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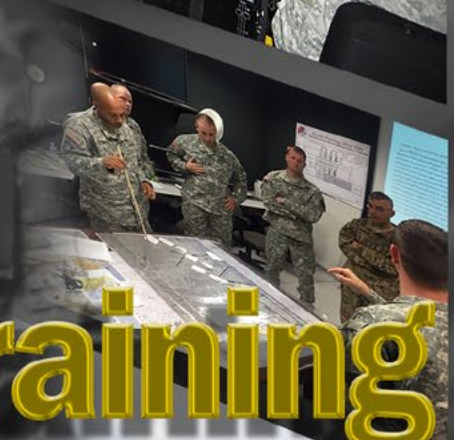

Aviation Training and Leadership Development

UNITED STATES ARMY
Aviation Digest
January - March 2016
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Commanding General, USAACE
MG Michael D. Lundy

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

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ABOUT THE COVER

Army training for leaders of tomorrow.

The Command Corner

"We can't say we are strong to be strong, we must constantly recommit to readiness and must never ever lull into a false sense of complacency and wake up to find ourselves unready for combat,"
- General Mark Milley, Army Chief of Staff

Readiness is the Army's number one priority, and it is built through tough, realistic training and leader development. Without trained leaders and formations, Army Aviation cannot fulfill its obligation as an asymmetric advantage for our nation. Aviation leaders must train their formations and leaders to the highest standards to win against an adaptive enemy employing traditional, unconventional, and hybrid strategies. Army Aviation must invest in our most important weapon systems; agile, adaptive, and professional leaders and Soldiers to achieve a level of readiness to win in a complex world.

To build lasting readiness, it is imperative that we optimize training opportunities to achieve the maximum benefit to readiness from the resources and time available. In January, the United States Army Aviation Center of Excellence distributed the Army Aviation Training Strategy: Training Aviation Warfighters for Decisive Action. The training strategy serves as a guide for Aviation leaders at each echelon for planning, preparing, executing, and assessing, relevant, rigorous, and realistic training through effective unit training management (UTM). Deliberate UTM ensures training is conducted to the highest standards, under the most demanding and realistic conditions with sufficient repetition to build mastery and expert knowledge. It must enable critical and creative thinking that challenges our units and leaders not only to be adaptive and resilient, but to get stronger and more agile as conditions change and become increasingly difficult.

Building and sustaining combat readiness is both a science and art, requiring commanders, subordinate leaders, and staffs to use the operations process to develop and execute effective unit training plans. Leaders must plan unit training with the same deliberate focus as a combat operation. Aviation commanders and leaders need to synchronize individual and collective training requirements with the aircrew training program, gunnery program, and maintenance program to achieve a progressive, rigorous, comprehensive and repetitive path to achieving unit readiness.

We will fight the way we train, and units are only as good as the leaders that lead them.

Above the Best!

Mike Lundy
Major General, USA Commanding

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By Order of the Secretary of the Army:
Official:

GERALD B. OKEEFE
Administrative Assistant to the Secretary of the Army
1600801

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

Managing Editor
Bruce Miller

Art Director
Henry Williford

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

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Letters to the Editor

The Role of Tracked Company Level Warrant Officers in Unit Training

Warrant officers must be willing to perform duties outside their traditional specialties. They hold a key role in training plan development within day-to-day company level operations. The warrant officer's specialized skills and knowledge require that his roles be expanded in order for units to operate effectively throughout the full spectrum of Army operations. This is especially important in today's rapidly changing operating environment and shrinking force structure.

Warrant officers are technical experts in highly complex tactical systems and serve as technical leaders, operators, trainers, maintainers, managers, sustainers, and advisors to the commander. Career tracked warrant officers assist the commander by recommending specific guidance based on their respective specialties.

Instructor pilots advise the commander on how to best leverage assets based on training demands and their intimate relationship with aircrew members. They then develop and evaluate plans based on the commander's guidance. The aviation mission survivability officer advises the commander on aircraft survivability equipment, survivability training, and threat weapon systems capabilities to recommend mission parameters and aviation training maneuvers to reduce risk. The aviation safety officer monitors all unit functions to conduct risk assessment, recommends application of risk reduction or mitigation techniques, and conducts training to conserve unit resources. The aviation maintenance officer's task is to meet the commander's requirements for aviation assets through efficient maintenance practices and to educate and mentor unit maintenance personnel.

Such an intense focus in one general area can artificially limit one's scope and thus relevance and applicability to the unit's operational requirements. Furthermore, aviation warrant officers career tracking into their specialty roles of instructor pilot, aviation mission survivability officer, safety officer, or maintainer "pigeon holes" these experts into a specialty within a specialty. The increased complexity of a dynamic operational environment and the need for adaptable and flexible leaders to train at all levels require unit trainers to be familiar with more than just their career-track specialty.

The background of many warrant officers attending the Aviation Warrant Officer Advanced Course (AWOAC) is noteworthy, typically spanning the gamut of military occupational specialties. The skills of the warrant officer specialties are essential. However, the warrant officer should be expected to contribute to unit operational efficiencies from his education, previous skills, and experiences as leaders and trainers that were developed as Soldiers in their previous lives.

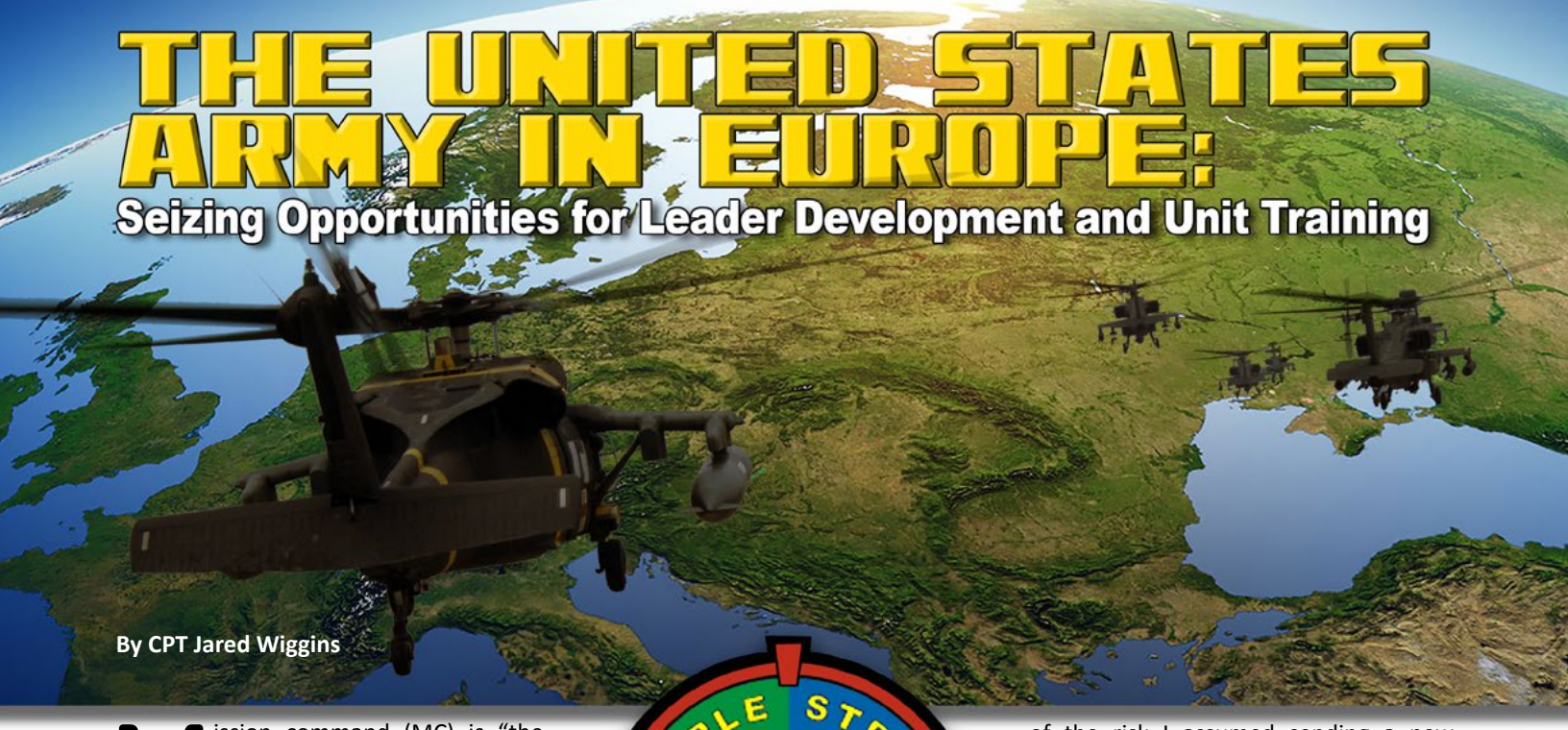
The future of military operations requires warrant officers to be adaptable and efficient leaders. Training and sharing information can maintain warrant officers' relevance as their roles continue to grow. No longer can the Warrant Officer Corps view the Army's rapidly changing environment from the narrow perspective of the individual track or specialty. The operational environment requires warrant officers to learn and teach complex tasks and teach them starting at the company level to help the transformation process in our current, rapidly changing, military operations.

Professional military education must adapt to reflect the changing roles and demands of a dynamic operational environment. To maintain relevance, warrant officer training must deliberately implement a career progression and professional development plan to prepare them to support the wide range of unit operational requirements. As a result of recent changes, mid-level AWOAC education is meeting this objective by focusing on education that provides a more thorough understanding of unit training requirements and how to provide mentorship, advice, and council to non-commissioned and company grade officers.

CW3 Clayton A. Shropshire, Small Group Instructor, Aviation Warrant Officer Advanced Course, 1-145th Aviation Regiment, Fort Rucker, AL.

THE UNITED STATES ARMY IN EUROPE:

Seizing Opportunities for Leader Development and Unit Training



By CPT Jared Wiggins

Mission command (MC) is "the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent to empower agile and adaptive leaders in the conduct of unified land operations."[1] As commander of an attack reconnaissance company in the U.S. Army Europe Theater of operations, I have been challenged with the practical application of this principle to meet mission requirements. At the same time, the "... enable disciplined initiative" piece of the definition pressed the need to develop the junior leaders within my organization. Extended lines of communication, dynamic mission requirements, direct lateral engagement with North Atlantic Treaty Organization (NATO) allies and partner nations, and the large number of combined and joint training exercises conducted over widely separated training areas preclude the direct supervision of units by their parent organization. Just four months into my command, the leader development training schedule was more compressed than I would have wished for; however, necessity being the mother of all invention coupled with the tremendous opportunity for collective trainingthis afforded, we set forth.

My company received simultaneous missions to support Joint Terminal Attack Controller (JTAC) Exercise Ample Strike 2015 in the Czech Republic and Combined Arms Live Fire Exercise Swift Response in Bulgaria. While the practice of separating elements of an attack company during mission execution is counter to Army Aviation doctrine, we reasoned that we were not doctrinally supporting tactical maneuver as much as providing specialized training support to our NATO allies. Besides, we had our orders. As such, a contingent of aviation maintenance company and forward arming and refueling point personnel and equipment, and other mission enabler personnel with their provisions were deployed to each of the Czech Republic and Bulgarian locations to support the mission of each platoon.

As I evaluated mission requirements, I elected to take the more complex, and ambitious Swift Response mission in Bulgaria. I assigned a platoon leader (with even less time in the company than I) to command our Ample Strike contingent in the Czech Republic. My company standardization pilot attended the planning conference and the previous year's exercise. Therefore, to offset some of the risk I assumed sending a new platoon leader to support this mission, I sent the company standardization pilot on the mission to mentor and assist. Most of the ground work was already laid, yet I was leaving a new platoon leader in charge of a very high visibility mission, far from where I could provide direct supervision. I simply provided a mission order laying out my intent and let my platoon leader…well…lead. His platoon's performance and the success of the other half of my company lay entirely out of my hands which is exactly what my brigade commander intended. His guidance to the commanders was simple and uncomfortable but proved very effective; "Decentralize until it hurts! Enable your leaders to lead!"

I affirm that the selection process for cadets and officer candidates, professional military education, and the experience our junior officers receive while on the job work to provide the Army quality leaders. Despite the errant articles from armchair strategists in military blogs lamenting how the retention system is broken and we are failing our junior leaders, this unsupervised lieutenant managed to keep his platoon flying without airspace violations, putting steel on target, and assisting in the training of critical terminal attack controller skills without incident. Battalion leadership visited briefly and provided a few enablers and a liaison officer to keep our crews tied in with

the exercise but did not dictate to the lieutenant how to run his platoon - they allowed leaders to lead at their levels.

The Apache's contribution proved crucial to the exercise after a number of our NATO partner units couldn't participate to the degree that they committed. The crews of C Company, 2-159th ARB stepped up under the leadership of a platoon leader and conducted close air support (CAS) live gunnery missions to train 28 JTAC teams from 18 different countries. The platoon leader operated with mission approval authority for low risk missions, something invariably reserved only for company and battalion commanders. The mission succeeded and the aircrews far surpassed the expectations of the Czech military as well as those of our own chain of command. They succeeded in training multiple multinational JTAC teams, accomplishing immeasurable collective training tasks, and developing partnerships with NATO partners.

Meanwhile, in Bulgaria, the other half of my company was 1,000 miles away from battalion headquarters and planning a combined arms live fire exercise (CALFEX) with a battalion from the 173rd Infantry Brigade Combat Team (Airborne). They too, were developing their junior leaders by employing mission command and working with a partner nation while building key collective task proficiency. The 1-173rd was validating new platoon leaders and company commanders with the Swift Response CALFEX. Essentially, the platoon leader or commander would build his plan illustrating how he would shoot, move, and communicate to the objective. Many of the new lieutenants were less than a month out of Infantry Basic Officer Leadership Course or Ranger School and had never had the opportunity to run a mission of this scale. This was exactly what the 173rd leadership intended - "Platoon leader, you have artillery, mortars, air assault helicopters, attack helicopters, light infantry, sappers, and a platoon of scouts. Go attack the enemy in this (mockup) city." The maneuver platoon leaders enjoyed flawless mission execution in all instances. The synchronization of all these effects and maneuvers onto the objective, particularly in the complex terrain of the Bulgarian Novo Selo Training Area, is no small task, and yet there were no unsafe acts and no failed missions.

From our perspective, we knew that we needed to be integrated into the ground commander's plan. We conducted air ground operations briefings to ensure that the 173rd planners understood what we could provide, namely; the most effective way to employ attack aviation assets and other tactics, techniques, and procedures that would help the new platoon and company commanders achieve mission success. Our proactive efforts to integrate into the ground plan and suggesting how we could best be employed during the mission helped us to meet our own training objectives while still abiding by the ground force commander's intent.

In addition to supporting the CALFEX, my second objective was to take advantage of opportunities to conduct collective task training. While emphasis, in the recent past, has been primarily focused on aircrew training program individual pilot skills, the staggering costs associated with flight time are pressing for innovative training events that combine individual and collective tasks. Counterinsurgency (COIN) missions of the past 15 years have focused on reconnaissance and security for convoys and raids operating at altitudes of 1,000 feet and above, typically flying in pairs. Often, entire deployments called for Apaches to fly around like beat cops, patrolling bad neighborhoods and waiting for the 911 call on the radio. The COIN fight in Iraq and Afghanistan required vastly different skills than the decisive action tasks we will face when operating against a near peer threat. Skills in deliberate mission planning, flying as platoons and companies (instead of teams of two), and flight at nap of the earth altitudes to avoid sophisticated air defense threats have atrophied over the years. The possibility of a fight against an enemy with tanks, integrated air defense networks, and armored personnel carriers all led by a centralized command structure has never faded, even while we were fixated on COIN threats in Iraq and Afghanistan. We still must be able to fight as part of the combined arms team against the old Soviet-style threat at extremely low altitudes.

To train my company, I followed the eight step training model. First, I had to figure out what we needed to train for. The battalion and company mission essential task list provided a wide array of tasks to

choose from in order to build my list of key collective tasks (KCT). Tasks such as aerial security, aerial recon, and aerial attack formed the backbone of this list. Using the training and evaluation outlines (T&EO) available on the Army Training Network, I built fragmentary orders listing the KCTs for that mission as the key tasks under the execution paragraph. The T&EOs clearly lay out all the steps required to successfully complete a collective or individual task so that anyone with a basic understanding of the task can complete it. During each mission after action review (AAR), I would walk through the events and measure what we did beside the T&EO for that task. For example, while maneuvering into a battle position, did the crews clear it prior to entering or did we simply blunder into a hidey hole in the mountainside and hover our aircraft directly above enemy troops we didn't think to look for? From there, I would determine whether or not that crew needed to perform that task again. I kept a copy of their grade slip (the T&EO for that mission) and tracked the most recent date of when each individual successfully completed each key collective task.

The second step of the eight step training model calls for the leader to train the trainers. As all of my unit (including myself) has fought in an Army that has been focused almost exclusively on COIN operations, fighting in a decisive action environment against near peer threat possessing sophisticated air defense capabilities was only vaguely familiar as dusty chapters in doctrinal manuals or articles in "old" professional bulletins. By using the T&EO checklists, the company leaders and primary trainers are bringing the company's proficiency in these critical tasks on line. The difficult part is building a training event to effectively maximize the number of tasks within the mission without making too many tasks. For example, a movement to contact followed by a hasty attack is pretty straight forward. Can I add a call for fire into a security mission? If I put a crew or team into an attack by fire position, I'm meeting one training objective. If the crew calls for artillery from that attack by fire position while serving as a rear guard, then three objectives in one mission have been accomplished.

In step three of the training model, recon the site, we used Google Earth and Hawg-View (a free commercial off the shelf CAS scenario builder) to conduct a map recon and generate simulated enemy radar sites, routes to recon, and targets to attack. On one mission, for example, I simply used the grid for the training area's fuel point/motor pool as an enemy location and tasked my pilots to "destroy" an "enemy" assembly area and fuel depot.

I completed step four, issue the order, by issuing a fragmentary order (FRAGO) for each mission. Again, each KCT was a key task outlined in that FRAGO. I insisted that each crew member understand every aspect of the mission and expected each individual to be able to intelligently discuss critical aspects of the mission – objective, required reports, points of contact/frequencies of the supported ground unit, last reported positions of friendly and enemy forces, rules of engagement, etc.

Step five, rehearsing the training, occurred during the combined arms rehearsal for each mission. We used a variety of tools to rehearse mission details from aircraft start on the flight line to shutdown including instituting contingencies for reasonable mission variations (aircraft/weapon system malfunctions, communications issues, mission changes, aircraft shoot downs, etc.) that we could possibly encounter during the mission.

As we conducted step six, execute the training, company leaders and primary trainers monitored crew composition, task, and task iterations to ensure each aviator could not only successfully complete the tasks but that they demonstrated an understanding of the application of every detail of the mission and the doctrine associated with it.

Following each mission, we assessed our own performance in step seven of the training model using the T&EOs to guide/organize our self-evaluation/AAR. Everyone was expected to contribute to identify better ways to complete each task and identify those tasks that we needed to improve.

While we seldom needed to retrain any tasks due to lack of performance, we took ample opportunities to continue the learning process by running the same mission, or a new mission, with slight variations. Our support for the 173rd CALFEX afforded us many day and night missions. One of the more interesting training exercises we did was "Can you see me now?" during terrain flight. A pilot with a hand radio stood in the motor pool (our simulated enemy assembly area) while a crew practiced flying into a battle position and unmasking just enough to gain intervisibility of the target (the fuel points and "enemy" vehicles). When the aircraft became visible or audible, the pilot in the objective area would let the crew flying know they had been spotted. This exercise greatly improved the pilot's terrain flight abilities, increased survivability, and multiplied the company's effectiveness against the target.

Following the 173rd CALFEX, a U.S. Marine Corps combined arms company arrived at the Novo Selo Training Area. The opportunity to train with the Marines continued to increase our confidence and proficiency in the decisive action individual and collective skill sets. Flying "against" the Marines offered us the opportunity to maneuver against a thinking, reactive, and adaptive enemy.

Battalion leadership enabled us to take full advantage of available training opportunities and reach the level of proficiency we now have by employing mission command, much as I had done with my platoon leader running JTAC training. We were given the leeway to exercise disciplined initiative to coordinate directly with ground units and train a wide variety of tasks that have enhanced our proficiency as an attack/reconnaissance asset.

We are looking forward to a month-long training event in the spring to support other NATO allies. There is no doubt in my mind that because of the mission command exercised by our brigade and battalion leadership, we will perform exceptionally well in our key collective tasks and that the platoon leaders are absolutely qualified to lead crews that are prepared to complete whatever mission is assigned to them.

CPT Jared Wiggins is currently assigned to the 12th Combat Aviation Brigade as Commander, C Company, 1-3 Attack Reconnaissance Battalion. Previous assignments include assistant operations officer and attack helicopter platoon leader in the 1st Air Cavalry Brigade. CPT Wiggins deployed in support of Operation Enduring Freedom 11-12. He has 11 years' service and is qualified in the AH-64D.

[1] U.S. Department of the Army, Mission Command, Army Doctrine Publication 6-0 (Washington D.C.: U.S. Department of the Army, 2012), 1.

Acronym Reference

AAR - after action review	**JTAC** - joint terminal attack controller
CALFEX - combined arms live fire exercise	**KCT** - key collective task
CAS - close air support	**MC** - mission command
COIN - counterinsurgency	**NATO** - North Atlantic Treaty Organization
FRAGO - fragmentary order	**T&EO** - training and evaluation outlines

Selecting and Developing Capable Leaders

for Operations in a Complex Environment

By COL Robert T. Ault

The demands of the operating environment (OE) require uniquely capable leaders that know how to learn. However, it is imperative that the future leader be more than an academic. Future conflict will require Army formations that adapt faster than the enemy and leaders that can develop the tools to solve complex problems as well as build cohesive teams that move faster, outthink, and outperform our adversary.

The process of developing highly adaptive leaders follows a distinctive pattern. Leaders are developed following a select, train, and trust format. This model of developing junior leaders allows the senior leader an opportunity to check on learning before moving on to more complex and risky endeavors. The first step starts with selecting the right leader for the job.

Highly competitive units, such as special operations and other unique organizations, are able to recruit and select from across the Army. Their selection process is fairly clear and straight forward, with both leader and led being able to "opt out" along the way. The senior leader in a conventional unit has a more difficult task of selecting junior leaders. The selection process is more nuanced and subtle but just as important. Both leader and led must go through some version of a select train and trust model underpinned by a transparent relationship of trust in order to fully develop the leaders needed by the Army today.

From the beginning, leaders develop other leaders. This means leaders are always on the hunt for talent. Leaders should be looking for opportunities and individuals that possess the potential to lead. This is not new; it merely emphasizes an understanding that leaders are responsible for both performance management and leader development.

Even if a leader inherits a formation already fully manned, some sort of selection process is still required. The senior leader must determine whether the junior leaders assigned in his formation meet his vision - whether they have the commitment, personal skills, and competence to lead. Equally important, the senior leader must determine whether he can work with the junior leader and whether the junior leader is open minded and willing to learn.

In order for the junior leader to be receptive to guidance, he must trust the senior leader and view that person as a supporter/mentor. This mutual selection is critical to any leader development process. Without mutual trust, the efforts of both senior and junior leader will not gain traction since both will likely be second guessing the intentions of the other.

Without a genuine "selection" by both the leader and led, the relationship cannot move forward to trust. In circumstances where this is the case, the leader must continue to offer development opportunities until a change in manning can be made. Once selection is completed the true training begins.

The training process trains and educates junior leaders with low overhead, high repetition training events until they can perform under conditions of high stress and uncertainty. The senior leader must understand the task being taught to the level of understanding that he can identify shortcomings and provide instruction to correct deficiencies. This is the crucial difference between simply good leader development and great leader development. Great leaders teach and train to very high standards and they enforce these in their subordinates. This basic responsibility for training leaders cannot be delegated; it must be performed by the senior leader. Many times leaders make the mistake of confusing lecturing to their junior leaders as training. Too often the words, "I told him about…" are considered developmental. This is not training. Training is a hands on process until the standards are achieved under increasingly difficult and complex conditions.

True hands-on training requires demonstrating what right "looks like" under a wide variety of increasingly demanding conditions. A common pitfall is settling for a particular number of repetitions versus perfect repetitions. As an example, physical training develops muscle memory. That muscle memory may be beneficial if the physical training repetitions are done to standard and not so beneficial, or even harmful, if not done to standard. The same analogy may be applied to processes such as conducting air mission commander training. It is necessary to expect standards to be adhered to early in the training process

and anything short of that should be discussed with the intent of helping the junior leader be more effective at developing a critical eye to detail. Anything less results in a subordinate leader that only partially understands the task and standards and creates gaps in learning. These gaps in understanding become the junior leader's standards. In essence, an improperly trained leader trains incompetence into his formations and subordinates. However, if trained correctly, the junior leader will be able to perform the tasks to a high degree of efficiency and correctness under pressure. Once this milestone is reached, the relationship is able to progress into the trust phase.

Trust is an evolving and expanding relationship between the senior leader and the junior leader. As the junior leader demonstrates "to standard" proficiency under demanding conditions, the senior leader moves on to other tasks or skills with confidence in the capabilities his subordinate leaders possess. Once the standard is met, the junior leader is then trusted to perform the task or process.

It is important to note that transparency or openness of both the senior and junior leader is imperative. Proficiency without transparency will eventually erode trust and confidence. Transparency allows both the senior and junior leader to "see" into each other's head and understand intent. Open and honest leadership and followership are crucial to building the kind of leaders that can adapt and solve complex problems as well as build teams that can win.

As the last step in the trust process, assessment is beneficial for both the senior and junior leaders in that it provides critical feedback for growth. The leader must allow the subordinate to see his performance holistically. Important to the assessment phase of leader development is that the junior leader comes to the table with an open mind. Feedback and counseling will be useless unless he is committed to facing his shortcomings, correcting his deficiencies, and is dedicated to becoming a more effective leader.

Smart, fast, lethal and precise leaders that can learn and adapt in conditions of great uncertainty is what the operating environment demands in order to win. These types of leaders will not grow themselves. Army leaders have a responsibility, at all levels, to follow a deliberate and predictable process of selecting the right leader for the job. The more senior leader must be dedicated to training the junior leader until he demonstrates proficiency under the most demanding conditions possible that replicate combat. The "Select-Train-Trust" process is underpinned by mutual trust as an essential component of the senior and junior leaders' relationship. Even the most competent performer will erode the trust of his leader if he makes it difficult for the boss to predict his next move.

The fight Army leaders must win is the one against a competent peer adversary. We must grow future leaders that can adapt to an ever changing operational environment and bring exponential combat power to the formations they lead to defeat their adversaries. Select, train and trust all from an environment of trust is the way forward to develop the winning leaders of tomorrow.

COL Robert T. Ault is currently serving as Director, Directorate of Training and Doctrine, United States Army Aviation Center of Excellence. His most recent assignment was Commander Combat Aviation Brigade, 4th Infantry Division, Fort Carson, CO.

Mission-Command Culture: A Leader-Subordinate Contract

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By LTC Chad R. Foster

"Culture is established by the people who compose your team and is carried on through those people. ... But you cannot merely expect culture to be a natural occurrence; it has to be taught and made a part of your everyday routine." - Mike Krzyzewski, Beyond Basketball (2006)

Mission command is much more than a philosophy or a warfighting function. It is a culture that permeates every aspect of organizational activity, from routine staff meetings and field training to actual combat operations. At its heart, this culture is built on a contract of mutual trust and respect between leaders and subordinates. There is no middle ground – this contract either exists in a unit or it does not. Leaders and those under their charge have specific obligations to each other and to the unit. There are also significant costs all parties must accept as the price of building a climate of trust where prudent risk-taking and experimentation is rewarded and decentralized execution is the norm. This makes for an often messy arrangement, but the contract is necessary for a unit to build and maintain a mission-command culture.

Army doctrine simultaneously refers to mission command as a philosophy and as its own separate warfighting function, but neither of these designations is adequate alone. A philosophy connotes a primarily theoretical endeavor, focusing on an individual's personal motivations and his way of thinking. While having the right mindset is essential in facilitating mission command, a direct link between what is in a leader's mind and his external actions is necessary. Designating mission command a warfighting function also falls short of the mark because, despite the nuanced language used in its definition, it implies certain tasks lay within the scope of mission command while others do not. What the Army really hopes to achieve is the manifestation of mission-command principles in the beliefs and actions of individuals and in the collective norms of organizational activity. In short, the Army's true goal is a culture of mission command.

Trust a must

For such a culture to emerge, a bond of mutual trust must exist between leaders and subordinates. This trust only develops over time when words combined with actions clearly and consistently demonstrate a commitment to the principles of mission command in everything a unit does. If these principles seem not to be applied in even one category of organizational activity, the leader's commitment will be perceived as incomplete and, therefore, will limit the level of trust given by subordinates. In this way, mission command is an all-or-nothing proposition. For example, a leader who micromanages the unit while in garrison cannot realistically expect subordinates to suddenly exercise disciplined initiative in a field environment. Subordinates quickly sense half-measures and adjust their conduct accordingly.

However, zeal cannot override common sense. A commitment to mission command does not mean a refusal to give detailed directives when the situation demands. The most effective practitioner of decentralized operations recognizes when conditions require more specific instructions, and a good leader does not hesitate to issue them. However, a leader committed to mission command recognizes these situations are the exception rather than the rule. Because of this, the leader takes the time to explain to subordinates why they are deviating from mission-command principles for the given situation. Such explanations – and a quick return to normal practice – ensure the bond of trust remains unbroken.

To understand what mission-command culture is and what achieving it entails, think in terms of a two-part contract between leaders and subordinates (Figure 1). William S. Lind, author of the Maneuver Warfare Handbook, first articulated this idea as a way to understand the specifics of mission orders. However, his concept of a

contractual agreement between leaders and subordinates has a greater utility when expanded to apply to the entire organizational culture of a unit. Like other contracts, this one is a voluntary arrangement that carries with it very specific obligations and costs. If unwilling or unable to live up to these obligations or to pay the associated costs, leaders and their subordinates will not be able to operate within (or contribute to) a mission-command culture.

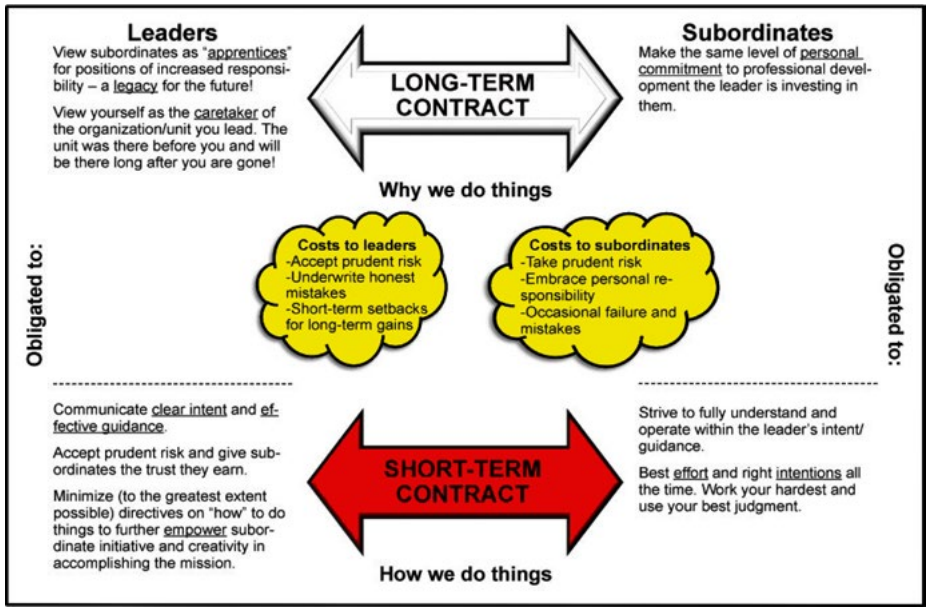


Figure 1. Mission-command culture: a contract based on mutual trust and respect. (*Based on the senior-subordinate contract concept articulated by William S. Lind in the* ***Maneuver Warfare Handbook***)

The first part of this contract provides the long-term context by establishing how the parties involved are obligated to view themselves, other members of the team and their place within the organization. Leaders must consider themselves as merely the current caretakers of a unit that has a long and proud history – one that existed before their arrival and that will continue long after their departure. Doing so encourages personal humility and a desire to make a positive contribution to the unit's history. That contribution comes by treating subordinates as "apprentices" for positions of increasing responsibility. It is not enough just to train them for their current duties. Instead, the leader must help develop each member of his team both professionally and personally as a legacy for the future. In turn, the subordinate's obligation is to make a commitment to his own self-development that matches what the leader is investing in him.

Meeting the short-term obligations of the mission-command contract is the immediate and tangible expression of the long-term agreements previously described. Success hinges on the leader's ability to provide clear and effective guidance that is useful to subordinates when developing their own plans for mission accomplishment and in making on-the-spot decisions as the situation changes. Leaders must issue only the minimum amount of directives on exactly how to complete assigned tasks, demanding that subordinates exercise disciplined initiative and creativity within the boundaries of the leader's intent. Underwriting honest mistakes along the way is vital as long as individuals learn and grow because of them. Such top-cover does not extend to legal, moral and ethical lapses. Errors made with the right intentions, in honest pursuit of the assigned objective, are the natural cost of building and maintaining a mission-command culture.

Risk is inherent in this contractual agreement. Leaders must accept the risk of subordinates making mistakes that result in short-term setbacks. These setbacks might cost the leader (and possibly the unit) a bit of temporary recognition, but the long-term payoffs are well worth it. These payoffs come in the form of empowered subordinates who trust their superiors and thrive in the types of conditions that demand disciplined initiative and decentralized operations. Leaders who are unwilling to accept this cost because of a zero-defect mentality or a desire for personal advancement are unfit for their position because they have not defined success as growing the next generation of adaptive Soldiers, noncommissioned officers (NCOs) and officers. Leaders must resist the temptation to violate the contract, even if they see a peer gaining more short-term success by centralizing decisions and punishing those who experiment in the spirit of exploiting an opportunity.

Results achieved through micromanagement or toxic-leadership practices are invariably short-lived and detrimental to the morale and long-term health of the unit. They erode trust and fail to create a climate that will foster the initiative needed to beat a thinking enemy at the point of contact. Likewise, a subordinate who lacks the courage to exercise initiative cannot earn the full trust of his superiors. Team members must accept that temporary failures will, in the long run, pave the way to greater success because of the learning and professional growth that take place because of them.

Determining exactly how to put this contract into practice is difficult. There is no single "right" answer when establishing a mission-command culture because each situation is unique. However, assessing progress is possible by focusing on observable indicators (Figure 2). Almost none of these indicators are "inputs," meaning that few are actions or directives imposed by higher headquarters. Instead, they are descriptive outcomes that are observable at all levels by anyone with the inclination to look and listen. There are many tools at a leader's disposal to help with assessments, but for most of these indicators, all that is required are a leader's eyes and ears. Asking pointed questions at the right time to the correct individual or group will reveal far more than the most detailed PowerPoint briefing. The only way to find out what is really happening inside subordinate formations is to seek unfiltered contact with the Soldiers, NCOs and junior officers within those units. Unscripted encounters and focused observation are the keys to determining where a unit really stands when establishing a mission-command culture.

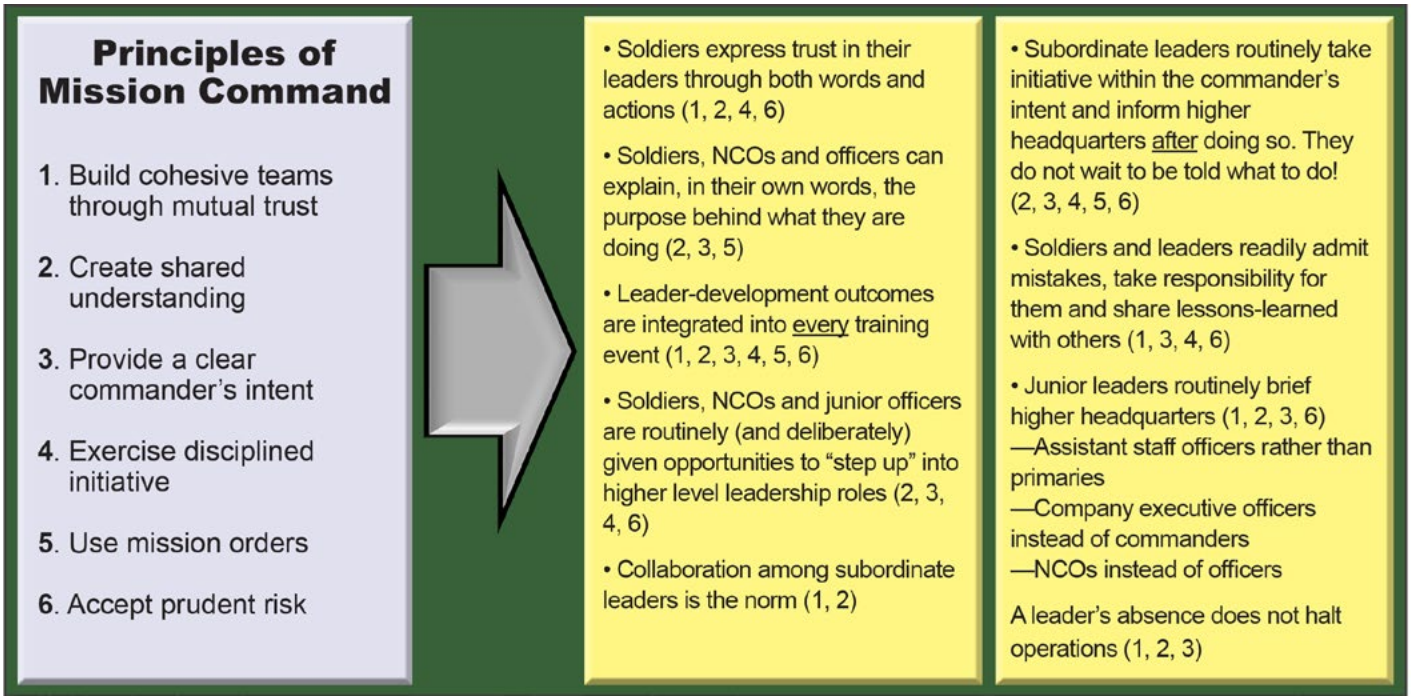


Figure 2: Establishing a mission-command culture: indicators of success.

Summary

Mission command is just the latest label for a concept of empowered leadership that has existed throughout the history of military operations. It is not something that can be selectively applied. Mission command is a culture that binds the members of the organization together through a contract of mutual trust and respect. This contract provides purpose and a guide to action for all involved. More to the point, it creates the conditions for adaptive leadership to blossom by empowering leaders to make decisions at the lowest appropriate level. None of these ideas are new or ground-breaking. In fact, most of the points articulated in this article are quite simple and well-known.

But as many have discovered, even the simplest of things are often difficult. To help ensure a unit is "getting it right," leaders must observe their formations closely and ask the tough questions of the right people within the organization, including themselves. Also, subordinates must have the courage to accept prudent risk and exercise disciplined initiative within the guidance of the leader's intent. Only when this level of commitment from both leaders and subordinates is present does the unit have a chance of achieving a mission-command culture.

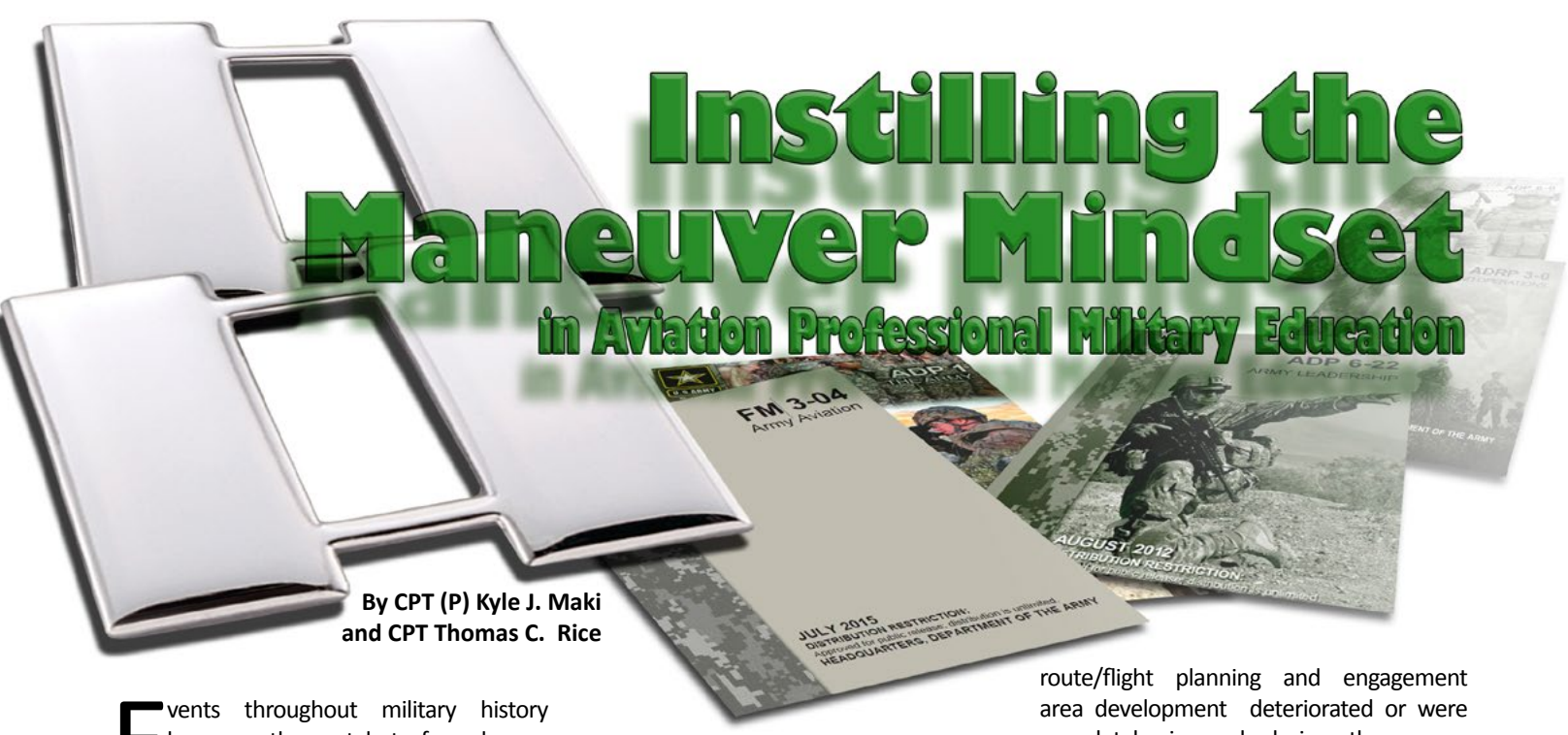
LTC Chad Foster is the Armor colonels' assignment officer, Senior Leader Development, Office of the Chief of Staff of the Army, Alexandria, VA. His past assignments include executive officer, 2nd Armored Brigade Combat Team, 1st Cavalry Division, Fort Hood, TX; operations staff officer/executive officer, 4-9 Cavalry Regiment, 2-1 Cavalry Division, Fort Hood; course director, platoon operations MS300, Department of Military Instruction, U.S. Military Academy (USMA), West Point, NY; and company commander, 1-66 Armored Regiment, 1/4 Infantry Division, Fort Hood. His military schooling includes the Armor Officer Basic Course, Scout Platoon Leader Course and Armor Captain's Advanced Course. He holds a master's of arts degree in national security and strategic studies from the U.S. Naval War College, Newport, RI, and a bachelor's of science degree in history from USMA.

Acronym Reference

NCO - noncommissioned officer	**USMA** - U.S. Military Academy

Instilling the Maneuver Mindset

in Aviation Professional Military Education



By CPT (P) Kyle J. Maki and CPT Thomas C. Rice

Events throughout military history become the catalyst for change. Hannibal's defeat of the Roman legions at Cannae caused a complete shift in the military structure and organization of the Roman army. The defeat of the Prussian military by Napoleon caused Carl von Clausewitz to pen *On War.* The Vietnam Conflict caused the U.S. Army to reassess the frequently opposing and complex objectives of military action and national foreign policy in a counterinsurgency environment. In this same manner of change, the wars in Iraq and Afghanistan also caused change specifically with the structure and outcomes of the Aviation Captains Career Course (AVCCC).

When the Afghanistan and Iraq deployment frequency was at its highest, the AVCCC temporarily removed officers from the Army Force Generation cycle and stopped deploying them back to back. This afforded them some time for self-reflection and reliance and prepared them for their next assignment, which would most likely involve intermediate staff time. This approach suited the current situation well in that company grade officers needed time to stabilize and mentally recuperate while developing themselves in areas other than military doctrine, as well as prepare for the rigors of staff operations. In the AVCCC curriculum, preparation to assume company command did not receive the level of emphasis that staff operations did. Some may argue that this approach is valid in regards to the complexities of the military decision-making process; however, in some cases, the company grade officers, arriving at the AVCCC during the conflicts in Iraq and Afghanistan, could possibly assume command immediately after leaving Fort Rucker. Additionally, the complexities and innovative nature of counter-insurgency operations (COIN) in Iraq and Afghanistan forced Army Aviation to abandon existing doctrine focused on conventional force on force engagements involving a sophisticated air defense threat and adapt tactics, techniques, and procedures (TTP) based upon the reality of existing conditions and requirements. These TTP served the company grade officers well in the confines of operating environment in Iraq and Afghanistan. Unfortunately, that same approach is ill-suited for the more complex and conventional engagements stressed in the decisive action environment.

The shift away from COIN techniques and the return to doctrine in the form of unified land operations (ULO) has revealed a significant lack of basic Army and, more specifically, Army Aviation doctrinal knowledge in company grade officers. Recent observations from the combat training centers (CTC) validate this point. Lieutenants and captains do not grasp how the Army fights nor do they understand how Army Aviation supports the overall mission of the Army. In addition, basic, but essential, skills such as troop leading procedures, organizing unit training using the eight-step training model and the mission essential task lists, leading route/flight planning and engagement area development deteriorated or were completely ignored during the course of the COIN fight. Many of these young leaders developed innovative solutions to complex problems, but failed to apply the basics of their profession when challenged at a post COIN CTC rotation. We have identified deficiencies and implementing solutions with an updated threat at the CTC, updated doctrinal publications, revised Army Aviation formations, and have also dramatically revised institutional learning to ensure company commanders understand the basics and can apply those principles in order to become the bedrock for good formations.

The AVCCC conducted a thorough analysis of Army requirements of the Aviation Branch company grade officer. The results of this analysis refocus education on developing company commanders first and the staff officer second. This change will develop a more competent captain in regards to planning, preparing, executing, and assessing organizational training; solving complex problems; exercising communication skills; and tactically employing his formation. This will be a culture change implemented over time to provide aviation and ground force units the most capable combined arms officer.

Captains are required to prepare for the AVCCC by studying specific material prior to attending the course to re-establish a doctrinal foundation. On arrival, students are administered an entrance exam on doctrinal fundamentals. The student has two

opportunities to pass this exam. A second failure will result in a recommendation for elimination from the course.

Instructional focus in the AVCCC has changed with emphasis now on doctrine and company level operations. The student conducts troop-leading procedures while executing operations ranging from an air assault to organizing a defense with an armor brigade combat team. The second half of the course provides students the opportunity to conduct detailed planning using the operations process involving Infantry, Armor, and Aviation units. Both portions of the course emphasize doctrine and the capabilities of each of the branches of the Army to contribute as a combined arms team. The course culminates with company level planning, unit training management, and home station training.

While the Aviation and Maneuver Captains Career Courses are not identical, course planners have generally aligned subject material to be more consistent with each other allowing for collaborative combined arms simulation exercises in the future. The changes reinvigorate the emphasis on company level leadership and the complexities involved in conducting unit training management and company level operations. The AVCCC redesign will challenge the students' knowledge of doctrinal concepts through more rigorous academics and practical exercises and will better prepare the graduating captain for command. While the AVCCC's past academic, practical exercises, overall objectives, and end product have been questioned, the course has now been upgraded. Students slated to attend the new AVCCC are forewarned to prepare for a more challenging "graduate" level program of instruction.

One example of the changes to the AVCCC is new selection criteria for the course's small group instructors (SGI). Prior to the course's redesign, SGI selection came from available personnel reassigned on a permanent change of station to Fort Rucker with little or no input from the Aviation Center of Excellence. In the future, senior commanders will nominate potential SGIs. The 1st Aviation Brigade and 1-145th Aviation Regiment (Brigade and Battalion Headquarters for AVCCC) will then vet the potential SGIs with the final cut made by the Deputy Commander, Aviation Center of Excellence. This selection process will ensure an SGI, with the proper background and experiences, leads the AVCCC into the future.

An AVCCC class is currently in session under the new redesign. The course will continuously evolve, to meet future changes in doctrine in order to provide a quality combined arms officer to the force. The emphasis on the military decision making process will remain, but the company level operations will increase to provide future company commanders the tools required to be successful. With these changes, the AVCCC will change the perception of the course and attract other branch officers. This will provide all officers attending the course the ability to learn from their peers as well as adapt to future situations. By embracing this mindset, we intend to ensure that the Aviation branch is no longer perceived to be the odd maneuver branch. Instead, others will see the Aviation Branch as a critical element of the combined arms team that helps solidify the relationships required on the modern battlefield while retaining innovative thinkers executing maneuver-based operations.

CPT Thomas C. Rice is a Small Group Leader for the Aviation Captains Career Course. As an Infantry officer, CPT Rice has previously served as Platoon Leader, Executive Officer, and Staff Officer in the 3rd Infantry Division (ID), Fort Stewart, Georgia. Following his assignment in the 3rd ID, he served as a company commander in the 198th Infantry Brigade at Ft. Benning, Georgia and as a company commander in 4th Brigade, 1st Infantry at Fort Riley, Kansas. CPT Rice has deployed to Iraq in support of Operation Iraqi Freedom and Operation New Dawn and has deployed in support of AFRICOM for Operation Western Accord 14. He has eight years of military service.

CPT(P) Kyle J. Maki is currently the Aviation Captain's Career Course Manager. CPT(P) Maki has served as an Attack Platoon Leader, Attack Reconnaissance Company Commander, and Brigade Staff Officer, 82nd Combat Aviation Brigade (CAB), Fort Bragg, North Carolina. Following his assignment in the 82nd CAB CPT(P) Maki served as an Observer, Controller, Trainer at the National Training Center, Fort Irwin, California. CPT(P) Maki deployed twice to Afghanistan in support of Operation Enduring Freedom. He has 8 years of military service and is a qualified in the AH-64D and OH-58 A/C.

Acronym Reference

AVCCC - Aviation Captains Career Course	**SGI** - small group instructor
COIN - counterinsurgency	**TTP** - tactics, techniques, and procedures
CTC - combat training center	**ULO** - unified land operation

Aviation Warrant Officer Advanced Course:

Honing Army Aviation's Primary Warfighters

By CW4 Shawn N. Paris

For decades, commanders across the aggregate complained that the professional military education for Army Aviation's mid-grade warrant officers was not focusing on the development of CW2 and CW3's primary roles as warfighters. At the expense of the operational unit, the Aviation Warrant Officer Advanced Course (AWOAC) was steering these Aviation trainers more toward staff functionality rather than their primary role as trainers. Hence, the Commanding General, U.S. Army Aviation Center of Excellence ordered the restructure of AWOAC, providing his vision to ensure tracked senior CW2s and CW3s are focused on warfighting and home station training. Additionally, as stated in the Army's Operating Concept, Army Aviation's primary operators must understand how to win in a complex world and be trained and educated to apply doctrine effectively, understand the operational environment, manage training, reduce operational risk, maintain and sustain combat power, employ weapons, recognize emerging threats, apply tactics, and lead in combat.[1] Therefore, today's AWOAC is drastically different from the course of the past. Modified course prerequisites, flow, and the integration of simulations are all designed to produce polished Army Aviation warfighters.

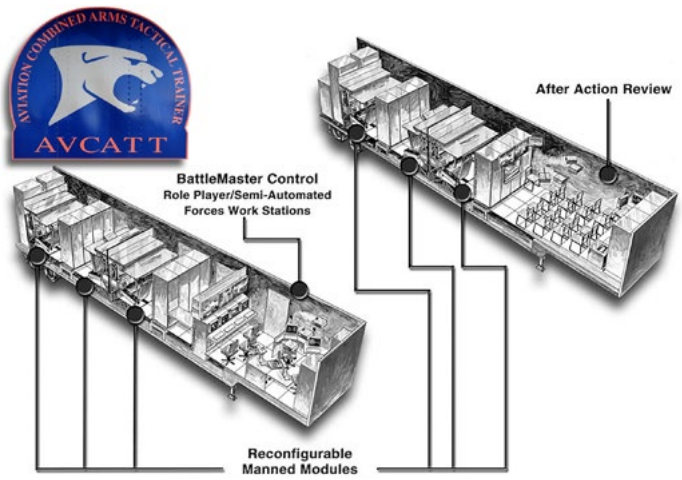
According to Army Regulation 350-1 (Army Training and Leader Development), Warrant Officer Advanced Course (WOAC) has a mandatory nonresident phase that must be completed prior to attending branch/proponent WOAC training.[2] The Action Officer Development Course (AODC) is currently the resource for this distributed learning (DL) phase. However, starting in fiscal year 2017, AODC is replaced with a new Phase 1 DL. The WOAC Common Core, consisting of 54 hours of DL, covers the essential elements of its predecessor while incorporating subjects that possess commonality with the Aviation Captains Career Course. This new DL is aimed at establishing a shared doctrinal understanding of the Army's operational concept and leadership. Phase 2 (for National Guard/Reservist warrant officers only) consists of 75 hours of new branch-specific DL. The new Phases 1 and 2 replace the 127 hours of DL currently in place for these National Guard and Reserve (COMPO 2 and 3) Soldiers. Although this new plan insignificantly increases the DL requirements for these Soldiers, the redesigned product provides the necessary foundations required of tomorrow's warfighters.

The Army Training Requirements and Resource System require that active duty warrant officers and COMPO 2 and 3 warrant officers who attend an active duty scheduled class be a pilot in command and tracked. The only exceptions to this requirement are for Unmanned Aircraft Systems (UAS) Operations Technicians and Air Traffic and Air Space Management Technicians; those warrant officers need not be tracked. The requirement to be tracked aims at enhancing an aviation warrant officer's individual track knowledge while providing instruction on the development of training scenarios in support of their commander's mission essential task list. These new prerequisites will provide and ensure warrant officers arrive at the resident portion of AWOAC with the foundational knowledge required for success.

The AWOAC resident phase trains and evaluates mid-grade warrant officers to plan, prepare, execute, and assess unified land operations in a direct action training environment in order to prepare them as warfighters and leaders in Army Aviation. The military decisionmaking process builds from course onset, where students identify hybrid threat, threat capabilities, and threat operational methodologies. Students receive classified intelligence briefings from Aircraft Survivability Development and Tactics Branch, National Air and Space Intelligence Center, Mission and Space Intelligence Center, National Ground Intelligence Center, and Army Reprogramming Analysis Team. These classified discussions cover peer and near-peer weapon systems, including their proliferation, capabilities, and effects on airframes and conclude with a discussion on current tactics, techniques and procedures (TTP) to defeat or mitigate those threat weapon systems. Students then progress into how the Army's operating concept lends to the defeat of such threats through unified land operations. From here, students enter two weeks of advanced track training, honing their individual track program management skills while

learning how to leverage assets to assist in unit training development supporting the commander's mission essential task list. Additionally, track specific training introduces aviation mission survivability (AMSO) officers, instructor pilots, aviation maintenance officers, aviation safety officers, air traffic and airspace management technicians, and UAS technicians to individual, advanced track simulation training. This enhanced training equips these officers with the knowledge to assess and develop training scenarios, maximizing the utilization of simulation across the force. As an example, AMSOs learn how to analyze a threat environment and then use that analysis to develop an Aviation Combined Arms Tactical Trainer (AVCATT) threat scenario in order to train the other students in the course. In another example, the UAS warrants partake in multiple manned-unmanned teaming scenarios, enhancing communication and integration of assets across the aviation aggregate. Students then war-game multiple scenarios, requiring the application of previous lessons while assessing their experience level. This first run of mission scenarios is designed to present the transition medium for military history through operational risk management and combat leadership, thus allowing students the ability to correlate previous operational shortcomings to their courses of action. Finally, students will embark on a rapid pace, 4-day Chief Warrior Exercise, assessing every lesson learned during this course. Lessons ranging from application of doctrine, mitigation of threat, and mission success through combat leadership evaluated in simulation devices.

The AWOAC utilizes simulations throughout the course, instilling and establishing essential war fighting functions for the development of mid-grade warrants. The use of simulations starts with aviation operations, where students are introduced to the Division Exercise Training System, allowing correlation of aviation's role within unified land operations and enforcing the element of aerial mission command. Simulations continue into employment of weapon systems, where students will practice TTP to defeat or mitigate threats from peer and near-peer weapon systems, thus instilling confidence in not only the aviator's abilities, but also in the corresponding threat system TTP and the aircraft survivability equipment.



In the final phase of this course, students fly the scenarios in the AVCATT and the Reconfigurable Collective Training Devices. These exercises allow warrants to fight, regroup, redesign, and reattack the course of action their team developed, providing invaluable insight into their action and decisions. Next, these officers conduct an after-action review, capturing vital lessons learned while providing critical feedback for individual improvement and course development.

The AWOAC continues to evolve and refine. Whether it is revisions to course prerequisites, distributed learning, or the resident phases, there must be a commitment from Army Aviation's leadership to maintain this unstoppable momentum, ensuring the warfighters of tomorrow are ready for the complexities of the battlefield. The best way to ensure our aviation warfighters of tomorrow are properly trained is for senior leaders from the operational force to recommend mature, professional and knowledgeable small group leaders (SGL) to serve as warfighting mentors and educators. Serving as an AWOAC SGL is a unique broadening opportunity which develops instructors into better doctrinal subject matter experts and leaders. Thus, the implemented changes to AWOAC will produce polished Army Aviation warfighters and critical thinkers capable of leading formations towards winning future conflicts.

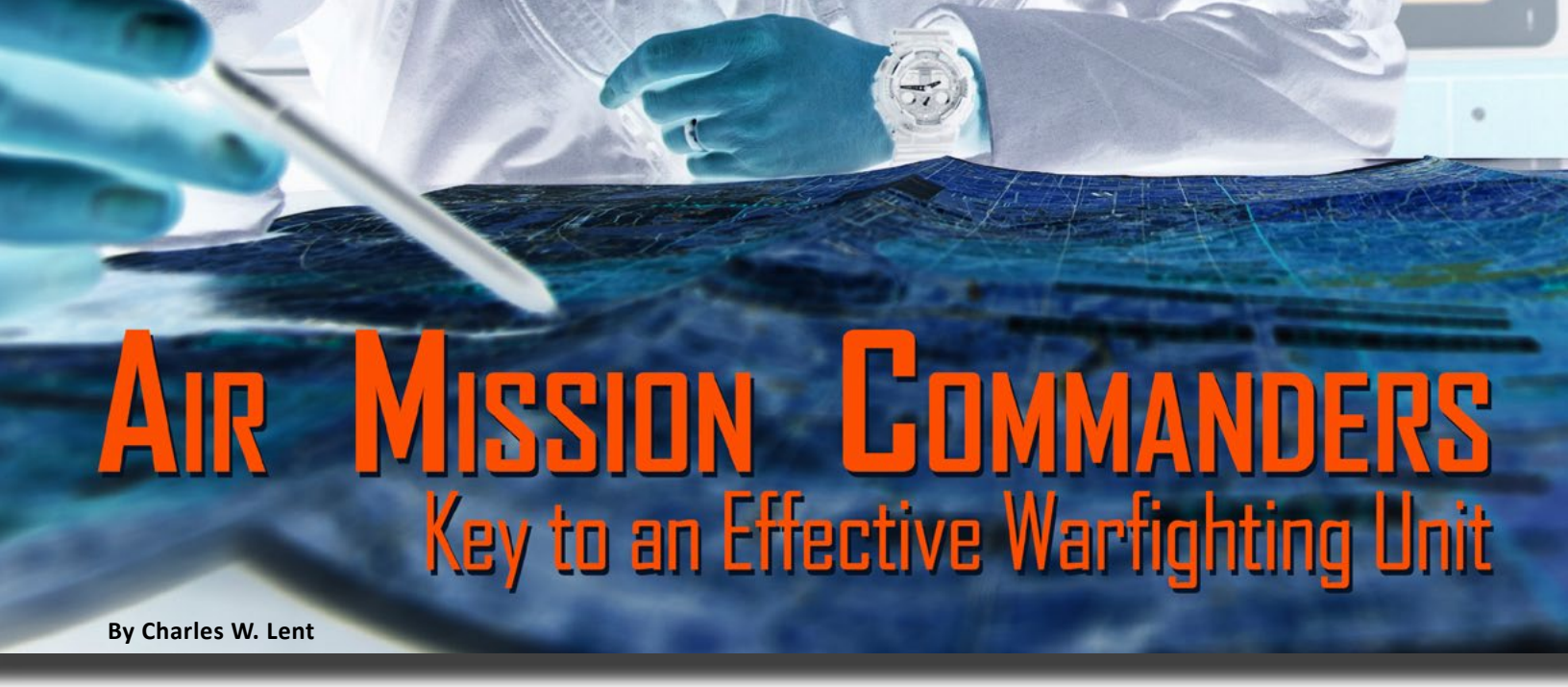
CW4 Shawn N. Paris is currently the Army Aviation Warrant Officer Advanced Course Chief. CW4 Paris previously served as a Medical Platoon Sergeant in 2/3rd Armored Cavalry Regiment, Fort Carson, Colorado; Emergency Medical Technician Basic (EMT-B) Instructor, Advanced Cardiac Life Support Instructor, and Prehospital Trauma Life Support Instructor, U.S. Army Medical Department Activity, Camp Zama, Japan; and instructor pilot, instructor examiner, and standardization officer at the company and battalion levels, 7-101st Aviation Regiment, Fort Campbell, Kentucky. He has deployed to Iraq and twice to Afghanistan. CW4 Paris has 21 years of military service and is a qualified aviator in the CH-47 D/F and OH-58 A/C.

[1] U.S. Department of the Army, The U. S. Army Operating Concept: Win In A Complex World, TRADOC Pamphlet 525-3-1 (Fort Eustis, VA.: United States Army Training and Doctrine Command, 2014)

[2] U.S. Department of the Army, Army Training and Leader Development, AR350-1 (Washington D.C.: U.S. Department of the Army, 2014), 69.

Acronym Reference

AODC - Action Officer Development Course
AVCATT - Aviation Combined Arms Tactical Trainer
AWOAC - Aviation Warrant Officer Advanced Course
DL - distributed learning
SGL - small group leader
AMSO - aviation mission survivability officer
TTP - tactics, techniques, and procudures
WOAC - Warrant Officer Advanced Course
UAS - unmanned aircraft systems



Air Mission Commanders

Key to an Effective Warfighting Unit

By Charles W. Lent

"The air mission commander (AMC) is the commander or the designated representative of the supporting aviation unit. The AMC receives and executes the guidance and directives from the air assault task force commander (AATFC) and controls all aviation elements. The AMC ensures continuity of command for all supporting aviation units and employs attack/recon helicopter, unmanned aircraft system, and artillery along the air route, fighting the battle from pick-up zone to helicopter landing zone, while keeping the AATFC and aviation task force commander (ATFC) informed."

- Army Techniques Publication 3-04.1, Aviation Tactical Employment (publish date Spring 2016).

The Directorate of Evaluation and Standardization (DES) has conducted numerous unit assessments over the past year which have included numerous combat aviation brigades and a variety of battalion sized formations from both the Active and Reserve Components. The Directorate is continuously focusing efforts toward assessing functionality of aircrew training programs (ATP) during assessments as well as performing flight and academic evaluations for individual crewmembers. A recurring trend that is consistently noted on the final out brief is the weakness or lack of an effective AMC training and certification program. Although the requirement to develop and formalize an AMC program was originally mandated in 2006, few units since then have developed programs that have been sound enough to evolve into effective programs. Most programs appear to be developed to meet requirements and are generally viewed as just another ATP standing operating procedure requirement; however, the AMC program is a critical component to a unit's ATP and directly impact a unit's ability to train, fight and win. The AMC program must be an integral and effective part of an ATP and commanders at all levels must ensure this is a high priority requirement in order for the unit to be successful in future combat operations.

Units are confusing the duties of pilot-in-command (PC), flight lead, and AMC and are not effectively training and evaluating current doctrinal principles and collective training in regard to the AMC program. Pilot-in-command, flight lead, and AMC programs are not synonymous and should not be the same. In some instances, we have reviewed Department of the Army (DA) Form 7122 (Crew Member Training Record) entries where flight evaluations have been conducted for PC, flight lead, and AMC all at the same time. Although possible, it does not seem to be a reasonable, or an effective, method of certifying AMCs. These should all be parallel efforts and not cumulative events based on the designation of PC. A majority of units list only instructor pilots (IP) as AMCs. This should not be the objective of an effective AMC program and is certainly not required by Army Regulation 95-1 which states "The designation of air mission commander is an assignment of command responsibility and is not an aircrew duty assignment." In order for AMC programs to work, the emphasis must be doctrinally based and not based on proficiency in the aircraft while performing individual flight and mission tasks at the controls, but instead be based on "aviation experience, mature judgement, mission situational awareness, and understanding of commander's intent." The AMC must be trained to make critical decisions from the mission planning phase through execution and able to provide sound judgement and risk mitigation in regards to the air mission. The AMC must possess a thorough understanding of each aircraft's capabilities in the flight, understand all facets of the mission to include contingencies, understand the ground commander's intent, and, most of all, provide the ground commander with the aviation support required. All rated crewmembers should receive training on doctrine and tactics, techniques, and procedures (TTP) but AMCs are those who can go beyond TTP to provide the leadership, experience, and sound judgement to lead air missions and provide the "sacred trust" aviation branch maintains with our brothers on the ground.

There is an overall lack of ownership and hands-on management by the battalion commander and company commanders in programs DES has assessed. A robust program should include training of all officers (warrant and commissioned)

and one in which commanders are directly involved in the development and sustainment of the program. Senior leaders with the prerequisite academic training on current Army doctrine and warfighting TTP must take part in the development, oversight, and execution of the program to ensure mentorship to subordinates and ensure current doctrine and TTP are trained and evaluated. The ultimate goal of the ATP is to provide commanders with aircrews who are prepared for warfighting. The fact is, unit collective training is generally shown to be an area of weakness in any ATP as resources become scarce and individual training becomes the focus of an ATP effort. Air mission commanders are a critical component in a commander's ability to collectively train and evaluate current warfighting doctrine and to perform the unit's wartime mission. Ultimately, commanders must be able to decentralize control over missions to AMCs who are current in Army doctrine and TTP. Commanders, platoon leaders, and instructor pilots at all levels must coach, mentor, and teach subordinates to ensure that current doctrinal principles are taught and sustained. All leaders, not just IPs, have a responsibility to teach.

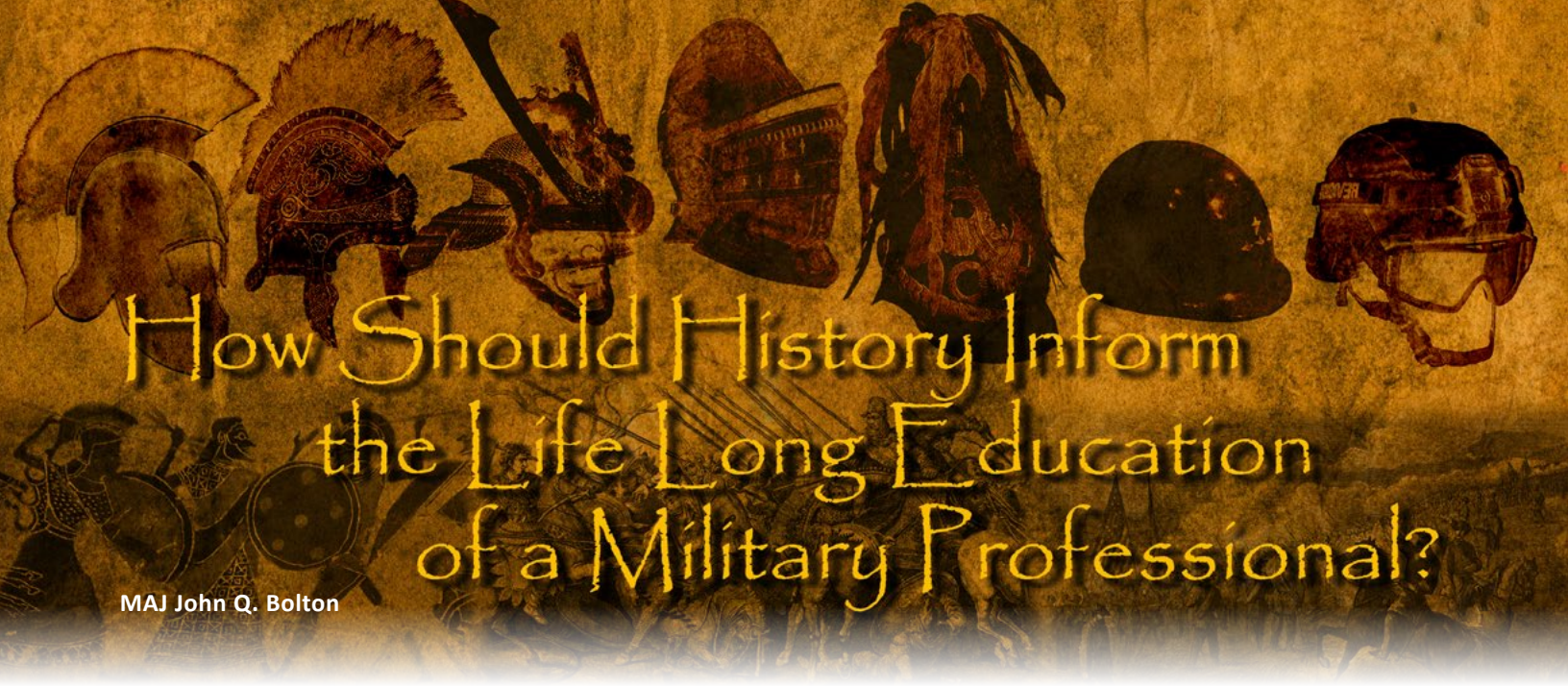
The certification program process for AMCs is generally not formalized and the only documentation of the duty is the DA form 7120-3-R (Crew Member Task Performance and Evaluation Requirements, Remarks, and Certification) and DA Form 7122. Certification should not be relegated to initials on the DA Form. Certification must involve an evaluation of the duties of the AMC. In order to emphasize the importance of the certification program, the Directorate of Training and Doctrine, at the direction of the Commanding General of the United States Army Aviation Center of Excellence, will include a 6000 series task for battalions and companies to evaluate AMCs. Requiring an evaluation by the chain of command will not only enhance the certification process but ensure a more effective AMC program.

In closing, the AMC program is a critical component to a unit's ATP and has a direct impact on a unit's ability to train, fight, and win. The AMC program must be an integral and effective part of an ATP and commanders at all levels must ensure this is a high priority requirement. The program must include not only the training and certification process for AMCs but must also include effective sustainment training to ensure currency in doctrine and TTP in order to stay relevant. With the fielding of state of the art aviation training aids, devices, simulators and simulation, coupled with the recency of over 10 years of combat experience, the Army Aviation Branch should be producing the most tactically proficient warfighters in aviation history. Ultimately, it is up to commanders and leaders at all levels to ensure the quality and success of the AMC program, as well as other ATP programs that directly impact the ability of aviation units to fight and win.

Mr. Charles W. Lent is currently a Department of the Army Civilian assigned to the Standardization Division, Directorate of Evaluation and Standardization (DES) as a H-60 A/L/M Standardization Instructor Pilot and Rotary-Wing Instrument Flight Examiner. Mr. Lent has been assigned to DES since 2004 and has completed multiple deployments worldwide during his 30 years of U.S. Army Aviation service.

Acronym Reference

AATFC- air assault task force commander	**DES** - Directorate of Evaluation and Standardization
ATP - aircrew training program	**IP** - instructor pilot
AMC - air mission commander	**PC -** pilot-in-command
DA - Department of the Army	**TTP** - tactics, techniques, and procedures



How Should History Inform the Life Long Education of a Military Professional?

MAJ John Q. Bolton

History is profoundly important to the military professional. Encompassing a wide spectrum of military campaigns, political-military interaction, and technological developments, history is the lifeblood of professional military education. History informs an officer's life-long education by fostering a love of learning, providing context, and creating an understanding of the long-term trends in military affairs. Armed with a thorough education in history, military professionals are poised to operate in a variety of capacities and environments.

Not all readers are leaders, ...

But all leaders are readers.
- Harry S. Truman

A well-developed comprehension of history helps address perhaps the most troubling aspect of modern military history teaching, an insistence on practicality. Officers trend toward the practically minded; they seek tools that solve problems. However, history seldom offers direct correlations or specific, packaged solutions for the problems of today. Furthermore, once we encounter problems, it is too late to seek a historical solution. There is no book of answers leaders can simply open for an answer. Rather, history offers lessons that, if properly understood within context, elucidate continuous themes. As opposed to practical, set-piece solutions, history creates options in the mind of military professionals, fostering adaptability through broadening.

More importantly, a broad historical background teaches officers the value of general education and critical thinking. There are abundant, varied historical examples of well-learned military leaders successfully utilizing history. Just as importantly, the failure of commanders who lacked historical understanding of their environment should provide all the necessary motivation. As J.F.C. Fuller pointed out, "Until you learn how to teach yourselves, you will never be taught by others."[1] History provides the vehicle for this education.

A love of learning is a tenet of the Classical Tradition. Though considered esoteric today, the Classics were the foundation of education during the Enlightenment through the early 20th century. Officers familiar with the Classical Tradition possess the skills of reason, logic, and rhetoric. Just as importantly, the Classics provide a thorough understanding of the central tenets of Western Civilization, namely individual liberty, secular humanism, and rationalism. The Classics prescribe knowledge of Roman military history as well. From a military perspective, the problems faced by Caesar, Scipio, and Hannibal are still applicable today when viewed through the lens of history and combined with an appreciation of context. Together these elements comprise the foundations of strategic thought and strategy.

History, therefore, provides context for what an officer sees and experiences. This is perhaps the most important aspect a thorough education in military history engenders. Understanding the historical milieu of the operational environment gives military professionals an ability to weigh contemporary actions, plans, and frameworks against the backdrop of cultural, geographical, and political factors. History provides maturity through self-aging, allowing a person to be 'old in mind.'[2] Too often, military leaders expend effort re-learning what history teaches with a minimum of effort, unacceptably wasting time, money, and lives. T.E. Lawrence illustrated this futility, "With 2000 years of examples behind us we have no excuse, when fighting, for not fighting well..."[3] If military professionals can conduct self-aging, they create a force-multiplying maturity that informs plans and influences decisions to great effect.

History is the first step toward a learning institution that continually improves, not just from contemporary mistakes, but also from an understanding of historical trends. Perspective helps military institutions develop doctrine. Too often, institutions seeking practical examples to justify doctrine, use history to serve their own ends.[4] As John Boyd pronounced, "You've got to challenge assumptions. Otherwise, what is doctrine one day becomes dogma forever."[5] If the

institution's leaders are not familiar with the reality and context of an event, the example becomes a distortion. Less understanding results in greater bias and lessens the ability to identify the error. True professionalism involves not merely citing examples of our righteousness, but a thorough examination of the institution's strengths and weakness.

Great commanders of the past knew how to leverage historical perspective into the framework of current operations. Napoleon's analysis of Frederick's Austrian Campaigns before Austerlitz or Patton's reading the Norman History of Sicily in 1943 serve as two excellent instances of 'self-aging' commanders.[6] These are just two of the many examples that provide the most obvious rationale for the study of history. More importantly, however, great commanders of the past demonstrate the usefulness of history. It is not a one for one exchange of lessons or tactics, but an acknowledgement of the environments, problems, frictions, leaders, and men. Many things change, but much more stays the same for the military commander; history elucidates the continuities.

The continuity of long-term trends in military affairs is obvious to the historical-minded military professional. This understanding is essential when reality fails to match expectations. For example, the disorder in Iraq following the overthrow of Saddam Hussein surprised American leaders, but would have been no surprise to those familiar with the failure of Caesars' assassins, who assumed governance would spontaneously recover. Moreover, when the situation rapidly changes from our plans or when information is incomplete, a commander with history at his side will understand that, regardless of technology, a complete understanding is never possible. Incorporating a variety of foundations ranging from Physics, Psychology, and Thermodynamics, John Boyd hypothesized that we can never truly understand a system or event.[7] We should consider that, even in an age of profound technological awareness, all attempts to manipulate a complex system invariably upset it in ways we may not foresee. This inevitably causes frustration as we fail to understand despite efforts to do so.[8]

Military operations are never as simple as a map illustrated with icons and corresponding graphics would have us believe. War is a profoundly human endeavor, complicated and uncertain. History illustrates a consistent theme of a pervasive fog, rife with uncertainty, misperception, and conflicting reports; history tells us there are always multiple truths. The key, according to Napoleon, is for a commander to distil the 'true truths' by filtering what is relevant amid the chaos.[9] A commander armed with history understands that technology, no matter how advanced, cannot dissipate the fog of war. We may mitigate confusion, but we cannot dissipate it entirely. Efforts to understand, without an evaluation of our own biases and limits, will merely create more confusion.[10] Furthermore, history tells us that understanding ourselves is just as important as understanding the enemy.

History remains of the utmost importance to the military professional. History provides the context so critical to officers facing ambiguity and uncertainty. By fostering a love of learning, history arms the officer for a career of education, so that he may grow in his profession. To deal with challenges and uncertainty, military professionals must have already inculcated history to act at the decisive point; education cannot wait until the moment of need.

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MAJ John Q. Bolton is a student at the Defense Language Institute-Monterey (Chinese) as an Olmsted Scholar. His previous assignment was as a student at the Command and General Staff College at Fort Leavenworth. Prior to making a branch transfer to Aviation, MAJ Bolton served as an Engineer Officer performing route clearance in Iraq. He has served in the Aviation Branch as an assistant S-3, battle captain, detachment officer-in-charge, and company commander with multiple deployments to Operation Iraqi Freedom and Operation Enduring Freedom. MAJ Bolton is a qualified AH-64D and AH-64E Pilot-in-Command with over 1,600 flight hours.

LE★DERSHIP

Congratulations, Lieutenant, You Are the New Platoon Leader!

At the moment of arrival, an aviation lieutenant is the most inexperienced soldier in the platoon. Before long, the same person is one of the most experienced. What happened in between? Creditability, courage, and proficiency are part of the answer that helps the inexperienced soldier become experienced for platoon leadership, a most rewarding job in the Army.

Captain Pete Curry
P Troop
4/2 Air Cavalry Regiment
APO NY

WE HAVE ALL been there. You are a young, 23-year-old second lieutenant fresh from Fort Rucker, AL. You are aggressive and smart. The chances are good you are Regular Army and a distinguished military graduate.

You are highly motivated as you walk into your first assignment. As you meet your company commander, he tells you that you will be signing for the platoon next week.

Then it hits you. You are greener than the 5-ton truck parked outside. Doubts start to creep into that always squared-away mind of yours. Suddenly, beads of sweat begin to manifest themselves on your forehead. Your heart quickens its pace. You mutter the expected military responses to the commanding officer (CO), while your mind races towards the prospect of now being responsible for something.

Your subconscious begs, ''Use a checklist...uh, what is the emergency procedure for being a platoon leader? Gawd! I knew I should have stayed awake during that block of instruction!''

Welcome to reality, lieutenant. You will not find any blocks of instruction entitled, "Platoon Leading 101." No checklists. No emergency procedures. Well, unfortunately, no magic articles, either.

This article introduces a commonsense method used by the Army designed to start you thinking about how to lead a platoon. The idea is to read the article, use what applies, and talk to your CO about parts you may not understand.

An aviation lieutenant is, at the moment of arrival, the most inexperienced soldier of the platoon. The aviation platoon leader is no different than any other Army platoon leader, except an aviation platoon leader leads fewer people than, say, the infantry counterpart. This is a mixed blessing. In a relatively small group, the platoon leader gets to know soldiers in detail.

Even the youngest private will know your degree of technical competence is relatively low. So how are you going to start to change this image? The following are some suggestions for changing your image.

Congratulations, Lieutenant

Establish your creditability. Since the soldiers know you are probably straight out of flight school, you should not try to hide things from them. If you do not know, ask a question. Better yet, ask it in such a way the person has to demonstrate his knowledge to you. Your most important asset is your ability to listen and learn.

Demonstrate what you know at the appropriate place and time. One example of establishing yourself early is to be prepared for the commander's evaluation flight. Your first flight with the instructor pilot (IP) should set the stage if you are prepared. The IP is looking for a sound, safe aviator who has learned the basics well and demonstrates the potential for learning more advanced aviation techniques.

You are the leader. Your soldiers expect you to act like one. You must first set the standard for personal conduct and professional bearing. All eyes are upon you. As Peters and Austin describe this in their book, ***A Passion for Excellence***—

"The (leader) is shockingly powerful. Remember when you were a nineteen-year-old on your first job. You darn well knew what your manager (who was probably all of twenty-two) ate, and when his eating habits changed. You were a manager-watcher par excellence. We all were. (Leaders) are powerful. People pay attention to...(leaders)."

You are in charge of a military organization, not a flying club. You may be friendly with the people in your organization, but they are not your buddies. Remember that fine line between being friends and being friendly. Everyone has a job. Your foremost responsibility is the platoon's mission.

I feel your ability to succeed as a platoon leader is directly related to your ability to grasp all the new concepts bombarding you. It is not what you know in the beginning, it is how much you learn.

Have courage. Rule number one. Do not vacillate. Make a decision and stick with it. Issue mission-type orders and make them as your own. Do not say, "The CO says that..."

Even though you may not agree with the CO, once the decision has been made, you are morally obligated to support the chain of command in front of your soldiers. If you are constantly undermining decisions, do not be surprised if your beloved soldiers start second-guessing you. It takes courage to issue unpopular orders.

Be technically and tactically proficient. The only purpose for the peacetime Army is to be ready to fight wars. You have to understand the unit's mission and how the unit fights. You must study doctrine, history, leadership, and your unit's standing operations procedures (SOPs). You have to do this on your own time. Once you do, you will begin to see a growth in your understanding of these subjects.

Focus on the platoon level. You must focus on the platoon as a whole. While it is true you have to know the individual tasks of your soldiers, you must emphasize the platoon. You must leave the actual execution of individual training to the people responsible for it.

Responsibility for individual training rests primarily with the NCOs for most skills and the instructor pilots for aviation-specific training. They will execute the training you plan for them, and they must be held accountable for the success of that training.

You also owe them the chance to get the job done. If you tell them the mission, they will figure out how to do it. If they keep you informed, and if you properly check without suffocating their training, they will exceed your expectations every time.

You get paid to plan and allocate the resources for training. Success depends on your ability to plan. No matter what distractors and roadblocks lag before you,

with experience you will have to anticipate things going wrong.

Check, check, check. The other part of allowing your subordinates time to train is to supervise them correctly. I am not telling you to give a person a mission and then let him go. What I am saying is you must periodically check on the progress of the mission.

You may be asking yourself, "0.K. How?"

Many variables exist. The biggest variable is you. You must train yourself to interpret factually all kinds of indicators. Unfortunately, you only become proficient at interpreting indicators over time.

Here is some good news, though. The ability to see and analyze things is a skill that can be learned through practice. To develop the skills, you must be prepared and work hard. Hit the books.

If you have vehicles assigned to the platoon, you must understand how to perform preventive maintenance checks and services on those vehicles. Just like your aircraft, you should get into the -10s of most of the major end items you are signing.

In tandem with your increasing knowledge of your craft will be your ability to ask the right questions. At first this will take time and a conscious effort on your part.

When you ask a soldier a question, ask in such a way to require more than a short "Yes, Sir." This should lead into the next question, "What are you guys doing about it?"

The answer, "We went over to technical supply. They do not have the part, but they are ordering it. We are going to check after lunch to make sure, sir."

Now, you have a lot more information. You know the crewchief knows the exact status of the aircraft, which means a training instructor has looked at it. You also know that aviation unit maintenance knows you need a part, and you know your crewchief has a handle on the situation. You also have something to do this afternoon, namely check on technical supply to make sure they order the parts.

Carry a notebook everywhere. You will never know when information will be thrown at you. The old adage, "A short pencil is better than a long memory," is still true even in the computer age. "Good poop" can come your way at any time, even in the mess hall or out on the flight line. You have to be ready. Just remember to review your notes daily.

In some section of your book, you should have essential information on each of the soldiers. I am not going to tell you what you need, but you should remember dates for physical tests, weapons qualification, or your officers' last efficiency report.

Know your supply requirements. Most supply actions at your level require correct inventories. Here are a few examples.

☐ Do not sign for anything you have not personally seen.

☐ Make sure you have correct paperwork before you inventory anything. Proper paperwork indicates the unit's expertise in property accountability.

☐ Every piece of Army equipment comes with a publication. The paperwork may be a technical manual or just a simple letter. During an inventory, make sure every piece of equipment has a current publication. Your commander can help.

☐ Make sure the training schedule includes the inventory. The inventory as a major event requires preparation and time. Take an inventory of all the like

items at the same time. The most common end item in an aviation unit is the mechanic's tool box. Take an inventory of them at the same time.

This not only saves time and speeds up the process, but your soldiers cannot ''share'' tools. You would be amazed at the number of shortages, because someone put certain tools in the ''wrong'' toolbox.

☐ Lay everything out in an orderly and uniform manner. The Army has a reason for ''dress right dress.'' Anything missing immediately becomes apparent when everything is laid out.

Know your maintenance requirements. Let us review what you had at the Officers Basic Course. At your level, you have two types of maintenance, scheduled and unscheduled.

Scheduled. Any piece of equipment, from radios to aircraft, requires periodic maintenance at regular intervals. Know when these services occur and keep the commander informed. These scheduled services, which will take a piece of equipment away from you temporarily, may require your soldiers' time. Plan and try not to have long training events during maintenance checks. Before an item goes into a scheduled service, your platoon should perform a thorough equipment inspection. If you identify any deficiencies, try to fix them before the equipment goes into service. This will help turn that item back to you faster. You should also check to see if the needed parts are ordered in advance so they will be on hand when the maintenance section begins work.

Unscheduled. When an item breaks, it is unscheduled. This sounds simple, but a repair in a short time is the real trick.

The cornerstones of the Army maintenance system are the operator and the first-line maintenance personnel. If they are weak, then the whole program is weak. Spare no effort to improve the quality of your maintenance at this level.

As the platoon leader, know what is supposed to be done by the maintainers and operators. Learn to perform proper preventive maintenance checks on your equipment until you get the hang of it. That is really the best way to know if the operators are inspecting correctly.

Here's a maintenance checklist.

☐ All inspections require a book. If anyone looks at your equipment without the proper book, that individual should get one. No excuses.

☐ If a part is broken, check the paper audit trail. If supply personnel do not have the part, make sure they order the item and give you a document number. That means the part has been ordered, but you cannot stop there. Make sure someone periodically updates your records to see if the order is still valid. If it is not recorded, find out why.

☐ A similar system is used for work that cannot be accomplished by your soldiers and requires a higher level of maintenance. The deferred work is annotated on a document register. Usually the repair people cannot get to your work right away, so they will give you a work order number. Track that number the way you would track the parts.

Know about additional duties. Know the regulations that govern them. You must also know the additional duties of your subordinates. If you are having trouble finding out specifics of certain areas, then call your inspector general. This office will have subject matter experts to help guide you in the right direction.

Prepare for inspections. You must prepare yourself properly for this. You are on the other side of the fence now and you must know what to look for.

Depending on the inspection, you should probably ask the first sergeant for help. That person is usually the expert on such matters. You owe it to your soldiers to inspect properly.

Use proper formations. Field Manual 22-5 is the only reference. If you use it, you cannot go wrong. When the opportunity arises, use the formal, established standards.

One word of caution: there seems to be a generally accepted method of assembling large groups of officers in small formations. Refer to your unit's SOPs if this occurs.

Have your stuff together in drills and ceremonies. When you make a mistake, so does everyone else.

Remember payday activities. Many units still have some form of this traditional event, usually in the form of awards ceremonies. Even if your unit does not have one, you can still finish a lot of administrative items on these days.

The leave and earnings statements can help. When it arrives, sit down and open your notebook. Double check the officer or enlisted evaluation report deadlines, what awards need to be written, and counseling updates. This way, you can get all of this completed periodically. You will not waste time reacting. The main reason you should do this is to take care of your soldiers, your most precious resource. Never forget your soldiers. If you take care of them, they will take care of you and your mission.

Like it or not, all of this administration may not be fun, but it gets people paid and promoted. You stand a greater chance for allowing your people to succeed, if you can meet the suspenses.

Counsel. Here is a critical area often overlooked. You can be an effective leader if you use this tool to your advantage. Counseling allows you to do several things: convey your goals and desires; show the soldiers exactly what you expect; and help you set the record straight with your soldiers.

One may think the Army has a tendency to use counseling only in the negative sense. When a soldier makes mistakes and does not perform to a standard, we counsel that individual.

This should happen only part of the time. You need to counsel soldiers when they first arrive in the platoon and periodically throughout your tenure. They must always know how you rate their performance.

Most soldiers fail to perform well, because they do not understand the established standards. Formal counseling sessions establishes the medium to correctly define these standards for your soldiers.

Talk with your commander. He knows what you are experiencing. He has a vested interest in your success. One of his main jobs is to train you to perform better and, ultimately, to perform as commander in his absence.

Remember, he needs honest and open answers from you. Do not hold back telling him what you think. He may not always like it, but he needs to know the truth as you see it for the unit's good.

Set the example. Before making any on-the-spot corrections, make absolutely sure you have your act together. You can never be viewed as having a double standard. What is good for your soldiers is good for you.

If you do not remember anything else in this article, remember this: it is an honor and a privilege to lead soldiers.

However, this is not a "ticket punch" to get ahead. You must sincerely believe this, or you will not be worthy to lead anyone. Be a good platoon leader and everything else will fall in place.

Being a platoon leader requires effort and diligence. Nobody is going to lead you around by the hand; you have to be a self-starter to do the mission.

Hopefully, this article has stimulated thought on how you can become a better platoon leader. We have only scratched the surface of what it takes to be a good platoon leader.

Leading a platoon is one of the most rewarding jobs you will have in the Army. Make the most of it and good luck.

BREAKING THROUGH THE STEREOTYPE

By CPT Rebecca Blood, Ph. D.

"I won't go to Behavioral Health. They'll ground me, and it'll ruin my aviation career!"

This is a phrase heard all too often in the aviation community. For years, there has been a deep-rooted myth that pilots and crewmembers are automatically grounded when they seek medical treatment - especially behavioral health care. Much like most folklore and myth, there is little truth to this misperception. This article strives to provide clarity about seeking behavioral health treatment while on flight status, while also encouraging the utilization of behavioral health services as a valuable resource.

Aeromedical psychology applies clinical psychology principles, methods, and techniques to address both individual and group issues within the aviation community. Typically, focus is placed on assessment and treatment, but occasionally aeromedical psychologists are consulted on human factors affecting performance and aviation safety. Aeromedical psychologists work closely with flight surgeons and aeromedical physician assistants to address clinical issues and to sustain health of the aviation force.

If we remove the psycho-analytic nature of the title and description of aeromedical psychologists, would that result in aircrew feeling more comfortable seeking help? Ultimately, aeromedical psychologists are just people who help other people deal with what's going on in their lives. At any given time, we all have something going on in our lives: occupational stress, deployment stress, marital stress, family stress, friend stress. All of these factors can be compounded by inadequate sleep and long hours at work. Aeromedical psychologists are here to help you cope with these stressors.

There are two main types of stress – acute and chronic. Acute stress originates from the current and near future demands. In small doses, acute stress can increase adrenaline and make you feel energized while completing the task. In large doses, acute stress can lead to psychological and somatic distress. Think headaches, nausea, and general aches. Getting a "no notice" by the strictest instructor pilot in the battalion after being notified of the initiation of a 15-6 within your company is an example of acute stress.*

Chronic stress – this is a problem. It is long term, cortisol producing, difficult solution kind-of-stress. It occurs when a person encounters the stress of unrelenting demands for an inordinate amount of time. Often, chronic stress results in a person giving up hope and sometimes, forgetting that the chronic stress even exists. Chronic stress typically exists for so long that it often becomes familiar and comfortable. Some typical symptoms include headaches, gastrointestinal distress, discomfort in the chest, and sleep problems. Also, people with chronic stress may become sick more frequently due to a lowered immune system. These are concepts that all aviators learn during flight school, but it seems that due to "Type A" personalities and mission requirements, the risks of chronic stress are quickly forgotten. You have encountered the chronic stress aviators and crew. Toward the end of their careers, these Soldiers are broken both physically and mentally from the continued wear and tear of Army Aviation. Aviators are incredibly resilient individuals and some of the best compartmentalizers the Army has ever seen. Unfortunately, this often results in symptoms and chronic stressors being ignored and "pushed to the side" in order to continually complete the "most pressing" mission.

Our primary goal in aviation psychology is prevention. If possible, we want to address small issues before they become much larger ones. Aeromedical policy letters dictate guidelines for treatment and diagnoses of conditions that require a down slip (DD Form 2992, Medical Recommendation for Flying Duty). Some policy letters are more straightforward than others. Figure 1 (below) provides a proposed framework for decision-making with regard to flight status and treatment. An aviator can show mild symptoms (for example, nervousness and hypervigilance) and receive treatment

Symptoms	Functioning	2992 Status
Mild	No impact on functioning	No down slip required
Moderate	Impact on some areas of functioning	Possible down slip
Severe	Impact on flying duties	Down Slip

Figure 1.

* A reference to Army Regulation 15-6, *Procedures for Investigating Officers and Boards of Officers. Under normal circumstances - not a good thing.*

before the symptoms begin to negatively affect functioning. Two examples illustrate the potential impact of psychological symptoms on functioning.

A CW4 scheduled a session for counseling due to serious marital concerns. His wife of 22 years had decided that she wanted to seek a divorce. She wanted to separate due to him "not being around enough." While one may argue that marital concerns are something that everyone inevitably experiences, separating from your spouse of 22 years could potentially result in some huge life changes. The CW4 was considerably upset over the circumstances and asked to receive a down slip until HE felt comfortable to continue flying. The initial stages of the divorce were too aggressive and confrontational for him to manage with other work responsibilities. After 30 days, the CW4 felt that his situation had stabilized and requested an evaluation for an up slip. He received an up slip, continued treatment (in this case, individual counseling), completed the divorce, and progressed in his career as an aviator.

In the second example a LTC with five combat deployments reported experiencing a number of posttraumatic stress disorder related symptoms to include nightmares, flashbacks, severe anxiety, and nervousness. He admitted that he should have sought treatment years ago; however, there was always another important upcoming mission such as combat training center rotation or unit gunnery qualification that resulted in his decision to postpone treatment. Now, due to an accumulation of symptoms and stressors, his overall functioning was negatively impacted. Although the LTC was disappointed, he acquiesced and received a temporary down slip for three months while he received specific posttraumatic stress disorder treatment (consisting of weekly appointments).

These situations are indicative of what a senior Apache crewchief described to me as "too many pebbles in the bucket." At some point, all of the small (and larger) stressors begin to accrue, and our innate ability to cope with any additional stress is affected. If there are too many unaddressed stressors, the "bucket" becomes full and cannot tolerate additional "pebbles." Coping strategies such as compartmentalization (or sheer avoidance) are short term, temporary techniques and not effective with regard to long term management. After fifteen years of war, this is becoming more prevalent and needs to be addressed. Aviation continues to be in high demand in the world and as assets are placed in Korea, Germany, and Middle East locations. The Aviation branch continues to experience a high operational tempo, and will continue to serve as a significant asset. Some of the demand for Aviation is a credit to the great capability and performance the branch has displayed in taking care of the ground force. However, if we are not careful and do not care for ourselves, we may fail in our mission to be anywhere, anytime that the Soldier on the ground needs us. Ultimately, the recommendation is that Soldiers address concerns long before their "bucket" becomes full.

Hearing an aviator recommend behavioral health services to another aviator is probably the greatest compliment that a provider can receive. The standard in aviation is high – and trust for the medical community, particularly with regard to managing their career, is sometimes low. Addressing the stigma and behavioral health myths are some of the first steps to building trust with the aviation community, as well as receiving accurate information from the medical community. Aviators are encouraged to maintain open and honest communication with their medical and organic behavioral health providers. Particularly with behavioral health treatment, there are no requirements for providers to report treatment to the chain of command. This is only necessary if there are any safety concerns (i.e., down slip due to impaired functioning).

As more combat aviation brigades receive organic behavioral health providers, it is the intent that behavioral health treatment becomes more of an ordinary function, rather than one that creates reluctance and distrust. Think of psychologists as personal trainers for the brain. Successful performance and mission are the ultimate goals for aviators, and sustaining psychological fitness is just as important as maintaining a healthy and fit body.

Note: Both aviators consented to and endorsed the use of their cases in this article. Some of the identifying details of their cases have been modified to protect their identities.

CPT Rebecca Blood is from Buffalo, NY. She obtained her undergraduate degree from State University of New York at Buffalo, Master's degree from Towson University, and her Ph.D. from Georgia State University. CPT Blood completed her clinical psychology internship at Walter Reed National Military Medical Center and attended the Aeromedical Psychology Course at Fort Rucker, Alabama. Following internship, she arrived at her first duty station at Fort Hood, earned non-crewmember aviation status, and assumed her position as the Brigade Psychologist at 1st Air Cavalry Brigade.

It's More Than JUST A HAT

The Future of Air Cavalry

By CPT Jeff Hayes

Is anyone else tired of reading articles stating that divestment of Kiowa is a mistake? I am. Not that I disagree with the sentiment, but a mistake is, by definition, "an action or judgment that is misguided or wrong." No mention is made of how happy one must be with the action or judgment, and I fear that many of my fellow Cavalrymen are confusing the decision's negative impacts with its necessity. Having been a Kiowa guy for a decade, spanning two deployments to Afghanistan and one rotation to the Republic of Korea, I love our helicopter. She is simple, cheap, tough, and has done everything we as a community have asked her to do - infinitely more than she was ever designed for. But there cannot be a single dust-eating, hard riding Cavalry Trooper out there who doesn't recognize how old our horses are.

It is paradoxical that Cavalrymen, who earn their bread and butter by pulling victory out of the jaws of defeat for themselves and the ground forces that we support, should be so unable to see the present circumstances for what they are. The nation thinks the wars are over. We are in so much debt that I cannot begin to grasp the total amount without a visual aid and a college math professor. The government has told us that the Army will shrink drastically. Perhaps most painfully of all, no matter how many people shake your hand in the airport to thank you for your service, in the back of too many minds, we are greedy to ask for anything more than that. The cold hard fact is that we are out of the political capital to get more money, more equipment, or more manpower. The military industrial complex, such as it is, along with our elected representatives, have put us in a position where we cannot have our way.

Is the Apache the best solution for an armed scout helicopter? I don't think so. Not by a long shot. Come to think of it, I haven't met a single aviator of any rank who thinks, all things being equal, that it is. Last I checked, we don't live in a world of perfect solutions. To my well meaning peers who make their impassioned arguments, your arguments are intelligent, combat proven, and agreed with. But that doesn't change the fact that something has to give.

On the upside, if something has to give, and if someone has to take a unique skill set and adapt it to a less than ideal airframe, who better than us? Let's not forget that arming the OH-6 in Vietnam and then again the arming of OH-58D were not universally popular ideas across the community at their inception either. So, if we are to forge ahead with this concept, distasteful as many of us may find it, it would seem prudent to get ahead of the idea and make it our own.

Looking for a Fight

As the Kiowa community transitions over the next several years, the first key battle will be one of identity. What fundamental differences, if any, will heavy cavalry squadrons bear out when compared with their attack reconnaissance battalion counterparts?

Attack reconnaissance battalions will be equipped with the MQ-1C Gray Eagle, while the heavy cavalry squadrons will have two platoons of the smaller RQ-7 Shadow. Except for this relatively minor difference, the formations will be remarkably identical. They will both have at their disposal 24 AH-64 airframes, similar complements of aviators and maintainers, and largely the same capability. Why then differentiate between the two formations at all? Is there something more at stake here than the simple sentimentality of lineage?

It is particularly interesting, and indeed encouraging, that over several weeks of writing and thinking through this question, similar discussions have been taking place across the Army. It is worth noting that Aviation is not the only branch addressing an identity crisis. As this article sat in its third draft, I read two fantastic parallel discussions, one by CPT Thomas Spolizino on the Cavalry identity in the Armor Branch[1] and the second by COL William Nuchols, Jr. regarding the need for a dedicated Aeroscout.[2] Both articles forced me to significantly relook some items I had over or under emphasized. I extend my profound thanks to these officers, who I do not know personally, but whose work led me to consider new ways of approaching

our problem set. You can find theirs and other excellent articles at the eArmor website (http://www.benning.army.mil/armor/eARMOR) and I encourage all professional Soldiers to read them regardless of your proximity to the Cavalry community.

Back to the Point Though:

What is Cavalry?

Contrary to those ignorant of Cavalry operations, it is more than ... ... JUST A HAT.

Our Armor brothers, they too coming out of a decade of war and in a similar search for the Cavalry identity, have had the good sense to narrow down the definition somewhat. To quote directly from CPT Spolizino's article: "Cavalry organizations fight for information, find the enemy, engage and destroy him, exploit our success – and the success of others – and protect friendly formations from the same. While this list is certainly not all-inclusive, it covers the basic tasks a force described by the proposed definition is best suited to accomplish as part of a combined-arms team. These tasks are also non-doctrinal because they focus on themes in warfare that have existed for a long time and are likely to retain their relevance long after the current doctrinal words go out of vogue."[3]

If you take CPT Spolizino's attempt at defining Cavalry as a suitable beginning, as I do, you may recognize immediate differences between traditional Apache and Kiowa operations in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom using that definition as a lens. So, a more logical approach to the difference between future heavy Cavalry, vice our attack formations, may be solved by answering the questions - 1. What duties, capabilities, and strengths have our Kiowa formations historically brought to the fight that the AH-64 community, either by design, mission, or culture, did not? 2. How do we preserve that goodness and send it into the future mounted on a heavier horse?

Kiowa formations, as a community, embrace disciplined initiative. The Apache community, less so. Now, if I am correct, I just heard the sound of 500 of my Apache brothers' and sisters' brains exploding in protest. Are there bold, audacious Apache pilots? I am privileged to know a great many of them. Reluctant Kiowa pilots? You betcha. But we are discussing the mindset of the collective cultures, and as is so often the case, let's allow the exceptions to prove the rule.

Big Brother is Watching

Everything an Apache crew does and says in the cockpit is captured and recorded. They have routinely been held as a tactical reserve or committed to specific, complex, dedicated missions (air assault, deep attack, etc.) for a host of reasons. They are the poster-child of Army Aviation and they very often garner high levels of attention simply because of their high profile. On several occasions, a lawful, righteous engagement by an attack weapons team merited further scrutiny not because of the facts of the engagement, but because it was known far and wide that every detail of the flight was readily available to be analyzed. That a curious staff officer or commander can have instant access to every intimate detail of a mission, from take-off to trigger pull, and every relevant or irrelevant discussion in between, absolutely frustrates the development of disciplined initiative - being able to realize the decisive point in time and space *and the freedom and courage to commit to it without worrying about being second-guessed later.*

This has very little, if anything, to do with the individual in the cockpit. The "carnivores" of the branch are largely cut from the same cocky, self-assured cloth. The difference has everything to do with a culture in which one group of trigger-pullers are accustomed to someone looking over their shoulder, someone in an office easy chair ready to provide their minute by minute two cents based on a unmanned aircraft system (UAS) video stream, crews ready to have every combat decision second guessed after an eight hour flight by everyone from general officers to staff lieutenants, to hastily assigned Investigating officers, outraged local officials, and the media.

I haven't developed this opinion as an isolated Kiowa guy looking across the flight line - I developed it through discussions with Apache pilots who I admire and respect, who I have flown alongside stateside and in combat, who are understandably frustrated with latitudes granted in the Kiowa world that they could only dream of.

Why then the difference in the OH-58D world? Clearly Kiowa engagements have caused their share of strategic and operational heartburn on occasion, right, wrong, or indifferent. But it hasn't impacted the culture in nearly the same way as our AH-64 counterparts. Perhaps this is because it is a community whose normal warhorse, until very recently (and although improved, still somewhat today) had finicky communications, limited or poor quality video capture oversight, whose mission set often consisted of nothing more than "grid, call sign, frequency," and no interest collectively in what a UAS could send or receive to or through it. Because of power limitations and an awkwardly placed, antiquated sensor, much of the Kiowa fight was done in close proximity to the ground force customer. The sounds and smells and peripherals of the combat zone take on a different meaning below 200 feet AGL. It develops, as our Armor kin would call it, an "out of the hatch" mentality.

Then too, it is physically difficult for Apache crews to develop that relationship with the ground force outside of the gunfight. As one of my dearest Apache friends put it: "…The 64D has been known to be a bit of a (maintenance) drama queen; shutting down at a small forward operating base may not be the best idea, and it's a pain to get out. The 58 community on the other hand are the first to shutdown and bail out, don their Stetsons, shake hands and kiss babies." A well experienced Kiowa crew can be back off the ground again in less than 10 minutes, if necessary. It doesn't matter how good the Apache crew is, the big machine inherently takes much more time.

Moving to the Future

Can some of these traits be retained as the branch transitions to an "all Apache" scout/attack platform? I believe they can, if Cavalry formations are led by Cavalry Troopers. Can they be preserved indefinitely? That remains to be seen. Keeping the mission sets separate as Attack or Cavalry with no officer bouncing between the two, would do much to help. Breaking from the traditional combat aviation brigade model and assigning Cavalry Squadrons back to Armored Cavalry Regiments (or some similarly provisioned force), or earnestly committing a troop to a habitual relationship with a maneuver battalion would reinvigorate the relationship between the Cavalry and the ground force.

What I know for sure is that culture is a fluid concept and can be passed either way. Case in point was the effectiveness of teaming of Kiowas and Apaches under the same guidon in Afghanistan. I was privileged to be assigned to a unit which proved a fantastic example of Apache-Kiowa teaming done right. A platoon of each airframe was formed into a cohesive troop about nine months out from deployment. We trained up together, went to the Joint Readiness Training Center together, deployed together, and lived together. Where initially there was reluctance, camaraderie and trust grew. I never felt so safe flying in Regional Command East as when I had an OH-58D on my trail and an AH-64 flown by people I knew, above. Kiowas were free to develop the situation - we provided disciplined initiative to the team, we were free to use our senses of sight and sound and smell to evaluate the environment. Obviously Apaches brought to the fight their vastly superior firepower, sensors, and engines which gave them airspeed and altitude and a different, more technological, but still valuable assessment of the battle space.

With a few changes in command guidance, the Apaches were declared a division reserve and our Apache brothers were once again intensely managed. The trust and brotherhood was still there, but it would be untrue to say that it didn't affect the entire troop's spirit. Obviously there were other factors at play here, most notably, the political climate across OEF having most to do with new restrictions. But the result was that the sense of disciplined initiative which grows out of trust with your fellow warriors and trust in your chain of command, that little spark which had been fostering the Cavalry spirit in our Apache crews, was effectively quashed.

To use a doctrinal term which is new, but a concept which is as old as warfare itself, we are talking about "Mission Command" as a culture in and of itself. Regardless of the century examined, you can find traces of it throughout recorded history. It has always been a game changer. And yet, despite written doctrine, it has almost always been outside the cultural norm of military formation after formation - the winners who really "got it," are anomalies. Several such case studies are listed on the Army Training Network website. Even as our own Army's doctrine was being rewritten and the buzzword "mission command" was coming into vogue, the message across the battlefield in Afghanistan was a clear one: hesitancy

is preferable to mistakes. Don't make decisions that you aren't 100% sure of; and, if you do, you are on your own to face the consequences. That message is irreconcilable with the Cavalry mindset, and it is absolutely lethal to any sense of subordinate initiative in pursuit of the Commander's intent.

Mount Up!

The greatest strength of the Kiowa community, and a strength which can be allowed to flourish and provide huge dividends, is a carefully groomed propensity to take the initiative and aggressively develop the situation on behalf of a habitual customer. It is a trait which grew rapidly in the fertile fields of the War on Terror, and its seeds are still there to be fostered in the hearts of our former Kiowa drivers and future Apache brothers and sisters who take their turn under the fluttering red and white of Cavalry guidons.

At the end of the discussion, the Army Restructuring Initiative can and must be about more than just dollars for an improved turbine engine and future vertical lift; it must acknowledge that with the rapid progress of technology we run the risk of forgetting what made us all special, unique, and lethal in the past. It is a trend we can begin to reverse by preserving the heritage of generations of Cavalryman, and we must own the circumstances in which we find ourselves and become the master of our fate, rather than just bystanders.

Whether continuing to take detailed notes on a mundane reconnaissance mission, sleeping under the aircraft parked amid the tactical assembly area of main battle tanks, running an isolated frontier patrol in hostile territory, or routing the enemy with a violent saber charge, the Cavalry has always acted when and where action was needed. It can continue to do so from the AH-64. So let's quit our bellyaching, Troopers, and mount up. Now where is my new -10? Out Front!

[1] Spolizino, Thomas Captain, U.S. Army. "Not Just Infantry with Tanks: Who We Should Be and Why the Army Needs to Be It." Armor, July-September 2014: 68.
[2] Nuckols, William T. Colonel, U.S. Army and Rose, Peter W. "What our Army Needs is a True Aero Scout." Armor, July-September 2014: 50.
[3] Spolizino. 69

CPT Jeff Hayes is the S-3 Operations Officer for the U.S. Army Alaska Aviation Task Force, Fort Wainwright, AK. At the time of writing, he was serving as Commander, D Troop, 6-17th Cavalry Regiment, Fort Wainwright, Alaska, deployed as the rotational cavalry squadron in support of 2nd Combat Aviation Brigade, 2nd Infantry Division, Republic of Korea. He has previously served as an Assistant S-3, 3-82nd General Support Aviation Battalion in Regional Command (RC)-East, Afghanistan; Kiowa Platoon Leader, F Troop, 1-17th Cavalry Regiment, Fort Bragg, NC; Kiowa Platoon Leader, C Troop, 1-17th Cavalry Regiment, RC-South, Afghanistan; and Armament Platoon Leader, 122nd Aviation Support Battalion, RC-South, Afghanistan. CPT Hayes is qualified in the OH-58D.

Acronym Reference

OEF - Operation Enduring Freedom	**UAS** - unmanned aircraft system

The Lost Art of Reconnaissance and Security

MAJ Eric Megerdoomian

The core fighting organization of the United States Army prior to 2005 was the division headquarters. The division not only synchronized maneuver brigades but brought into concert additional combat enablers to include artillery, sustainment, aviation brigades, and a division cavalry squadron. These assets allowed the division commander to prosecute a division level fight in the rear, close, and deep dimensions with limited support from outside the division.

The reorganization of the Army into brigade combat teams (BCT) as the core fighting force in 2006 changed this dynamic. Artillery, cavalry, sustainment, and often aviation formations were assigned to BCTs allowing brigade commanders the autonomy they needed to fight in a wide area security (WAS) construct against an asymmetric threat. After 10 years of fighting BCTs with success in Iraq and Afghanistan, the Army once again is focusing on near-peer conventional threats that can only be defeated with planned and synchronized fire and maneuver. When the BCT centric modular divisions of today take the field to conduct fire and maneuver, the noticeable missing formation is the division cavalry squadron, the organization that is designed and trained to provide reconnaissance and security for the division to fight and maneuver to positions of advantage over the enemy.

Wide area security operations in Iraq and Afghanistan facilitated the atrophy in the division's ability to operate across both space and time in a maneuver scenario. There no longer exists a dedicated and trained organization to allow the division to see the fight in the next 48-72 hours and two major terrain features ahead, a critical service once provided by the division cavalry squadron. Reconnaissance and security for a maneuvering division today must be assigned to a BCT that does not likely train division level reconnaissance and security as part of its core competencies. Therefore, it is quite likely that the division's reconnaissance and security, and likewise its ability to shape the division fight, are hindered given the current modular division construct.

The Army must evaluate this gap in the division formation in order to fight as an offensive and defensive maneuver force and transition quickly to stability operations. In an era of limited resources and downsizing, the Army will likely have to resource its reconnaissance and security responsibilities from within the formations it already has on hand. Aviation brigades, with their maneuverability and firepower, seem to be a logical option for becoming the division commander's choice as the "Chief of Reconnaissance."

Over the last decade, the combat aviation brigade (CAB) proved to be an exponential force multiplier in winning the close and rear fights in a non-contiguous operational environment. However, the CAB's ability to gain and maintain contact with enemy formations, conduct reconnaissance, and ultimately shape the enemy in support of the division's maneuver and fire plan has not been routinely trained or evaluated. With the evolution in unmanned aircraft systems (UAS) and rotary wing technologies, the CAB quickly emerges as the primary formation to conduct division level reconnaissance and shape the divisional fight.

Lessons Learned Fighting the Combat Aviation Brigade

Combat aviation brigades are powerful as both a maneuver force and a combat multiplier. With four battalions composed of one attack reconnaissance battalion (ARB), one attack reconnaissance squadron (ARS), one assault battalion, and one general support aviation battalion, the combinations of formations to support complex and changing mission and operational variables is limited only by the CAB's ability to divide its sustainment capability to support the different airframes. Task force configuration of the CAB to meet the BCT centric WAS mission requirements is the norm in Afghanistan because aviation task force packages are configurable and flexible enough to accomplish attack, assault, reconnaissance, security, and general support to BCTs under varying mission and operational conditions. Multifunctional aviation task forces enable aviation teams and sometimes platoons to provide direct support to multiple simultaneous missions to the BCT in support of WAS mission requirements. In Afghanistan and other WAS mission environments, aviation task forces work well. However, fighting a near-peer maneuver force requiring combined arms maneuver (CAM) mandates a different approach to CAB employment.

Recent experience at a division level warfighter exercise designed to test the organization's ability to conduct

CAM against a near-peer threat showed that the knowledge sets required to employ the division in this fight requires increased focus and training across division, BCT, and CAB staffs. As part of the Fiscal Year 2015 Aviation Restructuring Initiative, the CAB structure is changing to enable the integration of more UAS and manned-unmanned teams (MUM-T). These new dynamics require more thought and study from ground and aviation maneuver leaders about how best to employ the unmanned and rotary wing assets against a peer threat.

During this warfighter exercise, the CAB's assets were employed primarily in the close and rear fight. Routinely, the request for CAB asset support was in response to a current "emergency" rather than integrated into the division's scheme of maneuver in support of a BCT. Even more routine were BCT and division requests for a "sprinkle" of close air support (CAS) missions across various locations in the close and rear areas. This was a clear indication that our staffs were ingrained with the mental model that the AH-64D was best employed as a team of two supporting troops in contact and that the air assault was a tool for reinforcing success rather than maneuvering to a position of tactical advantage. This is not to say that CABs do not play a vital role in the close and rear fights, but rarely in a CAM scenario should we employ teams in a CAS or conduct air assaults against a known enemy stronghold. Rather, it's best to mass these assets and assign missions to aviation platoons and companies to maneuver in their close attacks or use the air assault as a means to maneuver on the enemy flanks putting him in a position where he is forced to react.

In the close fight, mass allows aviation formations to protect themselves and bring the firepower required to force the enemy into a variety of engagement options that limit his ability to mass his direct fires. In the warfighter scenario, not only was the CAB's role in the close and rear fights not fully realized, its capabilities to shape the deep fight were not fully employed.

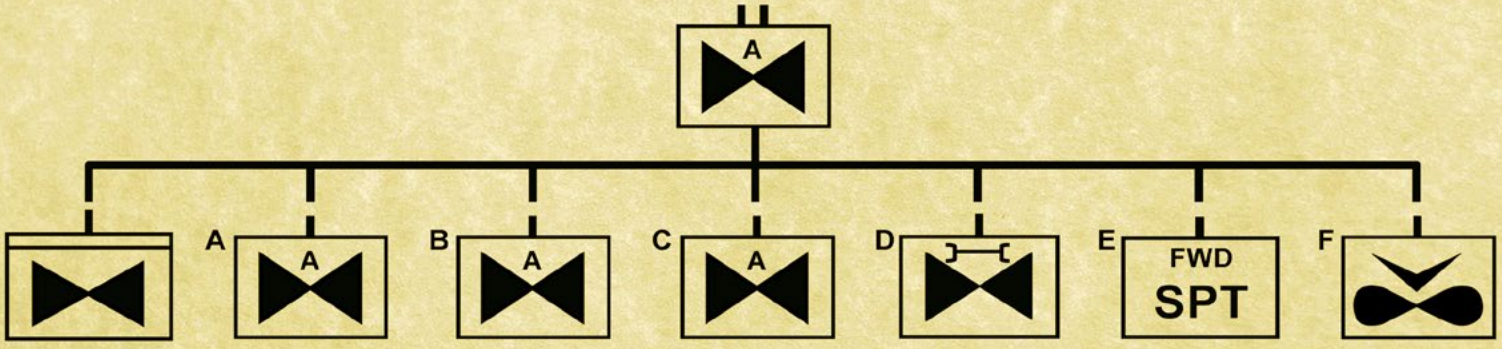
The Combat Aviation Brigade's Role in Shaping Future Operations

The CAB must increase its role in shaping future operations and providing division the reconnaissance expertise and capabilities once filled by the division cavalry squadron. All the CAB's aviation assets are potential reconnaissance platforms and all provide the ability to see and shape the future fight. The recent fielding of UAS (Gray Eagle and Shadow) into the CAB brings even more long range reconnaissance and fires capability to the division.

There are many aerial reconnaissance platforms available to the division to help "see" the enemy but none are more diverse than the CAB and none, except the CAB, fight as an assigned maneuver force for the division. The organic CAB provides the division a powerful tool for understanding and shaping future operations.

In a reconnaissance role, the AH-64D/E, Shadow, and Gray Eagle UAS are all capable platforms and the ARB/ARS are capable formations to provide long range armed reconnaissance in excess of 100 kilometers around the division's maneuver area. The ARB/ARS can utilize rotary wing, UAS, or a combination of both platforms as a MUM-T to obtain information about enemy activity, terrain, weather, and population areas to allow commanders to confirm or make changes to existing plans. The division needs real time information for the execution of the current fight and the planning of future operations. The ARB/ARS are well equipped and trained formations to answer these information requirements. The ARB/ARS is capable of moving quickly over inaccessible terrain to elevated positions of advantage using advanced, eyes-on, long-range sensors; working through and countering enemy deception efforts; and providing the fastest, most reliable means of assessing terrain and the enemy. Not only can the ARB/ARS find the enemy, it can also further develop the situation and force the enemy to reveal more information while simultaneously disseminating information to commanders with an immediate need. The CAB's UH-60/CH-47 assets can also provide reconnaissance but are more effective at inserting ground reconnaissance forces into positions of advantage over enemy formations to provide a persistent reconnaissance presence for the division.

When shaping the enemy ahead of the deep fight, there is no formation more capable than the CAB. The CAB's ability to attack the enemy well beyond the division's front line trace using direct and indirect fires, mobility, and speed is beyond the capability of any other division organic asset. The CAB can conduct interdiction attacks, air assaults, and utilize the Gray Eagle to divert, disrupt, delay, degrade, or destroy the enemy before he has time to employ his assets against friendly forces. Using the CAB in this role, the division is able to influence enemy actions, get inside the



enemy decision cycle, and force him to maneuver when he is unprepared to do so. When applied in concert with joint and division organic fires platforms, the CAB can deny terrain to the enemy forcing him to fight on terrain more advantageous to friendly forces.

Conclusion

The CAB is a multi-function maneuver element that is capable of executing several mission sets simultaneously throughout the division battlespace including attack, reconnaissance, security, air assault, and general support missions for the division. The CAB can achieve this throughout the entire depth of the division area rapidly and effortlessly regardless of terrain. When employed and enabled properly, the CAB is a powerful force multiplier that can support the division in the rear, close, and deep fight simultaneously.

Unlike any other force, the CAB is able to find and shape the enemy before any organic division assets can. When the division decides to set the conditions necessary to gain a position of relative advantage for the next fight, the CAB can locate, identify, and attrite the enemy forces in order to ensure the division a decisive victory. Before the BCT's maneuver to defeat the enemy using direct and indirect fires in the close fight, the CAB can attrite, or destroy in order to set the conditions for the BCT's maneuver. The CAB is the division's organic force that affords the ability to find and shape the enemy throughout its area of operation.

The CAB's maneuver and firepower capabilities make it the formation of choice for the division's primary reconnaissance, security, and deep fights. Augmented with a capable ground force, the CAB will accomplish all reconnaissance and security requirements for the division and excel as the "Chief of Recon."

MAJ Eric Megerdoomian is currently serving as Executive Officer, 4th Attack Reconnaissance Battalion, 4th Combat Aviation Brigade, Fort Carson, CO.

Acronym Reference

ARB - attack reconnaissance batalion
ARS - attack reconnaissance squadron
BCT - brigade combat team
CAB - combat aviation brigade
CAM - combined arms maneuver
CAS - close air support
MUM-T - manned-unmanned team
UAS - unmanned aircraft systems
WAS - wide area security

Light Air Support:

Rethinking Airpower for Irregular Warfare

By MAJ Kenneth A. Segelhorst

War is expensive, especially when using high-tech, multi-million dollar jet aircraft to provide air support. While the United States (U.S.) Department of Defense (DOD) has enjoyed the extravagance of seemingly bottomless coffers over the past decade due to the wars in Iraq and Afghanistan; that time has ended. In the coming years, our military's focus will likely shift to smaller-scale overseas contingency operations. Small teams of special operations forces and regionally aligned forces will deploy to advise and assist U.S. allied and partner-nation forces around the globe in irregular warfare (IW), specifically counterinsurgency and foreign internal defense. The deployment of high-performance jet aircraft in support of such operations is not only impractical but also unlikely due to their high operating costs. Instead, the U.S. military requires an inexpensive, light air support (LAS) aircraft as a practical and cost-effective means of providing air support in small-scale IW environments.

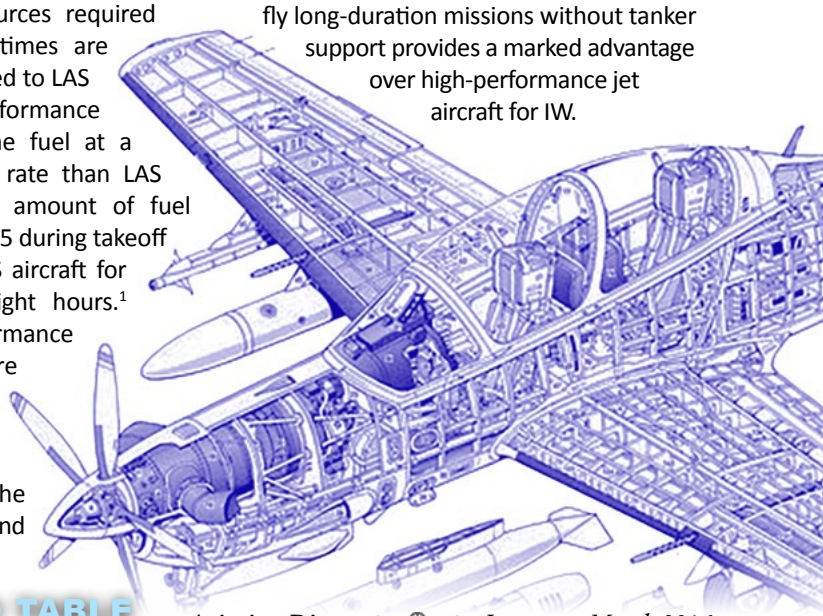
For the purpose of this article, LAS aircraft will be defined as fixed-wing, piston or turbine powered, propeller driven, single or multi-engine aircraft. Rugged and inexpensive LAS airframes like the AT-6 Wolverine, A-29 Super Tucano, AT-802U, AC-208 Combat Caravan, and OV-10 Super Bronco are all well suited for IW. Armed with the latest avionics, sensors, and weapons, these aircraft would prove invaluable to U.S. IW efforts due to their long loiter times, minimal support requirements, multi-purpose designs, low-speed operation, and maneuverability, survivability, and cost-effectiveness.

Long Loiter Time

Unlike high-intensity conflicts where aircraft are dispatched to attack preplanned targets and quickly return to base, missions flown in support of IW require long loiter times. In IW, intelligence, surveillance, and reconnaissance (ISR) aircraft must loiter patiently overhead, searching for signs of elusive enemies. Other aircraft circle high above the battlefield, waiting to provide close air support (CAS). The more loiter time an aircraft has to perform these tasks, the better suited it is for IW.

While it is true that most high-performance jet aircraft have considerable loiter times, the cost and resources required to support those times are substantial compared to LAS aircraft. High-performance jet aircraft consume fuel at a significantly higher rate than LAS aircraft. The same amount of fuel consumed by an F-15 during takeoff would power a LAS aircraft for more than 100 flight hours.[1] Many high-performance jet aircraft require aerial refueling to achieve desired loiter times, increasing both the U.S. footprint and the cost of an operation. In addition, loitering for long periods rapidly depletes an airframe's service life. One year of employment in an IW environment, such as Iraq or Afghanistan, translates to five to seven years worth of real airframe degradation.[2] The employment of LAS aircraft in IW could save billions of dollars in remanufacturing and replacement costs.

Light air support aircraft, with their piston or turbine powered props, consume significantly less fuel than jet aircraft. Conservative fuel consumption and low stall speeds allow LAS aircraft to loiter longer and cheaper than their high-performance counterparts do. Most models are capable of flying five-hour sorties on internal fuel alone and conducting sorties in excess of 10 hours when operating with external drop tanks. While some LAS aircraft are capable of aerial refueling, the ability to fly long-duration missions without tanker support provides a marked advantage over high-performance jet aircraft for IW.



Minimal Support Requirements

With the mission in Afghanistan ending, the U.S. is shifting its focus to advising and assisting allies and partners in fighting terror and maintaining regional stability throughout Africa, Asia, and South America. Future deployments in support of these objectives will surely come with strict force caps in place to minimize the U.S. footprint. Planners will need to meticulously scrutinize available forces and select those capable of providing the most "bang for the buck." When it comes to aircraft, the ability to forward deploy LAS aircraft to remote and austere locations with minimal support packages provides a marked advantage over high-performance jet aircraft.

High-performance aircraft like the F-15, F-16, F-22, and unmanned systems like the MQ-1 and MQ-9 require complex and costly support packages. These aircraft demand long, smoothly paved, and pristine runways. They require avionic repair shops; petroleum, oil, and lubricant facilities; and various other support activities. Operating and maintaining this level of infrastructure is not only extremely costly but also manpower intensive, requiring the deployment of numerous support and security personnel and special equipment. The burdensome logistical and personnel requirements of employing high-performance jet aircraft often result in their consolidation at one or two major airbases. The consolidation of aircraft onto these bases frequently means aircraft must "commute" to their area of operation, not only wasting the aircraft's fuel and service life but also reducing the aircraft's time on station.

Light air support aircraft require little infrastructure or support. They do not require pristine, smoothly paved runways. They are capable of utilizing roads, fields, and dirt strips carved out of the jungle. Many LAS aircraft qualify as short takeoff and landing aircraft, with some requiring less than 1,000 feet for takeoff. Light air support aircraft are far less maintenance and support-intensive than their high-performance counterparts. Whereas many modern high-performance jet aircraft require 10 to 30 direct maintenance man-hours per flight hour, many LAS aircraft require just one to two direct maintenance man-hours per flight hour.[3] A few general aviation mechanics equipped with simple hand tools are capable of keeping most LAS aircraft flying day after day. Their minimal infrastructure, support, and manpower requirements make LAS aircraft extremely well suited for forward deployment to the remote and austere locations often associated with IW.

Forward deploying LAS aircraft offers a number of tactical advantages. Rather than commuting to the battlefield like high-performance jet aircraft, LAS aircraft can operate from the same bases with the very units they support. Forward basing maximizes aircraft time on station and enables faster turnaround times for aircraft refueling and rearming. Forward basing also compensates for the slower speed of LAS aircraft. While they may not fly as fast as high-performance jet aircraft, the ability to forward deploy LAS aircraft reduces the distance aircraft need to travel to provide support. Most importantly, forward deploying aircraft facilitates full integration of aircrews into the planning process and forms air-ground teams. Ground forces can fully incorporate aircrews into operation planning, rehearsals, execution, and after action review process to ensure maximum synchronization and synergy of effort.

Multi-Purpose Design

Future U.S. support to allied and partner-nation forces in IW environments will be small in scale. As previously discussed, planners will need to artfully select forces to provide desired capabilities while meeting strict force caps imposed by the U.S. Department of State, DOD, or host-nation governments. These anticipated constraints make the deployment of highly specialized aircraft improbable. However, LAS aircraft can provide ground forces with a wide range of capabilities in support of IW, including ISR, CAS, and more.

The importance of ISR in IW cannot be understated. These conflicts often revolve around locating a highly elusive enemy. While high-performance aircraft like the F-16 can be equipped with add-on sensors like the Sniper XD pod to perform ISR, this is not the aircraft's intended purpose. With surveillance and targeting pods built into their fuselages, LAS aircraft offer a better field-of-view with fewer blind spots than high-performance aircraft equipped with add-on sensor packages. Integrated laser rangefinders, infrared pointers, and illuminators allow aircrews to confirm or relay target data. Many LAS aircraft also come equipped to transmit video directly to ground forces via remote optical video enhanced receiver systems.

Light air support aircraft are not only capable of locating the enemy but engaging the enemy as well. These aircraft have impressive payloads for their size; several LAS aircraft offer payloads in excess of 3,000 pounds. Hard points on their wings and fuselages allow these aircraft to carry a wide variety of weapon systems, including machine guns, cannons, rocket pods, missiles, and up to 500 pound bombs. These aircraft can operate today's most advanced weapon systems,

including global positioning system (GPS)/ laser-guided bombs, Hellfire missiles, and even some versions of the Maverick air-to-ground tactical missile.[4]

Light air support aircraft also have the capability to support ground forces in ways high-performance jet aircraft cannot. Some LAS aircraft, like the AC-208 and OV-10, can double as light transports, giving the supported ground force commander added flexibility. Light air support aircraft are also well suited for psychological operations (PSYOPS). Their low stall speeds and long loiter times make them ideal platforms for leaflet

drops and aerial loudspeaker operations. Successfully employed by the British during the Malayan Emergency, the U.S. could use aerial loudspeakers over the jungles of Asia, Africa, and South America to influence elusive rebel organizations and encourage defections.[5]

Low-Speed Operation & Maneuverability

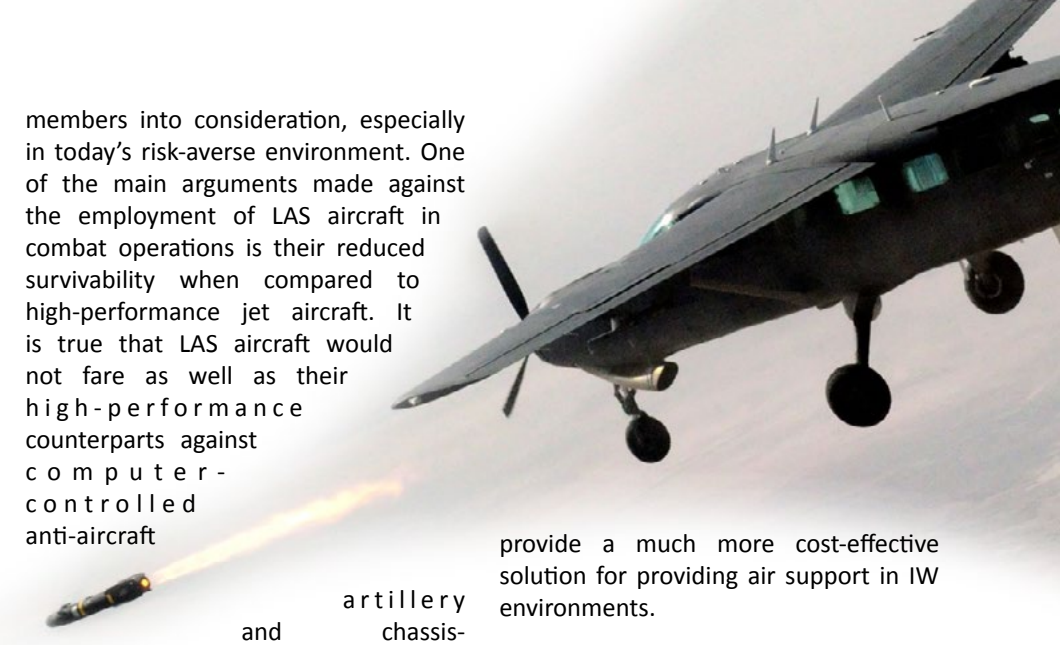
While it is true that LAS aircraft cannot come close to matching the speed of high-performance jets, the ability to operate and maneuver at low speeds offers a few distinct advantages. The low stall speeds of LAS aircraft enable them to operate alongside helicopters, an impossible task for most high-performance jet aircraft. Along with their longer loiter times, greater survivability, and more substantial payloads, LAS aircraft could replace or supplement attack helicopters as escorts for air assault, medical evacuation, and combat search and rescue (CSAR) helicopters.

The U.S. gainfully employed piston powered, propeller driven, A-1 Skyraiders in this capacity during the Vietnam War. Under the callsign "Sandy," A-1 Skyraiders escorted CSAR helicopters deep into enemy territory to rescue downed aviators. The A-1 performed this role so well that joint planners selected it to play a critical role in the Son Tay Raid. Five A-1s escorted the heliborne Special Forces raiders deep into the heart of North Vietnam and successfully isolated the Son Tay prison camp from enemy reinforcements throughout the duration of the ground assault.

Light air support aircraft's smaller size and reduced power does not necessarily equate to a lack of maneuverability. Many LAS aircraft are capable of conducting aerial combat maneuvers and they maneuver better at low speeds than high-performance jet aircraft, giving them a significant advantage when performing CAS. Low-speed maneuverability translates to a tight turning radius. The smaller turning radius an aircraft has, the quicker it can reengage the target area.

Survivability

Survivability is an important characteristic for all military aircraft. The DOD must always take safety of U.S. service members into consideration, especially in today's risk-averse environment. One of the main arguments made against the employment of LAS aircraft in combat operations is their reduced survivability when compared to high-performance jet aircraft. It is true that LAS aircraft would not fare as well as their high-performance counterparts against computer-controlled anti-aircraft artillery and chassis-mounted surface-to-air missiles (SAM). However, the air defense artillery threat is traditionally extremely low in IW. The greatest threat to aircraft in these environments is typically small arms fire with the occasional manually controlled 23mm cannon or shoulder launched SAM.[6]



Light air support aircraft, can be equipped with missile approach warning systems, radar-warning receivers, and infrared countermeasures for operation in low to mid-intensity air defense artillery (ADA) environments. Many LAS aircraft provide armored cockpits and canopies and engines that offer protection against small arms fire and flak. Some aircraft feature ejection seats while a few are equipped with whole-airplane parachute recovery systems. These features greatly increase the survivability of LAS aircraft and their crews in the IW environment, reducing the risk associated with their employment to an acceptable level.

Cost-Effectiveness

The days of extravagant spending by the DOD are over. Military and civilian policymakers in Washington are currently searching for ways to cut defense costs without sacrificing capabilities. Army doctrine teaches leaders to employ the best weapon for the target. This basic principle of fire control applies well beyond the infantry squad or platoon. Not every operation requires the most advanced, high-performance jet aircraft designed to wage war against a high-tech superpower or well-armed military regime. Light air support aircraft provide a much more cost-effective solution for providing air support in IW environments.

The procurement cost for LAS aircraft is significantly less than that of new, high-performance jet aircraft. The problem-ridden F-35A, built as a cost-effective replacement for the F-16 and A-10, costs over $161 million per aircraft.[7] The world's premier air-superiority fighter, the F-22, carries a unit cost of approximately $412 million.[8] By comparison, most LAS aircraft built and equipped specifically for IW cost between $2 million and $10 million depending on the platform and configuration.[9] At that cost, the DOD can procure entire squadrons' worth of LAS aircraft for the cost of a single F-22.

Aircraft operating costs are also an important consideration when evaluating cost-effectiveness. The cost of fuel, replacement parts, and scheduled and unscheduled aircraft maintenance all affect an aircraft's cost per flight hour. The F-22 costs approximately $44,000/flight hour.[10] The F-15E operates at a cost of roughly $35,000/flight hour and the F-16 costs taxpayers approximately $20,000/flight hour.[11] Light air support aircraft have much simpler designs, making them much easier and cheaper to maintain. They also consume fuel at a much lower rate, helping keep operating costs low, often under $1,000/flight hour.[12] The DOD would enjoy significant cost savings by deploying LAS aircraft to IW environments as opposed to high-performance jet aircraft or drones.

Possible Airframes

There are a number of exceptionally capable LAS aircraft available. Perhaps the most popular choice is Beechcraft

Defense Company's AT-6 Wolverine, based on the popular T-6 Texan II currently utilized by the U.S. Air Force and Navy's undergraduate flight training programs.[13]

The AT-6 features a digital cockpit, upgraded power plant, reinforced structure, integrated electro-optical sensors, and datalink. The AT-6 is fully compatible with U.S. and North Atlantic Treaty Organization joint terminal attack controller systems. Equipped with seven hard points, the AT-6 is capable of mounting a wide variety of weapon systems, including gun pods, 2.75" laser-guided rockets, Hellfire missiles, and up to 500lbs GPS- or laser-guided bombs. The AT-6 also maintains an 85% commonality with the standard T-6 trainer already in service, translating to reduced costs associated with procurement, training, and maintenance.[14]

Embraer's A-29 Super Tucano is also a likely candidate. Unlike the AT-6, the A-29 is combat proven. Over 170

A-29s are in service with nine different countries. These aircraft have logged over 28,000 combat hours without a single loss. Slightly larger than the AT-6, the A-29 Super Tucano still boasts a top speed of 320 knots, a max payload of 3,420lbs, and a 3.4 hour flight endurance (8.4 hours with drop tanks). The A-29 offers an advanced sensor suite, making it a capable ISR platform. For light attack and CAS missions, the A-29 features two internally mounted .50 caliber machine guns and five hard points, allowing crews to choose from over 130 weapon and fuel configurations.[15]

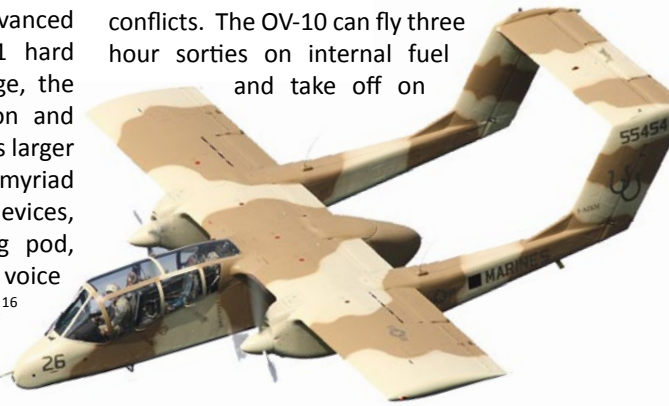
Air Tractor's AT-802U is another capable LAS aircraft. Based on a popular agricultural platform, the AT-802U is an extremely rugged aircraft capable of operating from unimproved airstrips and dirt roads with ease. Although slower than the AT-6 and A-29, the AT-802U

is extremely fuel efficient, capable of loitering for over 10 hours while armed with over 2,000lbs of today's most advanced weapon systems. With 11 hard points on the wings and fuselage, the AT-802U offers countless weapon and fuel configurations. The AT-802U's larger fuselage also accommodates a myriad of sensors and communications devices, including a retractable targeting pod, video downlink, and encrypted voice and data communication systems.[16]

The Cessna AC-208 Combat Caravan is an adaptable, multi-role aircraft. Already in widespread use around the world, the Cessna 208 is a favorite amongst bush pilots, contractors, humanitarian organizations, and militaries for its simplicity, ruggedness, and low cost. Designed as a regional utility aircraft, the Cessna 208

trades speed and maneuverability for cargo capacity. The standard Cessna 208 can carry up to 3,835lbs of cargo or 12 passengers. The AC-208 Combat Caravan adds wing-mounted hard points capable of mounting machine guns, rocket pods, or Hellfire missiles.[17] Adding a roll-up cargo door and either 7.62mm GAU-17 or .50 caliber GAU-19 electronically driven Gatling guns would give the AC-208 an added gunship capability. The AC-208's large fuselage can host a wide array of sensors and communications equipment along with their operators, making the aircraft a suitable ISR and command and control platform.

Finally, the OV-10 Super Bronco offers a compromise between the AT-6's speed and the AC-208's flexibility. A combat proven design, the U.S. employed North American Rockwell's twin-engine aircraft during the Vietnam Conflict as a forward air control platform. Although not currently in production, Boeing has explored the possibility of reintroducing the OV-10 with advanced avionics, sensors, and engines to revitalize the aircraft for modern conflicts. The OV-10 can fly three hour sorties on internal fuel and take off on



unimproved runways as short as 800 feet. In a light attack configuration, the OV-10 can carry over two tons of armament, including 7.62mm machine guns, 20mm cannons, rocket pods, missiles, and 500lb bombs. As a utility aircraft, it can carry up to 3,200lbs of equipment, five passengers, or four fully equipped paratroopers. For casualty evacuation, the OV-10 can support two litter patients and a medic to provide in-flight care.[18]

Conclusion

Irregular warfare is the most prevalent form of conflict in the world today. Employing costly, high-tech, jet aircraft in

IW is not only impractical but also fiscally irresponsible. Relatively inexpensive, fixed-wing LAS aircraft provide a far more practical and cost-effective means of providing air support for IW. Light air support aircraft have long loiter times, consuming a mere fraction of fuel burned by high performance jets. Rugged and easily maintained, LAS aircraft are capable of operating with minimal infrastructure and support, allowing them to be based far forward at remote outposts. Light air support aircraft can also operate in a wide variety of roles, providing ISR, CAS, casualty evacuation, and even psychological operations. Although slower than their high-performance counterparts, many LAS aircraft are extremely maneuverable. When properly equipped, they can operate in low to mid-intensity ADA IW environments without significant increase to risk. The U.S. can procure entire squadrons' worth of LAS aircraft for the cost of a single F-22. Furthermore, the introduction of LAS aircraft could save the DOD billions of dollars in operation and maintenance costs each year. When taken in the aggregate, the advantages of LAS aircraft provide distinct advantages that are both tactically sound and cost-effective.

MAJ Ken Segelhorst is currently serving as the Information Operations Officer (S-7) for 2nd Stryker Brigade Combat Team, 25th Infantry Division. His previous assignments include Detachment Commander, Special Forces Operational Detachment-Alpha 0412, 10th Special Forces Group (Airborne); Special Forces Liaison Officer, U.S. Embassy-Bangui; Executive Officer and Maneuver Adviser, Military Transition Team 4110; Executive Officer, Headquarters and Headquarters Troop, 4th Squadron, 7th Cavalry; 1st Heavy Brigade Combat Team, 2nd Infantry Division; and Platoon Leader, Pathfinder Company (Airborne), 4th Battalion, 101st Aviation Regiment, 159th Combat Aviation Brigade, 101st Airborne Division (Air Assault). His experience includes numerous operational and combat deployments throughout the Central Command, Pacific Command, Africa Command, and European Command areas of responsibility.

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Acronym Reference

ADA - air defense artillery	**ISR** - intelligence, surveillance, and reconnaissance
CSAR - combat search and rescue	**IW** - irregular warfare
CAS - close air support	**LAS** - light air support
DOD - Department of Defense	**SAM** - surface-to-air missile
GPS - global positioning system	**U.S.** - United States

Combined Arms Live Fire Exercise

Ammunition is Critical to Army Aviation Readiness

By CW4 Frank Capri

In order for Army Aviation to fully support Forces Command (FORSCOM) and the United States Army Aviation Center of Excellence (USAACE) training intent and directives to train as an integral member of the Joint Combined Arms Maneuver (JCAM) force, Army Aviation requires combined arms live fire exercise (CALFEX) munitions to supplement the normal allocation of limited training and unit (individual, crew, and team) qualification ammunition. The ammunition requested to support a CALFEX would allow realistic training with, and feedback from, ground units requesting exercise support. **As approved by the Standards in Training Council of Colonels in 2015, CALFEX ammunition will be available to active duty AH64 D/E units beginning october 1, 2016 (Fiscal Year 2017).**

Army Aviation assets, especially attack reconnaissance assets, are consistently requested by ground force commanders to support realistic home station training and combat training center rotations. The ground unit commander understands the critical role Army Aviation plays in the combined arms fight. Furthermore, the necessity of training with and conducting subsequent operations with joint assets and multinational partners is commensurate with the USAACE emphasis on air-ground operations (AGO). Air-ground operations is highlighted in Field Manual 3-04, *Army Aviation* and USAACE's subsequent updates to mission essential task list (METL) and collective tasks. These include training tasks expected to be implemented at the individual level such as Task Number 011-AVC3-0024, Integrate Fundamentals of Air-Ground Operations.

Army Aviation training documents recommend that the CALFEX be an integral part of home station training, testing, validating, and strengthening of combined and joint AGO. They go on to define the process in which aircrews train, qualify, and attain proficiency to deliver air-to-ground fires to fully maximize integrated combat effectiveness as part of the maneuver commander's plan. These training documents also indicate that the most realistic measure of combined arms combat readiness is the combined arms live fire exercise (CALFEX).

The USAACE Commanding General, Major General (MG) Michael D. Lundy clearly states in the *Army Aviation Training Strategy* that "executing air-ground operations in conjunction with ground maneuver units and aviation battalions and brigades conducting mission command in coordination with supported ground maneuver units is essential to developing decisive action combined arms capability." [1]

The FORSCOM Commander, General Robert B. Abrams echoes similar sentiments in his Fiscal Year (FY) 2016 *Command Training Guidance*, stating that: "The integration and synchronization of aviation, UAS [unmanned aircraft system], and joint fires is absolutely critical to mission success. Furthermore, the specific incorporation of manned/unmanned teaming into FCXs [fire coordination exercises] and CALFEXs will build upon foundational understanding, develop best practices and make employment of the emerging asset a reflexive competency among our maneuver commanders and fire supporters." [2]

The Chief of Staff of the Army, General Milley has said, "After a decade of fighting counter-terrorism and counterinsurgency campaigns from fixed sites, our conventional force has reduced skills in joint combined arms maneuver (JCAM) as

a core competency." In addition, he further elaborated that, "the key to defeating our likely future threats is our application of JCAM." GEN Milley touted how the CALFEX is the gold standard for developing combined arms maneuver proficiency.[3]

General Milley further alluded to the benefits of forming habitual training relationships in the Fiscal Year 15 *Command Training Guidance*, by saying that one of the most critical outcomes of realistic complex training is building organizations with confidence in both the character and competence of their leaders vertically and horizontally.[4] in complement, MG Lundy also emphasizes this point several times in the *Army Aviation Training Strategy*, that when habitual relationships are established, "liaison is embedded throughout the operations process, procedures are standardized and practiced, a common operational picture is maintained, and mutual trust is built through effective relationships, realistic training, and shared understanding."[5]

As the CALFEX training model is fully implemented, it will provide the means for realistic and effective training at multiple levels of the aviation and ground unit's organization. The after action review generated from the exercise will prove to be an invaluable form of performance review, provide a means of reinforcing lines of communication, and establish a lasting relationship between aviation and ground units. The AGO CALFEX increased realism will empower aviation and ground commanders to train and build warfighting confidence.

In order for Army Aviation attack reconnaissance units to receive a "T" (trained) rating, they must successfully accomplish gunnery training and qualification that culminates in a CALFEX. The CALFEX is the essential training event enabling Army Aviation to maintain a high level of proficiency in dynamic operating environments and providing leaders the ability to develop and execute rigorous and realistic home station training. The CALFEX validates individual and collective tasks, ensures crews are qualified and, most importantly, ensures they are developed as an effective combat multiplier fully integrated into combined arms missions. The CALFEX is designed to build confidence for our ground and aviation organizations as well as establish cohesion and efficiency developed through the formation of habitual training relationships while developing the highest levels of survivability and lethality.

The USAACE proposed a CALFEX ammunition strategy to the Army G-3/5/7 Army Munition Requirements Council of Colonels (AMRCOC) addressing the gap in training resources in 2015. As a result, the AMRCOC approved an annual allocation of 70 rounds of 30mm (M788 / HA13) and eight rockets (M274 / HA13) per aircrew for active duty AH-64D/E units beginning in FY17. The newly resourced training ammunition affords units participating in the CALFEX with the holistic view of synchronized operations -maneuver, fires and effects, and scheme of maneuver. Combined arms live fire training allows weapons accuracy assessment and training strategies to develop further. However, and, more importantly, it mitigates risk and creates warfighter confidence that gives our forces the advantage necessary to win. Units should begin planning resourced CALFEXs now to maximize this opportunity.

The new allocation of CALFEX munitions will provide units the necessary realism required for the commander to execute mission intent, evaluate, and utilize specific tactical engagement techniques in a combined joint live fire training scenario. Army Aviation needs to capitalize on the upcoming CALFEX ammunition allocation beginning in FY17.

ATTACK!

CW4 Frank Capri is currently assigned to 2-17th Attack Reconnaissance Squadron, 101st CAB, Fort Campbell, KY. He has served as standardization instructor pilot, instrument flight examiner, aviation mission survivability officer, and master gunner. Previous assignments include USAACE Gunnery Branch, 10th Combat Aviation Brigade, 1-337th Aviation Regiment, 1-2nd Attack Battalion, and 2-101st Aviation Regiment. CW4 Capri has deployed in support of Operation Iraqi Freedom and Operation Enduring Freedom. CW4 Capri has 18 years of service. He is qualified in the AH-64D/E.

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[3] General Mark A. Milley, FORSCOM *Command Training Guidance* (CTG) - FY15, Department of the Army Memorandum for Commanders.
[4] General Mark A. Milley
[5] Major General Michael D. Lundy

Acronym Reference

AGO - air-ground operations	**FORSCOM** - Forces Command
AMRCOC - Ammunition Munitions Requirements Council of Colonels	**JCAM** - joint combined arms maneuver
CALFEX - combined arms live fire exercise	**METL** - mission essential task list
FY - fiscal year	**MG** - major general
	USAACE - United States Army Aviation Center of Excellence

Non-Rated Crewmember Manned Module

By SFC Clinton P. Bruce

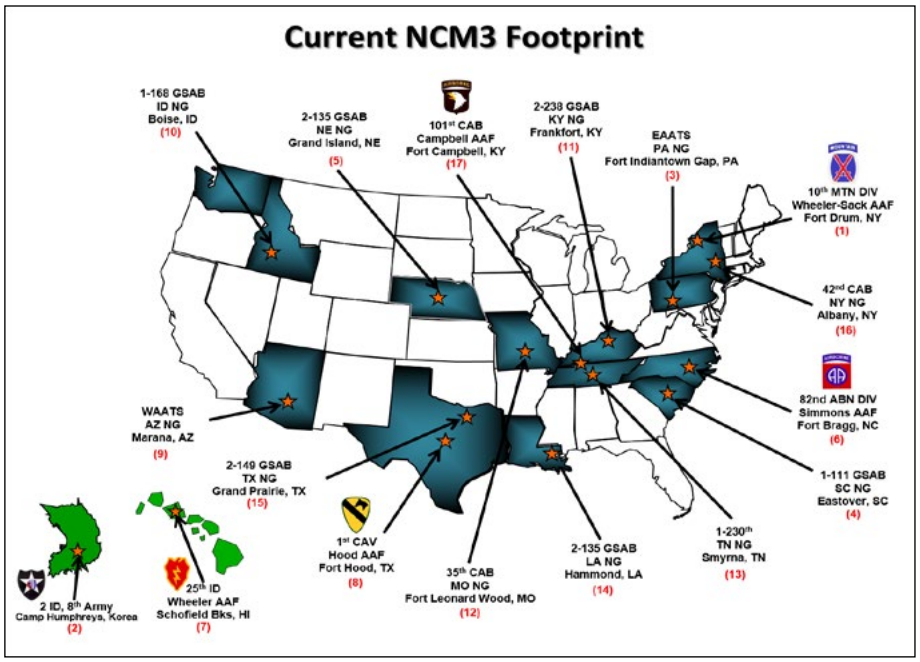
The Non-Rated Crew Member Manned Module (NCM3) is a cost effective, yet realistic, simulator that provides critical training to aviation non-rated crew members (crew chiefs, flight medics, and door gunners), without affecting budgetary training guidelines.

The NCM3 is designed to pair with the Aviation Combined Arms Tactical Trainer (AVCATT). When linked, they allow the entire crew, both rated and non-rated members, to operate simultaneously in a combined arms virtual training environment as either a cargo or utility aircraft, just as they would in a real aircraft. The NCM3 software replicates the terrain of Afghanistan and most unit home stations including Hawaii, Korea, Fort Campbell, Fort Bragg, Fort Drum and many others. These virtual locations provide better training for crew members before their first aerial flight by getting them acquainted with their home-station runways and terrain flight training areas thereby reducing the time needed for local area orientations.

Currently, there are 17 NCM3 simulators ready for training across the Army, both at Forces Command (FORSCOM) unit locations and National Guard facilities. The Program Executive Office for Simulation, Training and Instrumentation is awaiting the funding for six more NCM3 trailers to fully field the remaining FORSCOM units and the United States Army Aviation Center of Excellence's NCM3. The NCM3 at Fort Rucker will be used for institutional training in support of the Non-Rated Crew Member Flight Instructor (FI) / Standardization Instructor Course.

The NCM3 makes up 25% of the Army Aviation door gunnery training tables. Gunnery training leans heavily on simulator training to prepare for aerial live fire training and qualification events. Even though it's not required to be used for Gunnery Tables II, VII, and X, the NCM3 provides a much better training environment than using blank rounds or weapon dry fire training.

In addition to door gunnery training, the NCM3 can provide a unit with a multitude of other important crew training tasks. With the ability to control two aircraft at a time, whether it be two UH-60 Blackhawks, two CH-47 Chinooks, or one of each, the FI at the Instructor/ Operator Station (IOS) can perform crew-level tasks such as sling load/water bucket operations, hoist operations, crew-coordination training, and emergency procedures training. Future benefits include the use of the LUH-72 Lakota for those National Guard units equipped with them, also more water bucket options like the 120 gallon for the LUH-72 and 2000 gallon bucket for the CH-47F. Current software only gives the option for the 660 gallon water bucket that is standard for the UH-60.



With the current state of the economy, the Army recognizes its responsibility to do things smarter, better, and more cost effectively. Instead of units having to use funds to move their crewmembers to the simulator, the NCM3 can move to the unit's duty station location. This reduces costs for temporary duty and time that Soldiers have to be away from their families. Forces Command will move and fund a NCM3 trailer for up to six weeks to the using duty station. If the unit requires more than six weeks, the unit will have to pay for the contracted operator's travel expenses for the remainder of that trip.

In addition to being fully mobile, the NCM3 is economical. The Department of Defense cost per flight hour for a UH-60M Blackhawk helicopter averages at $3,633 and for the CH-47F Chinook, the costs are even higher, averaging $8,649. These totals are comprised of fuel, oils, lubricants, and parts that a unit would spend out of their flying hour budget. Each hour logged in the simulator is saving the Army in flight hours to train their non-rated crew members.

Each NCM3 contains two manned modules which are re-configurable to either UH-60 or CH-47 aircraft. There are two IOS stations and the common integrated One Semi-Automated Forces software for modeling threat and friendly units. An exercise record/playback capability is provided at the IOS for an integrated after action review (AAR). The integrated AAR function records all training actions using both video and voice for real time feedback and replays automatic scoring.

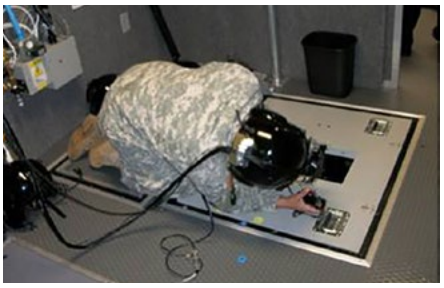
The manned modules utilize real (demilitarized) M240H weapon systems complete with physical 200-round ammunition cans at each gunner station. The weapon system mechanisms have electrically-driven recoil and use force-feedback motors to simulate airspeed induced wind on the weapons for added realism. Sensors in place around the physical weapon system replicate exact weapon action and movement in the simulated environment. For example, when the gunner lifts the feed tray cover up to load or unload the weapon, the digital environment will also show the virtual weapon's feed tray cover open. Up to six weapons stations can be used at any given time when both modules are configured for the CH-47 and the ramp gunner stations being used for training.

The forward module comes equipped with a physical UH-60 hoist mechanism with proper cable motion and resistance allowing the operator to feel the cable extend, retract, and move around as an actual hoist cable would in response to forces exerted, such as wind, cargo and weather conditions requiring the operator to take action. The instructor can set the hoist to use the jungle penetrator or litter to retrieve simulated rescue survivors. The simulated medic can move around the battlefield as needed and can give hand and arm signals to the operator at the hoist station.

The aft module comes equipped with a maintenance panel station for use by the CH-47 ramp gunner position for training crew members in system monitoring and maintenance actions. The maintenance panel uses a touch-screen monitor to allow the operator to change switch positions and test maintenance functions as they would in an actual aircraft. When paired with the AVCATT, the maintenance panel receives the same system readings the rated crew members see at their pilot stations. Other modules include

a physical bubble-window structure for CH-47 crewmembers to look around the outside of the virtual aircraft for better airspace surveillance training.

The helmet-mounted display (HMD) mounts the crew member's issued HGU-56P helmet by replacing the night vision goggle (NVG) visor mount. The HMD delivers a realistic environment for training individual tasks or crew coordination without the limitations of a projected screen. The HMD immerses Soldiers in the virtual environment for day and night task training in all weather conditions. The HMD can also simulate NVG operations by tinting everything the



UH-60 crew chief views the simulated sling load though the HMDs while feeling the physical space and dimensions of the cargo hook door/hatch.

CH-47 crew chief views the simulated external load though the HMDs

wearer sees in that familiar green shade. The HMD can display rain, lightning, and almost any type of cloud layers. The HMD can also display dusty environments based on the rotor wash level the instructor sets for the training period.

The NCM3 has positions in both modules for both aircraft type hatch operations for sling load operations. The hatches are the same shape and size of the actual helicopters. There is enough space in the modules to use almost any technique for viewing the external load.

A number of software upgrades will be introduced with System Enhancements II (SEII). Some of these enhancements are visual upgrades to the simulated environment as well as upgrades to the digital aircraft or "own ship." These enhancements include:

- CH-47 troop bell and alarm will now be displayed in the virtual aircraft.
- CH-47 maintenance panel will include better usability and functionality as well as receiving information passed over from the AVCATT when tethered.
- CH-47 bubble window will have better visuals when the Soldier's head is within the physical window area.
- CH-47 sling load emergency release handle will show up in the virtual environment to give the crew member a visual representation of handle position.
- CH-47 physical Common Missile Warning System flare dispenser switches will now be included.
- 400-round ammunition cans will be available for selection from the instructor station for visual reference for the gunner.
- Own ship shadows are upgraded to better follow terrain, will include the rotor disk, and will also converge with the own ship when on the ground.
- Own ship rotor wash will better simulate dust behavior by trailing the aircraft as determined by speed.
- Virtual medic (DI GUY) behavior is more advanced for hoist operations.
- NVG field of view will more accurately simulate actual NVG operations by inducing a circular mask when looking through the HMD.
- UH-60M visual models will be updated with correct emergency procedures on the virtual multi-function displays and engine fire T-handle will illuminate under NVGs.
- Engine fire smoke will better represent actual visual effects.
- Rain appearance will be uniform all around the virtual aircraft.
- Upgraded sling load visuals when operating in interoperable mode.
- Water bucket upgrades to provide realistic water dropping, effects on the fire entities, and torrentula valve operating functionality.
- Selections for 120 and 2000 gallon water buckets for training on LUH-72 and CH-47 respectively.

The NCM3 is currently scheduled to receive SEII enhancements in March 2016.

For any questions pertaining to the NCM3 or door gunnery requirements, contact the CH/UH Master Door Gunner at the Directorate of Training and Doctrine, usarmy.rucker.avncoe.mbx.atzq-tdd-g@mail.mil.

SFC Clinton P. Bruce serves as the United States Army Aviation Center of Excellence Aviation Branch Master Door Gunner at Fort Rucker, AL. He has just over 20 years of Army Aviation service and has accumulated over 3800 UH-60 Flight hours, with over 1000 of those being combat flight hours. His previous assignments include: UH-60 DES Evaluator, Senior Instructor for the UH-60 Aircraft Crewmember Standard Instruction Course; Brigade Standardization Instructor, 159th Combat Aviation Brigade (CAB); Company and Battalion Standardization Instructor, 2nd Battalion, 25th Combat Aviation Brigade, and Company Flight Instructor, C Company, 6th Battalion, 101st Aviation Regiment. SFC Bruce has deployed to Camp Doha, Kuwait, in support of Operation Southern Watch; one deployment with 25th CAB in support of Operation Iraqi Freedom, and three deployments in support of Operation Enduring Freedom, one with 25th CAB and two with 159th CAB.

Acronym Reference

AAR - after action review
AVCATT - Aviation Combined Arms Tactical Trainer
FI - flight instructor
FORSCOM - Forces Command
HMD - helmet mounted display
IOS - instructor/operator station
NCM3 - Non-Rated Crew Member Manned Module
NVG - night vision goggle
SEII - System Enhancements II

How to Sustain a CAB in the Decisive Action Fight

By MAJ P. John Culpepper

In February 2015, the 3rd Combat Aviation Brigade (CAB) conducted a two week logistics exercise (LOGEX) to re-familiarize logisticians with the challenges of fighting a pure CAB in a decisive action environment. After a decade of fighting out of forward operating bases and conducting numerous command post exercises that focused little attention on sustainment operations, the 603rd Aviation Support Battalion commander and the brigade simulations officer developed a plan to gather lessons learned from previous combat training center rotations and challenge logisticians to think about the future as an expeditionary Army. During the past ten years, most aviation units deployed as an aviation task force in support of the ground commander. In the foreseeable future, it is expected that the CAB will operate pure (not task organized) with battalions conducting their primary missions with their assigned aircraft type. The LOGEX was conducted at the Fort Stewart Mission Training Complex to provide a sequestered environment to focus on the event and to have easy access to the Battle Command Sustainment Support System (BCS3) subject matter experts. The audience for the exercise included the brigade supply (S-4) section, the support operations (SPO) section, battalion and squadron S-4s, and an officer from the forward support company (FSC). The first week of the exercise focused on conducting the military decisionmaking process (MDMP) to brief the concept of support to the brigade commander. The second week included a two day functional area workshop (FAW) and a two day table top exercise using BCS3 as the reporting tool. At the conclusion of the exercise the brigade logisticians agreed that the time had been well spent focusing on supporting a pure CAB while at the same time confirming previous lessons learned.

The MDMP focused on understanding and familiarizing the logisticians with the operations order and preparing to brief the concept of support to the brigade commander. To simplify the exercise, aviation training exercise (ATX) products were used for the base order. The scenario was modified to fit Fort Stewart's terrain so that the LOGEX would serve as a digital rehearsal for a scheduled division level exercise in May. It was discovered late in the exercise planning that the ATX Training Support Package did not include an Annex F (Sustainment); therefore, paragraph 4 (Sustainment) of the operations order was written with additional detail. Additionally, the exercise director was given the authority to approve assumptions and injects as necessary to keep the training progressing. The plan also called for minimizing the amount of operations involvement during MDMP to ensure the focus of the exercise remained on support. The initial brigade set had all of the units collocated at Tactical Assembly Area (TAA) Spartan with no combat sustainment support battalion (CSSB) pushing supplies to the aviation support battalion (ASB). After a day of working through the challenges of supporting the brigade on the move, the ASB commander gave a change of mission that ceased CSSB support to the ASB while displacing the battalions and squadron to various TAAs throughout the division area of operation. By limiting the CSSB's ability to resupply the CAB, the logisticians were forced to conceptualize how they would maintain forward arming and refuel points and reach back to draw supplies. This portion of the exercise provided an excellent venue for logisticians to share recent lessons learned during combat training center rotations. Some of these lessons learned included actual haul capacity of the FSC and how that volume translated into total number of flight hours available. The plans were based on the assumption of one hundred percent table of organization and equipment (TOE) available and all equipment fully mission capable to create a baseline for discussion and visualizing maximum capacity. At the conclusion of the first week, the brigade S-4 and SPO section briefed the brigade commander on the concept of support for the operation. This provided an excellent opportunity for logisticians from across the brigade to hear the challenges the brigade commander saw and how he visualized the future role of the CAB in a decisive action fight.

The second week's FAW allowed the brigade to ensure the BCS3 systems were fully configured with templates for future operations. The workshop also allowed the unit to refine the BCS3

standing operating procedure (SOP). As most of the officers and leaders had not been through the BCS3 course, the FAW provided an executive level overview of the capabilities. Templates and equipment were added to the system to reflect the current TOE. The most productive portion of the FAW was the brigade leadership discussions with BCS3 subject matter experts as to the optimum physical locations for the BCS3 systems and the creation of primary, alternate, contingency, and emergency (PACE) communications plan. We determined the data forwarding gateway was best located in the SPO shop to ensure that it was always running and connected. One classified BCS3 was placed with the brigade S-4 to interface with the mission command systems, a second BCS3 was located with the S-4 for oversight and reporting to division, and the remaining three systems were retained by the SPO section for reporting and analysis. The most difficult decision to make was where the battalion BCS3 would go. There are plenty of legitimate reasons for the system to reside in the FSC or the battalion S-4 shop; however, in the end it was decided that the FSC should have the BCS3 to reduce the number of times data is input into the system. For oversight, the battalion S-4s would use the Logistics Reporting Tool - a Windows program that pulls data from BCS3. The PACE plan established BCS3 as the primary communications method, a Joint Capabilities Release (JCR) message the alternate, FM radio selected as contingency, and a hard copy of the exported excel spreadsheet from BCS3 was selected as the emergency communications method. Other items identified for inclusion in the SOP included specifying the computer/position that inputs data to avoid erroneous data overwrite, setting a standard naming convention for items, and documenting the requirement for operators to refresh BCS3 often to ensure the most current data is visible. The FAW proved most beneficial as a venue to discuss BCS3 fielding options and prepare the brigade to rely more heavily on using BCS3 as the primary logistics reporting tool.

The remaining two days of the LOGEX consisted of a table top exercise to execute the plan developed in week one. Cards were developed representing each haul asset including fuel trucks and light to medium tactical vehicles. A 1:6 ratio of real time to simulation time was established to maximize the length of simulation time for the exercise and ensure that classes of supply were quickly depleted. Additionally, the exercise started at day three which resulted in less than 100% fully mission capable equipment and quantities of supply already diminished. The FSC units had to bring the appropriate cards necessary to conduct a logistics resupply to a center referee table to represent the time the vehicles were unavailable either due to maintenance or replenishment. Once the travel time had elapsed, the FSCs would change their commodity numbers in BCS3 providing the battalion and brigade a near real time accounting of supplies on hand. In addition to managing the convoys, injects were provided to the FSC or the brigade from division that would require a modification to the plan. Injects included non-mission capable vehicles or pumps, traffic congestion along the routes that delayed convoys, notification that that ASB could not draw fuel from the CSSB for 48 hours due to an insurgent attack on the logistics support area, and occasional maximum effort helicopter missions that required a surge of bulk Class III and Class V. Each of these injects required the battalion S-4s to coordinate with the SPO shop and prepare courses of action to brief the commander based

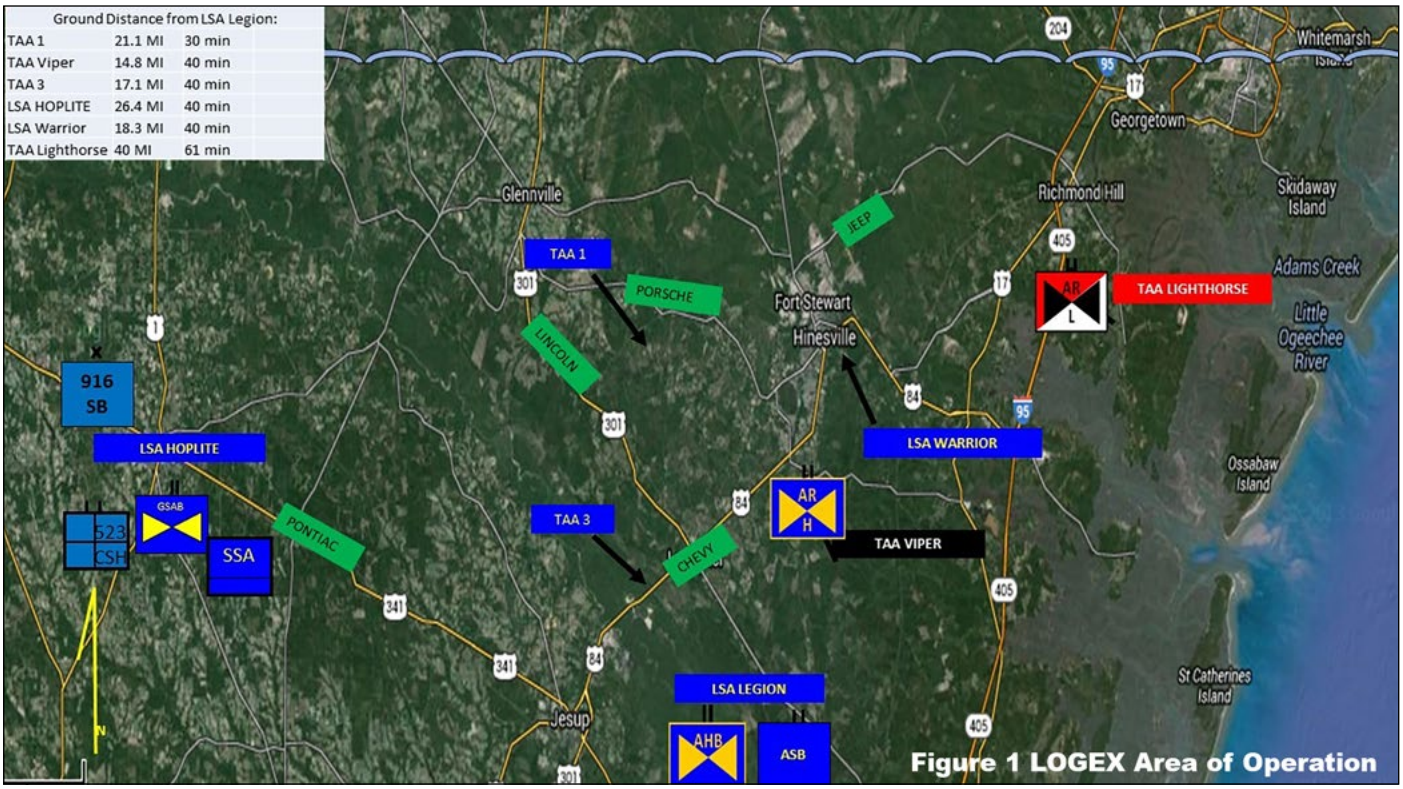


Figure 1 LOGEX Area of Operation

on remaining capabilities. During the second day, the real time to simulation time ratio was changed to 1:12 to execute four more days of simulation and challenge the logisticians to begin forecasting requirements based on multiple published injects for events occurring beyond the time of the LOGEX.

Despite the success of the exercise, a few key observations were made that will be included in the future. The two most important improvements include providing a small operations cell and including an approved ATX Annex F in the operations order. The operations cell, made up of one to two Aviation officers, would field requests for information and provide more realistic supply consumption rates for logistical forecasting. Consumption rates could also be calculated by the Joint Conflict and Tactical Simulation. The original plan for the exercise included using the Joint Deployment Logistics Model (JDLM) to push commodities to the ASB but once the operation changed to pull from the CSSB, JDLM was unnecessary. To provide the most useful product for home station training, the U.S. Army Aviation Center of Excellence needs to produce a robust Annex F for both the offensive and defensive ATX Training support packages. Other planned improvements projected for future exercises include providing a more defined end state so that the logisticians know what is expected as they forecast future requirements and providing a canned MDMP prior to the start of the exercise to allow the participating units to focus more on branches and sequels which are seldom part of warfighter exercises.

At the conclusion of the LOGEX, the participants unanimously agreed that the exercise provided a unique opportunity for the unit logisticians to become acquainted with the challenges of operating a pure combat aviation brigade in a decisive action environment, share lessons learned from recent combat training centers, refine the BCS3 SOP, and fight the plan they developed. The logisticians became familiar with upcoming TOE changes and discussed, as a group, the differences between supporting separate aviation task forces and supporting a pure CAB in a force on force fight with a near peer enemy. This new consideration also forced everyone to consider how to maintain a mobile capability while supporting a CAB displaced from forward operating bases. Finally, the LOGEX provided the opportunity to fight a developed plan, adjust to changes in the mission, and refine the forecast for future missions. At the conclusion of this exercise, the key leader participants immediately began planning the next LOGEX to further build on the leader development achieved in this event.

MAJ Patrick John Culpepper currently serves as simulations officer for the 3rd Combat Aviation Brigade, 3rd Infantry Division, Hunter Army Airfield, GA. As a Functional Area 57 officer, he supports the commander in developing training exercises and establishing the knowledge management program throughout the brigade. His previous assignments include Assistant Professor, Department of Geography and Environmental Engineering, United States Military Academy (USMA), West Point, N.Y. and Commander, F Company, 35th Engineer Battalion (One Station Unit Training), Fort Leonard Wood, MO. He has a Bachelor's Degree in Geographic Information Science from USMA, a Master's Degree in Geography from the University of Utah, and a Master's Degree in Geophysics from University of Missouri-Rolla.

Acronym Reference

ASB - aviation support battalion	**JDLM** - Joint Deployment Logistics Model
ATX - aviation training exercise	**LOGEX** - logistics exercise
BC23 - Battle Command Sustained Support System	**MDMP** - military decisionmaking process
CAB - combat aviation brigade	**PACE** - primary, alternate, contingency, and emergency
CSSB - combat sustainment support battalion	**SOP** - standing operating procedure
FAW - functional area workshop	**SPO** - support operations
FSC - forward support company	**TAA** - tactical assembly area
JCR - Joint Capability Release	**TOE** - table of organization and equipment

TURNING PAGES

~ book reviews of interest to the aviation professional

Two Steps from Glory:

A World War II Liaison Pilot Confronts Jim Crow and the Enemy in the South Pacific.

By Major Welton I. Taylor with Karyn J. Taylor. Chicago, IL: Winning Strategy Press 2012. Photographs, appendices, 376 pp. Available in softcover and Kindle formats at http://www.amazon.com/Two-Steps-Glory-Liaison-Confronts/dp/0983867712/ref=sr_1_1?s=books&ie=UTF8&qid=1440984492&sr=1-1&keywords=Two+steps+from+glory.

A book review by SFC Raymond E. Huff

In this compelling book, World War II Army Liaison Pilot, Major Welton I. Taylor takes the reader along with him from a brief period in his childhood through the end of World War II, while recounting numerous wartime experiences. It is a memoir of the challenges he faced including Jim Crow laws left over after the American Civil War, segregation during military flight training, and the dangers of fighting in a world war. The author

provides insight into how racism affected the interactions between military professionals of the United States and allied forces. Taylor's central theme is that although the war was won by allied forces, there was a continued loss to humanity in the form of humiliating post-war discrimination that limited valuable contributions from capable men.

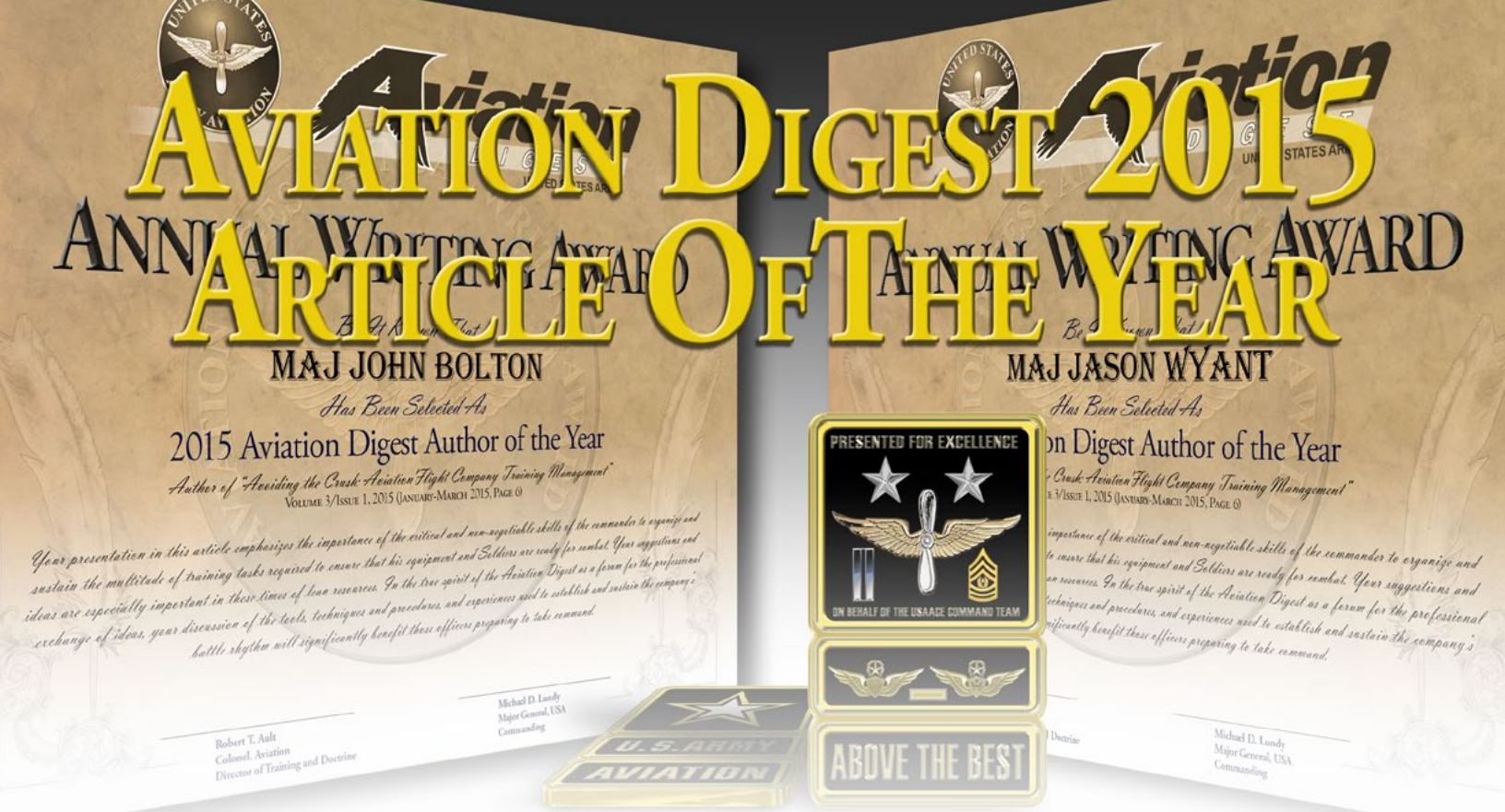
Major Taylor organizes *Two Steps from Glory* into 29 chapters with photographs mid-book. He sets the stage in the early chapters for the two separate wars he endures throughout this biography – World War II and racism. The reader is kept cognizant of the issues addressed in the early chapters. The tone of these chapters is integral to the rest of the book, as he often references the Jim Crow laws and attitude of the 1940s Army. He describes, in captivating detail, the events and efforts leading to the culmination of his training as a liaison pilot. Chapter Six, "Check Ride" binds the early portion of this book together with some resolve as Lieutenant Taylor's s intellect and skill as a pilot allow him to successfully overcome institutional prejudice to complete his final check ride and become an aviator in the U.S. Army Air Corps.

Chapters seven through 13 recount advanced training prior to deployment to Guadalcanal. Taylor describes the valuable time spent behind the "stick" of his L-4H Grasshopper, presenting how lessons learned during training were relevant throughout the war. Chapter thirteen is an introduction to Guadalcanal followed by photographs taken by the author. Taylor then puts the reader next to himself, providing suspense as he reveals events as they occur. This second half of the book provides the relevancy of its title. Taylor discusses "black troops incapable" of being combat troops and demonstrates how this was disproven. Specifically, the chapter, "Isle of Joy" notes the achievements of the segregated 93rd Infantry Division and how they were discounted by prejudiced observers who only took mistakes into account.

In the final chapter, "One War Down," Taylor ties events in the war together after his return home. In this chapter, he and other black veterans continue to experience institutional racism despite their service. Segregation still defined his life back home, just as it had dominated his military experience. Even though he was a combat veteran, there "…was no protection against racial violence." With this description, Taylor builds on the theme of this book by linking the humiliating and discriminatory events that he faced before, during, and after war. He overcame racism in his own way by becoming an award-winning microbiologist.

Ultimately, Two Steps from Glory is an uplifting story that demonstrates how a determined and resourceful individual overcame racism and discrimination to defend his country. Major Taylor's memoir is a necessary read for any military professional for its lesson on the effects of discrimination on and off the battlefield. For the aviation professional, this book provides insight into history, the evolution of tactics, and to the Aviation branch itself.

Aviation Digest 2015 Article Of The Year



We hope that the Aviation Digest is providing you with information that is informative and insightful. Without the contributions of the Aviation Digest's authors, you would have one less resource to learn from and one less opportunity to not repeat the errors of others. If our authors did not take time to share their thoughts and experiences, the Aviation Digest wouldn't exist as Army Aviation's Professional Bulletin.

With this in mind, MG Michael D. Lundy, Commanding General (CG), United States Army Aviation Center of Excellence acknowledges each author's contribution with a Certificate of Appreciation and a printed copy of the Aviation Digest containing the author's article. The Certificate of Appreciation represents our token of thanks for sharing your professional thoughts and ideas with Army Aviation.

At the end of each year, the Aviation Digest Editorial Review Board, reviews all articles from the year's four issues and recommends one article to the CG for the Aviation Digest Annual Writing Award. The author(s) of the selected article will receive a Certificate of Appreciation annotating his article as the Aviation Digest Article of the Year and a coin from the CG.

This year, the Aviation Digest, Annual Writing Award for 2015 was awarded to MAJ John Bolton and MAJ Jason Wyant for their contributions in penning "*Avoiding the Crush: Aviation Flight Training Management*", published in Volume 3/Issue 1 (January - March, 2015, pg. 6).
Read it online at: http://www.rucker.army.mil/aviationdigest/images/AD%20Jan-Mar_010715.pdf

Congratulations MAJ Bolton and MAJ Wyant!

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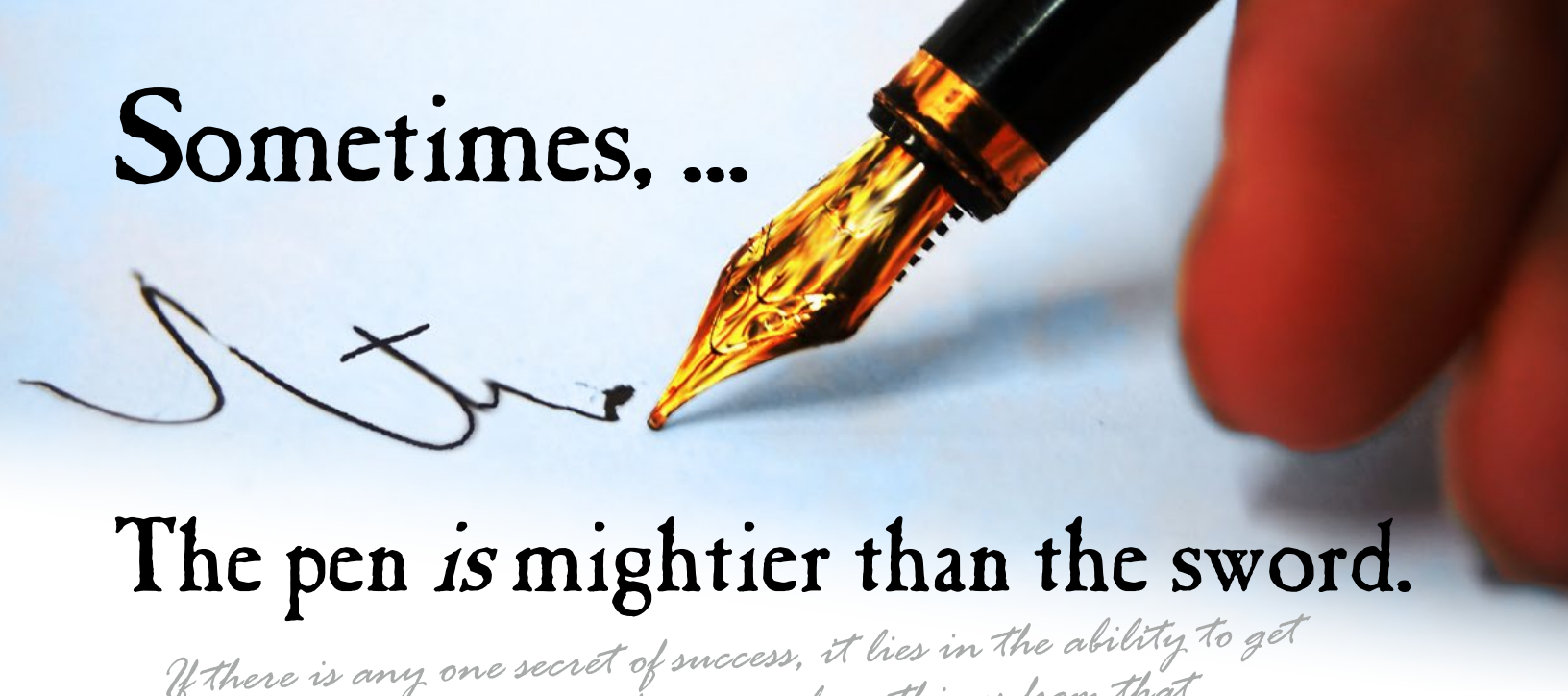
The Aviation Digest Editorial Review Board uses these three criteria.

(Note that none of the criteria indicate a requirement to be a professional writer. The Aviation Digest staff will wear the internet pipeline out working an article back and forth with a contributor to ensure the presentation is as good as we are collectively able to prepare.)

Does the article have a purpose?
- Has the author identified an issue within the Aviation branch requiring command attention/action to improve existing procedures or operations?
- Has the author recommended revised TTP for commonly accepted operational practices that simplify and increase efficiencies?
- Has the author presented an article that improves audience knowledge of doctrine or other established operational procedures?
- Has the author related an experience that others may benefit professionally or potentially prevent an aircraft accident?

Does the author present researched, factual information to support the article?
- Has the Author recommended a realistic solution to remedy or improve those conditions causing a perceived deficiency?
- Has the author presented a discussion based on facts and not suppositions, generalizations, or vague innuendoes?

Does the author present his article as an organized discussion – introduction to the issue, background information, and meaningful presentation of discussion points, summary, conclusion?
- Was the article easy to read and follow the discussion points?
- Did you understand the author's message?



The pen *is* mightier than the sword.

If there is any one secret of success, it lies in the ability to get the other person's point of view and see things from that person's angle as well as from your own. ~ Henry Ford

We cannot solve a problem by using the same kind of thinking we used when we created them. ~ Albert Einstein

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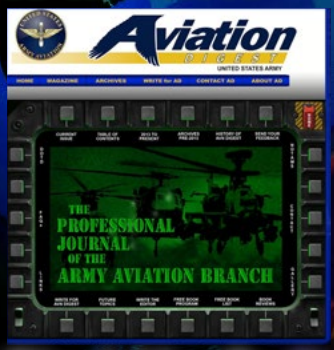

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