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LETHALITY

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Commanding General, USAACE
WILLIAM K. GAYLER

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

Tactics Division
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https://www.us.army.mil/suite/page/389908

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By Order of the Secretary of the Army:
Official:

GERALD B. O'KEEFE
Administrative Assistant to the Secretary of the Army
1911302

MARK A. MILLEY
General, United States Army
Chief of Staff

About the Cover:

SPC Sarah Henderson, a flight engineer with the 3rd Combat Aviation Brigade, 3rd Infantry Division, scans the outlying neighborhoods of Jalalabad, Afghanistan while crouched on the rear door of a CH-47 Chinook helicopter. (U.S. Army photo by SFC Randall Pike)

The Command Corner

The Aviation Branch has been continuously and actively pursuing excellence nonstop across every part of the globe. It has been simply awe-inspiring to watch all of the tremendous efforts across the force, and we at the U.S. Army Aviation Center of Excellence are very proud of each one of you. The branch's work has been diffused over multiple lines of effort and various theaters, each with their own unique challenges and trials. Each one of you has taken these challenges and trials to heart, and we are becoming a better branch because of it. Much of the effort is evidenced in how and what you are writing and submitting to be published in our branch's professional bulletin, the ***U. S. Army Aviation Digest***.

This quarter's issue specifically focuses on the topic of lethality. Army Doctrine Reference Publication (FM) 3-0, "Operations," explains in chapter one that "Effective close combat relies on lethality informed by a high degree of situational understanding across multiple domains." It is this capacity for informed lethality that provides the "...foundation of all other military capabilities and the basic building block of military operations." Informed lethality is not simply about the might we bring to bear within the battle space; it is about the convergence of where, when, and how we bring that capability to bear against the enemy.

As you read this issue, I hope that you take the time to consider everything within the Aviation Branch, and across the Joint Force, that has to come together in unison for our aircrews to provide informed lethality in support of ground forces. The incredibly diverse articles in this issue provide a testimony to every task that must be performed in concert to achieve this lethality. For instance, CW3 Elder writes to the challenge surrounding airspace in support of Large-Scale Ground Combat Operations, which is a topic that marries perfectly with SSG Synder's perspective on leaders getting the most out of their 15P radio/telephone operators. These two articles certainly speak to the informed portion of lethality. MAJ Hall has written an incredible piece that, while focused on preserving the lethality of Army Special Operations Aviation forces' rotary-wing assets and capabilities, has tremendous potential impact on the future planning and utilization of conventional forces.

There are numerous thought provoking contributions to this issue, and I encourage each of you to review the ideas brought forward by your peers and fellow aviation branch Soldiers. Additionally, if you have something to say, speak up and submit your ideas to ***Aviation Digest*** for publication. After all, such efforts have great impact for all of us. Thanks again for all you do.

ABOVE THE BEST!

William K. Gayler
Major General, USA
Commanding

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U.S. Army photo by 1LT Ryan DeBooy

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Managing Editor
Amy Barrett

Art Director
Brian White

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

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July–September 2019 issue articles due June 1, 2019 (magazine published on or about August 15, 2019)

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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 AIRSPACE INFORMATION CENTER

IN A LARGE-SCALE COMBAT OPERATIONS FIGHT

By CW3 LeBron Elder, Jr.

The airspace information center (AIC) is an air traffic control facility possessing a great deal of capability; however, it is rarely utilized to its full potential. Believed by some to be an antiquated facility, experimentation and wargaming continue to demonstrate that the AIC team, equipped with the full tactical airspace integration system (TAIS), enhance combat effectiveness. Doctrinally, this team's capabilities are well defined. This article explores the how, where, and why AIC operations can occur and attempts to convince operational and tactical planners to incorporate AIC capabilities during combat training center rotations, warfighter exercises, and real-world missions.

SGT Shawn Carriere, air traffic control operator, Fox Company, 3rd General Support Aviation Battalion, 82nd Combat Aviation Brigade, demonstrates a light gun as the sun lowers behind him, Fayetteville, North Carolina, March 30. The light is used to regain communication with aircraft. The light is aimed at the aircraft and the pilots are given a sequence of color lights, which they acknowledge by flashing their landing lights or rocking back and forth. (U.S. Army photo by SSG Christopher Freeman/ 82nd Combat Aviation Brigade PAO)

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The AIC assists commanders to extend a greater reach across the battlefield as the team hones its craft in preparation to support large-scale combat operations (LSCO). The team uses the full TAIS to provide automation assistance to airspace planning, enhancing near-real time airspace management operations, and ensures connectivity between all air traffic service (ATS) assets and airspace users in theater. New software updates for TAIS allow the AIC team an easier means of communicating, sharing data, and accessing a common air picture than ever before. The AIC enables commands to interface and link ATC facilities, fostering the safe and efficient flow of air traffic.

As defined in Training Circular (TC) 3-04.6, "Air Traffic Services Operations," "The AIC team provides flight following services to friendly aircraft operating within assigned airspace" (Department of the Army [DA], 2017a). In LSCO, this operation can occur, as defined in Field Manual (FM) 3-0, "Operations," in a joint security area (Figure) (DA, 2017b).

Airspace information center in the joint security area supports various aspects of joint operations, such as lines of communication, movement control, sustainment, command and control, and airfields. An example is flight-following operations for aircraft transitioning between an aerial port of debarkation to a theater Army headquarters based from an airfield in a fixed location where security is already in place.

In the consolidation area, an AIC can support friendly force territory gains to exploit tactical success while enabling freedom of action for forces operating in the other areas. The AIC performs flight following from the theater Army to a corps in a consolidation area, or from the corps to a division in the support area (or possibly in the close area). Security for the team is provided when based from an airfield.

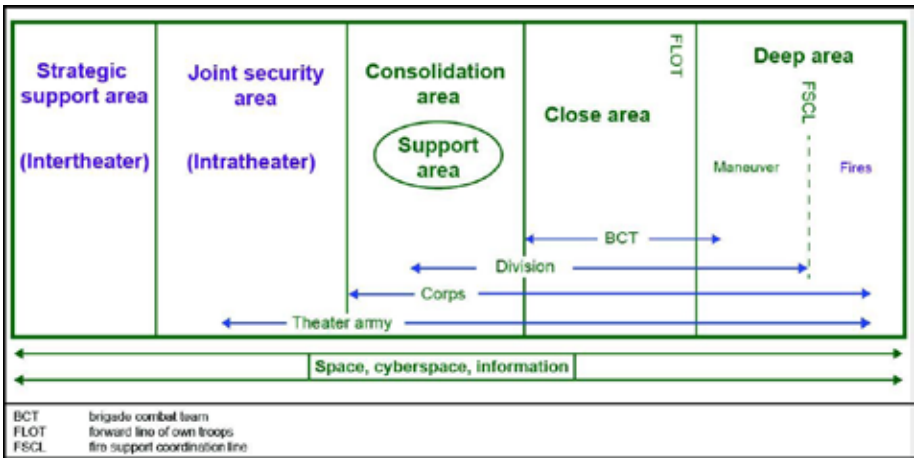

Figure. Field Manual 3-0 graphic showing various corps area of operations (DA, 2017).

Training Circular 3-04.6 further defines the team as coordinating "… emerging airspace requirements for current operations, broadcasts air and ground threats to participating aircraft, and maintains situational awareness of unmanned aerial systems within their area of responsibility." The AIC supports the division's Joint Air Ground Integration Center (JAGIC) by being positioned to best support the control of division-assigned airspace. This could be in the support area, where the AIC assists a maneuver enhancement brigade managed with movement control, mobility support, and sustainment operations. It could also be in support of a key brigade combat team assisting the air defense and airspace management/brigade aviation element (ADAM/BAE) with air-ground integration. Regardless of positioning, the AIC should be prepared to move, as the AIC's electronic signature could be detected in a peer (or near-peer) engagement.

An AIC in the close area helps facilitate rapid decision making to exploit opportunities, mass indirect and direct fires, and properly use terrain. Tactically placed on the battlefield, the AIC provides flight following or supports an ADAM/BAE airspace management operation; placing special emphasis on aircraft recovery operations, personnel recovery, air medical evacuation, and assistance to aircraft in distress. Security for the section is required in this area, and the team must displace to multiple locations since the system is highly susceptible to electromagnetic detection.

Air traffic control (ATC) and airspace control are two different, but related, activities. Air traffic control, by the definition, separates airspace users. An ATC's goal is to keep all aircraft away from each other. Airspace control, on the other hand, integrates. With the commander's intent in mind, the airspace element attempts to accommodate every airspace request and fit those operations within the assigned airspace. Much of the coordination made to integrate airspace users for airspace control operations occurs well in advance of execution. Conversely, an ATS facility separates aircraft in the vicinity of an airfield in realtime.

While ATC does not equate to airspace control, the Army air traffic controller is capable of making that mental transition, understands general airspace rules, and possesses the talent required to speak to all airspace users. Primarily, ATC (except AIC) facilities use positive control, while airspace control elements use procedural control for much of their operations. Similarly, but under a different approach, both facilities prevent fratricide by separating

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PFC William Jennings, air traffic control operator, Fox Company, 3rd General Support Aviation Battalion, 82nd Combat Aviation Brigade, adjusts the settings on a system inside the Tactical Airspace Integration System, Fayetteville, North Carolina, March 31. The TAIS is an integral part of Fox Company's mission as the ATC support for the 82nd CAB. (U.S. Army photo by SSG Christopher Freeman/ 82nd Combat Aviation Brigade PAO)

integrated airspace users laterally, vertically, by time, or a combination of the three. Given the access to specific radar systems, both AIC and an airspace control element possess the capacity to provide positive control.

As a tactical ATC facility, the AIC primarily train flight-following operations. Department of the Army Form 3479-13, "Commander's Task List (ATS) AIC Operator," is the Commander's Task List (CTL) used by section leaders to track a trainee's progress when entered in the training program (DA, 2010). In order to receive an AIC rating, the trainee must complete all required tasks on their assigned CTL and perform 80 flight-following position hours. Rated controllers must perform 40 position hours for the preceding 6 months to maintain proficiency. Accredited simulation devices can account for up to half of the required hours for both rating and proficiency. The training and certification requires controllers to have a firm understanding of Federal Aviation Administration (FAA) regulations and the ability to install, operate the full TAIS, and prepare the system for movement.

Currently assigned to the combat aviation brigade (CAB), the AIC issues advisories to separate aircraft from other aircraft and activities or significant weather hazards provided by an eight-Soldier team of 15Q, air traffic control specialists. This team of FAA-certified service members possess the capability to maintain data and communications links with other Army battle command systems and ATS facilities. These linkages enable the AIC team to communicate with airspace users regarding immediate changes to the airspace originated from an ADAM/BAE, JAGIC, or battlefield coordination detachment/air operations center.

Numerous individual and collective tasks address airspace operations for an AIC team. Resident courses such as: digital master gunner-TAIS, noncommissioned officer battle staff, ADAM/BAE, joint air operations command and control, joint force power, echelons above brigade airspace, and specialized joint air-ground training are available to address airspace and system integration. Brigade combat teams, specifically ADAM/BAEs, and CABs are encouraged to solicit the assistance of AICs during combat training center rotations to better manage the complicated scenarios designed by the observer-coach-trainers. Divisions and corps are encouraged to incorporate the positioning of AICs

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at locations on the battlefield facilitating integrated operations and improving lines of communication in their planning. Leaders are also encouraged to allow AIC and airspace personnel to enter installation fixed-base flight-following training programs in accordance with Army Regulation (AR) 95-2, "Air Traffic Control, Airfield/Heliport, and Airspace Operations." Modeled after the JAGIC, several Army installations have combined fixed-base flight-following and range control operations. This combined facility exposes air traffic controllers to integrating ATS and airspace control with all other tactical operations executed in the installation's range areas.

The capability is currently available for AIC teams to communicate, both verbally and digitally, across the battlefield. Air traffic control specialists possess the ability but require the additional training to conduct airspace control operations. In an LSCO engagement, commanders will seek to use all available assets to defeat the enemy. Planners must incorporate the AIC in their operations, and the AIC must step up to the challenge.

CW3 LeBron Elder, Jr. is an Air Traffic and Airspace Management Technician with 17 years of service. He has completed three combat tours to Iraq and Afghanistan and humanitarian relief operations in Pakistan. Assigned to the Airspace Control Proponent Office in Fort Leavenworth, Kansas, CW3 Elder is responsible for developing DOTMLPF-P requirements for airspace control and JAGIC capabilities.

SPC Kelli Oliver, air traffic control operator, Fox Company, 3rd General Support Aviation Battalion, 82nd Combat Aviation Brigade, listens to pilots using a radio headset, Fayetteville, North Carolina, March 31. Fox Company's mission as the ATC support for the 82nd CAB requires them to be able to listen to multiple elements, from infantry to aircraft, to ensure safe travels for aircraft. (U.S. Army photo by SSG Christopher Freeman/ 82nd Combat Aviation Brigade PAO)

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DOCTRINAL TRAINING AND THE SUBSEQUENT SHORTFALLS OF THE AEROMEDICAL EVACUATION NONCOMMISSIONED OFFICER

By SFC John F. Barnes
Reviewed and edited by CPT Justin Purser

Aeromedical evacuation (hereafter referred to as AE) noncommissioned officers (NCOs) face an ever-evolving and changing landscape of medical concepts, practices, and doctrinal changes in the face of an increasingly complex mission profile under the decisive action training environment (DATE). U.S. Army AE is responsible for providing medical evacuation support for two combat theater operational environments (OEs), Afghanistan and Iraq, which fall under counterinsurgency (COIN) strategy, and are aligned with multiple regionally aligned forces (e.g., Operation Atlantic Resolve). In light of this, the Army's inventory of AE NCOs are demonstrating shortcomings in doctrinal background, and the application of AE skills has been evident at the three Combat Training Centers (CTCs) across our formation. The current coaching focus at CTCs is centered on NCOs' responsibilities and capabilities to complete tasks that combine academic knowledge, doctrine, and their application in combat operations. Ultimately, this coaching focus intends to create shared understanding within the Army Health System (AHS) community.

U.S. Army National Guard photo by SGT Emily Finn

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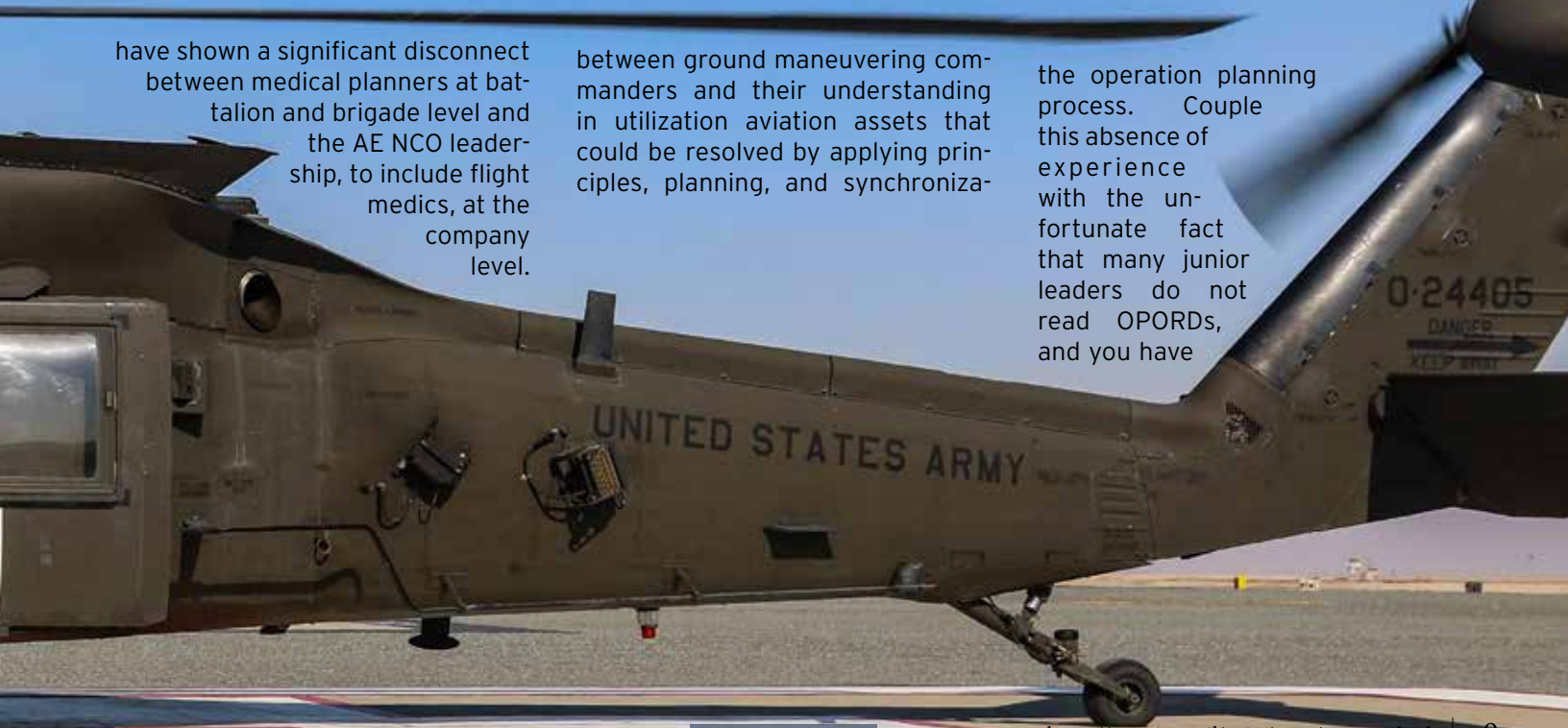
Medical observer, coach/trainers (OC/Ts) at sister CTCs have observed key areas in which AE NCOs are weakest: understanding of the medical common operating picture (MEDCOP), application of standard operating procedures (SOPs) and doctrine, and attendance at formal technical training courses.


photo by JMRC Hohenfels

The following observations are based on experiences from nine rotations during 16 months with rotational training units at the Joint Multinational Training Center (JMRC) in Hohenfels, Germany. They were captured via instrumented after action reviews and executive summaries submitted to the Center for Army Lessons Learned.

Understanding of the MEDCOP and associated planning.

Soldiers and leaders need doctrinal education at centers of excellence focused on the AHS and their responsibility to the medical planners to streamline operations. My observations over repeated rotations have shown a significant disconnect between medical planners at battalion and brigade level and the AE NCO leadership, to include flight medics, at the company level. Either the medical planners or the AE NCOs are not in harmony in terms of what the plan actually is, or a MEDCOP simply does not exist at all and is not posted in unit areas for quick reference. Continued education and development in the application of doctrine regarding AE principles, AE planning, Army health service support planning, and AHS will increase leaders' ability to apply tactical techniques of patient evacuation and en route care and also sustain medical support to the AE company's supported units. This issue has created a gap between ground maneuvering commanders and their understanding in utilization aviation assets that could be resolved by applying principles, planning, and synchronization. Aeromedical evacuation NCO leadership must have a persistent presence in creating the operations order (OPORD), friendly courses of action, integration into the ground force scheme of maneuver, and formulation of the MEDCOP—to include synchronization of air and ground medical evacuation assets/procedures between friendly units. I have most often observed that from the receipt of the OPORD to the execution of the order, most NCOs are not part of the operation planning process. Couple this absence of experience with the unfortunate fact that many junior leaders do not read OPORDs, and you have



an AE company that is not nested with the higher intent and is essentially making it up as they go.

SOPs/doctrine.

Due to the constraints of 24-hour operations and a 25-hour duty day while in a combat environment, AE Soldiers and NCOs need SOPs that provide expectations and checklists of mandatory tasks. Based on my experience with JMRC rotations, most AE companies and forward support medical platoons (FSMP) arrive without an SOP or they arrive with one, but lack familiarity with its content. Aeromedical evacuation companies and FSMPs need written procedures to prevent confusion in the event of a communications system loss. The majority of coaching focus for junior and senior AE NCOs centers around proper utilization of air evacuation, understanding of casualty evacuation (CASEVAC) criteria, mission approval/launch approval process, and development of SOPs that govern execution of AE. Doctrinal excerpts provided to NCOs during the rotation tend to help planning and execution of AE operations as the unit progresses in the rotational fight, enabling rapid learning and adaptation of the unit.

The current AE NCO's mindset must change regarding doctrine and its application. The United States Congressional Mandate of 2012 established the need for critical care flight paramedics (Department of the Army, 2012)[1] and has produced flight medic NCOs whose skill level has improved rapidly compared to previous generations of medics. Medical OC/Ts at CTCs, however, are seeing a trend of NCOs that suffer in doctrinal background or operational experience. This shortcoming is manifest under the DATE in the NCO's involvement with the orders process. Noncommissioned officers are not part of the planning process—platoon/company leadership and higher staff echelons tend to manage this process entirely—producing NCOs who lack understanding of the greater operational picture and where they fall in it.

Attendance at formal technical training courses.

With U.S. Army Forces Command units still tending to focus on COIN operations, transition to the DATE has only rigidly occurred at CTCs, and units are conducting little to DATE-centric training in preparation for a near-peer threat due to constraints from competing internal/external tasking requirements. The Army currently offers the 2C-F7 course, the only medical evacuation doctrine course that focuses on the proper application AE tactics, techniques, and procedures to support tomorrow's combat and peacetime operations at the user level. The course provides a monthly class, but current operational tempo for garrison AE units is so high that units cannot afford to lose Soldiers who would benefit from the training; therefore, seats in the course go unfilled. Personnel completing the Critical Care Flight Paramedic (FP-C) program attend the aircrew member course, which includes doctrinal classes but is limited by additional curriculum prerequisites that must be met. Several options to educate NCOs' doctrinal knowledge are to establish mobile training teams that can visit combat aviation brigades and bring the course to the units. This allows for a larger audience at little expense to the unit since the Soldier is still local. Another option is to incorporate this course into a distributive learning course (DLC, or distance learning) to allow the NCO to complete the coursework at his own pace. Most AE NCOs absorb

[1] This document is available via Army Knowledge Online with an active common access card.

U.S. Army Soldiers assigned to the 2-211th General Support Aviation Battalion, Minnesota Army National Guard, and the 155th Armored Brigade Combat Team, Mississippi Army National Guard, carry a patient to a UH-60L Black Hawk helicopter during an aeromedical evacuation rehearsal at Udairi Range Complex near Camp Buehring, Kuwait, Dec. 11, 2018. The rehearsal was conducted to prepare for Operation Desert Observer II, a combined arms live-fire exercise with Task Force Spartan and the Kuwaiti Land Forces, to validate protocols and strengthen communications between the ground teams and aviation assets. (U.S. Army National Guard photo by SGT Emily Finn)

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and digest a disproportionately small amount of doctrine content in the current DLC construct prior to attending a Noncommissioned Officer Education System (NCOES) course, which does not satisfy the broad spectrum of AE and the AHS plan.

As AE prepares for the future fight, NCOs must develop to understand the MEDCOP, apply SOPs and doctrine, and attend formal technical training courses.

Mastery of these concepts is crucial to improving survivability of patients, AE personnel, and medical evacuation platforms. The AE NCO will have to prepare himself to assume roles of greater responsibility and apply expertise to guarantee that AE continues to deliver premier health care to the U.S. and multinational militaries worldwide for current and future operations.

photos by JMRC Hohenfels

SFC John Barnes is currently serving as the Aviation Medicine Observer, Coach/Trainer at the Joint Multinational Training Center (JMRC), Hohenfels, Germany. Previous assignments include First Sergeant, C- Company 2/501st Aviation Regiment 1st Armored Division CAB, Platoon Sergeant C-Company 7/101st Airborne Division, Clinical NCOIC Soldier Center Clinic and Military Intelligence Student Clinic Raymond W. Bliss Army Community Hospital (RWBACH) MEDDAC, Evacuation Platoon Sergeant C-Company 501st Area Support Medical Company (ASMC) 86th Combat Support Hospital (CSH) 101st Airborne Division.

Reference:

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AN INWARD EYE TO ARMY AVIATION

WHAT SOLDIERS REALLY NEED FROM THEIR AVIATION LEADERS

By MAJ Donald J. Sulpizio

TO SERVE as an observer, coach, trainer (OCT) at a combat training center (CTC) offers a critical long study and reflection of Soldiering to forge current and future leaders of the Army profession. Nowhere outside of a CTC can a combined arms team assemble to undergo more extensive preparation and training for war. A CTC is a fully integrated and complex environment that tests the mettle of a unit and its leaders. This is where the practice of doctrine and experience meets the friction of time and human nature. Observer, coach, trainers are afforded an unparalleled perspective of Army organizational behavior, placing responsibility on them to provide feedback and accountability to the enterprise on employing the force. Carl Von Clausewitz, in his works of ***On War*** (1984), refers to the French term of ***Coup d'oeil***, which describes the "...quick recognition of a truth that the mind would...perceive only after long study and reflection." This article is a collection of feedback synthesized from a "...long study and reflection" of Soldiers across 18 CTC rotations at the Joint Readiness Training Center (JRTC), scar tissue as a battalion and brigade field grade Officer, and the duty this places on Army aviation leaders.

The agenda is not the rant of a cynical Iron Major on "how to win" at a CTC. Rather, this article distills 10 key arguments from Soldiers' feedback and provides Army aviation leaders topics to consider as they head to their seat at the combined arms table. Learning organizations require feedback. If feedback is truly a gift, consider the following straightforward input from Soldiers of what they really need from their aviation leaders. For the following arguments, the term Soldiers will include all ranks and all branches of the Army.

1: You are either **LEADING OR PREPARING TO LEAD**. There is no in-between in this profession. As a leader you must **INSPIRE**. Communicate your vision passionately and persuasively. Be able to move your formation forward while everyone is retrenching or slipping backward. Teach and lead your staff through military planning. Do not delegate away your own ineptness for the military decisionmaking process with, "figure it out."

U.S. Air Force photo by SSgt Jordan Castelan

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2: READ, WRITE, AND THINK. If you are leading or aspire to lead, **TAKE RESPONSIBILITY** for your self-development and realize your role in mission command and the other warfighting functions. The Soldiers you lead deserve better than just your opinion. The more you read and write, the better you may understand what you think and believe. Moreover, reading, understanding, and applying doctrine is the cure for a counterinsurgency (COIN) hangover. Terms of reference from mission command, Army Doctrine Publication (ADP) 6-0, "Mission Command," (Department of the Army [DA], 2012) are not simply punchlines to a mission statement or training objectives. Terms (or words) have meaning that must drive actions in your formation. A humble reminder from the past, "Not all readers are leaders, but all leaders are readers."–Harry S. Truman

3: Battalion **COMMANDER'S INTENT** must be tangible and actionable at the platoon echelon. Get away from conceptual statements with buzzword bingo of doctrinal terms. Clearly define how the commander visualizes success in a manner that can be translated into suspense (or time), space, and above all–ownership.

4: OWN TIME. Have a plan-to-plan. Management of time will either preserve the force or feed the private sector with talent. Illuminate the commander's decision points to drive priorities of work across your formation. When leaders at every echelon understand the commander's next decision, what only they can do to help, and where they need to be, the units' efforts are unified. Remember one thing, "Time isn't the main thing. It's the only thing."–Miles Davis

5: EMPOWER YOUR NONCOMMISSIONED OFFICERS (NCOS) to solve complex problems while simultaneously holding team members to a high standard of discipline, fitness, and never-yielding focus on the Army values. Army aviation is an officer-heavy tribe and at times, perceived to marginalize the NCO corps. In the absence of orders, NCOs can determine what they should be doing (from commander's intent) and execute. The hallmark of a trusted NCO corps is the unremitting vigilance to shape the discipline of a unit. "Discipline is the soul of an army."–George Washington

6: Planning or tactical standard operation procedures (SOPs) are often absent or not enforced. Do not deploy to a CTC or combat without the units' **SOP NORMALIZED ACROSS THE FORMATION**. In the absence of the SOP, a team will focus on products over process and struggle to solve the commander's problem. Through the disciplined practice of a unit SOP, a callow formation can swiftly transform into an organized, networked, and lethal force.

7: A cheap trick to leadership is blaming your higher headquarters. **SOLVE THE COMMANDER'S PROBLEM** before your own. An example for aviation leaders is to help solve the brigade combat team (BCT) commander's problem during mission analysis and course of action development before introducing an air mission coordination meeting checklist of requests for information. Examine each of the (higher) commander's key tasks, and explore how to leverage the arsenal of Army aviation core competencies to execute each one.

SGT Brandon Boggs and SPC Zackery Yarbrough, both observer coach/trainers assigned to 2nd Training Support Battalion, 340th regiment, 4th Cavalry Multi-Functional Training Brigade, review a map of the training area that Soldiers will drive through while training on the Virtual Battlespace 3 trainer Nov. 1, 2018, on Fort Knox, Kentucky. (U.S. Army photo by SGT Rakeem Carter, 4th Cavalry Multi-Functional Training Brigade)

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8: KNOW YOUR ROLE. Liaison officers (LNO) and brigade aviation officers (BAO) are not substitutes for the operations officer or battalion commander. Put the readiness level (RL) 1 lieutenant or warrant officer back behind the cyclic, and leverage an ambassador of Army aviation to **BUILD MUTUAL TRUST AND UNDERSTANDING** with the BCT. We are eroding trust between other maneuver elements, future leaders, and Army aviation by sourcing LNOs (and BAOs) out of our formations with novice training, education, or experience in Army aviation core competencies.

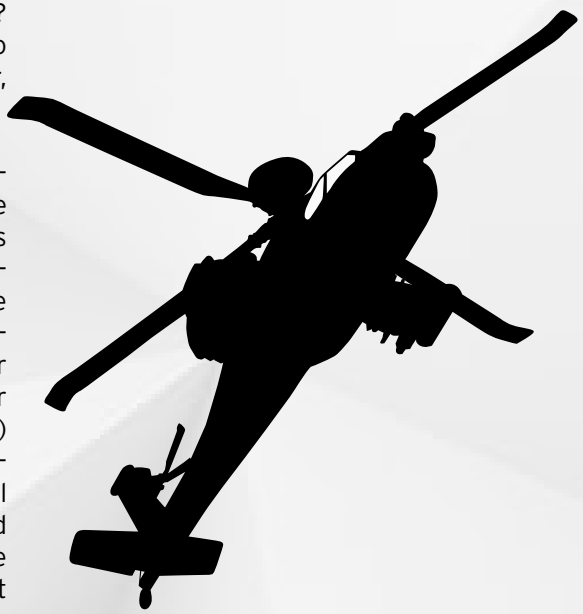
9: "I'm an assault, cargo, or attack guy" doesn't brief well at the varsity table of planning and decision makers. If you shoulder a guidon you, in-turn, must **BE A TACTICIAN WHO IS ALSO AN AVIATOR.** Be familiar with all platforms, (manned and unmanned) and understand all of the Army aviation core competencies. Understand how to fight your formation, not simply manage assets.

10: THEY'RE NOT CUSTOMERS, and we're not an Uber. Stop waiting for an air mission request to plan. The Army aviation branch is a critical pillar in large-scale combat **OPERATIONS**; not operations support or force sustainment (even though we enhance those functions as well). Understand your own **RELATIVE COMBAT POWER** and integrate into a combined arms team with viable options. Note: Effective aviation leaders drive parallel planning within their own formation on assumptions while working collectively with the ground force element to develop a course of action.

A CTC rotation provides a unit and its leaders with powerful study, reflection, and accountability away from quarterly readiness briefings. Maneuver warfare, or force-on-force at a CTC, examines our ability to manage violence in defense of our homefront and achieve our national security objectives. To support this training strategy and to build on the truth of your unit readiness, consider the following: After your next CTC rotation, ask yourself and your team, "are we prepared to conduct air-ground operations against a peer adversary? If you could recommend changes to key events on the training calendar, what would they be and why?"

Are leaders truly listening to the answers? Are we acting on what we learned? The deliverable of this multimillion dollar collective training event is a learning objective over performance. The bridge between practice in the field and our intellectual framework (i.e., after action review [AAR], SOP, doctrine) distinguishes our Army as a profession from ordinary skills. We may all remember a time when we walked away from a problem we had the answer to. Leaders of a unit must reconcile if that time was before or after they embraced the Army as their profession. From a collective AAR or among trusted battle buddies, leaders must ask questions and have a duty to act on the feedback they gain. What do we sustain? How do we improve? Where in the SOP does that go? Who is owning that? Engaged leaders at every echelon must ask the right questions to get the right vision for their organization.

After reading the 10 key arguments from Soldiers' feedback, you may recognize the needs transcend across the force, not just in Army aviation. The study and reflection of Soldiers' feedback in this article prepares leaders to confront the contours and dilemmas of their next mission. Leaders who listen to what Soldiers really need and act on their feedback can ignite engagement through invested teams and ultimately **win** as a member of a combined arms team. Through this people-centered approach, leaders can develop professional, aggressive, capable Soldiers and lethal squads, platoons, and companies—the foundation of our capability to fly above the best.



MAJ Donald "Don" J. Sulpizio, U.S. Army, is the executive officer of the Aviation Division at the Joint Readiness Training Center, Fort Polk, Louisiana. He holds a BS from Millersville University and an MS from the Marine Corps Command and Staff College. His assignments include service as a flight platoon leader, battalion S4, and commander in the 82nd Airborne Division; a battalion aviation officer in 3rd Special Forces Group (Airborne); and the USASOC deputy G-39 as the USSOCOM cyber OPT lead. Recent service includes battalion operations officer in 3-1 Assault Helicopter Battalion and brigade executive officer of the Combat Aviation Brigade, 1st Infantry Division. His combat experience includes both conventional and special operations tours in support of Operation Enduring Freedom VIII, X, XII as well as Operation Freedom's Sentinel and Resolute Support.

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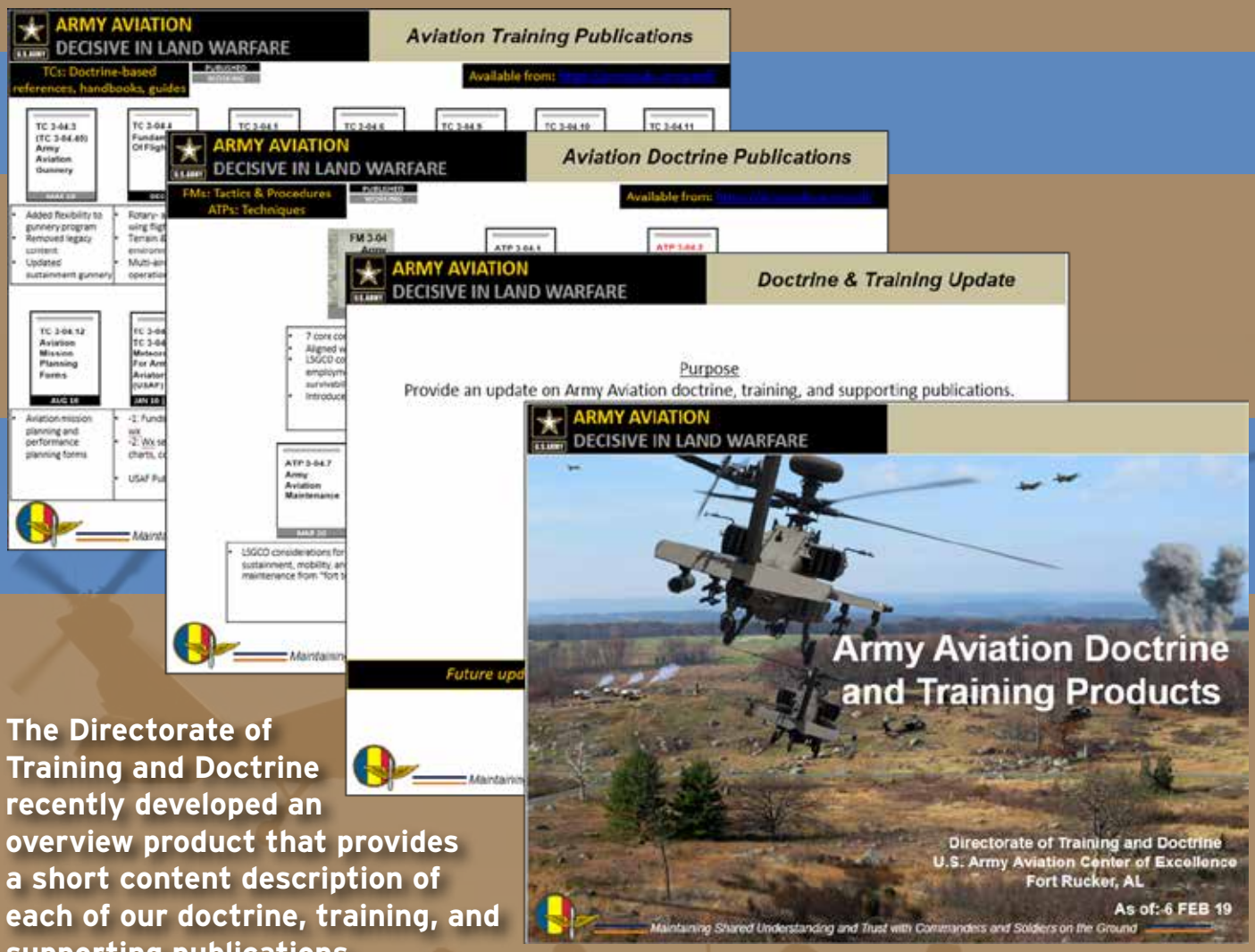

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LO-LO OR RO-RO?

Some Thoughts on Aircraft Movement Methods

By CPT Jonathan Lee

Located on the island of Oahu, the 25th Combat Aviation Brigade (CAB) is faced with unique challenges each time the brigade deploys. While other CABs are able to ferry aircraft to the National Training Center (NTC) and Joint Readiness Training Center (JRTC), the 25th is faced with nearly 2,500 miles of ocean between its home at Wheeler Army Airfield and the continental United States. Given the hefty cost of air movement, the CAB's movement method of choice is shipboard operations. Consequently, aircraft spend a significant amount of time on T-AKR-300 naval transport vessels such as the United States Naval Ship (USNS) *Fisher*, USNS *Bob Hope*, and USNS *Brittin*.

An AH-64D is lowered into the hatch of the USNS ***Brittin*** in Port Arthur, Texas. Note the crew managing the ropes at the top of the hatch. (Photo credits to U.S. Army CPT Jonathan Lee)

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Given the training requirements of the CAB, during my time in Oahu I have seen a significant progression of proficiency in loading aircraft onto vessels. As a maintenance platoon leader during Pacific Pathways 17-01, the task force (TF) conducted eight separate port operations at four different ports throughout the Pacific. The TF progressed from moving its 4 AH-64Ds, 12 UH-60Ms, and 3 CH-47Fs in 2 full 12-hour days during the first movement, to finishing the entire operation in just 8 hours on the last. I watched as the CAB's newly fielded AH-64Ds were lifted for the first time in Hawaii using a head sling amidst much confusion. During the initial lift in Pearl Harbor, we made multiple attempts to lift the first aircraft, only to find out we had the wrong sling. By the end of the exercise, the crew completed each lift for AH-64Ds in fewer than 10 minutes. A year and a half later at JRTC Rotation 19-02, TF Diamondhead was able to complete port operations in Port Arthur, Texas, averaging 15 minutes per UH-60M and 10 minutes per AH-64D. The CAB has clearly achieved proficiency at lift-on lift-off (LO-LO) operations.

Reverse port operations for JRTC Rotation 19-02, however, made apparent the need for proficiency in both LO-LO operations and roll-on roll-off (RO-RO) operations. Upon entering the USNS ***Brittin*** at the port of Port Arthur, I was dismayed to find that the vessel was largely set up for RO-RO operations. Only the right half of the ceilings of B-deck were compressed near the bow of the vessel, leaving a large portion of the bow with just 16 feet of total space from floor to ceiling (for reference, the highest point on an AH-64D is 17 feet, 6 inches; a UH-60M is 16 feet, 11 inches). While the TF was able to fit its 13 UH-60Ms and eight AH-64Ds into the limited deck space, the experience caused me to re-examine the practicality of RO-RO operations. Without the talented crew we had at port, we potentially would not have fit all of the aircraft into the boat, given their configuration. As with any operation, each form of movement comes with positives and negatives. Commanders should conduct a thorough evaluation of each method when planning movements, as each method incurs different costs from a personnel, time, and financial perspective.

An AH-64D waits to be lifted off of the ground by crane at port of Port Arthur, Texas. (Photo credits to U.S. Army CW2 Jonathan Pickens, A Troop 2-6 CAV)

An evaluation of LO-LO operations demonstrates the reason it is the method of choice for the 25th CAB. Lift-on lift-off operations require the least amount of preparation from a maintenance perspective, as the setup is not very maintenance intensive. The UH-60M has fold blades and stabilators to facilitate craning into the vessel. Folding takes 1-2 hours per aircraft. The task is a bit more time consuming for AH-64Ds and CH-47Fs, as each requires blades to be removed and loaded into blade boxes (AH-64Ds have fold kits but are very rare).

While the preparation from a maintenance standpoint is significantly less for LO-LO than RO-RO operations, LO-LO operations require more personnel to actually load the vessel. A LO-LO team has the same basic concept for each vessel:

1. **A TUG TEAM ON THE GROUND TO MOVE AIRCRAFT INTO PLACE TO BE LIFTED**

2. **A TEAM TO PUT THE SLING ON THE AIRCRAFT AND HOLD TAG LINES**

3. **A TEAM AT THE TOP OF THE HATCH TO STEADY THE AIRCRAFT AS IT ENTERS THE VESSEL**

4. A team to hold tag lines inside the vessel and remove the sling

5. A tug team to place the aircraft within the vessel

Housing the quantity of personnel required for LO-LO operations could provide a challenge, depending on the location of the port. A LO-LO team varies from 17–30 people, depending on port and vessel requirements and availability of stevedore assistance.

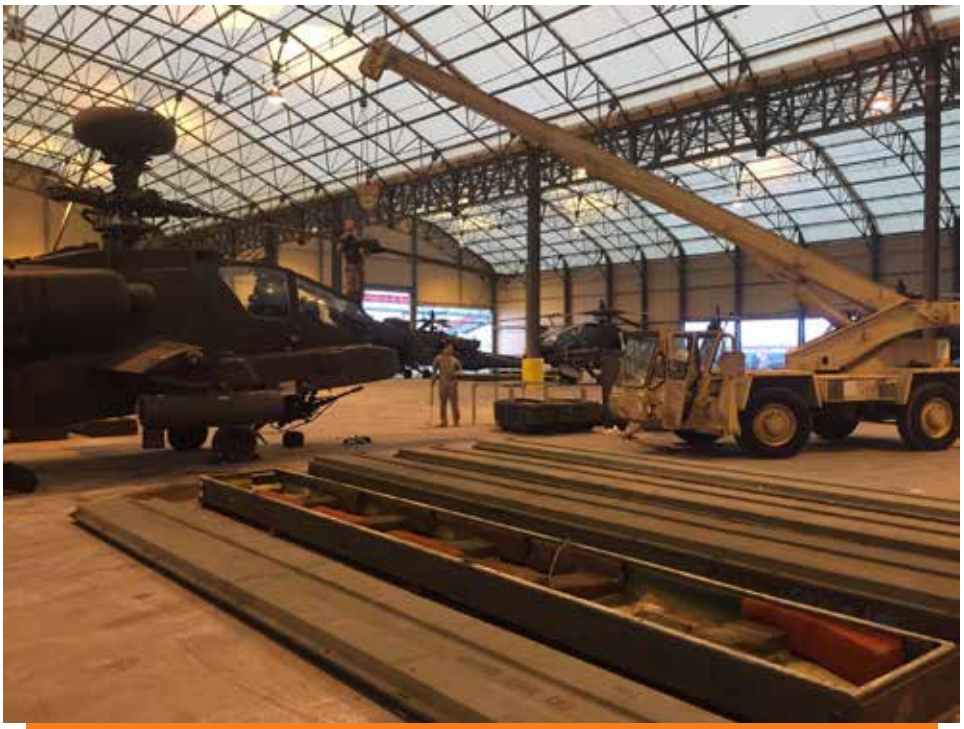
Roll-on roll-off operations vary significantly in both preparation requirements and load team requirements. Roll-on roll-off operations involve towing aircraft onto the vessel via ramp in a similar manner to vehicles.

Ceiling height at the entrance to T-AKR-300 series vessels varies from 16–16.5 feet. Consequently, the preparation to load the aircraft is significantly greater for RO-RO operations. In addition to removing the blades, maintainers must remove the AH-64D frequency modulation (FM) 1 and FM2 antennas and gun cradle, an especially difficult task in corrosive environments. The UH-60M must have its paddle boards (located on the tail rotor) folded to facilitate the height requirement to fit into the vessel. The folding of paddle boards incurs a maintenance test flight for each aircraft. The CH-47F must have the center pylon removed. This task requires 2–3 days of lead time.

After preparation, RO-RO operations require a significantly smaller personnel package. Given that each aircraft is rolled onto the vessel via ramp, the personnel requirement depends on the number of towing vehicles used to load the boat. Each towing vehicle requires 3–4 personnel to drive and to guide or "wing walk" each aircraft onto the vessel. The time requirement for RO-RO operations depends largely on the distance of the aircraft from the boat but can be as fast, if not faster, than LO-LO operations with a proficient towing vehicle team. One significant factor impacting the overall speed of the operation, however, is ramp angle. Sufficient shoring at the top and bottom of the ramp is required to ensure the aircraft does not face a significant angle as it rolls onto the ramp. Often, flooding of the boat is required to reduce the ramp angle, as well. If the angle at entry is too large, the ramp may contact portions of the aircraft such as the 30-millimeter machine gun on the AH-64D. This potential for contact presents significant risk and as such, should be approved at the appropriate level. The potential for damage to the most casualty-producing weapon in the aviation TFs is also a significant tactical risk.

When compared, the benefits of LO-LO operations are largely reduced, depending on the nature of the overall movement. Lift-on lift-off operations require a crane operator and approximately 10–25 minutes per aircraft with a well-trained LO-LO crew and crane operator. If the overall movement is container intensive, LO-LO operations could significantly increase the vessel's time spent at port, thereby incurring additional costs to the operation. While the time requirement for LO-LO operations is favorable to the CAB due to lack of maintenance resources required, it may impede the efficiency of the overall operation. The decision to LO-LO or RO-RO should therefore be held at the O-5 level or higher, given its impact on the overall cost of the operation.

The impact of RO-RO operations on the overall port operation is much different from LO-LO because it primarily impacts the loading of rolling stock. If the overall load contains significantly more rolling stock than containers, it may be preferable to LO-LO the aircraft to facilitate a quicker overall load. Additionally, during RO-RO operations, one aircraft can halt all rolling stock from entering the boat for a significant period of time. The CH47F for example, may require the ramp to be lifted up to roll onto the vessel, which can be a significant event in terms of time and effort.



A 15R takes the blades off of an AH-64D in preparation for LO-LO operations. (Photo credit to U.S. Army CW4 Jason Richards, C Troop 2-6 CAV)

A quick case study gives insight into the considerations commanders should evaluate prior to deciding to LO-LO or RO-RO the aircraft. For JRTC Rotation 19-02, the TF was faced with loading 13 UH-60Ms and eight AH-64Ds in conjunction with the 2nd Infantry Brigade Combat Team's movement of approximately 1,300 pieces of rolling stock and containers.

To simplify the equation, let's assume a Soldier costs $97 per day in lodging and per diem and $10 per day in transportation costs based on the current per diem rates in Port Arthur, Texas, and rental rates for minivans. In addition, we will assume the TF has all aircraft at port 3 days prior to loading the boat, and a flight hour for a UH-60M Black Hawk costs $3,633 (Office of the Under Secretary of Defense, 2015). We will also assume the aircraft will load the first day the boat arrives in both the LO-LO and RO-RO scenarios.

For LO-LO, the following expenses are expected: A crew of approximately 30 people can break down aircraft and prepare them in 1 day prior to boat arrival. The same crew can load the boat in 1 day, as well. The overall cost here is $5,820 for lodging and per diem and $600 in transportation. LO-LO does not incur test flights, and the potential for damage is minimal. As such, it should be left up to commanders to assess. Given that during this particular load, rolling stock and containers were anticipated to take similar durations, we will assess the port cost as negligible also. The total cost incurred is therefore $12,840.

For RO-RO operations, the following expenses are expected: A crew of 30 can break down the aircraft in 2 days, and then a crew of 8 can load the boat in 1 day for a total of $6,596 and transportation cost of $80. Each of the UH-60Ms incurs a half-hour test flight to the cost of $23,614.50. Potential damage to the aircraft is assessed to be higher but again, is at the commander's discretion. Assuming an aircraft gets stuck, costing the vessel an additional hour at port at the cost of $30,000 per day of port time, that's an additional $1,250.

A breakdown of cost (Table) with the given assumptions gives the clear conclusion that LO-LO is the ideal option in our scenario. The picture may be slightly different, however, in movements that are AH-64D-heavy or during which containers make up the bulk of the load in comparison to rolling stock. Such analysis should be considered by commanders prior to aircraft movement for any port operation.

Given the cost of port operations in both potential training time, flight time, and money, it is important for commanders to understand the implications of choosing LO-LO or RO-RO when moving aircraft onto vessels. Each method of movement has different implications on the overall port operation and as such, the decision should be made based on the factors discussed in addition to crew proficiency. For example, if a CAB is proficient in LO-LO operations and has limited time for maintenance prior to loading, the commander should choose LO-LO as the method of loading. This decision, however, should not be made without consideration of the overall load requirement for containers vs. rolling stock. The decision to lift or roll aircraft onto vessels is one of significant tradeoffs and as such is essential to the conduct of safe, efficient port operations. With its potential effect on movement timelines, budgets, and personnel requirements, it is a decision that should not be taken lightly.

CPT Jonathan Lee is an Assistant Operations Officer in 2-6 CAV, 25th Combat Aviation Brigade out of Wheeler Army Airfield, Hawaii. His tenure in Hawaii has included time as a line platoon leader and maintenance platoon leader. During his time in Hawaii, he has conducted nine port operations as Officer in Charge from the platoon, Troop, and Task Force level. He is a graduate of the United States Military Academy and is a rated aviator in the AH-64D.

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Table. LO-LO vs. RO-RO Breakdown of Costs

EXPENSE	LO-LO	RO-RO
Lodging and Per Diem	$5,820	$6,596
Transportation	$600	$680
Flight hour cost	$0	$23,614.50
Potential Damage Cost	$0*	$0*
Port Cost	$0	$1,250
Total Cost	$6,420	$32,140.50
*Commander's discretion		

ATTACK AVIATION AND THE MULTI-DOMAIN BATTLE CONCEPT:

DEEP ATTACK OPERATIONS FOR THE FUTURE OPERATING ENVIRONMENT

By CPT, AV Daniel John Vigeant

Counterinsurgency and stability operations in Afghanistan and Iraq have shaped Army aviation doctrine since 2003. The operating environment was largely uncontested, and U.S. Forces enjoyed superiority throughout all the warfighting domains. However, the global landscape has changed, and the world has entered a new era of great power competition. Domain superiority no longer exists, and the United States Army is not trained, equipped, or postured for this future operating environment (FOE) (Department of Defense, pg. 2, 2017). To address this military problem, the United States Army–Marine Corps published a 2017 white paper titled, *Multi-Domain Battle: Combined Arms for the 21st Century.*

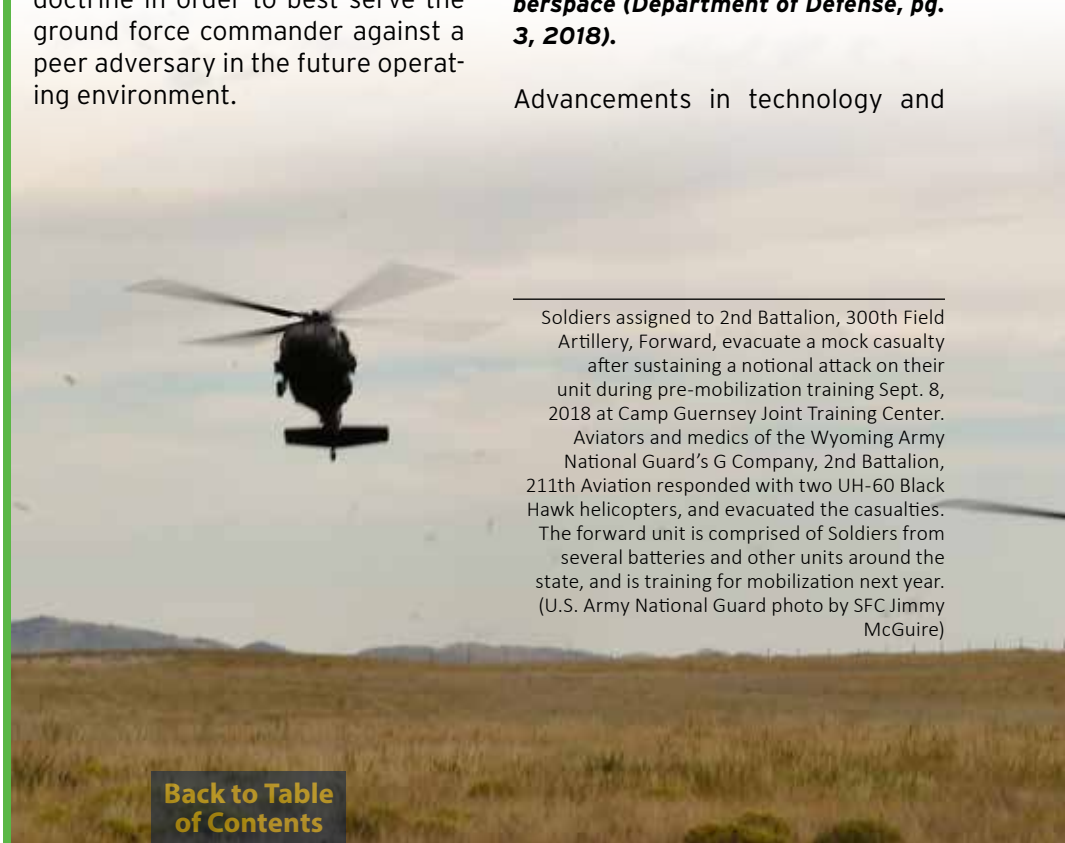
The multi-domain battle (MDB) concept is a coordinated joint approach to the FOE in the 2025-2040 timeframe. Although not officially published as doctrine, MDB is a wide-angle approach that needs bottom-up refinement from each branch before it can be implemented. It is intended to generate thoughtful discussion on how best to utilize U.S. Army forces as part of the joint combined arms team against a peer adversary. Army attack aviation, as part of that combined arms team, is doctrinally unprepared for the FOE or implementation of MDB. Deep attack operations, currently not addressed in current aviation manuals, must be added to future revisions of doctrine in order to best serve the ground force commander against a peer adversary in the future operating environment.

THE MULTI-DOMAIN BATTLE CONCEPT

The FOE presents a myriad of new obstacles that the United States is currently unprepared to counter. The *Summary of the 2018 National Defense Strategy of the United States of America* succinctly identifies this challenge:

For decades the United States has enjoyed uncontested or dominant superiority in every operating domain. We could generally deploy our forces when we wanted, assemble them where we wanted, and operate how we wanted. Today, every domain is contested–air, land, sea, space, and cyberspace (Department of Defense, pg. 3, 2018).

Advancements in technology and



Soldiers assigned to 2nd Battalion, 300th Field Artillery, Forward, evacuate a mock casualty after sustaining a notional attack on their unit during pre-mobilization training Sept. 8, 2018 at Camp Guernsey Joint Training Center. Aviators and medics of the Wyoming Army National Guard's G Company, 2nd Battalion, 211th Aviation responded with two UH-60 Black Hawk helicopters, and evacuated the casualties. The forward unit is comprised of Soldiers from several batteries and other units around the state, and is training for mobilization next year. (U.S. Army National Guard photo by SFC Jimmy McGuire)

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the means by which they will be employed will drastically change the character of war in the upcoming decades. The emergence of autonomous robotics, hypersonics, additive manufacturing, artificial intelligence, and precision-guided munitions will challenge U.S. dominance in all domains. Equally, air superiority is no longer guaranteed due to these same technological advancements. ***Multi-Domain Battle: Combined Arms for the 21st Century*** addresses this concern, stating "...adversaries can contest U.S. air supremacy through the development of complex integrated air defense networks, missile capabilities, electronic warfare capabilities, and highly sophisticated 4th and 5th generation aircraft" (Department of Defense, pg. 4, 2017). Current military doctrine does not support large-scale conflict in this FOE; a new operational approach is being developed to address this problem.

Multi-domain battle was introduced to address the military problem of confronting a peer adversary in the FOE. The entire concept "...requires ready and resilient....combat forces capable of outmaneuvering adversaries physically and cognitively through the extension of combined arms across all domains....to create temporary windows of superiority across multiple domains and throughout the depth of the battlefield..." (Department of Defense, pg. 6, 2017). Aligning subordinate doctrine with MDB will require thoughtful discussion across the joint force. Implementation will require a level of joint coordination across the warfighting functions at the strategic, operational, and tactical level. For attack aviation, this translates into leveraging the Apache's unique ability to integrate with joint and unmanned aircraft systems to attack targets deep beyond the forward line of troops (FLOT).

Multi-domain battle is a new, untested concept. "To make it work," according to Greg Grant and Paul Benfield, "the ground forces will need to work through its implications for the current architectures of fire support, logistics, intelligence, and command and control" (Grant & Benfield, 2017). Doctrine needs to be revised to include new levels of joint integration that permeate down to the tactical level. The AH-64 Apache, as a fires and maneuver asset, will play a critical role in this joint framework; it will execute offensive and defensive tasks to defend the force from attack and surveillance, create exploitable windows of domain superiority, and support the ground force commander's scheme of maneuver (Department of Defense, pg. 8, 2017). The Apache already has a highly advanced targeting system, the ability to employ manned-unmanned teaming, interoperability capabilities such as Link 16 small tactical terminals (AH-64E Guardian), and the range to reach the deep area of operations (extended range by way of forward arming and refueling points). The aircraft is tailor-made to conduct deep attack operations and its capabilities will continue to improve with future modifications. However, its employment in this type of joint operation is doctrinally unsupported. The solution—including deep attack operations descriptively into future aviation doctrine—is easier to surmise upon understanding the Apache's role at the height of the Cold War.

AIRLAND BATTLE DOCTRINE AND THE AH-64 APACHE

Airland battle doctrine was implemented in the late 1970s as a joint U.S. Army and Air Force response to the rising threat of Soviet Russia and the Warsaw Pact. The Soviets, through sheer quantity of equipment, had the ability to quickly mobilize and mass into Western Europe before the North Atlantic Treaty Organization (NATO) could appropriately respond. Airland battle was the proposed solution to this military problem and, much like MDB, required joint combined arms to interdict the enemy prior to the main engagement area. In "Airland Battle Doctrine," Mark R. Schwartz argues, "By immediately taking the fight deep into the enemy's rear area, NATO could channel the attackers' movement, open gaps among their formations, and block follow-on echelons from joining the battle" (Schwartz, 2013). It was a concept focused on land and air dominance through joint cooperation, requiring new technology to truly come to fruition.

U.S. Army photo by 1LT Ryan DeBooy

The Warsaw Pact threat highlighted the need for an attack helicopter capable of effectively targeting and destroying armor assets in the deep area of operations. Dr. James W. Williams, author of ***A History of Army Aviation***, argues, "[there was an] urgent need for a more capable attack helicopter that could help offset disadvantages the U.S. might face in numbers of tanks on the battlefield" (Williams, pg. 207, 2005). The AH-64 Apache was the solution to this capability gap with the first of 535 initially purchased aircraft completed on 30 September 1983 (Williams, pg. 211, 2005). The Apache's ability to effectively destroy targets beyond the FLOT addressed the

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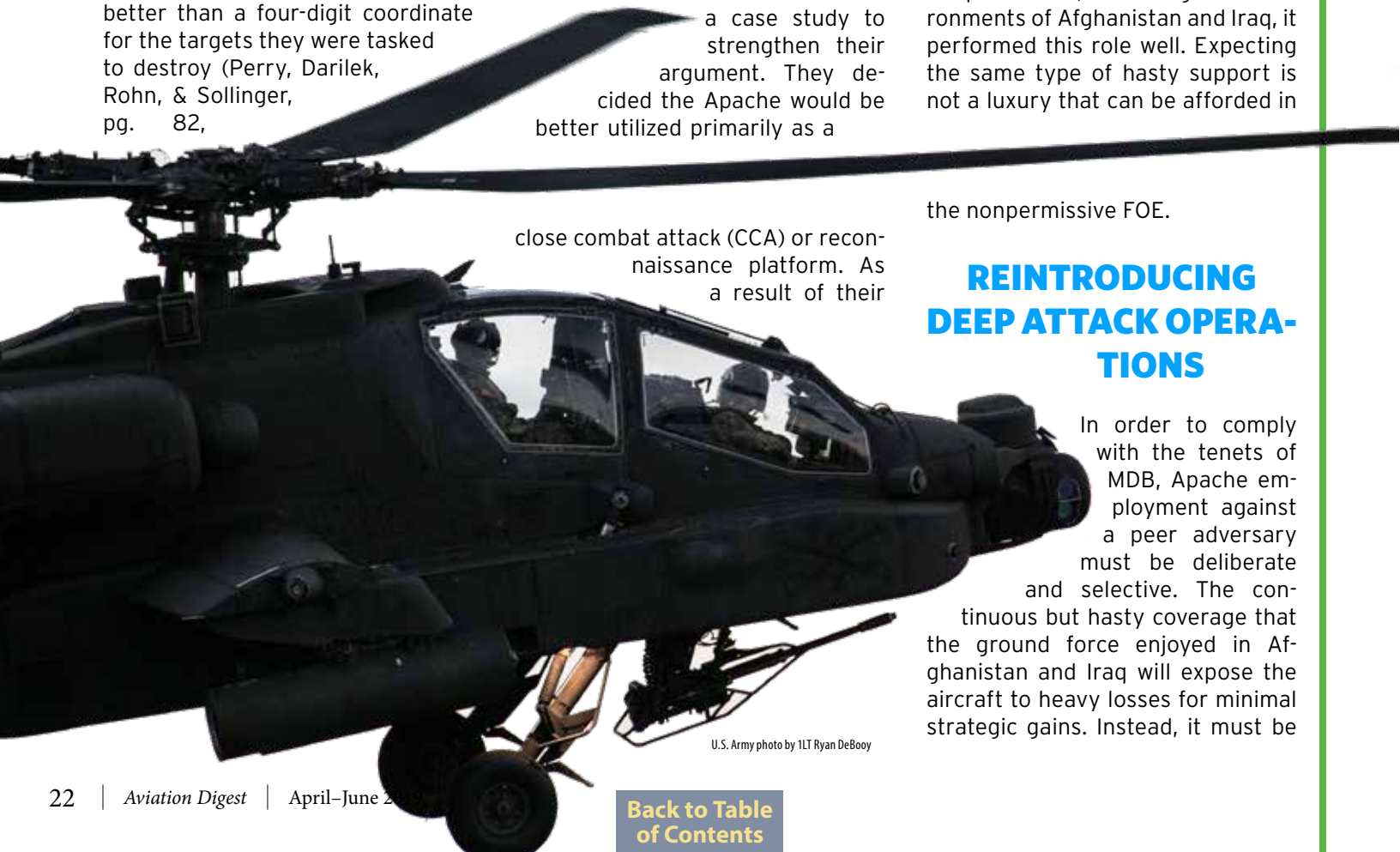
doctrinal tenets of airland battle. It performed this role well both in training and combat (most notably the task force [TF] Normandy strike during Operation Desert Storm in 1991). However, fateful events in 2003 caused senior leaders to rethink the Apache's future role on the battlefield.

11TH AVIATION REGIMENT AND THE END OF DEEP ATTACK

24 March 2003 was a turning point for attack aviation doctrine. The 11th Aviation Regiment, tasked with conducting a deep attack against the Iraqi Republican Guard Medina Division, suffered heavy casualties due to a number of contributing factors including poor intelligence, a failure in joint coordination, and pressure to execute due to impending weather. Of primary concern was the lack of target fidelity. Enemy location was estimated and based almost entirely on the typical deployment patterns of Iraqi units. The aircrews flying the mission never received better than a four-digit coordinate for the targets they were tasked to destroy (Perry, Darilek, Rohn, & Sollinger, pg. 82, 2005). For this reason, and many others, the mission lacked the doctrinal tenets of a deep attack operation and more closely resembled a movement to contact or search and destroy operation. It was a near-disaster; of the 31 Apaches that participated in the mission, one was shot down and the rest returned to friendly lines with significant battle damage (Perry, Darilek, Rohn, & Sollinger, pg. 84, 2005). The incident validated the survivability of the Apache but renewed the long-running debate concerning the utilization of the airframe as a deep attack platform.

Senior leaders vigorously debated the risks of deep attack operations in the aftermath of the failed 11th Aviation Regiment mission. Commanders deliberated on the purpose of sending an entire battalion, or even a company, of highly expensive aircraft beyond the FLOT. They argued that the associated risks of such an operation did not justify the outcome. However, they did not account for the causal factors that contributed to the incident and instead used it as a case study to strengthen their argument. They decided the Apache would be better utilized primarily as a close combat attack (CCA) or reconnaissance platform. As a result of their findings, deep attack operations were completely removed from aviation doctrine beginning in 2003 (Lindsay, pg. 26, 2015).

Counterinsurgency and stability operations in Afghanistan and Iraq further altered attack aviation's role in support of the ground force commander. The 2007 revision of Field Manual 3-04.111 reprioritized aviation missions, dictating, "An aviation TF supporting the BCT primarily conducts reconnaissance, security, CCA, air assault, air movement, and aeromedical evacuation" (Department of the Army, pg. 3-5, 2007). Deep attack operations were renamed interdiction attacks and placed at a lower priority than CCA, reconnaissance, or security operations (Buss, pg. 52, 2013). This doctrinal shift had rippling effects throughout the Army. The Apache ceased conducting operations at the company or platoon level, instead opting to support the ground force primarily in flights of two. Commanders on the ground became overreliant on the Apache for CCA in support of troops in contact. In the permissive, noncontiguous environments of Afghanistan and Iraq, it performed this role well. Expecting the same type of hasty support is not a luxury that can be afforded in the nonpermissive FOE.



U.S. Army photo by 1LT Ryan DeBooy

REINTRODUCING DEEP ATTACK OPERATIONS

In order to comply with the tenets of MDB, Apache employment against a peer adversary must be deliberate and selective. The continuous but hasty coverage that the ground force enjoyed in Afghanistan and Iraq will expose the aircraft to heavy losses for minimal strategic gains. Instead, it must be

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resourced deliberately as a jointly supported deep attack platform able to create temporary windows of domain superiority beyond the FLOT. By reintroducing the Apache primarily for deep attack, it will be able to support the ground force commander by shaping the enemy outside of their main engagement area. This shift can be accomplished by reintroducing deep attack operations into doctrine and vigorously training aircrews to execute these operations.

The 2015 revision of FM 3-04, "Army Aviation," frequently mentions the deep area of operations but fails to specifically address "deep attack" as an operational mission. Under the guise of "...deliberate attacks against enemy forces out of friendly contact..." attack operations in the deep area are doctrinally underemphasized and grouped with operations in the close and rear area of operations (Department of the Army, pg. 3-7, 2015). Stated another way, current doctrine does not place enough importance on this truly unique capability that attack aviation can provide to the ground force commander. Deep attack operations must be specifically addressed and expanded upon in future revisions of aviation doctrine in order to prepare attack aviation for the implementation of MDB. No two deep attack operations will be the same; this doctrinal addition should be descriptive rather than prescriptive and provide guidelines for planning and execution. Additionally, deep attack doctrine should address three foundational tenets: detailed intelligence analysis and planning, joint integration, and execution at the platoon or higher level. Ultimately, doctrinal support for deep attack operations will give the joint force another option for achieving the temporary windows of domain superiority required in MDB.

CONCLUSION

Limited wars will continue to challenge national interests. In these types of threat environments, the Apache is an extremely effective CCA platform. As such, the tactics, techniques, and procedures learned and employed over the last 2 decades have a permanent place in aviation doctrine and training. However, the FOE is rapidly changing the character of war, and Army aviation is currently unprepared for this inevitable change. The MDB concept provides a foundation for generating discussion on how attack aviation will be employed to solve the current military problem. Deep attack is one answer to this complex problem and should be the primary means by which attack aviation is integrated into this future concept.

The first step in this process is to descriptively reintroduce deep attack operations into aviation doctrine. Doing so will align Army attack aviation with the tenets of MDB. Deep attack, planned and executed as part of a larger joint combined arms team, will give the ground force commander flexibility by disrupting, delaying, and destroying enemy forces prior to the decisive engagement. A case can be made that deep attack operations place aviation assets and their aircrews needlessly at risk. If deep attack operations are intricately planned against valid intelligence and trained to at every opportunity, this argument has no merit. Equally, the argument can be made that fixed-wing assets are better suited to perform disrupting operations in the deep area. However, integrated air defense systems will preclude their exclusive use. Rather, fixed wing and rotary wing will play a complementary role in MDB; these assets will mutually support each other in order to achieve temporary windows of domain superiority. Ultimately, deep attack operations cannot be planned or executed in a vacuum; they must be a joint combined arms effort. The Apache is already a highly capable fires and maneuver platform; its employment in deep area operations is only limited by innovation and creativity. It simply needs the doctrinal support to be able to conduct these types of operations in support of MDB against a peer adversary in the FOE.

CPT Dan Vigeant is currently attending the United States Marine Corps Expeditionary Warfare School (EWS). He previously served as a Platoon Leader and Assistant Operations Officer with 1-82 Attack Reconnaissance Battalion from 2016 to 2018. He has a B.A. in History and has served 15 years in the Aviation Branch both as a UH-60 Black Hawk maintainer and AH-64D Pilot-in-Command.

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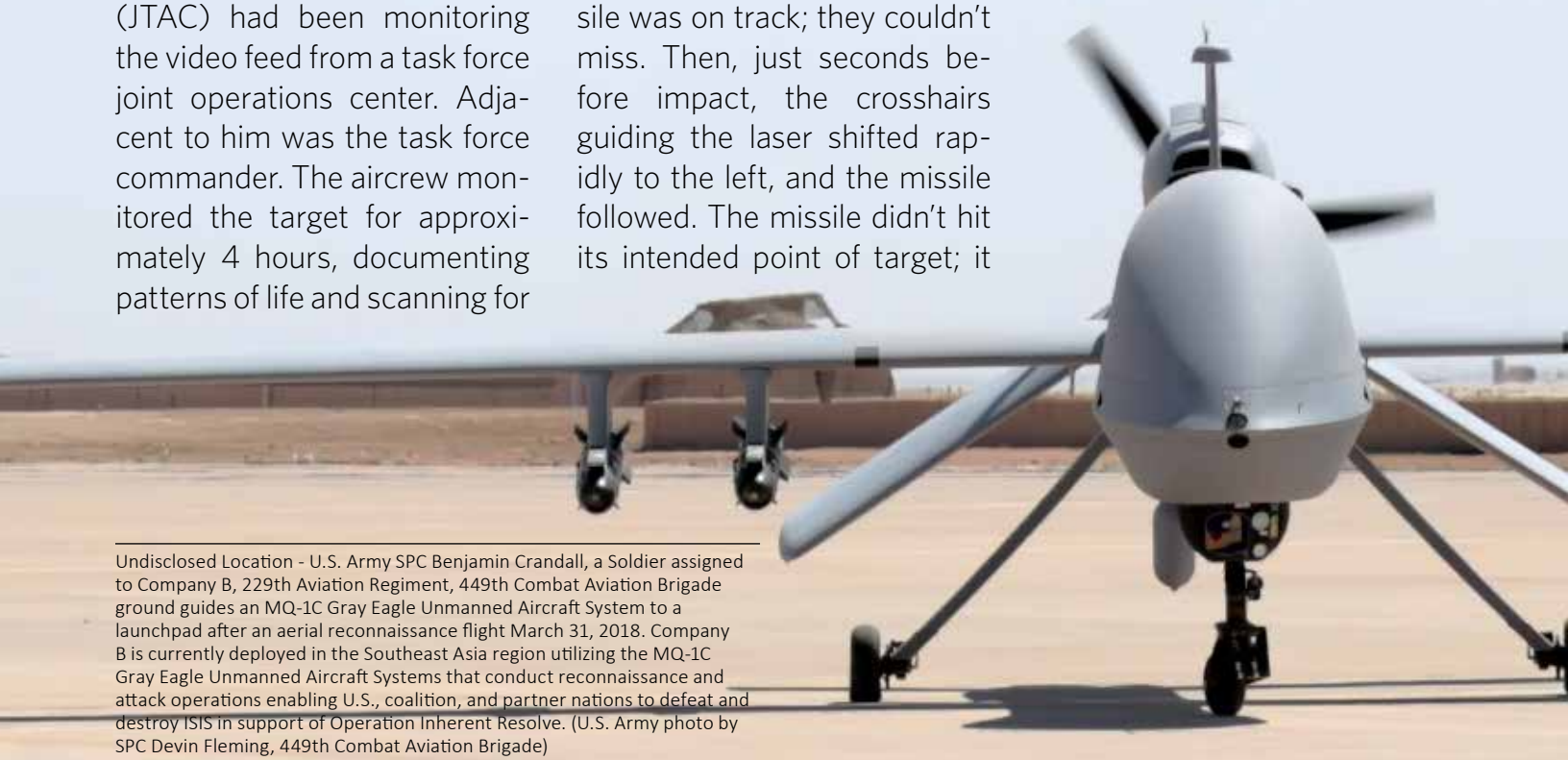
By CPT Ryan Beilstein and LTC Jarred Lang

IMPROVING ARMY GRAY EAGLE

"VICTORY USUALLY GOES TO THE ARMY WHO HAS BETTER TRAINED OFFICERS AND MEN"
–SUN TZU

I stood in the Tactical Operations Center (TOC) and watched as one MQ-1C Gray Eagle unmanned aircraft system (UAS) loitered in a holding pattern above a compound of interest. Adjacent to a corner building was a pickup truck loaded with potential homemade explosives. The truck was positioned along a wall partially concealed by tree branches and foliage. The joint terminal attack controller (JTAC) had been monitoring the video feed from a task force joint operations center. Adjacent to him was the task force commander. The aircrew monitored the target for approximately 4 hours, documenting patterns of life and scanning for any collateral concerns. Upon order to engage from the task force commander, the aircrew modified their flight pattern to establish a strike posture. They conducted a dry run of the engagement and communicated with the JTAC about the preferred attack heading. They were cleared to engage, and I was glued to the screen. Seconds felt like minutes while waiting for the impact. It was a stationary target, and the missile was on track; they couldn't miss. Then, just seconds before impact, the crosshairs guiding the laser shifted rapidly to the left, and the missile followed. The missile didn't hit its intended point of target; it struck a building. Every such miss leaves me remorsefully pondering whether the lucky survivor might go on to inflict harm on our ground forces and coalition partners.

BACKGROUND: ***An Army MQ-1C Gray Eagle is flown using two operators. There is an aircraft commander (AC), the crewmember who generally has more experience and is ultimately responsible for the aircraft; and an aircraft operator, who generally has less experience. This concept parallels the Army's***



Undisclosed Location - U.S. Army SPC Benjamin Crandall, a Soldier assigned to Company B, 229th Aviation Regiment, 449th Combat Aviation Brigade ground guides an MQ-1C Gray Eagle Unmanned Aircraft System to a launchpad after an aerial reconnaissance flight March 31, 2018. Company B is currently deployed in the Southeast Asia region utilizing the MQ-1C Gray Eagle Unmanned Aircraft Systems that conduct reconnaissance and attack operations enabling U.S., coalition, and partner nations to defeat and destroy ISIS in support of Operation Inherent Resolve. (U.S. Army photo by SPC Devin Fleming, 449th Combat Aviation Brigade)

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manned aviation roles of pilot-in-command and pilot. The operators pilot the aircraft from the inside of a Ground Control Station (GCS), which has two seat positions: payload operator and aircraft operator. Each seat position has a designated set of duties and responsibilities. The payload operator's responsibility is to manipulate the common sensor payload and control the air-to-ground missile (AGM)-114R Hellfire missile; the aircraft operator's responsibility is to navigate and pilot the aircraft.

What exactly rendered this engagement ineffective? Why did the crosshairs suddenly shift to the left when the munition was only seconds away from impact? We debriefed the crew and rewatched the video feed repeatedly. As the crosshairs began to slightly drift right, the operator commanded a left input. When no correction was readily evident, the operator incorrectly assumed the system didn't register the command and applied further left deflection. The system, functioning with a Kurtz-under (Ku)-band satellite communications (SATCOM) delay, accepted both commands and the result was an erratic field of view, poor sensor placement, and a missed kinetic opportunity. While the operator's overcorrection was the proximate cause of this failed engagement, there is an underlying and much larger problem within the Gray Eagle community that should be immediately addressed. Current institutional and organizational training does not adequately replicate operational conditions.

We demand a lot of our Gray Eagle UAS operators. In many cases, we ask young Privates and Specialists to do a job the U.S. Air Force requires rated aviation officers to do: command a multimillion dollar airframe and guide precision munitions in combat. There are a wide array of institutional factors contributing to a lack of experience in the UAS community; most notably the competition for talent retention with our defense industry partners. But I'm not going to focus this article on the larger, and frankly much more complex, Army manning concerns. Instead, I am going to address a few key issues that are simpler by comparison but equally vital. In order to improve our operators' lethality and prepare them for maximum success in combat operations, we must address and resolve these issues now. It is imperative that leaders and materiel developers provide operators with ample proficiency training prior to deployment and ensure they are properly resourced with effective proficiency and sustainment training equipment. As a Gray Eagle UAS community, we are currently falling short but with a comprehensive approach, we can underwrite our aircrews' combat effectiveness going forward.

While the Hellfire missed its target due to an overcorrection, the ultimate cause lies with operator judgment and inexperience. Training aids available today do not replicate live engagements or the feed lag associated with beyond line of sight (BLOS) system and payload control. As a direct result, the first time most UAS Soldiers experience the intricacies of deploying live munitions is in combat. We must improve the GCS simulation software to replicate live engagements, reconfigure the inefficient GCS control panel to streamline lethal engagements, develop and distribute deployable control panel trainers for daily use sustainment training, and begin instructing gunnery during advanced individual training (AIT).

Outside of the United States Army Special Operations Command, U.S. Army Gray Eagle crews typically train in line of sight (LOS) configurations. The GCS is connected to a ground data terminal (GDT) that sends signals via LOS to the MQ-1C air vehicle, either on the ground or in the air. Oftentimes in deployed theaters, MQ-1Cs are required to use Ku-band SATCOM to fly BLOS due to transit distance or geographic barriers. While the video feed from the full-motion video sensor is pushed at near-realtime, operator control inputs often incur a delay of up to 3 seconds to take effect for observable feedback. These delays are not replicated in any Army simulator, and they cannot be replicated in an LOS configuration for training, thus

effectively neglecting to mitigate a major risk factor on the path to operator experience and proficiency.

Satellite time is expensive—very expensive. It's understandable that most conventional units have not trained in a SATCOM configuration. However, in doing so, we're failing to 'train like we fight.' Thus, we must either resource our U.S. Army Forces Command and Intelligence and Security Command Gray Eagle units preparing to deploy with satellite time, or possibly develop training software that can be integrated into a GCS or trainer to replicate the delay and ergonomic setup of the actual shelter and all internal controls. Units must not only simply train with SATCOM but integrate it into their gunnery table (GT) training—arguably the most critical phase of the training timeline. As an interim risk-mitigation strategy, while engineers develop the software for a sustainable and economically feasible solution, units need to be resourced with satellite time for effective predeployment training.

In an effort to take maximum advantage of every kinetic strike opportunity with improved lethality, we must develop new and improved ways for operators to train with their weapon system. Most Gray Eagle units aren't allocated missiles for training, and if they were, there'd be minimal opportunities to fire them. Gray Eagles can only launch missiles on Hellfire surface danger zone-approved ranges with airworthiness release statements and certificates of authorization required from the project management office. Even if units were supplied with an arsenal of training munitions, they'd be constrained by limited training engagement opportunities. As of today, there are few Gray Eagle-approved Hellfire ranges available. Units would be required to deploy their aerial vehicles and associated equipment to the limited ranges before being able to leverage their training allocation. In short, this course of action doesn't seem monetarily feasible.

Units are currently required to conduct gunnery training as per Training Circular 3-04.45, "Combat Aviation Gunnery" (Department of the Army, 2014).[1] Aircrews are required to be GT VI (Basic Aircrew Qualification)-qualified in order to conduct live fire at other than home station gunnery events. While units can accomplish Gunnery Table VI with live munitions, most elect to accomplish this task through the use of a captive aviation training missile (CATM), which looks and feels like an actual AGM-114R missile and is supported by computer software that is integrated with the GCS. Operators exercise checklist procedures and simulate lethal engagements as if they were real. Currently, available training equipment and conditions do not nearly approximate those of

[1] **This publication has a distribution restriction code of C (U.S. Government Agencies and Their Contractors Only) and is available with a valid common access card.**

The MQ-1C Gray Eagle is a long-endurance platform able to fly for nearly 27 hours at speeds of up to 150 knots while carrying up to four AGM-114 Hellfire missiles. Photo credits to U.S. Army SPC Derrik Tribbey

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an actual engagement and as a result, they do not ensure maximum effectiveness in combat.

In addition to accommodating the SATCOM delay, operators in live engagements almost always have to regain the track after the plume from the missile launch passes the sensor when using the autotrack mode—a preferred tactic, technique, and procedure (TTP) for dynamic targets. This can be the most daunting challenge for operators when tracking such a target. They're required to exercise tactical patience and rely on experience to reacquire the track or manually slew the sensor prior to impact. Despite this well-known deficiency and TTPs put in place to mitigate it, missed shots still occur. As a community, we must enhance the level of training available to our operators and improve the systems we currently employ.

Current large UAS platforms like this Gray Eagle provide important capabilities but need a runway to take off. These systems also have lower airspeeds and depend on data links and GPS signals. Future systems will need to be more independent to operate in a complex battlespace. (Image courtesy of AMRDEC)

Soldiers succeed in gunnery training in far fairer conditions than those in which we fight, and this dynamic directly results in missed kinetic strike opportunities. We are not preparing them for the reality of authentic engagement challenges. This deficiency is mitigated by either allocating units with live training missiles, by upgrading the interface software, or both for maximum effectiveness. The updates must include video obscuration of the Hellfire launch, dynamic targets moving about challenging terrain and obstacles, collateral damage considerations, and a program setting that would permit the track to break upon launch due to the missile plume. With current simulator software, the track maintains the target after rifling, or launching the munition. By not training operators to regain target track custody, a critical skill remains undeveloped prior to combat deployment, where every operator must be prepared to take the shot and make it count.

Improving simulations to vary the realistic engagement intensity and difficulty is important, but reconfiguring the GCS control display to streamline the engagement process is paramount. The current design of the GCS is extremely inefficient for firing the laser and would greatly benefit from ergonomic optimization. The man-machine interface forces the payload operator to look away from the video screen in order to command all actions. The system must be intuitive in order for the operators to watch the screen and simultaneously manipulate the controls without the distraction of looking away from the screen to locate or confirm a control on a remote keyboard.

Even more significant is the placement and functionality of the laser designator button. Its current location is awkward at best and prohibitive at worst. It is located in front of the operator, away from the joystick and the other sensor controls. The operator cannot easily control and aim the sensor with the right hand and control the sensor to track or regain track with the left hand while also firing the laser. The placement of the button is so inconvenient that the current TTP requires the use of a third crewmember to enter the GCS and continuously depress the laser button.

Upgrades to GCS ergonomics and user interface, as well as advanced simulator technology will properly prepare operators to meet operational expectations in a combat theater. Arming UAS operators in AIT with gunnery knowledge and experience will make them even more lethal, shallow out a steep learning curve, and relieve some burden on unit instructors. Currently, operators are provided with no formal gunnery training in AIT, which is the initial MQ-1C Qualification Course. Some may receive a PowerPoint class on functionality of the equipment and receive an initial familiarization with the laser designator

button. Responsibility entirely rests with the gaining unit to train the newly assigned operator on gunnery operations, while manned aircraft qualification courses include gunnery familiarizations or qualifications for those mission aircraft.

The MQ-1C is the operator's aircraft and program of record weapon system. If AIT can integrate a minimum of GT-1.3 (Gunnery Skills Test and Gunnery Conduct of Fire Training/Evaluation (Department of the Army, 2014) into the course curriculum, unit instructor operators can teach and build upon their fundamental knowledge. Unit instructors can better utilize time investing in operators who require additional instruction, as opposed to having to teach a block of basic instruction to every operator.

With the ever-increasing need for aerial-intelligence, surveillance, reconnaissance, and target acquisition, Army Gray Eagle units will continue to be in high demand. Rather than continuing the trend of adapting to system deficiencies to enable mission success, it's time we address the faults, and implement the solutions. Let's arm our Gray Eagle operators with the most up-to-date equipment that effectively replicates reality. We need to improve the lethality of our Gray Eagle operators, and we need to do it now.

CPT Ryan Beilstein is an Aviation and Military Intelligence officer serving as the Commander for Bravo Company (Gray Eagle), 224th Military Intelligence Battalion (Aerial Exploitation), 116th Military Intelligence Brigade (Aerial Intelligence). B/224th MI BN is continuously deployed in support of Operations Freedom's Sentinel and Resolute Support Mission Afghanistan. CPT Beilstein formerly served as a company executive officer and platoon leader for an MC-12 Enhanced Medium Altitude Reconnaissance and Surveillance System company.

LTC Jarred Lang is an Army Aviation and Military Intelligence Officer currently serving as Battalion Commander for 206th Military Intelligence Battalion (Aerial Exploitation), and Task Force Observe, Detect, Identify, Neutralize (TF ODIN), continuously deployed in support of Operations Freedom's Sentinel and Resolute Support Mission Afghanistan. He previously served as the Army JSTARS Detachment Commander, and as Operations Officer for the 116th Military Intelligence Brigade (Aerial Intelligence) and PED Center at Fort Gordon, Georgia.

Sunset picture of an unarmed Gray Eagle in Afghanistan. Photo credits to U.S. Army CPT Ryan Beilstein

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HOW THE AVIATION COMMAND POST MAKES THE MOST OUT OF THEIR RADIO/TELEPHONE OPERATOR

By SSG Alexander F. Snyder

We want to build a better 15P Aviation Specialist for your Aviation Command Post (CP). A Radio/Telephone Operator (RTO) needs to be competent, confident, and aggressive. An RTO with these qualities comes from a motivated and experienced battle noncommissioned officer (NCO). This battle NCO takes ownership of the CP, while also being the battle captain's right hand and advisor. Half the battle is that most of the 15Ps don't feel like they are important or part of the mission. You may not see it at face value, but this affects overall morale and mission focus. Below are a few tips and tricks to make the most out of your 15P RTO and encourage them to strive for greater.

Common Operating Picture (COP) understanding: It is vital for your RTOs to understand the COP, whether this be analog or digital. They should be able to identify where the key pieces of an aviation task force are. These key pieces include the main CP, the company CPs, the forward arming and refueling point (FARP), retransmission site, and the supporting convoys. Additionally, they need to be able to identify the enemy locations and build. The best and easiest way to do this is by opening up and going over Army Doctrine Publication (ADP) 1-02, "Terms and Military Symbols" (Department of the Army [DA], 2018). It might

U.S. Soldiers from Headquarters and Headquarters Company, 1st Battalion, 3rd Aviation Regiment (Attack Reconnaissance), 12th Combat Aviation Brigade, conduct a command post exercise in order to test their equipment at Katterbach Army Airfield, Ansbach, Germany February 13, 2018. (U.S. Army photo by Charles Rosemond)

sound easy to just recommend using a military regulation to increase military knowledge, so here is how I would recommend teaching it. First, take the map currently being used in the tactical operations center (TOC) by the S2 or a previous map from another training or actual event. Next, identify all graphics used on the map and find those in the ADP. Make yourself a cheat sheet for learning or a cheat sheet for teaching, and have the battle NCO verify his knowledge and/or learn what is on the source map. Then, take this leader (battle NCO) and have them teach the graphics to the current or future RTOs. This will start small and set the foundation for the basic knowledge of operational terms and graphics.

Situational awareness (SA): It is crucial for the RTO to have complete SA of the CP, as well as who is in the CP, what their role and function is, and what information is important to them. One simple way of learning this is by simply asking said person in the CP, "what do you do, and what information is crucial and/or important?" Another useful way in helping others to obtain the appropriate SA and knowledge of the CP is conducting an exercise on paper where they are assigned the duty of battle captain and are expected to list all personnel and equipment in the CP. Have this person assign priority levels of everything and everyone. Have them explain their choices, and tactfully help them adjust for any discrepancies. This is not meant to discredit anybody's job but to help understand at the lowest level why someone works in the CP in the first place. Once SA is established, a shared understanding needs to be the next priority. "A defining challenge for commanders and staffs is creating shared understanding of their operational environment, their operation's purpose, its problems, and approaches to solving them" (DA, 2012, p. 3).

Information relay: Encourage your RTO to do more than just relay information. The RTO should be able to listen to a paragraph of radio chatter and process the important pieces. Then, they should be able to relay those important pieces of information to the appropriate people. For SA, the RTO should discern who needs to know, and who would benefit from that knowledge. Using the methods in the previous paragraph, and then affirming to your RTO ***who needs to know what*** will help you encourage them to go above and beyond the standard.

RTO standardization: There exists a need for standardization of specific RTO practices. In the CP, a huge piece that often goes overlooked until there is an emergency or event is DA Form 1594, "Daily Staff Journal or Duty Officer's Log" (DA, 1962). The 1594 should be seamless from one RTO to another. There should be a set standard regarding what is included on the 1594. Although small in comparison to other regulations, Army Regulation 220-15, "Journal and Journal Files" (DA, 1983), is a good starting point to determine the minimum amount and type of information required on the 1594. Your specific unit might want additional information logged, but the regulation should be incorporated into those decisions.

RTO additional duties: I highly encourage all 15Ps to have the following additional duties of rehearsal of concept (ROC) drill, building and briefing, and giving ownership. Radio/telephone operators should have a part in building the ROC drill. Having your younger RTOs assist and build your ROC drill or terrain board will greatly set you up for success by allowing the RTO to easily understand a concept before the aircraft departs for the mission. This frees up whomever is tasked with administering a ROC drill and allows them focus on building a better product. For bigger missions, a ter-

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rain board helps all the key players understand from a bird's-eye view what key events are going on, including the commander, the ground force being supported, and the aircrews flying the mission. A good ROC drill can make or break mission understanding of events and variables. Terrain-model rehearsal can be found in Field Manual 6-0, "Commander and Staff Organization and Operations" (DA, 2014, p. 12-4).

Tactical operations center planning and prioritizing: Under the mindset that we train for a combat situation, it is important in your TOC to set precedence. We are too comfortable with the belief that our aviation TOC is beyond attack from the enemy. If we continue to train and fight like this, we will lose and die like this. The time to better ourselves is now. Setting a priority for personnel, duty, and equipment beforehand takes the guess work out of "well if this happens, then what?" If there is a duty in the TOC, assign primary and alternates to perform said duty. If there is equipment in the TOC, assign what is mission essential and mission critical in the event of rapid loss of equipment due to a move or an attack resulting in destruction. The battle NCO needs to be top priority in the TOC; able to replace an RTO if a body is needed for a task. They should also able to replace the battle captain momentarily if he needs to conduct business elsewhere for a moment in time. The reasoning for this is because the battle NCO should already be able to work as an RTO and know, for the most part, what decisions can be handled at his level and what should be elevated. The thought or excuse "they don't need to know that," does not apply in an effective TOC. All Soldiers in the TOC should be tracking key events. If a Soldier were to be tasked elsewhere or perish, another Soldier in that TOC needs to be able to fill the vacant role while maintaining their own. This is essential in order for that TOC to function properly and effectively.

Backbriefing: How do you know all the information you are conveying or teaching is not only being listened to but understood at the level you need it to? Backbriefing is a great tool to make sure the person to whom you are conveying information understands what you're saying. In my experience, if you tell someone beforehand you are going to have them backbrief, they will pay more attention and seek to understand what they don't know. In doing this, when you speak with them, they will engage in active listening. I have used this method as the aviation TOC observer, coach, trainer and as a battle NCO. Field Manual 6-0 discusses the importance and effectiveness of a backbrief.

A BACKBRIEF IS A BRIEFING BY SUBORDINATES TO THE COMMANDER TO REVIEW HOW SUBORDINATES INTEND TO ACCOMPLISH THEIR MISSION. NORMALLY, SUBORDINATES PERFORM BACKBRIEFS THROUGHOUT PREPARATION. THESE BRIEFS ALLOW COMMANDERS TO CLARIFY THE COMMANDER'S INTENT EARLY IN SUBORDINATE PLANNING. COMMANDERS USE THE BACKBRIEF TO IDENTIFY ANY PROBLEMS IN THE CONCEPT OF OPERATIONS (FIELD MANUAL 6-0, 2014, CHAPTER 12, PARAGRAPH 7, P. 12-1).

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Duties of the battle NCO: At a minimum, the battle NCO needs to be a sort of "bouncer" for the RTO. For example, all nonessential personnel need to get out of the TOC. It should be the duty of the battle NCO to ensure that this is followed through with (and then explain why this is important). Additionally, the battle NCO should take ownership of the TOC. They should become primary 15P in the TOC while being able to take the place of any of the RTO positions in case a tasking comes down. They need to be able to delegate duties and responsibilities to the RTO, as well as assign ownership of products to the both primary and alternate RTOs. Finally, the battle NCO should work with the battle captain to set a standard of what should be on the 1594 by providing suggestions and avoiding simply asking the battle captain what he wants on it.

Duties of the battle captain: At a minimum, the battle captain should deal directly with the battle NCO and have minimal contact with the RTOs. The battle captain should inform the battle NCO that the TOC and the RTO's performance and professionalism are a direct reflection of that battle NCO's leadership. This assigns ownership and empowers the battle NCO. The battle captain should outline expectations to the battle NCO, identify what is critical information in the TOC, and then give that to the battle NCO to inform and hold the RTOs to.

Duties of the RTO: At a minimum, the RTO needs to understand what specific products there are to update and have a clear and defined RTO space. The RTO must know how to use the radio and how to change, load, and fill with a simple key loader. The RTO should also understand operational terms and graphics, especially terms used in an aviation CP. These terms can be found in the ***Combat Aviation Brigade Army Aviation Handbook*** and ADP 1-02 (Directorate of Training and Doctrine, 2018, p 116-120; DA, 2018). The ***Handbook*** is available via Army Knowledge Online with a common access card.

photo credits to U.S. Army SSG Alexander F. Snyder

SSG Alexander Snyder is currently serving as the Flight Operations NCO OC/T at the Joint Multinational Training Center (JMRC), Hohenfels, Germany. Previous assignments include PACOM Plans NCOIC, Company Aviation Operations NCOIC, and Flight Operations Sergeant at 4-160th Special Operations Aviation Regiment. SSG Snyder is a graduate of Mission Command Digital Master Gunner.

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LEARNING TO MAXIMIZE YOUR LEADERSHIP COMMUNICATION

By LTC Michael Gourgues and CW4 Leonard S. Momeny

Leadership is commonly understood to be the process of influencing others to work toward the accomplishment of a common goal (Northouse, 2019). Leadership is the business of the military, and the Army makes an effort to emphasize this point by ensuring that leadership is instructed across all ranks with specific attention paid to both professional military education and overall development. Leadership is of such importance that it has its own guiding documents, which include Army Doctrine Publication 6-22, "Army Leadership" and Field Manual 6-22, "Leader Development." It would seem that while all are aware of leadership, associating responsibility to it, and able to discuss the practice of it ad nauseam, yet the question remains of whether we take enough time to deliberately build leaders (Shaw & Witty, 2017). There is now a solution at hand that will assist leaders in maximizing their leadership, regardless of the struggle of time.

This article seeks to provide the Army leader with an ability to do much more than talk about principles associated with leadership. The goal of this article is to equip Army leaders with an ability to maximize their communication and become better at integrating leader development within the course of leadership. At first glance, it appears nearly impossible to make time for both organizational-centric leadership and development of subordinate leaders. All leaders lament the tyranny of the busy training schedule and other competing requirements that is presented on a daily basis. However, utilization of the simple ideas outlined in the Communication Process Theory (CPT) discussed here will improve a leader's ability to become more strategic in their leadership communication efforts (Momeny & Gourgues, 2019). Leaders struggling with the challenge of time can at least learn to make the most of their communication efforts, honing a skill beneficial to both the organization and the members of the team. We must become strategic in our communication.

LEADERSHIP AND STRATEGIC COMMUNICATION

Leadership and strategic communication are intrinsically linked. If leadership is the result, then communication is the means by which leaders both explain and initiate change or movement within their respective organization or team. The same can be said for each individual in that team. A leader explains and produces a suggested vision that communicates both the **how** and the **why** surrounding the future direction of an organization (Northouse, 2019). Kotter captures the essence and importance of communicating vision when referring "to a picture of the future with some implicit or explicit commentary on why people should strive to create that future" (Kotter, 1996, p. 68). In the same way Kotter and Northouse describe organizational vision, leaders can utilize the concept of vision to affect leadership and leader development. Vision can and should be related to both the organization and the individual.

How and **why** leaders communicate can be just as important as **what** a leader communicates. With time as a limitation, a leader must regard all communication as an opportunity for mentorship; it must be meaningful and effective. When speaking to their organization, the leader must ensure that there is clarity and brevity in communication, but more so than that, the communication must be properly and strategically aimed. What does that

mean? Strategic communication, regardless of the audience, implies that leaders must ensure that they are communicating the right message, at the right time, to the right people. This means that communication must be planned in advance, with purpose and meaning in hopes of deriving the maximum value by the effort of the leader. Strategic communication should always be both technically correct and emotionally intelligent, as both elements will impact relationships that surround the leader in either a positive or negative way. Additionally, a sound vision for both the organization and individuals will assist a leader in crafting strategic communication of value.

With strategic communication and vision in mind, leaders must make their subordinate leader's development a priority.... [because] Leadership is not a passive process" (Shaw & Witty, 2017, p. 39). As Shaw and Witty note, leadership and leader development, whether passive or active in nature simply "...requires time and effort" (Shaw & Witty, 2017, p. 39). Time's impact on the leader and his ability to provide meaningful leadership and leader development cannot be ignored; however, increased understanding can assist in negotiating the challenge of time.

THE IMPACT OF TIME ON LEADERSHIP COMMUNICATION

The greatest impact on strategic communication is time. Time affects all things: operations, freedom to maneuver, and the calendar. Many leaders might insist that all of these competing requirements prevent the meaningful leadership communication that ultimately develops the individuals of a team/organization into the high performers that everyone desires. It's these competing requirements that are problematic, and it is time for leadership studies to properly address the problem set of the task-saturated/overburdened leader and the impact of time.

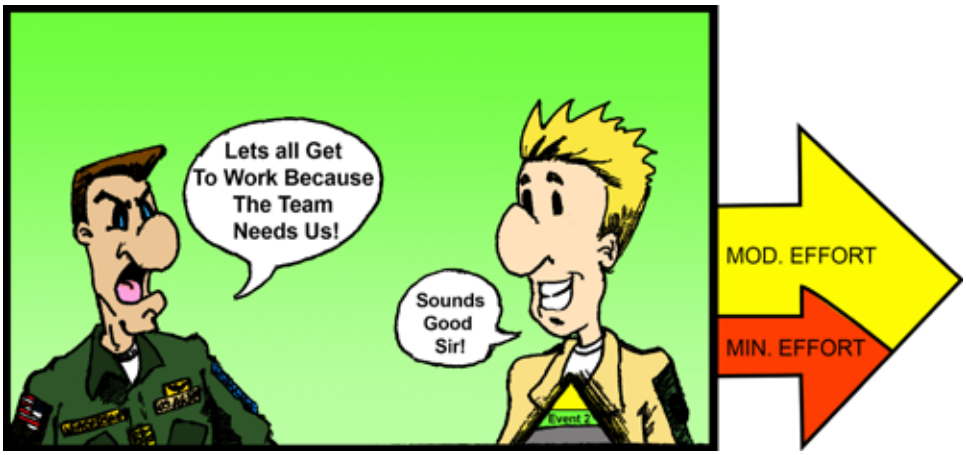
Time is always running, one can never seem to save it, and once you have it you are always in danger of it running out. Time is a resource that we can never restock, and so as leaders we have to continuously prioritize. As a limited resource it is not an excuse, it is an environmental factor. It is incredibly powerful to frame any situation in relation to time available and communicate this with the members of our team. What sort of impact do your words have on those that you lead when you tell them that you do not have time for them? In contrast, what kind of message does it send when you communicate that you have reserved a portion of your most limited resource to develop your subordinate leaders? Leaders cannot make more time to communicate, but instead they must make the most of their time when communicating. Therefore, it is necessary to develop a tactic, technique, and procedure (TTP) that allows the leader to better understand how his communication relates to both development and production.

INTRODUCING THE COMMUNICATION PROCESS THEORY (CPT)

A device or framework for meaningful communication effort between leader and follower becomes necessary to better equip a leader to speak in a strategic fashion. Recently, Momeny and Gourgues (2019) published the CPT in support of transformational leadership process clarity. The theory seeks to better describe the process of meaningful transformational leadership, an approach known to produce wonderful leader-follower-relationship sentiment. The CPT represents a simple and logical way of engaging the people around you and providing a roadmap for leaders seeking to communicate their vision in support of leadership actions, mentorship/development, or even both.

The leader's target during the communication process is represented by the steps within Maslow's pyramid of needs (Maslow, 1943). The theory aims communication toward an individual's motivation to achieve outcomes associated to those same needs. When the leader addresses these specific motivations, they are able to develop a person toward a desired generalized level of output. Over time, a leader can assess the effectiveness of his or her communication efforts based on the individual's achieved output/development. Following the process is a way to build upon leadership/leader development efforts and never "revisit" issues already covered or even resolved. This becomes critical in utilizing time available to conduct leadership actions or leader development.

The path involves three sequential areas of focus. First, the leader must overcome fear and the perception of threat inherent in an immature relationship. Using Maslow's pyramid, we can do this by showing concern for humanity of the individual. Leaders can address family, housing, and religious issues and in doing so, create space for the individual to thrive. When fear is present, output is transactional and only potentially benefitting to the superior and individual instead of the team. Additionally, output in relation



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to the leader's communication efforts is incredibly minimal. People will do just enough to not get yelled at, and that is why this is the most unproductive area of leadership/leader development communication. Strategic communication efforts must bridge the gap of perceived fear so the leader and individual can move toward something bigger and more meaningful. Encoding communication with emotional intelligence factors of self-awareness and empathy will help leaders traverse the gate between transactional interactions and foundations of a transformational leader-follower relationship.

Next, leaders must build upon an individual's sense of belonging by addressing their innate desire to be a member of the team. A leader can use this desire for belonging to fully develop an overwhelmingly strong dedication and commitment to the leadership vision and the organization as a whole. It is evident every day in the military that when an individual feels like they are part of a winning team, they will do anything to keep the team winning. The sooner the individual knows that you value the team and his place on the team, the quicker he will begin to internalize all facets of daily routine that are important to the team. The team essentially becomes everything. For example, "I want to be an Airborne Ranger." The phrase alone spurs people toward joining the elite team of Airborne Rangers...and why not...wouldn't you want to be on the team everyone was talking about?

The third and final gate of communication within the framework of the CPT is self-actualization. Perhaps the most valuable portion of all, because the individual is gaining in confidence and attempting to link himself, his team, and his career in the pursuit of a higher goal. Simply put, he is maximizing output and achieving his #bestlifenow. That does not mean there is no need for growth or improvement. Just the opposite, in fact. This third gate is likely to be enjoyed by the organization for a brief period. Though this is the point where the leader has brought the follower to the maximum point of development within his scope of influence, the logical conclusion is to attend professional military education, promote to the next higher grade, or take on a position of greater responsibility. Failure to advance could actually result in a regression of output if the leader does not appropriately challenge the individual or progress them into greater roles and responsibilities.

CONCLUSION

Time is too short not to view every communication as strategic. This article aims to clarify strategic communication efforts to create meaningful change in the limited time available. The purpose of the CPT is to provide a meaningful TTP to leaders. It is the opinion of the authors that the CPT allows for leaders to execute more strategic communication efforts in support of leadership and leader development actions. Furthermore, the CPT offers a relevant leader TTP in an effort to maximize time and leadership development opportunities.

These efforts can be further enhanced by teaching the CPT TTP to subordinate leaders within their sphere of influence. If the method of leader strategic communication is duplicated across all echelons of the organization, then there is no one being left behind, and the leader vision for the organization is more completely supported.

CW4 Leonard Momeny currently serves as a Doctrine Writer and Tactics Analyst with the Directorate of Training and Doctrine, Fort Rucker, Alabama. Prior assignments include Fort Drum, Fort Riley, Fort Rucker, Fort Lewis, and Army Europe. He holds degrees from Southwestern College Kansas, Liberty University, and American Military University and is a graduate of Ranger School.

LTC Michael Gourgues currently serves as the Tactics Division Chief with the Directorate of Training and Doctrine, Fort Rucker, Alabama.

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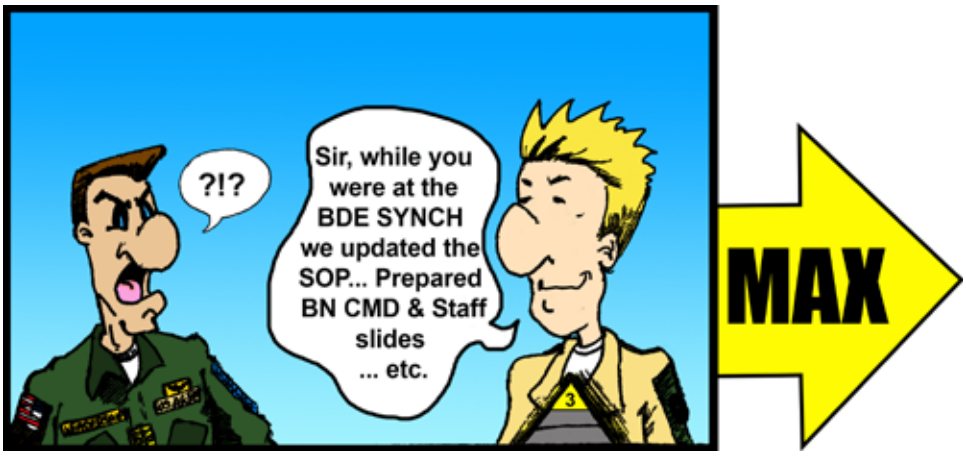

U.S. Army senior leaders and noncommissioned officers, assigned to I Corps, carry 20 pound sand bags during the Value of Life Ruck March on Joint-Base Lewis-McChord, Washington, Feb. 1. The sand bags were a training tool representing the "weight of life." As the ruck march drew to a close, the Soldiers were able to unload the sand bags with the help of their battle buddies. (U.S. Army photos by Private Adeline Witherspoon)

WHY IS SUICIDE SO DIFFICULT TO TALK ABOUT?

By 1SG Kevin D. Shoun

"I think suicide is sort of like cancer was 50 years ago. People don't want to talk about it, they don't want to know about it. People are frightened of it, and they don't understand it, when actually these issues are medically treatable."

Judy Collins (Judy Collins Quotes, n.d.).

After reading a recent article in the ***Army Times***, which was titled "Suicides among active-duty soldiers are up about 20 percent," (Myers, 2019), I was inspired to write an article of my own about this hard to talk about issue. Suicide is something that I was first introduced to in June of 2002, when my father took his own life. Sadly, I have been reintroduced to suicide far too many times throughout my 15-year military career. We must do more for each other as friends, as family members, as leaders, but more importantly, for ourselves! We must talk to the people around us, ask the hard-hitting questions, and dive deep into meaningful and challenging topics. These types of conversations will absolutely be tough; nevertheless, such conversations change our lives for the better. It is no secret that suicide is a difficult topic to talk about; however, by sharing my story and providing a personal perspective, I aim to make it a little easier to understand its impact on the people around us, and to actually bring

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up this topic and openly discuss it should there ever be a time where doing so might save someone's life. Together we can make a difference.

WHY DO PEOPLE CHOOSE TO COMMIT SUICIDE?

Suicide is the act of ending one's own life; it is a tragic event that carries strong emotional repercussions for surviving friends and family members. According to "Psychology Today" citing the Centers for Disease Control and Prevention, "More than 45,000 people in the U.S. killed themselves in 2016, making it the 10th leading cause of death overall. Suicides also appear to be increasing across the country. The rate of suicide rose in 44 states between 1999 and 2016, with half of states reporting an increase of greater than 30 percent" (Psychology Today, 2019). Although many suicide prevention programs focus on helping teenagers, the highest number of suicides in the U.S. in 2015 occurred among people ages 45 to 54. Men are especially at risk, with a suicide rate approximately four times higher than that of women. 'Why did they do it?' is a question every surviving family member and friend asks themselves after the fact, oftentimes never truly understanding why they made such a devastating choice. While the reason someone takes their own life is often unknown, here is the statistical breakdown of contributing factors that lead to suicide:

42% relationship problems,

29% crisis in the recent past or near future,

28% problematic substance use,

22% physical health problems,

16% job or financial problems,

9% criminal legal problems, and

4% loss of housing

(Centers for Disease Control and Prevention, 2018).

CAMP ARIFJAN, Kuwait – Army Chaplain (MAJ) Jesse King, a chaplain assigned to Area Support Group - Kuwait, talks to Soldiers about suicide prevention and awareness during a Value of Life Ruck March at Camp Arifjan, Kuwait, March 11, 2019. King said the Value of Life training reinforces the idea that your life should be important to you and when Soldiers are at their low point, they should fight that urge to go inward and instead should seek help. Value of Life training is a supplemental program to the annual suicide prevention and awareness Ask, Care, Escort training. U.S. Army Central hosts these types of events to demonstrate its enduring commitment to Soldiers' health, welfare, and morale. (U.S. Army Reserve photo by SGT Christopher Lindborg)

SPEAK UP AND BE APPROACHABLE

It is no secret that life in the military strains every one of the commonly accepted reasons listed; not even the strongest of relationships can avoid the reality of real world hurt. For example, the deployments, field problems, temporary duty assignments, and the many other requirements that cause military members to spend countless hours away from their loved ones. Unfortunately, failed relationships are extremely common in the military. Given the fact that relationship problems are statistically the leading cause of suicide, we owe it to the people around us who are going through difficult times to genuinely be there for them and provide them ample support when needed. This also requires us to speak up for ourselves and let the people around us know when we're not doing so great. Being transparent with our coworkers, friends, and loved ones is a good thing and needs to be encouraged. After all, if we cannot be bluntly open with the people closest to us, who can we talk to? Sergeant Major of the Army, Daniel A. Dailey, does a phenomenal job at summing this up by saying, "Don't be the feared leader. It doesn't work. If Soldiers run the other way when you show up, that's absolutely not cool. Most leaders who yell all the time, they're in fact hiding behind their inability to effectively lead. Soldiers and leaders should be seeking you, looking for your guidance, asking you to be their mentors on their Army career track..." (Tan, 2015). Be approachable, be a problem solver and make a difference in your circle of influence.

MY STORY

It was June 3rd, 2002. I remember the day vividly. It was a Monday afternoon, and I had returned home

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https://www.militaryonesource.mil/

The Military OneSource site provides referrals to a local military treatment facility, TRICARE, or other appropriate resource. To access, click on Menu (top right of screen), Health & Wellness/Mental Health/Suicide. If you or someone you know is suicidal or in a state of crisis, the Military Crisis Line is open 24 hours a day (1-800-273-8255 and Press 1). You can also start a conversation via online chat or text (838255)

from school. The phone rang. It was my uncle. His voice trembled noticeably and he struggled with his words. I mean, how do you tell a young kid that his father is dead? After a moment, he worked up the courage to say the words that would forever change my life, "Kevin, your father's dead." I staggered to lean against the counter, confused, my eyes swelling with tears. Unsure if my sister or mother knew, I immediately called them both to inform them of the news I just received. As a teenager, it was a task I was not prepared to do. The drive to my father's house was kind of a blur to me. However, I remember when we arrived my mother, sister, and I were all received by other grieving family members. We had to wait outside because the city coroner and local authorities were still doing their job, investigating. Eventually, my family and I watched as my father's lifeless body, draped in a white sheet, was transported into the coroner's van. I shouted, "I want to see him!" The lead investigator looked heavily to the ground and asked me not to look. By that time, I learned that my father had taken his own life. I silently agreed with the man's recommendation, fearing what the last image of my father might be. The days, months, and years following my father's unnecessary and untimely death were filled with anger, sorrow, and a plethora of other unhealthy emotions that consumed me. Thankfully, I have grown and learned a great deal since that tragic day, and I must humbly admit that I have been blessed with a successful life and a loving family. Although, I do occasionally read the note he left us, and think about all the memories he has missed out on: seeing me graduate from college, meeting my beautiful wife, the births of our amazing children, and all the holidays and countless other memories he could and should have been a part of.

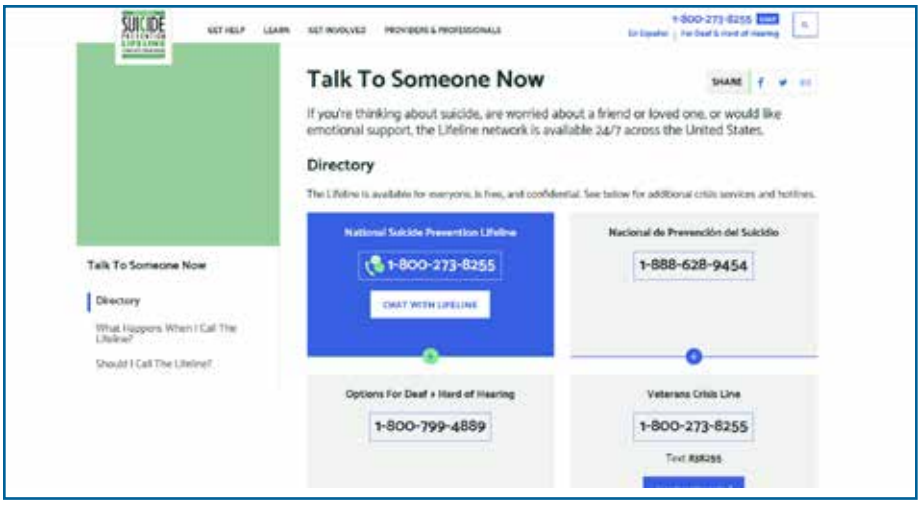
CALL TO ACTION

If you are ever in a dark place, go to counseling, talk to a friend, hit the gym, read inspiring books or articles, just do something! But whatever you do, please, do not give up on life! In the darkest moments, it might be difficult to acknowledge all of the people who love and value your presence and friendship, yet these are the same people who would enthusiastically help you through that darkness. I challenge everyone reading this article to get comfortable with being uncomfortable. Become involved with your local community, help others, volunteer your time, and live a life that brings value to others every day. It can be as little as a smile or as much as clearing your calendar to help someone out. Initiate a conversation about suicide and other challenging topics, finances, family history, learn what the people in your lives think about it and if they have ever thought about it themselves. Establish an environment that fosters open and candid conversations to be had. This can be done at work, over lunch or coffee, while conducting training flights or turning wrenches on the flight line, while being driven around in an Uber, or anywhere else for that matter. Again, get comfortable with being

https://stopsoldiersuicide.org/

Stop Soldier Suicide is the first national, veteran-founded-and-led 501(c)3 nonprofit focused on military suicide prevention. They work individually with troops, veterans, and military families to help navigate the many services, programs, and assistance available. "We are an advocate in your corner. We find the right resources for your specific needs and track your progress for two years. And we won't stop until you get the help you deserve" (Stop Soldier Suicide Web site).

uncomfortable, and save someone's life or your own by simply having a genuine conversation with the people around you. There are so many resources at our disposal that were made for us to use; let's utilize our resources to their full capacity. As leaders, and individuals, we need to educate ourselves on the numerous support agencies that are out there for military members, their families, and our civilian counterparts. For example, Military One Source offers 12 free and offsite counseling sessions, all of which are completely confidential and can be initiated by making a simple phone call. The best part, if you do not like the person they assign you, they will reassign a new counselor to you until you find one that you are comfortable talking with. Lastly, and most importantly, choose to live my friends–you and your loved ones will not regret it, because the best days in your life have yet to come!



https://suicidepreventionlifeline.org/talk-to-someone-now/

The Suicide Prevention Lifeline site provides various confidential ways to receive help. You can call the National Suicide Prevention Lifeline at 800-273-8255, or click to chat with Lifeline personnel. Additionally, Veterans can call the Veterans Crisis Line at 1-800-273-8255, click to start a conversation via online chat, or text (838255).

1SG Kevin D. Shoun currently serves as the First Sergeant for Bravo Company 1-11th AVN BN, Fort Rucker, Alabama. Prior assignments include Fort Bragg, Hunter Army Airfield, K-16 South Korea, and Fort Drum. He holds a degree from Excelsior College.

1SG Kevin Shoun speaks at his promotion and re-enlistment ceremony on March 15, 2019, at the U.S. Army Aviation Museum, Fort Rucker, Alabama

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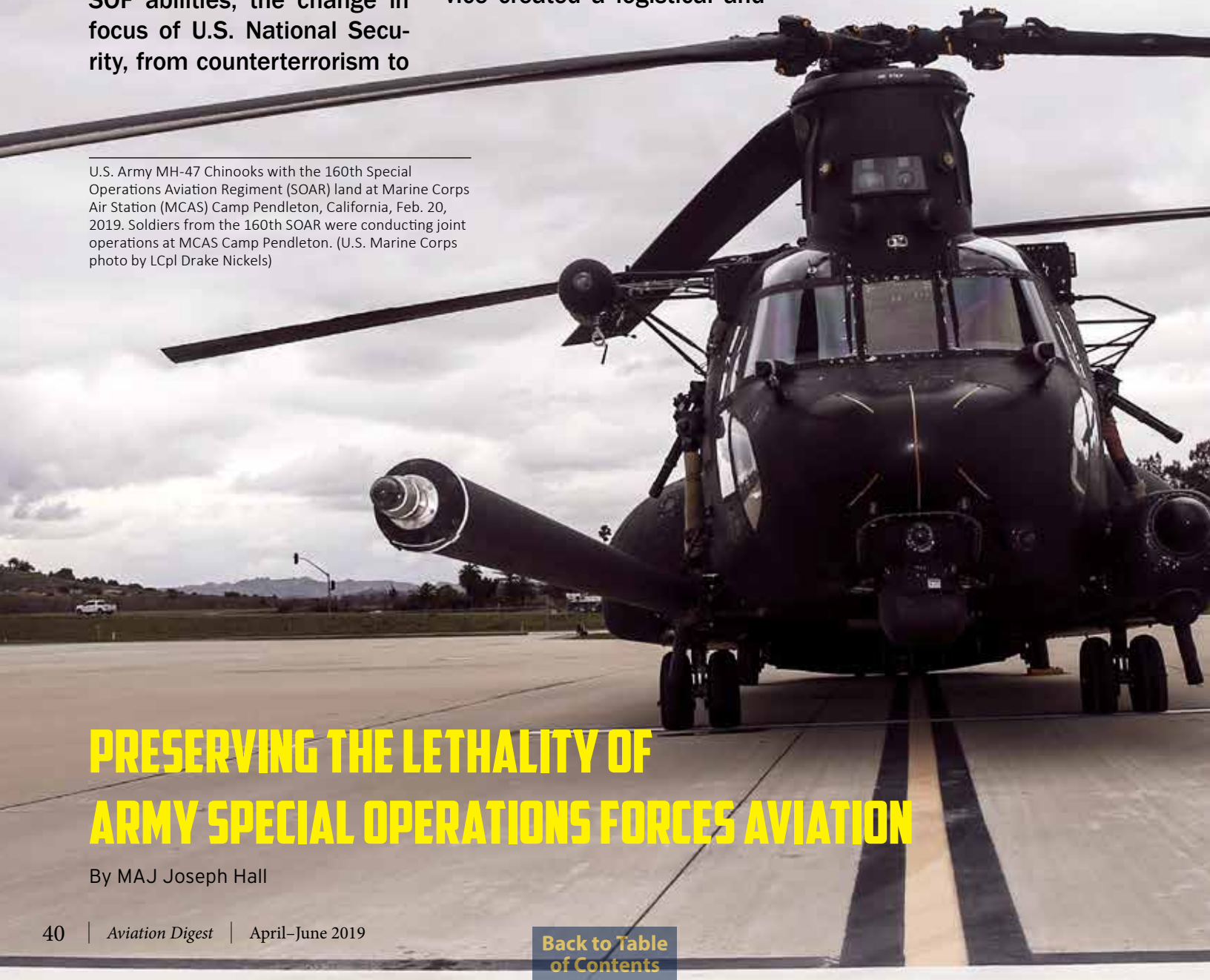
PRESERVING THE LETHALITY OF ARMY SPECIAL OPERATIONS FORCES AVIATION

By MAJ Joseph Hall

Army Special Operations Forces (SOF) aviation's unique support to the ground force was highlighted in an attempted rescue of U.S. hostage, James Foley (Groll & Brannen, 2014). A complex mission into Syria, involving SOF ground forces and rotary-/fixed-wing aircraft, demonstrates the U.S. SOF's lethality to penetrate an adversary's airspace and strike (Groll & Brannen, 2014). Despite these successful demonstrations of SOF abilities, the change in focus of U.S. National Security, from counterterrorism to emerging state and non-state actors, requires an increased emphasis on technology development. These advancements, however, must not alter the nature of the unit or the capability it provides to the ground force. A joint program to develop these advanced platforms to reduce cost while increasing functionality across the services must be feasible. The F-35 program has already demonstrated how the different requirements of each service created a logistical and financial burden on the program that ultimately led to delays and significant faults (Tegler, 2018). The Future Vertical Lift (FVL) program of the U.S. military, particularly for SOF, must ensure that deployability and maneuverability are foundational capabilities of the base platform to maintain its unique service. These capabilities will assist in achieving air superiority in future conflicts, providing SOF the necessary assets to strike anywhere and anytime.



U.S. Army MH-47 Chinooks with the 160th Special Operations Aviation Regiment (SOAR) land at Marine Corps Air Station (MCAS) Camp Pendleton, California, Feb. 20, 2019. Soldiers from the 160th SOAR were conducting joint operations at MCAS Camp Pendleton. (U.S. Marine Corps photo by LCpl Drake Nickels)

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SPECIAL OPERATIONS FORCES ROTARY-WING AVIATION

"When the Navy SEALs or Army Special Forces need a ride, they call the unit with the most elite helicopter pilots in the world—the 160th Special Operations Aviation Regiment (SOAR)" (Szoldra, 2014). The 160th Special Operations Aviation Regiment (SOAR) is the Army's only Special Operations aviation task force. Its primary mission is to employ precision attack and assault aviation capabilities in support of worldwide contingency operations and combatant commanders (Department of the Army, n.d.). This is accomplished by highly skilled and trained Soldiers, as well as various types of aircraft. The aircraft possess advanced technological capabilities that can be modified to meet various mission sets. Special Operations Forces rotary-wing aviation was created as a result of the 1979 failed hostage rescue of Americans in Iran. The U.S. military did not possess a rotary-wing unit built specifically to conduct long-range infiltration/exfiltration and attack missions. The unit was originally built from various helicopter companies stationed at Fort Campbell, Kentucky and in October 1981, was officially designated the 160th Aviation Battalion. The unit, comprised of AH-6/MH-6 Little Birds, MH-60 Black Hawks, MH-47 Chinooks, and MQ-1C Gray Eagles has grown to four battalions with locations at Fort Campbell, Kentucky; Fort Lewis, Washington; and Savannah, Georgia, as well as a higher headquarters at Fort Bragg, North Carolina. The 160th SOAR (A) prides itself as the fastest deployable aviation task force in the world with the capability of delivering its precious cargo time on target plus or minus 30 seconds (Department of the Army, n.d.).

FUTURE THREAT ENVIRONMENT

Russia cannot keep up with the military industrial power of the United States, but it aims at investing in certain capabilities that challenge U.S. superiority, particularly in the air. Russia's development and sales of the S-400, an advanced surface-to-air missile system that outperforms the U.S. Patriot Missiles, threatens the U.S. and its allies' ability to operate freely in Eastern Europe, the Middle East, and North Korea (Grove, 2019). Aviation leaders must preserve specific fundamentals to ensure future aircraft possess the right characteristics that allow it to perform effectively in an increased threat environment. Air supremacy and air superiority shape the threat environment for aviation assets. Joint Publication 3-01 defines U.S. air supremacy as an opponent's inability to counter U.S. air assets in any way. United States air superiority is defined as the ability of U.S. forces to limit an opponent's counter-air defense activities during a given time and place (Chairman of the Joint Chiefs of Staff, 2017). The U.S. SOF has operated primarily in areas where the U.S. has maintained air supremacy with the adversary having very limited ability to deter U.S. air activities.

Air supremacy, however, cannot be assumed for future conflicts. The U.S. SOF must be able to operate in an environment where the enemy is able to challenge U.S. air assets through their air defense systems. Enemy air defense systems may vary from anti-aircraft guns to an advanced integrated air defense system composed of early warning radars, command and control, and air and missile weapon systems. These systems have continued to advance and, depending on the country, vary in complexity and lethality. These threat systems require indepth analysis and detailed planning to overcome (Chairman of the Joint Chiefs of Staff, 2017). In addition to the analysis and planning, SOF aviation aircraft must possess the necessary capabilities to perform in such an environment but it must not alter the nature of the unit. The FVL program is the next step, but leaders must ensure that the correct capabilities are developed and preserved.

ARMY FUTURE VERTICAL LIFT

Military decision makers have signaled the value of FVL by listing it as one the Army Future's Command six modernization priorities (Kimmons, 2018). The program is still in the development stage but as the threat environment continues to evolve, the program's increased capabilities will become more important to adequately support the ground force commander. The focus of the FVL program is to increase the speed, range, and strategic reach of rotary-wing platforms; however, it is being introduced as a joint development between the services with a common architecture to reduce procurement, maintenance, and operating costs. Different variants of similar aircraft to meet mission requirements (***Fiscal Year 2017***, 2017). Decision makers must consider the lessons learned from the F-35 to ensure the FVL program does not follow the same shortfalls.

F-35: THE WRONG MODEL

The Joint Strike Fighter (JSF) program was initiated in early to mid-1990s when the Air Force, Navy, and Marines sought a replacement for their respective strike aircraft. Congress mandated that the three services develop a joint aircraft in order to reduce cost in procurement, operation, and sustainment. At its conception, the F-35 JSF was designed to be a "relatively affordable" platform that could be procured for the various branches and allies (Gertler, 2012, p. 1). The program aimed at using developing technology to provide the most up-to-date and lethal strike platform that could be varied to each service's requirements to meet their mission demands. The program's evolution, which started in 2001, has been plagued with numerous delays and budget in-

U.S. Air Force Capt. Andrew "Dojo" Olson, F-35 Demo Team pilot and commander, maneuvers an F-35 during the Heritage Flight Training and Certification Course at Davis-Monthan Air Force Base, Arizona, Feb. 28, 2019. The team flew several sorties in preparation for final certification for the 2019 air show season. (U.S. Air Force photo by SSgt Jensen Stidham)

creases. In 2009, the program was extended by 30 months to complete the development phase although aircraft had already started to come off the production line. In 2010, the program far exceeded its expected budget and surpassed the Nunn-McCurdy law, which required the Secretary of Defense to notify Congress of the issue and what steps were being taken to correct it (Gertler, 2012, p. 20).

Critics argue that one of the major reasons for these delays and the increased cost was the pursuit of a "one-size-fits-all" platform. For example, the Air Force wanted stealth, the Marines wanted a vertical lift capability, and the Navy required the aircraft to be able to land on an aircraft carrier. All these requirements pushed the foundational version of the aircraft far beyond its initial inception. From 2001 to 2012, the program suffered major setbacks, from exceeding structural weight restrictions to Chinese theft of development and software specifications (Tegler, 2018). The gap in the United States' air supremacy is gradually decreasing with the military advancements in countries like Russia, China, and Iran. This highlights the fact that the U.S. military cannot afford major delays in future weapons development.

THE WAY FORWARD

Special Operations Forces aviation must preserve its foundational capabilities in the development of its own version of FVL to enhance lethality to the ground force commander in an increased threat environment. Aviation capabilities of the modern SOF have continuously developed post-World War II out of the necessity to complete politically sensitive missions. The 1979 failed Iranian hostage rescue demonstrated why SOF must maintain a lethal aviation infiltration capability. The ***Holloway Report*** extensively reviewed the rescue attempt and focused on improving the United States' counterterrorism capability. The report highlighted the SOF's inability to execute complex counterterrorism missions under a condensed operating timeline, as well as the aircraft's ability to perform the mission (Holloway, 1980). The report states "...specially equipped helicopters would have markedly improved ability" (Holloway, 1980, p. 32). Since 1979, SOF has drastically improved its capabilities; however, as the threat environment changes, it is critical that certain core fundamentals be maintained to avoid the two observations made during the failed hostage attempt.

Special Operations Forces aviation must preserve two key capabilities: deployability and maneuverability. Deployability is a unit's ability to prepare, load, and transport an aircraft to anywhere in the world at a moment's notice to support various SOF missions. For this to be successful, the unit must have extensive training on preparing and loading the aircraft. The aircraft's basic design allows expedited folding and loading onto transport aircraft to preserve the ability to rapidly position forces in a limited period to accomplish a politically sensitive mission. Additionally, the aircraft crew and maintenance package must be limited in size so that it does not become too logistically demanding to

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the extent that it becomes counterproductive. For example, a package loses its deployability if it requires too much time and resources to reposition across the globe. When considering the platforms for FVL, decision makers and industry must ensure that the aircraft meets this requirement. The aircraft design must incorporate quick folding and packaging within U.S. mobility aircraft. The aircraft must not incur additional build-up time and maintenance delays to interrupt operations on actionable intelligence. This allows U.S. decision makers the capability of surprise and stealth to maneuver forces quickly before the adversary can rearrange defenses or match capabilities.

Another major factor that increases SOF aviation success is the aircraft's maneuvering capability. There are several factors that contribute to an aircraft's maneuverability like speed, range, and the aircraft's agility on the objective. Additionally, aircraft must have the capability to refuel in the air to avoid landing in hostile territory. These factors not only increase the amount of time on the target for the ground force but also provide the capability to land right on top of the enemy without completely disrupting the surrounding conditions. The aircraft's ability to protect or conceal itself also contributes to its maneuvering capability, which will be especially important in future environments. The aircraft must possess advanced radar-defeating technology, as well as an advanced surface-to-air missile defeating capability. The aircraft's ability to fly longer and faster, penetrate an adversary's air defense system, and perform in the terminal area will provide the ground force commander the required lethality required to accomplish dynamic SOF missions.

ANALYSIS

Deployability and maneuverability greatly influence the Special Operations Command's ability to rapidly deploy and lethally execute direct action missions. Because SOF enjoys detailing its successes more than its failures, correlating these factors to successful and unsuccessful SOF missions can be difficult. Despite this limitation, certain implications can be drawn on how the nature and capabilities of the units, as well as the general timeline of certain tactical, operational, or strategic level missions highlight the importance of deployability and maneuverability. Ultimately, the following cases demonstrate the value of these factors and how they aid in the lethality of a unit and why they must be preserved in the FVL program.

U.S. Soldiers with 160th Special Operations Aviation Regiment and Marines with Marine Aerial Refueler Transport Squadron 152 conduct air delivered ground refueling during Exercise Yuma Horizon 19 at Imperial County Air Field, Imperial County, California, Jan. 16, 2019. Exercise Yuma Horizon is a squadron-level training exercise with a focus on education in a range of mission requirements designed to maintain squadron capability in a forward-operating environment. (U.S. Marine Corps photo by LCpl Seth Rosenberg)

During the SOF invasion of Afghanistan in October 2001, several instances highlight how deployability and maneuverability increased the SOFs' chances of success and lethality against the adversary. Within 10 days of the World Trade Center attacks, various SOF received deployment orders to position themselves with the ability to support joint operations in response to the terrorist attacks. Less than a month later, SOF aviation forces were in position in areas like Uzbekistan and the north Arabian Sea on the ***U.S.S. Kitty Hawk*** to support an SOF ground campaign into Afghanistan (Perry & Kassing, 2015). On October 16, 2001, three SOF aircraft departed from an airfield in Uzbekistan and conducted aerial refuel and border penetration under the harshest weather conditions to infiltrate a SOF ground element into Northern Afghanistan to link up with the Northern alliance and facilitate the invasion (Briscoe, Kiper, Schroder, & Sepp, 2016). The authors of ***Weapon of Choice: U.S. Army Special Operations Forces in Afghanistan*** emphasized that "Unbeknown to many, this mission paved the way for the UW [unconventional warfare] campaign in Afghanistan" (Briscoe et al., 2016, p. 85).

Another example of SOF aviation's effectiveness during the invasion was seen on October 20, 2001, when SOF Operational Detachment-Alpha teams, as well as Army Rangers, were infiltrated to two separate targets in Afghanistan to link up with Northern alliance members and occupy a landing strip in southern Afghanistan to support future SOF operations. These missions were performed under the cover of dark-

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ness with limited visibility, across highly demanding terrain, and pushed the aircraft to the absolute limits in speed, range, and survivability. The success of the missions carried a message to U.S. adversaries that U.S. SOF possess the ability to position themselves anywhere at a given time to accomplish a variety of missions (Briscoe et al., 2016). In less than a month, SOF aviation was in position to support ground campaigns in various locations around the world. These two missions highlight the range and speed at which the aircraft were able to travel, which gave planners various options on where the aircraft could be staged, as well as numerous possibilities in executable targets within Afghanistan. Just as important as the range and speed was the maneuvering capability of the aircraft. The aircraft were able execute expedited landing procedures in some of the most demanding conditions in the world in terms of dust and darkness. This strategic-level SOF campaign would not have been possible without aircraft possessing deployability and maneuverability.

The last example of the SOFs' ability to rapidly deploy forces in a complex and dynamic threat environment, but on an even more condensed timeline, was the Special Operations raid to kill Osama bin Laden. From notification to execution, the SOF finalized planning, deployed, and executed a complex, cross-border operation to infiltrate SOF to kill bin Laden in roughly 4 days (Marks, 2018). The timeline from mission approval to mission execution is the major takeaway from this case study. Special Operations Forces decision makers were able to position aviation assets on an extremely condensed timeline with the capability of flying extended lengths of time and through demanding terrain in denied territory to execute a complex landing plan in an urban environment in support of U.S. National Security interests. The maneuvering agility and stealth capability of the aircraft allowed surprise and lethality for ground forces on target. These capabilities ensured air superiority resulting in accomplishing a strategic U.S. objective by eliminating the mastermind of the September 11, 2001, attacks on the World Trade Center.

CONCLUSION

Army SOF aviation faces difficult choices as it looks to advance its fleet of aircraft to increase performance and survivability in an increased air defense environment, while continuing to support various warfighting commands in their fight against violent extremists. Ideally, the 160th would have two fleet of aircraft. One fleet would consist of advanced aircraft that possesses the newest aircraft survivability equipment, as well as advanced flight performance capabilities. The second fleet of aircraft would be more basic and not weighed down with the additional technology required to defeat enemy air defense systems. This preserves the unit's capabilities and performance in areas with little or no enemy air defense, which currently, is where the unit primarily operates while also providing solutions to near-peer threats. Because this concept is not financially and logistically realistic, when the SOF aviation community moves on to FVL, the aircraft must be deployable and maneuverable to the same standards that has shaped the unit for 28 years.

MAJ Joseph Hall is a U.S. Army Officer with 4 years of Special Operation aviation experience, including deployments each to Iraq and Afghanistan. He served as an MH-60M Defensive Armed Penetrator platoon leader in C Company, 1/160th SOAR(Abn), and 14 months as a Special Missions Unit Liaison Officer. He is currently a candidate for an M.S. degree in Defense Analysis at the Naval Postgraduate School, Monterey, California.

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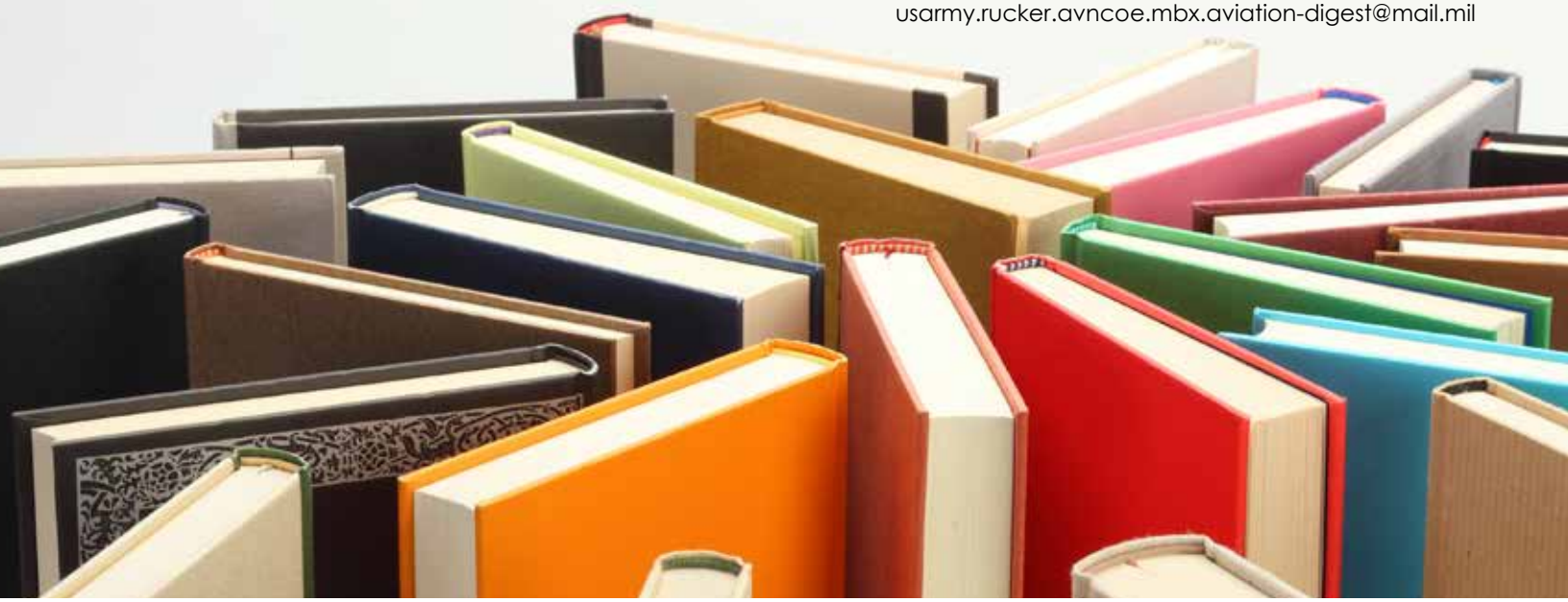

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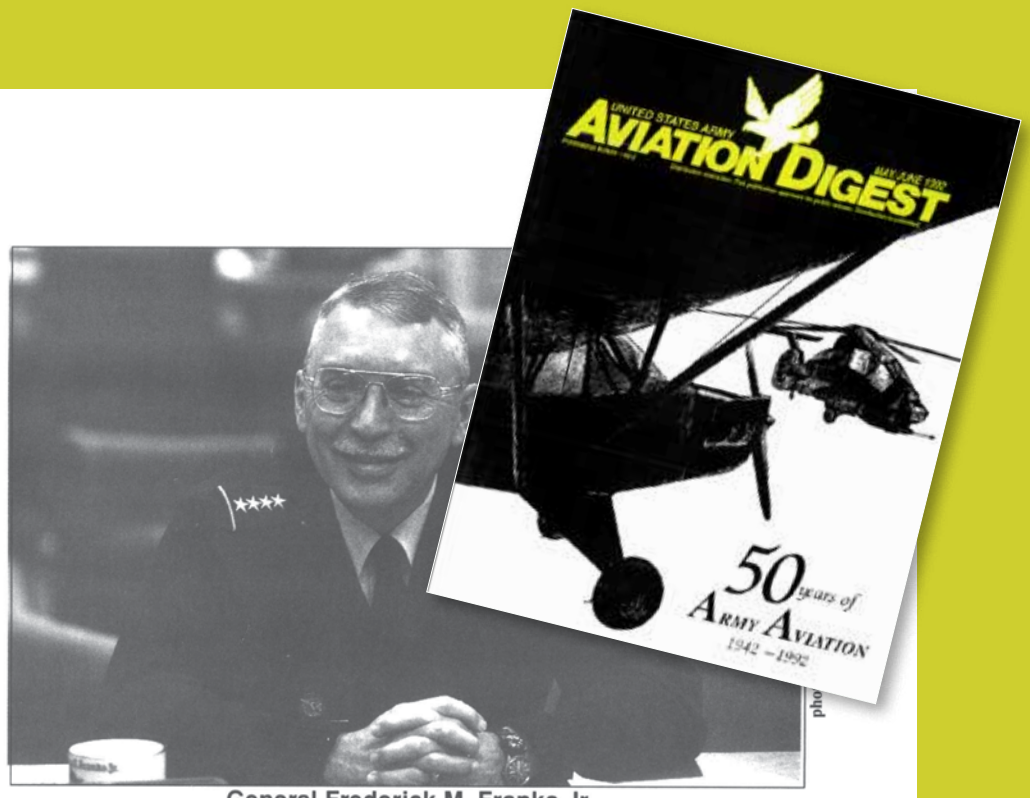

General Frederick M. Franks Jr
Commander, U.S. Army Training and Doctrine Command

by LTC Colin K. Dunn

Excerpts from a recent interview conducted by Lieutenant Colonel Colin K. Dunn, Editor, ***Field Artillery Professional Bulletin,*** *Fort Sill, OK, with General Frederick M. Franks Jr, Commanding General, U.S. Army Training and Doctrine Command, Fort Monroe, VA.*

As the Army moves toward a continental U.S. [CONUS]-based contingency force, what do you see as the capabilities critical to responding to crises?

General [Gordon R.] Sullivan [Chief of Staff of the Army] is reshaping our Army into a post-Cold War Army and not just a smaller version of our Cold War Army. We are reshaping both intellectually and in our training and leader development programs.

As we move toward a strategic Army, the majority of our forces will be in the United States. But forward presence also will be part of our national military strategy. So we'll deploy from either forward presence or CONUS locations.

With this strategy, rapid mobilization and deployment become increasingly important. The circumstances under which the Army can deploy are more ambiguous now than they were a few years ago. When we had the certainty of the Cold War contingencies, commanders trained and prepared to win in those particular circumstances.

Now we must be more versatile—mix and match units in tailored force packages, fight battles at the tactical and operational levels, and organize our contingency theater to defeat threats in many scenarios. This versatility is critical, but we've shown such versatility before. A lot of the capabilities we demonstrated in operations such as Just Cause and Desert Shield and Storm will continue to be important for our contingency Army in the future.

What are some of the greatest challenges the Army faces in training for joint operations?

First, we have to base our training on the situations we could face—the circumstances unified commanders need their forces to practice. We must have a relevant set of circumstances or conditions within which the training takes place.

Scenarios are very important in joint operations. So, as we watch scenarios being developed in unified commands, in our schools, leader development programs, and CTCs [combat training centers], they should be relevant for the U.S. Army now and in the future. Next, we must capitalize on the significant strengths each service brings to the operation and harmonize them in accordance with emerging joint and Army doctrine. For example, joint special operations at the JRTC [Joint Readiness Training Center, Fort Chaffee, AR] harmonize air-ground fires, both close and deep. As the organic fires of our Army systems reach out farther and farther—MLRS [multiple launch rocket system], cannon artillery, Army tactical missile system [Army TACMS], AH-64 Apaches—as the ground com-

mander can employ these assets at greater distances, that requires more coordination and more training in joint operations.

How do you see the Army's increasing the lethality of our early deploying forces in a contingency operation?

We can increase our lethality in several ways. The most talked about way is through materiel solutions. Certainly, we'll pursue developing the armored gun system [Armor's lightly armored gun system with a high-velocity cannon, which is transportable by C-130 Hercules aircraft]; HIMARS [Artillery's high-mobility, artillery rocket system, a lightweight, wheeled version of MLRS]; the Javelin [Infantry's one-man-operated, fire-and-forget, advanced antitank weapon with a 1.25-mile range]; and others that give us more lethality on the ground early.

Fielding the M119 light howitzer and adding fuel pods to UH-60 Black Hawks, Apaches, and the CH-47D Chinook plus the helicopters' capability to be refueled in midair give us lethality options early on. Our aviation now can self-deploy as well as deploy aboard ships and inside strategic aircraft. Again, ***versatility*** is key.

Depending on the contingency's circumstances, deployment means, and time available, the commander can increase the lethality of his deploying light forces by introducing other types of units early on. He can mix and match his light, special operating, and heavy forces to meet that particular threat.

You'll see more mixing and matching in your NTC [National Training Center, Fort Irwin, CA] and JRTC rotations as you train on contingency operations. Those CTCs are employing heavy and light forces in operations specifically aimed at developing versatility.

In the joint arena, our sister services are helping us get forces on the ground faster in contingencies. The Navy, for example, is committed to building more fast sea-lift ships in the next few years. So we'll see a dramatic improvement in our forces' ability to deploy by surface means. The Air Force has committed to the C-17 Airlifter. So our strategic transport aircraft capability is improving. Additionally, we can preposition Army materiel on ships at selected locations.

The materiel, force package, and other solutions to increasing our lethality early on are all part of being versatile enough to meet any contingency. What we don't want to do is get locked into inflexible ***formulas*** for specific scenarios. Our doctrine should guide us—describe how to ***think about*** mobilization and deployment—how to think in terms of versatile force mixing and matching in combat, combat support, and combat service support forces, etc. Using such doctrine, we would be flexible enough to organize and operate in any situation.

As the sponsor of the "Fighting with Fires" initiative being worked by the Field Artillery School, would you explain your notion of the combined arms commander's role in synchronizing operating systems?

My goal—with Major General [Fred F.] Marty, Brigadier General [Tommy R.] Franks [Field Artillery School Commandant and Assistant Commandant], and the Field Artillery School leading the way—is to ensure the Army makes the most of our increasingly lethal fires.

In what General George S. Patton called the "Musicians of Mars," the combined arms commander is the "conductor of his orchestra" of operating systems performing on the battlefield. He's responsible for pulling together all the elements of combat power to fight and win. In the tactical battle, major engagements or campaigns, the elements of combat power are the same: firepower, maneuver, protection, and leadership.

The combined arms commander must be as involved in the fires part of his battle as he is in the maneuver part. I want combined arms commanders Army-wide to know how to skillfully maneuver fires, and we accomplish that first in our doctrine and leader development programs and then in training. And I want those skills honed.

The lethality of our fires has increased significantly. During Desert Storm, in one-half hour we delivered more fires more effectively than World War II artillery could have delivered in 8 hours. So we have extraordinary fires capabilities—and the systems and munitions under development promise even greater lethality.

The maneuver commander must become the combined arms commander and fight more than the maneuver battle—know how to fight with fires and make them an integral part of the battle. He must be able to quickly maneuver and mass fires and skillfully employ counterfire. If the fire support officer [FSO] plans fires as a separate entity—not integrated in the total battle by the combined arms commander—the plan ends up having little relevance to the conduct of the battle. Fires are too important to be left solely to the artillery.

Fire planning by the FSO is certainly necessary, but the plan has to have an agility built in—an interrelationship with maneuver—to make the maximum contribution to winning. Planning is one thing, fighting is another. The fire plan can't be "put on automatic" and executed as though the enemy's not going to react to it. He will. In a fight, you've got two minds working on the same problem: the commander's and the enemy's.

Points of Main Effort

In this interview, General Franks emphasizes five "points of main effort" to guide TRADOC in helping to shape the Army for a changing world situation:

- Lead the Army through intellectual change.
- Propose modernization alternatives to maintain the technological edge for soldiers on future battlefields.
- Sustain excellence and relevance in training and leader development.
- Foster organizational excellence.
- Focus on soldiers.

How would you rate our ability to synchronize operating systems at the combat training centers?

I was enormously proud of the Desert Storm commanders' orchestrating capabilities, at least those I observed personally. Their abilities to synchronize fires and maneuver were superb. The 1st Infantry Division in the breach; the 1st Armored Division (United Kingdom) with the 142d Field Artillery National Guard from AR; and the 1st Cavalry Division in their raids, feints, and demonstrations; the artillery raids and counterfire ambushes with MLRS were all professional, skillful operations. The 1st and 3d Armored Divisions in their zones of action against the Iraqis demonstrated their success in employing massed fires. (I define "massed" as the fires of two or more battalions, not batteries.)

We need to continue this awareness of the capabilities of fires, an awareness forged in Desert Storm. And we need to practice it at the CTCs. I'm encouraged by some recent work at the NTC. Both counterfire and target acquisition are beginning to get the attention they deserve. I also see some encouraging changes at the JRTC, such as the participation of key players, for example ANGLICO [air naval gunfire liaison company] teams. We need continued emphasis on getting every player on the combined arms team on the field at the CTCs. Thus, combined arms commanders can train to synchronize the team.

How do you envision the future CTCs' evolving to maintain our Army's warfighting edge?

We've got to ensure our practice fields remain relevant to the circumstances in which the Army finds itself. At one time we trained to fight based on the Cold War world order. Now the playing field has changed, and we've changed our training accordingly.

General Sullivan has directed we conduct contingency operations at both the NTC and JRTC. At the JRTC, you'll see joint operations on a continuing basis and armor-mech, light, and special operating forces. You'll see light and armor-mech forces at the NTC. Units now face the threat in a variety of configurations as opposed to one threat. In our BCTPs [battle command training programs] for our divisions and corps, you'll see the same type of changes occurring. We're shifting quickly to post-Cold War warfighting.

But ***relevancy*** is key. Our training has to be relevant to the circumstances in which the Army finds itself. We must sustain excellence and relevance in training and leader development.

Current doctrine addresses the commander's intent in his concept for fires and maneuver but in general terms. What should fire support and maneuver expect from the combined arms commander?

The commander needs to precisely describe the effects he's trying to achieve and ***where*** and ***when*** he wants them. In simple, straightforward language, he should describe his desired effects in the conduct of the operation, the point of his main effort, a sensing of the speed of the operation, and where it needs to be relatively tightly controlled. And, depending on the echelon, the commander may have to tell where he chooses to fight the decisive battle over time. If he's the corps commander, he's probably describing 2 to 4 days of operations.

But the combined arms commander doesn't come up with his intent in isolation. Before he expresses the intent, either verbally or in the order, there needs to be continual dialogue face-to-face with subordinate commanders and his staff so he can harmonize his operating systems. He gets advice for his running estimate by talking to subordinate commanders, members of his staff, commanders of fire support and engineer units, and so forth. That's the way to make the combined arms orchestra play.

But when the intent arrives, then it's the responsibility of the logistician, fire supporter, engineer, etc., to say, "How can I involve my organization to best achieve the desired effects?" For example, at the division or higher level, the fire support officer should give the commander some alternatives for task organizing the artillery and weighing the effects of fires to achieve his desired outcome.

What impact do you believe future intelligence and fire support systems will have in terms of achieving success on the bat-

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tlefield without major engagements of maneuver forces?

Most combined arms commanders would tell you that the major intelligence shortcoming in terms of identifying targets is their inability to see over the hill. What they're trying to avoid is unplanned meeting engagements. Friendly reconnaissance out front, either in the defense or the attack, is of utmost importance to commanders. Our ability to see over the hill will be improved, by and large, by the UAV [unmanned aerial vehicle].

We need the ability to rapidly target and deliver fires that contribute to the overall tactical scheme. For example, in Southwest Asia, we were fortunate to have the Pioneer [UAV]. So we flew it and, with a quick-fire capability, spotted and fired on targets in real time. It's the real-time capability we're looking for in delivering fires—not only with cannons, but also with the Army TACMS and MLRS.

As far as fires substituting for maneuver engagements are concerned, you have to watch how you think about that. Fires and maneuver are linked; one contributes to the other.

Of course, it depends on the type of target you're talking about. With MLRS and Army TACMS, you can achieve lethal effects without involving maneuver forces. For example, if you're firing at a SAM [surface-to-air missile] site with Army TACMS, you can probably put it out of business.

How can the combined arms commander make the most of his fire support and aviation assets?

In the factors of METT-T [mission, enemy, terrain, troops, and time available], he looks for those elements of combat power he can rapidly shift from one part of the battlefield to another. I call those "reusable combat assets." Though the commander can usually shift his artillery the quickest, his reusable combat assets also include aviation and close air support.

We've got a great Army, and I'm proud to be part of it.

So the commander formulates his plan to take advantage of reusable combat power available to him. But a fire plan is just that—a plan. The fire supporter, the aviator, and the Air Force representative must understand the commander will have to deviate from the plan to seize opportunities, and rapidly adjust to take advantage of situations as they occur during the fight.

The Army's capstone warfighting doctrinal Field Manual [FM] 100-5, Operations is under revision. How is this manual changing?

The Chief of Staff of the Army has charged TRADOC with leading the Army through this intellectual change to a post-Cold War world by using doctrine as the engine of change. A part of this effort includes revising FM 100-5. Our doctrine isn't broken. But we need to include in it the operational versatility our Army now requires in a post-Cold War era.

FM 100-5 will describe how to think about mobilization and deployment, how to think about employing Army forces in actions short of war and other intellectual changes we must make—all of which we've done before in some form or other. But the centerpiece of the revised FM 100-5 will continue to be fighting at the tactical, operational, and strategic levels—guidelines for employing forces, conditioned by the factors of METT-T.

We're engaging not only TRADOC, but the total Army in developing FM 100-5. The process is as important as the product. If we do the process right, if we have the kind of dialogue we need, we'll accomplish two things. First, we'll inform the Army about the need for change as we change. And second, by the time we publish the manual sometime in 1993, we'll have tapped the collective wisdom of the Army to include in the revised manual. FM 100-5 is TRADOC's "point of main effort" and requires the full attention of leaders Army-wide.

What message would you send to combined arms soldiers worldwide?

We've got a great Army, and I'm proud to be part of it. It's one that's confident in itself, as proved by its successes in Just Cause, the Cold War, and Desert Storm.

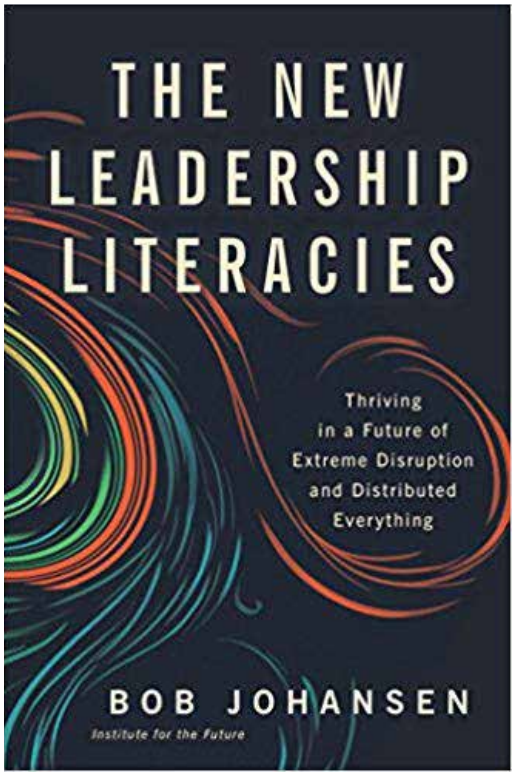
But we have work to do. We must rapidly shift our focus from preparing to fight the battles of a Cold War world to the battles of the future. And to do that in our smaller Army, we must optimize all our combat capabilities, including making the most of our fires. So our doctrine, training, and leader development strategies must evolve as we reshape the Army.

Then, as we reduce forces in Europe, move units to our TRADOC installations and as our Army gets smaller, we must do it all while caring for our soldiers, civilians, and their families. For those who leave the Army, we must show our great appreciation for their service in peace and war, helping to make the Army the best in our nation's history. Every Army alumni should depart with a sense of dignity and respect.

To our many soldiers who will remain in the Army, all of whom play some part on the combined arms team, I thank you for all you've done and challenge you to continue your record of excellence. ❐

The New Leadership Literacies: Thriving in a Future of Extreme Disruption and Distributed Everything

By Bob Johansen. Published by Berrett-Koehler Publishers, Inc., 2017, California, 176 pages.



A book review by LTC Jason S. Davis, Senior Aviation Trainer, Joint Readiness Training Center

Aviators take pride in being ready for changing conditions. Bob Johansen's latest work, ***The New Leadership Literacies***, provides advice on forecasting future environments as the branch adapts doctrine and technology for the next fight. In ***The New Leadership Literacies***, the fourth book from the Institute for the Future's former president and a frequent business consultant on future trends, Johansen tackles leaders' communications challenges in the hyper-connected world of 10 years from now.

Johansen uses the term literacies instead of skills to stoke readers' imagination of how leaders integrate the most connected generation ever into the workforce. In Johansen's future, massively dispersed organizations operate without hierarchies, exploiting technology to revolutionize how people connect and learn. He contends that today's leadership skills will not be enough to succeed or even survive.

The first two literacies focus on development: developing a clear vision of the future, and developing skills through immersive gaming. He predicts a gaming revolution erasing the line between real and virtual, creating an immersive learning environment where experimentation thrives. Accordingly, pressure must be applied to industry partners to create immersive environments as doctrine and technology evolve, enabling maneuver leaders to experiment in a "forgiving" environment. This experimentation brings the best chance of maintaining our Army's overmatch against potential adversaries as they adapt to our capabilities.

Johansen's most valuable insight to future strategic leaders resides in establishing the clear vision of the future. His new literacy: looking backward from the future vividly describes how to develop clarity of what the future could look like through scenario development and establishing likely signals and indicators of the coming change. That description mirrors what military leaders recognize as intelligence preparation of the battlefield and commander's critical intelligence requirements. Both Johansen's new literacy and the Military Decisionmaking Process risk falling victim to cognitive biases, being overly certain of predictions and failing to recognize the least preferred course of action. This symmetry between existing concepts and "new" literacies is found throughout the book, prompting the reader to see the book as a rehash of tiresome tropes, and therefore missing Johansen's message: future success requires challenging existing assumptions.

The literacy of being there when not physically present echoes Army leadership attributes of intellect, presence, and character. Military leaders can apply this literacy as they look for ways to increase shared understanding—either through virtual presence in an operations center, or widely transmitting their intent through hyper-connected methods. The fight of tomorrow will require small units to control larger areas, forcing commanders to further rely on technology to facilitate mission command. ***The New Leadership Literacies*** contains a few new approaches to time-tested leadership skills such as communicating a vision and building trust within a team, but the reader must fight through a cavalcade of buzzwords to find them.

The leading shape-shifting organizations and creating positive energy literacies offer updated translations of business-leadership concepts covered in books such as ***The Starfish and the Spider: The Unstoppable Power of Leaderless Organizations*** (Brafman & Beckstrom, 2006). Shape-shifting examines the success of organizations without hierarchies, a hard concept for military readers to embrace, but describes it in a way that mirrors mission command's tenets. Hierarchy's hard edges are

less relevant to organizational success after shared understanding and trust are established. Creating positive energy updates the well-worn 'work-life balance' adage, stressing physical fitness and self-care in the 'always engaged' world of the future. Ironically, as technology makes everyday life more comfortable by removing physical limitations, Johansen reinforces the need to maintain physical strength and well-being to take full advantage of predicted biological breakthroughs.

Perhaps the most insightful portion of Johansen's work is when he challenges the reader to flip these anticipated challenges into positives. His description of inverting VUCA's (Volatile, Uncertain, Complex, Ambiguous) negative connotations and then offering a positive acronym provides the reader with a clever mental checklist when faced with adversity. The "positive VUCA" of vision, understanding, clarity, and agility remind the reader that every challenge presents an opportunity, and the future will be no different.

The New Leadership Literacies provides the reader with techniques to envision what lies ahead and could inform Army aviation leaders trying to 'stay ahead of the aircraft.' The concepts outlined in the book offer a different lens to view established concepts such as connecting with subordinates and setting organizational goals. It is a worthwhile read for aviation leaders at all levels. Johansen's concepts are helpful to the development of senior strategic leaders in the complex world of today and tomorrow, and junior aviation leaders can benefit from gaining additional perspectives on how to analyze problems and challenges to our institutional relevance. Predicting the future is a tough task, but one Army aviation must take to remain relevant. ***The New Leadership Literacies*** does not have all the answers, but it can play a role in assisting the branch to ask the right questions.

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