve and enforce the Army’s maintenance standard for all equipment. According to Army Regulation (AR) 750-1, Army Materiel Maintenance Policy, the Army has one maintenance standard, and it consists of eight criteria.

To meet the standard, an item must be **1)** fully mission capable per the technical manual (TM); **2)** all shortcomings (faults) must be identified using the applicable TM’s preventive

maintenance checks and services (PMCS) tables; **3)** if a fault cannot be repaired, there must be repair parts on valid requisition; **4)** if the repair cannot be made at the appropriate level, it must be sent to the next higher level [*keep in mind, this was written under the Army’s 4-level maintenance concept*]; **5)** all basic issue items (BII) and component of end items are present, serviceable, or on valid requisition; **6)** all scheduled services are complete; **7)** all modification work orders are applied; and **8)** the item is compliant with all safety of use or maintenance action messages.

Unit Status Reporting and Pacing Items

Leaders need to understand the difference between equipment readiness codes (ERC): ERC-A versus ERC-P (pacing item). The Army’s equipment readiness goal for ground equipment is 90%, according to AR 700-138, Army Logistics Readiness and Sustainability. A unit’s modified table of organization and equipment (MTOE) will identify ERCs for each line item number (LIN). Due to the low density of ERC-P items in many organizations, the ERC-P readiness rate will determine the unit’s overall readiness level, or R-level. According to AR 220-1, Army Unit Status Reporting and Force Registration, the unit’s R-level is always the lowest of the two readiness rates. For example, if the aggregate equipment readiness rate for ERC-A items is 95%, but the readiness rate for an ERC-P item is 70%, the unit readiness rate is 70%. Additionally, for every pacing item in a 30-day reporting period, a unit can only accumulate three not-mission-capable (NMC)

days before the item goes below 90% (27/30=90%) (26/30=87%).

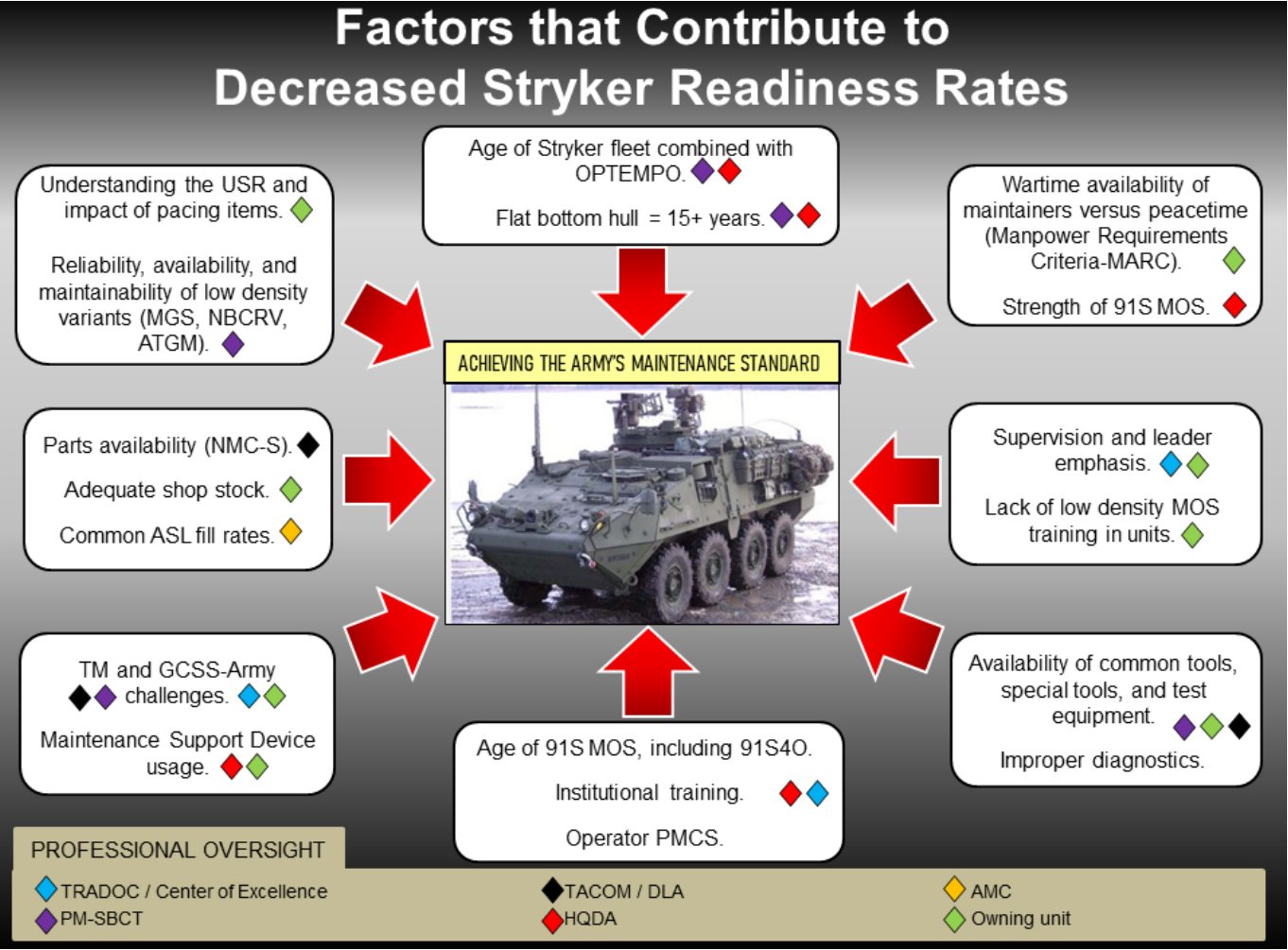
Operator PMCS

PMCS is the cornerstone of the Army maintenance system. Leaders of successful maintenance programs ensure operators and crewmembers perform PMCS from the applicable -10 TM. In a recent audit of armored brigade combat team maintenance, the U.S. Army Audit Agency noted that 25 out of 47 tank crews (53%) had outdated or missing operator TMs. The operator TM is part of the BII and, as noted above, having the required BII is a criteria of the Army maintenance standard. Units must have an active publications account to order hard copy publications. It is important to note that the AMC funds publications replenishment orders so the unit is not responsible for the cost.

Some Soldiers have identified “innovative” ways to access operator TMs using their personal electronic device by placing the electronic TMs or PMCS table on a commercial file storage service and scanning a quick recognition code affixed to the vehicle’s windshield. Although effective, this is not an acceptable practice as it compromises operational security and violates the distribution statement of the front cover of the TM.

Repair Parts Availability

Shop stock (formerly known as prescribed load list) is the company or battalion’s first line of defense for stocking essential repair parts. The authorized stockage list (ASL) is another set of repair parts managed at the brigade support battalion within a brigade combat team. ASL is a



This graphic shows the factors that contribute to decreased readiness rates for the Stryker vehicle along with organizations that exercise professional oversight. Senior Ordnance leaders use the graphic to brief visiting Army commanders on sustainment operations within their divisions. It prompts discussion about the organization’s current readiness posture, specific problems, and recommended solutions. (U.S. Army Graphic)

predefined list of parts established by AMC, but shop stock is established by the number of times a company or battalion orders or consumes the part. Units must use Global Combat Support System (GCSS)-Army to accurately bring all of their parts to record for accountability and to establish an accurate and beneficial shop stock list.

In line with AR 710-2, Supply Policy Below the National Level, and All Army Activities Message 076-2019 on depot-level repairable items, leaders must understand and enforce the Army’s 10-day turn-in standard

(30 days for USAR) for recoverable repair parts such as wheel and tire assemblies, starters, and engines. This 10- or 30-day clock starts when the recoverable item is post-goods issued in the customer’s bin, not when the unit picks up the item. Thus, it is vital to pick up parts at the supply support activity (SSA) every day. Additionally, the prompt and disciplined return of recoverable repair parts allows depots to receive, rebuild, and keep up with supply demands.

Technical Manuals

Maintainers must consistently use

the applicable TM and maintenance support device (MSD) to troubleshoot, diagnose, and identify Class IX parts. The MSD is the maintainer’s diagnostic tool and stores updated TMs and other reference material. Without the current TM, the maintainer cannot accurately troubleshoot, maintain, or research repair parts, thus contributing to decreased readiness rates.

GCSS-Army Proficiency

GCSS-Army is the nucleus of readiness reporting, supply and maintenance management operations. GCSS-Army is an internet-based



Pvt. Alyssa Devlin, 664th Ordnance Company, 553rd Combat Sustainment Support Battalion, 1st Cavalry Division Sustainment Brigade, trains on proper munitions distribution during weekly sergeant's time training (STT) on Fort Hood, Texas, April, 4, 2019. STT builds Soldier skills and creates a force of Army professionals ready for any task. (Photo by Spc. Calab Franklin)

enterprise resource planning system that is typically updated every quarter.

Automated logistical specialists, unit supply specialists, and other users must be proficient when using the system. Supply personnel should use the new automated identification technology “My Work Place” within GCSS-Army. This functionality enhances the user interface and simplifies processes through the use of tiles and predictive text features instead of transaction codes. If on-hand, supply clerks should

use hand-held tablets when picking up parts at the SSA. Scanning a materiel release order using the tablet’s built-in bar code scanner, instead of searching for the document number in GCSS-Army, substantially improves accuracy and velocity.

Within GCSS-Army, units must properly configure all systems and sub-systems in accordance with AR 700-138, Army Logistics Readiness and Sustainability. For example, the containerized kitchen (CK) is considered

a system and the water trailer, prime mover, and generator are sub-systems of the CK system. The CK system cannot be employed without its sub-systems. If any of these sub-systems are NMC, the entire CK system is NMC. Proper system and sub-system configuration within GCSS-Army will provide organizations a clearer operating picture of their mission readiness.

Training

For enlisted Soldiers, training begins with Advanced Individual Training

(AIT) at the U.S. Army Ordnance School that uses a skills-based training approach for maintenance and repair military occupation specialties (MOS). Considering that the wheeled vehicle mechanic is responsible for maintaining more than 350 different end items across the Army, the school cannot teach every system in the time allotted for AIT. Instead, instruction focuses on the fundamentals of brakes, engines, and suspension that can be applied to numerous systems. Soldiers graduate AIT with the basic skills needed to perform at the apprentice level. Once these maintainers arrive at their first unit, NCOs and warrant officers must provide the supervision and on-the-job training they need for progressive development.

Further, units must dedicate time on their training calendars to conduct low-density MOS training to increase proficiency. Leaders should refer to the Soldier Training Publications (STP) for each MOS. These Soldier’s manuals and trainer guides contain the current critical tasks and standardized training objectives to plan, conduct, and evaluate training. STPs are available on the Army Publishing Directorate website.

Tools

Units must have all authorized common tools, special tools, and test equipment. Accountability and kitting of special tools and test equipment are insufficient across the Army. Most fleets lack a bill of material or component listing of the special tools needed. Maintainers rely on the applicable repair parts TM to identify the special tools required for each end item. However, these tools do not have separate LINs

and are not found on the property book or hand receipts. Without the required special tools or test equipment, maintainers cannot perform all of the maintenance procedures outlined in the TM.

Time

For MTOEs, the Army calculates the number of mechanic authorizations using the manpower requirements criteria formula as outlined in AR 71-32, Force Development and Documentation, and DA Pam 71-32, Force Development and Documentation Consolidated Procedures. Leaders need to understand this methodology and the difference between available time in garrison compared to wartime. Appendix C of AR 750-1 and AR 570-4, Manpower Management, outline the differences between peacetime and wartime requirements for maintainers. Furthermore, units must employ their maintainers within their MOS and not assign them to other duty positions. Some units even “protect” their maintainers and do not allow them to participate in taskings or other duties outside of their MOS. Working maintainers in their MOS contributes to sustaining proficiency and prevents skill atrophy.

Supervision

Successful maintenance programs depend on supervisors to manage processes, enforce standards, and develop expertise within their ranks. Supervisors must ensure maintenance leaders at all levels (NCO, officer, and warrant officer) receive appropriate and timely training at Army schools and institutions. Moreover, they must employ that training in duty assignments

that will develop critical maintenance skills and leadership experience over time.

As outlined above, there are numerous contributing factors that affect an organization’s equipment readiness rate in the near-term. Leaders who recognize, synthesize, and address as many as possible will have the best results. Army modernization, to include prognostic and predictive maintenance, advanced manufacturing techniques, and reduced reliance on contracted logistics support, will bring exciting new capabilities as well as challenges to the maintenance arena. However, operators, maintainers, and their leaders must always recognize the contributing factors that impact readiness and the ability to “fight tonight.”

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Strategic Support Area

Fostering Collaboration and Teamwork to Deliver Capabilities for the Joint Force

■ By Maj. Gen. K. Todd Royar, Maj. Gen. Heidi J. Hoyle, and Col. Gavin J. Gardner

The Department of the Army G-4 brought together three experts for a conversation about how their respective strategic Army logistics commands are foundational to the joint fight. The panel included Maj. Gen. K. Todd Royar, U.S. Army Aviation and Missile Command; Maj. Gen. Heidi Hoyle, U.S. Army Military Surface Deployment and Distribution Command (SDDC); and Col. Gavin Gardner, Joint Munitions Command and Joint Munitions and Lethality Life Cycle Management Command.

Q: How do you see Army logistics' strategic role in the joint force evolving as we transition to fighting in a contested, multi-domain environment?

Royar: In terms of doctrine and process, I think we are pretty well set. The role of Army logistics is sound, but the methods we use will continue to evolve. So, let me ask the question a different way: How do we provide the joint warfighter the same high level of logistics support, but do so with greater efficiency and effectiveness?

I believe the answer is we reduce the overall sustainment requirement, which we can achieve in several ways. For example, we can consider sustainment solutions at the front-end, during weapon system development. If we design a system that doesn't consume parts as quickly and increases the reliability on the battlefield, we will carry fewer parts, ship fewer parts, and contract for fewer parts.

Another mechanism for reducing the sustainment requirement is advanced manufacturing. Imagine having the ability to manufacture a part on the battlefield—as opposed to bringing the weapon system all the way back to the strategic support area for repair. It is a massively complex endeavor, but advanced manufacturing would greatly reduce our sustainment footprint overall.

Gardner: Maj. Gen. Royar brings up a good point. How do we modernize to support the systems that will come online to enable the multi-domain operations (MDO) ready force? I think we do it by prioritizing resources, both the physical infrastructure and the people. Keeping in line with the Chief of Staff's People First strategy, we need to consider how we transform and develop an organic

workforce that is capable of sustaining today's requirements but during large-scale combat operations (LSCO), from an initial surge to sustaining power generation in the long-term.

Hoyle: There are approximately 5,100 surface warriors around the globe, 2,600 of those are part of the Deployment Support Command (DSC), our reserve component partners, so we always keep the DSC at the top of our mind as we move through the planning process ensuring they can mobilize in a timely manner.

Our DSC recently realigned some of our units closer to our seaports. That realignment will enable a faster mobilization. It will also help with recruitment. After all, the skills our workforce needs for seaport operations doesn't necessarily exist in the interior of our country. By moving the DSC partners closer to our coastal operations, we have the right workforce with the right skills.

Another element of Surface Deployment and Distribution Command's (SDDC) success as a small organization is our ability to utilize our "fourth component". While Army components one, two, and three are the traditional Active, National Guard, and Reserve Soldiers, our fourth component – our commercial carriers and partners, exponentially increase our distribution capability and they are our inextricable link making it possible for us to accomplish our mission.

For example, within the Trucks and Highways Program, we tap into more than 700 commercial carriers, which

give us access to more than 1 million trucks. SDDC conducts operations at 23 continental United States seaports as part of the Strategic Seaport Program and an additional 180 seaports around the globe. This allows us to move from the continental United States through the strategic support area and project forces closer to the fight. Our brigades regularly exercise these seaports to keep them open and vibrant, delivering our combatant commanders options during planning and flexibility during operations.

Gardner: DOD has directed us to look holistically at the supply chain to minimize risk by identifying, monitoring, detecting, and mitigating threats. We need to know the points of failure and shore up any vulnerabilities. For example, we can outsource manufacturing to a friendlier country or even consider producing critical items domestically. Every supply chain decision should come with a risk assessment and, obviously, resources.

Hoyle: We also need to consider cyber as we evolve to meet the requirements of contested multi-domain operations. We have to strengthen our cybersecurity and make it more resilient. As SDDC develops multilateral contracts with our fourth component partners, we place requirements into the contracting obligations to increase their cybersecurity posture. Without doing so, we create an even greater risk during contested operations.

Q: What are your organization's specific roles and contributions to Army support to other services?

Hoyle: From a holistic perspective, the SDDC provides support to other services and the joint force daily. I think of SDDC as the enabler—the connective tissue—for the joint operations of the U.S. Transportation Command (USTRANSCOM). The Air Mobility Command provides the airlift and the Military Sealift Command (MSC) conducts ocean vessel movements. We are the connective tissue for getting equipment to the port, conducting port operations, transitioning equipment to our sealift partners, and conducting port operations on the other end.

Gardner: The Joint Munitions Command (JMC) is also an inherently joint operation. Our core function is to produce, distribute, store, and demilitarize all the conventional munitions as well as ensure stockpile reliability. It is about making sure the ammunition is ready to go and will perform as designed. We perform these functions for all our military services, but we also perform them for other government agencies. This is important because LSCO in a multi-domain environment will require a whole-of-government effort.

Royar: As the name implies, the Aviation and Missile Command provides two major commodities to our joint partners. The first is the rotary wing aircraft. Corpus Christi Army Depot serves as the DOD's center of excellence for rotary wing repair and overhaul. The Army and its sister services have very similar systems—they fly Blackhawks; we fly Blackhawks—so the extension of support is understandable. The second is the missile component. We provide for the repair, overhaul, recapitalization,

and stockpile reliability testing of the family of missiles and missile systems operated by the Army and the other services.

We provide the same support to our foreign partners. When I think of our foreign partners, interoperability becomes key.

Q: How do you envision that mission set changing as we move toward LSCO in a multi-domain environment?

Royar: As we move to LSCO, the need for commonality becomes even more critical. If one of the services or foreign partners does something that is just slightly different or vice versa,

the sustainment mission becomes much more difficult, especially from a supply perspective. Systems that are not interchangeable at the point of need put more stress on Maj. Gen. Hoyle's organization. Therefore, commonality will be critical and should be one of the major drivers for changing the way we support our warfighters.

Gardner: The joint force will be taking a closer look at dispersion as MDO and the Joint Warfighting Concept (JWC) develop. Today JMC distributes ammunition through our partnerships with SDDC and Air Mobility Command. We push very large volumes based on set schedules that meet the combatant commanders' requirements. As we go into the future,

we may have to reconsider how we distribute ammunition from the strategic support area to the end-user. Maybe more combat-configured shipments in smaller volumes. JMC is very attuned to the changes within the JWC, and we will adapt accordingly to meet the joint services' requirements.

Hoyle: Because our daily mission is inherently joint, I don't foresee any significant changes as we move to LSCO. Except, as Maj. Gen. Royar mentioned earlier, maybe doing it more efficiently and effectively and certainly in a greater capacity.

Q: Support to other services is a huge piece of the Army logistics mission set. How do we better



Maj. Gen. K. Todd Royar, commanding general, U.S. Army Aviation and Missile Command, tours the Aviation Center Logistics Command Missiles and Fires Division at Fort Sill, Oklahoma. The team there ensures training equipment is safe and reliable so Fort Sill can focus on generating the Army's future force. (Photo by Lisa Simunaci)



Maj. Brittany LoPresti, Battalion Executive Officer, 832nd Transportation Bn., 597th Transportation Brigade, briefs now-Maj. Gen. Heidi Hoyle, commanding general, Military Surface Deployment and Distribution Command (SDDC) and Command Sgt. Maj. Rocky Carr, SDDC's senior enlisted leader, on the capabilities of the Rapid Port Opening Element (RPOE) during a visit to the RPOE Deployment Center at Joint Base Langley-Eustis, Newport News, Virginia, Jan. 19. The stop at the deployment center was part of a day-long tour organized by the RPOE soldiers, which showed the SDDC commanding general where the Soldiers live and work on base. (Photo by Julie A. Kelemen)

“think joint,” “plan joint,” and “sustain joint” as we look through the lens of setting the theater and power projection?

Hoyle: Air Mobility Command and SDDC are co-located on Scott AFB with USTRANSCOM, and everyday operations here are very joint in nature as we support the Joint Deployment and Distribution Enterprise, or JDDE.

Key to DOD's success in joint thinking, planning, and sustaining is the Joint Planning and Execution System (JOPES)—DOD's planning repository. With all joint requirements built into JOPES, we can conduct planning operations to provide the

timeliest and most cost-effective solutions for the DOD.

Ammunition is a great example of how we serve and think jointly every day. We recently conducted an exercise where we moved ammunition for the Army, Air Force, Marines, and the Navy from JMC's ammunition depots, plants, and arsenals to Military Ocean Terminal Sunny Point (MOTSU). MOTSU is one place where we are allowed to warehouse a significant amount of net explosive weight. In addition to the inherently joint nature of this mission, we also exercised contingencies with our industry partners, simulating a disruption of our standard rail solution and adjusting to a purely trucking

solution. We were stress-testing the system. We wanted to see how we could use the facilities and test our operations to receive large quantities of containerized ammunition by truck only. Once the shipments were received at the ports, we put them on a military sealift vessel to move the ammunition overseas. That is just one example of how we are inextricably linked—JMC, SDDC, MSC, the larger joint force as well as industry.

Gardner: I agree. It requires routine interaction with our joint partners. My command works hand-in-hand with SDDC to develop the distribution plan that enables their concept of the operations, so the

flow of munitions is sequenced with all the other commodities. It is the interoperability—of both planning and business systems—that is key to success.

Like the Army, our joint partners review their ammunition requirements annually. That information helps us define our mission. It also helps us drive the planning and execution of transportation and distribution.

In addition, as Maj. Gen. Hoyle highlighted from a JOPES perspective, transportation planning is evolving as the services' enterprise business systems catch up. Even though munitions is an

inherently joint function, and one of our Title 10 requirements, the military services are not fully integrated. As the Army evolves its business systems, we have asked for commonality—at least for munitions—so that we reduce the time between demand signal from our joint partners, the push of munitions at my level, and the pull of munitions by SDDC for movement to the point of need.

Every year we conduct joint munitions rehearsals of concept drills. We take a no-kidding go-to-war plan for a theater of operation, and we pull all munitions requirements for that plan. We then send the demand signal to SDDC

for transportation planning. We also send on-the-ground physical demand signals to the industry (whether it is by truck or rail or even air) we exercise it all. As we exercise, we are in constant communication with our joint partners about both their current and future signals.

Royar: I absolutely agree with everything both Maj. Gen. Hoyle and Col. Gardner have said. But I think it is important—from a joint perspective—to get the requirements correct on the front end. Over time, we have done a better job working with our counterparts in our sister services. Together, we have determined the right capabilities for new

weapon systems. But our services have different problem sets. For example, the control of corrosion is important to the Army, but it is more important to the Navy because they fly their helicopters off the back of a ship. It helps long-term if we can address those environmental and operational factors upfront.

To Col. Gardner's point, Army Materiel Command has been working hard to give us a way to see ourselves from the enterprise business systems. The better we can see ourselves, the better our visibility, the greater our interoperability is across the board. If I know exactly where that one part is, I can get it to our sister service in the same combatant command when they need it.

Q. The Army of 2028 and 2035 will look radically different than that of today. What advice do you have for our young Soldiers who will join the ranks over the next decade?

Royar: My oldest son is joining the Reserve Officers' Training Corps program this summer, and my advice to him is to make sure the foundation is solid. It is about Army values, ethics, and doing the right thing. If you have that foundation, you will have the ability to address the tactical challenges and be willing to innovate, change, and learn.

It is important to recognize that you can take risk—appropriate risk for your level. It is okay to try something. If it doesn't work, then let's innovate and do it better next time. The Army needs leaders that are adaptable and can get

through that. But it starts with that all-important foundation of values and ethics.

Gardner: I think we have talked about new equipment and evolving doctrine for the Army. But at the end of the day, the Army remains all about the Soldier. Just as Maj. Gen. Royar highlighted, it is about that foundation. It's about being physically, mentally, and morally fit because combat is hard. It is not going to get any easier, despite all of these technological advances. You have to be fit to deal with a faster-evolving combat environment.

In addition, teamwork is essential to everything we do moving forward. The technology is evolving at a faster pace, but we can leverage our teammates to overcome the speed traps. It is about relying on each other to accomplish the mission.

Royar: Collaboration is key; not only internally to the Army, but also with our partners.

Hoyle: I am glad we are all thinking in the same way. To paraphrase the Chief of Staff of the Army, if we take care of the people then the people will take care of the mission. When I say people, it is all of our people. We have three components: the Active, the National Guard, and the Reserve. We have our Department of the Army Civilians and we have our fourth component (industry) partners. The future really will require this whole-of-nation approach.

As each Soldier lives and learns the Army values, they also learn different

skills. So, I tell young Soldiers to set that foundation, build leadership skills, and take advantage of every opportunity that is presented to broaden their skillset. Diversity of skills and experiences is how you build adaptability.

Gardner: About every 40 years, the Army goes through a really significant doctrinal and modernization change and we are in the midst of that now. It leads to great opportunities for innovation, at all levels, to drive the changes we'll need to continue our overmatch of any potential adversary.

Maj. Gen. K. Todd Royar assumed command of the United States Army Aviation and Missile Command on June 10, 2019. As the commander, he leads more than 16,000 Soldiers and civilians in providing aviation, missile and test measurement, and diagnostic equipment sustainment support to the Joint Warfighter to enable readiness. Royar has deployed and commanded units in combat at every echelon from platoon to brigade in support of Operations Desert Shield/Desert Storm, Iraqi Freedom, and Enduring Freedom.

Maj. Gen. Heidi J. Hoyle assumed command of the Military Surface Deployment and Distribution Command in June 2020. She is truly a multi-functional logistician with a diverse sustainment background. Hoyle has served at every level of command, from company command to brigade command, and is now in her third general officer billet. Hoyle's most recent assignment was commandant, U.S. Army Ordnance School.

Col. Gavin J. Gardner assumed the duties of commander of the Joint Munitions Command and Joint Munitions and Lethality Life Cycle Management Command on June 11, 2020. He was commissioned as a second lieutenant in the Ordnance Corps branch, detailed to the Armor Corps in 1992. He earned a three-year Army ROTC Scholarship and is a Distinguished Military Graduate from the University of Georgia with a Bachelor of Business Administration Degree in Production and Operations Management, 1992; Masters of Science Logistics Management from the Florida Institute of Technology, 2002; and Masters of Arts in National Security and Strategic Studies from the U.S. Naval War College, 2014.



Donald Benton, director of Recovered Chemical Materiel, Chemical Materials Activity, right, briefs Col. Gavin J. Gardner, commander, Joint Munitions Command and Joint Munitions and Lethality Life Cycle Management Command, center, with Kelso C. Horne III, CMA director, about the Explosive Destruction System (EDS) during a tour March 10 at Aberdeen Proving Ground, Maryland. The EDS destroys chemical warfare materiel in a safe and environmentally sound manner. (Photo by Sarah Lobos)

Movement Matters

U.S. Army Japan Movement Control Team Provides Support in Theater

■ By Col. Chris Paone and Capt. Michael Westrom

Movement control is an essential subordinate function of transportation, one that ensures that the right equipment arrives at the right location at the right time. Effective movement control has operational and even strategic implications for the Army's ability to rapidly deploy and sustain formations using systems that are unclassified and inelastic. In Japan where operations are inherently reliant on service integration, movement control is part of a vast

network of supply and transportation chains that, when optimized, enables commanders to assess technology and innovation to synchronize movements for the deployment, redeployment, and distribution of equipment and personnel without disruption.

Understanding Army movement control challenges in Japan in general and, specifically, for 623rd Movement Control Team (MCT), 35th Combat Sustainment Support Battalion (CSSB)—the only MCT in Japan—

offers a method of analysis that lays out how a particular geographic region's requirements drive this MCT's mission inputs and outputs that support our customer base. For example, long, multi-country military convoys in the European theater create unique movement control challenges such as managing multiple countries' diplomatic clearances and regulations regarding oversized loads for green assets, as discussed in other articles within Army Sustainment Professional Bulletin (i.e. "Moving Across Europe for Operation

Atlantic Resolve” by Capt. Alex Brubaker and Sgt. 1st Class Lucas W. Pedigo, in the July-August 2016 issue; “Expanding the NATO Movement Control Network” by Capt. Robert R. Yauger in the Nov.-Dec. 2015 issue). On the other hand, in Japan, the lack of U.S. military transportation assets creates different and unique transport and logistics policy coordinations that often rely on our strong military relationship with the Japanese Ground Self Defense Force (JGSDF).

The following discussion outlines how the 623rd MCT, through its five MCT doctrinal mission sets, looks to achieve theater-wide agile and resilient transportation logistics support with its higher headquarters, 35th CSSB, and the 10th Support Group (10th SG). Acknowledging the many ways in which Army movement control organizations nest themselves into a joint theater sustainment environment is important. Movement control capabilities and specific customer outputs vary greatly depending on the particular area of responsibility (AOR) and transportation organizational structure. This context-based analysis will inform new perspectives from which other movement control professionals and commanders can draw to more effectively employ their theater’s MCTs.

The execution of movement control support is generally carried out by MCTs, the interface between operational-level transportation organizations and the supported customers. MCTs are 21-Soldier organizations, consisting of a logistics captain, two transportation lieutenants, a sergeant first class, and four staff sergeants, who each lead a branch

movement control team (BMCT). Each enlisted Soldier in the MCT has a military occupational specialty of 88N, transportation management coordinator. All MCTs are capable of performing five-movement control missions: intermodal, area, movement regulation, documentation, and division support, per Army Techniques Publication 4-16. The extent to which an MCT focuses on one or more of these missions and the nature of the specific services an MCT offers customer organizations depends on mission conditions, circumstances, and operational environment (OE) influences that inform a commander’s information and decision cycle.

Intermodal

MCTs achieve intermodal movement control support by filling gaps and fostering organizational overlap. Either directly or via their higher headquarters, MCTs liaise and coordinate between joint transportation organizations to ensure seamless movement of Army personnel and equipment from port to fort, or vice versa. Such organizations include the Army Surface Deployment and Distribution Command (SDDC) at seaports, Army transportation units and/or civilian common user land transportation (CULT) assets on the roads and railways, and the U.S. Air Force at airports, among others. Essential to effective intermodal movement control is the provision of in-transit visibility (ITV) for the aforementioned organizations and the supported customer Army units. Accurate ITV enables commanders at all echelons to make better-informed decisions regarding the movement and, ultimately, employment of their equipment.

In Japan, 623rd MCT provides ITV for equipment when it arrives at the sea port of debarkation (SPOD) and/or the air port of debarkation (APOD) and then on to the final destination within Japan. While 623rd’s ITV consisted of analog methods in the past, the MCT recently implemented the use of its portable deployment kit (PDK) lite capabilities, which enable the MCT to portably burn and read radio frequency identification (RFID) tags onto the web-based RF-ITV tracking portal.

The MCT also deploys its BMCTs to SPODs/APODs and final destinations, where they use the PDK’s iridium modem technology to establish mobile choke points that feed data from the RFID tags onto the ITV server. This allows anyone with a common access card and access to basic equipment data (i.e. transportation control numbers, interrogator IDs, and so forth) to log onto the web-based server and view the equipment’s location in near real-time.

In practice, the 623rd recently supported a rotational area support company’s (ASC) equipment for U.S. Army-Japan (USAR-J). A BMCT deployed to the APOD, Yokota air base, to receive and track the personnel that arrived by air. Simultaneously, a second BMCT met the vessels at the SPOD, Yokohama north dock, and assisted the SDDC and USAR-J G4 Transportation with the staging and onward movement of the equipment via civilian CULT assets. Since the rotational unit did not use RFID tags, 623rd provided its own, filling a gap in its intermodal movement control support. The MCT validated the ASC’s unit deployment list at the SPOD, burned and affixed RFID tags

to the equipment, and established PDK mobile choke points to track the equipment as it moved from the port to the final destination within Japan, providing the ASC, USAR-J, and associated joint support organizations with intermodal connectivity.

Area

MCTs are often tasked to provide movement control support of Army personnel, equipment, and cargo that moves into, through, and out of an assigned area. The specific movement control missions vary considerably depending on the area’s specific requirements; however, they generally involve some piece of the coordination of onward movement with the appropriate agencies, execution of ITV, and provision of unit movement coordinator services, which include assisting supported units with documentation, deployment automation management, and movement control support at hubs. As the only MCT in Japan, 623rd MCT spends the majority of its efforts providing movement control support to area-specific rotational unit deployments and USAR-J exercises; however, being the sole organization with a specific, unique capability within the Japan AOR drives 623rd MCT to provide its technical assistance to a host of different mission sets.

For instance, the Army Field Support Battalion (AFSBn) at Sagami Depot, Japan, which manages the ground Army pre-positioned stock-4 (APS-4) in Japan, requested 623rd’s assistance in processing its unit set movement data. Since the AFSBn is a small, mostly civilian organization that lacks the command deployment discipline

program assets of most Army units, the battalion asked the MCT to validate the organizational equipment lists (OELs) for the APS-4 equipment on Transportation Coordinators’ Automated Information for Movements System II (TC-AIMS II). The MCT validated APS-4’s OELs on TC-AIMS II by cross-referencing each unit set’s OEL with its associated Army War Reserve Deployment System record. This technical MCT support to the area increases the speed of issue should the unit sets be issued and transported, improving the AFSBn’s quality of support within the theater.

Movement Regulation

MCTs or BMCTs are capable of deploying to multiple locations to regulate movement on main or alternate supply routes, generally through the execution of convoy support centers (CSCs). This capability is particularly important in theaters like Europe, where movements are typically long and involve multiple countries, necessitating the management of convoy rest cycles, diplomatic clearances, and tight control over scheduling. Japan is slightly larger than Germany, but only a quarter of its area is habitable. Most peacetime ground movements are short and are conducted by civilian CULT assets, obviating the need for military CSCs on commercial routes. In a contingency operation, however, this capability would be essential. The 623rd MCT is equipped and trained to provide tactical CSCs in austere and contested environments. Each BMCT is capable of deploying movement regulation capabilities throughout the theater, establishing frequency modulation (FM), joint capabilities release (JCR), and high

frequency (HF) communications with higher headquarters, and defending themselves against enemy attacks.

Last year, 623rd MCT established a tactical CSC during the 35th CSSB Samurai Rising field training exercise (FTX) at Camp Fuji, Japan. During this FTX, the MCT validated its ability to tactically convoy, establish a CSC at a remote site, conduct tactical movement regulation, communicate with the CSSB via FM, JCR, and HF, and defend against opposing forces. While commanders place necessary emphasis on improving movement control during peacetime, it is important to emphasize that MCTs are tactical and deployable organizations that stand ready to train and employ their tactical mission essential tasks in support of national objectives during contingency operations.

Documentation

Although deploying units are generally required to produce their own cargo and hazardous materials (HAZMAT) documentation, MCTs have the capability and know-how to augment cargo documentation support at distribution nodes and central receiving and shipping point yards. Documentation support is generally inherent in the other four MCT mission sets, but can be a standalone MCT function depending on the specific operational environment. While units that draw APS-4 are typically responsible for completing the appropriate documentation, during operations in which units lack appropriate personnel, the MCT can play a crucial role in augmenting the cargo documentation responsibilities

inherent in the successful issue and movement of APS.

The 623rd MCT has HAZMAT certifiers and portable scales used for documentation purposes on an as-needed basis within Japan. Most recently, the MCT provided documentation augmentation to the small, mostly civilian, AFSBn at Sagami Depot that lacks the HAZMAT certifiers typically available in other Army battalions. Last fall, the AFSBn executed a small-scale deployment readiness exercise (DRE) of its APS-4 consisting of the movement of four containers, which included HAZMAT. In support of this DRE, 623rd deployed a BMCT to Sagami Depot that certified the HAZMAT and weighed the containers on site using its portable scales. Additionally, the BMCT established a PDK mobile choke point to burn and track the movement of the four containers around the depot as part of the DRE.

Division Support

In addition to area support, MCTs can be tasked to provide movement control for a division area of operations, including any divisional movements or exercises. USAR-J is the Army's two-star command in Japan and its theater-wide exercises keep the 623rd MCT decidedly engaged. Last winter, 623rd MCT deployed a BMCT to support the 10th SG Logistics Task Force (LTF) operation in support of the bilateral Yama Sakura-79 (YS-79) exercise at Camp Kengun, Kumamoto. Due to the bilateral nature of the exercise, movement control support required the MCT to work alongside the USAR-J G4 Transportation to coordinate

equipment movements with the JGSDF transportation section and Japanese civilian CULT assets. This type of coordination strengthened our bilateral military relations and enabled strategic effects while providing the MCT Soldiers the opportunity to promote a mutual understanding of the OE and strengthening cooperative relationships across-the-board.

Additionally, the BMCT deployed its PDK to Camp Kengun to provide USAR-J accurate ITV of the exercise equipment arriving from within Japan. The BMCT served as the on-the-ground liaison at Camp Kengun to confront transportation-related friction points, which included the reception, appropriate emplacement, and load out of equipment and deconfliction of U.S. and JGSDF base access requirements for civilian line hauls. Lastly, the team met exercise participants at the civilian APOD and ensured they were tracked and loaded onto JGSDF-controlled buses, a capability that was particularly important during the protective COVID-19 environment. YS-79 is just one example of the many theater exercises in which the MCT provides USAR-J level support via its CSSB headquarters or LTF.

Conclusion

Considering the challenges of operating in a contested future environment that will be required of our sustainment formations, the MCT is clearly a force multiplier and strategic enabler, part of the contemporary sustainment enterprise faced with a volatile OE. While many of our Army sustainment professionals regularly engage with MCTs and rely on their

expertise and support to control the movement of equipment and personnel into, through, and out of theaters, creating a thorough understanding of an MCT's capabilities and processes executed by a tiered network of organizations will ensure the seamless transition from the strategic through tactical levels of operation. While the specific execution of MCT missions are dependent on the situation or environment and is based on the demand signals of the supported forces, successfully balancing requirements against capabilities, integrating military and host nation modes of transportation, building relationships, training Soldiers, and incorporating MCTs into the deployment process in any OE build capacity and endurance in support of the future fight.

Col. Chris Paone serves as the commander of the 10th Support Group at Torii Station, Japan. Paone has more than 22 years of service that includes a variety of troop leadership, staff assignments, and operational/strategic experiences. He completed his undergraduate studies at Providence College, Providence, Rhode Island. He has earned graduate degrees in Business Administration (University of Maryland Global Campus), Logistics Management (Florida Institute of Technology), and Strategic Studies (U.S. Army War College).

Capt. Michael Westrom serves as the commander of the 623rd Movement Control Team at Camp Zama, Japan. He holds a Bachelor of Science in Mechanical Engineering from the United States Military Academy and a Master of Science in Anthropology from Durham University, United Kingdom. He is a graduate of the Quartermaster Basic Officer Leader Course, the Combined Logistics Captains Career Course, and the Support Operations Phase II Course.

Featured Photo
Sgt. Miguel Yap, Movements NCO, 623rd Movement Control Team, validated a unit deployment list and received equipment from Japanese commercial transportation assets at Camp Kengun, Japan in support of Yama Sakura-79 bilateral exercise on Nov. 16, 2020. (Photo by 1st Lt. Ali Al-Hada)

Sustainment Readiness

The Opportunity for a More Resilient Sustainment Brigade

■ By Capt. Christopher Campbell

Looking forward, the Army sees potential conflict with near-peer adversaries with similar capabilities, known as large-scale combat operations (LSCO). As all branches of the DOD and the Army change in preparation for the future, one unit that would drastically benefit from new capabilities and equipment fielding would be the sustainment brigade (SB). As the main effort for tactical level combat support, SBs support their division and the additional units tasked to the area of operations (AO). In garrison, SBs support their assigned division, installation, and attached units, leaving little time for tactical training for the future fight. The DOD has been preparing for the next possible major conflict to consist of multi-domain operations (MDO), in which near-peer adversaries are capable of contesting the U.S. in all domains: air, land, maritime, space, and cyberspace. Fully realizing that this will shape conflicts in the lens of LSCO, the Army has the opportunity to increase the ability for SBs to defend themselves with as little dependence on other units as possible to increase survivability and responsiveness. This

can be done by increasing their lethality in weapons fielding and training, and the fielding and familiarity of Unmanned Aircraft Systems (UAS) technology.

Increased Weapon Familiarity and Fielding

To prepare for a LSCO environment, SBs must do more than the required semi-annual M4 carbine qualification. While SB leadership does an excellent job keeping Soldiers qualified on weapons, integrating weapons training on a monthly or quarterly basis will drastically increase familiarity and lethality down to the individual Soldier. For comprehensive defense, SB Soldiers must be familiar and capable on all crew-served weapons: the M2 .50 Caliber Machine Gun, the M240B Machine Gun, the M249 Squad Automatic Weapon, and the MK 19 Grenade Launcher. In a worst-case scenario where enemy armored reconnaissance units engage division support areas (DSAs), SBs could defend themselves by being fielded FGM-148 Javelin anti-tank missile weapon systems and mortar capabilities to engage the enemy with as much distance as possible. Currently, no sustainer in a SB

can defend themselves or their unit from armored vehicles, making this requirement critical. These capabilities would increase the DSA protection but can be further improved by Soldiers practicing field artillery call for fire operations during home station field exercises. This will not only support the DSA itself but also the SB's convoys, and its supporting units.

A Glimpse into the Future of UAS Warfare

With an opportunity to focus on readiness, SBs should fill their field operations and garrison training calendars with critical training in emerging technology and capabilities to stay ahead of the curve. U.S. adversaries have taken great steps in

drone capabilities for the battlefield, with limited real-world examples of capabilities until September 2020, when Azerbaijan and Armenia went to war over the disputed Nagorno-Karabakh region. With a majority of air support by primarily Turkish and Israeli UAS, preliminary numbers reported Azerbaijan destroyed over 40 Armenian tanks within less than two months of battle. This highlights the great steps all units in the Army must take to combat UAS lethality, especially in the DSA. While the Army uses personnel-sized UAS in some units,

SBs must also have access to these capabilities, training, and maintenance so that they can properly support themselves in the future. Furthermore, SB Soldiers must be well-versed in enemy UAS spotting, evasion, and anti-UAS capabilities to keep the division's sustainment line intact.

Responding to a New Threat with New Capabilities

The Nagorno-Karabakh conflict in 2020 shocked the world

by showing the capabilities of advanced UAS in ground combat. Azerbaijani UAS platforms would locate Armenian T-72 battle tanks on the battlefield, destroying critical combat vehicles. When Armenian forces would use camouflage to conceal their tanks or personnel, Azerbaijani UAS would follow tank tracks or wait for unaware Armenian soldiers to briefly step out of their camouflage before destroying their target. SBs must learn from these lessons and train due to the undeniable fact these tactics will be used in the future. With the threat of UAS of all sizes currently being purchased by near-peer adversaries looking to spread across the battlefield, SBs cannot always depend upon air defense artillery units being

attached to them for UAS defense. Furthermore, as the providing point for the preparation and sustainment of brigade combat teams (BCTs), DSAs are large, visible targets. This makes them open opportunities for the enemy to disrupt and destroy, compromising the support of the entire AO. DSAs will have increased defense capabilities if three to four SB Soldiers per platoon can be trained in the upcoming Fixed Site-Low, Slow, Small Unmanned Aircraft System Integrated Defeat System, a family of anti-UAS equipment currently being tested by

the Army to disengage small enemy UAS. Combining these concepts with increased camouflage training, SB Soldiers will stand a better chance against the UAS threat.

SBs would greatly benefit from training on the Army's RQ-20 Puma UAS or Air Force's Wasp III models to conduct beyond-line-of-sight reconnaissance and patrol the area surrounding the DSA. With MDO conflicts possible in the future, SBs may have limited, if any, air support from joint

With the threat of Unmanned Aircraft Systems (UAS) of all sizes currently being purchased by the near-peer adversaries looking to spread across the battlefield, Sustainment Brigades (SBs) cannot always depend upon air defense artillery units being attached to them for UAS defense.



Cadets familiarize themselves with the M4 carbine and advanced optics ahead of weapons qualification as part of the U.S. Military Academy at West Point's cadet field training July 9, 2018. (Photo by Matthew Moeller)

or combat aviation brigade assets. Due to hybrid threats from non-uniformed personnel seeking to disrupt or destroy sustainment capabilities, SBs should have Soldiers trained in current and emerging UAS to conduct route reconnaissance and terrain analysis as an "eye in the sky." Currently found in BCTs, the AeroVironment RQ-11 Raven, a small, hand-deployed UAS, could be used on the platoon or company level in case an alternate supply route is required due to a change of mission. If unable to properly train SB Soldiers on current UAS, the Army can look to field positions for UAS operators in the SB's modified table of organization and equipment, making them organic to the unit. Consistent training and employment of UAS in garrison training opportunities will provide precious training opportunities required if called to action in a LSCO environment.

Conclusion

As the entire Army changes and trains for future combat in a LSCO environment, the SB cannot afford to be left behind in updates, specifically in its tactical capabilities.

SBs are responsible for the support of an entire division, any attached units, and the AO. This makes their survivability paramount to win the fight. If MDOs are expected with near-peer adversaries matching our capabilities, sustainers must be able to defend themselves with as little dependence upon other units as possible. This can be done by the fielding of anti-armor and mortar capabilities and increased M4 carbine and crew-served weapon ranges to make the SB more lethal down to the individual Soldier. To adapt to the changing landscape of combat operations, SBs need UAS and anti-UAS capabilities to ensure the survivability of SBs. With the threat of war with near-peer adversaries only increasing every year, SBs have the opportunity to stay ahead of the curve and defend themselves to provide support and win the fight.

Capt. Christopher Campbell is assigned to the 3rd Sustainment Brigade, 3rd Infantry Division, Fort Stewart, Georgia. He has served as a distribution platoon leader in Echo Company, 3-501st Assault Helicopter Battalion, 1st Combat Aviation Brigade, 1st Armored Division, Fort Bliss, Texas, and has deployed to Operation Freedom Sentinel '18. He holds a Bachelor of Science in Criminal Justice and a Bachelor of Art in Sociology from East Stroudsburg University.

A full-page background image showing the backs of a Soldier and a Marine. The Soldier on the left wears a camouflage uniform and a cap with the name 'FABACHER'. The Marine on the right wears a camouflage uniform, a white hard hat, and sunglasses. They are standing on a ship's deck, looking out at a large white ship in the background.

Sustaining JOINT OPERATIONS

Expanding Posture and Competition by Leveraging the Sustainment Warfighting Function

■ By Gen. Paul J. LaCamera and Col. Theodore O. White

A Soldier and Marine observe Roll on/Roll off operations of U.S. Marine Corps equipment on an Army logistics support vessel in preparation for a recent movement within the Hawaiian Islands. Providing support to other services is a part of what the Army brings to the joint fight. (U.S. Army Photo)

The National Defense Strategy (NDS) guides us as we enhance our readiness, strengthen alliances and partnerships, and reform to align our resources with our highest priorities. The Pacific remains the top priority. It is too important to ignore that this is the most contested region in the world, and absolutely vital to global economics, trade, and stability. The NDS places primary emphasis on the great power competition, with a particular focus on China. China represents the greatest long-term strategic threat to a free and open Indo-Pacific. Russia, North Korea, and violent extremist organizations are also threats impacting this area of operation.

The competition that started with tensions over trade and technology has moved beyond the economic domain. China has been steadily building comprehensive national power for decades to displace all other powers in the international order, especially the United States. China's aggressive territorial ambitions and actions create friction and raise concern with many countries in the region. China is the single largest economic contributor in the region, funding megaprojects focused on logistics and transportation infrastructures like ports, highways, and high-speed rail. Additionally, nearly 60% of global maritime trade passes through Asia and it is estimated that one-third of global shipping passes through the South China Sea. In the realm of sustainment, Anti-Access/Area Denial (A2/AD) is not limited to kinetic means. Using tethered economic investment, land reclamation within the Spratly Islands, and recent vaccine

diplomacy, China continues to expand its influence across the region and challenge the post-WWII International order.

In this competitive environment, we remain committed to the joint force and executing our critical role in the implementation of a comprehensive strategy for the region. U.S. Army Pacific (USARPAC) is the largest of our Army's service components with more than 90,000 personnel assigned, and more available, serving throughout the Indo-Pacific area of operation. From the west coast of the United States to the west coast of India, and from the North Pole to the South Pole, there are 36 countries in the region with more than 4 billion people, comprising more than 60% of the world's population. This region also contains four of the five priority security challenges identified by the Department of Defense and includes frequent natural and man-made disasters, the negative impacts of climate change, rapid population growth, and of course, disease and pandemics.

We continue to navigate this critical time in the Indo-Pacific through our operations, activities, and investments that afford us the opportunities to test, evaluate, and prepare strategies, partnerships, and our force – joint, combined, and inter-agency. USARPAC is set to posture and prepare Army forces, sustain, and protect those forces to ensure they have the freedom of action to operate within an integrated joint, combined, interagency, all-domain environment in competition, crisis, and conflict. As the Army component in the Pacific, these challenges consume our attention. Army logisticians are the key

to our success as we compete with those who seek to change the international order.

Army Support to Other Services (ASOS)

As a standing Theater Joint Force Land Component Commander (TJFLCC) during competition, USARPAC can shift from competition to crisis, or conflict, and is responsible for the coordination of joint and coalition land forces within the theater. The Army provides upwards of 51% of the foundational capabilities to the combatant commander and included within these capabilities is the Army's support to other services (ASOS) requirements.

The ASOS requirements are expanded further in joint doctrine (JP 3-34) to include Airfield Repair, Sealift Support to Joint Operations, Joint Terminal Operations, Joint Logistics Over-the-Shore, Petroleum Storage, Distribution and Protection, Theater Collection Point and Evacuation Support, and Logistics Support to Enemy Prisoners of War. These requirements deeply nest the Army's sustainment capabilities within the planning considerations for the independent services and the Joint Force Commander's execution of numbered operational plans (OPLANS). As planners identify the ASOS requirements, sustainers are developing a framework to establish a series of sustainment running estimates for the theater to provide a holistic look at joint force and partner nation capabilities throughout the theater to drive multiple lines of effort across USARPAC and Indo-Pacific Command (INDOPACOM).

Theater Sustainment Posture Review

The 8th Theater Sustainment Command, USARPAC's senior logistics headquarters, designed, executed, and delivered a theater sustainment posture review (TSPR) in January 2021. The purpose of the TSPR is to enable USARPAC to "see the theater" and see ourselves in phase zero and phase one configuration and conduct operational sustainment analysis to identify current sustainment capability strengths, gaps, and shortfalls that inform current and future operational plans. The analysis was not limited to Army capabilities but included a holistic review of joint force capabilities, the strategic infrastructure of partner nations, and the existing access agreements with our partner nations throughout the theater.

A threat assessment, through a sustainment lens, of strategic sustain-

ment infrastructure and capabilities across the region influences the TJFLCC's protection planning considerations. Protection of sustainment infrastructure, including host nation capabilities, is a critical consideration to preserve the options providing freedom of action, enabling operational reach, and prolonging operational endurance for the supported maneuver commanders. The TSPR threat analysis and study through the lens of sustainers assessed how and where our competitors have employed a non-kinetic, A2/AD strategy, to gain the decisive advantage over the United States in the region. Our most prominent competitor, China, is accomplishing this through tethered development agreements and infrastructure investments through their "Belt and Road Initiative" to shape the regional environment in their favor. Other adversaries are advancing

their capabilities to position themselves as dominant players in the Pacific.

The consolidated International Agreement analysis also informs the combatant commands Theater Engagement Strategy. Through our inform, influence, engage, educate line of effort, the analysis allows USARPAC to focus resources to identify high payoff operations, activities, and investments (OAIs) to expand access and develop the sustainment infrastructure required to open the theater and establish the distribution network.

The foundation of our ability to expand our posture within the theater is predicated on the strength and depth of our access agreements. Access directly correlates to our ability to establish new agreements and expand current agreements with our partner nations to enable leveraging of their national and



Army watercraft LSV-3 executes a beach landing off the shore of an island in the Western Pacific during exercise Defender Pacific 20. (U.S. Army Photo)

commercial sustainment capabilities/commodities—fuel, water, fresh fruits and vegetables, transportation, etc.—within the Pacific island chains. Leveraging partner nations to source commodities with high operational demand quantities provides flexibility for sustainment planners to resource as far forward in the theater as possible and mitigates risk by lowering requirements sourced from the strategic support area (SSA). The mitigation of this risk enables operational reach, ensures freedom of maneuver, and prolongs endurance supporting joint and multinational forces if conditions shift from competition to crisis or conflict. The in-depth analysis provides sourcing options to counter disruptive actions, maintain sustainment-to-sustainment operations, and maintain operational tempo.

After the international agreement analysis, the TSPR expanded the aperture to analyze the current posture of key commodities, infrastructure, and capabilities across the region. This included but was not limited to airports, seaports, fuel refineries and storage locations, maintenance and repair facilities, and the capabilities inherent within the joint force (i.e. water purification, additive manufacturing, etc.).

Four themes resonated throughout the analysis:

- Access and authorities are essential to conducting theater opening, theater distribution, and theater sustainment to build and sustain combat power, provide operational reach, and prolong operations and endurance to the supported commander.

- Global power projection and sustainment of the joint force is a strategic competitive advantage for the United States but will be heavily contested in the future.

- The Joint Logistics Enterprise lacks operational sustainment and distribution capabilities, presence, and infrastructure across the entire Indo-Pacific.

- The current positioning of strategic stocks and critical supplies are vulnerable to adversarial influence and threats risking access and availability in the time of need.

The analysis identified targeted engagement requirements for the theater sustainment assessment team (TSAT) as it evaluated OAI opportunities. The

TSPR identified OAIs that nested well with USARPAC’s theater support campaign and theater engagement plans. The first TSAT deployed west of the international date line (IDL) initiating a series of planned engagements across the region.

Theater Sustainment Assessment Team

The TSAT is a capability-organized team that is task-organized to assess theater opening, distribution, and sustainment capabilities of a partner nation. This includes seaport, airport/airfield, inland transportation (road and rail), warehousing, beach landing, communications infrastructure, and protection of key assets. The flexibility of the TSAT configuration allows the team to be composed of various experts - transportation experts to analyze road, waterway, and airport infrastructure; engineering dive teams capable of analyzing surface and subsurface seaport facilities and infrastructure; and signal experts capable of analyzing landline, cellular, and satellite communications capabilities.

Before deployment, the team uses existing data from classified and unclassified information systems to analyze the infrastructure, topography, communication networks, government, and economic investment. Engagements with the U.S. Embassy and country teams assist with assessing the interests of the partner nation government and their willingness to cooperate and support the objectives of the TSAT. The team leverages the established relationships with the partner nation armed forces through the Security Force Assistance Brigade

teams and the joint force initiatives across the region to assess capabilities and answer numerous requests for information (RFI). Upon completion of the initial assessment, the TSAT develops a focused engagement plan to answer open RFI’s and maximize their assessment activities while on the ground.

The first TSAT deployed west of the IDL in February 2020 and was greeted by the U.S. Embassy country team. Their efforts will allow us to establish a clear understanding of the host country’s sustainment infrastructure and capabilities while simultaneously highlighting our commitment to the region. The TSAT will update running sustainment estimates, contribute to the USARPAC and INDOPACOM theater engagement strategy, and identify possible OAIs to remain aligned with the United States, and its allies and partners in the region.

With sustainment professionals leading the way, the opportunities for additional OAIs continue to expand. Sustainers enable operational reach, ensure freedom of action, and prolong operational endurance for the supported maneuver commanders. Additional TSAT deployments will continue to expand our access, presence, and influence throughout the region, deepen our relationships with current partner nations, and bring new nations into the alliance, adding to our ability to promote a free and open Indo-Pacific.

The importance of strengthening partnerships and cultivating new relationships has never been more

important. We must be strategically predictable, but operationally unpredictable in order to effectively compete, respond in a crisis, and win in conflict. Winning versus our adversaries means recognizing the type of fight we are in, the size of the playing field, the degree of intensity of the game plan, and the associated risks. Winning will require uniting forces globally, organizing our resources, taking action daily to raise the costs of China’s malign behavior, make our allies/partners less vulnerable, deter aggression, and regain advantages lost over the last decade. This is how we win without fighting, but we cannot forget that in a fight the last 100 meters is the most dangerous piece of earth; we must be prepared to fight and win there. Competition does not mean conflict, but if a conflict comes, we will be prepared to fight and win because we can sustain joint combat operations.

Gen. Paul J. LaCamera is currently serving as the U.S. Army Pacific commanding general based at Fort Shafter, Hawaii. He previously served as the commanding general, XVIII Airborne Corps, and Fort Bragg, North Carolina; and as commander, Combined Joint Task Force Operation Inherent Resolve, Iraq and Syria. He has had the honor to lead and serve with members of all military branches, inter-agency colleagues, and coalition partners from platoon through corps, and a combined joint task force. His education includes a Bachelor of Science from the U.S. Military Academy and a Master of Arts degree from the U.S. Naval War College.

Col. Theodore O. White is the deputy commander of the 8th Theater Sustainment Command, Fort Shafter, and has completed command at every level through the brigade. He received his commission as a quartermaster officer from Florida A&M University with a degree in accounting and holds master’s degrees from Vanderbilt University and The Eisenhower School for National Security and Resource Strategy.



The 7th Dive Team, 130th EN Bde, 8th TSC, conduct a hydrographic survey to facilitate the harbor clearance of Alcan harbor at Eareckson Air Station, Alaska to keep Pacific Air Forces operational in the far reaches in Aleutian Islands. (U.S. Army Photo)



Ammunition Distribution

Defender Pacific and Pacific Pathways Exercises Test Army's Sustainment Skills

■ By Chief Warrant Officer 3 Michael K. Lima

One of the critical functions of the U.S. Army is the ability to conduct force projection. That is to project the military element of national power from the United States in response to military operational requirements. The operations extend from mobilization and deployment to a theater and the redeployment to a place of origin. The U.S. military conducts regional integration with the Indo-Pacific through two parts; mutual defense treaties and training exercises.

Specifically, the U.S. Army conducts bilateral exercises in the Indo-Pacific through Pacific Pathways and the newest large-scale exercise, Defender Pacific. Part of any major exercise is training events with allied and partner nations that require ammunition, explosives, and missiles. Many of the U.S. Army units deployed into the U.S. Indo-Pacific Command's area of responsibility will most likely receive Class V supply from Okinawa, former Ryukyu kingdom, and part of the First Island Chain.

Bilateral Exercises

The First Island Chain comprises mainland Japan, Okinawa, the northern part of the Philippines, Malaysia, and Taiwan. The second chain consists of the northern islands of Japan stretching to Guam and the islands of Micronesia. The Army has nearly 85,000 troops stationed in the Indo-Pacific region and already conducts Pacific Pathways bilateral exercises. The training reinforces the U.S. forces in rapid force projection into the Pacific. The Pacific Pathways exercises began in 2014

and have supported bilateral training with allies and partners between the U.S. Army and nations such as the Philippines and Thailand. There are generally three rotations each year for about ten months divided between Pathways 1, 2, and 3. In recent years, Pathway exercises have extended units in host nations for more extended training periods. Exercise Defender Europe 20 had the largest deployment of U.S. forces into Europe. The Army also conducted Defender Pacific 20, a smaller joint exercise that demonstrates strategic readiness. Defender Pacific 21 is a division-sized exercise in the Indo-Pacific and the next phase of the Defender Pacific exercise is to conduct joint multi-domain operations supporting Indo-Pacific command.

Army Distribution Management

Supporting ammunition is one of many commodities required to support bilateral Defender Pacific exercises. Munitions supply is a complex logistics operation due to the critical need during exercises, inherent hazards of handling explosives material, and the regulatory security requirement during transportation. Class V materiel managers execute supply support using the Army distribution management process that includes the following:

- Materiel Management
- Distribution Integration
- Transportation Operations Functions

Army Techniques Publication 4-42 Materiel Management, Supply, and Field Services Operations, describes materiel management as the

continuous situational understanding, planning, and execution of supply and maintenance capabilities to anticipate, synchronize, and direct all classes of supply to maximize combat power and enable freedom of action in accordance with the supported commander's priorities. Class V distribution integration aligns material requiring distribution (by specific types, quantity, and priority) with adequate transportation capabilities to synchronize distribution to support Indo-Pacific exercises' concept of operations. Lastly, transportation operations develop a movement plan by mode and through entry ports dependent on each host nation node's capabilities. But first ammunition must leave the seaport of embarkation from one of the nodes in Japan.

Japan Ammunition Supply Points

Ammunition Depot, 10th Support Group, is the remnant of 83rd Ordnance Battalion. An inactivated ordnance (ammo) unit with the mission of ammunition management. The amount of service members assigned to the ammunition depot does not compare to the reduced amount of the former 83rd Ordnance Battalion. Still, the Army civilians and Japanese host nation support continue the mission. Today's mission is to operate four strategic prepositioned ammunition support activities in support of U.S. Indo-Pacific Command's full spectrum operations and the Joint Munitions Command's maintenance and demilitarization programs. Kawakami Ammunition Depot operates the only approved burn site in Japan. The depot also runs the ammunition peculiar

equipment 1236 M1 Deactivation Furnace to demilitarize small caliber rounds and components for the joint force. The four strategic prepositioned ammunition support activities are:

- Kawakami Ammunition Depot
- Akizuki Ammunition Depot
- Hiro Ammunition Depot
- Ammunition Depot Okinawa

Ammunition Depot Okinawa is the Army's portion of Kadena air bases' munitions storage area, northeast of the air base, covering over 26 square kilometers. Under the 18th Munitions Squadron administrative control, all four U.S. services manage operations supporting conventional munitions throughout the Indo-Pacific region. The Okinawa munitions storage area is known for Operation Red Hat—the removal of chemical warfare munitions. Also, as a key intermediate staging base for the Vietnam conflict with B-52 bombers taking off from Kadena Air Base. The U.S. forces in Japan and ballistic missile defense assets are an essential component of the Indo-Pacific strategy. To that end, U.S. Army bilateral exercises play a vital role in the region.

COVID-19 Challenges

While the U.S. Army was conducting Defender Pacific and Pacific Pathways 20, COVID-19 caused a severe outbreak and public health emergency in January 2020 and a global pandemic in March 2020. Usually, providing Class V support to units can be a push or pull system. A push of ammunition goes to the supported units, or supported units pull ammunition from ammunition support activities. For exercises on

mainland Japan, a push method is used as the entirety of Japan can easily stretch the lengthwise of the east coast of the United States. From northern Hokkaido to southern Kyushu, and the remote archipelago of the Ryukyu Islands, including Okinawa. Ammunition Depot Okinawa conducts a pull method as the island can easily be traveled a few hours from the major airport to the island's northern edge. The unit provides a detail of Soldiers and an NCO to sign for the ammunition from the ammunition supply point. Then containerize the ammunition and send the containers as unit cargo movement into the host nation for the exercise. The COVID-19 pandemic fundamentally changed ammunition supply operations for Pacific Pathways and Defender Pacific from the Okinawa Island.

Exercise Ammunition Shipments

One of the first initiatives, pre-COVID, for Pacific Pathways and Defender Pacific 20 was to use container roll-in/out platforms. While blocking and bracing of breakbulk munitions provides an appropriate way to ship ammunition using wood filler for constructing partitions. The lumber must be kiln-dried, heat-treated, and stamped as required by the DOD wood packaging material program. The fundamental flaw in using the lumber process is that it does not allow exercise units to conduct proper retrograde as the units conducting the exercise are limited in tools and experience with blocking and bracing ammunition with lumber. A function of ammunition material management is retrograde, the returning of excess or unserviceable

ammunition material. The unit signed a temporary hand receipt (DA Form 3161) for equipment, and the unit commander signed a memorandum of understanding for the loan of the equipment. The initial step provided a path for future critical actions to continue operations during the COVID-19 pandemic. The Japanese government created travel restrictions that prevented most U.S. citizens from entering the country and placed service members on a 14-day quarantine period that traveled into Japan.

The shift in procedures changed from unit cargo movements to shipment operations, from an ammunition support activity using a push method to the exercise unit located in a host nation. The operation is complex but achievable using the shipment process and the request for an exception to policy for manual issue procedures for the Total Ammunition Management Information System. The shipment process allows ammunition material to use the transportation system to send ammunition containers to an in-country node supported by the U.S. Government. With second destination transportation from the port to the storage area operated by the organization conducting the exercise. Manual issue procedures allow the ammunition supply point to support the exercise unit with training ammunition from approved authorizations and maintaining track of expenditures. The difficult part will be during retrograde operations, where the unit will have to conduct shipments from the host nation back to the supply point on Okinawa. The ammunition supply point conducts the receipt process to bring the ammunition back onto the stock record and completes supply

discrepancy reports for any incorrect documentation. Then lastly, the use of manual turn-in procedures to close out the training ammunition and reconcile expenditures.

Conclusion

The COVID-19 pandemic has pushed sustainment planners for Pacific Pathways and Defender Pacific to create innovative solutions to new logistical problem sets, as the U.S. Army will be the leading provider for ammunition supply support during large-scale combat in joint multi-domain operations. Major exercises provide the opportunity for sustainment and maneuver units to identify future training requirements. While Defender Pacific 20 provided for ammunition distribution management to increase organizational effectiveness and readiness. Defender Pacific 21 will offer the opportunity to practice the lessons learned during the COVID-19 pandemic. In addition, maneuver unit practice training to support the nation's force projection and ordnance sustainment units the ability to provide Class V distribution in a challenging environment.

Chief Warrant Officer 3 Michael K. Lima is the ammunition warrant officer for the 10th Support Group, at Torii Station, Okinawa, Japan. He is an accountable officer of an ammunition supply point at Kadena Air Base. He was battalion senior warrant officer advisor for the 6th Ordnance Battalion in the Republic of Korea. He holds a doctorate in business administration and a master's degree from Baker College Center for Graduate Studies.

Featured Photo
Fijian Army Private Beado Ratuciri, who serves with 3rd Battalion, Fiji Infantry Regiment, shoots and takes instruction from U.S. Army Spc. James Bianchi, who serves with 1st Btn., 27th Inf. Regt., 2nd Brigade, Inf. Brig. Combat Team, 25th Inf. Division during a Short Range Marksmanship training in Labasa, Fiji, August 1, 2019. (Photo by Sgt. 1st Class Whitney Houston)



Systems Integration

Logistics Warrant Officer Role in Joint Logistics and Large-Scale Combat Operations

■ *By Chief Warrant Officer 3 Andrew Drake*

As the U.S. Army continues to contour training and readiness toward potential large-scale combat operations (LSCO), the need for transformation and modernization is becoming more apparent every day. Furthermore, the sustainment requirements of LSCO are understandably much greater in scale and scope than those of the counterinsurgency (COIN) operations of the past 20 years. COIN operations allowed units to establish forward

operating bases (FOB) where we could reset, reconsolidate, and resupply. This will not be an option in LSCO. LSCO will force units to maximize their fix-forward capabilities and efficiency of basic loads and resupply chains because there will be no FOB. Support units will need to continue to push forward to keep pace with the forward line of troops.

Historically, warrant officers (WOs) are known as subject matter experts (SME)s in their respective fields. In the

COIN environment, WOs established systems to prolong the endurance of equipment, personnel, supply chains, and operations. With the continued proliferation of technology and rapid modernization, it has become largely difficult for Soldiers to maintain their proficiency regarding technical expertise. Due to the high operating tempo (OPTEMPO) and rapid fielding of new equipment and processes, much of the technical expertise shifted to field service representatives, other contractors, and local national labor.

Because some logistics WO roles are so broad, we must adapt to become SMEs in systems integration and administration.

Logistics WOs will need to play a critical role as the systems integrators in LSCO, particularly at the strategic level. As depicted in an excerpt from Joint Publication 4-0, Joint Logistics, sustainment WOs offer competencies that span all the operational domains and most of the core logistics functions to support the requirements of the joint operational environment. FM 4-0,

Sustainment Operations, defines the purpose of the sustainment warfighting function as to provide commanders in a decisive action environment three things: operational reach, freedom of action, and prolonged endurance. Operational reach refers to the distance and duration in which a force can successfully employ their capabilities. Freedom of action is the ability of commanders to gain the operational initiative and maintain the necessary OPTEMPO. Prolonged endurance is the ability to employ combat power for prolonged periods.

For sustainment activities to effectively ensure those things are provided to commanders, WOs will be involved in the planning, execution, and sustainment of the systems, tactics, techniques, and procedures in which those principles are achieved. Throughout their careers, logistics WOs are trained as technical experts regarding the enterprise resource planning (ERP) solutions used in the Army. These systems include the Global Command Support System-Army, Standard Army Ammunition System-Modernization, General

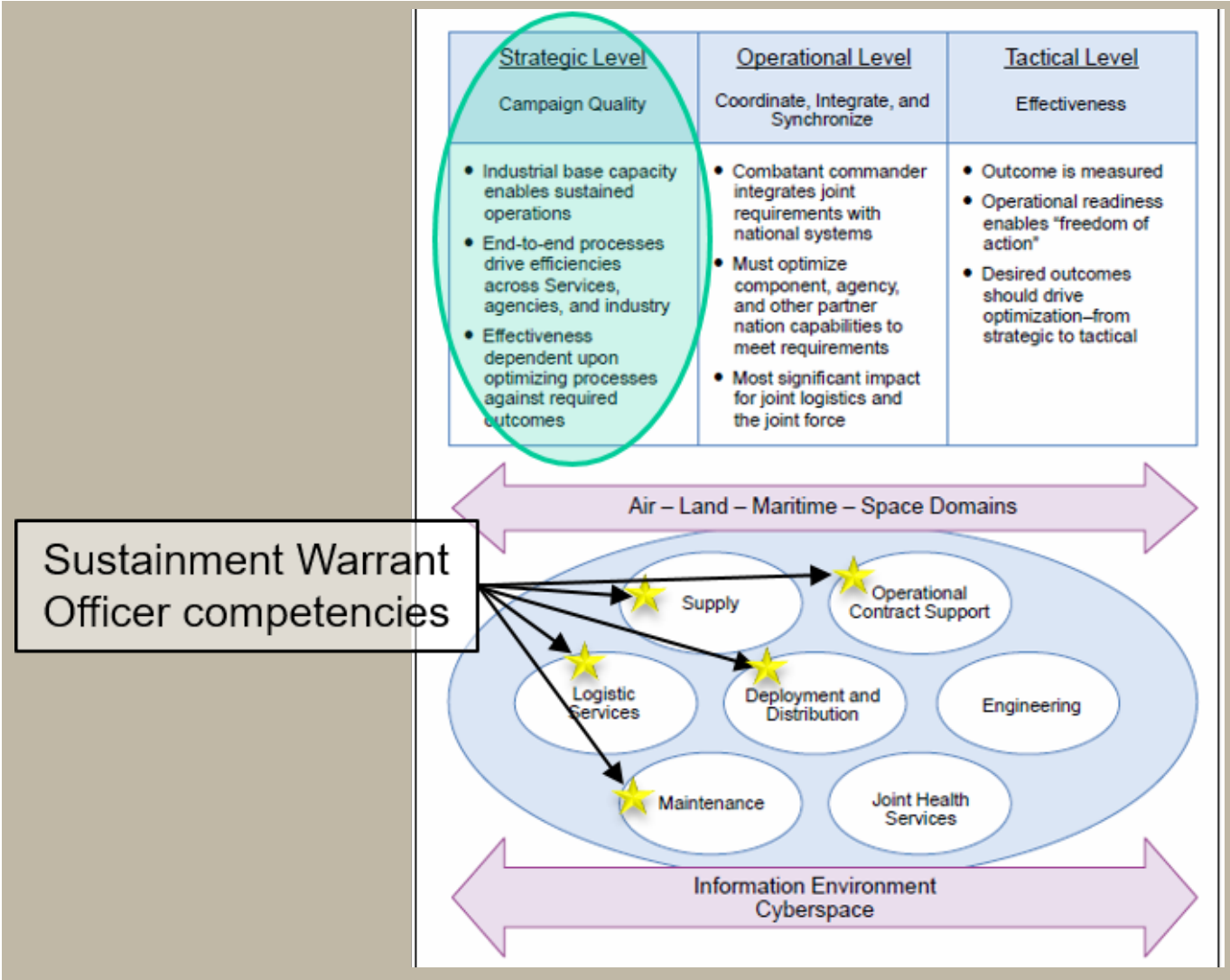


Figure 1. Joint Logistics Environment Operating framework. (U.S. Army Graphic)

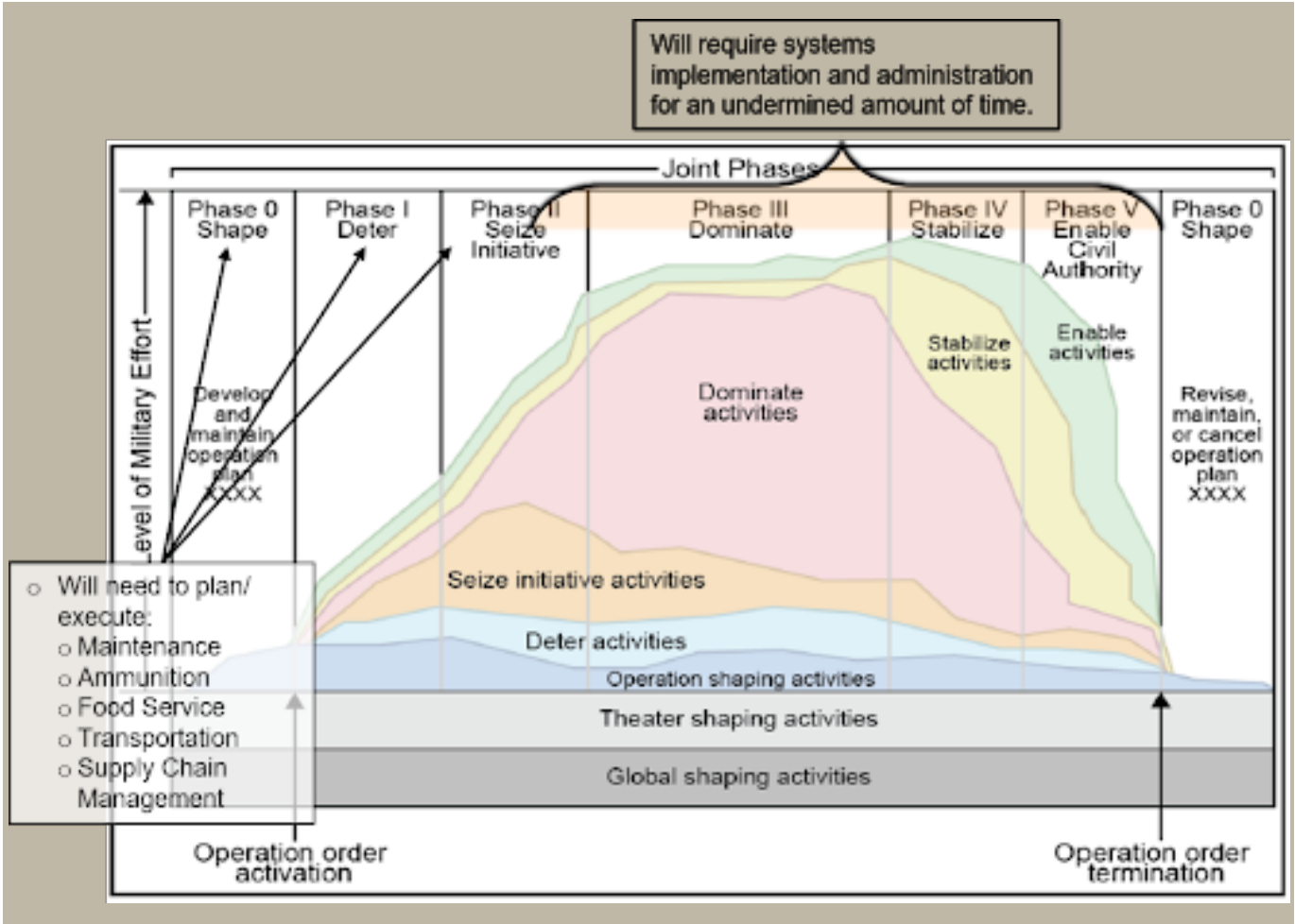


Figure 2. Phases of a notional operation plan versus level of military effort. (U.S. Army Graphic)

Fund Enterprise Business System, and Transportation Coordinators' Automated Information for Movements System II. These different ERPs are the cornerstone to implementing, administering, and managing systems, which will be critical in a LSCO environment.

Through supply, maintenance, and transportation, logistics WOs are trained in both the institutional and operational domains to maximize the three facets of sustainment within their realms of expertise. Logistic WOs will be critical planners and administrators of systems throughout the joint phases of operations. Much like in garrison

operations, the logistic WOs will act as advisors and liaisons between senior commanders and the operations on the ground at the user level. The conduit between echelons provided by a WO provides a level of continuity that would be otherwise absent within the joint environment. The nature of WO training and focus throughout their career enables them to provide fidelity in systems administration that may not be available from NCOs or officers because of the diversity of assignments enjoyed by those cohorts. Logistics WOs rarely work outside of their technical competencies. This enables them to be invaluable staff officers and expert advisors to commanders.

Chief Warrant Officer 3 Andrew Drake is currently assigned as an ordnance warrant officer (WO) instructor at the Technical Logistics College in Army Logistics University. He facilitates technical and common core training for the WO Basic and WO Advanced Courses. He is a graduate of the 915A WO Basic Course, WO Advanced Course, and WO Intermediate Level Education. He holds a master's degree in Business Administration with a concentration in Project Management from Grantham University.

Featured Photo
Army Warrant Officer Candidate Korey Rasmussen, training to be a health services maintenance technician with the 971st Medical Logistics Company, 807th Medical Command, conducts service maintenance on an Impact 754 Ventilator at the Medical Equipment Concentration Site for the 88th Readiness Division in Ogden, Utah, April 17, 2020. (Photo by Sgt. Jeremiah Woods)

Building Readiness

Resetting the Theater Builds Both Strategic, Tactical Readiness

■ By Col. Michael LaBrecque

For the past two decades, the Army focused on force optimization in support of counterinsurgency efforts in the U.S. Central Command (CENTCOM) area of responsibility (AOR). As we shift to global strategic readiness, resetting the theater has become a key priority.

U.S. Army Materiel Command (AMC) has implemented initiatives like the Army pre-positioned stocks (APS) 2028 strategy while also balancing more urgent operational requirements such as force reductions and associated equipment retrograde in Afghanistan. These efforts require cooperation across the entire joint logistics enterprise.

Johnny Blackett, a Department of the Army Civilian with the Army Field Support Battalion - Afghanistan, 10th Mountain Division Resolute Support Sustainment Brigade oversees the loading of retrograde cargo on Bagram Air Field, Afghanistan July 12, 2020. The AFSBn-AFG is responsible for coordinating the movement of equipment out of the Combined Joint Operations Area - Afghanistan. (Photo by Sgt. 1st Class Corey Vandiver)

While the 1st Theater Sustainment Command (TSC) is responsible for operational-level sustainment across the CENTCOM AOR, AMC's key integrator and "face to the field" in the Middle East remains the 401st Army Field Support Brigade (AFSB). Headquartered in Camp Arifjan, Kuwait, the 1st TSC, the 401st AFSB, and its subordinate units (Army Field Support Battalion (AFSBn)-Kuwait, AFSBn-Southwest Asia, AFSBn-Qatar, AFSBn-Afghanistan, and the 2nd Logistics Civil Augmentation Program Support Battalion) span the breadth of the Middle East and enable the strategic reach and endurance of the Army Central Command.

The 1st TSC sets the theater and provides mission command and operational-level sustainment to enable unified land operations in support of the combatant commander's directives. In coordination, the 401st AFSB integrates and synchronizes AMC resources

to deliver materiel readiness at the operational and tactical points of need in support of operations Resolute Support, Freedom's Sentinel, Inherent Resolve, and Spartan Shield. Over the past two years, the 1st TSC and the 401st AFSB also have taken on the mission of optimizing the theater in support of critical requirements, including growing other APS

unit sets and assisting in Army force modernization and readiness efforts.

Beginning in 2020, the team focused on the redeployment of the legacy APS-5 Armored Brigade Combat Team (ABCT). This formation and its enablers consisted of roughly 500 tracked vehicles, 700

wheeled vehicles, and hundreds of containers of repair parts and associated equipment. By closely coordinating with the Surface Deployment Distribution Command's (SDDC) 595th Transportation Brigade, the 401st AFSB redistributed these assets across global APS sets and depots while also filling critical equipment shortages in units worldwide. This effort enabled U.S. Forces Command to avoid cascading M1 systems to the National Guard and saved over \$20 million per brigade combat team by allowing formations to turn

in tanks without bringing them to 10/20 standards. As a result, the National Guard was able to modernize three ABCTs directly to M1 System Enhanced Package (SEP) Version 3 ten years ahead of schedule. Additionally, these platforms positioned the Army to divest of legacy M1A1s and M2 Bradley Fighting Vehicles (BFVs) and provided critical M88 recovery

Over the past two years, the 1st TSC and the 401st AFSB also have taken on the mission of optimizing the theater in support of critical requirements, including growing other APS unit sets and assisting in Army force modernization and readiness efforts.



Two Army Landing Craft Utilities (LCU) are staged at the Kuwaiti Naval Base, Kuwait, before transporting to their new area of operations on Oct. 7, 2020. LCUs are capable of transporting wheeled or tracked vehicles and personnel from battle ships to land. (Photo by Staff Sgt. Christopher Osburn)

vehicles to force-generating formations in support of advanced individual training. Self-propelled howitzers (M109A6) and M2/M3 BFVs from the set served as seed assets for Red River Army Depot under the regionally aligned readiness and modernization model initiative.

In addition to the ABCT effort, the 1st TSC and the 401st AFSB spearheaded divestiture and redistribution of Army Watercraft Systems (AWS) from the APS-5 set. This entailed the demilitarization of 23 vessels in preparation for possible future foreign military sales and the transfer of two critical landing craft utility (LCUs) to APS stocks in Korea. The 401st AFSB

teamed with the SDDC's 595th Transportation Brigade to conduct the first LCU float-on/float-off operations in the CENTCOM AOR in more than 20 years. While shifting equipment to other APS sets, the 401st AFSB also coordinated the transfer and fielding of CENTCOM-based Mine Resistant Ambush Protected All-Terrain Vehicle (M-ATV) systems in support of force modernization efforts for military police formations and center of excellence training institutions. From June to September 2020, the 401st team—again working in close coordination with 595th Transportation Brigade—prepared and shipped 602 M-ATVs to AFSBn-Charleston (406th AFSB) for contractor reset (ManTech) and reissue across the Army.

While divesting legacy APS-5 unit sets, AMC operationalized Army war reserve sustainment stocks in the CENTCOM AOR to improve overall Army readiness. From October 2020 to March 2021, the 401st AFSB, under the direction of 1st TSC, prepared and shipped approximately 800 twenty-foot equivalent unit containers of Class II, Class IV, and Class IX supplies to Army depots and other APS sets in Europe and Korea to fill critical shortages and return key materiel to the supply system. In total, the effort returned more than \$100 million in repair parts, aerial delivery equipment, nuclear/biological/chemical outer garments, and similar items to the Army supply system. For six months at both Camp As Sayliyah, Qatar, and Camp Arifjan, Kuwait the 401st AFSB team inventoried, packed, and shipped materiel via both dedicated and opportune strategic lift assets to improve Army global force posture. This herculean effort required 1st TSC-wide coordination between Area Support Group Qatar, Area Support Group Kuwait, the 595th Transportation Brigade, and the 401st AFSB.

In response to the recent force reduction in Afghanistan following Intra-Afghan peace talks, the Resolute Support Sustainment Brigade (RSSB), and the Army Field Support Battalion-Afghanistan (AFSBn-AFG) re-postured forces in support of Operation Freedom's Sentinel. Following initial directives from operation Resolute Support leadership in June 2020, the team immediately reworked existing maintenance contracts in anticipation of a large-scale retrograde effort. Drawing on lessons learned by the 401st AFSB and the 3rd Expeditionary Sustainment Command during similar operations in support of Operation Enduring Freedom in 2014, the 1st TSC leadership built a robust redistribution property accountability team (RPAT) capability at hubs in Bagram and Kandahar. In coordination with the Resolute Support Sustainment Brigade, the 1st TSC also established a second RPAT at Bagram using Soldiers to augment the AFSBn-AFG's contracted labor force. This provided the Resolute Support leadership three points where equipment could be turned in and retrograded, allowing for an increased capacity to meet the maneuver commander's intent.

Divestiture and redistribution began immediately. Under the guidance of the 1st TSC, the 401st AFSB worked with Army Sustainment Command to determine the disposition of all in-theater equipment utilizing the lead materiel integrator decision support tool. Working with the Resolute Support CJ4, the 401st AFSB identified more than 1,400 pieces of rolling stock and approximately 25,000 non-rolling stock items requiring retrograde. To validate this increased RPAT capacity in preparation for future operations, the AFSBn-AFG processed on-hand mission-essential equipment list (MEEL) sets, consisting of critical engineer equipment and upgraded M-ATVs designated for future security force assistance brigade deployments. Immediately following validation with the MEEL equipment, formations began turn-ins at the RPAT yards based-on Resolute Support force reduction directives.

In coordination with the RSSB and the 595th Transportation Brigade, the AFSBn-AFG received, processed, and shipped more than 1,000 rolling stock, and more than 16,000 non-rolling stock pieces in a six-month period using multi-modal transportation. As equipment began to accumulate, the 1st TSC coordinated with the U.S. Central Command Deployment and Distribution Operations Center, co-located in Kuwait, to conduct hybrid multi-modal movement by which equipment flew from hubs in Afghanistan to Kuwait. Upon receipt, AFSBn-SWA at Camp Arifjan received and processed the equipment for onward movement to the continental United States and outside the continental United States locations using strategic lift assets coordinated through SDDC.

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Ship to Shore

Seaport Operations and Force Projection

■ By Capt. Jordan Jendersee

The U.S. military has been renowned for its ability to adapt, overcome, project combat power, sustain, and maneuver with swift lethality. The Army has forged niche capabilities that are utilized across every combatant command, yet few within the active force understand or realize these lesser-known skill sets exist. As the Army has adapted to the ever-changing areas of operations, one thing remains the same, to gain the decisive advantage, one must project combat power with speed and aggression. Doing so requires sustainment units to bring the force ashore. The history of large-scale combat operations (LSCO) and the innovation

of initial infiltration tactics have served as the building blocks for military and seaport operations. The first large application of amphibious transport through floating pier assets and port download operations was in World War II's mulberry harbors. The harbors were composed of modular floating concrete and metal pieces and were used as the conduit between deep drafting vessels that contained heavy cargo and vehicles and shallow beaches. These harbors laid the foundation for what is today's Army watercraft and seaport operations. This equipment allowed the Allied forces to rapidly offload cargo onto the beach during the invasion of Normandy. The harbors brought the force ashore in a

brand new approach, propelling the development and employment of Army seaport and maritime forces.

These maritime capabilities now reside with the 7th Transportation Brigade (Expeditionary) (TB(X)), a unit whose modular composition has the broad ability to haul 23 Abrams A1 tanks on one vessel, conduct riverine basin operations, construct a modular platform and pier for rapid employment of combat power over the shore, and open and operate bare beach, degraded or fixed ports globally. With the Army's focus on LSCO, the 7th TB(X)'s execution of seaport operations became overwhelmingly important and the



During Joint Logistics Over the Shore Native Fury 21, Soldiers from the 368th Seaport Operations Company alongside the U.S. Navy and Marines download Naval equipment for a training opportunity. The floating platform, or Trident pier, is used for linking deeper drafting vessels to the shore. (Photo by Capt. Jordan Jendersee)

fulcrum for mission success. The brigade exercises its vast and particular talents through joint logistics over the shore (JLOTS) and joint readiness exercises, where units overcome no notice deployment orders, forward deploy to a training exercise, and are brought ashore

for combat engagement through seaport operations.

The Joint Readiness Exercise (JRE) 2020 serves as a monumental demonstration of the Army's vast adaptation to any problem set. Through

a global pandemic, JRE20's seaport operations execution incorporated the 7th TB(X) units alongside 2-25th Infantry Brigade Combat Team (IBCT), highlighting the impressive and rapid download of two large, medium-speed roll-on/roll-off (LMSR)

s simultaneously at separate geographic locations. The 11th Transportation Battalion (Terminal), one of two terminal battalions within the 7th TB(X), presented the critical pieces that their companies bring to the fight, most importantly the 368th Seaport Operations Company (SOC). The 368th SOC, one of only two active SOC's, is unlike any other unit in the Army, as it is tailored for seaport operations. The unit consists of material handling equipment operators that utilize platforms that vary from 4,000-pound forklifts to rough terrain container handlers and organically provides proficient operators on hagglund and gantry cranes. Additionally, they extend their capabilities with drivers that can operate any platform. During JRE20, the SOC orchestrated the simultaneous download of both LMSRs, displaying their ability to control two offloads at separate locations. They downloaded 1,759 pieces of rolling stock through roll-on/roll-off (RO/RO) in addition to conducting crane lift-on/lift-off (LO/LO) of 300 containers off the USNS Fisher at Port Arthur, Texas.

The unit's second LMSR consisted of 269 pieces of RO/RO, along with 54 containers and 37 aviation aircraft LO/LO downloaded off of the USNS Brittin at Beaumont, Texas. The SOC impeccably performed the task in under 72 operational hours; moving focus to support the 567th Inland Cargo Transfer Company (ICTC) with staging operations and onward movement.

ICTCs are more prominent throughout the force and are constructed to account for equipment and run central and receiving shipping point yards.

Furthermore, as the SOC downloads, they string together equipment accountability through the movement control teams and ICTCs. Accountability begins with the SOC registering each vehicle in the Global Air Transportation Execution System and processing it to leave the port.

As the Army has adapted to the ever-changing areas of operations, one thing remains the same, to gain the decisive advantage, one must project combat power with speed and aggression.

As the units laterally confirm counts through manual tallies and automated systems, the SOC moves vehicles forward to hand off to the ICTC for staging and onward movement. The capabilities that each unit brings to the warfighter in LSCO operations are often overlooked without understanding that the 7th TB(X) forces are what mission success hinges on. Being the only unit

within the Army that is modular, has seaport operations tested experts, and is the largest force flow enabling asset reinforces the importance of their nested mission throughout the force. JRE and JLOTS exercises are imperative to showcase the unit's competencies and provide companies to continually master their craft.

Overall, JRE20 is yet another example of how important and vast the seaport and maritime operations are to LSCO mission execution. Units like the 368th SOC provide the 11th TB(T) and 7th TB(X) commanders the flexibility to globally employ combat units and continually sustain the combat force through any port operation. As LSCO continues as the prominent focus, the 7th TB(X) will continue to serve as the point of convergence for combat units. Their niche capabilities to organically link the deploying forces' cargo and vehicles from deep drafting vessels to any seaport situation further signifies the importance of what the unit offers. The Army's ability to rapidly deploy with unmatched lethality, force

projection, and sustainability would not be possible without the maritime capabilities supplied by the 7th TB(X) and their unique units.

Capt. Jordan Jendersee serves as the commander, 368th Seaport Operations Company. He holds a Bachelor of Science in Psychology, Pre-Medicine, from the University of South Dakota, graduating as a distinguished military graduate and commissioning as an ordnance officer.

Force Projection

Lessons Learned in a Division Movement

■ By Maj. Matthew N. Mayor

Proper force projection planning, force flow integrity, and strategic movement mission analysis for division operations is crucial for command teams and staff planners to perfect, as it enables overall mission success. Army Techniques Publication (ATP) 3-35, Army Deployment and Redeployment Operations, defines force projection as the capability to project the “military instrument of national power from the United States or another theater, in response to requirements for military operations. It is a demonstrated ability to alert, mobilize, rapidly deploy, and operate effectively anywhere in the world.” 1st Infantry Division's (1ID) successful movement to the National Training Center (NTC) in support of the 20-10 rotation at Fort Irwin, California Aug. 31, 2020, to Oct. 8, 2020, highlighted

several force projection challenges and lessons learned as the division trained to validate for division operations and large-scale combat operations (LSCO) in a decisive action training environment. 1ID's theater entry and clearance operations facilitated a rapid and organized end-to-end deployment from home station.

Overall, four brigade elements and 17 geographically separate enabler units participated in the rotation from multiple locations across the United States, consisting of more than 1,876 pieces of equipment valued at more than \$6.5 million. 1ID successfully conducted the end-to-end deployment of more than 200 pieces of organic equipment designated to move via linehaul from Fort Riley, Kansas, to Fort Irwin, California, and more than 1,050 pieces of 1ID equipment via rail

on more than 292 rail cars. The division safely deployed and redeployed more than 3,370 1ID Soldiers to include the enabler entities' personnel via air and ground transportation modes across the United States valued at more than \$9.8 million. The deployment phases highlighted several critical lessons learned in division-level force projection and force flow planning as 1ID sought to project the “appropriate mix of combat forces together with support and sustainment units,” according to ATP 3-35.

Pre-Deployment Lessons Learned

1ID approached mission analysis with the purpose of maintaining personnel and equipment accountability while conducting and synchronizing multimodal deployment operations that built combat power in a COVID-19



restricted environment. The COVID-19 restrictions presented 1ID command teams, staff, and Soldiers with an additional layer of operational complexity in movement and force flow planning. The COVID-19 complexity required a total division-led team effort to lead and manage movements given quarantine, sanitation, safety, and testing requirements associated with each movement. The mission analysis process included multiple division-led mobility synchronization meetings with brigade mobility warrants, command teams, the G3/G5, and other key staff planners to identify critical equipment on the unit deployment list (UDL) and personnel required before the UDL locked on June 1, 2020.

Due to the unique nature of the division-level rotation, task organization requirements drove multiple units to deploy in a fashion they had not trained to execute. For example, several platoon-size elements were deployed separately. Unfamiliarity with their platoon-sized container requirements led to an overestimation of container requirements in some cases. Finally, one of the most significant risks 1ID faced to strategic movement planning was with an NTC-directed decision to shift to expeditionary reception, staging, onward movement, and integration (ERSOI) after the UDL was locked on June 1, 2020. In ATP 3-35, it defines reception, staging, onward movement, and integration (RSOI) as the “process that delivers combat power to the joint force commander in the operational theater. The very nature of seizing the initiative demands expeditious processing of personnel and equipment throughout the deployment

pipeline.” However, the shift to a more austere ERSOI triggered multiple UDL unlocks as command teams and staff grappled with identifying novel equipment, personnel, and movement requirements.

Shortfalls in deployment planning and frequent mission essential and subordinate commander-directed changes after the UDL was locked injected friction into proper strategic movement intermodal planning. Late changes in mission, shortfalls in the unit-level understanding of command deployment discipline program requirements, and the under-prioritization of force flow integrity also resulted in challenges with 1ID's force projection planning process.

1ID conducted several strategic movement rehearsals of concept (ROC) drills at the Fort Riley installation transportation office (ITO) site on Camp Funston, and during division-level sustainment ROC drills held at 1ID's joint operations center. These pivotal rehearsals identified brigades responsible for command and control at the out load nodes on both Fort Riley and Fort Irwin while covering estimated logistics and sustainment requirements that enhanced the overall strategic movement plan's shared understanding.

Deployment and Redeployment Lessons Learned

1ID sustainment equipment, personnel, distribution, and transportation assets required to support ERSOI were not fully understood during the deployment phase. As a result, the ERSOI process was delayed. 1ID also had delayed access

to mission-essential containers due to a train delay en route to Fort Irwin, further complicating and delaying ERSOI.

The convoy release to Camp Funston on Fort Riley, coupled with a timed-release strategy, increased overall equipment flow through ITO's inspection weigh stations, which was a clear win for 1ID. The brigade command and control (C2) node responsibility designation between the Combat Aviation Brigade and 1/1 Armored Brigade Combat Team was well executed for personnel, linehaul, and rail out load operations on Fort Riley. 1st Sustainment Brigade's detailed C2 of ERSOI at Fort Irwin and the Fort Riley ITO support was also critical to 1ID's success.

Finally, an area of necessary improvement was a shortfall with enabler units not providing detailed movement plans and UDLs before the Fort Irwin reception. Supported units were hard-pressed to identify when enablers needed to redeploy, leaving 1ID units responsible for turn-in of enabler prepositioned equipment. This enabler oversight challenge is common to NTC rotations with Compo 2 and 3 training constraints.

Conclusion and Recommendations

Employing unit staging checklists, movement control teams (MCT), rail load plans, and prioritizing personnel are essential elements to a division movement. 1ID learned to ensure proper time allocation for unit-level pre-deployment tasks. At the same time, brigades and battalions must pre-stage equipment to conduct pre-deployment checklist inspections

before movement to deployment nodes. The MCT must be tasked at the deployment nodes to sustain asset and in-transit visibility for the division.

Rail load plans must be submitted to the ITO by the unit mobility warrant officer with their initial UDL before requesting rail cars, while rail cars must be loaded with force flow integrity. Rail load planning provides equipment visualization on planned dedicated transportation assets while operationalizing railcar planning requirements. A refined rail load plan, produced by requesting units, reduces costly underutilized rail cars and actualizes the rail load UDL resulting in better force projection visibility. Units must leverage their unit mobility officers (UMOs) to receive and account for equipment while ensuring equipment drivers are identified, trained, and prioritized on the torch movement before deployment.

UDL signing, organizational equipment list (OEL) validation, G3 mission command, and deployment readiness exercises (DRE) are essential to proper force projection. 1ID learned that units must validate OELs and sign their UDLs during monthly inventories while final UDLs must be signed by battalion and brigade command teams with input from brigade mobility teams. Brigade commander involvement in signing the UDL to identify bottom-up force projection priorities will improve mission and movement requirement identification, enabling force projection throughout ERSOI. Finally, tracking and managing movements during deployment out

loads must have an overall mission command node as a G3-led operation.

1ID already exercises DREs to regularly validate load plans, which must continue, combined with container pack-out exercises. Units that had recently completed a DRE, for example, had significantly better results with accurate container and equipment requirement projections. 1ID must operationalize deployment processes across the division that includes precise intermodal movements, tracked by transportation control number, while running it as a G3/S3 operation and not as an exclusive “logistics” task.

Mobility Warrant Officer/UMO Utilization and Force Flow Integrity

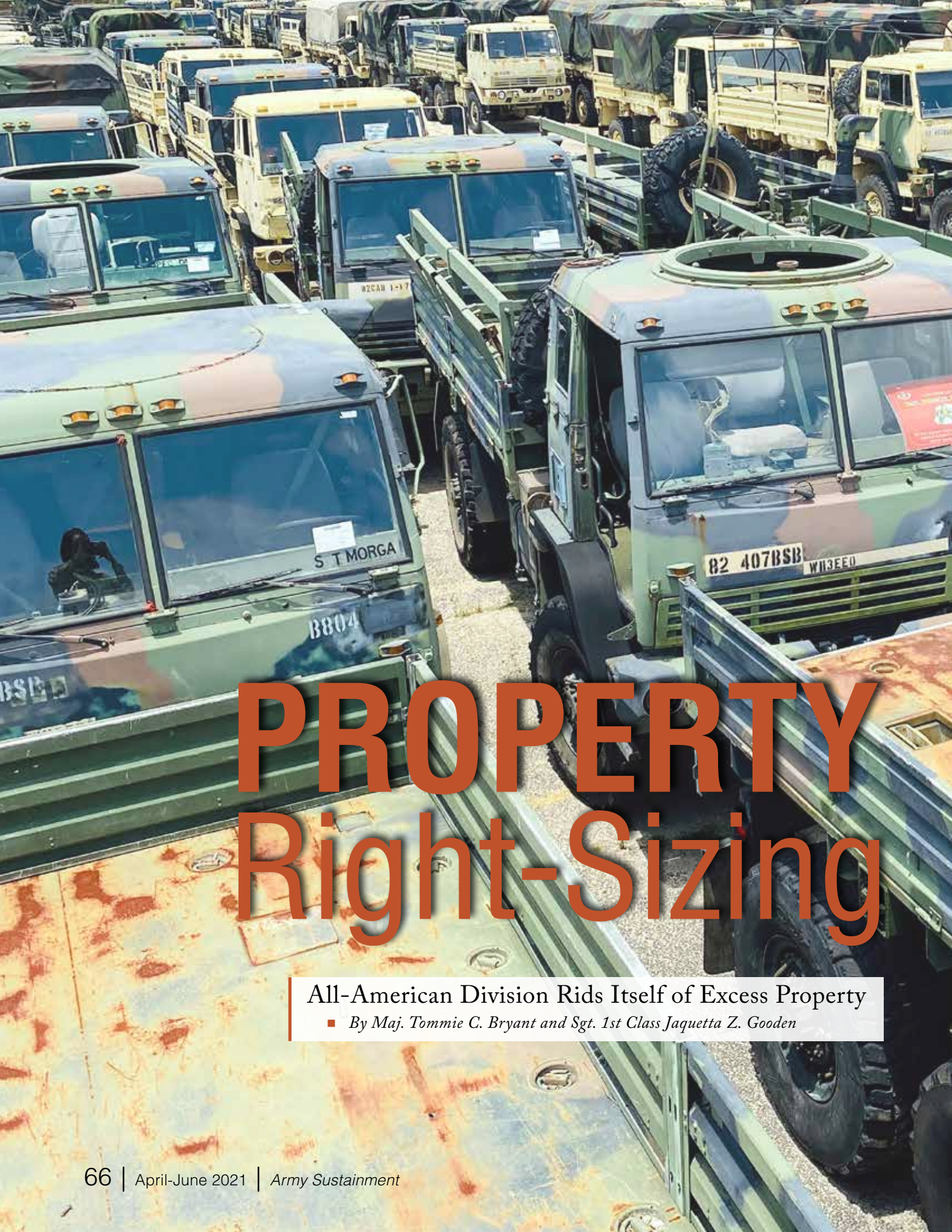
Mobility warrant officers must rotate through each nodal location during out load operations and ERSOI, ensuring the process flows as planned, while UMOs must have a presence in the unit motor pool areas. Posting battalion-level UMOs at weigh station inspection sites and brigade UMOs at C2 node locations to report out load and reception statuses will enable the execution of force projection. Force flow integrity enables an effective RSOI which “matches personnel with their equipment, minimizes staging and sustainment requirements while transiting the Ports of Debarkation, and begins onward movement as quickly as possible,” according to ATP 3-35.

1ID must ship equipment with force flow integrity to have the right equipment at the right place and right time, which requires G3 oversight. This G3 oversight must synchronize requirements with the

G4, division transportation officer, G1, and key division staff sections to include strategic enablers at Surface Deployment and Distribution Command and the U.S. Transportation Command. This action supports the deployment principle of synchronization, which ATP 3-35 describes as essential because effective synchronization of scarce lift assets and other resources maximizes their use. Synchronization normally requires explicit coordination among the deploying units and staffs, supporting units and staffs, a variety of civilian agencies, and other services.” 1ID learned the importance of building tactical assembly area support packages that include life support, communications, and force protection to be deployed via line-haul with the torch party movement. Finally, units must identify equipment items that will move first by priority tied to the UDL with G3 validation to sustain force projection and combat power during LSCO.

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Featured Photo
Equipment belonging to the 1st Infantry Division are staged by like-item and force-loaded after passing through the Installation Transportation Office's inspection station during the National Training Center Decisive Action Rotation 20-10. This division-level rotation was used as a proof of concept that division or corps headquarters could employ NTC's Decisive Action Training Environment for large-scale combat operations. (U.S. Army Photo)



PROPERTY Right-Sizing

All-American Division Rids Itself of Excess Property

■ By Maj. Tommie C. Bryant and Sgt. 1st Class Jaquetta Z. Gooden

In October 2019, Maj. Gen. James J. Mingus, the former commander of the 82nd Airborne Division, initiated a property management campaign plan to rid the unit commanders' property books of excess equipment to improve and maintain pace with operational requirements.

Commanders from across the All-American division were responsible for an overflow of more than five thousand pieces of equipment, which accumulated over the years and greatly impacted operational readiness.

The 82nd Airborne Division Sustainment Brigade was appointed as the lead brigade for the property right-sizing initiative and played an integral part in what would set the stage for the divestiture process of a unit's excess property. The Provider Brigade spearheaded the way ahead by nesting with the 406th Army Field Support Battalion (AFSBn) and the Defense Logistics Agency-Disposition Services (DLA-DS) to implement the mobile retrograde warehouse team (M-RWT). With the M-RWT in place came

the birth of the retrograde warehouse yard. The warehouse yard's capability supported the property management campaign plan's line of effort to reduce excess and fix units' property books to align with current mission and operational requirements. The M-RWT mission also included the receiving of all properly identified excess material within the division, preparing the property for retrograde to the source of repair, and reallocating it according to disposition instructions.

The retrograde warehouse yard served as the primary turn-in location for units to divest of surplus equipment; units had the option of unlimited turn-in, which were available five days a week. The newly implemented process and procedures were

developed through the combined efforts of the 82nd Airborne Division Sustainment Brigade, 406th AFSBn, and DLA-Fort Bragg, North Carolina. The M-RWT streamlined the turn-in and receiving process, thus increasing productivity by 95%. The improvements to velocity boosted the flow of turn-ins significantly from 5 to 10 pieces of rolling stock per unit, to as many as 150 pieces of rolling stock per unit, and up to 50 line item numbers (LIN) per week. That equates to about 1,800 pieces of rolling stock and 2,600 LINs of extra equipment divested throughout the 82nd Airborne Division by the end of fiscal year 2020.

The "Provider" brigade, the 406th AFSBn, and DLA set the framework for FORSCOM to standardize and operationalize the displaced equipment process across the board.

The RWT simplified the excess turn-in process by creating a one-stop-shop, with DLA and 406th AFSBn all Army excess (AAE) partners located in-house when excess turn-ins are completed and implemented a walk-in turn-in process allowing units to turn-in an unlimited number of excess equipment daily.

The process not only reduces the amount of red tape unit commanders endure while trying to rid themselves of surplus equipment, but it also maximizes divestiture velocity and sets a new standard by streamlining the excess turn-in process.

This process not only reduces the amount of red tape unit commanders endure while trying to rid themselves of surplus equipment, but it also maximizes divestiture velocity and sets a new standard by streamlining the excess turn-in process.

With a steady flow of turn-ins and lateral transfer requirements, the 82nd Sustainment Brigade's RWT turned in more than 15,000 pieces of property, including 2,700 pieces of rolling stock, to appropriate agencies. This saved \$160 million in equipment returned to the DOD supply system or transferred to right-size units' modification table of organization and equipment and improved supply/readiness ratings.

During the development of modernizing the centralized access control point, the MRWT identified some chokepoints, which aided the capabilities of what the retrograde warehouse yard is now.

Four vital efforts are what sets the M-RWT apart from the traditional way of excess turn-in.

- *RWT Capabilities:* The RWT completed 80% of the paperwork, taking the brunt of the stress off the unit supply clerk by reducing the required turn-in packet from nine to three documents for turn-ins to DLA-DS and enabled customers to fix packets on the spot. Furthermore, the team conducted demilitarization of each piece of equipment in preparation for final turn-in/lateral transfer. These trained personnel properly facilitated valid turn-in/lateral transfer, which drastically reduced the likelihood of rejection. It also built trust with external agencies, leading to daily relief in place of equipment with DLA-DS. Moreover, commanders were relieved of all property immediately upon turn-in of equipment at the RWT yard. All equipment was stored in a secured yard and warehouse facilities for DLA-DS and AAE to take ownership.
- *Building Partnerships with External Agencies:* Before the development of the Task Force (RWT), the average wait time for customers to turn in equipment through DLA-DS or AAE took about two weeks to a month to get an appointment. Additionally, units were obligated to a 15-day “conditional acceptance” for bulk turn-ins with a possibility of rejection, and limited to only five pieces of rolling stock per week to DLA-DS, contingent upon available space. After inviting the area manager of DLA-DS and the Chief of S&S Division of 406th AFSBn to discuss the way ahead of the division’s property right-sizing Initiative, both agencies were eager to assist and align their capabilities to meet the division’s goal in reducing excess across the formation. DLA-DS and 406th AFSBn made every effort possible to accommodate the command’s intent and ensured the division’s disposal needs served as one of their priorities. The agreement with the agencies helped reduce the average wait time for customers to daily turn-ins at the RWT yard. Additionally, as the conditions changed due to COVID-19, DLA-DS and 406th AFSBn

continued to support the division’s redefined plans to dispose of excess property under minimal manning essential personnel requirements. DLA-DS allowed each tactical supply support activity to conduct weekly turn-ins as an additional outlet for the division to reduce property. These processes allowed commanders and accountable officers to divest equipment faster and easier compared to previously published standards.

- *Movement Support:* The 82nd Airborne Division Sustainment Brigade augmented the M-RWT with a “movement response force” using the 126th Composite Truck Company (CTC) of the 189th Combat Sustainment Support Battalion (CSSB) as additional resources to assist company, troop, and battery commands with the transport of excess property from their unit location to the RWT yard. The 126th CTC, 189th CSSB heightened the momentum of turn-ins, while units focused on competing requirements.
- *Centralized Location Improving Readiness (Reutilization Site):* The RWT yard allowed units on installation to “shop” the “as-is” turn-ins for parts such as doors, lights, tires, and engines, to keep priority fleets at full capacity. The M-RWT yard “as-is” transactions have greatly impacted the division’s overall readiness rate in a positive way, hitting ninety percent across the division for the first time in a decade.

Maj. Tommie C. Bryant is currently serving as the executive officer of the 82nd Special Troops Battalion, 82nd Airborne Division Sustainment Brigade. She received her Bachelor of Science degree in Business Administration with a concentration in International Business and a Master of Business Administration with a concentration in Logistics Supply Chain Management from Alabama Agricultural and Mechanical University. Additionally, Bryant received a Master of Business Administration with a concentration in International business from Strayer University.

Sgt. 1st Class Jaquetta Z. Gooden is currently serving as the chief of Public Affairs, 82nd Airborne Division Sustainment Brigade. She received her Bachelor of Arts degree in Communications from Chamade University of Honolulu.

Featured Photo
More than 150 Low-Velocity Air Droppable Platforms, belonging to the 82nd Airborne Division, were divested from the unit during their Property Right-Sizing Initiative during June and July 2020 at Fort Bragg, N.C. Of these platforms, 133 adversely affected the division's overall Fleet Fully Mission Capable percentage. Divesting the unit of these platforms has freed mechanics to focus on other troubled fleet to meet the Army's required 90% operational readiness rate. (U.S. Army Photo)

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ISSN 2153-5973
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