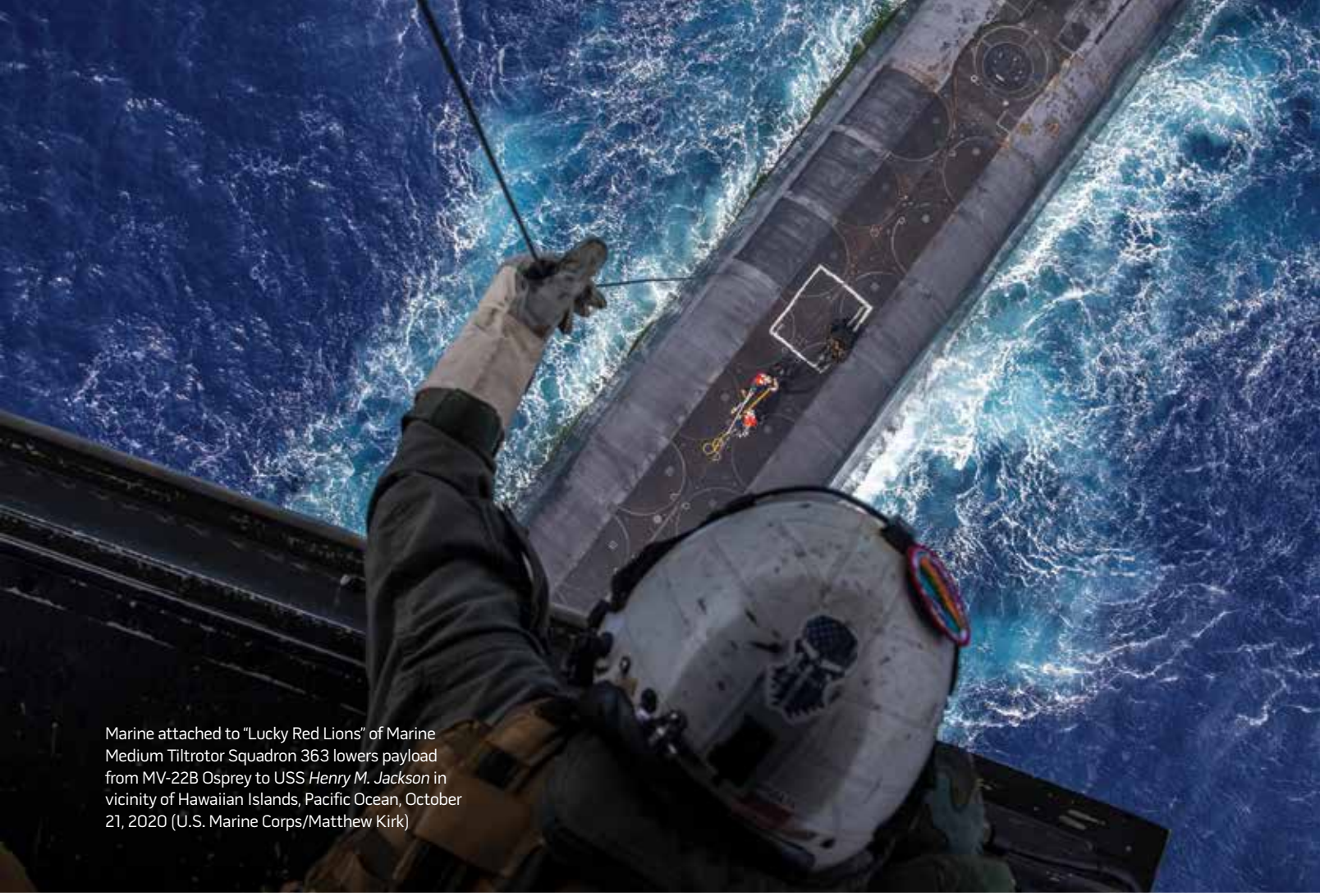

Marine attached to "Lucky Red Lions" of Marine Medium Tiltrotor Squadron 363 lowers payload from MV-22B Osprey to USS *Henry M. Jackson* in vicinity of Hawaiian Islands, Pacific Ocean, October 21, 2020 (U.S. Marine Corps/Matthew Kirk)

Logistics Under Fire

Changes for Meeting Dynamically Employed Forces

By Stephanie Myers, Eric Shirley, Brian Joseph Anderson, and Steven Hejmanowski

The United States has not faced contested lines of logistics since World War II. Over time, U.S. forces have become dangerously comfortable with having what they need, when they need it. The most notable difference between logistics during World War II and logistics now is that our supply lines are spread much thinner.[1] The Department of Defense (DOD) can no longer rely on established forward bases and uncontested lines of supply. The Indo-Pacific area of responsibility (AOR), for example, comprises nearly 100 million square miles, encompasses nearly half of the Earth's surface, is home to 36 nations, and contains more than 50 percent of the world's population (speaking 3,000 different languages).[2] The geographic and cultural challenges of the Indo-Pacific

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AOR strain current DOD logistics practices.

Today, similar to the early 1940s, the U.S. military finds itself in Great Power competition with peer adversaries. The peers have changed, but the logistics challenges have not. The U.S. military must adapt new logistics concepts to replace fixed (and therefore vulnerable) support sites—that is, main operating bases. The combat branches of each Service are enacting the direction spelled out in the 2018 National Defense Strategy to be more agile and less predictable, a concept known as dynamic force employment (DFE). The Air Force and Army components are aggressively exploring, and in many cases relearning, adaptive basing models.[3] The Navy, meanwhile, is already employing its assets dynamically and unpredictably.[4] The Services are not, however, applying the same energy toward the *combat support functions* that execute the extremely complicated tasks of supporting DFE.[5]

The new operational concept of DFE, coupled with antiaccess/area-denial (A2/AD) environments, present new challenges to the logistics community. "Operations Normal" will not cut it anymore. To support DFE in A2/AD environments, we must change our logistics practices dramatically. Sustaining joint forces in permissive DFE or in more complex A2/AD environments requires agile and innovative concepts of logistic support. Unlike in recent wars, such as Operation *Desert Storm* and Operation *Enduring Freedom*, today's adversaries are far less likely to allow prolonged U.S. force buildup and mostly uncontested lines of communication. Joint logisticians must develop support concepts that do not depend on robust logistics formations, traditional sources of supply, or traditional distribution networks.

This article highlights the need for leveraging business intelligence in order to provide agile logistics support to DFE operations. A brief discussion of the concept of operational contract support (OCS) and a definition of business intelligence will show the links between robust business intelligence, OCS, and logistics support for DFE. To properly leverage business intelligence, we propose some of the changes necessary—namely those in policies and procedures, culture, and planning and exercises. And finally, we demonstrate the benefits of leveraging business intelligence to support all types of operations.

Operational Contract Support

According to Joint Publication 4-10, *Operational Contract Support*:

Operational contract support (OCS) is the process of planning for and obtaining supplies, services, and construction from commercial sources in support of combatant commander (CCDR)-directed operations, as well as CCDR-directed, single-Service activities, regardless of designation as a formal contingency operation or not. OCS is a multi-faceted, cross-functional staff activity executed primarily by the combatant command (CCMD), subordinate staffs, Service components, theater special operations commands, and, in some cases, functional components, along with supporting combat support agencies (CSAs).[6]

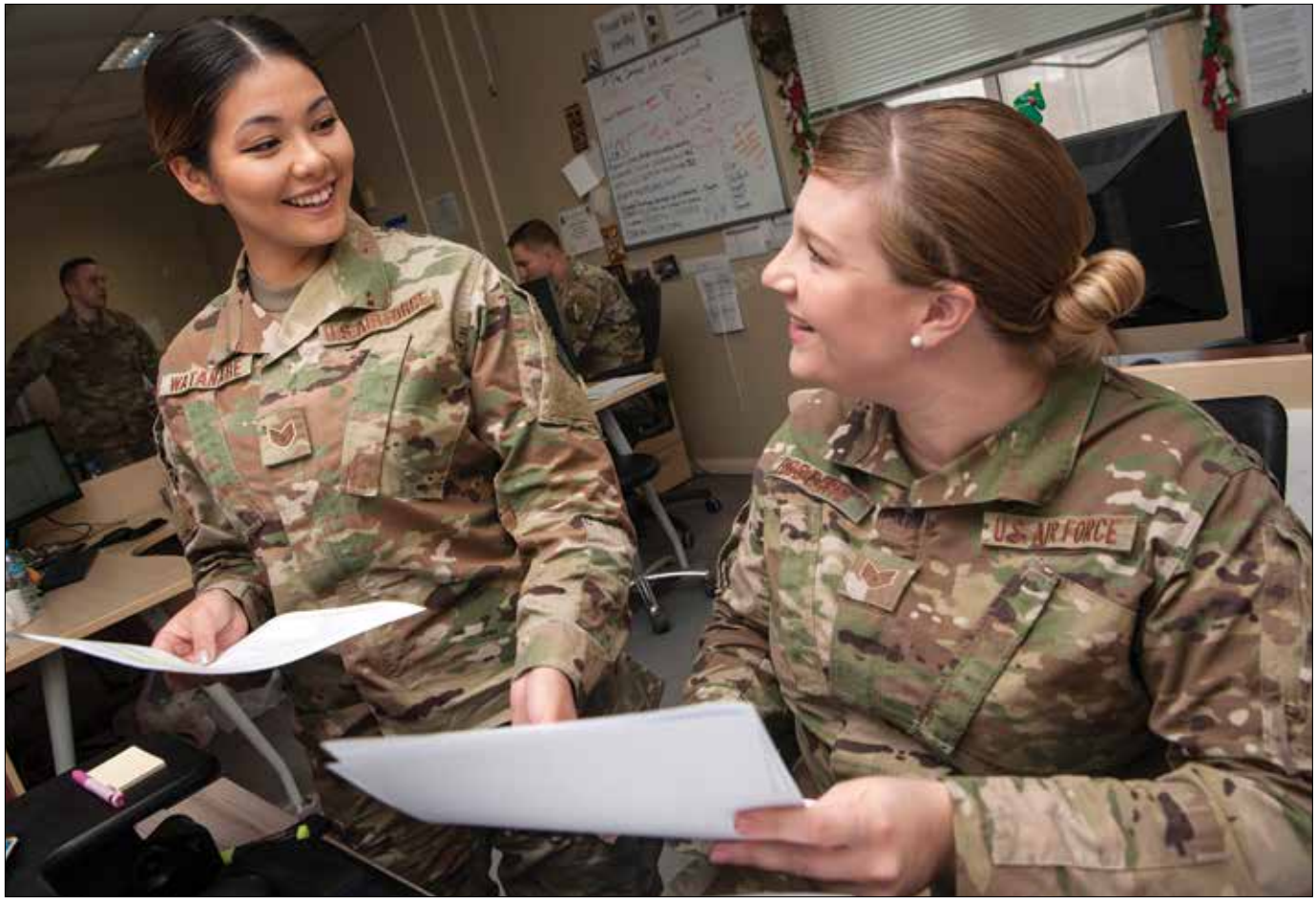
One option that logisticians can explore in a deliberate, proactive manner is expanding the theater logistics analysis of OCS solutions. These solutions can be incorporated into refined theater posture plans, contingency plans, and the execution of theater exercises and contingency responses. OCS can extend intervals between intertheater resupply by leveraging supplies and services available in the local market rather than by shipping supplies from a U.S.-operated hub. In order to fully operationalize the benefit of these solutions (that is, in order to fully leverage nonorganic, commercial support solutions), a business intelligence application that captures and displays commercial vendors, their capabilities, and their supply and service capacities is required.

Business Intelligence: The Foundation for OCS

Business intelligence, as defined in this context, is the identification, collection, display, and dissemination of vendors, supply and service capacities, supply chains, transportation infrastructure, and general business practices (for example, traditional work days and hours, local holidays, types of currency accepted, language in which business is conducted, taxation and customs rules) for use in support of military operations. Like other forms of military intelligence, it requires a refresh at appropriate intervals based on operational need. Business intelligence is the foundation for OCS, allowing the United States to seize operational opportunities by leveraging nonorganic, local supplies (food, water, fuel, commodities, building materials, material handling equipment) and services (Porta-John services, cleaning services, transportation services), thus lengthening the required time between resupply. Developing accessible and relevant business intelligence that planners and commanders can use to employ and sustain the force will ensure the ability to "regenerate in all domains while under attack."[7]

Business Intelligence Platform. Although DFE and adaptive basing–type movements conducted during conflict require units to source locally, DOD lacks knowledge of local markets, vendor capabilities, and a repository of local businesses—all pertinent forms of business intelligence. Business intelligence, from every potential AOR, should identify local commercial vendors, available supplies and services, maturity of the market, and viability after hostilities begin. To make this information available and accessible, the data should be hosted on a cloud-based database and presented in an application available on smartphones or tablets.

Lieutenant Colonel Karen Landale and Major Mike Sweeney, both fellows in Air University's Blue Horizons Program, have proposed that DOD develop easily accessible business intelligence to inform troop support, movement, and basing decisions. Partnering with industry, Landale and Sweeney are developing an application called BIZINT, which crowdsources vendor data (similar to how the Waze app crowdsources information) and displays vendors as pins on a map (similar to those



Contingency contracting officers with 379th Expeditionary Contracting Squadron share best practices, at Al Udeid Air Base, Qatar, December 17, 2018 (U.S. Air Force/Christopher Hubenthal)

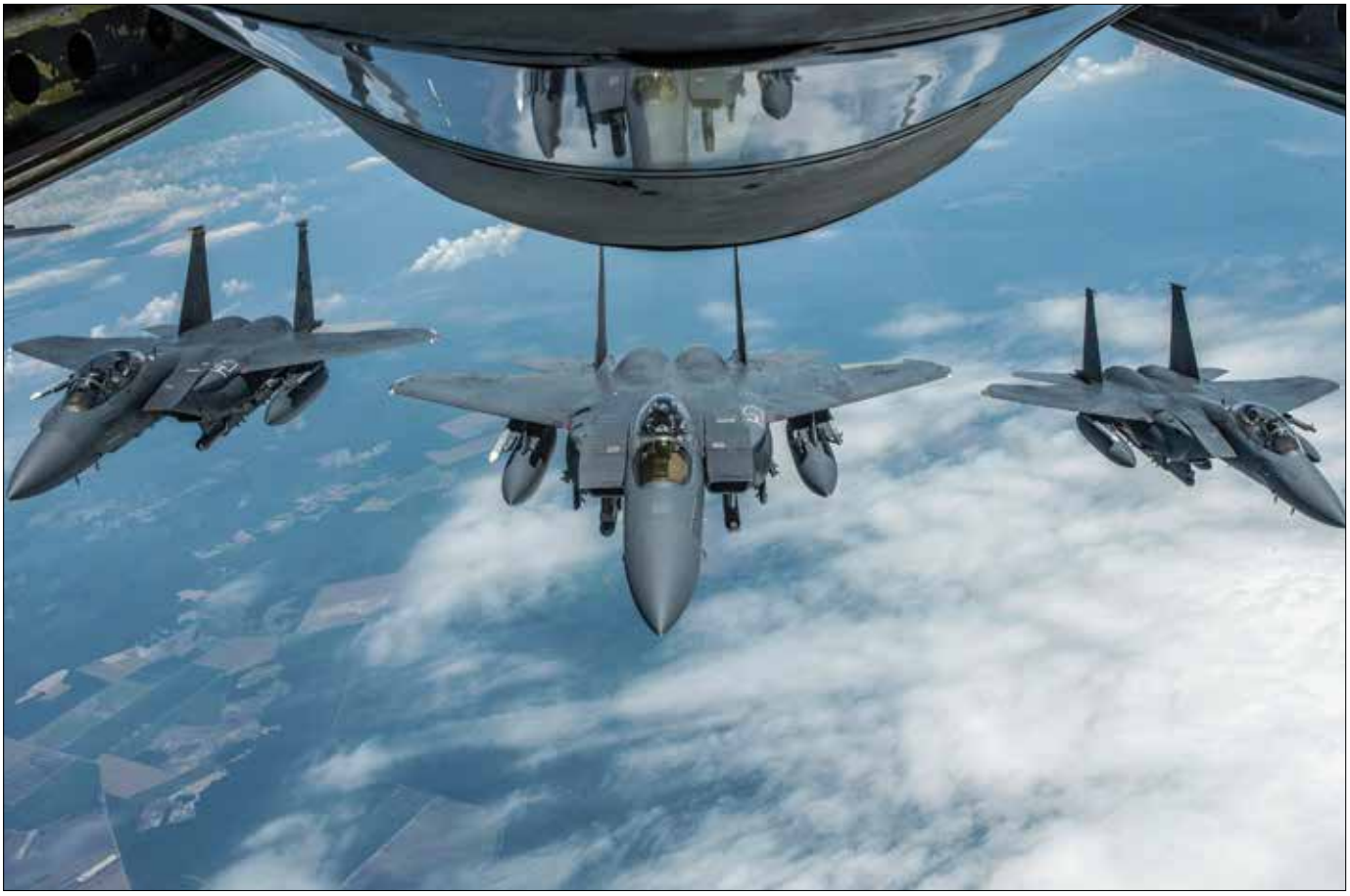
used in Google Maps) that, when clicked, provide a "baseball card" of vendor data (contact information, supplies/services available, and performance ratings). The map has filtering functions that allow the user to see vendors by class of supply, distribution distance, last validation (that is, the last time a user validated the vendor), past performance, and so forth.

Like all forms of military intelligence, the data must be continuously updated. Updates can occur via real-world events, scheduled theater exercises, inputs by Embassy acquisition personnel, or temporary duty for contingency contracting officers (CCOs) to reconnoiter vendor bases. All data inputs are time- and signature-stamped, making it possible to know when the vendor was last validated and by whom.

At present, readily accessible large-scale business intelligence data do not exist for globally employed forces. As a result, CCOs go into new events "blind"—with little understanding of the market beyond what Google searches and Embassy personnel can offer. Too often, CCOs are forced to learn the market "on the job," mostly by walking through local business areas and making contacts. Thus, although CCOs are innovative and forward-leaning, the lack of business intelligence results in an inherently reactive support response. Worse, any lessons learned by CCOs are kept in their heads or transmitted via text-based after-action reports. Contracting units individually collect vendor data (such as vendor location and contact information); however, the data are kept in Excel spreadsheets—hardly accessible to users in the field and hardly considered institutional knowledge. Furthermore, there is no common operating picture or dashboard of available supplies and services to inform planners across the CCMD.

Commercial companies such as Amazon, FedEx, UPS, and Walmart have large repositories of supplier data, the technology to analyze and display the data, and expertise to make data-driven supplier-related decisions; however, the sanctity of that data is protected (that is, not available for purchase by DOD), as access to the best suppliers and robust supply chains is what can make or break suppliers' innovation efforts and bottom line. While these large companies may not be willing to share data related to their supply chains, the quest to transform any antiquated logistics formation and planning process must include the private sector—we can learn a lot from its years of experience in mapping markets and establishing supplier relationships.

Moreover, we should not rule out the option of partnering with these companies to provide the supplies and services we use most during operations. How



F-15E Strike Eagles with 4th Fighter Wing at Seymour Johnson Air Force Base, North Carolina, form behind KC-135 Stratotanker after refueling with 121st Air Refueling Wing, Ohio Air National Guard, June 15, 2018 (U.S. Air National Guard/Tiffany A. Emery)

should we partner with them? What role will they play? How far are these companies willing to go into a war zone? At what price? It is safe to assume that many large companies are not willing to operate directly in a war zone, so there will always be a role for business intelligence collected and used by the joint force. That said, the joint force must have its own "map" of supplies and services to sustain operations.

Paradigm Shift: Policies, Procedures, and Culture. In today's risk-averse environment, acknowledging the need to use nontraditional sources of supply will require a massive paradigm shift. For example, based on current procurement standards, a U.S. veterinarian must scrutinize all food and sources of food consumed by U.S. troops. In a DFE/adaptive basing concept, this practice might be time prohibitive. As another example, cumbersome acquisition authorities requiring competition and set-asides in order to award contracts could also undermine the fulfillment of the operational concept. Perhaps these will be obvious risks to accept in the future, but integrating these potential scenarios into existing plans and exercises may be the forcing function needed to truly prepare Servicemembers.

That said, there are demonstrations that the Services are becoming less risk averse. For example, the Air Force has embarked on a campaign to remove redundant or overly prescriptive Service instructions in order to push decisions down to the lowest level possible and allow commanders to make smarter, on-the-ground risk-informed decisions.[8] A remarkable example of how the next fight might look was executed in summer 2019 by the men and women of the 4th Fighter Wing from Seymour Johnson Air Force Base in North Carolina. They demonstrated the ability of small multifunctional teams to establish and operate at multiple austere locations, rearming and refueling multiple airframes using integrated combat turns—a tactic that had been out of vogue for the last two decades.

These teams were sourced to operate autonomously for up to 72 hours, but if the teams had been allowed to utilize local markets, they likely could have sustained operations for much longer. Removing the weight of food and fuel might result in the ability to carry more ammunition, equating to longer intervals between resupply and potentially the difference between victory and defeat.

As an example of how we can do better, an analysis by the Army Material Systems Analysis Activity indicated that in the initial phase of Operation *Iraqi Freedom*, 32 percent of the tonnage moved to theater was water and 39 percent was bulk fuel (see table for the scope of weight being addressed). How many trucks could the Army have kept off the roads if it had had the ability to

source those items locally? What might those trucks have carried instead of water and fuel? Would it have been necessary to ship so many trucks to the operation in the first place? We are not advocating carelessness—sources of food, water, fuel, and other mission-essential sustainment commodities should be checked and vetted to ensure they meet standards. We are advocating for good decisionmaking—using local supplies where possible to vet to standards rather than automatically reverting to our comfortable, but very long, distribution chain.

Planning and Exercising the Use of Business Intelligence. In an ideal situation, functional planners in each CCMD would be able to view all sources of supply—organic Service component assets; Defense Logistics Agency (DLA) assets; and nonorganic, locally available assets—in order to make decisions that optimize the use of *all* sources of supply *and* associated strategic lift and transportation capabilities.

A2/AD challenges make it equally important to assess whether the locally sourced supply items would remain available after hostilities begin. During the Mexican-American War, for instance, Lieutenant Ulysses S. Grant's troops lived off the land and utilized local markets, including the black market, for procurement of necessary items.[9] Today, using the black market conjures thoughts of courts-martial and Fat Leonard.[10] Grant, however, did not let the proverbial "red tape" stand in the way of making the best operational and business decisions to execute his mission. Units may not be able to go to the extent Grant did because weapons systems are much more complex today, and the demand for oversight and accountability is likely higher. But logisticians, contracting officers, and functional planners must consider the feasibility and evaluate the risk of self-sustainment of food, fuel, and other operations support materials and services to maintain small, fast-moving combat teams.

Logistics classes I through IX have always been included in planning, but in an adaptive basing construct, critical data points are not being collected and analyzed. Incorporating DFE into the planning process requires sacrifices in quality of life, a significant departure from recent forward-operating base amenities that the joint force is used to, and specific attention to data to mitigate risks. Failure to adapt and prepare for the DFE-A2/AD fight leads to risk; however, risk can be mitigated at the CCMD level through detailed geographic analysis of distribution networks, local sources of supplies and services, and available host-nation transportation capabilities. These critical elements of the CCMD campaign plan are captured broadly in the theater posture plan, which is the combatant commander's proposal for forces, footprints, and agreements required and authorized to achieve the command's objectives and set conditions for accomplishing assigned missions.[11]

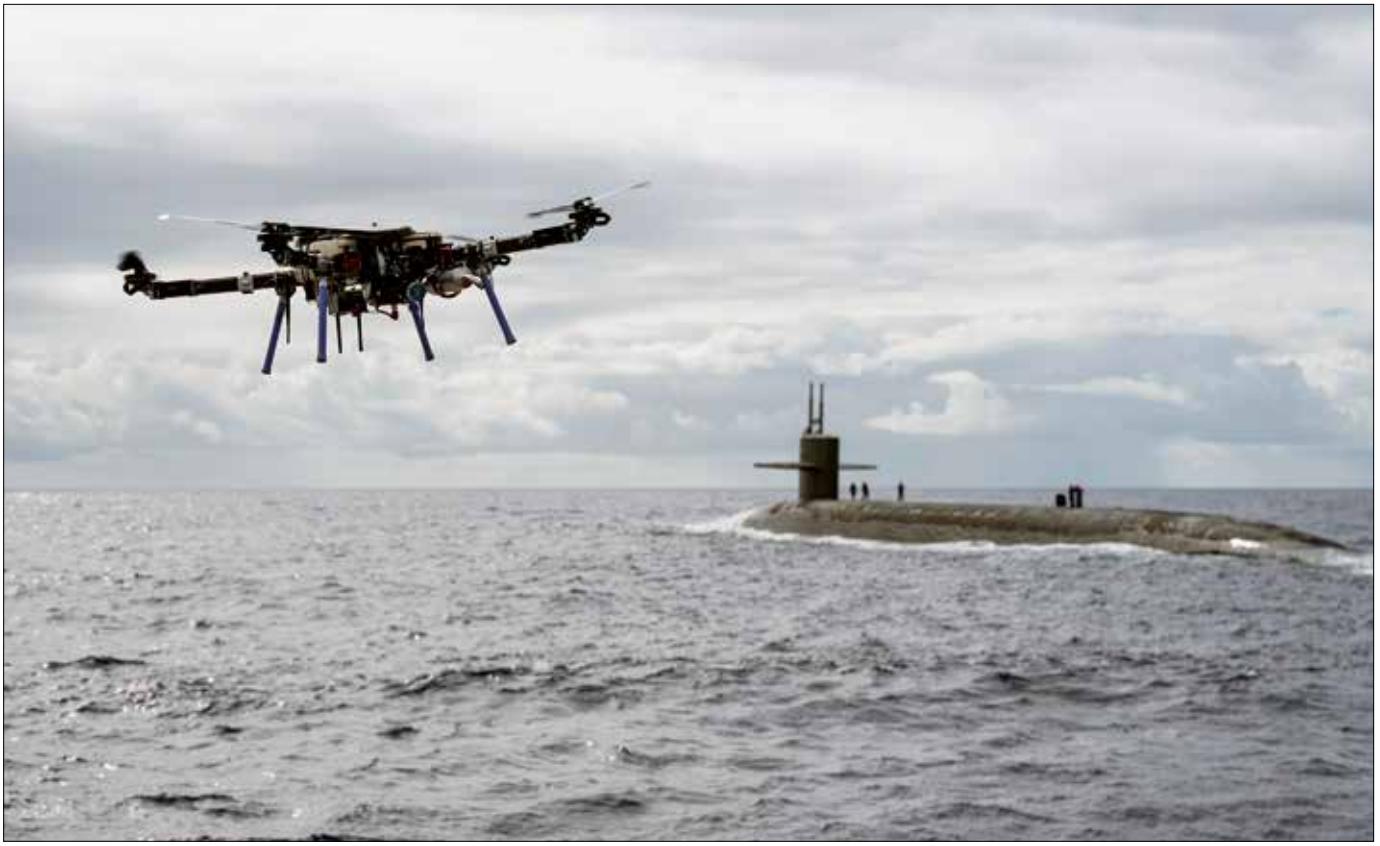
The Theater Logistics Overview (TLO) codifies the geographic CCMDs theater logistics analysis (TLA) within the posture plan. The TLA contains detailed country-by-country analyses of key infrastructure by location or installation, footprint projections, host-nation agreements, existing contracts, and task orders required to logistically support CCMD campaign plans and contingency operations. The vendor source of supply data could be incorporated into both Annex D (Sustainment) and Annex W (Operational Contract Support) for CCMD plans.

To reduce sustainment risk to initial entry forces and follow-on operations, theater or joint task force logisticians and functional planners could reference a business intelligence platform populated with vendor data. Real-time or near-real-time situational awareness for CCMD logisticians could also be maintained by incorporating the outputs of the business intelligence solution into the Global Logistics Readiness Dashboard, which is routinely referenced during exercises and contingencies. These enhancements to the traditional TLO will aid rapid integration of forces deploying in support of DFE events.

Due to the fluidity of DFE, real-time access to the class of supply data is critical. Business intelligence would inform the CCMD theater posture plan and could potentially mitigate submissions on the integrated priority list of known shortfalls, thus providing a set of criteria for the annual joint assessment. The results of this analysis provide CCMD inputs to the Chairman's risk assessment. Without visualized and vetted sources of supply and an understanding of vendor distribution capability in theater, a heavy—almost total—reliance on intertheater lines of communication will persist, along with an inordinate amount of civil-military coordination required to support onward movement and intratheater border crossings, rail and road utilization, and port throughput.

Furthermore, planners and commanders must learn to fully incorporate logistics and OCS functions into exercises. As General Dwight Eisenhower stated, "You will not find it difficult to prove that battles, campaigns, and even wars have been won or lost primarily because of logistics." The issues and challenges that the joint force will face in a peer conflict will not be solved via efforts that stem solely from the continental United States. In order to develop and train logistics and contracting professionals to utilize business intelligence, exercises must address the true challenges these individuals will face supporting Servicemembers in contingency environments. DFE poses a daunting logistics effort and introduces uncertainties; only confidence in training and experience can ensure delivery to the "last tactical mile."

Fully incorporating contracting and logistics functions into an exercise is not easy. First, "business play areas"—or what would be considered the equivalent of a live-fire range where aircrew drop live ammunition and practice real-world tactics, techniques, and procedures—do not exist. Second, exercising contracting functions in the real world has real-world financial consequences that must be considered prior to execution. For example, in small economies, on one hand, the amount of money the U.S. military spends locally during an exercise could provide a significant boost; on the other hand, the U.S. military might buy out supplies (for example, bottled water) and services (bus transportation), producing a shortage for the local populace. Third, dollars are not typically allocated to



Unmanned aerial vehicle delivers payload to USS *Henry M. Jackson* near Hawaiian Islands, Pacific Ocean, October 19, 2020 (U.S. Navy/Devin M. Langer)

exercise the contracting function, which results in a rudimentary simulation of contract awards. Although each exercise would look slightly different, funds should be allocated to allow contracting officers to source the local market to support the force and map the business environment (vendor locations, supply and service capacities, business practices, and so forth), particularly in exercises conducted overseas.

A focused logistics and contracting effort would tease out and improve the increasingly important function of OCS to the overall strategy of the operation. If we are to train like we fight, we need to fully incorporate *real* logistics and *real* contracting functions into our exercises—it will pay dividends in the future.

The Need for Business Intelligence

As directed in the National Defense Strategy, DOD is transitioning from large, centralized, unhardened infrastructure to smaller, dispersed, resilient adaptive basing.[12] Adaptive basing requires forces to disaggregate capabilities from a single base and diffuse forces to many locations for operational maneuver.[13] Because the United States no longer has a significant forward presence overseas and peer competitors have the capability to hold these forward assets and bases at risk, adaptive and agile operations are necessary.

Dynamically employed forces require a small footprint, rapid standup and tear-down capability, and a low profile. Using OCS to travel light and source locally, through developed business intelligence, would enable formations to meet these objectives. The new DFE concept demands faster, locally sourced logistics. Long logistics lines stemming from the United States or one of our traditional operating locations would almost certainly not work for DFE. Long logistics lines require too much time to get to the target, heavily tax our strategic lift capabilities (which might be better used to transport bullets, bombs, and other military equipment), and are vulnerable to attack.

Moving with a small footprint, similar to special operations forces movements, allows troops to relocate without significant time for buildup, which would otherwise signal intent to the enemy. A small footprint requires units to operate with less materiel support and fewer supply lines, which translates to sourcing locally, closer to a just-in-time method. Rapid setup and tear-down, within a matter of days or hours, deny the enemy sufficient time to locate forces and attack. Such swiftness of movement requires preestablished local connections and, in some cases, established contracts with local vendors. Keeping a low profile may mean using local vendors not vetted to the standards generally expected by today's forces.

Because the business intelligence needed to inform adaptive basing does not yet exist, basing decisions have been limited to locations with robust supply chains or those near main operating hubs. If, as former Marine Commandant General Robert Neller described, "we're going to have to fight to get to the

fight," then our logistics tail must be able to keep up.[14]

Studying the island-hopping campaign in the Pacific during World War II might allow contemporary planners to conceptualize the future challenge. The Pacific campaigns were executed after months of logistical placement and preparation. The difference today is that the fight could happen in days or hours rather than weeks or months. At the current pace of advance, the tooth could easily outpace the tail. Business intelligence would enable the tail to anticipate the tooth and keep pace—or even outpace the tooth in some scenarios. In order to provide senior leaders information to make logistically informed decisions about where operations could be best supported (that is, where it is easiest and most feasible to support the force with nonorganic supplies and services), joint logisticians must have access to current business intelligence.

Recommendations

Combat operations in Operations *Desert Storm* and *Enduring Freedom* were overwhelmingly successful; however, each operation had the advantage of time for significant buildup of resources preceding conflict—something that cannot be taken for granted or relied on in future scenarios. Even with that advantage, during the combat phases of those operations, the Army and joint community encountered challenges executing sustained, end-to-end logistics in an agile and precise manner, particularly along the last tactical miles of what the joint force now describes as theater distribution.[15] The initial combat phase of Operation *Iraqi Freedom* revealed a lack of effective theater distribution doctrine, disjointed headquarters architectures, unrefined concepts for contractor support/integration, and unresponsive logistics information systems. The Government Accountability Office, RAND, and Congress have all identified required areas of improvement and points of strategic risk in the DOD supply chain and in the department's ability to execute effective theater sustainment for the joint force from the 1990s to today.[16]

To prepare ourselves for logistics support for DFE operations, the joint force should complete and populate the BIZINT platform; use planning and exercising events to test BIZINT; and create new ways to perform logistics, partner with our allies to share business intelligence, and use business intelligence to our advantage.

First, the BIZINT platform that will host business intelligence must be completed. Currently, the estimated completion timeframe is spring 2022; however, the minimum viable product will be ready to receive data and test functionality by spring 2021. Once the minimum viable product is ready, it should be tested in a controlled manner to determine what changes are necessary to ensure intuitive and nonburdensome user interfaces and interactions. Once full functionality is ready, geographic combatant commands should begin populating business intelligence for their AORs based on their "most likely" and "most dangerous" planning scenarios.

Second, the U.S. military needs to practice planning for and using business intelligence in exercise events. Functional planners should become familiar with the BIZINT platform and understand how to filter through suppliers to determine whether requirements that they would normally source from military stock or DLA locations could (and should) be met using local vendors. Testing those decision calculations would help functional planners make the best use of both organic supplies (for example, do we use our war reserve material first, or do we save it for when the fight is in full swing and vendors are hard to find?) and nonorganic supplies. Functional planners must learn to rely on sources of supply other than those they could add to the time-phased force deployment data (TPFDD) to support operations. It is commonly known that, for any given operation, the list of TPFDD items far exceeds the strategic lift capability to move those items into theater in a timely manner. Leveraging business intelligence and local vendors' capabilities to the operations area would reduce the burden on our already overtasked strategic lift assets.

The process of developing business intelligence is an excellent opportunity to partner with our allies. Our allies know their own business environments and markets better than we ever could. By partnering with them, we could populate our vendor lists faster and easier. We could also leverage their insight to know *where* we should spend our money in their country—in a way that supports them economically while also favorably enhancing our own operations. And we could partner with our allies to ensure that we do not hurt their economy by buying out supplies and services needed by the local populace. In any exercise or real-world event, the U.S. military wields a significant amount of money. We must have a strategic plan for using that money, just as we have strategic plans for any other weapons system we use in the conduct of our operations.

Business intelligence and the associated money we use during operations are capabilities in our arsenal—indeed, they are national assets. How could we creatively employ those capabilities to our benefit? Could we spend money in areas in which we do not actually intend to operate as a feint/form of military deception? Could we use our business intelligence to "buy out" a local supply or service to prevent our enemy from using it? There are many ways to use our business intelligence and our money to our advantage. We just need to think creatively.

Conclusion

Logisticians have always struggled with the challenges of distance and time, and they have consistently demonstrated their ability to surmount those challenges. The solution to providing timely combat support will likely be a combination of host-nation support, prepositioned supplies, traditional transportation of items from established bases, and OCS leveraging commercial vendor networks.[17]

With the advent of DFE, logisticians need to be just as agile as the force they support. Success in the new environment

requires local sourcing, as traditional supply lines will be contested. These, too, are surmountable challenges; however, business intelligence data must be collected, displayed, and disseminated. Also, new ways to properly leverage business intelligence must be developed and refined during exercises, and business intelligence must be considered and trusted as a way to "buy down" risk during the planning process.

We know that past can serve as prologue. What is the U.S. joint logistics enterprise willing to do about it? JFQ

Notes

[1] David Swanson, "Closing Military Bases, Opening a New World," *Foreign Policy Journal*, May 3, 2019, available at <https://www.foreignpolicyjournal.com/2019/05/03/closing-military-bases-opening-a-new-world/>.

[2] Commander, U.S. Indo-Pacific Command, available at <https://www.pacom.mil/>.

[3] Michael Briggs, "Air Force Completes Test of Combat Support Innovation," U.S. Air Force Air Force Installation and Mission Support Center, *AF.mil*, May 14, 2019, available at <https://www.af.mil/News/Article-Display/Article/1847334/air-force-completes-test-of-combat-support-innovation/>.

[4] "Dynamic Force Employment," *Global Security*, May 17, 2019, available at <https://www.globalsecurity.org/military/ops/dynamic-force-employment.htm>.

[5] Michael Peck, "The Air Force Has a Huge Basing Problem," *National Interest*, November 5, 2019, available at <https://nationalinterest.org/blog/buzz/air-force-has-huge-basing-problem-93891>.

[6] Joint Publication (JP) 4-10, *Operational Contract Support* (Washington, DC: The Joint Staff, March 4, 2019), ix, available at <https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp4_10.pdf>.

[7] *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* (Washington, DC: Department of Defense, 2018), 6, available at <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>.

[8] Secretary of the Air Force, "Air Force Directive Publication Reduction," August 3, 2017, available at <https://www.e-publishing.af.mil/About-Us/Air-Force-Directive-Publication-Reduction/>.

[9] Ulysses S. Grant, *The Complete Personal Memoirs of Ulysses S. Grant* (1885; CreateSpace Independent Publishing Platform, 2009).

[10] The U.S. Navy husbandry contract with Malaysian contractor Leonard Francis ("Fat Leonard") is one of the worst corruption bribery scandals in the Service's history. It has resulted in 33 Federal indictments and has decimated a generation of naval officers. See Sam LaGrone, "Paying the Price: The Hidden Cost of the 'Fat Leonard' Investigation," *USNI News*, January 24, 2019, available at <https://news.usni.org/2019/01/24/paying-price-hidden-cost-fat-leonard-investigation>.

[11] JP 5-0, *Joint Planning* (Washington, DC: The Joint Staff, June 16, 2017), III-12, available at <https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp5_0_20171606.pdf>.

[12] Ibid.

[13] David Dammeier, Meka Toliver, and Logan Smith, "Overcoming a Power Projection Problem," *Air Force Civil Engineer*, Spring 2016, available at <https://www.afcec.af.mil/>.

[14] Megan Eckstein, "Neller: Marines Must Prepare to 'Fight to Get to the Fight' in High-End Littoral Warfare," *USNI News*, September 21, 2017, available at <https://news.usni.org/2017/09/21/neller-marines-must-prepare-fight-get-fight-high-end-littoral-warfare>.

[15] Michael Gordon and Bernard Trainor, *The General's War* (Boston: Little, Brown and Company, 1995), 57, 475–476; Gregory Fontenot et al., *On Point: The United States Army in Operation* Iraqi Freedom (Fort Leavenworth, KS: Combat Studies Institute Press, 2004), 31–41, 149–150.

[16] General Accounting Office (GAO), *Defense Logistics: Preliminary Observations on Effectiveness of Logistics Activities During Operation* Iraqi Freedom (Washington, DC: GAO, 2003), 3–5; eight additional GAO reports from 2005 through February 2013 specifically address supply distribution shortfalls in Operations *Enduring Freedom* and *Iraqi Freedom* and reform of the Department of Defense (DOD) supply chain, which remains categorized as a "high-risk" area of government operations since 1990. See Eric Peltz et al., *Leveraging Complementary Distribution Channels for an Effective, Efficient Global Supply Chain* (Santa Monica, CA: RAND, 2007); Eric Peltz et al., *Effectively Sustaining Forces Overseas While Minimizing Supply Chain* (Santa Monica, CA: RAND, 2008); Eric Peltz and Marc Robbins, *Integrating the Department of Defense Supply Chain* (Santa Monica, CA: RAND, 2012); U.S. Congress, House of Representatives, House Armed Services Committee, Sub-Committee on Readiness, "Hearing on Future of Logistics," March 30, 2004; Government Accountability Office, *DOD Has Taken Actions to Improve Some Segments of the Materiel Distribution System* (Washington, DC: Government Accountability Office, August 2012), 1.