Aviation
DIGEST
UNITED STATES ARMY
April–June 2021
Volume 9/Issue 2

MULTINATIONAL INTEROPERABILITY AND LARGE-SCALE COMBAT OPERATIONS

Table of Contents

UNITED STATES ARMY Aviation DIGEST
The Professional Bulletin of the Army Aviation Branch, Headquarters, Department of the Army, PB 1-21-2
April–June 2021
Volume 9/Issue 2

Commanding General, USAACE
DAVID J. FRANCIS

DOTD
BRIAN T. WATKINS
Colonel, AV
Director of Training and Doctrine
https://www.us.army.mil/content/armyako/en/mycommunities/Home/groups/TRADOC/Groups/CAC/Groups/USAACE/Groups/USAACEStaff/Groups/Directorates/Groups/DOTD.html

Tactics Division
Division Chief: LTC JAMES B. POLK
https://www.us.army.mil/content/armyako/en/mycommunities/Home/groups/TRADOC/Groups/CAC/Groups/USAACE/Groups/USAACEStaff/Groups/Directorates/Groups/DOTD/Divisions/DOTDTacticsDivision.html

The Doctrine Division, Directorate of Training and Doctrine (DOTD), U.S. Army Aviation Center of Excellence (USAACE), Fort Rucker, AL 36362 produces the *Aviation Digest* quarterly for the professional exchange of information related to all issues pertaining to Army Aviation. The articles presented here contain the opinion and experiences of the authors and should not be construed as approved Army policy or doctrine.

Aviation Digest is approved for public release. Distribution is unlimited. This publication is available through electronic media only by accessing the Army Knowledge Online (AKO) website and is intended for the use of command levels C, D, and E for the active Army, the Army National Guard, and the U.S. Army Reserve.

This and all previous issues of *Aviation Digest* are available on the DOTD AKO web site at DOTD

Submit articles or direct comments pertaining to the *Aviation Digest* to: *usarmy.rucker.avncoe.mbx.aviation-digest@mail.mil.*

By Order of the Secretary of the Army:

JAMES C. MCCONVILLE
General, United States Army
Chief of Staff

Official:

KATHLEEN S. MILLER
Administrative Assistant
to the Secretary of the Army
2109702

About the Cover:

Army Reserve UH-60 Black Hawk Helicopters from 8th Battalion, 229th Aviation Regiment, based out of Fort Knox, Kentucky, depart to Lakehurst Maxfield Field during a multi-component airfield seizure training exercise between the Army Reserve and the 101st Airborne Division (Air Assault) on March 13, 2017 to kick off Warrior Exercise 78-17-01. U.S. Army photo by SSG Shawn Morris

The Command Corner

The dialogue across our Army continues to resonate with large-scale combat operations (LSCO) and how we shape our institutional and operational force to meet the challenges of the future battlefield. With this shift in the emphasis of how we will fight, it is essential to reinforce why we are moving in this direction and, at every opportunity, highlight the nuances of these operations.

We anticipate LSCO will have a rapid tempo, with both sides deliberately striving to gain or maintain the initiative. We may find ourselves competing intensely across all domains—air, land, sea, cyber, space. Most important, the operations and actions are likely to occur at echelons above the brigade-division level, requiring extensive synchronization and coordination.

Large-scale combat operations, in a multidomain environment, is driving the design of Future Vertical Lift (FVL), revamping our training at the Combat Training Centers; our professional military education; and driving our doctrine and tactics, technique, and procedures to shape our organizations now. Not only for our aviators in the cockpit, this especially includes our leaders who will design, execute, and coordinate these operations. We must become "maneuverists" capable of employing aviation with the Joint Force to provide our ground forces with multiple maneuver options. We must understand in-depth maneuver schemes, commander's intent, and engagement opportunities across the Joint Force.

In LSCO, the synchronization and prioritization of warfighting functions of combat aviation brigade capabilities require coordination by division planners and higher to integrate mobility, speed, range, flexibility, lethality, precision, and reconnaissance capabilities across all of the domains. This coordination and precise synchronization will provide lethality, penetration, and dis-integration at the time and place of our choosing.

Multidomain Operations, the doctrinal framework for our Army, is essentially weaving together the right mix of technology, operational concepts, and capabilities that create advantages for ourselves and dilemmas for the enemy. During LSCO, our Partners must be able to routinely understand and join our networks and operate alongside or as a part of Army Aviation operations.

The core of successful Multinational Operations is recognizing and achieving the right level of interoperability. Interoperability is simply the ability to act together coherently, effectively, and efficiently to achieve Allied tactical, operational, and strategic objectives. Interoperability resides on a spectrum from deconfliction, compatibility, and integration. To reach full integration at the tactical level, multinational forces must strive for common doctrine and procedures to foster a shared vision and systems for addressing routine operations and actions.

The technical integration will become more complex as we field FVL, long-range fires systems, munitions, and networks that communicate high volumes of data across sophisticated encryption systems. The challenge is to determine which equipment or systems we can use and how they function with other equipment. Coalition forces can bring varying degrees of compatible radios, friendly force tracking devices, or command information systems to the battlefield. With our unique technology and platforms, we may find ourselves targeting our integration to ensure critical systems can communicate with each other. We have to synchronize our systems to the lowest level to ensure we can accomplish the basic tasks—requesting air weapons teams, calls for indirect fire, and communicating with the ground forces.

Army Aviation must evolve how we organize, equip our organizations with new leap-ahead technologies, and integrate as part of the Army and the Joint Force. Full integration with our Partners will be essential for LSCO across all domains to form a truly multinational team. From simple to complex, LSCO has inherent friction that our training, our material development, and our leadership must be able to address to ensure we continue to provide superb support to the preeminent Land Force—our Army.

Above the Best!

David J. Francis
Major General, USA
Commanding

Back to Table of Contents

Aviation DIGEST

contents

U.S. Army photo by SGT Stephanie Ramirez

Visit us online!

https://home.army.mil/rucker/index.php/aviationdigest

Managing Editor
Amy Barrett

Art Director
Brian White

Contact
usarmy.rucker.avncoe.mbx.aviation-digest@mail.mil

Author Guidelines

Articles prepared for *Aviation Digest* should relate directly to Army aviation or reflect a subject that directly relates to the aviation professional. Submit the article to the Aviation Digest mailbox at usarmy.rucker.avncoe.mbx.aviation-digest@mail.mil.

Please note that *Aviation Digest* does not accept previously published work or simultaneous submissions. This prevents an overlap of material in like publications with a similar or same audience.

Aviation Digest is an open-source publication. As such, we **do not** accept articles containing For Official Use Only or Classified materials. Please do not submit articles containing Operations Security (OPSEC) violations. If possible, have articles reviewed by an OPSEC officer prior to submission.

Please submit articles via MS Word document format. Articles should not exceed 3500 words. Include a brief biography (50 word maximum) with your article. We invite military authors to include years of military service, significant previous assignments, and aircraft qualifications in their biographies.

Aviation Digest editorial style guidelines follow the American Psychological Association Publication Manual, 7th edition; however, *Digest* staff will incorporate all necessary grammar, syntax, and style corrections to the text to meet publication standards and redesign visual materials for clarity, as necessary. Please limit references to a maximum of 20 per article. These changes may be coordinated with the authors to ensure the content remains accurate and reflects the author's original thoughts and intent.

Visual materials such as photographs, drawings, charts, or graphs supporting the article should be included as separate enclosures. **Please include credits with all photographs**. All visual materials should be high-resolution images (preferably set at a resolution of 300 ppi) saved in TIFF or JPEG format. For Official Use Only or Classified images will be rejected.

Non-military authors should submit authorization for *Aviation Digest* to print their material. This can be an email stating that *Aviation Digest* has permission to print the submitted article. Additionally, the author should provide a separate comment indicating that there is no copyright restriction on the use of the submitted material.

The *Aviation Digest* upcoming article deadline and publication schedule is as follows:

July–September 2021 issue articles due June 1, 2021 (published on or about August 15, 2021)

October–December 2021 issue articles due September 1, 2021 (published on or about November 15, 2021)

January-March 2022 issue articles due December 1, 2021 (published on or about February 15, 2022)

Authors are asked to observe posted deadlines to ensure the *Aviation Digest* staff has adequate time to receive, edit, and layout materials for publication.

THE ARMY TALENT ALIGNMENT PROCESS IN THE AVIATION ENTERPRISE:
BALANCING TALENT MANAGEMENT WITH ARMY READINESS

By CW4 Brent Adams

Managing aviator talent in a complex world with a high operational tempo has been and will continue to be an evolving challenge for those select few warrant officers (WOs) chosen to serve at the U.S. Army Human Resources Command (HRC). Warrant officer aviators are a small entity, just 1 percent of the total active Army, shrinking further when accounting for over 1,000 students, separations, and retirements. Despite our small numbers, the demand for our skills throughout the joint force has not waned. Every echelon of the enterprise must understand the challenges faced when Army readiness requirements compete for limited assets in the inventory to ensure the aviation branch is prepared for the missions of tomorrow.

WHAT IS ATAP?

The Army Talent Alignment Process (ATAP) significantly alters how the Army fills formations around the world with officers. The days of old where a WO would call a career manager to work his or her next assignment has morphed into a transparent, global talent marketplace within the Assignment Interactive Module, or AIM2, platform containing all available officers and units. The program's end state goals are to produce and use a 21st Century talent management system that meets readiness requirements, incentivizes officer and unit participation, and regulates officer and assignment alignment using the ATAP principles.

Human Resources Command is seen as the face of ATAP because officers and units interact with their respective career managers and account managers when working through the ATAP. In truth, HRC is only an instrument to execute the ATAP programs, policies, and procedures developed and approved by Army Senior Leaders at the Pentagon.

The Officer Readiness Division (ORD) receives guidance from Headquarters, Department of the Army (HQDA) G3/5/7 in the form of Active Component Manning Guidance (ACMG). Active Component Manning Guidance exists because most Army skillsets are not fully manned;

Two Aviation Advisors assigned to OPM-SANG discuss the taxi route prior to departure for a Local Area Orientation flight at Khashm al An Airfield, Saudi Arabia, December 8, 2018. U.S. Army photo by CW4 Brent Adams

Back to Table of Contents

thus, the Army's Chief of Staff, GEN James McConville, issues his guidance on manning the force through this document. Every formation in the Army is assigned to a category that dictates the readiness baseline. Units will always ask for every projected vacancy in their formation for the upcoming manning cycle, but every position cannot be filled due to limited assets. The ORD uses the ACMG baselines to determine priorities of fill and, by extension, which positions will appear in the marketplace, i.e., readiness requirements drive the jobs to be filled across the Army.

The Operations Division, Operations Support Division, and Force Sustainment Division Career Managers balance directives and guidance from the Army Talent Management Task Force within HQDA G1, ACMG requirements from HQDA G3/5/7, and each respective branch proponent. Warrant officer aviators take this challenge to another level by taking a single military occupational specialty and splitting it into nine skills specializing in safety, standards, survivability, maintenance, or acquisitions and development, none of which are interchangeable. The application of ATAP principles through the marketplace highlights the evolution from assignment officer to career manager: Career managers now function as senior mentors in their respective fields, guiding officers toward preference assignments in an open marketplace that fits the needs of their career and desires in lieu of directly assigning an officer to fill a requirement. Their talent management role also requires them to know and provide the number of available movers for the upcoming cycle to ORD, thus delivering the inventory to fill the enterprise's highest readiness requirements.

In simple terms, the career managers supply the faces while ORD selects the spaces based on readiness prioritization. From there, every WO and validated job will be entered into the marketplace. One key benefit to those taking part in the marketplace is that everything is on the table; every job that meets the Army's readiness requirements is posted with the required knowledge, skills, behaviors, and qualifications. There may be limited turbulence in the marketplace that causes jobs to be added or dropped with small fluctuations in the pool of available officers, but the overarching concept remains true.

FOSTERING TALENT DEVELOPMENT TO BUILD A BENCH

All aviators begin the same way—as an untracked pilot arriving fresh to a unit from Fort Rucker. At this point, assignments are driven by equitable strengths across the entire aviation force, because the Army has well over 100 percent authorized strength for untracked aviators. Every new aviator will spend the next 3 to 4 years working toward a pilot-in-command (PC) qualification. There is no incentive or justification to move an officer who is not a PC and does not have the minimum qualifications to attend a track-producing school when all available locations exceed their authorized strength. If an untracked aviator does move, it will be from an overseas location or extenuating circumstances.

Career managers will make every effort to send an untracked PC to a skill qualification course en route to the next assignment. Human Resources Command is allocated a certain number of seats for many schools that aviators will require throughout their careers. Generally, more opportunities for courses are available during the summer move cycle from April to September, so schools do not have to worry about minimum manning effects occurring in late December. If a course is full during the winter cycle, it may be possible to push an officer's Year-Month Available to Move (YMAV) date to the next cycle to accommodate attendance.

Units are also encouraged to "grow their own" tracked officers. Officers will usually be extended a minimum of 1 year from their graduation date to afford the unit time to benefit from the newly acquired skills and the funds invested to attend the school. For most overseas locations, the extension has become a necessity to justify the increased costs of travel. For units that want to send officers to schools, Command Chief WOs, or CCWO, and Senior WO Advisors, or SWOA, need to reach out to the career managers early, preferably before the next manning cycle's mission-essential

An AH-64 Apache pilot with 2-6 Cavalry Squadron, 25th Combat Aviation Brigade, 25th Infantry Division, prepares to conduct Advanced Aerial Gunnery Tables in August at Pōhakuloa Training Area, Hawaii. U.S. Army photo by SGT Sarah D. Sangster

requirements (MER) window closing.

Two factors drive this timeline: Career managers are slotting Officers Identified to Move (OIM) into courses and, sometimes more importantly, any seat left open within 45 days of the start date can be filled by any entity, e.g., Army Reserve Aviation Command, Department of State, or Department of Homeland Security, and is often filled by the National Guard.

Of all the WO tracks, the most challenging to develop is the Aviation Maintenance Officer, i.e., a Maintenance Test Pilot (MTP). Two courses are required that rarely line up for back-to-back attendance: The Aviation Maintenance Officer Course (AMOC) and the airframe's Maintenance Test Pilot Course, or MTPC. Human Resources Command career managers often must rely on the units to send prospective candidates to the AMOC for 5 weeks prior to their departure. Commanders tend to support this collaborative effort, knowing that they will not directly receive a return on their investment but support developing an MTP for the aviation enterprise. As long as both courses are required, HRC and the unit commanders will need to continue this partnership to prevent a crippling impact to a cornerstone specialty in Army aviation.

CW3 Denise Alonso-Griffie, a UH-60 senior instructor pilot assigned to 5th Battalion, 101st Aviation Regiment, 101st Combat Aviation Brigade, finishes her pre-flight inspection before an air assault during a training scenario in Kilkis, Greece on Jan. 20, 2021. U.S. Army photo by SPC Jabari Clyburn

Developing talent does not stop with the first course of a chosen specialty. No matter where an officer is stationed, most will say that there is never a good time to attend an advanced course to continue stewardship of his or her trade. Reasons may vary from person to person, but it usually comes down to a command not wanting to lose an officer for an extended period, no "white space" on the calendar, or various personal objections. For two tracks, safety and survivability, most officers are likely unaware of the options available to them. In the end, there are no positions within a combat aviation brigade (CAB) where the workload cannot be distributed amongst peers so that professional development can continue. Some examples of those courses are:

U.S. Army MH-60M Black Hawk helicopters flown by members of the 160th SOAR (Airborne) prepare to insert Ukrainian, Bulgarian, and U.S. Army Special Operations Forces near Yambol, Bulgaria during an air assault operation June 18, 2019, as part of Exercise Trojan Footprint 19. U.S. Army photo by SFC Whitney Hughes

Back to Table of Contents

MAINTENANCE OFFICERS

• Government Flight Representative Defense Acquisition University

• Contracting Officer's Representative Fort Lee, Virginia

MISSION SURVIVABILITY OFFICERS

• Joint Firepower Course Nellis Air Force Base, Nevada

• Air Defense Airspace Management/Brigade Aviation Element (ADAM/BAE) Air/Ground Integration Course Fort Sill, Oklahoma

SAFETY OFFICERS

• Advanced Aircraft Accident Investigations Fort Rucker, Alabama

STANDARDIZATION OFFICERS

• Aviation Master Gunner Course Fort Rucker, Alabama

Continued development extends beyond track specific courses. All aviators should strive to attend their commensurate WO professional military education (PME) course between the release of promotion list and 1-year time-in-grade. Aviators fall significantly behind the technicians when it comes to completing PME. Professional military education affects standardization officers the most. Department of the Army Pamphlet 600-3, "Officer Professional Development and Career Management," requires senior instructors to complete the WO Intermediate Level Education course before awarding the skill qualification identifier "H" (Department of the Army, 2019). The most common justification from all tracks for nonattendance is reaching a terminal rank. Promoting to a rank that allows retirement does not validate a reason to stop learning and developing talent. All WO PME courses are conducted in a temporary duty status at no cost to the unit and have no active duty service obligation attached.

Fostering talent development also requires senior leaders and mentors throughout the enterprise to encourage young aviators to seek out unique opportunities that exist beyond the CAB. The 160th Special Operations Aviation Regiment (Airborne) conducts year-round recruiting and assessment. Every name chosen for assessment will pass through HRC for branch release from aviation to Army Special Operations Forces. Career managers will review each officer's status for potential conflicts, e.g, is the officer currently on orders to another assignment? Conflicts are assessed on a case-by-case basis, but they may cause a delayed branch release for up to 15 months to allow the officer to fulfill current commitments. To prevent any possible delays, all officers should contact their career managers when a packet is submitted.

THE EFFECTS OF STABILIZATION ON THE MARKETPLACE

Moving to a new duty station every few years is part of the Army culture. The frequency of moves has been a topic of discussion over the past several years, as people want to keep from uprooting their families and provide a sense of stability and predictability to their loved ones. Unless an officer is serving in a restricted location for 12 months, YMAVs will default to 36 months from the time of arrival. The exception is an accompanied tour to South Korea for 24 months. Career managers can usually support extending an officer for an additional year, possibly more depending on the airframe, but the limitations are drawn from one source—overseas tours.

UH-60s assigned to 3rd Battalion, 501st Aviation Regiment, 1st Armored Division, prepare for departure from Germany to Denmark to provide mission support in July 2004. U.S. Army photo by CW4 Brent Adams

Back to Table of Contents

The Joint Travel Regulation establishes tour lengths for all overseas locations and can be 12, 24, or 36 months, depending on the location and type of overseas tour. Overseas tours have a finite length without intervention from the officer. High turnover is experienced by every short tour location, e.g., Honduras, Egypt, and South Korea. The consistent requirement to fill these units is the driving reason behind why career managers cannot indefinitely extend officers in the continental United States (CONUS), regardless of if they are assigned to a CAB or non-combat battalion. If this did occur, HRC would eventually run out of available OIMs to send overseas.

Extended stabilization has also demonstrated effects on the talent marketplace. Feedback received from marketplace participants often asks why there are so few jobs available. Using simple numbers, if a CAB has 300 aviators, instead of rotating 100 officers over the course of a year, the number has been reduced to 75 if every officer extends for a fourth year. The reduction of 25 movers per CAB does not decrease the demand to backfill overseas units. Instead, the jobs available in the marketplace inch closer and closer to a one-to-one swap between officers located overseas and those in CONUS.

Overseas stabilization is encouraged by Army policy. Officers who want to stabilize their families can do so through Foreign Service Tour Extensions (FSTE) and Continuous Overseas Tours (COT) outlined in Army Regulation 614-30, "Overseas Service" (Department of the Army, 2016). Those who are considering FSTEs and COTs need to reach out to their respective career manager to ensure deadlines are established and met to prevent the officer from being declared an OIM and placed in the talent marketplace.

AVOIDING A TALENT CLIFF

Each CAB and non-combat battalion commander throughout the enterprise is continuously assessing how they will fight and win tonight and how they will continue the fight 6, 12, and 18 months from tonight. Time and again, the easiest way seen to ensure consistent readiness is to keep the talent already present within the unit. On the surface, it comes across as a win. The commander has fewer issues with turnover, flying hour programs are spent for missions instead of constantly training a new member of the team, and the unit's WOs and their families are stabilized for a longer time. Unfortunately, this short-term "win" for the unit will have long-term consequences for the enterprise if it is not used sparingly.

The most common reason that commanders request to extend their officers is related to deployments. The Army has transitioned away from the Army Force Generation (ARFORGEN) model that stabilized units prior to and through a deployment, followed by a mass exodus within 90 days of returning to their home station. Over the last few years, the Army, and by extension, HRC, has moved officers using the Sustainable Readiness Model (SRM). The SRM moves officers around the Army regardless of the losing or gaining unit's location and status. The report date set by the gaining unit during the MER is the timeline that must be met by the officer and supported by the losing unit. This monumental shift would cause concern for any commander; however, it presents unique challenges for aviation commanders because of the amount of time it takes to integrate a new aviator.

The career managers within the aviation branch at HRC will make every effort to stabilize a unit as much as possible before deploying to a two-way range; but, it also requires significant planning from the CAB's senior leaders. Extending every officer's YMAV to the cycle after the deployment is not the correct answer since it perpetuates the ARFORGEN model that has long since sunset. Senior leaders need to start looking at a full cycle before their deployments to accurately assess the upcoming mission needs. This may require officers to move earlier than expected, i.e., at 30 months' time-on-station instead of 36 months, to receive an officer who will arrive in time to train up with, deploy with, and provide stabilization to the unit. Proactive talent management will do more for the commander than taking a reactionary posture.

TAKING GUIDANCE FROM THE TOWER

Much like our air traffic and airspace management technicians, the career managers at HRC are providing talent management overwatch for the entire aviation enterprise. Moving over 2,000 aviators per year is a challenging task by itself before factoring in specific unit requests and requirements, as well as guiding officers on career progression.

Warrant officer aviators are unique from their technician counterparts. A technician will typically be assigned to higher echelons of command through natural career progression and selection for promotion. Aviators are different because they can spend their entire career within a CAB at the battalion level or lower. Select aviators will serve in echelons above brigade; however, those positions do not usually appear before being promoted to CW4…almost 14 years into WO service. Career service at the brigade level and below can generate a jaded view of how the Army manages talent and readiness at the enterprise level.

At HRC, every career manager works 12 to 15 months in the future at any given time. Officers must understand that the career managers' deadlines are used to reduce turbulence in the marketplace for both participating officers and units. Many officers do not see the impacts their decisions have on

Back to Table of Contents

the force at large. Suppose an officer has been declared a mover, misses the deadline to adjust his or her YMAV, and is removed after the marketplace is set. In that case, a job must also be removed from the marketplace to balance the books, and a unit that was expected a backfill will now go without an officer. To help minimize the turbulence to the marketplace, the final approval authority to add or remove an officer elevates as time progresses in the same manner as a risk assessment completed before any flight. If an officer meets the deadline, the career manager can add or remove an officer. If an officer misses the deadline, the branch chief, a former battalion commander, can approve the change until the marketplace starts. After the marketplace begins, the division chief, a former brigade commander, must approve the change.

After the marketplace closes, the most common misconception is that an officer can plan on moving to an assignment because a "one-to-one match," i.e., the unit and officer ranked each other as their first preference, was secured with a unit. This match may occur eventually, but a "one-to-one" match does not occur until the dust settles and the ATAP computer algorithm completes the slate. Several external factors can potentially cause late market turbulence, e.g., the Married Army Couples Program or exceptional family members who require specialized treatment, which is only available at select locations. External factors coupled with a reduced number of movers from stabilization can cause an extended ripple effect across the marketplace. Career managers and account managers cannot reveal preference data to officers or units, but if a "one-to-one" preference is believed to be affected by the ATAP algorithm, officers and units are encouraged to reach out to their representatives at HRC for a discussion.

A UH-60M and HH-60M fly into the Arizona sunset during a ferry flight from Lakehurst, New Jersey, to Los Angeles, California to deliver the aircraft to 25th Combat Aviation Brigade. U.S. Army photo by CW4 Brent Adams

INTEGRATING TALENT MANAGEMENT INTO FUTURE OPERATIONS

The ATAP continues to integrate and modify our methods of manning the force with aviators. Talent management has transformed how career managers interact with their populations. Officers are grouped by similar skills and ranks before being tossed onto a level playing field in the ATAP marketplace. Those who are proactive and participate in the market have generally been rewarded for their efforts with an assignment in one of their top five preferences. As this process continues to evolve, officers at every level must begin to assess their abilities and articulate to a potential future commander why he or she is the best fit for the job. Senior WOs in every formation will need to continue teaching, coaching, and mentoring the next generation of aviators how to adapt to this changing environment that seeks to balance the individual's desires with maintaining the readiness of the aviation enterprise through effective leader development and talent management.

CW4 Brent Adams is a UH-60A/L/M Maintenance Evaluator who recently completed a tour at the US Army Human Resources Command as a UH-60 Career Manager and Operating Forces Account Manager. His previous assignments include OPMSANG, 25th CAB, 101st CAB, JTF-Bravo, and 12th CAB with deployments to Iraq, Afghanistan, Romania, and Bulgaria. He is currently serving as a Battalion AMO in 25th CAB.

References:

Department of the Army. (2016). *Overseas service* (Army Regulation 614-30). https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN6427_AR614-30_WEB_Final.pdf

Department of the Army. (2019). *Officer professional development and career management* (Department of the Army Pamphlet 600-3). https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN14707_DA%20Pam%20600_3_FINAL.pdf

Six UH-60L Black Hawks and two CH-47F Chinooks, assigned to Task Force Brawler, 4th Battalion, 3rd Aviation Regiment, Task Force Falcon, simultaneously launch a daytime mission Jan. 18, 2013 from Multinational Base Tarin Kowt. U.S. Army photo by SGT Scott Tant

Literature for Multinational Operations

By CW4 Dustin Case

Afghanistan, 2010: We were about 8 kilometers away from our intended destination, a low valley in the Uruzgan Provence. Our team of two Apaches was tasked to work with a unit from the Netherlands out on patrol. They drove from an outpost and dismounted from four armored vehicles, planning to work their way through a small village. The mission was based on intelligence indicating the locals were hiding a cache of explosive materials, and it was important to have the two attack helicopters overhead for security.

Checking in with a native Dutch-speaking joint terminal attack controller (JTAC) can be problematic. We were only 2 minutes from overflying their position on the ground; the radio waves would not carry far in the mountainous terrain. My gunner nonchalantly broadcast over the radio, telling anyone on the same frequency who we were and roughly where we were at. An obviously skilled controller came back with a heavily accented, rapid-fire situation update. It was line-by-line straight out of the J-fires book.[1] Then there was a long uneasy pause before I heard my gunner ask me, "What did he say?"

I will admit, I was also rusty on the check-in. I'd been flying with a different gunner, and had become totally dependent on him. I did have a few cheat-sheets on my kneeboard. Thankfully, on that particular day in Uruzgon, we had time to figure it out. On the second attempt, we received the threat, enemy situation, friendly situation, artillery status, clearance authority, hazards, and remarks via three short radio transmissions. All the information was clearly transmitted in less than a minute.

The value of knowing to listen for specific words when they are delivered in broken and accented English cannot be overstated. Our U.S. aircrew and the Netherlander JTAC had learned the same techniques and same vocabulary from two different schools on opposite sides of the Atlantic Ocean. Here, we met on

[1] Army Techniques Publication 3-09.32, "Multi-Service Tactics, Techniques, And Procedures for Joint Application of Firepower" gives special instructions for aircrews of close air support aircraft supporting ground forces by delivering fires (Air Land Sea Application Center, 2019).

Back to Table of Contents

a third continent to put those techniques to the test.

Literature is a teaching tool: Using literature to teach doctrine is as simple as recording relevant experience and operational history, and then offering the summarized lessons to future leaders. It was recorded in our doctrine a long time ago; one of our most powerful tools is the combined-allied application of force. As the Army prepares for large-scale combat, we must plan for the obvious integration of multinational forces at all three levels of war. An implied task is to read, learn, and evaluate the literature we use.

Like our Army, the North Atlantic Treaty Organization (NATO) produces a lot of reading material.[2] There are many different types of publications relevant to multinational aviation operations:

• Allied joint publications, published by the NATO Standardization Office (Figure).[3]

• STANAGs, or standardization agreements, are something comparable to an Army techniques publication or technical manual.[4]

• LibGuides are part of the NATO multimedia library and can help narrow down your desired reading list.[5]

South Korea, 2038: The aircrew of the seven U.S. Army vertical attack aircraft did not have any reason to speak to the on-scene Korean mission commander as they approached to conduct passage of lines. Captain Future, the mission commander for the Army flight simply asked her onboard computer for the fuel status of the Korean aircraft. The system-generated voice told her they had 3 minutes to relieve the allied force before they ran too low on fuel. Now was not a good time for the counterattack to stall. Seconds later, the artificial crewmember spoke again and told Future, "I'll show you allied force positions in blue, targets already engaged in yellow, and new threats in red." The artificial crewmember then overlaid the relevant information on Future's up-front display.

Today's Solutions: The problems we solve with multinational doctrine today may be solved with some interesting interoperability solutions in the future. For now, one of the main advantages to joint publications is they are already available. You can find many joint publications (JPs) with a simple Google search. You can bet that the foreign forces we are training with today have prepared by at least reading JP 3-0, "Joint Operations," (Joint Chiefs of Staff [JCS], 2018) and JP 3-16, "Multinational Operations," (JCS, 2021).

A joint force is not assumed to be a multinational force. However, as the Department of Defense's lead on developing the Joint Force, the office of the Chairman of the Joint Chiefs of Staff (CJCS) is one of the primary agencies responsible for global integration (JCS, 2021). The CJCS establishes policy and publishes literature for joint operations. In addition to joint publications, the CJCS produces instructions, manuals, notices, and guides. You can find all of these at the JCS Library website, including, for example, instruction on how to write joint literature.[6]

Iraq, 2008: We had intended to fly, but remained grounded and on alert due to the weather conditions. The visibility was about a half-mile, which is probably why the enemy chose to attack a small British outpost near the center of Basra that day. After receiving notification of troops-in-contact with casualties, we got our flight of four aircraft airborne as quick as ever. I led the two Apaches and two Black Hawks, alternating between using the pilot's night vision system and my own eyes to try to burn through the dust. We were going to go in, pick up any casualties, and simultaneously put down fires that would break the enemy attack.

We overflew the landing zone, and there were clearly small explosions

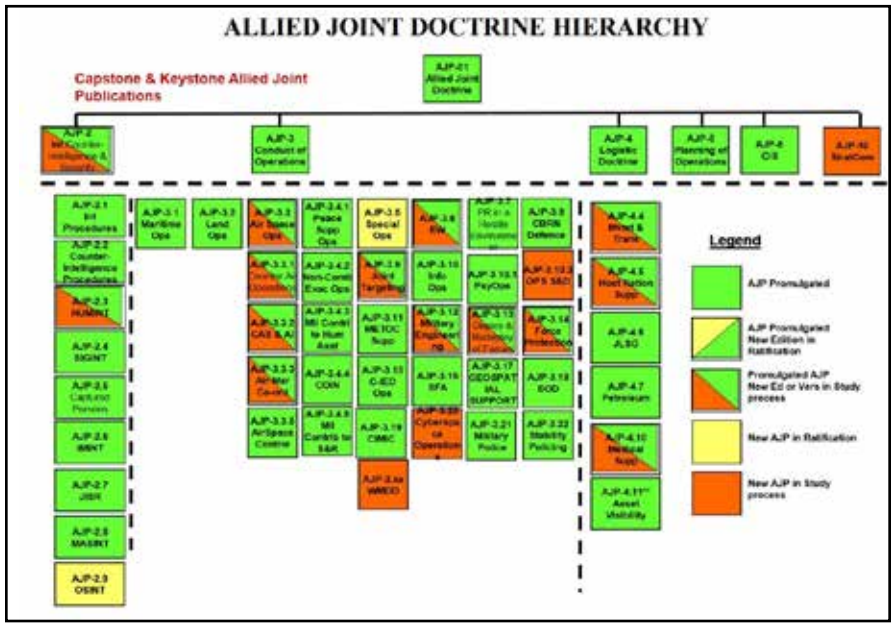


Figure. Graphic from the joint guide for interagency doctrine (Joint Chiefs of Staff, 2019)

[2] Users must request access to most NATO publications through the NATO Standardization Office public website https://nso.nato.int/nso/SOSite/default.html (NATO Standardization Office, 2021).

[3] Allied joint publications are similar in nature to joint publications and field manuals.

[4] There are dozens of STANAGs relevant to Army aviation.

[5] These digital library guides are arranged in broad categories. You can drill down to greater detail through a series of web links (NATO Multimedia Library, 2021).

[6] The JCS website (https://www.jcs.mil/) is arranged with joint publications under the doctrine dropdown, and other CJCS literature under the library dropdown.

A U.S. Army AH-64 and a U.S. Air Force A-10 prepare for a joint live-fire exercise with the South Korean Navy. U.S. Army photo courtesy of the author

popping off from incoming mortar fire. Our well-disciplined team moved about 3 kilometers away from the outpost to change formation. The risk of running into each other was greater than the enemy threat. The two Apaches went back overhead and try to find the insurgent mortar team. Sometimes flying at less than 70 knots, we could only hope there wasn't an anti-aircraft gun down there.

Almost by accident, we learned there were two British Tornado GR4s that had arrived overhead shortly before we did. While we were in contact with the landing zone controller at the outpost, a British JTAC at Basra Airfield talked to the jet pilots on a different frequency. Below 2,000 feet, the GR4s were basically invisible in the heavy dust, and I knew they could not see us. The jets flew far too fast to see anything in the limited-visibility conditions.

The Tornado pilots could not release any ordnance because they could not see anything, and because of the more restricted British rules of engagement. But the JTAC wanted the jets low and loud to try and deter the insurgents attacking the British outpost. All this added up to create a huge risk for all the allied parties involved, and almost no danger to the enemy attackers. With the weather, enemy, and risk of mid-air collision all stacked against us, I lost my cool. I called over the radio white-hot angry, "Get that [expletive removed] fast mover out of our [expletive removed] way so we can put down fires." I only succeeded in yelling at my wingman. In the heat of the moment, I had selected the wrong radio to transmit on.

Long story shorter—we made it work. The crews of both Black Hawks made a heroic approach to evacuate casualties, our Apaches' crews simultaneously suppressed the enemy attackers with rockets and gun, and the Tornado pilots flew lonely circles over the dust cloud. A successful mission; however, multinational doctrine had failed us on all three levels that day. Tactically, our American and British techniques for alert-aircraft were not synchronized. Operationally, our American, British, and Iraqi headquarters were not getting us good information on the multinational-friendly situation. And strategically, our nations did not even have the same rules of engagement. There are surely improvements to be made still today.

Multiservice Tactics: The Air Land and Sea Application (ALSA) Center is another valuable source of shared training material. The Center maintains the multiservice tactics books we used to train to work effectively between different services, and most of these books are available to five-eyes.[7] Multiservice tactics books usually have more than one publication number. Each of the services' doctrine centers assigns its own number when agreeing to use them.[8]

The U.S. Army will be successful in whatever situation it is required to handle. That is our only choice. But, we can make our fighting force more effective by studying the past and deliberately preparing for the future. Read multinational literature, speak the multinational language, and critique when you have an opportunity to improve our doctrine for those who follow in our profession.

CW4 Dustin Case is a tactical operations officer and maintenance test pilot currently serving in the USAACE Directorate of Training and Doctrine. He has worked on joint operations with the Air Force, Navy, and Marine Corps, and on multinational operations with Afghani, Australian, British, French, German, Iraqi, Netherlander, Romanian, and Korean armed forces.

[7] Five-eyes or FVEYE is used to describe the distribution for publications that may be shared between the United States, Australia, Canada, New Zealand, and the United Kingdom.

[8] As of this writing, there are 42 different multiservice books the Army has agreed to use (Army Publishing Directorate, 2021).

A British fuel handler and U.S. crew chief refuel an AH-64D after an alert launch at Basra Airfield. U.S. Army photo credited to author

References:

Air Land Sea Application Center. (2019, 18 October). *Multi-Service tactics, techniques, and procedures for joint application of firepower* (Army Techniques Publication 3-09.32). Headquarters, United States Army Training and Doctrine Command. https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=1007920

Army Publishing Directorate. (2021). *Search page for "multi-service"* (Army Techniques Publications). https://armypubs.army.mil/

Joint Chiefs of Staff. (2018). *Joint operations* (JP 3-0). https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_0ch1.pdf

Joint Chiefs of Staff. (2019, 4 November). *Joint guide for interagency doctrine.* Supplement to Joint Publication 3-08, Interorganizational Cooperation Appendices. https://www.jcs.mil/Portals/36/Documents/Doctrine/Interorganizational_Documents/jg_ia.pdf?ver=2020-02-03-151039-500

Joint Chiefs of Staff. (2021). *Global integration: What is it?* Chairman's Focus on Global Integration. https://www.jcs.mil/

Joint Chiefs of Staff. (2021). *Multinational operations* (JP 3-16). https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_16pa.pdf?ver=Z2GObyi__wW55p7kQZG07Q%3d%3d

North Atlantic Treaty Organization. (2021). *LibGuides.* Multimedia Library. https://www.natolibguides.info/

North Atlantic Treaty Organization. (2021). *List of current standards.* NATO Standardization Office. https://nso.nato.int/nso/nsdd/listpromulg.html

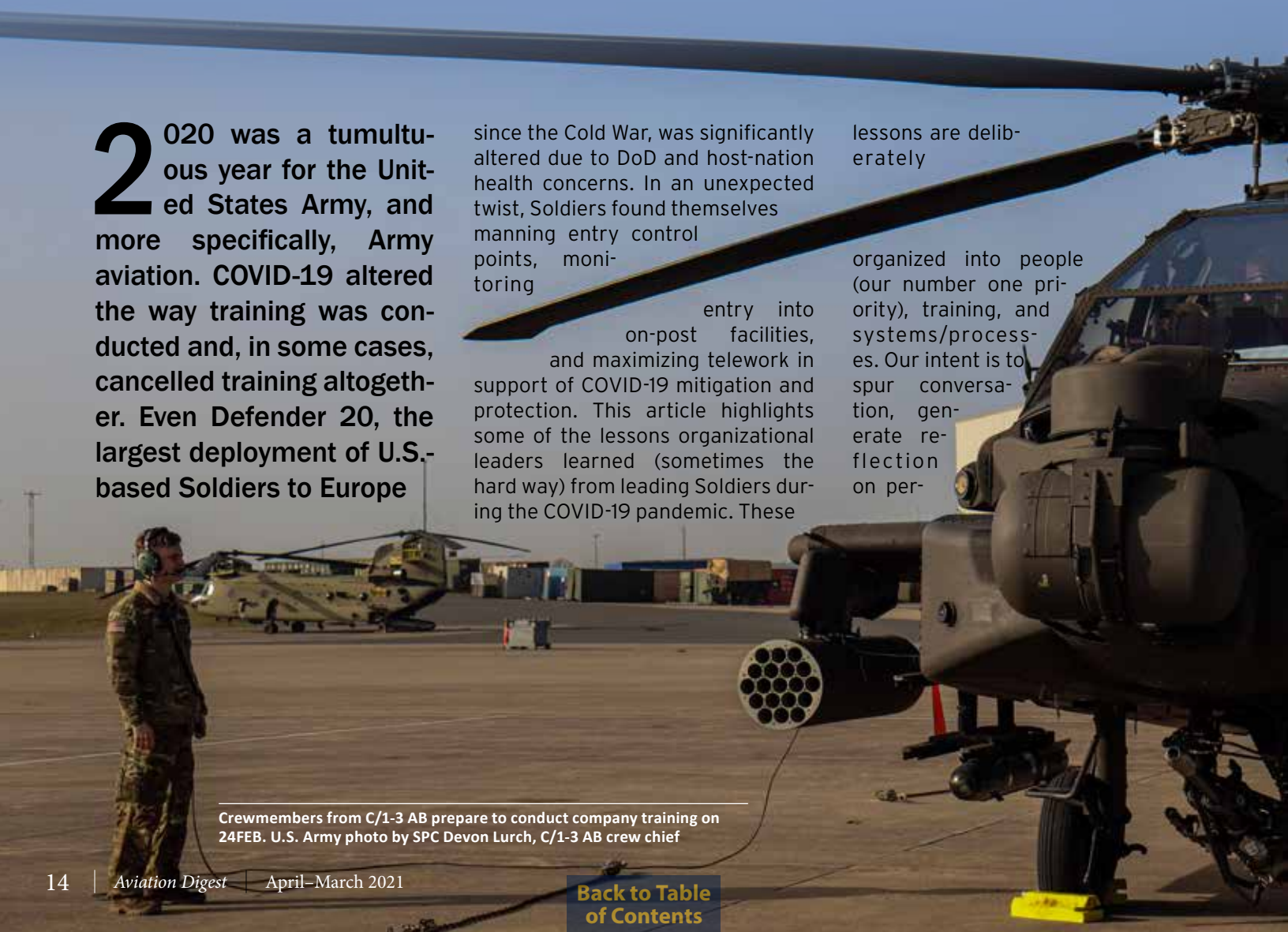
Authors' Note: *This is an opinion article. The thoughts expressed are those of the authors and do not necessarily reflect the views of Aviation Digest or the United States Army.*

THE NEW NORMAL:

EIGHT LESSONS FROM LEADING SOLDIERS THROUGH A GLOBAL PANDEMIC

By CPT Daniel J. Vigeant and CPT Phillip L. Savoie

2020 was a tumultuous year for the United States Army, and more specifically, Army aviation. COVID-19 altered the way training was conducted and, in some cases, cancelled training altogether. Even Defender 20, the largest deployment of U.S.-based Soldiers to Europe since the Cold War, was significantly altered due to DoD and host-nation health concerns. In an unexpected twist, Soldiers found themselves manning entry control points, monitoring entry into on-post facilities, and maximizing telework in support of COVID-19 mitigation and protection. This article highlights some of the lessons organizational leaders learned (sometimes the hard way) from leading Soldiers during the COVID-19 pandemic. These lessons are deliberately organized into people (our number one priority), training, and systems/processes. Our intent is to spur conversation, generate reflection on per-



Crewmembers from C/1-3 AB prepare to conduct company training on 24FEB. U.S. Army photo by SPC Devon Lurch, C/1-3 AB crew chief

Back to Table of Contents

sonal experiences, and codify best practices to assist company grade leaders in leading their organizations amidst future uncertainty.

1. MAINTAIN A POSITIVE ATTITUDE

COVID-19 is mentally exhausting. It has single-handedly created global uncertainty, upended professional and societal norms, and intensified preexisting stress and anxiety. While Soldiers have displayed tremendous resiliency and perseverance in carrying out their missions in the pandemic environment, it is necessary to acknowledge the mental, emotional, and spiritual fatigue that comes with COVID-19. Equally, leaders are not immune to these same conditions, amplified even still by the daily trials and requirements of leadership, especially for those officers and noncommissioned officers personally responsible for Soldier welfare. Having a clear understanding of the issue, both for ourselves and our Soldiers, allows us to search for possible solutions. Simply stated, it is imperative we take care of ourselves foremost so that we may better serve our Soldiers. We owe them no less than 100 percent of our time, energy, and positivity.

Managing our well-being allows us to better assist those we are responsible for. What that looks like will be markedly different for every individual and can be as varied as devoting time to reading, physical fitness, or learning a new skill or hobby. Others will recharge from spending time with their children or significant other. There is no wrong answer, so long as the activity benefits the individual's spiritual, mental, and emotional well-being. Once well-being is accounted for, we can then turn our thoughts and attention to our Soldiers.

As leaders, we shape the collective culture of our organization. Negativity breeds negativity; a leader with a toxic attitude will spread that attitude quickly throughout the formation. The greater the position in the organization, the more intensified the effect will be. As such, we must arrive to our organizations every day empathetic, motivated, and in good spirits. Unfortunately, and largely due to COVID-19, some days will be easier than others. This does not release us from our obligation to consistently provide compassion and positivity. Arguably, it is in those challenges we must arrive more attuned and compassionate to our or-

SPC Jackson Despas, C/1-3 AB extracts a fuel sample from an AH-64D prior to a training flight on Katterbach Army Airfield, Germany. Photo courtesy of MAJ Robert Fellingham, 12th Combat Aviation Brigade Public Affairs Officer

ganization's needs. It is our attitude as leaders that will allow us to identify changes in individual behavior and dips in organizational morale, while at the same time, managing the welfare of our Soldiers.

2. SOLDIER WELFARE ECLIPSES ALL

Soldiers want to fix and fly aircraft. Equally, they are social creatures who want to interact with peers, friends, and coworkers. At its core, this pandemic has upended these professional and societal norms that motivate and provide our Soldiers with purpose. COVID-19 has caused off-duty establishments to close their doors, restrictions to be placed on travel and leisure, and social activity to be replaced by social distancing. These sudden changes have consequently resulted in sustained periods of isolation and a decrease in morale and motivation. Our Soldiers are tired, downtrodden, and eager to return to social and professional normalcy.

Current conditions require us to be engaged in our Soldier's lives more than ever. We must make time to step out of our offices, turn off the email, and interact with them on a personal level. This is the only way we can build trust, gauge our organization's climate, and most importantly, recognize drastic changes in Soldier behavior. We don't have to overcomplicate it or expend a ton of resources. Simply conversing with Soldiers on a personal level could have unknown positive impacts. While more resource and time intensive, we can host activities in a manner that builds unit cohesion without needlessly placing our Soldiers at risk of exposure. Hosting an online gaming tournament, virtual trivia night, or drive-in movie are several examples we have seen that can keep Soldiers and their Families socially engaged, yet socially distanced. Regardless of how simple or complex the engagement, the Soldier will appreciate the effort and be thankful for the genuine leadership.

SPC Jackson Despas from C/1-3 AB services an AH-64D prior to company training on 24FEB. U.S. Army photo by SPC Devon Lurch, C/1-3 AB crew chief

3. SPONSORSHIP HAS NEVER BEEN MORE IMPORTANT

Permanent change of station (PCS) moves are inherently stressful, and COVID-19 has exacerbated that stress exponentially. Welcoming our newest teammates has been drastically altered due to changes in arrival, in-processing, and sponsor procedures. In this environment, sponsorship takes on a greater importance and must be emphasized at all echelons. If executed correctly, it allows us to show our Soldiers that their membership is valued in our organization before they even arrive to the formation.

Sponsors need to contact incoming Soldiers as soon as possible. Through this initial contact, sponsors can communicate specific COVID-19 restrictions and begin forming a relationship between the Soldier and the gaining unit. For some locations, housing may need to be coordinated prior to the Soldier's arrival. Sponsors can begin this process and ensure essentials are available to the Soldier if they must quarantine. Small gestures, such as working with the post internet provider to ensure our new Soldiers have access on arrival or coordinating with the commissary to support remote credit card purchases can pay huge dividends. Through special and individualized assistance, inbound Soldiers feel like members of our team, even before their arrival.

Prior to COVID-19, many sponsorship programs were not prioritized as critical to mission success. Rather than being an afterthought, sponsorship needs to be prioritized and assigned to capable Soldiers. In some cases, personnel may need to forego training opportunities to lead a rear detachment's sponsorship activities. In this same vein, choosing a trustworthy member of the team to serve as a sponsorship liaison can pay dividends in laying the groundwork for a successful sponsorship program. This individual can establish initial contact with the inbound Soldier, coordinate with assigned individual sponsors, and synchronize activities with garrison agencies. Ultimately, the renewed emphasis on sponsorship programs has become a key factor in increasing unit cohesion and overcoming many of the potentially detrimental effects of the pandemic.

4. LEVERAGE THE SOLDIER FAMILY READINESS GROUP

Back to Table of Contents

One of the greatest assets available to a leader, especially in the COVID-19 environment, is the Soldier Family Readiness Group (SFRG). Army Regulation 608-1, "Army Community Service," tells us the SFRG is "An organization of Family members…, volunteers and Soldiers belonging to a unit, that together provide an avenue of mutual support and assistance, and a network of communication among Family members, the chain of command and community resources" (Department of the Army, 2017, p. 75). Additionally, it tells us the SFRG's mission is to act as an extension of the unit in providing official and accurate command information to help Families solve problems at the lowest level (Department of the Army, 2017, p. 58).

In many cases, inbound Soldiers and their Family may need to quarantine immediately on arrival, adding to the already inherent stress of a PCS move. This is where the SFRG can tie directly into, and complement, the unit's sponsorship program by welcoming new Families and reducing any initial sense of isolation. For example, SFRG volunteers can be sourced to deliver welcome baskets with household essentials and valuable information. Newly arrived spouses benefit greatly from being linked in early with another spouse rather than their Soldier's sponsor. Equally, the interaction with another spouse can help foster a sense of community and openness, further benefiting unit cohesion.

COVID-19 naturally creates friction through uncertainty, especially for Families. We must do everything in our power to flatten communications to reduce said friction and provide the most up-to-date accurate information to the Soldier and their Families. The easiest way to accomplish this is through leveraging the SFRG. Soldier Family Readiness Group social media pages (keeping in mind operations security, or OPSEC, considerations), social rosters, consistent monthly SFRG meetings, and simple face-to-face communication are just some of the ways by which we can regularly engage with everyone in the organization. Through habitual use, we can deliver timely and accurate information regarding policy changes, garrison activities, and resources available. If nothing else, the SFRG is a forum by which we can quell rumors, ask questions, seek clarification, and cross-communicate; its importance cannot be underestimated.

5. UNIT READINESS CAN BE INCREASED

Maintaining and increasing unit mission-essential task (MET) proficiency is challenging, even under the best of circumstances. The COVID-19 pandemic has added a layer of complexity to an already complex undertaking. It is crucial that the unit training plan accounts for current individual/collective proficiency, emphasizes repetition of key battle tasks, and accommodates for the ever-changing COVID-19 environment. Equally, the training plan must nest tightly within higher headquarters' unit training plans and annual training guidance. Only through understanding higher headquarters' requirements and nesting our own can we adequately prepare our formations for challenging battalion and brigade collective training. Using these doctrinal tenets, it is achievable to maintain, and even increase unit readiness in the midst of a global pandemic.

Considering the COVID-19 environment, we can take several proactive steps to ensure we are conducting quality training and taking full advantage of time available. First, COVID-19 mitigation must be factored into every training event. Depending on local laws and general orders, this may look like rigorous surveillance testing, modified sleeping arrangements, or mandated quarantine requirements effectively placing the training audience in a protected "bubble." Whatever the requirement, it must be factored into the training event through all phases. Second, prioritize METs and assume appropriate risk. According to Army Doctrine Publication 7-0, "units cannot simultaneously train every task to standard because of mission, time, or resource constraints" (Department of the Army, 2019, 4-3). Once prioritized and nested in higher headquarters' training objectives, these METs must be trained relentlessly with resource allocation prioritized to weight key training events. Lastly, leaders must take full advantage of the 8-step training model. In the time and resource constrained COVID-19 environment, this framework "provides a flexible and reliable vehicle for creating continuity for planning and managing…training events" (Department of the Army, 2016, p. 3-3). For junior leaders, it serves as a roadmap to develop and lead quality unit training while accounting for higher headquarter priorities and COVID-19 mitigation.

6. AVIATION MISSION PLANNING

All aviation missions necessitate a certain degree of planning. Regardless of complexity, these missions require company planning cells to devote significant energy toward meeting commander's intent, mitigating risk, and creating shared understanding. To efficiently meet these gates, the process must be interactive and collaborative. In this manner, the COVID-19 environment does not lend itself to planning aviation operations. This is not to say it has stopped us from doing so, but it has greatly altered the ways and means by which we safely plan.

Under normal conditions, the receipt of an aviation mission triggers company planners to split into planning cells, digest the higher headquarters order, and begin troop leading procedures. Planners often gather in groups around maps or the Aviation Mission Planning Software machine discussing performance planning, route refinement, landing zone

Crewmembers from C/1-3 AB prepare to conduct a company deliberate attack mission on 24FEB. U.S. Army photo by SPC Devon Lurch, C/1-3 AB crew chief

suitability, battle position selection, and threat analysis. Once complete, these same planners, along with key leaders from across the organization, gather around a table or terrain model and receive an air mission brief, followed by some form of a rehearsal. The entire process places participants near each other, blatantly in defiance of COVID-19 social distancing protocols.

There are several methods to effectively conduct aviation mission planning in the COVID-19 environment. Digital teleworking systems such as Microsoft Teams work well in training but are not without fault. While these systems allow for easy file share and interaction, they do have limitations; planners will predominately plan in a vacuum, occasionally synchronizing efforts remotely throughout the process. Equally, this type of planning lends itself to the digital environment but would not be feasible in an austere or field environment. Ultimately, planners will need to assume some risk (with proper mitigation) to keep planning moving efficiently. Participants will eventually need to interact, whether at the standalone aviation mission planning system, during kneeboard packet production, or while rehearsing. The risk of COVID-19 exposure during these interactions can be mitigated through deliberate choice of briefing location that maximizes social distance and, of course, always enforcing use of an approved face mask.

7. AIRCRAFT MAINTENANCE AND CREATIVE PROBLEM SOLVING

Aviation maintenance is a never-ending demand specific to our branch that requires deliberate and constant focus to sustain. The COVID-19 environment has placed a strain on this critical function that never could have been predicted. This becomes most apparent during isolated outbreaks within the maintenance formation. As an example, an aviation unit is forced to quarantine due to a sudden spread of COVID-19 throughout the formation. Due to the quarantine of key personnel, that unit suddenly cannot perform its maintenance function. In the span of just 2 days, the organization may see an admirable 80 percent fully mission capable rate drop to below 50 percent due to scheduled maintenance that could not be performed. Preventing these dips in readiness due to unforeseen circumstances requires adaptivity and flexibility in managing aviation maintenance.

In the pandemic environment, staggered shift work is an excellent way to minimize risk to both the force and the maintenance mission. With no social distance mitigation in place, disaster can strike if a Soldier becomes COVID-19 positive. This is amplified if that same Soldier is in

Back to Table of Contents

a low-density military occupational specialty (MOS) (i.e., armament, airframe, or power plant). Suddenly, the Soldier's entire section is being quarantined, traced, and tested. This not only presents a health risk to the exposed Soldiers but can cripple the unit's ability to conduct aviation maintenance. We must be creative in how we manage workflow to minimize Soldiers' density in the hangar. Doing so serves to both minimize risk and keep maintenance operations ongoing.

Production control's mandated responsibility to establish, coordinate, and direct priorities of work takes on an even greater role in the COVID-19 environment. Depending on COVID-19 posture, maintenance must be deliberately planned against only essential personnel. To avoid congregation in shared workspaces, maintainers may remain postured at home for the duration of the day and only report to complete a specific task. Likewise, coordination with adjacent units and supporting elements such as tech supply, tool room, and quality control requires deliberate planning to ensure they are present and available when needed.

An obvious but potentially effective means to conduct maintenance during COVID-19 is reorganization of the shared workspace. Whenever possible, maintainers should try to conduct maintenance in open areas where the spread of COVID-19 may be mitigated. The hangar floor provides ample room and can be creatively organized to prevent unnecessary contact. Arranging workbenches and desks with spacing in mind is a great way in which leaders can create social distancing while still facilitating the accomplishment of maintenance tasks. However, it is the enforcement of simple protective measures that require the most leader engagement and supervision. Just as we require our Soldiers to conduct toolbox inventories after maintenance tasks, we must also be persistent in the enforcement of proper wear of masks and cleaning of surfaces.

Ironically enough, many of the required responses to COVID-19 coincide with the principles of sustainment. Anticipation, responsiveness, survivability, continuity, and improvisation are principles applied within and outside of the COVID-19 environment. In many ways, the pandemic has caused us to take a hard look at our maintenance programs and find gaps in our systems and processes. COVID-19 has unintentionally caused us to slow down, think deliberately about our maintenance practices, and emplace systems making us more efficient and flexible. As maintenance managers and leaders, it has improved our ability to identify systems deficiencies and creatively accomplish maintenance tasks.

8. DON'T FORGET THE SMALL STUFF

Personnel and equipment readiness impacts everything we do, even in the COVID-19 environment. Effectively managing this readiness requires constant supervision, emphasis, and leader engagement. Managing readiness has increased in difficulty due to telework, quarantine, and social distancing requirements. However, with modifications to accommodate for COVID-19, readiness through administrative actions, ground equipment maintenance, and command supply, discipline can still be accomplished.

Perhaps a permanent change ushered in through COVID-19 has been the acceleration toward making paperwork truly paperless. The ability to digitally review and sign memos, leave and pass forms, accountability reports, unit financial reports, and the myriad of miscellaneous paperwork that crosses a leader's desk naturally reduces physical interactions and streamlines processing. To further the paperless trend, deliberately developed and understood systems of digital organization are needed. The unit share drive can replace the in/outbox for administrative actions with items moved between folders as they go through the routing process. The infamous red pen edits on awards or evaluations can be recreated digitally which, in turn, streamlines corrections while minimizing the number of times paperwork is handled. Developing a clearly communicated digital process for administrative actions ensures continuity of unit functions for units in a COVID-19 posture.

Routine maintenance of ground vehicles can continue relatively unimpaired in a COVID-19 environment. The weekly preventative checks of all ground equipment should be altered to account for COVID-19 but also for battle rhythm efficiency. Instead of a once-a-week push for ground maintenance, we should apply a constant focus on spreading this task throughout the week. Small groups of Soldiers can conduct vehicle maintenance checks throughout the week with the added benefit of dispersing the force between their primary duties and the motor pool. Admittedly, COVID-19 protective measures may reduce the efficiency of the forward support company in repairing non-mission capable ground equipment. Dialoguing with the automotive maintenance technician can be fruitful in developing a way forward on this equipment. Often, the repairs can be accomplished with aviation MOS Soldiers assisting the limited number of wheeled vehicle mechanics. While often an overlooked task behind aviation maintenance, ground equipment readiness can be maintained from a socially distanced posture with enough command emphasis and deliberate focus.

A common sight in aviation tool rooms, hangars, or motor pools is Soldiers conducting the equipment inventories necessary to maintain a successful command supply discipline program. Through deliberately scheduling inventories and ensuring layouts are done in a secure area

Six AH-64Ds assigned to C/1-3 AB "Outcasts" departs Katterbach Army Airfield on 24FEB to conduct a company deliberate attack training mission. U.S. Army photo by SPC Devon Lurch, C/1-3 AB crew chief

where equipment can be prepared for inventory ahead of time, we can reduce the manpower requirements associated with property accountability. Special consideration should be given to ensuring inventories are not conducted in a confined area such as a shipping container or storage closet where social distance cannot be maintained. While often laborious, inventories are a necessary part of military life; through creativity, they can be conducted efficiently, yet safely, even in a COVID-19 posture.

CLOSING THOUGHTS

It would be naïve to think 2021 will not pose its own unique leadership challenges due to COVID-19; we aren't quite past the pandemic yet. However, at the time of this writing, three vaccines are actively in production and being globally distributed. Upwards of 25 million Americans have been vaccinated, and that number will exponentially increase with time. Soldiers are actively being vaccinated, infection rates are dropping, and society is slowly beginning to return to normal. Needless to say, the future is looking promising.

COVID-19 will quickly become a thing of the past. As it thankfully does so, it is important to reflect on the lessons learned through leading Army aviation units during the pandemic. While not an exact parallel, the requirements for dispersion, challenges to communication, uncertainty, and inherent friction during COVID-19 reflect certain aspects of the conditions we will encounter during Large-Scale Combat Operations. As stated by Chairman of the Joint Chiefs of Staff, General Mark Milley (2017), "We are going to have to empower [and] decentralize leadership to make decisions and achieve battlefield effects in a widely dispersed environment where subordinate leaders, junior leaders … may not be able to communicate to their higher headquarters, even if they wanted to" (Lopez, 2017).

In reflecting on the pandemic, we find few groundbreaking leadership lessons. Instead, we have seen the pandemic serving as a catalyst to refocus our units on basic leadership principles and practices. COVID-19 has forced us to slow down and given us the opportunity to reflect on leadership, refocus on doctrine, and improve weaknesses in our systems and processes. With the right perspective, we can view this period not so much a break from the normal as a shift to a new normal, leaving ourselves and our units better prepared for future uncertainty.

CPT Daniel J. Vigeant is the company commander for Charlie Company, 1-3 Attack Battalion. CPT Vigeant is a prior enlisted UH-60A/L maintainer and currently rated in the AH-64D with over 16 years of Army Aviation experience. He is a 2014 graduate of Arizona State University and a 2019 graduate of the USMC Expeditionary Warfare School.

CPT Phillip L. Savoie is the company commander for Delta Company, 1-3 Attack Battalion. His previous assignments include command of Charlie Company, 1-3 AB and platoon leader positions in 4-2 AB (attack and maintenance). He is a 2013 graduate of the United States Military Academy.

References:

Department of the Army (2016). *Train to win in a complex world* (Field Manual 7-0). https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/FM%207-0%20FINAL%20WEB.pdf

Department of the Army (2017). *Army community service* (Army Regulation 608-1). https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=1002972

Department of the Army (2019). *Training* (Army Doctrine Publication 7-0). https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=1007352

Lopez, C.T. (2017, May 5) *Future warfare requires 'disciplined disobedience,' Army chief says*. Army.mil. https://www.army.mil/article/187293/future_warfare_requires_disciplined_disobedience_army_chief_says

THE THREAT FROM ABOVE:

By MAJ Matthew G. Easley

DEFENDING AGAINST SMALL UNMANNED AIRCRAFT SYSTEMS

As the aviation instructor at the Maneuver Center of Excellence at Fort Benning, one of the questions my students often ask is how to counter small unmanned aircraft systems (UAS). Trying to explain that as an aviator, I do not really deal with shooting down small UAS, is a cop-out to the students. To them, I fly—therefore I should know all about UAS—whether friendly or enemy. In talking to these future infantry and armor company commanders, I started to think about the role of enemy UAS against aviation units.

Digging into my past, I remember my battalion's rotation to the Joint Multinational Readiness Center (JMRC) in 2017. We faced a situation most of us had not ever considered. What do we do with an enemy UAS? Before we even entered the "box," we found out. A UAS flew near our tactical assembly area (TAA). Based on the limited training we received, our Soldiers opened-up with small arms fire, trying to shoot it down. We were not successful; the enemy drone did not carry Multiple Integrated Laser Engagement System gear, and I'm not going to pretend our Soldiers were accurate enough to shoot down a small maneuvering target several hundred meters away.

The observer, coach, trainers (OC/Ts) were kind enough to remind us of the old adage, what comes up must come down. From the sheer amount of ammunition we shot into

Bravo Company, 2nd Battalion, 135th Infantry Regiment Soldier SPC Adam Wilhelm (center) uses the Drone Defender V2 to disable a drone while SPC Abraham Kiplagat (left) and SPC Jackson Carr (right) observe during Counter Unmanned Aircraft Systems training at Camp Lemonnier, Djibouti, Aug. 19, 2020. The Drone Defender V2 is an electronic warfare weapon that is capable of downing and disabling a small Unmanned Aircraft System, also known as a drone. U.S. Army photo by SGT Sirrina Martinez

the sky, some of the bullets, obeying the dictates of gravity, came down and struck a family riding in a car. Now we faced a public relations nightmare, as American forces had wounded the very civilians we were there to protect. Of course, this was all notional (the drone was real and we fired real blanks, but no civilians were harmed). The question remains; what should we do against an enemy aerial threat?

In starting to try to answer that question, I started asking more. When was the last time U.S. units practiced defense against aerial threats? For that matter, when was the last time the U.S. fought under possibly hostile skies? The last time American Soldiers were killed by enemy aircraft was April 15, 1953, during the closing days of the Korean War (Corcoran & Wilkins, 2013). Since then, when an American service member sees or hears something in the sky, the first thought is that it is friendly. Today, no matter what area of operations, that aircraft or UAS in the sky may not be friendly.

Recent conflicts show the increasing impact of UAS on operations. The war in Libya between the Government of National Accord and the Libyan National Army was called "the largest drone war in the world" by the UN Special Representative to Libya in 2020 (Gatopoulos, 2020). In the conflict between Armenia and Azerbaijan, drones have had such an impact to cause one pundit to defend armor, titling his article, "No, Drones Haven't Made Tanks Obsolete" (Bateman, 2020). Clearly, the threat of UAS is growing. These types of threats cannot be just waved away, watched from a distance as they happen to other countries and other theaters.

The TAA for an aviation unit would certainly be a high payoff target for an enemy, whether it is a peer competitor or a hybrid threat. We often think that an aviation battalion in a large-scale combat operation will be far to the rear, 30 kilometers or more from the forward line of troops (FLOT). We can certainly rely on the Air Force and our air defense artillerymen to defend us against airplanes and larger UAS, but what about smaller UAS?

Enemy special purpose forces (SPF), or perhaps a newer artificial intelligence-driven small UAS that does not rely on line-of-sight communications back to a ground-based human controller, would present a definite threat. A TAA 30 kilometers behind the FLOT is still within range of new indirect fire assets. A small UAS that finds a TAA can immediately pass that information back to an artillery unit. An aviation battalion on the ground would make a tempting target for an enemy willing to obliterate entire grid squares to achieve their desired effect.

Today's operating environment demands that an aviation unit must consider countermeasures against small UAS. Wishing the problem away does not make it so. In the long term, the Army is quickly trying to develop and acquire counter-UAS systems from the individual Soldier level to base defense. However, units can act now. They can develop techniques to minimize the threat of UAS, techniques that are still valuable even after fielding counter-UAS equipment.

The U.S. Army has doctrine for defeating UAS: "Counter-Unmanned Aircraft System Techniques," Army Techniques Publication (ATP) 3-01.81 (Department of the Army, 2017). The ATP focuses on low, slow, small UAS groups (Groups 1–3, think Shadow and smaller). Of course, there is a big difference between trying to defeat a Shadow-sized UAS vs. a small quadcopter. As the ATP discusses, Groups 1 and 2 are "abundant and difficult to detect on the battlefield" (Department of the Army, 2017, p. 1-2). That is exactly the threat that is too small for the Air Force or air defense artillery to worry about and the right size for an SPF.

At the basic level, the response to a UAS is simply, "detect, identify, respond to—and report" the threat (Department of the Army, 2017, p. 1-3). The ATP then breaks down what each echelon, brigade, battalion, and company, should do. At the

CAMP BUEHRING, Kuwait – A 1st Security Forces Assistance Brigade (SFAB) Soldier uses a Drone Defender to capture and control a drone as it's flying, Mar. 6, 2018. The Drone Defender uses an electromagnetic pulse to disable its target and has a range of 600 meters. U.S. Army photo by Mr. Brent Thacker

Back to Table of Contents

The first Deployable Rapid Assembly Shelter, or DRASH, assigned to Headquarters and Headquarters Company, 28th Expeditionary Combat Aviation Brigade stands assembled and covered in camouflage netting. U.S. Army photo by SGT John Pascucci

company level, the suggested approach comes down to avoid detection and observation, and if detected, using small arms fire to attempt to destroy the UAS. The rest of the chapter then deals with techniques for placing air guards and observers to try to detect UAS as quickly and early as possible.

The training and evaluation outlines for Defend Against Hostile Low, Slow, Small Unmanned Aircraft Systems (44-BTRY-1000),[1] discusses what a company should do if small UAS appear. Everything is geared toward what to do if one appears. The standard is to destroy or force the attacking platforms away. Although camouflaging oneself and equipment is a supporting individual task for this company-level task, the focus of the company task is all on actions once a UAS has appeared, not what the company could do to prepare.

The dichotomy should not simply be whether to shoot the UAS down or not, but to first avoid detection, if possible. Shooting down or engaging the UAS with an electronic warfare device alerts the UAS controller of your presence. This is positive information, even if you are successful in destroying or jamming the UAS. If the sole purpose of the UAS was to locate the position of the enemy forces for an artillery strike, then a shoot down of a UAS is a good indication. If Russia is prepared to take out entire grid squares, it does not need a 10-digit grid from a UAS to do that.

Army Techniques Publication 3-01.81 emphasizes camouflage at the brigade combat team level as a passive air defense measure. However, camouflage is critical to every level. It is something any unit can do ahead of time. The ATP states that if a low, slow, small UAS is over your position, "it is likely your position is already compromised" (Department of the Army, 2017, p. 4-1). Effective camouflage means that does not have to be true. Any aviator or UAS operator who spent the last 18-plus years looking for insurgents in Iraq or Afghanistan can tell you how difficult it is to locate an individual, or even vehicle, if it is deliberately camouflaged or takes advantage of the terrain.

Contrast the ATP with a proposed standard operating procedure (SOP) published in 2020 by 11 Marines titled, "Signature Management, Camouflage SOP, A Guide to Reduce Physical Signature Under UAS" (Ball et al., 2020). The quote that opens the purpose of the SOP puts it starkly, "To be detected is to be targeted is to be killed" (Ball et al., 2020). This quote comes from the Maine Corps Operating Concept, 2016. The idea is simple; if the enemy detects you, then they can kill you.

Army Techniques Publication 3-01.81 and the company-level task focuses on what to do once an enemy UAS is in your area, how to kill it or drive it away. If you kill it or force it to leave through some active means, the UAS still succeeded in locating your position. For an enemy who likes to destroy grid squares, the positive indication of your presence means you are dead.

Now we come back to the problem of what reducing your signature means for an aviation battalion. Camouflage is certainly not a new concept. It is something units practice all the time, especially to prevent detection from other ground threats. Now it just needs to extend to aerial threats. Claiming that an aviation battalion is too hard to camouflage, that its equipment,

[1] Available via the Army Training Network with a valid common access card or username and password.

whether it is a CH-47 or Heavy Expanded Mobility Tactical Truck tanker, is too big, is not an answer. We can and must work to minimize the threat.

Things as simple as staying inside tree lines, preferably trees with broad foliage instead of pine trees is a start. Camouflage netting is another step. Anyone who has attended a combat training center rotation or field exercise probably remembers the experience of sewing together camouflage netting to put over a battalion tactical operations center (TOC) or company command post (CP). Now think about how much netting you would need to cover an entire battalion's worth of tents and containers, without even considering camouflaging vehicles.

Back to the JMRC rotation in 2017. Our battalion received 100 sets of netting prior to the rotation. Although that certainly allowed us to cover the TOC, company CPs, and some sleep tents, it was nowhere near enough for everything. The solution to that problem is relatively easy. We can acquire enough camouflage netting for the unit. Finding enough space to carry it is a different problem.

In thinking of camouflage, we cannot think only of the visible spectrum. Many UAS, just like manned platforms, use thermal imaging or infrared sensors to detect what the eye cannot. When we camouflage, we need to think about shielding things like generators and environmental control units. We know that a battalion TOC is a huge emitter on the electromagnetic spectrum with radios, joint network node, Blue Force tracking, etc., but even the sheer number of generators we use to power everything emits a huge thermal signature if not shielded.

By using natural concealment, such as forests and manmade camouflage (e.g., netting), we can shield most of our tents, containers, vehicles, and equipment from an enemy sensor. Even if we only succeed in making it harder for the enemy to detect us, that may mean the difference between life or death. In a contested battlespace to include the air domain, enemy UAS will not be able to loiter indefinitely to look into every forest or suspicious mound. Any reasonable action that is effective at reducing our signature and the enemy threat is worth it.

Unfortunately, that still leaves the problem of how to conceal the aircraft itself. Can you conceal something as large as a CH-47?

During the Atlantic Resolve rotation that led to the JMRC exercise, we discussed that exact problem. If we fought against a peer competitor that contested the skies and possessed significant indirect fires capabilities, and if we stayed at existing airfields or heliports, we would quickly be targeted and destroyed in combat. Therefore, we cannot stay at an airfield.

The ability for us to operate from a field site goes back to the basic difference between a helicopter and a plane. We do not need a runway, just an open field. Even in a field site, and even if we can conceal our tents, vehicles, containers, and equipment, we are still left with the aircraft.

Dispersion was key. Finding many helicopters in few square kilometers is far easier than finding many helicopters in a multitude of square kilometers. A battalion could spread out to increase the space between companies. The battalion TOC is no longer near the helicopters. The forward arming and refueling point is not a stone's throw away from the flight line. We could never reasonably make it as hard as finding a needle in a haystack, but we can certainly make it harder than shooting fish in a barrel.

Dispersion does bring numerous challenges. It forces commanders to rely more on their subordinates. It forces maintenance to be more deliberate because the walk from the containers to the helicopters is much longer. Maintenance above the company level is even more demanding because the maintenance company is not conveniently centrally located within a TAA. Maintenance would be less responsive, which goes against everything we train for. However, if it keeps the unit alive and in the fight, it is an acceptable compromise.

A UH-60 Black Hawk helicopter from A Company, 3-10 General Support Aviation Battalion, 10th Combat Aviation Brigade, sits camouflaged in a hide-side during Exercise Falcon's Talon in Latvia on August 21. The exercise is focused on empowering junior leaders to use ingenuity and adaptability to meet commander's intent. U.S. Army photo by SPC Thomas Scaggs

Back to Table of Contents

The ideas of camouflage and dispersion may be difficult to accept in an Army accustomed to operating in forward operating bases, common operational pictures, and a dress-right-dress mentality. Dispersing into small groups spread over a large area with multiple different types of camouflage, and using the micro-terrain and foliage available may take a lot of effort, but if it prevents the enemy UAS from finding you, it is certainly worth it. It is at least something we need to consider as we fight under the unfriendly skies.

A Soldier from Task Force Baltic Phoenix, 3-10 General Support Aviation Battalion, 10th Combat Aviation Brigade, sits on the back of a camouflaged CH-47 Chinook in Latvia on August 21. The unit was participating in Exercise Falcon's Talon, which seeks to develop new tactics, techniques, and procedures that will assist Army Aviation on a complex battlefield. U.S. Army photo by SPC Thomas Scaggs

MAJ Matt Easley serves as the Aviation Instructor at the Maneuver Center of Excellence, Fort Benning, Georgia. His previous assignments include S-3/XO for 1-501 ARB and G-5 Aviation Planner for 1st Armored Division, Fort Bliss, Texas; Aviation Maintenance OC/T at the Joint Multinational Readiness Center, Hohenfels, Germany; and commander, D/3-17 CAV at Hunter Army Airfield, Georgia. MAJ Easley is a pilot-in-command qualified in the OH-58D, UH-72A, and AH-64D. He has deployed in support of Atlantic Resolve and Enduring Freedom.

References:

Ball, G., Boyce, G., Kolodziejczak, E., Livi, J., Mills, W., Schwartz, Z., Skaggs, C, Shibata, M., Todorski, E, & Walsh, B. (2020, 01 November). *A guide to reduce physical signature under UAS* (Signature Management [SIGMAN] Camouflage SOP). Marine Corps Intelligence Schools (MCIS) Intelligence Training Enhancement Program http://www.2ndbn5thmar.com/camouflage/SIGMAN%20Camouflage%20SOP%20200630.pdf

Bateman, R. (2020, October 15). *No, drones haven't made tanks obsolete*. FP. https://foreignpolicy.com/2020/10/15/drones-tanks-obsolete-nagorno-karabakh-azerbaijan-armenia/

Corcoran, C., & Wilkins, L. (2013, April 15). *Tyndall celebrates air dominance milestone*. Air Combat Command. https://www.acc.af.mil/News/Commentaries/Display/Article/203465/tyndall-celebrates-air-dominance-milestone/#:~:text=According%20to%20Air%20Force%20and%20Defense%20Department%20historians%2C%20April%2015,Air%20Superiority%20is%20not%20cheap.

Department of the Army. (2017). *Counter-unmanned aircraft system techniques* (Army Techniques Publication 3-01.81). Headquarters, Department of the Army.

Gatopoulos, A. (2020, May 28). *Largest drone war in the world: How airpower saved Tripoli*. Khalifa Haftar News | AlJazeera. https://www.aljazeera.com/news/2020/5/28/largest-drone-war-in-the-world-how-airpower-saved-tripoli

Army Aerial Intelligence, Surveillance, and Reconnaissance: A Concept for Modernization

By CPT Stephen D. Smallwood

In the 2018 National Defense Strategy (NDS), then Secretary of Defense, James Mattis, wrote "This strategy establishes my intent to pursue urgent change at significant scale" (Department of Defense, 2018, p. 11). The use of the adjective, urgent, is clearly purposeful by former Defense Secretary Mattis, and implies that without significant movement forward and at a pace commensurate with the urgency, the United States' national and international interests may be jeopardized. To meet the demand for modernization at pace, the 2018 Strategy conveys an entirely different vision for the Armed Forces: Moving the force away from 20 plus years of a counterinsurgency (COIN) focus and realigning the defense enterprise's focus to a complex environment with peer-state actors. The NDS aims to remain relevant in technological advancement and capable in deterrence against sophisticated actors, namely China and Russia. The Strategy changes the paradigm from what was a generally uncontested environment against an unsophisticated adversary who lacked the intelligence and target acquisitions systems, long-range precision fires, and integrated air defense systems to threaten U.S. interests, to a multidimensional threat from a peer-state capable of "decreasing U.S. global influence, eroding cohesion among allies and partners, and reduced access to markets that will contribute to a decline in our [U.S.] prosperity and standard of living" (Department of Defense, 2018, p. 1). The limitations of the COIN-centric approach to aerial intelligence, surveillance, and reconnaissance (A-ISR) in a peer fight is self-evident. What this article explores is the conceptualization of a new approach to Army A-ISR; one that focuses on a new payload carrying platform capable of greater range, altitude and endurance, sensor and shooter integration, the incorporation of a modular and agile design, and one that focuses on interoperability within and outside the defense enterprise.

Soldiers with Unmanned Aerial Vehicle (UAV) Platoon Delta Troop, Regimental Engineer Squadron, 2nd Cavalry Regiment, prepare for UAV training during U.S. Army Europe's exercise Saber Strike 18, near Bemowo Piskie, Poland, June 14. UAVs provide intelligence, surveillance, and reconnaissance information to assist with conducting unified land operations. U.S. Army photo by CPT Jeku Arce, 221st Public Affairs Detachment

Back to Table of Contents

Unfortunately, the current Army A-ISR fleet suffers from the same strategic atrophy mentioned in the NDS as the rest of the defense enterprise (Department of Defense, 2018, p. 1) The fleet was generally designed and created to perform well against an unsophisticated non-state actor both in sensor capability and aircraft survivability; it lacks the ability to perform well against peer threats with sophisticated and integrated air defense systems. The current manned platform is structurally limited by weight and limited in altitude as a function of power. It lacks the endurance and stand-off capabilities needed to perform well–or at all–in contested environments. This will, in part, require the acquisition of an entirely new platform to carry the sensors—one that is capable of achieving greater altitudes, has greater endurance, and one that has greater range. The next generation platform will need the ability to launch from relative sanctuary, perform its sensing mission outside of the primary anti-access aerial denial (A2/AD) threat ring, and return to sanctuary during one mission.

A vital capability, perhaps of win or lose importance, is the ability for Army A-ISR to conduct deep sensing. The Army needs a platform that is not only capable of sensing troop movements and disposition at the front line of troops but also deep into an adversary's territory. This capability is necessary both during armed conflict and prior to hostilities. Indeed, the Army needs the ability to sense deep into enemy territory to deter aggression as much as it does to win in battle. As countries such as China continue to expand the buffer surrounding their main territories, the Army needs to augment its capability to collect data at increased stand-off distances. Figure 1 illustrates this point.

Figure 1. China's creation of an island with 10,000' runway in the Spratly (Watkins, 2015)

Since 2014, China has undertaken a dredging and land reclamation project in the Spratly Islands, creating in one example, a 10,000 foot runway (Watkins, 2015). This effort expands their ability to influence a region that accounts for more than 30 percent of the world's crude oil transportation and 12 percent of the global fish catch (U.S. Energy Information Administration, 2013; Poling, 2019), while simultaneously creating a foothold in the South China Sea to enable the Chinese military's expansion of airpower and the opportunity to grow their A2AD array (Figure 2). This type of expansion is the exact type of behavior the NDS is concerned with and warns against when stating that China's aim is to create an "Indo-Pacific regional hegemony in the near-term and displacement of the United States to achieve global preeminence in the future" (Department of Defense, 2018, p. 2).

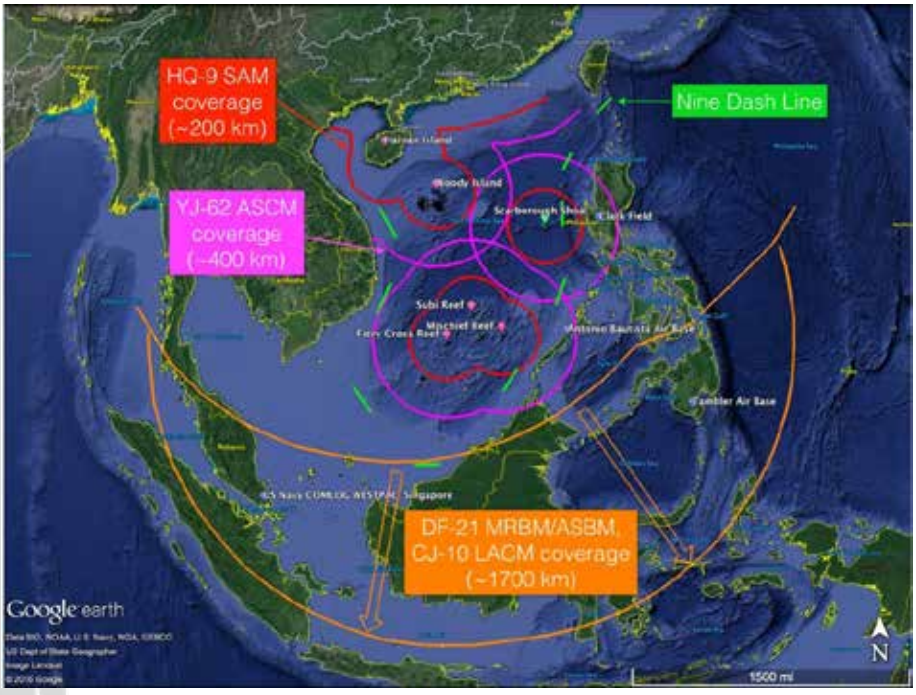


Figure 2. China's A2AD System (Shugart, 2016)

The payloads selected to mitigate China's geopolitical and military expansion, for example, must focus on a deep-sensing capability that is integrated into a deep-fires network. Lt. Gen. Norman Seip, retired, the Air Force senior mentor for Multi-Domain Command and Control, stated, "The goal of MDO opera-

Back to Table of Contents

A U.S. Army MQ-1C Gray Eagle with B company, 229th Aviation Regiment known as "Flying Tigers" goes through preflight checks at the Air Combat Element landing strip, Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, California, Nov. 7, 2019. The Flying Tigers are supporting U.S. Army Special Operation Soldiers with 3rd Battalion, 3rd Special Forces Group (Airborne) with intelligence, surveillance, target acquisition, and reconnaissance during their tactical recovery of aircraft personnel training. U.S. Marine Corps photo by Cpl William Chockey

tions is to create complex, simultaneous dilemmas at once for the enemy" (Nettis, 2020). To achieve at least part of that aim, what is necessary is an A-ISR platform that is capable of providing real-time targeting data to fire support assets. The payloads selected will necessarily require the ability to see deep into an adversary's territory, and the ability to deliver targeting information to integrated and precision capable deep-fires assets. That is, it is not good enough to have the ability to sense deeply into an adversary's territory; what is necessary is the ability to pair the acquisition of targets to a system capable of delivering precision fires deep into enemy territory in near real time. This capability needs to be intertwined and leveraged at the tactical level to enable the decisive action necessary to compete with and defeat peer threats. LTG Eric Wesley of the Army Futures Command, makes this point in an interview with *Army Times* when he stated, "I think it's fair to say in the future MDO is at the tactical level" (South, 2019). The point is, the platform chosen needs the endurance, range, altitude, and deep-sensing capability that is integrated into a deep-fires network that will provide a strategic impact on the U.S.' ability to fight and win in a peer fight. This is an ability that will also serve well as a deterrent to continued expansion threats from state actors aiming to upset the international order.

The ability for one platform to answer all information requirements is unlikely. The modernization efforts for the U.S. Army need to also focus on modularity. True roll-on roll-off packages in some semblance of a transportable rack system with common hardware is necessary to meet the changing capability demands for A-ISR. Conceptually, what the Army needs is a singular platform type with modularity designed into its payload system. A fragmented approach to capability all provided by different vendors, varying hardware infrastructures, and with a siloed approach to development is not the solution, nor is one platform to host all capabilities simultaneously. The latter approach affects the weight-to-power ratio mentioned previously, degrading the purpose of a new platform to solve the duration, range, and altitude constraints of the current fleet. Instead, what is required is a modular design with a common hardware infrastructure capable of being rolled-on and rolled-off expeditiously. The capability demand is ever changing, and what may be a requirement for one intelligence capability on one day may rapidly change to a new capability demand the next. Commanders would greatly benefit from the ability to rapidly shift capabilities as the phases of a fight were achieved or intelligence gaps were identified–a modular capability in sensor packages serves that purpose.

A true roll-on roll-off capability necessitates an approach that is developed devoid of separate and competing propriety designs in both hardware and architecture, in lieu of an integrated and interoperable approach. Currently, the Army has the Tactical Intelligence Targeting Access Node, or TITAN, the Air Force has the Advanced Battle Management System, the Navy employs Minotaur, and the Marine Corps has the Marine Corps ISR Enterprise, or MCISRE—all with the same purpose—data integration, fusion, and to facilitate sensor-to-shooter integration (Hoehn & Smagh, 2020). The question here is to what end those systems are capable of interoperability, not only internally within the service entity, but also between the services, other government agencies, and foreign partners. That's the problem with technology–it's hermetic, especially when developed for a singular branch which, understandably and correctly, is only concerned with the supplier meeting its demand. But what is needed in the new modernization efforts for the defense enterprise at large is a focus–an insistence–on interoperability between all entities, and to the greatest extent possible, between Allied partners. The NDS makes this point clear, "Interoperability is a priority for operational concepts, modular force elements, communications, information sharing, and equipment" (Department of Defense, 2018, p. 9). The success of this interoperability lies within the enterprise's ability to create the architecture and systems capable of achieving it. Simply put, it's all about the architecture.

The current fleet of Army A-ISR assets were designed and implemented for use in a permissive environment. The current vehicle for payload delivery is structurally weight limited and incapable of providing sufficient attitude, endurance, and range to compete in a contested environment. These assets suffer from lack of a deep-sensing capability, lack of modularity, and limited interoperability. The system of the future should be developed with an eye toward a deep-sensing and deep-fires integrated capability, designed with modularity in mind in an effort to enable the rapid transformation of capabilities as intelligence gaps and/or phases of a battle are realized. The architecture to support the capability should be developed in a joint environment, with a focus on integration and interoperability within and between the defense enterprise, extending to Allied partners to the greatest extent possible.

Captain Stephen Smallwood is currently the Commander of D Company, 304th Military Intelligence Battalion, 111th Military Intelligence Brigade. He is a graduate of Clemson University and holds a B.S. in Economics. He is a rated aviator and has served as an RC-12 pilot-in-command and MC-12 instructor pilot.

U.S. Army UH-60 Black Hawk helicopters assigned to the 101st Combat Aviation Brigade, prepare to land at dusk for a nighttime mission at Hohenfels Training Area, Germany, Feb. 17, 2021. U.S. Army photo by SSG Thomas Stubblefield

References:

Department of Defense. (2018). *Summary of the 2018 National defense strategy of the United States of America*. https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

Hoehn, J. R. & Smagh, N.S. (2020, June 4). *Intelligence, surveillance, and reconnaissance design for great power competition* (Report R46389). Congressional Research Service. https://crsreports.congress.gov

Nettis, K. (2020, March 16). *Multi-Domain operations: Bridging the gaps for dominance*. Wild Blue Yonder.https://www.16af.af.mil/News/Article/2112873/multi-domain-operations-bridging-the-gaps-for-dominance/

Poling, G. (2019, January 9). *Illuminating the South China Sea's dark fishing fleets*. The Stephenson Ocean Security Project. https://ocean.csis.org/spotlights/illuminating-the-south-china-seas-dark-fishing-fleets/

Shugart, T. (2016, September 21). *China's artificial islands are bigger (and a bigger deal) than you think*. War on the Rocks. https://warontherocks.com/2016/09/chinas-artificial-islands-are-bigger-and-a-bigger-deal-than-you-think/

South, T. (2019, August 11). *This 3-Star Army General explains what multi-domain operations mean for you*. Army Times. https://www.armytimes.com/news/your-army/2019/08/11/this-3-star-army-general-explains-what-multi-domain-operations-mean-for-you/

U.S. Energy Information Administration. (2013, April 4). *The South China Sea is an important world energy trade route*. https://www.eia.gov/todayinenergy/detail.php?id=10671

Watkins, D. (2015, October 27). *What China has been building in the South China Sea*. The New York Times. https://www.nytimes.com/interactive/2015/07/30/world/asia/what-china-has-been-building-in-the-south-china-sea.html

The following article has been adapted by author, Mr. David O'Connor, from his book, *A Fortress with no Roof: Returning to Normandy to Remember the Heroes of D-Day*, published in 2019 by Five Oaks Publishing. *Aviation Digest* has obtained express permission from the publisher for this adaptation. All photographs contained in this article are property of Five Oaks Publishing.

D-DAY 1944 AND THE ROLE OF THE U.S. ARMY AIR FORCES

By Mr. David O'Connor

"Before Allied Forces stormed the beaches of Normandy, before the liberation of Paris, and before Germany's ultimate surrender, a fleet of 1,200 warbirds set its course for France: (O'Connor, 2019).

The legendary D-Day assault on the coast of Normandy by Allied troops was preceded by 13,000 airborne troops transported by more than 800 U.S. Army Air Forces (USAAF) aircraft. At the head of this squadron was the formidable Douglas C-47, a warbird that General Eisenhower dubbed one of the pieces of equipment "most vital to our success" in WWII (National Museum of the United States Air Force™, n.d.). These airborne troops came by glider or parachute to the beaches and fields of Normandy in the early

Back to Table of Contents

Drop Zone K in Sannerville, France, June 5, 2019

hours of 6 June 1944 and paved the way for the unforgettable incursion that would begin the liberation of Western Europe.

D-Day marked the beginning of Operation Overlord—the Allied plan to reclaim France from the Nazis, starting with the storming of the coastal region of Normandy. More than 150,000 troops from a dozen nations were present that day (U.S. European Command, n.d.). The air was dominated by 2,395 Allied aircraft and 867 gliders that carried troops and supplies into France (Roos, 2020). "To say that it was a masterful coordination of troops, military equipment, and vessels of air, land, and sea understates the meticulous planning and training required for an international collaboration of this scale" (O'Connor, 2019).

By the end of D-Day, 4,413 Allied troops lay dead, but through a coordinated effort the Allies had gained a position in France (Roos, 2020). The Allies pushed on, and within 11 months of that assault, Nazi Germany surrendered.

THE PARATROOPERS

Operation Overlord began with paratroopers dropping into Nazi-occupied territory in Normandy, France. Among these paratroopers were the American 82nd and 101st Airborne Divisions. The 82nd had fought Axis troops in Sicily the previous year, but the 101st had yet to see combat (D-Day Overlord, 2021). These divisions received special training at home in the U.S., then again in the U.K., and were joined by the British 6th Airborne Division for the attack on 6 June 1944 (D-Day Overlord, 2021).

Both paratroopers and gliders were used during the D-Day attack. Paratroopers were transported into France by the Douglas C-47 (Guilmartin, n.d.). This powerful warbird was originally designed as a Civilian aircraft, but under the direction of the USAAF, was reworked for warfare (Guilmartin, n.d.). The C-47 was redesigned with structural reinforcements and equipped with more powerful engines, which enabled it to transport and drop greater loads (Guilmartin, n.d.). The U.S. Army Air Corps procured their first DC-3-type plane for General Henry "Hap" Arnold, Chief of Staff, Air Corps (DC-3 Admin, 2019). The plane was given a serial number of 40-070 and was delivered 11 September 1939 (DC-3 Admin, 2019). It was used by the General throughout the course of the war, and still flies today under the banner of *Hap-Penstance* with Golden Age Air Tours in Sonoma, California (DC-3 Admin, 2019).

The AAF was established in 1914 as a small aviation unit within the U.S. Army Signal Corps and was tasked primarily with weather forecasting and communications. Throughout the Second World War, the AAF underwent a remarkable growth,

operating 783 domestic bases by December 1943 with nearly 80,000 aircraft by 1944. By "V-E Day," the AAF was present at more than 1,600 airfields around the world and had stationed 1.25 million men overseas. At its peak during WWII, the AAF oversaw more than 2.4 million service men and women. The AAF had become a force to be reckoned with.

D-DAY BEGINS

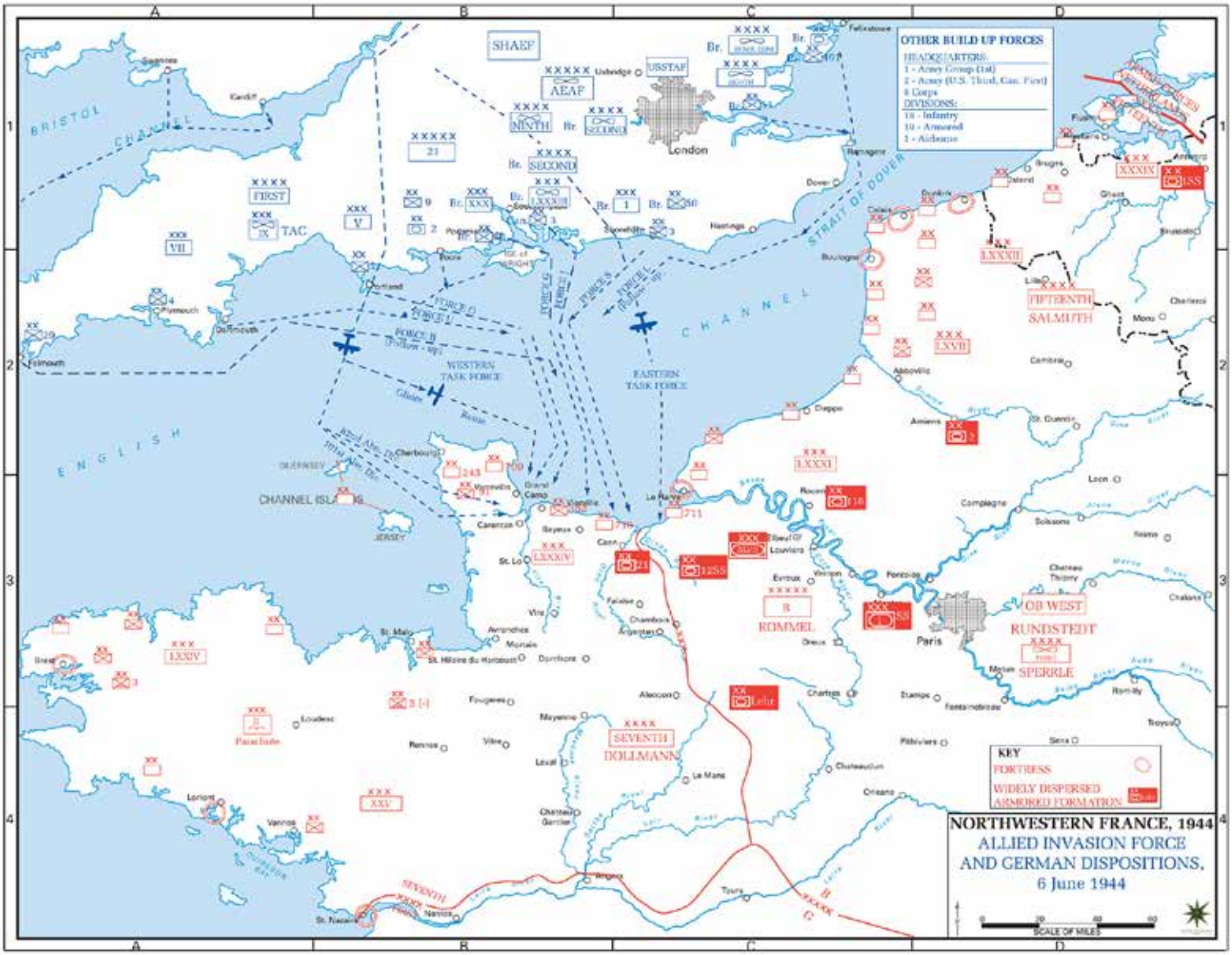
Prior to the main wave of airborne landings, Pathfinder paratroopers set out for Normandy under cover of darkness to mark drop zones for the coming assault. Among these pilots and paratroopers was Lieutenant Colonel Dave Hamilton, who is today the last surviving Pathfinder pilot who flew on D-Day. Hamilton enlisted in the AAF in December 1941, just one day after Japan's infamous attack on Pearl Harbor. He received training as a C-47 pilot, then was deployed with his troop to the Pathfinder base, Royal Air Force (RAF) North Witham. The Pathfinder troops made it possible for thousands more to safely parachute into occupied France to secure necessary routes ahead of the seaborne invasion.

When Lieutenant Colonel Dave Hamilton flew into France in the early hours of the D-Day invasion, he was met by a ruthless assault by German ground forces.

That night there were 20 Pathfinder aircraft going in—19 came home, said Hamilton. We flew at night in a straight line, only 50 feet above the water, until we had to climb for the drop. After the drop, I just firewalled the engines, put the throttles up and hit the deck. Then my co-pilot said, "you'd better lift your wing or you're gonna take the steeple off the church of Sainte-Mère-Eglise!" On the way back, I looked at our radar and saw so many ships in the water, it looked as though I could jump from ship to ship. I had every member of my crew come and take a look at that picture on the radar screen because it was very impressive. (O'Connor, 2019).

Landing craft and ships unload and supplies at Omaha Beach a few days after D-Day.

Back to Table of Contents



Once Pathfinder paratroopers had completed their mission, the 9th Troop Carrier Command entered the skies over Normandy. The Nazis were prepared, however, and the C-47 aircraft were met with a ferocious assault before they could begin their airdrop. Transport aircraft were shot down as they approached the beach, and many of the surviving aircraft were forced to risk jump safety and accuracy by diverting their flight paths or overflying the drop zones without slowing to the speed necessary for a safe jump. Out of the 13,000 American paratroopers who were dropped over Normandy, 2,500 died. Those who survived the initial onslaught and landed safely were forced to group together in small areas throughout the region to combat the German defenses.

The main objective for the surviving paratroopers was to clear the way for an amphibious landing that would take place only 5 hours later. The troops headed for the coastline were tasked with sweeping through the highly fortified German coastal defenses toward inland France. It was vital then that the paratroopers secure access to the roads that connected the coast of France to its interior. Doing so would ensure a safe route into Northern France for the incoming soldiers. If this could not be done ahead of the arrival of the main force, the push inland would be delayed, and the Nazi troops would have more time to rally and counteract the Allied efforts.

The Pathfinder paratroopers were also tasked with gaining control of intersections that linked major roadways into the interior, securing bridges for the use of Allied troops, and limiting German movement. The paratroopers successfully secured key bridges for the Allies and destroyed others to hinder a German retreat. Another objective for the paratroopers was to disarm German batteries and secure crucial positions. They ensured an early victory on D-Day by reclaiming the town of Sainte-Mère-Église from the occupying Nazi forces and successfully secured all four causeways that had been assigned to them by midday. Their numbers grew as additional troops were brought in by air, and by the end of the D-Day invasion, the number of paratroopers in Normandy had nearly doubled.

101ST AIRBORNE

Back to Table of Contents

The 101st Airborne Division, nicknamed The Screaming Eagles, were the first paratroopers to drop in the areas surrounding Utah Beach. Their planes approached from the northwest, flying low to avoid radar detection, but encountered cloud cover over their drop zones, which resulted in widespread disorientation. The Pathfinders who had been assigned to activate marking beacons landed off target, and some beacons failed entirely, enhancing the confusion. The Screaming Eagles suffered significant losses from anti-aircraft fire, and those who survived landed in a wide area around their drop zones. Though the 101st Airborne Division did not accomplish all their objectives, they managed to make their way toward the beach and successfully secure a causeway for the landing forces at Utah.

82ND AIRBORNE

The veteran 82nd Airborne Division were known as The All-Americans. Their objective was to defend the western approach to Utah Beach, from where the strongest Nazi reinforcements were anticipated. The 82nd Airborne dropped at 1:51 a.m., half an hour after the 101st Airborne, and experienced inconsistent accuracy with their drops. The scout troops who were dropped in drop zone O managed to successfully activate their locator beacons, allowing the main wave to land correctly on their drop zone.

On D-Day, the troop movements received additional support from military gliders—engineless aircraft that are towed in the air to their target by C-47 Dakotas. Glider reinforcement missions delivered two battalions of artillery support to The All-Americans. They secured their position near the drop zones but were unable to push west toward their defensive objectives.

AMPHIBIOUS ASSAULT

As Allied paratroopers sought to secure inland routes, their naval counterparts began firing at the German coastal defenses (National D-Day Memorial Foundation, n.d.). Just under 7,000 Allied ships made up the naval attack (U.S. European Command, n.d.). Like the earlier airborne attacks, this coastal bombardment was to proceed the beach landing of thousands of soldiers bent on breaching the German line (National D-Day Memorial Foundation, n.d.). The beaches along the coast of Normandy were given code names and were designated for attack by Canadian, American, or British forces (National D-Day Memorial Foundation, n.d.). Juno Beach was slated for attack by Canadian forces, Utah and Omaha Beaches were

Back to Table of Contents

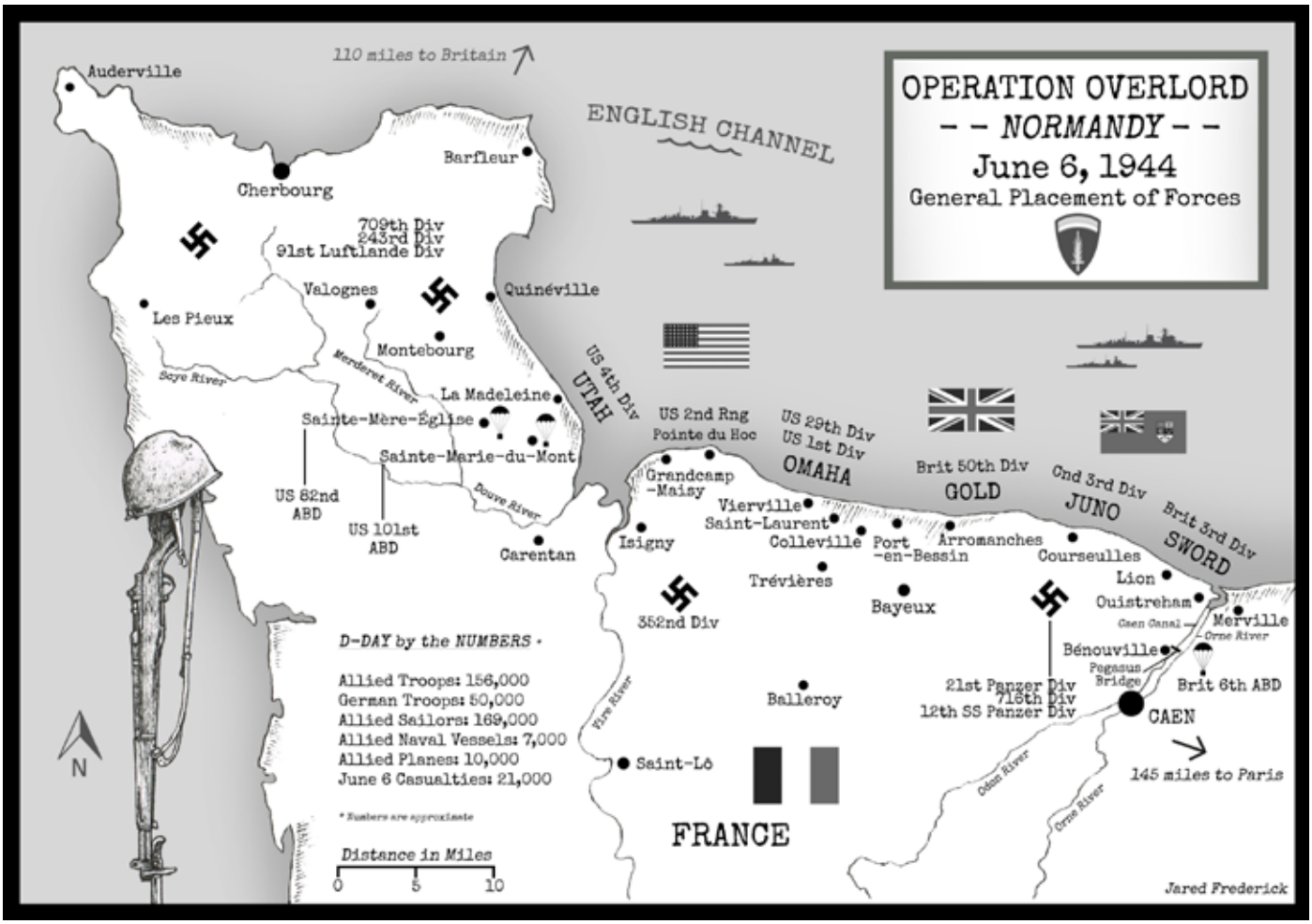
to be stormed by American forces, and Gold and Sword Beaches were tasked to the British (National D-Day Memorial Foundation, n.d.).

The first American forces hit Utah Beach at 6:30 a.m. but were hindered by rough waters (National D-Day Memorial Foundation, n.d.). The three waves of troops were swept off target and their attack delayed, but they managed to claim the short stretch of beach for the Allies by the end of the day (National D-Day Memorial Foundation, n.d.). The casualty rate of this attack was less than 1 percent of the 23,000 troops who landed (U.S. European Command, n.d.).

Omaha Beach was to the east of Utah Beach and was of strategic importance to both the Allied and Axis forces (National D-Day Memorial Foundation, n.d.). It was well-fortified by the Nazis and was overlooked by Pointe du Hoc, a promontory point with 100-foot (30 meter) cliffs, strengthened by German casements and gun pits. On D-Day, U.S. Army Rangers scaled the cliffs of Pointe du Hoc and assaulted the German forces, successfully capturing the artillery pieces that could have fired on Allied troops as they landed on the beach. Altogether, 34,000 U.S. Soldiers stormed Omaha Beach, backed by both the U.S. and British Royal Navies (U.S. European Command, n.d.). Due to adverse conditions, soldiers were obliged to disembark far from shore and make their own way to the beaches, wading through cold waters under heavy fire from German artillery (National D-Day Memorial Foundation, n.d.). Allied troops suffered their worst losses at Omaha Beach, with 2,400 soldiers killed or injured (U.S. European Command, n.d.).

Paratroopers prepare to board for the cross-channel flight

The amphibious attack at Sword Beach was prefaced by bombing from the British Royal Navy (National D-Day Memorial Foundation, n.d.), which paved the way for 29,000 soldiers to be landed by French commandos and the British (U.S. European Command, n.d.). Sword was the easternmost beach and was the planned site for troops arriving by sea to join forces with the paratroopers who had arrived ear-



lier that morning (National D-Day Memorial Foundation, n.d.). German tanks endeavored to push back the British forces, but reserve British troops were brought in, ensuring an Allied victory (National D-Day Memorial Foundation, n.d.). At the end of the assault, Allied deaths and injuries at Sword Beach totaled 630 (U.S. European Command, n.d.).

At Gold Beach, British and American aircraft dropped explosives on German defenses (National D-Day Memorial Foundation, n.d.). An hour after the assault on Utah, 25,000 British Army troops landed at Gold and began pushing their way through the Nazi line (U.S. European Command, n.d.). Juno, a 6-mile span of beach, was also shelled greatly prior to the arrival of 21,400 British and Canadian troops (U.S. European Command, n.d.). Juno Beach was not armed as heavily as the other beaches due to a rocky coastline, but adverse conditions at sea caused the loss of Allied tanks and landing craft (National D-Day Memorial Foundation, n.d.).

LEAD-UP

In the months leading up to D-Day, it was necessary to balance differing strategic principles of those appointed to lead the Allied Expeditionary Force to achieve a cohesive strategy. Overseeing the Allied Expeditionary Force was Supreme Allied Commander, Dwight Eisenhower. Eisenhower joined the commander of the airborne component of the Allied Expeditionary Forces in advocating a strategy named the Transportation Plan (National D-Day Memorial Foundation, n.d.). The Transportation Plan had USAAF and RAF aircraft attack French railroads to isolate Nazi troops from their leadership and supplies in Germany (National D-Day Memorial Foundation, n.d.). The Transportation Plan sought to destroy the transportation network leading into northern France, as well as the infrastructure supporting Luftwaffe operations, essentially 'isolating the battlefield.' However, opposing parties in the Allied Expeditionary Force sought instead to use air raids to target Germany's oil industry (National D-Day Memorial Foundation, n.d.).

Eisenhower's preferred strategy won out, and during the weeks leading up to D-Day, the Combined Bomber Offensive[1] launched a prolonged series of assaults that were intended to destroy key railways and draw the Luftwaffe into a crucial battle by hitting the German aircraft industry. These attacks were so effective in weakening the Luftwaffe, that German aircraft were

[1] The Combined Bomber Offensive was an Allied offensive of strategic bombing during World War II in Europe

Back to Table of Contents

noticeably lacking in the skies over Normandy on D-Day, ensuring air superiority (a crucial precondition to Operation Overlord) for the USAAF and RAF during the invasion.

USAAF FIGHTERS AND BOMBERS

By 6 June 1944, the United States Strategic Air Forces had grown to encompass 59 bombardment groups and more than 2,800 four-engine bombers. The Eighth Air Force contributed 1,361 four-engine heavy bombers to aid the D-Day landings, and with the support of the Ninth Air Force, flew nearly 4,000 fighter sorties on D-Day.

The most renowned Allied bomber of WWII was perhaps the B-17 *Flying Fortress*. Although the first prototype took off in 1935, only 30 of these planes were in use by 1939. The B-17 was at first poorly armed, and an easy target for enemy warbirds. Its wide range of action allowed it to hit targets far over hostile territory, but also prevented most of its fighter escorts from remaining within range. Later, the plane was equipped with 13 machine guns—at the front, at the rear, on the flanks, above, and below. The B-17's heavy armaments prompted its nickname of *Flying Fortress*. The Bomber was first used by the RAF and proved its worth during WWII on the European front. Many B-17s took part in the D-Day attack on Normandy.

Another Allied aircraft present on D-Day was the P-51 Mustang. The Mustang was designed in 1940, and the prototype produced on 9 September of that same year—only 102 days after the contract was signed. Originally, the P-51 Mustang was intended to use the Allison V-1710 engine, but that was replaced with a Rolls-Royce Merlin upon production, which enabled the warbird to perform well at altitudes greater than 15,000 feet. This feature put the Mustang on par with the Luftwaffe's planes. On D-Day, Mustangs carried out strafing and divebombing missions around Normandy. In the following weeks, aided by their long-range fighter capabilities, the Mustangs accompanied Allied bombers as they pushed deeper into France toward Germany.

D-DAY INVASION STRIPES

On 6 June 1944, the Allied aircraft that flew into France sported alternating black and white bands on their wings and fuselages known as invasion stripes. Before the use of invasion stripes, it was not always easy for troops on the ground to distinguish their own planes from those of the enemy. In July 1943, during 'Operation Husky' (the Allied

invasion of Sicily) an Allied gunner mistook the 144 Allied C-47s flying over the invasion fleet and beaches for enemy aircraft. He opened fire, prompting the shore troops and offshore ships to also fire on their own planes.

The invasion stripes worn by aircraft on D-Day were designed to prevent such a disastrous outcome during the attack on Normandy. On 1 June 1944, a small group of Allied aircraft was flown over the D-Day invasion fleet so that the ships' crews might become familiar with the markings. However, to preserve secrecy, the orders to paint the invasion stripes were not given to the troop carriers until 2 days later, and to the fighter/bomber units until 3 days later. "The enormous quantity of paint required for thousands of aircraft exhausted most of the black and white paint in Britain" (O'Connor, 2019).

ALLIED VICTORY

Supreme Allied Commander, General Dwight D. Eisenhower, issued his orders to the men embarking upon the invasion: "Soldiers, Sailors and Airmen of the Allied Expeditionary Force! You are about to embark upon the Great Crusade, toward which we have striven these many months. The eyes of the world are upon you." The order was distributed to the 175,000-member expeditionary force on the eve of the invasion. "We will accept nothing less than full Victory" (Eisenhower, 1944).

D-Day casualties totaled 10,000 servicemen. Of these, 4,000 were lives lost in the English Channel and the countryside of northern France.

Back to Table of Contents

Years of planning and the tremendous efforts displayed on D-Day led to a full German retreat. The Allied victory at Normandy can be attributed to several key factors. Despite the enormous scale of the operation and years of planning, the Allies managed to maintain an astonishing level of secrecy around the D-Day operation, ensuring that Nazi leadership had no prior awareness of the sheer scale of the assault. Well-constructed deceptions left Germany unsure of the Allies' abilities, strategies, and intended landing zone. Lastly, the German forces in Normandy were left to fend for themselves against the Allies as their leaders considered what aid would be necessary and delayed sending reinforcements until it was too late.

D-Day was the beginning of the end of WWII. The Allies successfully drove the Axis powers from France, fatally weakening the German military in the process, and on 7 May 1945, Germany officially surrendered, marking the end of the European conflict in WWII. Operation Overlord was the first major step toward the downfall of the Nazi Empire and the end of WWII, but its triumph came at a cost. Ten thousand Allied servicemen perished on D-Day (National D-Day Memorial Foundation, n.d.). Four thousand of these lives were lost in the English Channel and the French countryside in northern France (National D-Day Memorial Foundation, n.d.).

The nations of the world will forever remember Normandy, the courage and valor of the Allied forces, and the vital role played by the USAAF and its forces to achieve freedom for the liberty-loving nations of Europe and beyond.

Five Oaks Consulting is marketing company focusing on Non-Profit Fundraising and Grants Management. David O'Connor has 35 years of experience in the field, having worked both overseas and in U.S.-based support roles. The Five Oaks team is a regular contributor to issues benefiting vintage WWII aircraft and U.S. military historical preservation.

References:

DC-3 Admin. (2019, May 17). *The mighty fifteen– he American contingent flying to Normandy.* The D-Day Squadron, A, DC-3 Society. https://ddaysquadron.org/tag/c-47-hap-penstance/

D-Day Overlord. (2021). *D-Day air operations*. Retrieved March 23, 2021, from https://www.dday-overlord.com/en/d-day/air-operations

Eisenhower, D. D. (1944). Supreme headquarters, allied expeditionary force [Speech Transcript). U.S. National Archives and Records Administration. https://www.archives.gov/global-pages/larger-image.html?i=/historical-docs/doc-content/images/ww2-eisenhower-d-day-order-l.jpg&c=/historical-docs/doc-content/images/ww2-eisenhower-d-day-order.caption.html

Guilmartin, J. F. (n.d.). C-47. Encyclopedia Britannica. https://www.britannica.com/technology/C-47

National D-Day Memorial Foundation. (n.d.). *June 6, 1944*. Retrieved March 23, 2021, from https://www.dday.org/june-6-1944/

National Museum of the United States Air Force™. (n.d.). *Fact sheets*. https://www.nationalmuseum.af.mil/Visit/Museum-Exhibits/Fact-Sheets/Indextitle/W/?Page=5

O'Connor, D. (2019). *A fortress with no roof: Returning to Normandy to remember the heroes of D-Day.* Five Oaks Publishing.

Roos, D. (2020, June 4). *D-Day: Facts on the Epic 1944 invasion that changed the course of WWII*. History. https://www.history.com/news/d-day-normandy-wwii-facts

United States European Command. (n.d.). *D-Day: The beaches*. United States Department of Defense. U.S. European Command

Author Note: The opinions expressed herein are the author's alone and do not represent the United States Army nor the Department of Defense. Correspondence concerning this article should be addressed via email to CPT Clayton Jaksha at clayton.b.jaksha.mil@mail.mil.

Disappearing Dollars:

Enterprise Solutions to Systemic Property Accountability Problems in Attack Aviation

By CPT Clayton B. Jaksha

Senior leaders fight every day to ensure our Army remains modern, relevant, and lethal in large-scale combat operations. However, in resource-constrained environments, senior leaders struggle to argue for costly modernization efforts if the Army's internal systems allow for the loss, damage, or destruction of high-value items. Normally, Soldiers provide excellent care for Army property, and procedures exist to correct those who falter in their duties. But there are gaps—broken accountability systems exist and require fixes at the enterprise level. This article seeks to address three specific property accountability issues within attack aviation formations that represent high-dollar exposure to the Army: untracked fire control radar (FCR) components, the Department of the Army (DA) Form 2408-17's (Aircraft Inventory Record) inadequacy as an accountability document, and the frequent movement of radios, survivability equipment, and armament without a standard accountability process. Fortunately, these problems have easy-to-implement, low-cost solutions to the Army. At best, the costs of overlooking these issues are organizational inefficiency, misused manpower, and wasted efforts. At worst, the Army faces the loss of sensitive items (SI) and the costly repurchasing of millions of dollars' worth of already-fielded equipment.

A U.S. Army AH-64D Apache Longbow takes off from Forward Operation Base Tirin Kot in Uruzgan province, Afghanistan, Oct. 14, 2010. The aircraft was one of two AH-64D Apache Longbows that provided security for other helicopters transporting Australian special operations soldiers. U.S. Army photo by SSG Tracy Hohman/Released

Back to Table of Contents

Untracked Fire Control Radar Components

To understand the nature of the FCR components problem, one must first familiarize themselves with the Army standard for conducting an inventory. Commanders refer to DA Pamphlet (PAM) 710-2-1 Chapter 9, "Inspection and Inventory Procedures," for standard inventory procedure, which directs them to check the end item's serial number, its general condition, and its 'completeness' using the technical manual's (TM) listing of basic issue items (BII) and components of end item (COEI) (DA, 2016b). If a TM does not exist for a particular item, the bill of materials (BOM) from Global Combat Support System-Army (GCSS-A) is an acceptable substitute for a BII/COEI listing. When an item has neither a TM nor a BOM, Commanders annotate on a memorandum that there is no component listing for the item; all they can do is check the general serviceability and verify the serial number. This is not uncommon for low-value and commercial-off-the-shelf property. Most Commanders have a short list of items without a TM or BOM—the FCR is an anomaly among that group.

As Commanders inventory an FCR for the first time, they will find that it has neither a TM nor a BOM. Therefore, all they must do to gain accountability is check the general serviceability and ensure the serial number on the bottom of the mast-mounted assembly (MMA) is correct. In actuality, the FCR is a complex end item with multiple components that can function in different configurations. Currently, the only items that Commanders must inventory is the MMA, since it has the serial number printed on its underside. All FCRs also come with a large, metal storage container necessary to store or transport the radar (national item identification number [NIIN]: 01-444-4217). An aircraft survivability equipment (ASE) system is also attached externally to every FCR, the AN/APR-48 Modernized Radar Frequency Interferometer (RFI). The RFI consists of an antenna array (NIIN: 01-522-3006), a receiver (NIIN: 01-471-3768), and a processor (NIIN: 01-531-4697) (Lockheed Martin, 2015). Complicating matters, the FCR's own processors exist in two different configurations, one for the AH-64D and one for the AH-64E. When installed on an AH-64D, the FCR requires a programmable signal processor (NIIN: 01-412-9325) and a low power radar frequency unit (NIIN: 01-397-6050), but when installed on an AH-64E, the FCR uses a radar electronic unit (NIIN: 01-590-7767). Much like the RFI, these processors are physically separate from the MMA and can be installed and uninstalled without removing the MMA itself. The six or seven components (depending on AH-64D or E) listed above have a total value of several million dollars. Therefore, a single attack battalion with nine organic FCRs owns tens of millions of dollars in untracked equipment.[1]

SSG Bradon Prall and SGT Nathan Chapman are installing avionics components for an AH-64E Apache Helicopter at Camp Taji, Iraq, Mar. 11, 2020. The 1107th Aviation Group, Missouri Army National Guard, is organized as a Theater Aviation Sustainment Maintenance Group (TASMG), and is deployed to Kuwait providing depot level maintenance to U.S. Army aircraft across the Middle East. U.S. Army National Guard photo by CW3 Grant Hutcheson

An adept Commander knows that operating the FCR requires these six or seven components, but that same Commander would be procedurally correct never inventorying any of those components. By regulation, Commanders *must* use the TM or BOM to determine an item's completeness, and since there are no TMs or BOMs published for the FCR, Commanders can only rely on their judgment. Because FCRs are nearly all on the property books of attack companies who are commanded by experienced attack aviators, the reader may find it implausible that a Commander would neglect to inven-

[1] These item values are available in further detail via Army i2Log at https://i2log.apg.army.mil/. This system requires account request registration for access.

tory the FCR's processors. However, examples exist that demonstrate this gap in property accountability.

Consider an attack company preparing to deploy; this company has three FCRs, one of which is not mission capable and awaiting depot-level repair. The company chooses not to deploy with the broken FCR and instead, leave it with the home station mission command (HSMC) while awaiting disposition instructions. The attack company has the broken FCR uninstalled and in its storage container on the hangar floor; they leave the processors elsewhere in secure containers. The HSMC Commander, who is not an attack aviator and otherwise unfamiliar with FCRs, inventories the FCR in accordance with regulation—there is no TM/BOM, so he checks the general serviceability and serial number of the MMA. Not knowing to look for processors, he considers the FCR complete and signs for the item. Halfway through the deployment, the HSMC Commander is slated to permanent change of station and will change command with an attack aviator. Upon inventorying the broken FCR, the attack aviator asks for the HSMC Commander to produce the processors, which he is unable to do, resulting in a frantic search followed by a complex and high-value financial liability investigation for property loss (FLIPL).

The solution to this problem of untracked FCR components is simple: publish a list of BII and COEI to the FCR. The Army does not need to publish an entire TM for the FCR; the AH-64D/E TM and interactive electronic TM adequately describe operator-level instructions for care and use. Instead, the Army can publish an '-HR' TM, which is solely a component listing. This type of TM will allow a BOM to populate in GCSS-A, and then Commanders will know exactly what *must* be accounted for with an FCR. If the Army will bother to list a $1 tent stake as BII/COEI to a tent, it should certainly list several million in major components as BII/COEI to an FCR.

Inadequacies of the DA Form 2408-17 as an Accountability Document

In order to evaluate the DA Form 2408-17's utility, the reader should revisit standard accountability procedures and the method by which Commanders determine and track their end item shortages. When Commanders need to inventory complex end items, DA PAM 710-2-1, "Using Unit Supply System (Manual Procedures)" directs them to inventory all of the end item's BII and COEI that are published in the TM or BOM for that end item's specific configuration (DA, 2016b). Then, the Commander will identify shortages and log them on a DA Form 2062, "Hand Receipt/Annex

SGT Gigi "Diesel" Disasi, a native of Gaithersburg, Maryland, and an AH-64 Apache armament electronics avionics repairer, repairs the component that indicates the functionality of the transmission on the helicopter on Hunter Army Airfield March 22, 2017. Disasi is currently assigned to C Co., 603rd Aviation Support Battalion, which supports the 3rd Combat Aviation Brigade by performing maintenance, providing maintenance support, and performs intermediate-level maintenance on components, subsystems, and airframes. U.S. Army photo by SGT Kellen Stuart, 3rd CAB Public Affairs

Back to Table of Contents

Number," formatted as a shortage annex (DA, 1982). In accordance with Army Regulation (AR) 735-5, "Property Accountability Policies," the Commander must then account for each shortage, which is typically accomplished with an adjustment document, a statement of charges, or a FLIPL (DA, 2016a). The system is simple to learn, easy to execute, and straightforward to manage. The TM answers any question of *exactly* what a Commander must inventory, the 2062 succinctly lists *only* what was missing, and then the Commander can confidently take appropriate administrative action to account for his or her shortages.

Surprisingly, DA PAM 710-2-1 explicitly tells Commanders *not* to inventory and account for aircraft components this way. Department of the Army PAM 710-2-1 Chapter 6, "Controlling Components of End Items," specifically states to "use the aircraft inventory record to control components of aircraft and other items which complete the aircraft" and then references DA PAM 738-751 for instructions on using the DA Form 2408-17 (DA, 2016b, p. 55). By regulation, the -17 is the inventory and the accountability document for aircraft components, not a TM and a 2062. The weakness of the -17 as an accountability document is threefold: it is an exhaustive list, it double-counts other end items as components of the aircraft, and it does not account for differences in fielding or configuration.

Suppose CPT Z is about to take command of an attack company; as part of his change-of-command inventories, he must inventory all of his AH-64 aircraft in accordance with DA PAM 710-2-1. So, to know what he must inventory, he references the -17. The -17 covers everything that can possibly be installed on the aircraft from the old ALQ-136 electronic radar jammer, to outdated pieces of flyaway gear, to every possible adapter for aircraft memory cards—it is an impressive list and a helpful reference. However, many of these items do not need to be installed on the aircraft nor are they even fielded to the force anymore. The -17 does not clarify which items do and do not need to be present for inventory. As such, CPT Z is left wondering which items are truly shortages and which are meaningless zeroes in the 'quantity' column.

Even the most junior Soldiers know that upon signing a hand receipt for an item, they are accountable for that item. For that reason, even the newest Private would balk if asked to sign a hand receipt for an item and then subsequently sign a different hand receipt for the same item—if signed, the Private would be accountable for two of that item, even though he only has one of them. Unfortunately, the -17 asks this of Commanders; it lists items already accounted for as end items elsewhere in the attack company's property book. The -17 accounts for ARC-

The engines of an AH-64 Apache helicopter await to be hoisted and connected to the helicopter while a Soldier inspects the inside on March 22, 2017. This is a part of phase maintenance conducted by 603rd Aviation Support Battalion, which supports the 3rd Combat Aviation Brigade by performing maintenance, providing maintenance support, and performing intermediate-level maintenance on components, subsystems, and airframes. U.S. Army photo by SGT Kellen Stuart, 3rd CAB Public Affairs

231s (software-definable radios), APR-39s (radar warning receivers), FCRs, and other separate end items. If the -17 is truly the accountability document for components of aircraft property, then these items are being double-counted as both aircraft COEI and separate end items themselves. As CPT Z conducts his change-of-command inventories, it is unclear whether his radios, ASE, and FCR are accounted for as separate end items or as components of the aircraft themselves. Because they are separate line items on the property book, those items demand accountability outright, but then the -17 demands accountability of the items as aircraft components. The Army presents CPT Z with an unwinnable problem and he accounts for the same items on both documents, therefore double-counting his own property.

After conducting the -17 inventory, CPT Z compiles his shortages—he is short all ALQ-136 components, the air-to-air-to-ground (AAG) antenna, and various pieces of flyaway gear. The ALQ-136 is no longer fielded, so naturally it should be short. Across the force, some aircraft have AAG equipment, but some are fielded without those systems. Also, certain flyaway gear can be used with the aircraft, but some is outdated. Even so, these are all -17 shortages and shortages *must* be accounted for in accordance with AR 735-5. Common sense dictates that no one should be billed for unfielded or outdated equipment, but nothing in writing says which shortages from a -17 require accountability documents. In turn, CPT Z's opinion, rather than an objective view of materiel necessity, will determine whether a Soldier is charged for an outdated piece of flyaway gear or even an unfielded ASE system. Expanded further, CPT Z's opinion then determines whether flyaway gear is tracked or mismanaged, if blocker plates are discarded or kept in storage, or if aircraft memory cards, safety pins, and door keys end up 'walking away' from the flightline. CPT Z's opinions, if wrong, will end up costing the Army its time and treasure.

Fortunately, the Army can implement a zero-cost, two-part solution that fixes unstandardized accountability of aircraft components. First, retain the -17 as a historical record of what is actually installed on the aircraft (or readily available for installation, like flyaway gear). It may not be a useful accountability document, but the -17 offers an excellent record of all items that *could* be taken on and off the aircraft. Commanders and maintenance managers must track for operational and historical purposes what each aircraft can bring to the fight. Second, remove the paragraph from DA PAM 710-2-1 requiring the -17 to be the method of controlling aircraft component accountability (DA, 2016b, p. 55). Instead, account for aircraft components the same as any other piece of Army property. The Army can accomplish this by adding a chapter to the end of each aircraft's TM listing the BII and COEI that must be present at the time of inventory (or by publishing an '-HR' TM, as recommended earlier for the FCR). Then, account for aircraft shortages on a shortage annex, and hold individuals accountable. This same process works for every other piece of equipment in the Army, and it will work with aircraft components too.

Two AH-64 Apache helicopter maintainers assigned to 1-10 Attack/Reconnaissance Battalion, Task Force Tigershark, 10th Combat Aviation Brigade, communicate with the pilots of an Apache during a test maintenance run-up Aug. 6, at Forward Operating Base Salerno in Khowst province, Afghanistan. Maintainers and test maintenance pilots work together daily to keep the task force's aircraft mission ready and safe. U.S. Army photo by SSG Todd Pouliot

Lack of Standard System to Track Frequently Moved Sensitive Items

At face value, tracking radios, ASE, and armament moving throughout an attack battalion's area of operations may appear to be an issue of individual training and local systems. However, by examining the varied procedures units employ to solve this problem, the easiest and most cost-effective solutions appear at the enterprise level. The following vignette effectively demonstrates the problem and sheds light on potential solutions.

It is 2330 on Tuesday at our hypothetical attack battalion; the only personnel in the hangar are small crews of night-shift maintainers and whichever aviators are executing night training flights. CW2 J finishes his flight, pulls into parking, and reports to his 15R (Apache Crew Chief), SPC R, that he was having issues with one of the ARC-231 radios. SPC R hurries to the armament

Back to Table of Contents

shop and grabs PFC Y, a 15Y, to help troubleshoot the radio while the aircrew is still on the auxiliary power unit (APU). After 30 minutes on the APU, PFC Y is unable to diagnose the issue, tells CW2 J to write up the fault, and that he will hang test it later that night. CW2 J writes up the fault, SPC R immediately work-orders the fault to armament, and PFC Y goes out to remove the radio and hang test it on another aircraft. A higher priority work order comes up for the armament shop after PFC Y removes the radio, so he secures the radio in their shop's cage and leaves a note for the day shift to hang test it. Up to this point, everyone has done the right thing and performed up to the standard. The next morning 1LT K goes to conduct the monthly SI inventory and, to her surprise, an ARC-231 is missing from one of her aircraft. After an hour of searching, she alerts her Commander, who then directs everyone at work to begin searching for the radio. The night shift arrives 1 hour later, explains what happened, and PFC Y brings 1LT K the radio he put in his shop's cage.

This vignette showcases the *best* case outcome of current systems and processes. It is equally plausible that PFC Y misplaces the radio once he is dynamically re-tasked. This scenario could very easily end in the loss, damage, or destruction of SI. It might scare some to realize that this is the reality across Army Attack Aviation. The same story occurs not only with radios, but ASE components, training and dummy missiles, and even components as large as Hellfire missile launchers (HMLs) and rocket pods. The common thread is that the only military occupational specialty capable of installing, uninstalling, testing, servicing, and repairing these components is 15Y, Apache Armament System Repairers. Attack companies do not have any organic 15Ys and yet, maintain accountability of items that only 15Ys can move, service, and repair. Because this problem is not limited to the unique circumstances of one unit and can be generalized

AH-64 Armament/Electrical/Avionic Systems Repairer (15Y) Soldiers of Delta 2-6 Cavalry Squadron, 25th Combat Aviation Brigade, 25th Infantry Division, work together to load rockets and 30mm cannon ammunition into the AH-64D Longbow Apache during aerial gunnery at Pōhakuloa Training Area, Hawaii. The 15Ys are primarily responsible for the maintenance of AH-64 helicopters. With hundreds of Army missions depending on these helicopters, they must ensure that all of them are safe and ready to fly. U.S. Army photo by SGT Sarah D. Sangster

to any attack battalion or air cavalry squadron, the solution must be broad enough in scope to address commonalities across those formations. Presently, three distinct, low-cost solutions exist to remedy this complex problem: (1) standardize and regulate the chain-of-custody documentation for high-value and SI aircraft components that are regularly installed and uninstalled from aircraft, (2) move radios, ASE, and armament from the attack company to the aviation maintenance company (AMC) modified table of organization and equipment (MTOE), or (3) make a squad of 15Ys organic to each attack company.

A form regulated by DA PAM 738-751, "Functional Users Manual for the Army Maintenance Management System–Aviation," already exists to track the installation or removal of major components from an aircraft: the DA Form 2410, "Component Removal/Repair/Install/Gain/Loss Record," (DA, 2014b; DA, 2014a). Normally, maintenance personnel use the 2410 to document the installation or removal of major components from an aircraft. These are typically components coming from or going to a manufacturer or contractor; the 2410 tracks items as they enter or exit Army systems. Using the 2410 as a method of recording the routine addition or removal of end-item property from an aircraft would be a novel application. Whenever a radio, an ASE system, or an HML is uninstalled by a 15Y for servicing, they would furnish a copy of the 2410 to the owning company. Digital logbook systems like aircraft notebook complement this solution by making it easier to both create the form and distribute it to the owning company. Using a form like the 2410 would create a chain-of-custody for SI and high-value end items as they receive unit-level maintenance. However, this solution breaks down as the attack company accumulates different companies' equipment on its own aircraft, a common scenario driven by mission necessity when operating in distributed locations. Under those circumstances, the second solution generates greater efficiency.

If all radios, ASE, and armament are on the AMC's MTOE and sub-hand receipted to Noncommissioned Officers within the armament section, they will be able to react to faults much more quickly while maintain-

ing accountability of organic SI. Currently, the attack companies own all spare radios, ASE, and armament equipment. So, when 15Ys uninstall an item, they must ask the attack company for a replacement item so that the aircraft remains fully mission capable (FMC). This back-and-forth between armament and the attack company creates friction and natural delays in the time to return an aircraft to FMC status. Alternatively, if that equipment was organic to the AMC, then the process of replacing a radio would be streamlined, and the same organization moving the item would be responsible for tracking and accounting for that item. The original scenario driving this problem becomes moot. Detractors from this solution will point out that the end item user, the attack company, is no longer accountable for the item on its aircraft. While not maintaining direct responsibility, the attack company would maintain custodial responsibility. Those detractors should note that other property already exists on the aircraft for which a different unit is accountable. The 30-mm ammunition, rockets, and missiles are accounted for by Soldiers in the forward support company. Ammunition specialists are not the end users, but like 15Ys, their unique training makes them the logical choice to maintain accountability of the items. This solution comes at no additional cost to the Army and only requires reorganization of current MTOE equipment.

The most elegant solution to the original problem unfortunately carries far-reaching consequences that are beyond the scope of this article. Including a squad-sized element of 15Ys in the attack company MTOE allows the company to operate *and* maintain its own equipment. With a limited armament capability, the attack company would be able to organically perform routine troubleshooting and servicing without generating work orders and moving property to the AMC. This solution creates the least exposure for property loss, but more importantly, it makes the attack company more self-sustaining while fighting in dispersed and degraded environments. The additional personnel, equipment, and training requirements accompanying this solution demand further analysis before facing serious consideration for implementation. However, it is a promising solution to accountability and inefficiency problems resulting from frequently moved components.

Broader Implications

Attack Company Commanders, Platoon Leaders, Noncommissioned Officers, and Property Book Officers work exceptionally hard to account for sensitive and valuable Army property. Anyone can easily quantify the dollar value of lost, damaged, and destroyed property, but the time consumed by property issues is much harder to measure. Regrettably, time spent conducting additional inventories, searching for property, and administratively managing property loss is time that could be used training. Our attack companies *must* be focused on training to conduct aerial attack, reconnaissance, and security missions. Ground Force Commanders expect unquestionable professionalism and expertise from Army Aviation—the sort that results from tough, realistic training. The training time lost due to property inefficiencies manifests as a corrosive on unit training and, ultimately, our mutual trust with the Ground Force Commander.

Captain Clayton B. Jaksha is an Army Aviator qualified on the AH-64E. He has served in Army Attack Aviation units in various positions for the last 5 years and deployed in support of Operation Inherent Resolve and Operation Atlantic Resolve.

References:

Department of the Army. (1982). *Hand receipt/annex number* (Department of the Army Form 2062). https://armypubs.army.mil/pub/eforms/DR_a/pdf/ARN18064_A2062_FINAL.pdf

Department of the Army. (1991). *Aircraft inventory record* (Department of the Army Form 2408-17). https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=1404

Department of the Army. (2014a). *Component removal/repair/install/gain/loss record* (Department of the Army Form 2410). https://armypubs.army.mil/pub/eforms/DR_a/pdf/A2410.pdf

Department of the Army. (2014b). *Functional users manual for the Army maintenance management system-aviation* (Department of the Army Pamphlet 738-751). https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/p738_751.pdf

Department of the Army. (2016a). *Property accountability policies* (Army Regulation 735-5). https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/r735-5_Web_Final.pdf

Department of the Army. (2016b). *Using unit supply system (manual procedures)* (Department of the Army Pamphlet 710-2-1). https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/p710-2-1_Web_FINAL.pdf

Lockheed Martin. (2015). *AN/APR-48B modernized radar frequency interferometer* (Brochure). https://lockheedmartin.com/content/dam/lockheed-martin/rms/documents/electronic-warfare/APR-48B-brochure.pdf

Within the aviation community, we strive for standardization. The Type "A" personality that permeates the culture of aviation, coupled with the precise and demanding nature of the mission requires clearly established rules, regulations, and planning factors that outline our capabilities and limitations. Countless arguments have been settled, and bets won and lost, thanks to the fact that the Department of Defense (DoD), the Department of the Army, and the Federal Aviation Administration clearly lay these parameters out in writing. We create checklists, we memorize emergency procedures and limitations, and we calculate performance planning cards to the exact pound of fuel. Every combat aviation brigade (CAB) down to the battalion and squadron level has standing operating procedures in place that when pilots and planners have questions, they know exactly where the answer lies. Today, after 14 years of combat aviation operations in support of ground forces and thousands of permanent change of station moves later, our aviators have a generally shared understanding of our operational framework and capabilities across the force. Regardless of the unit patch you wear, we know what to expect from our sister units and, as a result, interoperability between CABs is relatively seamless. We may use different brevity words or conduct crew briefs slightly different, but at the end of the day, we each fall subject to the same Army Regulation 95-1. When it comes to integrating with our European aviation partners, however, our unfamiliarity with aircraft that many of us have only seen on recognition of combat vehicles exams leaves us in entirely unfamiliar territory, both culturally and operationally.

The Joint Multinational Readiness Center (JMRC) and the Falcon Observer Controller Team, unlike its sister combat training centers (CTC), is in the unique position to work in this environment as U.S. Army Aviation units integrate and work with aviation assets from numerous countries throughout Europe. As the DoD refines its focus to the European Theater, the integration with North Atlantic Treaty Organization (NATO) partners in wide scale combat exercises throughout the

region brings to the forefront many of the challenges we see units facing as we meld forces into a coalition partnership. Like each CTC, JMRC often sees many of the same challenges posed to each unit and the unique ways in which they overcome them. While each reached varying degrees of success, there are inevitably certain factors to keep in mind to make the process of integrating our international allies more seamless.

Early task force (TF) integration that facilitates mutually understood capabilities and limitations is of significant importance. This is especially true when incorporating a foreign entity largely unfamiliar with the way in which we operate. Early coordination, utilization of liaison officers, and capabilities and limitations briefings to key staff prior to or early in the rotation are proven ways to effectively ensure both a shared understanding while maximizing the use of assets. *Field Manual (FM) 3-04, Army Aviation* provides invaluable guidance for air ground operations, a concept with clear applications to integrating coalition partners into the TF, by stating that more detailed planning and rehearsals are required when the team is newly formed, but agility, speed of action and mission success are significantly enhanced when habitual relationships are established, liaison is imbedded throughout the operations process, procedures are standardized and practiced, a common operational picture is maintained, and mutual trust is built through effective relationships and shared understanding.[1]

Effective units ensure that every element is incorporated in the activities and products representing the readiness of the TF. This includes mission planning, rehearsals, briefings, and accurate representation of all TF airframes in daily maintenance status reports. Inclusion of the coalition partner in every facet of TF operations facilitates cohesion and open dialogue and greatly enhances the capabilities of the coalition teamed TF.

https://us.army.mil/suite/page/usaace-dotd

BACK TO TABLE OF CONTENTS

Back to Table of Contents

Army Aviation places great emphasis on and has become highly proficient conducting night operations using night vision devices (NVD). Some of our partner forces, however, do not share the same resources and proficiency in this task and

it is not uncommon for aircrews to arrive at Hohenfels without NVD, thus restricting their tactical flight operations to daytime only. Every bit as significant, perhaps more so, are communication issues within a coalition teamed TF. While we have become accustomed to avionics packages with upwards of five configurable radios, developing a communication plan proves to be a significant challenge given the fact that many coalition partner air frames have one ultra high frequency radio, one very high frequency radio, and maybe one frequency modulation radio. Considering the complexity of communication plans on the battlefield, coupled with the additional frequencies aviators are required to monitor, we see air crews quickly running out of radios. What ultimately results is each aircraft monitoring different radios and relaying information to their wing man, a process that, as you can imagine, becomes taxing in complex scenarios and results in confusion and a lack of situational awareness.

As much of our equipment and capabilities have become second nature and taken for granted, it is critically important not to assume any detail of mission support when teamed with a coalition partner. Task force leaders and planners must identify capabilities and limitations and determine how they might affect flight operations and ultimately the plans to support the ground force commander.
Many of our coalition partners' rotary wing aircraft originate from their Air Force component. This apparently simplistic statement has significant cultural and operational implications. While the physical act of flying a helicopter is universally understood, most everything else associated with mission planning and providing support to the ground commander with which they are familiar is vastly different. The proximity in which Army Aviation works in support of the ground force ultimately requires that we understand the ground commander's maneuver plan, battlefield tactical tasks, and coordination measures in order to operate safely and effectively. The relationship and familiarity with their supported ground forces and nature of the missions flown by some NATO partners in support of their military forces is not the same as the interdependent relationship between Army Aviation and ground units.

Ensuring that our Allies have a clear understanding of the battlefield picture and the limits imposed upon them as a result of coordinated fires, enemy and friendly locations, and surface to air threat capabilities helps build confidence and facilitates successful mission execution. In addition, as we build TFs with multinational partners who are integrated from both their Army and Air Force components, we should build aviation liaison teams to facilitate air-ground operations and planning using the framework for liaison duties and responsibilities provided by *FM 3-04* in the conceptual stage of a mission through the duration of a specific operation.[2]

Equally significant to TF operations is the cultural integration between TF personnel as they cohabit the airfield, hangars, and briefing tents. As coalition partners arrive with different uniforms, unique grooming standards, and varying proficiency in English, most American Soldiers are hesitant to strike up a conversation as foreign rank insignia leaves Soldiers fumbling for the proper title when addressing someone. Within the U.S. Army, we understand certain ranks correlate to certain levels of responsibility or command and are accustomed to addressing those ranks for varying reasons. Battle captains have no qualms asking company grade commanders for flight crew information or calling senior non-commissioned officers in delta company for an aircraft status. They hesitate; however, when they realize the detachment commander of two aircraft from a participating nation is a lieutenant colonel and his senior maintenance officer is a major. Some level of cultural education on the coalition partner's rank structure and military customs prior to forming the TF would go far in strengthening understanding and relationships amongst TF personnel.

Task force commanders should also consider how they align their foreign counterparts within the organization. For example, does the size and capability that the partner unit brings to the fight warrant treating them as a separate company, or should they be aligned under an existing company to increase the overall strength? A prime example of this we have seen is in the medical evacuation (MEDEVAC) community, where aligning two Bulgarian aircraft under an Army Aviation MEDEVAC company increased their depth of

personnel and their coverage windows. Additionally, the pairing allowed for cross-training between American and Bulgarian medics that may have not otherwise occurred.

Lastly, the way in which we communicate orders with our Allies should be a consideration from the operations and staff perspective. During rotations, fully developed, written warning orders, operations orders, and scripted air mission briefs are generally considered the standard. In time constrained planning environments, however, it's easy to cut corners and provide verbal orders to commanders and aircrews or give in-flight mission changes with the expectation that they will be able to execute without issue. When dealing with coalition aircrews, however, the possibility that critical information is lost in translation becomes significantly higher when issuing verbal orders. When communicating with one another, we often speak quickly, use acronyms, brevity words, or jargon that, while we fully understand what the other person meant, for individuals whose primary language is not English, the intended message may not be comprehended. For this reason, staffs should provide written orders, when possible, to multinational crews, even if it is a simple mission statement containing clearly defined information such as task and purpose, time lines, frequencies, grids, and call signs. Most importantly, be patient. I promise that despite having to come up with multiple ways to convey a message, at the end of the day, their English is better than our Czech, Bulgarian, German or Italian.

As Army Aviation increases its presence throughout the European Theater, the inevitability of partnering with multinational aviation assets in complex training missions is reality. As aviation TFs begin rotations in support of U.S. Army Europe, the incorporation of multinational partners in their planning process will become increasingly important to ensure success. Furthermore, from a real-world perspective, while the majority of U.S. forces are out of the Iraq and Afghanistan theaters of operation, watching the news for more than a few minutes illustrates the very likely possibility that we will be called upon again to combat terrorism somewhere in the world. With numerous regional threats throughout the globe, the importance of understanding our allies, their capabilities, and developing relationships with them will prove crucial should we find ourselves engaged in another conflict in which we have the opportunity to work side-by-side with our aviation partners.

1. U.S. Department of the Army, Army Aviation, *FM 3-04* (Washington D.C.: U.S. Department of the Army, 2015), 1-1.
2. *FM 3-04*, 2-20

MAJ Ryan A. Cryer is the Deputy Senior Aviation Observer, Coach, Trainer at the Joint Multinational Readiness Center, Hohenfels, Germany. MAJ Cryer's previous assignments include headquarters platoon leader, forward support company executive officer, battalion S-4, and Chinook platoon leader, 17th Aviation Brigade and 3-2nd General Support Aviation Battalion, Camp Humphreys, Korea; battalion S-4, air traffic services company commander, battalion S-3, battalion executive officer, and Executive Officer, 1st Air Cavalry Brigade, Fort Hood, TX. He has one deployment to Iraq and one to Afghanistan. MAJ Cryer has served in the Army for 16 years with 13 in Army Aviation and is qualified in the CH-47D/F and the UH-72.

CPT Seth T. Power is the Multinational Aviation Training Advisor and Cavalry Observer, Coach, Trainer at the Joint Multinational Readiness Center, Hohenfels, Germany. CPT Power's previous assignments include scout platoon leader, executive officer, assistant squadron S-3, 1-6 Cavalry Regiment, 1st Combat Aviation Brigade, Ft. Riley, KS; assistant task force S-3 and Commander, C Troop, 3-17th Cavalry Regiment, 3rd Combat Aviation Brigade, Hunter Army Airfield, GA. CPT Power has served in the Army for 8 years and has deployments to both Iraq and Afghanistan. He is qualified in the OH-58D and LUH-72.

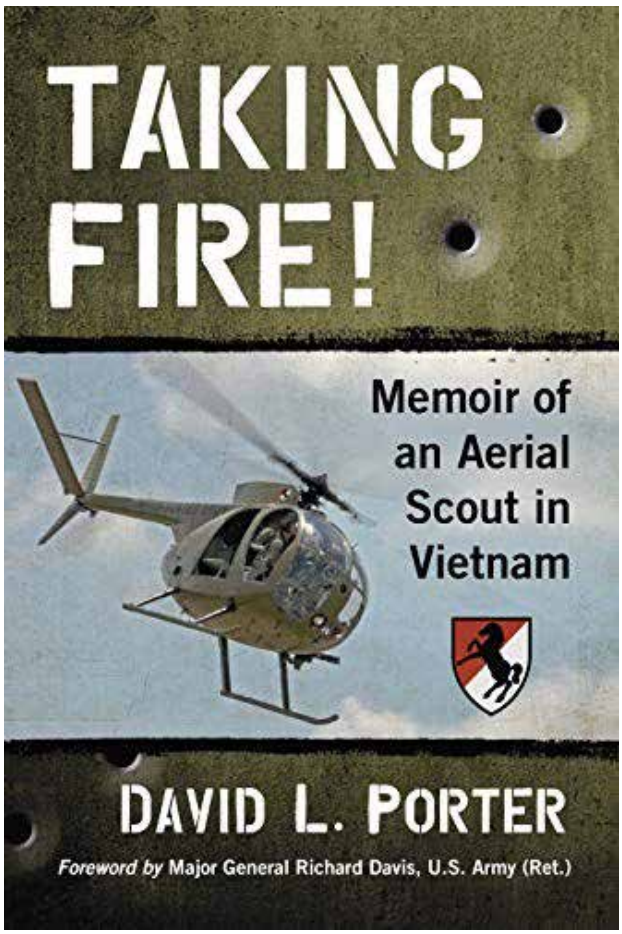
Acronym Reference

CAB - combat aviation brigade	**MEDEVAC** - medical evacuation
CTC - combat training center	**NATO** - North Atlantic Treaty Organization
DoD - Department of Defense	**NVD** - night vision devices
FM - field manual	**TF** - task force
JMRC - Joint Multinational Readiness Center	

Taking Fire, Memoir of an Aerial Scout in Vietnam

Author, Colonel David L. Porter, U.S. Army Retired; McFarland & Company; 2020; 214 pages

A book review by Colonel M. Alan Roberson, U.S. Army Retired



Finally! An outstanding "how to scout" memoir that is relevant for today's combat aviators! This should be a must read—especially for new Army pilots. If you are currently flying Apaches, Black Hawks, Chinooks, unmanned aircraft systems, and eventually Future Vertical Lift aircraft… reading and understanding COL Porter's lessons learned will make you an exceptional combined arms warrior; and possibly save your skin!

David Porter began his distinguished 27-year military career at South Dakota State University, Army Reserve Officers' Training Corps, or, ROTC. During his senior year (1966), David's leadership skills were recognized and he was selected as co-captain on the "Jackrabbit" varsity football team. During 1969–1970 he was assigned to the ***historic and mighty*** 11th Armored Cavalry Regiment (ACR) located at Quan Loi, Vietnam. For almost 5 months, he was an Aerial Scout Section Leader flying Light Observation Helicopters (LOH) / OH-6. During these challenging months, he was awarded: four-Distinguished Flying Cross, 30-Air Medals, a Bronze Star, several additional awards, and unit citations. Ironically, his most cherished award was a simple plaque from the Mess Sergeant that stated, "Thanks for staying out of my hair." You will enjoy reading the back story of this award from the hysterical "The Night of Bubonic Biscuits!"

The central theme of this book is to codify tactics for future aerial scouts. COL Porter's descriptions of Hunter-Killer Teams unique method of reconnaissance (Hunter) coupled with attack helicopters (Killer) lead to significant battlefield success. These tactics, techniques, and procedures ended with the Vietnam conflict. Now, even though the "tools" of reconnaissance have greatly improved, scouting remains mission essential for battlefield victories.

U.S. Army Field Manual 3-90-2,"Reconnaissance, Security, and Tactical Enabling Tasks (Volume 2)," states "Reconnaissance primarily relies on the human dynamic rather than technical means" (Department of the Army, 2013, p. 1-1). From his prologue to the epilogue, COL Porter was refreshingly honest about the impact of his leaders, pilots, and many more—especially the OSCARs; enlisted scout aerial observers. He quickly learned successful leadership in combat is best based on competence, courage, and character. The ones he admired the most had a warrior mentality.

The most interesting segments of the book are COL Porter's life as a scout, how it begins, taking a lot of enemy fire, and the bad days of February. You will learn that 11th ACR scout pilots were the most impetuous, fun-loving, risk-taking, and day-to-day bravest pilots in the Regiment. They took great pride in their work and were delighted when any one of their platoons succeeded.

Even after almost 50 years, COL Porter describes how he can still vividly feel the heat and jarring concussion of nearby explosions, the acrid smell of cordite and exhaust fumes from an OH-6 turbine engine, and the wonderful feel of freedom of flight he called "wind in the face."

Readers will truly feel the fear of "taking fire-taking fire" and getting shot at by enemy ground forces who were trying to kill him. In most cases, there was no time to consider the options of what COL Porter did; he merely reacted.

He clearly links being at the "point of the spear" from his cockpit to a combined arms leader synchronizing the effects of attack helicopters with artillery

Back to Table of Contents

and forward air controllers, with the amazing results of "Finding the Enemy and Pile On."

During the bad days of February—you will learn what it means to be in the cavalry! A key requirement of cavalry from time immemorial, has been to report what it is seeing to its higher command. COL Porter often heard from experienced pilots, "if you can't communicate, you are not a Cavalryman." These scout pilots took seriously the fact their reports to the ground commanders were important to their future operations, and they worked hard to be as accurate as possible. They fully understood that the veracity of their reports was often the basis for life-or-death command decision by their ground troop leadership. That was a very sobering responsibility.

Why is *Taking Fire, Memoir of an Aerial Scout in Vietnam* relevant to multi-domain operations? It brings to life the challenges and responsibilities of a scout. Because it teaches the true themes of human dynamic and mastering the fundamentals. It will educate you about the reality of life at battle. The lessons learned from the bad days of February are insightful to large-scale combat operation, requiring a full suite of combined arms and enabling capabilities–infantry, tanks, artillery, attack aviation, long-range precision fires, and intelligence.

My rating: 5 stars! There have been hundreds of books written about war, but only few can be recommended the highest. *Taking Fire, Memoir of an Aerial Scout in Vietnam* by COL (Ret.) Porter is one of the best. It is a purely enjoyable read, and a reminder to modern combat aviators of the challenges that you will face today and in the future.

Scouts Out!

BOOK REVIEWS

Do you have a favorite book on military history or on a professional military reading list that you'd like to share with others in the Army Aviation community? Consider writing a book review for Aviation Digest's Turning Pages section. We request that the review be one written page (approximately 825 words). Query the Aviation Digest editor through the AD mailbox regarding the book you'd like to share with us.

Book review guidelines are available upon request.

Colonel (Ret.) M. Alan Roberson is a retired Army aviator and served most of his 30-year career in divisional cavalry squadrons. He commanded 2-17 Cavalry Squadron (Kiowa Warriors) with the 101st Airborne Division and 82nd Combat Aviation Brigade, 82nd Airborne Division.

Reference

Department of the Army. (2013). *Reconnaissance, security, and tactical enabling tasks volume 2* (U.S. Army Field Manual 3-90-2). https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/fm3_90_2.pdf

Aviation Digest
ATTN: ATZQ-TDD
Directorate of Training
and Doctrine, Bldg. 4507
Fort Rucker, AL 36362

Look for the July—September 2021 Issue:

Our Featured Focus Will Be
Mastering the Fundamentals
... and More

Write for *Aviation Digest!*

Focus Topic: Leadership & Leadership Development
October–December 2021 articles due September 1, 2021
(published on or about November 15, 2021)

Focus Topic: How We Fight
January–March 2022 articles due December 1, 2021
(published on or about February 15, 2022)

Along with articles corresponding to the listed focus topics, the Digest is always receptive to letters to the editor, leadership articles, professional book reviews, anything dealing with the aviation 7-core competencies, training center rotation preparation, and other aviation-related articles.

The Army's *Aviation Digest* is mobile.
Find Us Online! @
https://home.army.mil/rucker/index.php/aviationdigest

or the Fort Rucker Facebook page
https://www.facebook.com/ftrucker

PB 1-21-2

PIN: 208753-000

Back to Table of Contents