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Air-Ground Operations

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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

~ the simultaneous or synchronized employment of ground forces with manned and unmanned, rotary - and fixed - wing aviation, and fires to seize, retain, and exploit the initiative.

Editor's Note

Those of us who entered the Army during the 1990s or earlier may remember a time when the relationship between Aviation and our ground maneuver counterparts was certainly less than what one would call a "brotherhood." Through demonstrated tenacity and unwavering support to ground tactical commanders over the past decade, however, Aviation now enjoys a well-earned reverence from our brothers and sisters in arms. MG Mangum refers to this as trust, and it is something we dare not squander.

Our focus in this issue of Aviation Digest is Air-Ground Operations; a term which replaces Air-Ground Integration. More than mere semantics, air-ground operations represent the next logical and necessary step in the evolution of combined arms as part of unified land operations. Whereas air-ground integration concentrated on the synergistic effects of air, ground, and fires components at a decisive time and place, air-ground operations demand that these elements come together during the initial mission planning and remain absolutely melded through execution. Air-ground operations seeks to harness, and build upon, the relationships and mutual trust we have forged with ground maneuver and fires over the past decade.

FM 3-04, Army Aviation, now reflects the transition to air-ground operations. Since doctrine writers from all of the Centers of Excellence are in constant collaboration as they strive to revise the Army's doctrinal library before the end of 2015, you can expect to see similar language across all publications. The doctrines of air land battle and full spectrum operations charted the evolving role of Army Aviation since the establishment of the Aviation Branch. Unified land operations strives to keep the best of previous doctrine, incorporate the innovations and capabilities gained over the past decade of conflict, and anticipate the environments of future conflicts. Air-ground operations represent a critical part not only of the future role of Army Aviation, but of our relationship with our ground counterparts.

ABOVE THE BEST!

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The Command Corner

We have recently replaced the term air ground integration with air ground operations. This change was brought about when the Commanding Generals of the Maneuver and Fires Centers of Excellence and I agreed on a revised description in July 2013. The seemingly nuanced change is central to our collective focus on air-ground combined arms operations as the means to achieve combined arms maneuver and wide area security in Unified Land Operations. Air- ground integration suggests bringing together disparate entities instead of the inextricable link between air and ground in air-ground operations.

Air-ground operations can be described as the simultaneous or synchronized employment of ground forces with manned and unmanned, rotary- and fixed-wing aviation, and fires to seize, retain, and exploit the initiative. Effective air-ground operations are built upon relationships, mutual trust, and a common understanding of the operational environment, current operation, and mission. They require detailed planning, coordination, and synchronized employment of ground, air maneuver and fires in order to achieve the commander's objectives and ensure freedom of movement and action.

Our publication of FM 3-04 this year will be the first Army doctrinal publication where we have described, defined, or codified the importance of orchestrating air and ground operations in how we fight. And the articles in this issue of the Aviation Digest clearly demonstrate the critical relationships that exist in air-ground operations and the intent of our revised definition and description. At the company level, the conversations of the aviation and ground company commanders in the reprint from the April 2006 Army magazine, "Building Combat-Ready Teams Air Ground Integration" in this issue highlight the relationships, mutual trust, and the common understanding of the environment, operation, and mission that is air-ground operations.

I used the words "inextricable link" earlier and emphasize that Army Aviation, from the onset, has been a critical element of air-ground operations. Thaddeus Lowes' first use of a balloon to observe and report at the First Battle of Manassas and later use in the Civil War as an artillery adjusting platform, the coordinated use of U.S. Air Force fighter and artillery preparation of landing zones in Vietnam, the Cold War emphasis on SEAD and JAAT, and the incredible relationships between Army Aviation and the Soldiers on the ground in Iraq and Afghanistan are all testimony to Army Aviation as an inextricable component of air-ground operations.

Our focus is to support and serve the ground force commander. We wear the same uniform, endure the same training and enjoy the same culture. We are American Soldiers, proud Army Aviation Soldiers. As we look to the future, in an uncertain world with complex, hybrid threats and certain fiscal challenges, we must do all we can to maintain this precious trust, hard earned over years of toil in the fight. We must continue to focus on the training necessary, in both the operational and institutional force, to enable air-ground operations so leaders are competent and confident in their ability to leverage all elements of combat power at the decisive point and time.

ABOVE THE BEST!

MG Kevin W. Mangum
CG, U.S. Army Aviation Center of Excellence and Ft. Rucker

Home-Station Air-Ground Training: Embracing Challenge as Opportunity

By LTC (P) Charles R. Bowery Jr.

In my current duty position on the Joint Staff, I am fortunate to be exposed to the thoughts and ideas of the current Chairman of the Joint Chiefs of Staff, General Martin Dempsey. General Dempsey encourages all of us across the services to approach the current national security environment, which is more dangerous and uncertain than ever, with optimism and aggressiveness. He constantly reminds us that although the United States (U.S.) military may do less in the future as we downsize "we cannot afford to do it less well." Instead of viewing our growing financial constraints and uncertain threats as obstacles or limitations, he sees them as opportunities to improve on our core competencies, to reinforce basic principles, and to get back to leader development and training instead of seeking a materiel "silver bullet" for every military problem. This worldview is absolutely critical for Army Aviation as we enter a turbulent period. It will enable us to continue to live up to the sacred trust placed in our branch by the Soldiers on the ground that we support.

As the Army updates its doctrinal base under the Doctrine 2015 program, the U.S. Army Aviation Center of Excellence, the Maneuver Center of Excellence and the Fires Center of Excellence continue to cooperate to improve all-arms, air-ground maneuver doctrine and training. An outgrowth of this collaboration process was a recommended change of the doctrinal term air-ground integration (AGI) to air-ground operation (AGO), a change that is set to take effect with the publication of the new FM 3-04, Army Aviation. This is more than just a semantic shift. The term AGO conveys the message that infantrymen, tankers, artillerymen, and aviators are all critical, integrated parts of the combined-arms team. Aircrews are not "enablers," interchangeable pieces inserted into a plan to ensure mission accomplishment. Rather, they are part of a maneuver arm that operates in the third dimension, focused on support to ground operations, and must be integrated in planning, preparation, execution, and assessment from the very beginning. Training that combines aircrews and aviation unit staffs with ground formations and staffs is the critical path to success in upholding this trust. The brigade aviation element (BAE) at the brigade combat team (BCT) level has the personnel and skill sets to facilitate AGO training. I have included some thoughts from a serving brigade aviation officer (BAO) to reinforce these ideas. With some creativity and a shared doctrinal baseline, combat aviation brigades (CABs) and battalions can execute AGO training at each echelon from crew/squad to brigade level in a variety of venues, many of which require no blade time. What follows is certainly not new, but rather a re-affirmation of some first principles of our branch and our Army.

Build and Maintain Relationships

The pace of recent operations, combined with the Army Force Generation (ARFORGEN) process, has broken the habitual relationships that should form the basis of AGO training. As we come out of Afghanistan, these opportunities will again present themselves. Make an effort to get to know the ground maneuver units in your division or on your installation. Learn about their missions and develop working relationships before you are tasked to support them for a combat training center (CTC) rotation or an overseas contingency. The BAO, an Army aviator assigned to the BCT staff, can and should facilitate habitual training relationships. Battalion-to-battalion exchanges of liaison officers, particularly for training exercises, can be beneficial as well.

One of the benefits of recent operations in Iraq and Afghanistan has been a general improvement in AGO techniques at the individual Soldier and aircrew/team level. The lack of routine interaction created by the ARFORGEN process has forced all parts of the AGO team to rely on doctrine and standard operating procedures to replace habitual relationships. This is a good thing to a point, because it can prevent the buildup of bad habits fostered by familiarity. Our challenge in the post-Global War on Terror Army will be to capitalize on the individual skills and experiences we have gained as an Army, while adding habitual relationships, which will be critical for future contingencies, back into the mix.

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Understand and Use Army Training Doctrine

If you served in an aviation unit before September 11, 2001, you have some memory of combined-arms training in a garrison environment, but if you have not reviewed the tools available to you now in Army training doctrine, you are missing out. Army Doctrine Publication 7-0 Training Units and Developing Leaders, is supported by a huge variety of resources on the Army Training Network. One of your critical resources in developing AGO training should be the Combined Arms Training Strategy, which is linked into the Digital Training Management System, and features task-based approaches to training mission essential task list tasks, both in the air and on the ground. The Army's eight-step training model is still valid, and it works! A return to training doctrine will help aircrews and staffs re-learn combined arms synchronization, particularly airspace management, synchronization and clearance of fires, and platoon/company/battalion employment.

There are so many of my peers in brigade and battalion positions that have never managed airspace and fires in a dynamic decisive action training environment (DATE). The transition from persistent stability operations to a more conventional environment has been difficult for ground organizations. We're the first Stryker BCT to go through a DATE rotation at the National Training Center (NTC). It's painful for us… and we're the ground force! I know it's painful for aviation, especially shedding the team-of-two mentality and point of intercept pick up for medical evacuation (MEDEVAC).

- A current brigade aviation officer

Capabilities and Doctrine

Begin the AGO training process with a shared understanding of the doctrine and capabilities of both air and ground units. Doctrine 2015 has produced a number of significant changes in combined-arms doctrine; you must speak the same language as the maneuver elements you support. An officer professional development (OPD)/non-commissioned officer professional development (NCOPD) series that begins with a doctrinal overview and continues to a series of capabilities briefings would be a good start. The capabilities discussion should move beyond hardware; conducting a static display is enjoyable, but insufficient by itself. Both the airframe and the ground weapons system or units have unique capabilities with regard to maneuver, weapons, communications, and protection. Building this discussion into sergeant's time training would also be a productive method. The bottom line is that the aviator, infantryman, and tanker all see the world (literally) through different lenses. In order to fight and win together, each part of the air-ground team must understand these viewpoints.

We do this in my brigade. Before a unit is allowed to conduct platoon or company air assaults (or air movements) or aerial fires training, they have to have an AGO briefing from the aviation unit as part of the initial planning conference for the event. It includes things like close combat attack (CCA) training in the simulators, hot load/cold load training, MEDEVAC drills, etc. The cross training has been beneficial. Most importantly, it's fostered a good relationship between the BCT and the CAB. It also means that my brigade's Soldiers feel comfortable with asking questions and speaking confidently about aviation operations with other aviation organizations that we receive support from.

- A current brigade aviation officer

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As unmanned aircraft systems (UAS) become more important across the Army, do not leave them or their operators out of your training plan. As CABs field Gray Eagle platoons and Shadow troops in reconnaissance squadrons, aviators will need venues in which to learn the employment of these systems. The CAB can learn a good deal from supported BCT staffs, which have been employing Shadow UAS for some years now. In turn, the CAB has a lot to teach supported BCTs about aircrew training program (ATP) management, command and control of aviation assets, airspace management, and risk management.

Leverage Simulation and Ground Training

Simulation will become more important than ever in a period of shrinking budgets and limited flying hour programs. The good news is that you do not have to be in the aircraft to conduct challenging AGO training. Radio exercises, cold-load training, and landing zone/pick-up zone setup and operations rehearsals can all take place in the unit area without expending flying hours. The Army's investment in gaming and simulation means that you can execute multi-echelon combined arms and staff training in the virtual/constructive world. As you plan situational training exercise lanes or air-mission commander training in the aviation combined arms tactical trainer, invite your supported BCT to take part. Return the favor by working with them in the close combat tactical trainer to better develop your understanding of the ground Soldier's challenges. The new command post exercise-functional brigades will give CAB staffs an off-the-shelf, low overhead training venue, into which you can further integrate ground maneuver staffs for increased realism.

Building on the theme of doctrinal proficiency and shared understanding, your OPD/NCOPD series could eventually develop into map exercises, walking rehearsals, or the tactical exercise without troops, a "golden-oldie" that has never truly gone out of style. Be sure to invite BAE personnel to these events for their professional development. These sorts of training events lend themselves to true combined-arms operations, versus CCA, and thus reinforce the doctrinal baseline you built at the beginning of this process. Some time for ground maneuver Soldiers in the Longbow crew trainer will convey a greater understanding of weapons effects, sensor and communications capabilities and limitations, and manned-unmanned teaming capabilities and limitations.

Build AGO Training Around Gunnery

Aviation gunnery or tank/Bradley gunnery offer ideal venues for AGO training. The proposed revision of the aviation gunnery manual, which aligns air and ground tables to the same numbering system, facilitates integration. Table VI is now the crew qualification table for both air and ground crews, and Tables VII through XII give the commander a great deal of latitude in designing engagements that are area of responsibility or deployment scenario-based. If you can include BCT Shadow operators in your aerial gunnery tables, so much the better. Consider also inviting a BCT to provide script readers for gunnery tables. If your engagements are built around AGO or CCA, this is a natural training opportunity both for ground Soldiers to train in controlling aviation, and for aircrews to work through positive identification and clearance of fires with actual maneuver partners. The new digital air-ground integration ranges (DAGIRs), now being fielded in several locations across the Army, allow for combined-arms live fire training, and have fully instrumented after action review capability. Even installations that do not receive DAGIR will receive home station range upgrades, to include "AGI villages" with more realistic target options. For true multi-echelon training, the aviation battalion staff can deploy to the gunnery range, set up a main command post, and conduct operations from the field site while crews conduct scenario-based qualification tables. The aviation battalion can then "plug in" to a supported BCT, also conducting gunnery or a field training exercise. If the aviation battalion is organized as a task force, utility and cargo crews can conduct air assaults or sustainment missions, and MEDEVAC teams can support all operations. This type of multi-echelon training is particularly useful for units preparing for a CTC rotation.

> ***Artillery and air deconfliction is the hottest topic at our NTC rotation at the moment. Our unit is the first to have a significant plan in place to manage the airspace for clearance of fires. I cannot stress this enough: the sooner you practice clearing air and fires with a BCT, and its airspace command element in the BAE, the better the aviation brigade will be at supporting the ground scheme of maneuver, preventing fratricide, and keeping fires responsive to the needs of the ground force. It shouldn't take 26 minutes to clear air for artillery fires… yet, that's normal at NTC. This is due to our experiences in persistent stability operations and our fetish of the restricted operations zone, which all comes from not having habitual relationships and developing deconfliction procedures with the ground planning staff.***
> - A current brigade aviation officer

Coach Ground Unit Commanders and Staffs in Understanding Aviation Risk Mitigation

While it is unnecessary for ground maneuver leaders to understand every detail of aviation risk mitigation, a sound overview of these processes will better allow them and their staffs to integrate aviation into combat operations. Aviation commanders should engage their ground counterparts with the basics of crew selection, weather, fighter management, and the mission briefing and approval process. Again, this does not make them experts in these areas nor does it allow aviation commanders to abdicate their responsibilities in risk management; but, it does facilitate AGO by producing a better-informed ground commander, who is better able to balance the assets at his or her disposal and accomplish the mission.

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Leverage the Brigade Aviation Element

Too often, the BAE becomes a glorified air mission request (AMR) cell, processing movement requests in a vacuum from the rest of the BCT staff and the supporting CAB. Use the BAE to your advantage. At a minimum, the CAB commander should work with supported BCT commanders to select BAOs for the units the CAB supports at home station; this selection should "hurt" the CAB, in that the aviation unit must send some of its best to these positions. The payback is a greater level of integration, and better staff advice to the BCT commander. The CAB staff should support and empower the BAE when planning AGO training; this is the best way to accomplish both aviation and ground maneuver training objectives.

Because BAO positions reside within the BCT's table of organization and equipment, these positions are centrally managed by Human Resources Command. This process does not prevent the CAB commander from getting involved, however. Since the CAB commander is usually the senior aviator in the division, he or she should offer to take an active role not only in filling BAO positions, but also in supporting and mentoring BAOs over time and placing the right aviators in other BAE positions (assistant BAO, survivability officer, UAS warrant, air traffic services Soldiers).

The better folks we slot into these roles, and the better you care for their careers during that process, the more apt BAOs will be to work hard and accept the duties. If they're hand-picked for their job by their CAB leadership, they know they'll be remembered when the "hard KD" slate is examined.

- A current brigade aviation officer

Train From the Simple to the Complex

The team-level operations of the past decade, focused around small-unit air assaults and the CCA, have established a high degree of trust between ground and aviation maneuver Soldiers, but this focus has caused more complex skills to deteriorate. The Army's ability to synchronize ground and air maneuver—intelligence, surveillance, and reconnaissance—and fires, for extended periods, has atrophied to a great degree. When visualizing home-station AGO training, it is best to begin with the known, those team-level operations for which there is already established proficiency, and move toward the "graduate" level as familiarity and proficiency expand. This process could begin with CCA iterations during aviation gunnery or during aviator readiness level progression training, and move toward a battalion-level zone reconnaissance culminating in a hasty attack, or a deliberate obstacle breach combined with a deliberate attack. The CTC observer/trainers have acknowledged these missions to be among the most complex of all combined-arms operations. Focus Soldiers and aircrews on the basics—fundamentals of reconnaissance, target identification, radio procedures, "talk-ons," CCA five-line— before moving on to the synchronization aspects of AGO.

Airspace, airspace, airspace! The biggest "money makers" for the BAE/air-defense and airspace management cell are clearance of fires and air, airspace management, personnel recovery management, and small UAS ATP management. If you can get BAEs tackling those difficult tasks, the AMR process isn't difficult to build later (which is what most BAOs tend to focus on due to our previous experience in persistent stability operations in Operation Iraqi Freedom and Operation Enduring Freedom). The decisive action training environment is very focused on the BAE's role as the brigade airspace command element, especially with NTC. Helping the BAO through that understanding and planning process is crucial.

- A current brigade aviation officer

Again, none of what I have described here is new or ground-breaking, but our branch has crossed a generational divide where we can no longer assume these skills to be second nature. In making the effort to train with supported ground maneuver units on your installation, you will improve the tactical skill of the entire combined-arms team, while continuing to reinforce the personal relationships that have made our tactical formations unbeatable in the close fight.

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LTC Bowery wishes to thank COLs Jeff Thompson and Michael McCurry, LTC Geoffrey Crawford, and MAJ Nicole Dean for their input to this article.

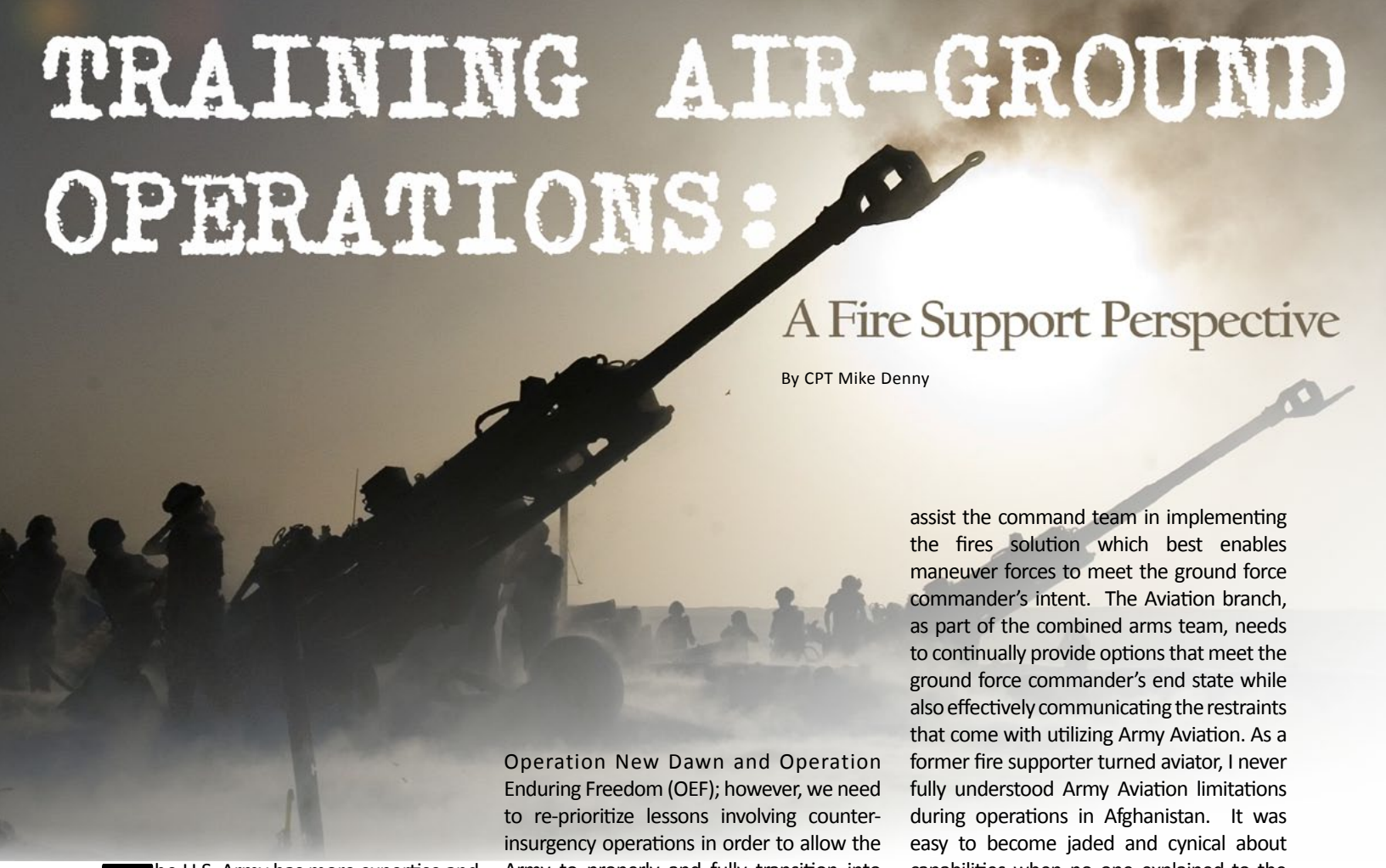
Acronym Reference

ARFORGEN – Army Forces Generation	CAB – combat aviation brigade
AGI – air-ground integration	CCA – close combat attack
AGO – air-ground operation	CTC – combat training center
AMR – air mission request	DAGIR – digital air-ground integration ranges
ATP – aircrew training program	DATE – decisive action training environment
BAE – brigade aviation element	NTC – National Training Center
BAO – brigade aviation officer	MEDEVAC – medical evacuation
BCT – brigade combat team	UAS – unmanned aircraft system

TRAINING AIR-GROUND OPERATIONS:

A Fire Support Perspective

By CPT Mike Denny



The U.S. Army has more expertise and experience in air-ground operations (AGO) in support of small unit action than any time in history. As the force transitions from combat operations in Afghanistan to future battlefield operations defined in Army Doctrine Reference Publication 3-0, Unified Land Operations (ULO) and the Joint Operational Access Concept, there is a chance to lose critical relationships that have developed between the maneuver, fires, and aviation communities during the past 10 years of counter-insurgency operations. As seen in past interwar periods, the perishable combat skills, habitual relationships, and lessons learned can atrophy and become forgotten. This article will focus on training and operational considerations for AGO from the perspective of fire supporters in conventional maneuver and fires units. The U.S. Army has learned many important lessons during combat operations in support of Operation Iraqi Freedom (OIF)/ Operation New Dawn and Operation Enduring Freedom (OEF); however, we need to re-prioritize lessons involving counter-insurgency operations in order to allow the Army to properly and fully transition into ULO. This article will discuss areas of future growth for the air-ground team and address the growth of manned and unmanned teaming.

Enabling maneuver is the heart of AGO. Army Aviation should not be considered merely as a supplement for the maneuver of ground forces any more than attack aviation should be considered as a means to destroy enemy forces as an end in itself. It is vital that aviators know the heart of their mission is as a member of the air-ground team. From the aviation commander's perspective, AGO becomes something akin to a sales pitch. Aviation has invaluable tools that can assist the ground commander, but if not properly packaged and presented to the consumer then those tools will never be used to their full potential. The aviator's relationship with the ground commander is incredibly similar to that of the fire supporter whose task is to explain fires options and assist the command team in implementing the fires solution which best enables maneuver forces to meet the ground force commander's intent. The Aviation branch, as part of the combined arms team, needs to continually provide options that meet the ground force commander's end state while also effectively communicating the restraints that come with utilizing Army Aviation. As a former fire supporter turned aviator, I never fully understood Army Aviation limitations during operations in Afghanistan. It was easy to become jaded and cynical about capabilities when no one explained to the ground team the effects that weather, power management, fuel consumption, and landing zone slope limitations have on the supporting aircraft's ability to meet the mission requirements.

Training AGO Doesn't Require Pilots to Fly

A training exercise in which pilots do not get to fly is never popular. However, in the age of decreasing budgets and stringent flight hour programs, there are numerous mutually beneficial training opportunities that do not require an aviator to step foot in the cockpit. Heresy aside, the partnership and relationship with supported units can be fostered via table talk, tactical exercises without troops, and by conducting simulation training in such devices as remote vehicle trainers and call for fire trainers . In preparation for deployment to Afghanistan, my unit used brigade aviation element and fires staff members to play

the roles of an attack aviator responding to fire support Soldiers call for fires and target orientation. By building the mechanics of proper radio transmissions in a non-threatening training environment, it reduced the stress during combat operations. A good lead into any of these training exercises is to review one of the many available YouTube or Defense Video & Imagery Distribution System videos of attack helicopter target engagements from multiple angles and then conduct an after action review of the performance as a kick-off to training. An incredibly useful tabletop exercise involved my fire support staff conducting call for fire refresher training for utility helicopter pilots in a classroom environment followed by a simulation exercise in the call for fire trainer. Another technique that proved effective was adjusting the aviator's perspective by taking them to an observation point in the field to observe initial and adjusted call for fire by forward observers. This exercise provided a perspective that allowed pilots to better understood the limitations of supported forces. And likewise, whenever possible, the use of familiarization rides for ground elements offers a better perspective when describing targets or air assault infil and exfil locations. Understanding one another's limitations and capabilities only provides for better situational awareness and partnership between aviation assets and ground forces during combat operations.

Training air-ground operations doesn't have to be fancy

Attack and scout reconnaissance aircraft have provided world-class support to combat operations demonstrating that AGO doesn't have to be fancy. Creative AGO training can even be conducted by utility aircraft; the main value for ground forces being the mechanics of integrating the 3rd dimension into their operations and de-conflicting rotary-wing aircraft with direct and indirect fires, fixed- wing aircraft, and unmanned aircraft systems (UAS). Everything that occurs within the aircraft is transparent to the supported ground force. For the aviation element, the exercise can be molded to meet specific aircrew training manual tasks within the cockpit. For example, using lift aircraft to move forces to a remote training location and then exercising the crew in an observer or call for fire role and simulating a medical evacuation mission at the end of the training period maximizes the blade hours for training both the aviation crew and the supported ground forces.

As the Army transitions into a budget constrained environment, live fire munitions may be limited to gunnery qualification exercises. The aviation unit commander, however, should never miss an opportunity to integrate ground forces into a live fire exercise, even for qualification gunnery. The habitual relationship created by taking advantage of these events pays huge dividends when the air and ground units enter the fight the first time. Even if the ground observer does not talk directly with the pilots, working through the mechanics of orchestrating an engagement and witnessing the effects of attack aircraft munitions are incredibly valuable for fire supporters. This becomes more important as the number of Soldiers with combat experience will decrease in the coming years. Additionally, receiving call for fire information from a variety of ground elements will enhance the pilots' ability to interpret "non-standard" information from the less seasoned ground element. The first time I witnessed a live explosion on a range it was surprisingly underwhelming, but it did give me an appreciation for which munitions I would need to later target hardened structures down range. A Soldier lacking in combat experience and who may have never observed the effects of live munitions due to budget constraints, may expect results beyond the capabilities of those munitions.

Don't Forget your Maps

It is vital that AGO is conducted both through analog communications and digital army battlefield control systems. Despite wishful thinking of future war theorists, the most common battlefield for Soldiers will likely be an unconventional one against an enemy with increasingly complex capabilities in conventional weapons, including advanced electronic and cyber capabilities. A training progression with supported ground forces should include degraded analog missions and digital missions. By pulling the plug on advanced digital systems in the midst of a simulation or exercise, it forces units to retain the ability to execute communications and fires deconfliction through "old school" methods using charts, radios, and common sense.

When available and possible, AGO should integrate digital communications in order to reduce the sensor to shooter time lag. The advanced field artillery tactical data system has the means to receive digital call

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for fires from individual aircraft reducing dependence on voice systems that may be affected by distance, line of sight, and enemy electronic warfare capabilities. Digital systems often provide an over the horizon technology that requires significant man hour expenditure to train and is often overlooked for the sake of "getting it done". As a training cycle progression, AGO should be conducted analog, followed by digital, and then degraded digital. These systems can all be experimented with during simulated exercises that do not require units to even leave the flight line in order to get the digital systems up and working. Concepts can be exercised through creative restructuring of scenarios in simulations using the aviation combined arms tactical trainer and the joint combined arms training system.

AGO is not only about the Infantry

Army Aviation has developed an amazing amount of expertise since 2001 with very low loss ratios due to well trained crews and institutional support. Conducting air assaults into contested landing zones (LZs) has been nearly perfected by aviators considering challenges such as dust landings and high altitude power management issues. On the attack reconnaissance side of the house, supporting troops in contact, particularly dismounted maneuver, mounted maneuver, and special operations forces, has been their bread and butter. As the Army transitions to a battlefield with more complex enemy threats, integration with fires and effects forces as well as intelligence support will increase battlefield survivability. The lost art of joint suppression of enemy air defense (JSEAD) will be increasingly important. Limited exposure to robust enemy air defenses during operations over the past ten years have resulted in degraded skills in the simultaneous integration of surface fires, attack aviation, and close air support. Formal airspace controls incorporating restricted operating zones as a means to control fires have created a procedural dependency. This dependency has limited the ability to utilize informal airspace coordination procedures which would allow for rapid airspace deconfliction and result in more efficient target engagement. More efficient airspace deconfliction can be executed through both digital communication and live training exercises following the joint firepower control exercise concept heavily relied upon by the special operations aviation community. Even though seemingly complicated, a joint firepower control exercise is really just a joint air attack team with integrated surface fires. This reduces risk to maneuver forces and simplifies surface danger zone planning for stateside installations, while exercising the muscles of the joint fires team.

Direct communications from aircraft to firing units is incredibly important on a battlefield even with rudimentary air defense artillery (ADA) threats. It becomes magnitudes more important against a complex ADA threat. On several occasions in Kunar Province in the spring of 2009, my unit engaged enemy heavy machine guns observed by Kiowa Warrior

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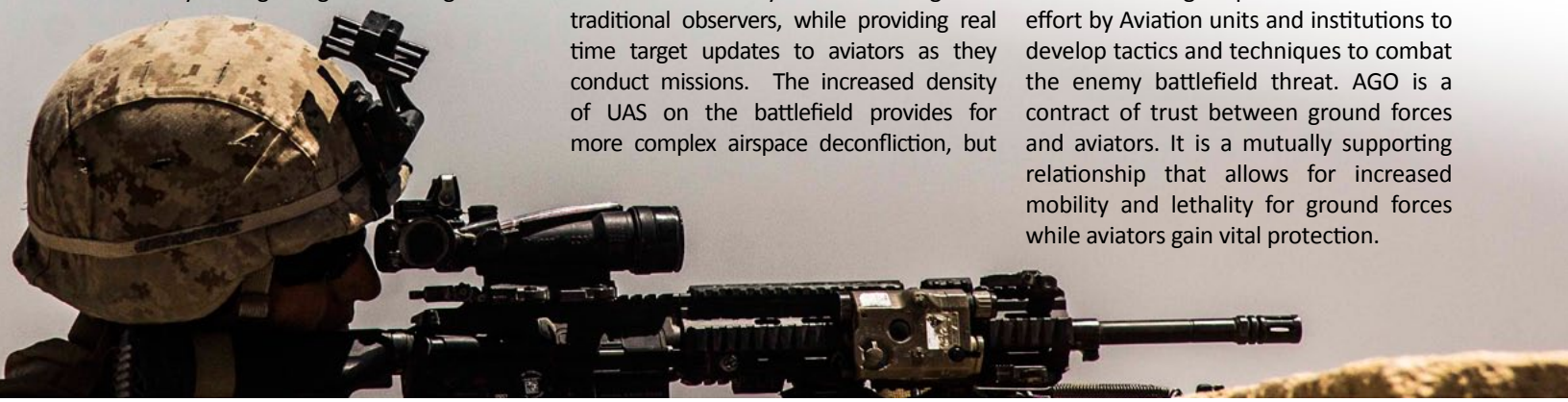
aircraft directly communicating to my artillery fire direction center. While airspace coordination and strike approval were conducted with digital communications, the important local deconfliction and relationship building between the artillery and aviation units were completed via radio. After the initial success of engaging a heavy machine gun position by one team, Kiowa aircraft within that unit continued to utilize our fire direction center to engage targets of opportunity. This tactical situation can be recreated at home station training events by coordinating with brigade combat teams to support artillery unit gunnery tables with aerial observers. The ability for the lead members of the joint air attack team to observe indirect fires will be increasingly valuable as the Army transitions to ULO.

A critical skill for towed artillery units that is often overlooked because of its complexity and competing demands for training is the ability to increase their battlefield mobility through single or multi-gun raids. In a battlefield constrained by a lack of navigable roads, in areas such as jungle or mountainous terrain, the ability to emplace cannon units to support troops in contact is crucial. For a historical example, see the story of the artillery units at LZ Falcon supporting the Battles of LZ Albany and X-Ray. Even in Afghanistan, U.S. artillery units regularly performed "one gun raids" between forward operating bases to leverage fire support into areas where howitzer fire was unavailable. Notably, Bravo Battery, 4-319th Airborne Field Artillery Regiment performed such missions in 2008, relocating in between Combat Outpost Monti and Fortress in Kunar Province to support an infantry platoon in Chowkay Valley with expanded fire support not normally under artillery coverage.

Fielding of the Gray Eagle UAS to the division, is a great AGO tool that will increase responsiveness for JSEAD. The Grey Eagle UAS coupled with common sensor data transmitted to the cockpit and to ground observers provides the ability to conduct JSEAD missions beyond line of sight of traditional observers, while providing real time target updates to aviators as they conduct missions. The increased density of UAS on the battlefield provides for more complex airspace deconfliction, but can be resolved in both digital and analog environments through proper utilization of aircraft stacks and local deconfliction from surface fires. Command and staff elements must resist the urge to control the battlefield by using UAS to monitor friendly forces during operations using the full motion video as a means for situational awareness. The "soda straw" view of the battlefield provides limited situational awareness and prevents the platform from being used most importantly as a means to target and destroy enemy forces.

Keep it Simple

As the Army shifts to the ULO concept with strategic changes including air sea battle operational theory or operations in an anti-access environment, the vital AGO lessons learned during OEF and OIF could possibly be relegated as unimportant and archaic principles of the counter-insurgency battlefield. The sometimes painful and costly lessons in money and manpower due to poor intelligence and enemy threat modeling required a coordinated effort by Aviation units and institutions to develop tactics and techniques to combat the enemy battlefield threat. AGO is a contract of trust between ground forces and aviators. It is a mutually supporting relationship that allows for increased mobility and lethality for ground forces while aviators gain vital protection.



Mike Denny is a National Guard Officer who spent six years as an Artillery officer before retraining as a UH-60 Blackhawk pilot. He served in fire support assignments at the company, battalion, and brigade level including two operational fires deployments in support of Operation Enduring Freedom in Regional Command-East. He is currently serving as a Headquarters Company Commander for 28th Combat Aviation Brigade, Pennsylvania Army National Guard. He is also a contributing editor to Red Team Journal, an online journal focused on Red Teaming and alternative intelligence analysis.

Acronym Reference

AGO - air-ground operation
JSEAD - joint suppression of enemy air defense
LZ - landing zone
OIF - Operation Iraqi Freedom
OEF - Operation Enduring Freedom
ULO - unified land operation
UAS - unmanned aircraft system

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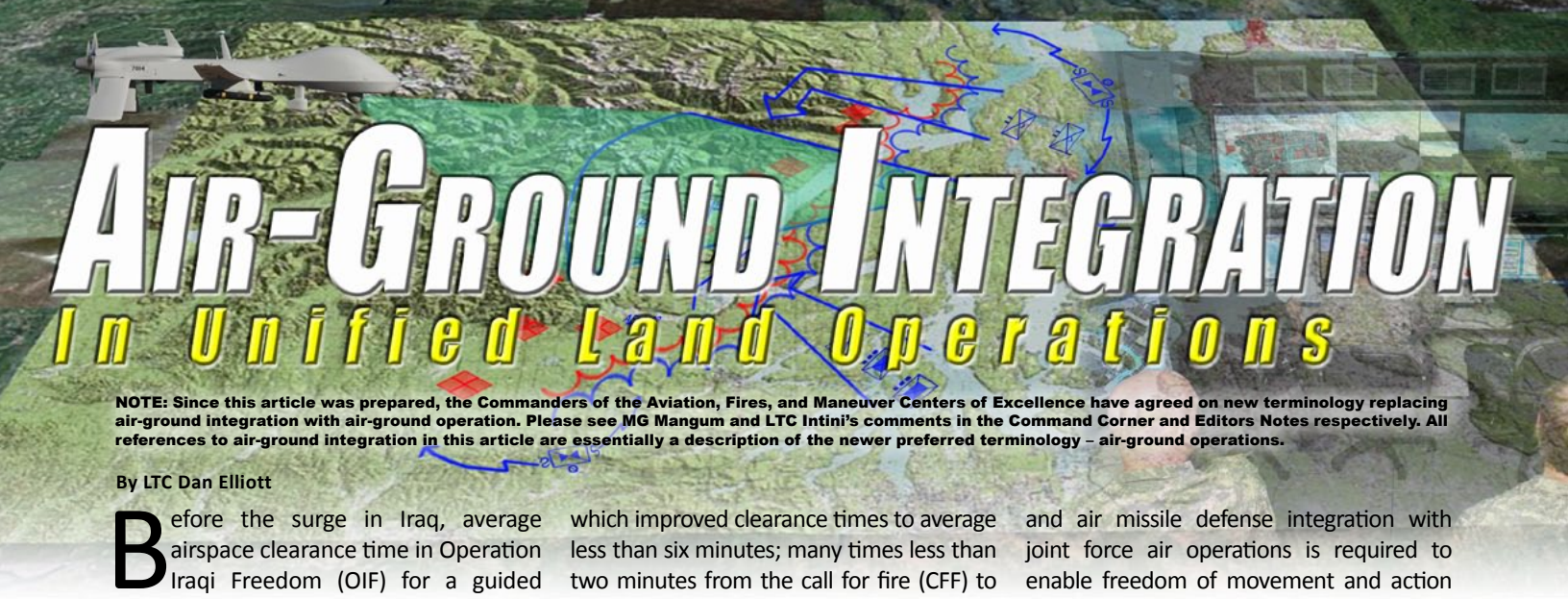

Air-Ground Integration

In Unified Land Operations

NOTE: Since this article was prepared, the Commanders of the Aviation, Fires, and Maneuver Centers of Excellence have agreed on new terminology replacing air-ground integration with air-ground operation. Please see MG Mangum and LTC Intini's comments in the Command Corner and Editors Notes respectively. All references to air-ground integration in this article are essentially a description of the newer preferred terminology – air-ground operations.

By LTC Dan Elliott

Before the surge in Iraq, average airspace clearance time in Operation Iraqi Freedom (OIF) for a guided multiple launch rocket system (GMLRS) fire mission averaged 45 minutes. The long pole in the tent was usually getting clearance through the fixed wing control readiness center or with the air support operations center as they were separately located from the requesting tactical echelon. As a result, they lacked situational understanding of how much or how little airspace was required to clear the mission.

This failure to gain understanding caused delays in clearing vast areas of airspace between the gun target line at all altitudes. Similar delays occurred in the brigade combat team and division operations centers clearance of fires process, when the fire support element was not collocated with the air defense airspace management and brigade aviation element cell, G-3 air liaison and tactical control air party (TACP), or air liaison officer.

In March of 2007, following the Joint Fires Conference at Multi-National Corps-Iraq (MNC-I), a joint working group developed tactics, techniques, and procedures to improve airspace clearance through air-ground integration (AGI). This effort was centered on collocating rotary-wing, fixed-wing, and fires liaisons and integrating their systems within current operations under the direction of the G-3/S-3 at echelon from brigade level to corps.

Additionally, MNC-I mandated bi-weekly battle drill rehearsals involving the functions of fire support, air space control, air maneuver, and reconnaissance and surveillance. Consequently, efficiencies developed due to common shared understanding in executing the battle drills, which improved clearance times to average less than six minutes; many times less than two minutes from the call for fire (CFF) to the GMLRS shot.

The fundamental characteristic of the Army necessary to provide decisive land power is operational adaptability -- the ability of Army leaders, Soldiers, and civilians to shape conditions and respond effectively to a broad range of missions, changing threats, and situations with appropriate, flexible, and responsive capabilities. How rapidly the Army responds is incumbent upon the speed at which knowledge is received and then appropriate action applied. Air-ground integration is a sustainable best practice that offers a justifiable solution to enhance and increase command post operational agility at echelon.

Air-ground Integration

Although there is no current published definition of AGI as a term, one can find it referenced in Army combined arms doctrine, Army mission command doctrine, and joint operations doctrine in multiple publications. Not only that, but it becomes readily apparent to the combined arms leader that no one publication describes AGI techniques at echelon for the commander. Obviously, Army and joint forces conclude that AGI is doctrinally essential to the successful conduct of operations and minimizing fratricide.

In Army mission command doctrine, it is stated that establishing a shared understanding of AGI and airspace use not only guides further planning, but enables informed, timely decisions during mission accomplishment. In Army combined arms doctrine, air and ground integration is a listed planning consideration for the commander. Airspace control integration and air missile defense integration with joint force air operations is required to enable freedom of movement and action for maneuver. Fires must be integrated with the capabilities of other Army warfighting functions, special operation forces, joint forces, and multinational forces. Special operations forces think enough of the importance of AGI to dedicate an entire chapter to it in their newly revised doctrine.

In joint doctrine, close air support and close combat attack require detailed integration of each air mission with the fires and movement of ground maneuver forces. With the proliferation of tactical unmanned aircraft systems (UAS), planners must pay close attention to integration and deconfliction within the objective area and ensure all units are informed of the plan. If present, the forward air controller or joint terminal attack controller (JTAC) must know the location and altitude of UAS within the objective area. Furthermore, when nontraditional strike platforms are re-tasked or transitioned from intelligence, surveillance, and reconnaissance (ISR) to strike missions, a clear transfer of command and control must occur.

So, what is AGI? To the commander, AGI is a function of combined arms and mission command. Combined arms is the synchronized and simultaneous application of the elements of combat power to achieve an effect greater than if each element of combat power were to be used separately or sequentially. The functional concept of mission command integrates leadership, information, and all of the warfighting functions and their supporting systems.

This integration uses the capabilities of each warfighting function and information in complementary and reinforcing

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capabilities. Complementary capabilities protect the weaknesses of one system or organization with the capabilities of a different warfighting function. Reinforcing capabilities combine similar systems or capabilities within the same warfighting function to increase the function's overall capabilities. An example of the synergies and efficiencies gained through integrating air and ground complementary and reinforcing capabilities lies with considering the counter-unmanned aircraft systems (C-UAS) scenario.

A recent information paper published by the United States Army Aviation Center of Excellence (USAACE) concluded that the combat aviation brigade provides one piece of the overall system-of-systems approach to the C-UAS mission. Aviation must remain aligned with the Fires Center of Excellence (FCOE) and also be integrated into joint solutions to ensure a coordinated effort.

The alignment and integration of air and missile defense capabilities, aviation capabilities, airspace control capabilities, and targeting capabilities creates increased command post agility and responsiveness for the maneuver commander to make decisions and apply appropriate action to defeat the C-UAS threat. The integration of these reinforcing and complementary capabilities provides a more complete solution to the C-UAS problem set.

AGI is one of the outputs of the mission command warfighting function and a continuing activity of the operations process. Additionally, AGI offers a technique of how to integrate, organize and configure the force to rapidly develop and communicate shared understanding, increase collaboration and interaction between staff liaisons, and enable commanders' decisions.

In collaborative efforts, the Maneuver Center of Excellence (MCOE), the USAACE, and the FCOE formed a working group to bring about shared understanding, improved relationships, interoperability, and mutually supporting exchange. The outcomes of this collaboration developed five lines of effort to improve professional military education, including driving a doctrinal common language based on an understanding of how we must fight. During this collaboration, liaisons from the collective centers of excellence identified the need to define and describe AGI doctrinally in order to achieve this common language and understanding of how we must fight.

The proposed definition of air-ground integration (AGI) is the planning, coordination, and synchronized employment of ground and air maneuver and fires in order to achieve the commander's objectives -seize, retain and exploit the initiative, and sustain freedom of movement and action.

Fundamental to successful AGI is understanding the ground scheme of maneuver, providing proper liaison, task integration, deconfliction, and systems integration. The Army's overarching framework for exercising AGI is the operations process. AGI requires the direct coordination at all stages of the operations process under the direction of the G-3/S-3 with the fires cell, the aviation cell, the targeting cell, and any additional joint, multi-national, or inter-agency cell that enhances AGI.

This coordination requires rapid synchronization in the employment of ground and air maneuver with fires in plans, future, and current operations integration cells. AGI synchronization results in efficiencies in unit battle drills that include dynamic targeting, interdiction, clearance of fires, medical evacuation (MEDEVAC), air assault (AASLT), C-UAS/counter air, ISR, UAS attack, downed aircraft, close combat attack (CCA), close air support (CAS), and personnel recovery.

Army forces do not operate independently but as a part of a larger unified action. Army leaders integrate Army operations within this larger effort. Commanders extend the depth of operations through joint integration. Effective integration requires creating shared understanding and purpose through collaboration with unified action partners. As a continued and collaborative activity throughout the operations process, AGI enhances the higher commander's ability to decisively employ his maneuver forces and joint fires at a time and place of his choosing.

In the planning phase, Army AGI begins with the conceptual plan in Army design methodology and the operational approach from the commander in developing the scheme of maneuver. Fundamental to complementing the scheme of maneuver through AGI is correctly framing the problem and visual modeling to highlight relationships that were not considered through conversation alone. This may point to new ways of thinking and possible areas of further examination considering ground and air maneuver, fires, reconnaissance, and security. Functionally, the targeting working group synthesizes AGI requirements in planning objectives, effects, tasks, and actions and coordinates these requirements with higher, lower, and adjacent units.

As the planning process becomes more iterative and detailed through the military decision making process and troop leading procedures, AG considerations offer specific insight in coordinating and synchronizing the maximum participation of air, ground, and fires and minimizing their limitations and constraints. AGI increases the flexibility of the commander to seize and maintain the initiative. Staffers must understand AGI coordination requirements and measures necessary to acquire and attack targets safely and efficiently in an operational environment at all echelons.

AGI control measures permit the complementary and simultaneous attack of targets by air and ground weapons system. Call signs, radio frequencies, fire support and airspace coordination measures, targeting guidance, reconnaissance priorities, mission command handover, and specific activities that complement and reinforce other warfighting functions are synchronized within the overall operation to support the scheme of maneuver.

In the prepare phase, the commander continues coordination with higher, lower, supporting, and supported units. Operations that include AASLT, air movement, CCA, and CAS require detailed AGI. AGI preparation activities include: establishing proper liaison, integrating systems, synchronizing standard operating procedures and battle drills, integrating security operations with reconnaissance and surveillance plans, refining planning based on current operations, and configuring, organizing, and integrating the force to best accomplish the commander's objectives.
AGI offers a technique to organize and

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integrate specific liaisons and systems collocated in the operations center as a best practice to enhance the operational agility of the command post. By collocating fire support, rotary-wing, fixed-wing, air missile defense, reconnaissance, and targeting functions under the direction of the chief of operations or battle captain, and integrating their systems, commanders best influence their ability to plan, synchronize, and employ ground, air, and fires capabilities to achieve AGI. Even if the joint liaison systems or digital linkages are not available in the operations center, Army AGI is achieved using this technique.

Commanders often use the combined arms rehearsal, the fire support rehearsal, and the targeting working group to refine and synchronize AGI inputs to the plan under the direction of the G-3/S-3 in the transition from the preparation phase to the execution phase. The Army targeting methodology of decide, detect, deliver, and assess lends well to the commander as one of the Army's integration processes to synchronize ground and air operations with fires.

During the execution phase, commanders and staff apply combat power to seize, retain, and exploit the initiative to gain and maintain a position of relative advantage. During execution, the situation may change rapidly. With respect to AGI organizing techniques, dynamic targeting becomes a suitable process to rapidly synchronize and coordinate staff actions in response to the current situation.

Using the distinct steps of dynamic targeting, staffs readily coordinate complementary and reinforcing activities within their warfighting functions to best enable decisive action. A rehearsed dynamic targeting battle drill in current operations that involves collocated and integrated functional liaisons between joint fires, aviation, and the chief of operations or battle captain will increase the speed and effectiveness of command decisions and allow for greater flexibility. In this process, the JTAC, joint fires observer, fire support officer, and TACP liaisons coordinate AGI requirements through liaisons at the highest echelon to enhance shared understanding.

Assessment is continuous throughout the operations process and AGI continued activities. AGI assessments occur at every echelon and are acted upon to enable commanders' decisions and achieve commanders' objectives. Battle damage assessment, munitions effectiveness assessment, and re-attack recommendations are pertinent to all components of AGI. These functions are crucial to the synchronization of combat power and provide the commander with vital feedback on the progress toward reaching the desired end state.

Upon publication, FM 3-04, Aviation Operations will establish the proposed description for AGI and AGI imperatives in Army doctrine. Additionally, in February 2013, the collaborative writing team established between the Aviation, Maneuver, Fires, and Mission Command Centers of Excellence produced and staffed a white paper regarding AGI gaps in doctrine and training. The recommended course of action based on feedback from the white paper staffing recommends a collaborative AGI Army Techniques Publication (ATP) which will establish AGI roles and responsibilities, AGI as part of mission command and the operations process, and techniques for achieving AGI through understanding the scheme of maneuver, proper liaison, battle drills, and systems integration at echelon.

AG as a term implies much more than just coordinated and integrated airspace deconfliction. It is a continuous activity of the operations process providing the synchronized planning and coordination of the employment of ground and air maneuver operations and fires to accomplish the commander's objectives. All artillery CFF, counter fire, CAS, UAS attack and ISR, MEDEVAC, CCA, and C-UAS requests received in the tactical operations center are functions of AGI.

AGI aligns the fires warfighting function within the operations process for the maneuver commander and complements the mission command warfighting function. Additionally, AGI techniques arrange personnel, networks, information systems, processes and procedures to best enable commanders to conduct operations, seize and exploit the initiative, and sustain freedom of movement and action. A combined arms publication that offers both the definition of AGI and techniques for achieving AGI at echelon to support unified land operations would enhance commanders' ability to synchronize complementary and reinforcing warfighting functions, enable decisions, and achieve the desired end state.

LTC Dan Elliott is currently a doctrine writer for the FCOE and lead action officer for center of excellence collaboration with the MCOE and AVNCOE. In Operation Iraqi Freedom 06-08, LTC Elliott served as Commander for TF Terminator during the surge in Iraq, firing over 420 GMLRS missions and contributed to developing clearance of fires and airspace clearance tactics, techniques, and procedures for MNC-I. LTC Elliott served as a plans officer liaison to 7th Air Force Group and 607th Combined Air Operations Center Strategy, Plans and Operations directorates in 2011. Additionally, LTC Elliott served as the Army Forces S-3 in Joint Task Force Bravo in 2010, providing operations command and control for disaster relief, humanitarian assistance, counter-drug interdiction, and personnel recovery missions. He has served on various joint and combined working groups in the effort toward coordinating air ground integration techniques.

Acronym Reference

AASLT - air assault
AGI - air-ground integration
CAS - close air support
CCA - close combat attack
CFF - call for fire
FCOE - Fires Center of Excellence
GMLRS - guided multiple launch rocket system
ISR - intelligence, surveillance, and reconnaissance
JTAC - joint terminal attack controller
MCOE - Maneuver Center of Excellence
MEDEVAC - medical evacuation
MNC-I - Multi-National Corps – Iraq
TACP - tactical air control party
UAS - unmanned aircraft system
USAACE - United States Army Aviation Center of Excellence

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Mission Command and the Employment of GRAY EAGLE

By CPT(P) Steve P. Sevigny

The Gray Eagle unmanned aircraft system (UAS) is gradually being fielded by combat aviation brigades (CAB) across the United States Army. As the Army shifts focus away from wide area security operations in Iraq and Afghanistan, and begins to focus training on combined arms maneuver, the Gray Eagle will play a critical role on the battlefield. It is essential for commanders to fully understand the capabilities and limitations of the Gray Eagle UAS to ensure proper employment on the battlefield. Mostly due to operations in Iraq and Afghanistan, the use of UAS has expanded exponentially. Advancements have been made by all branches of the military in different types of UAS. Everything from the hand launched Raven, the Shadow, and even the larger Global Hawk, Predator, and Gray Eagle UAS have made incredible strides in capabilities in the support that they can provide to the ground force commander.

Along with the technological advancement of these systems, the Army has placed their UAS in different organizations, indicating changing trends with employment on the battlefield. As an example, within the Army, the Shadow RQ-7B has been fielded to divisions under the special troops battalion within the Military Intelligence company. With the Gray Eagle UAS, the Army made the decision to assign these airframes directly to the CAB. This has lead to some discussion and development as to how an armed UAS should be employed on the battlefield. With the Gray Eagle's surveillance capability, it is well suited for information collection operations (ICO), but with its Hellfire capability, it is also well suited for interdiction attack and close air support missions. Since Gray Eagles are likely to perform both missions, one does not necessarily have to exclude the other. What follows is a discussion of the considerations that commanders must evaluate when they decide to employ the Gray Eagle on the battlefield. The intent of this article is not to argue for or against any specific role, or even a combination in the employment of the Gray Eagle. The intent is for all elements and commanders on the battlefield to understand the capabilities and limitations of the Gray Eagle UAS.

Interdiction Attack

FM 3-04.126 defines interdiction attack (IA) as "an attack by Army aircraft to divert, disrupt, delay, degrade, or destroy enemy combat power before it can be used effectively against friendly forces. IA combines ground based fires, attack aviation, unmanned systems, and joint assets to mass effects, isolate, and destroy key enemy forces and capabilities. Deliberate IAs are focused on key objectives and fleeting high value targets such as enemy C2 [command and control] elements, AD [air defense] systems, mobile, long-range surface missiles, surface-to-surface missiles (SSMs), artillery, and reinforcing ground forces." Emphasizing that IA may take place well forward of friendly forces and involves attacking key high payoff targets (HPTs), the Gray Eagle with its superior optics, range, and station time is very well suited for these type of missions.

Information Collection Operations

Army Tactics, Techniques, and Procedures (3-04.15, Appendix B defines Gray Eagle capabilities. The Gray Eagle has an extremely capable flight endurance and combat radius, subject to restrictions of weather, altitudes, ordnance on board, and other factors. The endurance of the Gray Eagle gives commanders incredible capability to conduct reconnaissance and surveillance of critical named area of interest (NAI) that will enable the answering of priority intelligence requirements (PIRs) that will lead to timely decisions for commanders on the battlefield. As a result, the Gray Eagle is equally well suited for ICO.

Commander's Guidance

Recent Mission Command Training Program (MCTP) observations at a Warfighter Exercise involved Gray Eagle UAS from the

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CAB being designated operational control (OPCON) to a battlefield surveillance brigade (BfSB) in order to facilitate the BFSBs ability to conduct ICO for their higher headquarters. The BfSB staff conducted analysis and employed the Gray Eagle UAS predominantly to answer PIR for their division headquarters. At the onset of the exercise, the Gray Eagles would provide surveillance of certain NAIs in order to accomplish this mission. The Gray Eagles were very effective in this role.

Friction soon developed as the Gray Eagles began to identify large numbers of HPTs, many of which were beyond the range of indirect fire systems. The BFSB continued to conduct reconnaissance and surveillance and sent up spot reports of enemy activity, but the potential for a Gray Eagle to be used in an IA role began to create confusion of priorities for the BFSB. Division headquarters became much more directive as to how the Hellfire weapon system on the Gary Eagle was to be employed. The BFSB observed HPTs and division directed engagements. The BFSB commander sought out the division commander in order to clarify his guidance as to how to employ the Gray Eagle UAS. The question that had to be answered was: How is the Gray Eagle going to be employed?

Mission Command

ADP 6-0 defines mission command as 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. In order for commanders to be able to exercise disciplined initiative with Gray Eagle, it is critical that commander's guidance is given on the subject of employment of armed UAS. Effective guidance cannot be given without an understanding of the capabilities and limitations of the Gray Eagle.

Fighter Management

As part of understanding the capabilities of the Gray Eagle UAS, commanders must understand that UAS operators are subject to fighter management restrictions in accordance with Army Regulation (AR) 95-23. Aviation brigade standing operating procedures will further address the length of duty day and what crew duties can be performed within a day and within a given month. It is critical that commanders with OPCON or tactical control (TACON) of Gray Eagle elements understand that UAS crews are subject to fighter management restrictions and understand these restrictions in order to employ UAS effectively on the battlefield. Field Manual 3-04.111, Appendix D, Table D-2 provides a sample crew endurance program.

Command Support Relationships

The nature of command support relationships create potential confusion in regards to risk approval between the CAB and the gaining unit. AR 95-23 defines final mission approval authority for UAS missions. Paragraph 2-12a (3) states "final mission approval authority are members of the chain of command who are responsible for accepting risk and approving all UAS operations within their unit." It further defines the command levels that can accept risk of UAS missions, with commanders in the grade of lieutenant colonel and above being responsible for selecting final mission approval authorities in writing, along with appropriate level of risk they are authorized to approve.

What is not clearly defined in AR 95-23 is how this relationship for final mission approval works under command and support relationships. Command relationships (assigned, attached, OPCON, TACON) imply a higher degree of control for the gaining unit. In the case of Gray Eagle, OPCON and TACON are typically the most common command relationships used. Army Doctrine Reference Publication (ADRP) 5-0, Par 2-80 defines OPCON as "the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations." This description implies that the gaining unit commander will exercise final mission approval authority of UAS operations under OPCON/TACON command relationships.

For support relationships, ADRP 5-0 states "a unit assigned a direct support relationship retains its command relationship with its parent unit, but is positioned by and has priorities of support established by the supported unit." If Gray Eagle Companies are assigned a support relationship, such as direct support, then the parent CAB will retain control of risk approval.

Regardless of the nature of the command and support relationship that might be designated, it is critical for gaining commanders to understand the aviation specific risks inherent with UAS operations when approving risk. It is, furthermore, critical for the details of risk approval and mitigation to be clearly defined between the commanders of the parent and gaining

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unit. The best way to do this is through a relationship with the CAB, involving frequent communication.

Armed or Unarmed

The decision to arm Gray Eagle UAS should be analyzed across all available ICO assets, available IA assets, and close air support (CAS) assets. Arming a Gray Eagle UAS increases the weight of the airframe and reduces ICO station time. The location of the airfield in relation to the area of operations or tasked NAIs will also impact the decision to rearm. Enroute times to and from the airfield and rearm time significantly reduces ICO. All commanders must understand that an armed Gray Eagle has reduced endurance. This will impact the ability to provide observation of certain NAIs, minimize the ability to provide redundancy if necessary, and therefore impact the ability to answer PIRs.

Engagement Decision

The decision to engage targets with the Gray Eagle must be weighed carefully. Such constraints as vulnerability of the Gray Eagle to air defense systems, the number of missiles on board, the ICO plan, and post-engagement actions such as returning to the airfield to rearm must all be considered in establishing guidance to support decisions. The commander must establish clearly defined engagement criteria or a vetted attack guidance matrix that is specific to the Gray Eagle. Commanders must consider if there are specific HPTs that are so critical to shaping the battlefield, they must be engaged immediately. These are optimal targets for the Gray Eagle while conducting ICO. It enables the commander to take full advantage of the armed capability of the Gray Eagle to attack critical targets of opportunity, while minimizing the impact on its ICO capabilities. Further guidance should also be given based on the mission whether the Gray Eagle is to return to the airfield to rearm after it has expended all Hellfire missiles, or to continue to conduct ICO.

Retasking

In addition to engagement criteria, commanders must clearly define what criteria are necessary to retask the Gray Eagle UAS on the battlefield. The Gray Eagle is well suited for IA as well as a CAS role in support of troops-in-contact. Commanders must ensure that battle captains understand the priorities for the utilization and re-tasking of the Gray Eagle. Similar considerations must also be made for developing ICO requests in real time. The previously discussed capabilities of the Gray Eagle are critical to establishing these criteria.

Enemy

In the decisive action training environment, the threat of enemy AD must be considered in the employment of any UAS. Even though the system is unmanned, commanders must consider the UAS as a limited and exceptionally valuable resource. The presence of robust enemy air defenses will significantly affect the decision to employ the Gray Eagle UAS for ICO and IA.

Conclusion

The Gray Eagle provides the command a powerful tool for IA, CAS, ICO, and shaping the battlefield. To effectively employ these capabilities, commanders must understand its capabilities and provide proper guidance to ensure that the Gray Eagle will be utilized to its full potential. With proper guidance from the commander, the Gray Eagle will have maximum impact on the battlefield. Critical to providing proper guidance is an understanding of some of the capabilities and limitations that have been discussed within this article.

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Acronym Reference

AD - air defense
ADRP - Army doctrine reference publication
AGO - air-ground operation
AR - Army regulation
ATTP - Army tactics, techniques, and procedures
BFSB - battlefield surveillance brigade
CAB - combat aviation brigade
CAS - close air support
HPTs - high payoff targets
IA - interdiction attack
ICO - information collection operation
MCTP - Mission Command Training Program
NAI - named area of interest
OPCON - operational control
PIR - priority intelligence requirement
SSMs - surface-to-surface missiles
TACON - tactical control
UAS - unmanned aircraft system

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Attack and Scout Weapons Team Employment in Support of Joint Air Attack Team Operations

By MAJ Jamey Welch

A joint air attack team (JAAT) is an engagement technique using a combination of attack reconnaissance aircraft and fixed wing aircraft operating together to locate and attack high priority targets and other targets of opportunity. The JAAT normally operates as a coordinated effort supported by fire support (FS); air defense artillery (ADA); naval surface fire support; intelligence, surveillance, reconnaissance (ISR) systems; electronic warfare (EW) systems; and ground maneuver forces against an enemy force (JP 3-09.3).

Attack reconnaissance aircraft are comprised of the AH-64D Apache Longbow and the OH-58D Kiowa Warrior. The Apache elements are commonly referred to as attack weapons teams (AWT) and the Kiowa's are referred to as Scout Weapons Teams (SWT). The AWT and SWT are the Army's aviation assets involved with JAAT operations to support the joint force commander.

Once a JAAT operation has been approved to support a maneuver commander, the G2/S2 must collaborate with the supporting aviation task force during intelligence preparation of the battlefield to identify the target, target area, named areas of interest (NAI), enemy defenses, enemy and friendly decision points, and a time window when the target will be active in the engagement area (EA) (FM 3-04.126). The aviation battalion or aviation task force (TF) will utilize the eight steps of the EA development in their mission planning in order to maximize the success of the JAAT operation. The aircrews will use this information with additional information from the G3/S3 pertaining to friendly units (i.e. FS, EW, ISR, ADA, etc.) participating in the JAAT to plan their direct fire distribution techniques and routes to attack by fire (ABF) or battle positions. The AWT/SWT air mission commander (AMC) will coordinate with his aviation TF staff to conduct terrain analysis to identify ground and air avenues of approach to the EA, and gaps in the threat ADA line of sight / range due to the terrain. Terrain analysis also aids in selecting ingress and egress routes for the AWT/SWT (FM 3-04.126). The aircrews should plan multiple ingress and egress routes in order to keep from developing a pattern that the enemy could exploit to shoot down the aircraft. Aircrews must coordinate with the squadron weather officer to determine what the weather conditions are forecasted to be on the day or night the JAAT is planned to be executed. High humidity, fog, and precipitation can reduce visibility and effectiveness of infrared devices and lasers. Low ceilings also affect the range and employment of laser guided maverick and hellfire missiles, since the trajectory may put the missiles in the clouds. High temperature and pressure can limit the range and weapons payload of aircraft and high or gusting winds effect accuracy of indirect weapons employment and can limit the use of rotary-wing aircraft (FM 3-04.126). The commander and staff must articulate the desired effect of the JAAT for the aircrews to continue planning. The JAAT end state can be quantified in an attack guidance matrix which outlines the priority and number of targets to be destroyed to ensure the commander's guidance is met. The attack guidance matrix will help the aircrews determine which munitions will be carried on board the aircraft (i.e. Apaches flying hellfire heavy vs. a combination of hellfire, rocket and 30mm). The Aviation commander should coordinate with the maneuver commander to determine if the attack aviation assets should use a continuous attack, phased attack, or maximum destruction to meet the intent of the joint force commander.

The Aviation TF must coordinate with the brigade combat team fire support element and brigade aviation element to obtain graphic control measures of the FS and maneuver forces in order to develop airspace control measures to de-conflict with the other air assets in order to sequence munitions into the EA and to prevent fratricide. The AMC must coordinate with the supported commander to determine if the initiation of fires will be trigger-based or time-on-target based, and review the destruction criteria desired by the commander. Once the aircrews have obtained all the information they need, the AMC will complete the plan, and then review and rehearse the plan with all of the aircrews to ensure everyone has detailed knowledge of the operation.

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The AMC of the AWT/SWT should be designated as the mission commander of the JAAT as he will have the best situational awareness of the targets remaining in the EA and where the other JAAT assets are located. The AMC can push forward a SWT or UAS to recon NAIs associated with the EA to confirm or deny the presence of the enemy moving into the EA. Once the enemy has been confirmed in the NAIs, or moving into the EA, the AMC can then call forward all air assets to occupy their ABFs or hold at the initial point in preparation to execute the JAAT. Prior to the engagement into the EA, the AMC should determine how he will coordinate the attack by using the combined attack where all air assets use the same avenue of approach to engage the enemy, or use a sectored attack where each air asset utilizes a different avenue of approach that is separated by an acknowledged and well defined boundary/terrain feature to engage the enemy (FM 3-09.32). The AMC should also weigh the advantages and disadvantages of using simultaneous, sequential, or random firepower timing options when he initiates the JAAT.

As the AWT/SWT expend ordnance, the AMC must prepare to conduct a battle handover to a relieving force to continue the attack, or if the AWT/SWT will need to disengage as targets are destroyed to meet the commander's destruction criteria. When the AMC chooses to disengage with the enemy, the AMC can use the close air assets that are on-station or use FS to conduct covering fire while the AWT/SWT egresses from their ABFs to the rear. As the AWT/SWT egresses to the rear, the AMC will send battle damage assessment reports to the joint force commander.

When a JAAT is approved for execution, it is vital that the aviation battalion staff/aviation TF staff is notified to begin parallel planning with the joint force commander's staff. The aircrews will be given a warning order of the JAAT so they can begin planning how they will conduct their operations to meet the joint force commander's intent. Pre-mission planning and coordination are the most important elements for the aircrews so that they will have a comprehensive understanding of the enemy, the terrain, and how to integrate all of the available assets to maximize the destruction of the enemy inside the EA to complete the JAAT operation successfully.

MAJ James Welch is the Operations Officer, 2916th Aviation Battalion at the National Training Center (NTC), Fort Irwin, CA. While at the NTC, he has also served as Chief of Plans for the Scenario Development Team (Lizard Team) and as an Attack Company Observer Controller/Trainer (Eagle Team). MAJ Welch's previous assignments include Assistant S-3, 3-159th Attack Reconnaissance Battalion and Commander, B Company, 3-159th. MAJ Welch has two deployments to Iraq. He is qualified in the UH-72A and the AH-64D and has 11 years' service.

Acronym Reference

ABF - attack by fire	**FS** - fire support
ADA - air defense artillery	**ISR** - intelligence, surveillance, and reconnaissance
AMC - air mission commander	**JAAT** - joint air attack team
AWT - attack weapons team	**NAI** - named areas of interest
EA - engagement area	**SWT** - Scout Weapons Team
EW - electronic warfare	**TF -** task force

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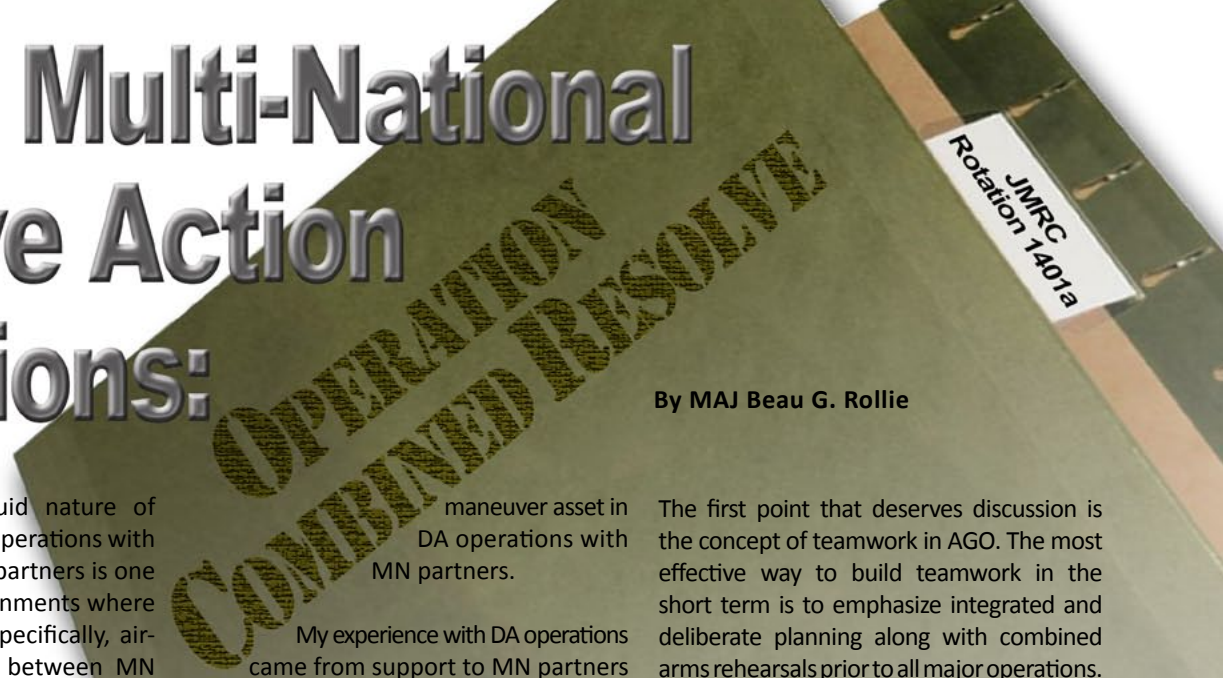
AGO In Multi-National Decisive Action Operations:

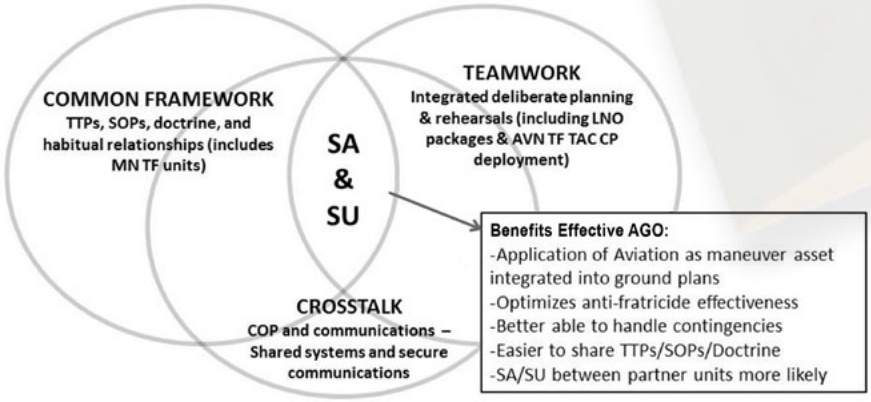


By MAJ Beau G. Rollie

The complex and fluid nature of decisive action (DA) operations with multi-national (MN) partners is one of the most difficult environments where Army Aviation operates. Specifically, air-ground operations (AGO) between MN partners conducting combined arms maneuver against conventional threats is a difficult task that Army aviators have not practiced for many years. To regain optimum efficiency in AGO during MN combined arms maneuver, Army Aviation needs to re-emphasize the value of exchanging robust liaison officer (LNO) packages, secure communications, and systems (i.e., Blue Force Tracker (BFT) / command post of the future) to facilitate an accurate common operational picture (COP). Additionally, integrated planning and rehearsals from the inception of major operations is the gateway to DA success. This article seeks to demonstrate the importance of continuous teamwork, crosstalk, and a common framework as the primary ways to maintain situational awareness (SA) and achieve situational understanding (SU) between MN partners. It is through the application of these principles that Army aircraft will attain the status of a fully integrated maneuver asset in DA operations with MN partners.

My experience with DA operations came from support to MN partners while serving as Task Force (TF) Gunslinger Operations Officer during Joint Maneuver Readiness Center rotation 1401a (Operation Combined Resolve) in November of 2013. Our battalion sized aviation task force included 12 Apaches, 8 Blackhawks, and 3 medical evacuation (MEDEVAC) aircraft supporting TF Bayonet, a MN brigade including a Czech mechanized infantry battalion, a Slovenian mountain infantry battalion, and a U.S. airborne infantry battalion. Threat forces included mechanized infantry, armor, and hybrid insurgents, all of whom possessed organic man-portable air defense systems as the main threat to aviators. TF Gunslinger operations focused on offensive and defensive tasks including a company (+) guard mission, a company level advanced guard operation, an interdiction attack, close combat attacks along with multiple company level air assaults, air movements, and MEDEVAC missions in a high threat environment.

PRINCIPLES OF EFFECTIVE AGO IN MULTI-NATIONAL DA OPERATIONS



The first point that deserves discussion is the concept of teamwork in AGO. The most effective way to build teamwork in the short term is to emphasize integrated and deliberate planning along with combined arms rehearsals prior to all major operations. Truly deliberate and integrated MN planning along with combined arms rehearsals were targets that eluded operations during Operation Combined Resolve. There were numerous missions where MN planners failed to integrate aviation assets, or even brief them on the ground scheme of maneuver. The result was that many helicopter operations were reactive versus pro-active. Aviation effectiveness during any exercise is directly attributable to the aviator's SA/SU regarding the ground commander's intent and scheme of maneuver. When aviators do not understand the ground plan, a critical component of the operation operates at a distinct disadvantage. Lack of SA challenged our ability to respond to dynamic conventional threats quickly. Specifically, figuring out the location of friendly units monopolized a significant portion of our attention during attack operations, especially when enemy and friendly vehicles looked similar as they did during the exercise. One way TF Gunslinger improved SA during combined resolve was to increase the presence/quality of LNO packages along with co-location of our battalion tactical command post (TACCP) with the respective main efforts for major operations. These steps improved teamwork and increased lateral crosstalk between units, crucial elements to effective operations when one considers the limited effectiveness of an analog COP. The increased crosstalk fostered by our use of LNOs and the TACCP helped us gain SA and achieve SU.

Crosstalk happens to be the second principle of AGO that bears examination regarding

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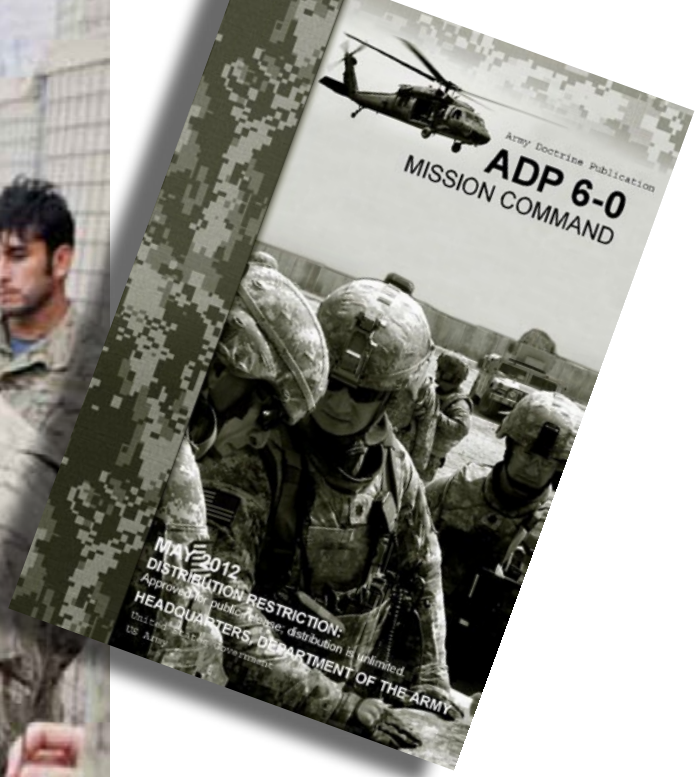

operations during Operation Combined Resolve. If teamwork is the key ingredient used to gain SA regarding the plan, then crosstalk is how units maintain SA as the plan adjusts during execution. Crosstalk (enhanced by LNOs and the TACCP) is the primary feeder of SA/SU in AGO and should be enhanced by a standardized COP and real time communications – preferably with secure/over the horizon capability. During the first few operations of Combined Resolve, the COP and communications systems shared by MN partners were atrocious. Our MN partners did not possess systems that we rely on such as BFT, command post of the future, or secure communications. The enemy leveraged this weakness by intercepting and jamming unsecure frequencies, thereby, sapping aviation's ability to maintain SA. Additionally, the analog nature of the COP, which was reliant on unreliable/unsecure communications, meant that SA was at least 30-90 minutes behind real time. To overcome the weakness of the COP required constant use of other communications venues including chat and telephone, which did not feed directly to aircraft. We relied heavily on LNOs and the TACCP to maintain SA and, in turn, pass that information directly to the aircraft. We found that the best way to overcome unreliable communications and COP was to deploy systems including BFT and secure radios directly to ground unit command posts, either with our LNOs or our TACCP. In essence, shared systems allowed us to increase SA and reduce the lag associated with the COP. Of note, our battalion TF did not deploy our TACCP to the Slovenian sector because their battalion was TF integrated with an American company of infantry and engineers. The integrated nature of the Slovenian TF meant that their positions were inherently easier to track because of the systems that American units brought with them.

The final point of discussion regarding AGO in MN DA operations is establishing a common operational framework. A common framework includes shared doctrine, standard operating procedures (SOPs), tactics-techniques and procedures (TTP), and habitual relationships. The nature of MN operations means that shared doctrine is uncommon. Additionally, unless MN partners train together, shared SOPs and TTP are uncommon as well. On the other hand, habitual relationships force the creation or sharing of common SOPs and TTP. Experience from TF Gunslinger operations showed that it was easier to work with a MN battalion TF than MN pure units (BN sized or lower) because the TF possessed organic systems (BFT & secure communications) and enjoyed some measure of shared TTP and SOPs as a matter of course. In either case, MN SOPs regarding AGO were mostly reliant on English-speaking joint terminal attack controllers (JTAC) as opposed to direct control by command elements as is often the case during operations with the U.S. Army. The relative scarcity of aviation in North Atlantic Treaty Organization partnered countries meant that most MN partners were unpracticed at integrating organic or direct support aviation assets into their planning and operations. Language barriers between aviators and ground commanders magnified this problem. Without a shared common language, AGO was over-reliant on English speaking MN JTACs. SA funneled to aviators through JTACs was crucial with respect to language limitations; however, both the aviators and ground commanders suffered from limited SA and reduced maneuver integration by using a JTAC intermediary. JTACs by their nature tended to utilize aviation assets as fires platforms instead of maneuver assets and often applied helicopters to deal with immediate crisis as opposed to a planned and integrated application. A common framework in the form of doctrine, SOPs, and TTP regarding the planning and use of aviation are the paths most likely to yield success in the realm of integrating attack and lift aviation more effectively into maneuver plans and to avoid using helicopters reactively. JTACs are helpful, but

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should not be the primary answer due to their limited availability on the battlefield. If JTACs continue to control Army Aviation assets, we will be treated like close air support and fires assets. Divorce from JTACs as primary control and establishment of habitual relationships to force the sharing of doctrine, SOPs, and TTP are the crucial elements of a common framework that can foster effective AGO. MN AGO requires a basis in common framework to set the stage for effective teamwork and crosstalk.

In conclusion, the preponderance of U.S. operations throughout history have included MN partners and we must continue to train AGO in this difficult environment. If an aviation unit can conduct effective AGO with MN partners, then AGO with any unit is possible. This article lays out the importance of AGO principles including teamwork, crosstalk, and a common framework as ways to make Army Aviation more effective in AGO. Teamwork enables aviation units to gain SA regarding ground unit plans. Crosstalk enables aviation units to maintain SA as plans adjust during execution. The combination of well-executed teamwork and crosstalk ensures SU. Lastly, common framework serves as a systemic solution that sets the stage for successful teamwork and crosstalk. Specific suggested steps to achieve effectiveness in MN AGO include systems exchange, integrated planning, rehearsals, and creation of MN battalion TF units. Effective AGO is the only way that Army Aviation will ever attain status as fully integrated maneuver asset. TF Gunslinger re-discovered a lot about DA and MN AGO during Operation Combined Resolve and with the commonality of this type of operation on today's battlefield, we hope that others can learn from our experiences.

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Acronym Reference

DA – decisive action	**MEDEVAC** – medical evacuation
MN – multi-national	**SA** – situational awareness
AGO – air-ground operation	**TACCP** – tactical command post
LNO – liaison officer	**TF** – task force
BFT – Blue Force Tracker	**SOP** – standing operating procedure
COP – common operational picture	**TTP** – tactics, techniques, and procedures
SU – situational understanding	**JTAC** – joint terminal attack controller

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COMPANY COMMAND–
BUILDING COMBAT-READY TEAMS

AIR-GROUND INTEGRATION (ARMY INTERNAL)

And if I concentrate while he divides, I can use my strength to attack a fraction of his. There, I will be numerically superior. Then if I am able to use many to strike few at a selected point, those I deal with will be in dire straits.
—Sun Tzu

Effective integration between the Army's air and ground forces is critical in today's operating environment. Soldiers on the streets, in the desert and atop mountain ridges must coordinate daily with Soldiers flying above them to ensure mission success. As these junior leaders fight together, the Company Command forum has become a place to share what they're experiencing and learning. In this ongoing conversation, some focus areas are emerging:

- Predetermined SOPs (TTPs, graphics, etc.)
- Pre-deployment training (home station/training centers)
- Habitual relationships between units (either pre-deployment or during deployment)
- Pre-mission preparation (OPORDs/ rehearsals/use of liaisons)
- Radio Communication (ad hoc, hasty planning) Here are some specific lessons that company commanders are learning and sharing via the CompanyCommand forum:

[Thoughts from Air Commanders]

Marshall Tway
D/1-1 CAV & HHC/2-501st AVN

Okay, so I'm flying along in an OH-58D Kiowa Warrior under NODs (night observation devices). We get a call from the battalion whose sector we are in asking us to drop

Pre-Mission Preparation
We were operating in two-aircraft teams, dispersed a good distance apart. We picked a hilltop, settled into a good overwatch position, and I started using the optics to examine the likely avenues of approach. My right-seater said, "What's that in front of us?" I looked up, and saw one individual stand up, then two, then another, then all three picked up rifles. Yikes.

We beat feet out of there and reported to higher. The individuals in question turned out to be a friendly ground team emplaced to overwatch the same AO. They were nowhere on our graphics, nor was it ever mentioned in any of our mission briefs that ground teams might be anywhere in the vicinity. This could have been a real tragedy. If we had been carrying ammo, we almost certainly would have laid down some type of suppressive fire to cover our egress, and someone could have been injured or killed. **The Lesson:** Situational awareness is critical. Find out who owns the battlespace you're operating in and get a good sense of who's there and what they're doing. If you can't get that information, then be real careful about the extent to which you try to influence that battlespace.

Radio Communications
During a home station training exercise, one of our teams was late taking off due to maintenance and weather issues. In the hurry to get on-station and checked in with the ground force, they abbreviated the check-in call and did not mention what ordnance they were carrying. When the ground troops requested that one aircraft suppress a dug-in troop position, there was silence for a moment, and then the aircraft commander mournfully replied that he was only carrying Hellfire and Stinger, not the most useful weapons for such a target! The Lesson: Aircrews need to make sure they do a good check-in and that they've got both point target and area target capability in a team (if not on each aircraft), and they need to make sure the supported ground force understands the difference. They must also ensure the ground force gets all the necessary information during the check.
—Ray Kimball

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U.S. Army, CW2 Mitch Carver

down to a company net. We arrive on the radio net and perform our check-in call. We receive this reply, "Okay…I'm in the HMMWV at Grid MB 12345 67890…"

The "911 Call": Hasty AGI

One of the things we were called upon to do daily during OPERATION IRAQI FREEDOM was to conduct AGI with troops on the ground when no prior coordination had been conducted (we call this a "911 Call," as most often it involves friendlies in contact of some sort). The lack of prior planning in these types of missions generally translates into a lack of situational awareness (SA) on the part of the aircrews. In order to offset this, a lengthy conversation ensues and in some cases, we are forced to land to conduct a face-to-face meeting. So here are some tips for conducting AGI when you need us and we have not planned anything:

- **Check-in:** Grids get us the location, but no situational awareness. Once we tell you we have you, we both need to confirm the identification via a signal and exchange some vital information in order to begin coordination.
- **Target ID:** Finding and positively identifying the target should preferably be done with an azimuth (degrees magnetic or clock direction) and distance from your position. Include some sort of target description. DO NOT pass a grid; we like to fly heads out of the cockpit as much as possible—passing a grid ensures that one of us will have to come inside to find it on a map, orient it, and then confirm it.
- **How low can you go?** Push as far down as you can. You will be better served by pushing the aircraft down to the company command net and letting us talk to people there. It allows the platoon leaders, company commander and aircraft to share information, and it reduces reaction time. It also builds a working relationship between the aircrews and the ground crews. Ask a ground cavalry trooper—he knows this works.
- **Task/Purpose/Intent:** Assign a task and purpose, and give your intent to the aircraft. Don't worry if it may not be exactly doctrinal or you aren't sure we'll understand. We will ask, or interpret what you tell us. Aviation works the same as ground forces when it comes to this portion of operational planning.
- **Too Much Information:** We can, and will overwhelm you with all the information we can pass. We can see more; it is that simple. If this is starting to happen, let us know; tell us how we can best help you.
- **Talk To Me!** We love to talk to you, but we like it even better when you talk to us. I ran an air assault security mission once where we were trying to get a

Habitual Relationships

We were nearing the end of our tour in Iraq. I had been detached from SQDN for a year, and due to ongoing operations we did not get the chance to attend briefings or rehearsals for an upcoming mission. The one saving grace was our relationships with the "Bandit" Troopers on the ground (my troop even called ourselves "Bandit Air").

The mission started easily enough. We established communications with the battalion and started the route recon along the ingress route about 1 km ahead of ground forces. As the mission progressed, things got steadily worse. I think the battalion was overcome by events and was experiencing some pretty severe communications problems. The result was that Bandit Troop and my troop ended up running the operation and coordinating the mission. My aircraft would point out targets and the B troopers would react. We had individual airplanes talking directly to the TCs and vice versa. The mission turned out to be a resounding success.

Afterwards, one of the 1SGs came up to the B Troop 1SG and said, "Wow, you guys really know this Air Ground Integration piece, it was almost as if you had worked together before!" to which the B Troop 1SG replied, "Back home, if I want to talk to the D Troop Commander, I walk across the hall."

The Lesson: Even without attending rehearsals and briefs, we were able to utilize our personal relationships with the leaders of our sister troop and leverage that to pull the mission off. While far from the ideal, it shows the value that a personal relationship between units can have.

—Marshall Tway

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blocking position to stop a car that was attempting to exit the cordon. The car got away. When we asked the leader on the blocking position if he had heard us, he replied, "Yes, but I was nervous about talking to you."

- **Pre-determined TTPs:** Air/Ground Integration (AGI) is not hard, but it can become so when the communications are not clear. Pre-determined TTPs go a long way towards enhancing the effectiveness of the AIR-GROUND Team. When possible, get with a group of your supporting aviators and work out some TTPs. This will pay huge dividends later.

Ray Kimball
F/3-7 CAV, 3rd ID (M)

Face-to-face training always trumps everything else. This should be especially doable with the new brigade combat team structure—aviation units should be identified to the units they support and train with them. To actually train on employment and integration, you need living, breathing people and an area to maneuver.

Predetermined SOPs are the next best thing to pre-deployment training—if you can't train with your air assets, at least train with an SOP that you'll both be using, so you're better prepared when the time comes.

Radio communication only can be risky, especially if there are no predetermined SOPs. It's very easy to misunderstand terminology and directions.

Rehearsals are great, but there's always some guy who doesn't get the word. If a rehearsal is the only chance you've got, get as many key leaders there as possible (down to the platoon and squad level).

[Thoughts from Ground Commanders]
Matt McGrew
HHC/1-24th IN (SBCT), 25th ID (L)

The ability to employ aircraft is no longer just a combat arms skill. Like close quarters marksmanship and combatives, it is a critical skill for all Soldiers who leave the wire. I also agree it is a critical part of home station training to get leaders comfortable with talking to aircraft. It would be nice if we could train with the unit that will be supporting us, but unless you are in a unit that has its own organic assets, this isn't likely to be possible. In a year in Mosul, I worked with aircraft from three different units at one time or another (as different units rotated through). With that being said, here are some of the keys to our success using aircraft in Iraq:

- If the unit is based in your area of operations (AO), you need to get your arms around them early. The sooner you start building relationships, the better. Part of this is giving them the Common Operating Picture (COP) for your AO. This includes not just your graphics but an overlay with common names for key terrain. After a year in one location, we had names for most key/distinctive terrain in our AO, allowing us to rapidly gain situational awareness across the battalion when units were in contact. After a couple of days in sector most pilots were familiar with our reference system. You must also ensure that everyone has the most recent listing of the frequencies and call signs for all units in your AO and our intelligence staff's assessment of the AO. Doing these simple steps cuts down on the planning time.
- Concise communications are important if you are going to keep aircraft on a busy radio net. You don't want to tie up a net that others have to use. Concise communications are directly tied to the pilots understanding your COP.
- Trust in lower-level leaders to effectively use aircraft in the best way to support their mission. This started with home-station training but was solidified after several months in combat. This is a function of your leadership climate and it is different for every unit.

Chris Danbeck
F/2-2nd ACR

- Get as low as you can go: I cannot agree more and implore fellow commanders to heed your advice about pushing down as low as possible. This allows the pilot to talk directly to the PL or PSG and communicate what was going on at the objective. I never found it to be overwhelming to the PLs, since they were ready for the additional radio traffic. If I felt I wanted to keep a tighter rein on the aircraft then I would ask for the wingman to stay on my net.
- Knowing the mix of weaponry available to the leaders on the ground is vital during check-in. The onus is on ground commanders to educate our platoon leaders about what packages you guys can carry and what the effects are.
- For the ground guys who are in units that do not have frequent access to OH-58D aircraft or pilots, do some research. Make some calls and put together some kind of OPD to get your junior leaders to understand the capabilities and limitations of the aircraft. We were able to get in the aircraft for familiarization flights, and the pilots were able to ride around in our Bradleys and tanks. It was a blast and we had a much better understanding of the constraints that the aviators were under and they could get the same from us.
- It was commonplace in my unit for Soldiers to confidently talk to aviators, and using SOP cheat sheets, they could perform AGI. The farther apart we get in the garrison environment the poorer our abilities to meld and mesh on the battlefield will be.

Bryan Carroll
B/1-24th IN (SBCT), 25th ID (L)

- Air and ground assets need to be incorporated at the lowest possible level. A platoon leader or squad leader needs to be trained and feel comfortable talking to aircraft. In the current environment you will use them nearly every day. That leader needs to be able to accurately and quickly give his position, the enemy or suspected enemy positions, and his intent for the aircraft.

"BACK HOME, IF I WANT TO TALK TO THE D TROOP COMMANDER, I WALK ACROSS THE HALL."

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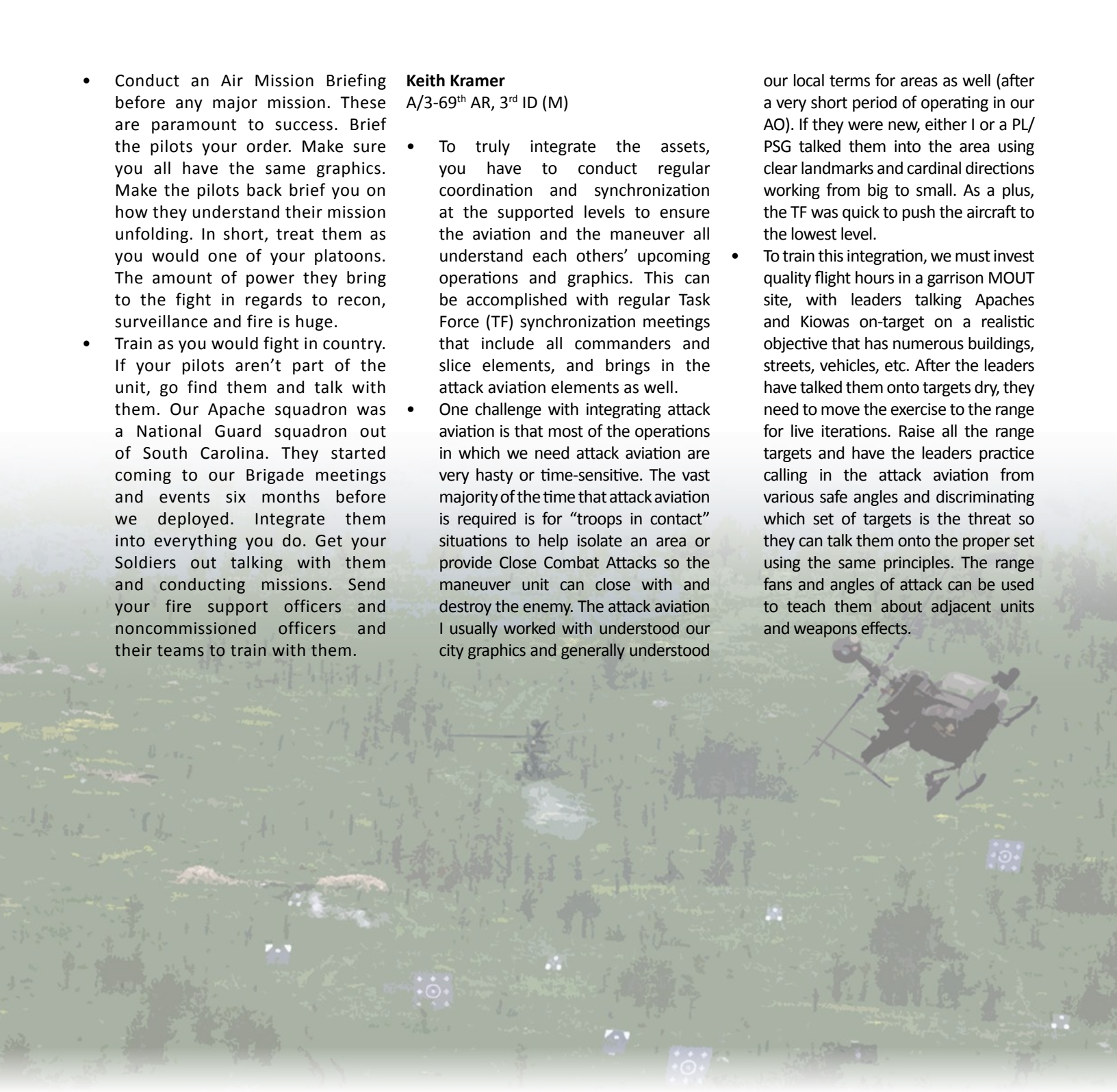
- Conduct an Air Mission Briefing before any major mission. These are paramount to success. Brief the pilots your order. Make sure you all have the same graphics. Make the pilots back brief you on how they understand their mission unfolding. In short, treat them as you would one of your platoons. The amount of power they bring to the fight in regards to recon, surveillance and fire is huge.
- Train as you would fight in country. If your pilots aren't part of the unit, go find them and talk with them. Our Apache squadron was a National Guard squadron out of South Carolina. They started coming to our Brigade meetings and events six months before we deployed. Integrate them into everything you do. Get your Soldiers out talking with them and conducting missions. Send your fire support officers and noncommissioned officers and their teams to train with them.

Keith Kramer
A/3-69th AR, 3rd ID (M)

- To truly integrate the assets, you have to conduct regular coordination and synchronization at the supported levels to ensure the aviation and the maneuver all understand each others' upcoming operations and graphics. This can be accomplished with regular Task Force (TF) synchronization meetings that include all commanders and slice elements, and brings in the attack aviation elements as well.
- One challenge with integrating attack aviation is that most of the operations in which we need attack aviation are very hasty or time-sensitive. The vast majority of the time that attack aviation is required is for "troops in contact" situations to help isolate an area or provide Close Combat Attacks so the maneuver unit can close with and destroy the enemy. The attack aviation I usually worked with understood our city graphics and generally understood our local terms for areas as well (after a very short period of operating in our AO). If they were new, either I or a PL/PSG talked them into the area using clear landmarks and cardinal directions working from big to small. As a plus, the TF was quick to push the aircraft to the lowest level.
- To train this integration, we must invest quality flight hours in a garrison MOUT site, with leaders talking Apaches and Kiowas on-target on a realistic objective that has numerous buildings, streets, vehicles, etc. After the leaders have talked them onto targets dry, they need to move the exercise to the range for live iterations. Raise all the range targets and have the leaders practice calling in the attack aviation from various safe angles and discriminating which set of targets is the threat so they can talk them onto the proper set using the same principles. The range fans and angles of attack can be used to teach them about adjacent units and weapons effects.



Acronym Reference

AO - area of operation
AGI - air-ground integration
COP - common operating picture
HMMWV - highly mobile multi-wheeled vehicle
MOUT -military operations in urban terrain
NOD - night observation devices
OPORD - operations order
OPD - officer professional development
PL - platoon leader
PSG - platoon sergeant
SA - situational awareness
SOP - standing operating procedure
SQDN - squadron
TC - tank commander
TF - task force
TTP - tactics, techniques and procedures

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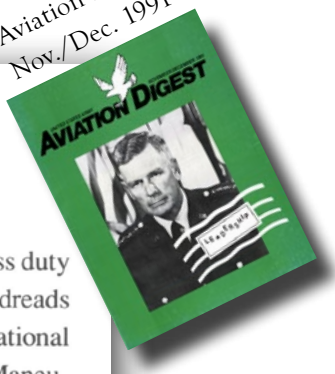
Aviation Digest
Nov./Dec. 1991



LEADERSHIP

Redefining the Aviation Liaison Officer

The liaison officer is a key figure in Army Aviation. He must possess many qualities and skills to be an effective asset. We, in Army Aviation, can no longer afford to devote minimal effort to our liaison requirement if we hope to maximize our contribution to the combined arms team. Further development of this important position is vital to our success in the future.

Captain Rodney Smith

Captain Smith was attending the Aviation Officer Advanced Course, U.S. Army Aviation Center, Fort Rucker, AL, in 1989 when he wrote this article.

LIAISON OFFICER (LNO): that thankless duty that every lieutenant or warrant officer dreads when it comes time to deploy to the National Training Center, Fort Irwin, CA; the Combat Maneuver Training Center, Hohenfels, GE; or the Joint Readiness Training Center, Fort Chaffee, AR. And with good reason. The hours are long, the rewards practically nonexistent and, worst of all, the job allows for little to no flight time. No sane young aviator would want to give up his seat in the cockpit for the job.

The LNO is one of the most important command and control tools the aviation commander has at his disposal. For, the most part, we have set ourselves up for failure by assigning the position either to the most junior and inexperienced lieutenant in the unit, so he can "pay his dues," or to a grounded pilot, so we can "fill the requirement" without degrading our own capability.

Given our current doctrine of AirLand Battle Operations and the necessity of fighting as part of the combined arms team, we no longer can afford to take the LNO position lightly. The increasing complexity of our weapons systems, coupled with a fluid and dynamic battlefield, tests the mettle of all soldiers. With this in mind, let's rethink the LNO in terms of the qualifications he must possess, the mission he must perform, and the tools he needs to perform it.

The LNO's Qualifications

First and foremost, the LNO needs to be smart in combined arms tactics. He needs to understand how ground maneuver units fight; how fire support, close air support, engineers, and all the other combat multipliers, fit into the picture; how combat support (CS) and combat service support (CSS) sustain the fight; and, finally, how aviation integrates itself into the battle.

He needs to be intimately familiar with the current doctrinal employment of combat, CS, and CSS assets without becoming a slave to that doctrine. What does

this mean? It simply means he must be creative and innovative in applying doctrine to certain situations and not accept the written word as gospel but as a guideline.

His field library also must be extensive since he must provide technical data on all aircraft available to the brigade he supports. These data could range from station time and weapons loads for AH-1 Cobras to lift capacities for UH-60 Black Hawks and CH-47 Chinooks. In addition, he will have to match the capabilities and limitations of available aircraft to the tactical situation to best integrate aviation into the ground commander's scheme of maneuver.

The LNO must be a shrewd and tactful salesman. He must establish himself as a knowledgeable, straightforward aviation expert. He must extol the capabilities of Army Aviation; however, he must not oversell it as the savior of the modern battlefield. Overselling has gotten us into trouble in the past. ("What do you mean the Cobra cannot take out dug-in tanks, lieutenant?!")

He must establish his credibility and competence with the ground brigade early. Perception is reality, my last battalion commander told me. My own experience as an LNO bears this out. A ground commander would trust his own experience in handling aviation rather than the advice of an LNO who does not appear to know that he is doing.

Last, the LNO must be forceful in ensuring that aviation is totally integrated into the scheme of maneuver, not merely as an afterthought. For example, an attack helicopter battalion (ATKHB) operational control (OPCON) to a ground brigade should be included as a combat unit of that brigade with specific missions to accomplish. The ATKHB should not be merely a fire support asset to be included in an annex to an operations order.

It becomes obvious the practice of using junior and inexperienced lieutenants and warrant officers as LNOs is counterproductive. It hampers the integration of aviation as a viable member of the combined arms team.

The LNO's Mission

In the past we used the LNO exclusively as a communications link between the OPCON aviation unit and the supported ground brigade. While this role must continue, it needs to be expanded. The LNO can provide a vast amount of information to his unit simply by virtue of his location in a brigade command post. For instance, how many times has an aviation battalion S-2 needed intelligence updates for planning future operations and been unable to obtain the information through normal intelligence channels? The LNO is tied in with all the intelligence assets the ground brigade has under its control and can deliver necessary information rapidly. He also can provide warning orders of impending operations to give his unit maximum planning time and coordinate for any support that his battalion requires.

With the Army of Excellence force structure, we lost some of our ability to conduct continuous planning for future operations. The LNO can help fill this gap by getting in on the early stages of planning at the ground brigade command post. He must ensure aviation is integrated into the tactical plan from intelligence preparation of the battlefield to course of action development to production of final operations order.

His knowledge of combined arms tactics will help him advise the brigade planners on how to make aviation a productive part of the team effort rather than a separate, nebulous entity. In his capacity as a planner, the LNO also will act as a filter. Since he is located with the brigade planners, he can head off any potential problems he sees in the plan before the final product is produced and sent to the aviation battalion. Being attentive to any possible misuse of such a critical asset as aviation will save valuable time later.

Since the LNO probably will be the sole aviation representative at the ground brigade, he is going to

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have to deal with all types of aviation operations, not merely those of his parent unit. For instance, I was assigned to an ATKHB; however, as LNO I also had to help plan and coordinate aerial resupply, air assault, air movement, medical evacuation, and Army aviation command and control. The more the LNO knows about these operations, the better he will be able to serve both the ground force and the aviation brigade.

The LNO's Tools

Anyone who has ever been an LNO remembers the support received from his or her unit to conduct the mission. Usually, the LNO is given a vehicle and driver. Hopefully, the driver knows how to set up a radio antenna. More often than not the LNO knows more than the driver does. The LNO may never know if his secure radio is going to work properly or if he has enough wire to remote into the brigade command post.

Further, ground commanders want to get the most out of aviation. With the wide variety of aviation missions the LNO may have to plan and coordinate, burnout becomes a problem. To make matters worse, there was, and still is, only one LNO assigned to an aviation battalion, which means long hours in the field. See Table of Organization and Equipment (TOE) 01386L200, Headquarters and Service Company, Attack Helicopter Battalion (ATKHB) (AH-64 Apache), 11 Jan 1988, paragraph 04, line 04. The round-the-clock fighting capability provided by the introduction of the AH-64 Apache and the OH-58D Kiowa even more taxes the LNO to his limits.

My favorite "war story" was the time I spent 42 hours awake doing plans, coordination, et cetera, in a brigade tactical operations center (TOC), finally crawling into my sleeping bag because I started speaking some language no one else could understand and drooling uncontrollably, and then being shaken awake 30 minutes later by the brigade chemical officer because the S-3 wanted to talk about joint air attack team.

A must-have list of equipment for the Aviation Liaison Officer

This list can be modified to accommodate specific missions or geographic locations.

- ☐ **Commercial utility and cargo vehicle/high mobility, multipurpose wheeled vehicle with secure freqency modulation radio.**
- ☐ **RC-292/OE-254 antenna.**
- ☐ **AN/GRA-39 remote with headset.**
- ☐ **1 reel of WD-1 wire.**
- ☐ **Hexagonal tent with space heater.**
- ☐ **Camouflage screen with supports.**
- ☐ **Applicable publications.**

To counter this problem, I recommend that a liaison team be formed. This team would consist of a captain, an advanced course graduate; a lieutenant, who would work the opposite shift in the command post; and a driver, who holds a communications military occupational specialty. The advantages of this team are numerous. The team would offer 24-hour liaison capability, combined arms tactics expertise and experience, technical knowledge, and credibility with the ground force. Besides, this team would have the capability to handle problems with its communications equipment. The biggest disadvantage would be that the team would have a profound effect on the aviation battalion's own operational capability. Until a change to current TOE is made to accommodate the addition of a second LNO, the battalion will have to choose whether or not it can afford to form such a team.

In terms of equipment, the LNO needs to have a reliable package that can be set up and moved quickly. I recommend the equipment listed above.

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COMBINING BFT AND UAS; LOOK AT ME NOW!

How Task Force Gladiator combines BFT and emerging technology to enable the warfighter.

By 1LT Derek Distenfield
and CW2 Dwight Phaneuf

Unmanned aircraft systems (UAS) effectively enable warfighters only if the information reaches the Soldiers on the ground in a timely manner.

This paper explains how Task Force (TF) Commando, 10th Mountain Division (Light Infantry) utilized both human factors and emerging technology to make better use of UAS throughout the Paktika province on their 2013 deployment to Afghanistan's Regional Command - East.

Early in their deployment it was apparent to the Task Force Gladiator Commander that communication between route clearance platoons (RCP) and UAS operators was insufficient. Despite having frequency modulation (FM) re-transmission capabilities on the aircraft which allows for extended FM communications, UAS operators and ground patrol leaders often couldn't communicate via FM due to atmospheric and mountainous terrain conditions. The need for communications redundancy that enabled UAS operators and ground patrol leaders direct linkages became a necessity. This requirement for direct communication was emphasized during one particular route clearance operation in which the assigned UAS operator was conducting over-watch with a RQ-7B Shadow and identified a man made road block at a choke point along the RCPs route. The UAS team determined that the RCP was approaching a possible ambush location. However, as direct FM communication with the patrol was not possible - even with re-transmission capabilities, the UAS team was unable to communicate timely early warning to the patrol. The warning was relayed through the brigade, the battalion S-2, the tactical operation center (TOC), and finally to the RCP via Blue Force Tracker (BFT). By the time information was relayed to the RCP, the convoy had already passed the chokepoint – fortunately without incident.

Although that particular roadblock did not target the patrol, the situation clearly demonstrated a need for better aerial intelligence, surveillance, reconnaissance (ISR) and RCP integration. TF Gladiator understood that leaders on the ground

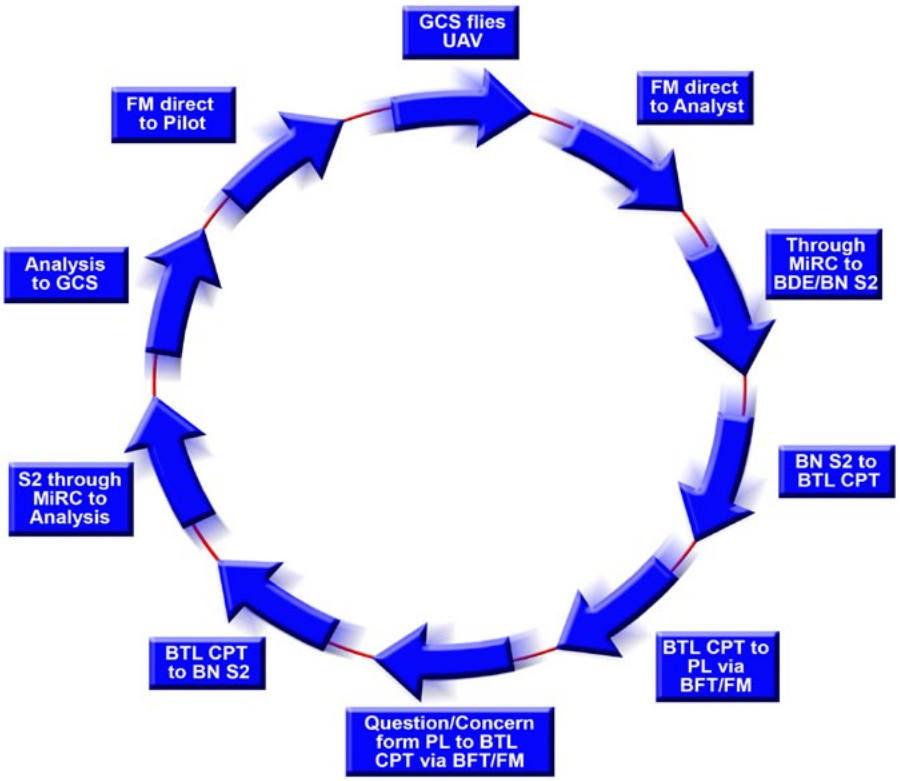

Figure 1-1 Communications Cycle which takes
10 minutes for information to reach the warfighter

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must maintain near instantaneous communications and have the ability to provide requests to UAS similar to communications with attack helicopters providing coverage of combat patrols.

Blue Force Tracker and FM Radio

BFT provides a quick easy method for UAS operators to communicate with Soldiers on the ground and vice versa.

The TF Gladiator S-6 and UAS Platoon Leaders identified two methods to increase communication between the UAS and Soldiers on the ground:

- BFT and direct radio communication
- Enhanced operational collaboration and partnerships with the Soldier on the ground

Figure 1-2
DTCS Radio

Blue Force Tracker has become the Army standard for commanders at all levels to maintain situational awareness of the battlefield. With the right equipment and technical instructions, it can be useful for UAS operations as well.

TF Gladiator was able to acquire a modified laptop (AAI part number is 38900-42050-10) that fits inside the ground control station (GCS) and displays the UAS location on the BFT. This allows convoy and TOC personnel to be aware of the exact location of the UAS. In turn, UAS teams increase their situational awareness to identify exactly where the BFT equipped units are located on a map. Another important function BFT provides is two way text messaging that provides direct communication with the patrols on the ground allowing for more effective operations.

Distributed Tactical Communication System and BFT

The distributed tactical communication system (DTCS) is a push to talk satellite radio that is effective in the mountainous terrain of eastern Afghanistan. In addition to long range communication, the DTCS has an icon that displays the location of the user on the BFT (see figures 1-2 and 1-3). This is especially useful to vehicle patrols and UAS operators alike as vehicle mounted leaders and UAS operators will know the exact location of dismounted route clearance teams equipped with the DTCS.

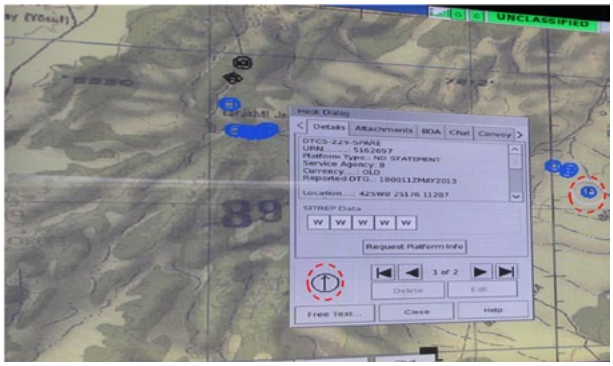

Figure 1-3 DTCS Radios location shows up on BFT as the machine gun symbol

Communications Relay Package

TF Gladiator received the communications relay package (CRP) system prior to deployment. The CRP permits the UAS to be used as a radio relay station allowing Soldiers on the ground to communicate through radios mounted internal to the UAS to the UAS GCS.

UAS operators and Soldiers on the ground were able to communicate directly via the CRP at significantly greater ranges than they had previous to the CRP installation.

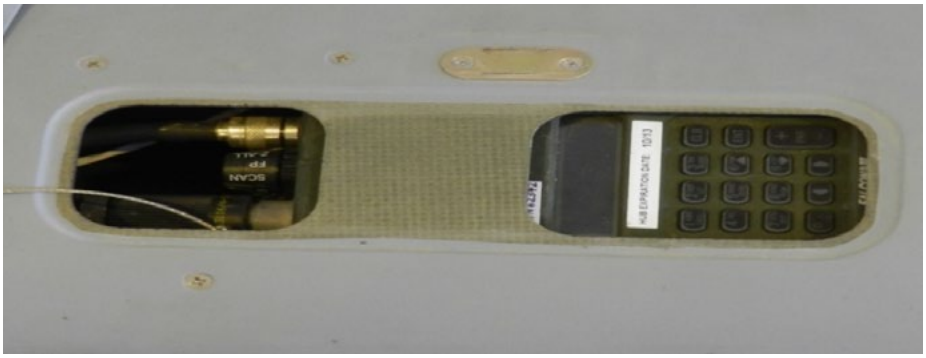

Figure 1-4 The AN/PRC 152 Harris radio inside the aircraft wing

Communication Partnerships

UAS Operators should contact both the Brigade S2 and the Soldier on the ground.

Once TF Gladiator developed two methods for UAS and Soldiers on the ground to communicate, it was only natural to look at how and when information should be delivered. The best technology can only be effective if Soldiers on the ground are the beneficiaries. Therefore the TF stresses a two pronged approach that enables both the Soldiers on the ground and the brigade's ISR efforts. This approach calls for UAS Soldiers to simultaneously pass priority information requirements (PIRs) directly to brigade and to the Soldiers on the ground ensuring leaders have the information they need to make successful decisions (See Figure 1-5).

This approach requires direct interaction between UAS operators and maneuver Soldiers. Conversations and sync sessions were facilitated by the S-2 to ensure that UAS operators understood the maneuver unit's PIRs and other information. It is equally important that ground patrols understand the capabilities and limitations of the aircraft.

Partnership was further enhanced when UAS Soldiers attended a RCP mission rehearsal followed by active participation in a ground route clearance patrol giving an important perspective to Soldiers that would typically not leave the forward operating base.

Incorporating BFT and other communication practices, TF Gladiator has had a significant impact on the brigade's mission in RC-East in less than 60 days.

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Since TF Gladiator has instituted enhanced communication platforms and procedures, patrols have been provided enhanced ISR coverage. Route clearance patrols are advised well in advance prior to reaching potential improvised explosive devices or ambush locations, allowing for enhanced situational awareness and insurgent defeat. The information dissemination is streamlined and provides enough time for a patrol leader to take appropriate action.

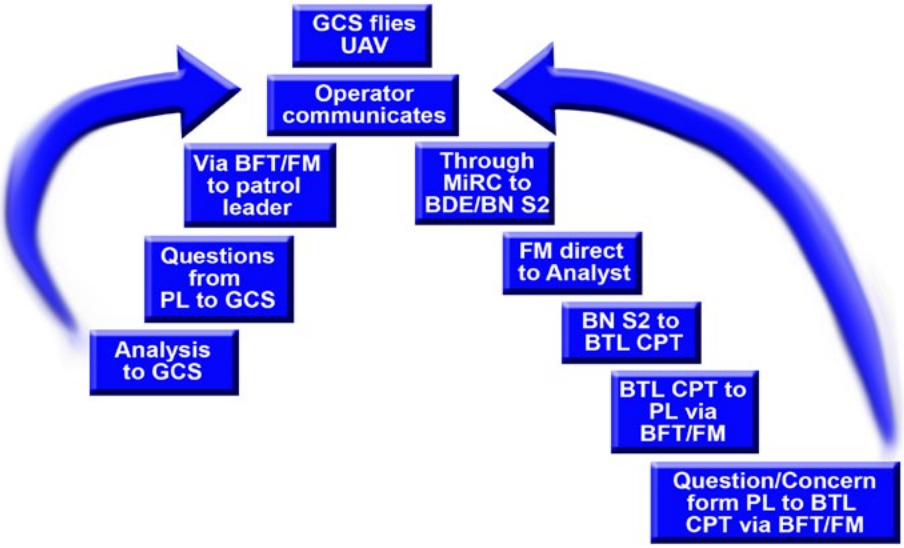

Figure 1-5 Simultaneous reporting has resulted in warfighters getting information more than ten minutes faster

Other results that have had a significant impact on the mission include the following:

• UAS enabled real time mortar registration. During one mission, UAS operators were able to communicate with the mortar team that an ineffective round had been fired. UAS sent a text message on BFT advising of the situation which enabled additional effective rounds to be fired.

• Supported airspace control authority. A UAS operator used BFT to confirm an unidentified aircraft's position and maneuvered above it to avoid and confirm it was a "friendly."

• Deconfliction of airspace with joint terminal attack controllers using enhanced communication via CRP and/or BFT graphics showing the Shadow's position allowed the UAS to stay on-station during close air support missions.

• While monitoring their CRP radio during a mission, UAS heard that a persistent threat detection system aerostat had broken loose. Exercising initiative, the UAS operator immediately followed the aerostat and communicated with Soldiers on the ground facilitating the Afghan National Army recovery of the sensitive asset.

• The DTCS icon on BFT allows UAS operators to quickly identify where dismounted Soldiers are located allowing for better ISR coverage and enemy deterrence.

Recommendations

Based on TF Gladiator's results, it is recommended that all UAS platoons are provided a BFT platform to increase situational awareness and provide more reliable communication with Soldiers on the ground.

Specific recommendations include:

• The BFT designed to go inside the UAS GCS was not provided with any training or operator's manuals. The critical nature of this installation was demonstrated during TF Gladiator's deployment. If it became a program of record and a table of equipment item, it could be effectively utilized Army wide.

• DTCS displays the user's geographic location on BFT and provides invaluable situational awareness and essential long range communication. They should be fielded as a table of equipment item in order to enhance operations involving dismounted Soldiers and UAS operators.

1LT Derek Distenfield entered the Army in September 2006 as an Air Traffic Controller with the 1/58 Airfield Operation Battalion stationed at Fort Rucker, AL. He completed Officer's Candidate School in July 2008 and was commissioned as a Signal Officer. He has deployed to Kuwait, Iraq, and twice to Afghanistan. He currently serves as TF Gladiator S6 in Paktika Province, Afghanistan.

CW2 Dwight Phaneuf entered the Army in May 1990 as a UH-1 crewchief in the U.S. Army Reserves. CW2 Phaneuf has deployed to Bosnia, Kuwait, Iraq, and Afghanistan. He currently serves as TF Gladiator UAS Platoon Leader in Paktika Provence, Afghanistan.

Acronym Reference

BDE - brigade
BFT - Blue Force Tracker
BN - battalion
CRP - communications relay package
DTCS - distributed tactical communication system
FM - frequency modulation
GCS - ground control station
ISR - intelligence, surveillance, and reconnaissance
PIRs - priority information requirements
RCP - route clearance platoon
TF - task force
TOC - tactical operation center
UAS - unmanned aircraft systems

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Blended Training/ DISTRIBUTED PRACTICE

Training a Combat Aviation Brigade in the Resource Constrained Environment

"For any profession to remain viable it must continually do two things: revamp its expert knowledge and then develop the practice of that knowledge into a corps of leaders (officers and NCOs) at all levels who can use it when called on to do so."

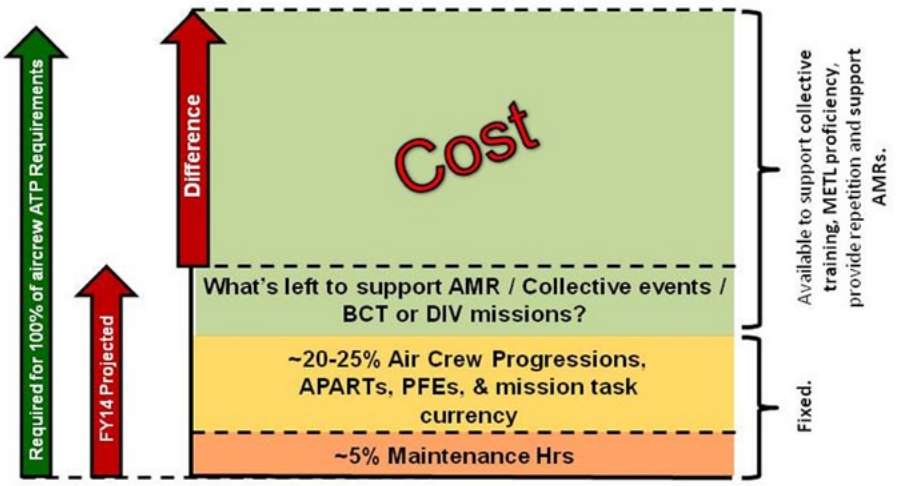
– Dr. Don M. Snider,
Distinguished Visiting Professor,
United States Army War College

By MAJ Michael Hale
and COL Robert T. Ault

The United States Army is entering a period of reduced funding. This is fiscal reality. With this reduction in funding comes a new problem for company and battalion leadership: How do you maintain a professional and capable force despite the resource constraints associated with this "new normal?" These fiscal constraints reduce the amount of flight time provided to aviators at every level of experience, but will affect those of low proficiency the most. The current generation of aviators will continue to carry the burden of complex missions because that is the most reliable way to mitigate risk. The danger to the future force is that the current generation of aviators will be relied upon to such an extent that the younger pilots never mature. In order to prepare our future generation of aviators, our formations must frontload some risk now, in order to avoid unacceptable risk or an incompetent force later. A shift in thinking must occur with regards to how aviators and missions are allocated. We must manage the frequency of repetition, and provide a low-cost mechanism to reinforce the skills gained, so that over time we can increase the ability of our junior pilots to retain their skills. In this article, we discuss one method of allocating flight hours and incorporating an integrated training environment (live, virtual and constructive) to not only increase retention of basic aviator skills, but also to increase the capability of the entire organization. This method will "pay down the principle" with our younger aviators in the short term to avoid ineptitude after our more senior aviators have moved on to greener pastures.

Several assumptions underlie this training strategy. One, we will continue to face reduced funding. Units are no longer able to train to a top proficiency level. Using the Combined Arms Training Strategy as a guideline, an aviator should be funded to fly 11.5 hours each month to maintain top proficiency. Current funding will not allow that, limiting battalions to near half of their required flight hours to meet aircrew training program minimums without a waiver. This will put the typical aviator well below the top tier of proficiency. If this is a short term problem we'll make do with what we have, waive requirements when appropriate, stack the deck on complicated missions, and wait for spending to increase. This article is meant to address the long term. A second assumption is that simulation facilities are available and will support the aviator and unit training requirements. Other constants are assumed in the development of our flying hour program: 33% personnel turnover at the unit level ("churn") per year, approximately 5% of flight hours per month on maintenance test flights, and 20 hours of progression flights per new aviator on average. One can picture the cost of the flying hour reduction like this:

Where The CAB Expends Flight Hours



Picture it as a glass that must fill from the bottom. The hours at the bottom are fixed, and the hours at the top are where the cost is absorbed. As we cut hours from the top, the opportunity to train vital skills through

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real world mission support and collective training is spread thin. Units and individuals will not get the required exposure to maintain proficiency.

Proficiency and Practice

Young aviators, in order to be successful, require the drive to study independently and also must be provided repetitious execution of fundamental aviation tasks. The model of training in the previous decade has included high frequency/ high repetition execution during progression, followed by decreased frequency once achieving readiness level 1. Junior aviators, recently signed off, fly to maintain minimums. These pilots fly relatively unpredictably, two to three times a month in order to achieve their semi-annual requirements with simulator periods spaced throughout. This is typically augmented with battalion level capstone events, certification exercises, a gunnery density or a combat training center rotation, which serve in an unorganized fashion to provide proficiency. This is "massed practice", similar to cramming for a test in college. The shortfall for this method is the lack of a reinforcement mechanism for skills that are gained during the peaks in activity. In order to provide this reinforcement, we turn to "distributed practice".

Distributed practice, in broad terms, relies on managing the interval and duration of exposure to a task in order to gain proficiency. To continue the college study metaphor, students who study in organized intervals will have longer recall and perform better during evaluation than those who "cram." This concept is not revolutionary, and approved Army Aviation training programs are designed to facilitate this (semiannual requirements and currency requirements). That being said, it is an accepted fact that flying for minimums or currency does not facilitate competence, and that competence further erodes when units began to implement waivers. With intensive and distributed practice, we will more quickly create competent, adaptive aviators who are able to fly, fight and win.

RAG Method - A Way

Red-Amber-Green cycled aviators and units provide for distributed intensity within an aviation unit. The available pools of pilots, within the organizational structure of the battalion or brigade, are split into three groups which rotate on a periodic basis. The flying hour program will be managed so that these groups experience different mission frequency. These intensity cycles provide for a force that is available to conduct mission support and live training (green cycle), a force to focus on virtual training (amber cycle) and a force to support taskings and conduct intensive maintenance, individual skills training (red cycle). Underlying each cycle, units are required to conduct maintenance test flights and maintain currency. This underscores the importance of the critical skill sets of our maintenance test pilots and instructor pilots, which will be maintained and protected through continued practice throughout all cycles.

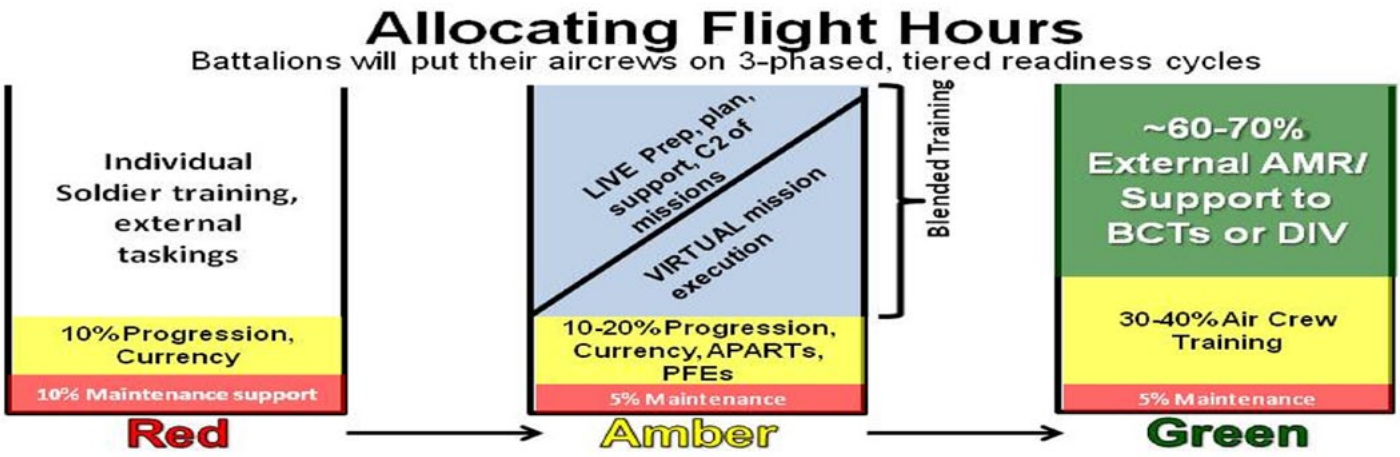
In practice, the green cycle will look like our current typical mission operational tempo (OPTEMPO), but the available aircrews are reduced. In a given period the green cycle crews will see more repetitions, hence, increased frequency. Ultimately, even if aircrews are forced to fly multiple missions in the same day, it will closer replicate a deployed setting, validating systems at the company, battalion and brigade levels.

The amber cycle will provide a currently under-exploited opportunity to train and assess the collective organization. Primarily focused on a constructed campaign with a hybrid threat, and utilizing blended simulation resources (aviation combined arms tactical trainer [AVCATT]) and live activities (mission command, maintenance activities, mission planning, preflight, communications check, run-up, debrief, post flight, etc.), flight crews and staff will maximize the gains in skills associated with live training, while being provided the opportunity to conduct missions that are likely beyond the scope of the most experienced Global War On Terror pilot.

The red cycled unit will be intentionally limited to a reduced flying hour program focused on currency requirements. Organizations will be provided the opportunity to conduct intensive individual training to meet Army Regulation 350-1 requirements, attend schools, and participate in leader development. Formations entering the red cycle from the green cycle can focus maintainers on fleet maintenance by supplementing phase teams, supporting launch-recover-launch of green-cycled crews and aircraft, and eliminating "partially mission capable" conditions.

This cycling of units will serve to provide a limit to the size of the force available to support division missions. This is by design, as it increases the frequency of the missions available to those crews in Green cycle and their collective proficiency. A depiction of how this would look is on the next page.

For the combat aviation brigade (CAB) staff, the Amber cycle can, in effect, become the main effort. The CAB will be



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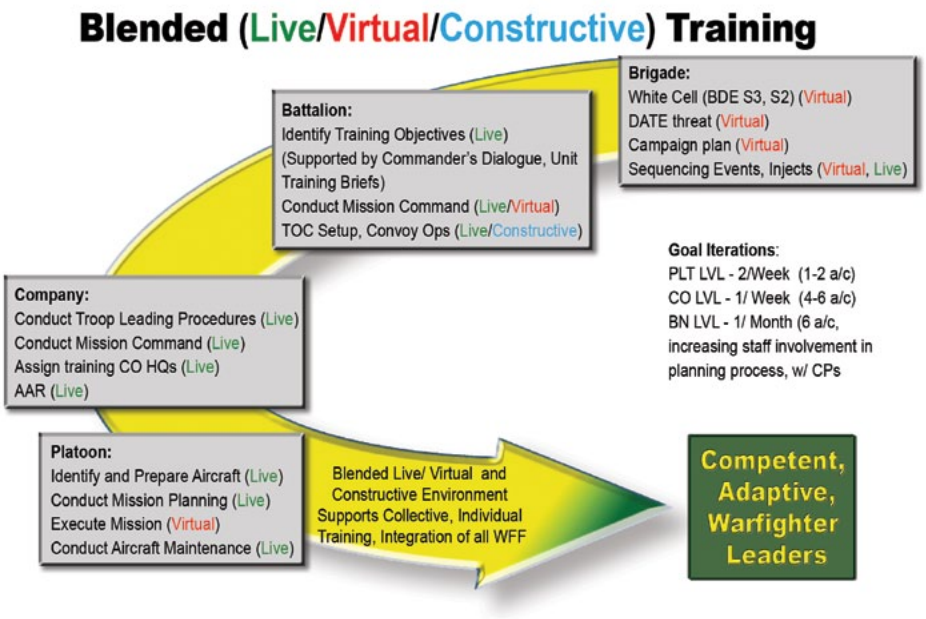
the organization which will have to act as the "white cell," as well as the operational headquarters. Key players will be the unit simulations officer, tactical operations/ aviation mission survivability officer, the S-2, and S-3 to create the scenario, propagate it through a campaign over the course of a training cycle, and create the products that would typically be provided from a joint task force or division headquarters, as well as those at a brigade. The construction of the threat scenario is limited by the available simulated environments in the AVCATT, which serves as the centerpiece for the execution of the blended training. The available databases include Korea, Afghanistan, and the National Training Center, all of which provide sufficient training scenarios to support the training strategy. In the near future, AVCATT will include Fort Carson and may include other continental U.S. CAB home-station locations, providing opportunities for commanders to utilize the virtual environment as a rehearsal tool.



What steady state combat power can the Division expect from the CAB?

	Green Mission Ready (2 Months)	Amber 2-4 Weeks to be Mission Ready	Red 2-3 Months to be Mission Ready
ARB	1 x Company (6-8 Crews)	~1 x Company	~1 x Company
GSAB	CAC: 1 x PLT (3 Crews) CH: 1 x PLT (3 Crews) MED: 2 x PLT(-) (5 Crews)	3 / 3 / 5 Crews	3 / 3 / 5 Crews
AHB	1 x Company (8-10 Crews)	~1 x Company	~1 x Company
ARB	1 x Company (6-8 Crews)	~1 x Company	~1 x Company

Conclusion

The purpose of this article is to discuss a methodology to employ the resources available to the aviation force to offset the lack of "reps" and real world experience in the pursuit of exceptional leaders and warfighters. The institutional momentum is typically against simulated exercises, likely because of the overhead (in staff effort) required to build and feed a robust constructed environment. Challenges will exist. Battalion and CAB staffs will also have to conduct daily operations in the real world, despite an increased (if virtual) OPTEMPO. Annual proficiency and readiness tests and progressions will be on strict timelines, and must be managed throughout the cycle. Finally, (and most importantly) there is a requirement for commanders to willingly accept reduced capability, both in terms of crews and crew strength, in order to concentrate mission flow to those pilots in the green cycle. Mission risk must be managed with more imagination than simply saying, "Get a stronger crew." Leaders at the CAB and battalion levels must control the complexity of the missions and the environment in which they are flown actively, with support of division, CAB, and battalion staff. The risk management process must be the main effort for this model, and leverage every ounce of experience that exists within an organization to provide for the growth of future leaders. With the fiscal reality facing us, the time has come to leverage the staff resources and pivot towards the live-virtual hybrid training environment. The investment in our future force is worth the cost.

COL Robert T. Ault is the Commander of the Combat Aviation Brigade of the 4th Infantry Division at Fort Carson, Colorado. He was commissioned in 1989 and first served as a platoon leader with 1-6th Calvary. He has commanded C Company, 2nd Battalion, 82nd Aviation Regiment and served as the Battalion Commander for 4th Battalion, 3rd Aviation Regiment. Other significant positions held include Battalion S-3 and XO with the 2nd Battalion, 25th Aviation Regiment, Chief of Plans and Deputy G3 with the 25th Infantry Division and CJTF-76, Company and Battalion-level Trainer at the National Training Center and Chief of a Military Transition Team in Iraq. He has deployed twice to Afghanistan and once to Iraq. He is qualified in the UH-1, OH-58, UH-60 and AH-64.

MAJ Michael Hale is the Brigade S-3 in the Combat Aviation Brigade of 4th Infantry Division. He was commissioned as an Armor Officer, first serving as a platoon leader and then S-4 in 2nd Squadron, 3rd Armored Cavalry Regiment. After transferring into the Aviation Branch in 2003, he has served as a platoon leader in Korea, commanded a company and served as the S-3 in 3rd Battalion, 10th Aviation Regiment and also served as the Battalion XO for 2nd Battalion, 4th Aviation Regiment. He has deployed twice to Iraq and once to Afghanistan in his 14 years of service and is qualified in the CH-47.

The authors would also like to extend a special thanks to the Commander and staff of 2nd Battalion, 4th Aviation Regiment for their contributions to this article: LTC Tyler Smith, MAJ Eric Carlson, and CPT(P) Matt Partyka.

Acronym Reference

AVCATT - aviation combined arms tactical trainer
CAB - combat aviation brigade
OPTEMPO - operational tempo

NTC Training Opportunities

TRANSITIONING TO DATE

Great moments are born...

... from great opportunities.[1]

- Herb Brooks, USA Olympic Hockey Coach, 1980

By COL Jeff White

We, as an Army and a nation, are at a cross-road as we deal with continuously changing conditions in terms of potential threats, fiscal reality, competing requirements, and numerous priorities. This, as we know, is nothing new. Throughout the Army's 237-year history we have adapted to current conditions, adjusted to emerging threats, and trained our most precious resources - our people - for an uncertain future during challenging times. The Army's strength, has, and will continue to be its leaders, at all levels, as we develop innovative ways to train Soldiers, in preparation to answer our nation's call - wherever and whenever needed. Thus, we continue to turn many challenges into great opportunities.

At the National Training Center (NTC), these training opportunities have been prevalent throughout the last 12 years of persistent conflict, astutely focusing our leaders on conducting operations in an austere environment, focusing on counterinsurgency and security force assistance operations while in preparation for combat in Iraq or Afghanistan. Many brigade combat teams (BCTs) and task organized multi-function aviation task forces, specifically designed to support the ground force commander, have taken advantage of the realistic operational environment at the NTC to prepare for combat or future missions. The Army has grown a tremendous number of leaders during this time. The leaders are forged in combat over the vast desert expanses and dense urban areas in Iraq and the incredibly inhospitable mountains and inaccessible valleys of Afghanistan. They continue to fight a relentless enemy, while simultaneously operating at the tactical, operational, and strategic levels of war.

We are aptly shifting our focus toward the decisive action training environment (DATE) in order to align with Army guidance outlined by GEN Odierno, the Army Chief of Staff, while leveraging our combat experience. We are now transitioning to the DATE as we draw down in Afghanistan, adapting into a "smaller, more versatile Army that will take on a broader range of missions in support of national defense objectives."[2] BCTs are posturing as part of regionally aligned forces, in order to support Forces Command and Combatant Commander requirements across the globe. By doing so, we are incorporating complexities consistent with executing regular and irregular warfare, in order to counter both conventional and hybrid threats. These missions stretch the BCTs as we conduct unified land operations, focusing on two core competencies as outlined in Army Doctrine Publication (ADP) 3-0: combined arms maneuver (CAM) and wide area security (WAS)[3]. As BG(P) Terry Ferrell, the former Commanding General of the NTC and Fort Irwin, recently put it, "Decisive action training is 'old school' without going back in time—preparing for the next fight."[4]

So where does Army Aviation fit into this fight? How can we train to better prepare for this uncertain future in order to maximize limited resources (specifically money and time) and mitigate tactical and accidental risks to our most precious resource – our Soldiers? Here are three points, "a way" as we look to develop solutions and answer these difficult questions:

1) Train on the fundamentals (core competencies) – shoot, move, communicate, and conduct maintenance, medical, fieldcraft operations.

2) Capitalize on every training opportunity at the individual, collective, and crew level at home station, the combat training centers, or any other location that presents itself.

3) Continue to grow leaders on fundamental aspects of our profession, especially air-ground operations.

As leaders, we understand that it is imperative that our Soldiers adopt the mindset that the next deployment will not be like the "last deployment." Although there will be similarities and we can certainly leverage experience, the next deployment will likely be to counter a "near-peer" threat (i.e., a large conventional force equipped with a wide array of lethal/technologically advanced ground combat systems and air defense weapons potentially incorporated as part of an integrated air defense system).

We can anticipate a requirement to execute unified land operations accomplished

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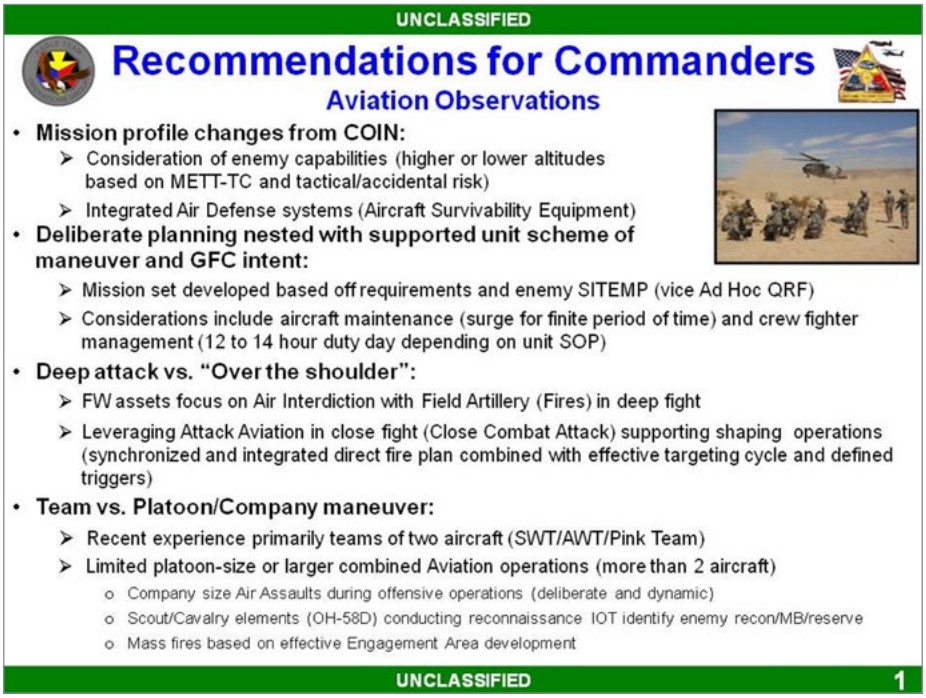

Figure 1

through simultaneous and/or sequential offensive, defensive, and stability operations. This should sound familiar. Emerging doctrine outlined in upcoming publications such as the Aviation branch keystone manual, FM 3-04, and the five new army techniques publications (ATPs) currently in progress covering aviation tactical employment, will be familiar to those who have experience preceding the Global War On Terror.[5] The majority of Soldiers courageously volunteering to serve in the Army after 9/11 do not have this type of experience. Operating from an unimproved tactical assembly area is as foreign to our younger Soldiers as it was to us "older Soldiers" the first time we came out to the NTC, set up during a field training exercise, or executed operations in an austere environment in an immature theater (think Desert Storm/ Desert Shield and early Operation Iraqi Freedom/Operation Enduring Freedom).

As we task organize into multi-function aviation task force elements and train for a decisive action (DA) fight – or remain in a "pure" organic table of organization and equipment configuration depending on mission analysis – one of the tenets of Army Aviation must remain intact and that is to provide responsive and reliable aviation support to the ground force commander. By doing so, we affirm the sacred trust we share with our brothers and sisters on the ground.

Providing responsive and reliable aviation assets to the supported commander is easier said than done. This principle encompasses many facets, none-the-least of which are maintenance and logistics, compounded by an often condensed and complicated Army Force Generation cycle as we continue to field the AH-64E, UH-60M, CH-47F, MQ-1C "Gray Eagle" unmanned aircraft system (UAS) and modify legacy platforms such as the OH-58D (R). We all understand we can only fly as much as we can maintain, whether training or executing combat operations. When factoring equipment shortages, reset, fielding initiatives, personnel turnover, competing requirements, and innumerable other considerations - training Soldiers takes on a whole new dynamic.

We, as leaders, have a responsibility to develop solutions to these complicated problems so the Army Aviation Branch can remain relevant and a capable combat multiplier. To assist in developing training guidance, establishing priorities, and possibly refining training objectives, a few recommendations for commanders (aviation and supported alike) based on observations of four DA rotations conducted at the NTC over the last twelve months are listed in figures 1 and 2.

Most of the points in these figures are self-explanatory and intuitive based on our previous "old school" experiences. The key to success, not only at the NTC, but during any operation, includes deliberate planning within the aviation task force nested with the supported BCT while refining the scheme of maneuver during the planning process, in order to integrate and synchronize aviation assets. As we seek to maximize effectiveness across all the warfighting functions incorporating the entire joint force, commanders and leaders at every level must factor in both accidental and tactical risk mitigation measures, along with

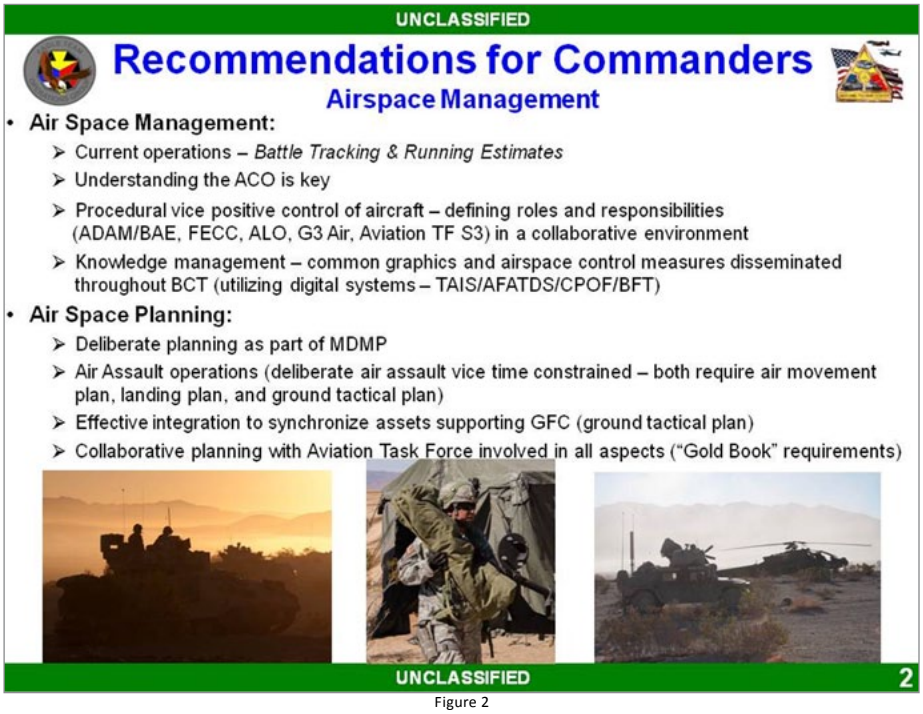

Figure 2

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personnel, platform, sensor, and weapon system capabilities and limitations. The end result of all the tremendous effort and teamwork is a synchronized, integrated, and effective fighting force capable of achieving the commander's mission and intent. In this manner, Army Aviation will continue to be an essential part in unified land operations in any operational environment.

Figure 3
An AH-64D Longbow Apache, masked behind terrain at the NTC, conducts operations as part of a multi-function Aviation Task Force providing direct support to a BCT during a recent DA rotation.

The other piece of the puzzle, which is often times overlooked in a DA fight, is the management of airspace. Again, tied to a deliberate planning process, airspace control measures nested with other control measures available to commanders (fire support coordination measures, graphic control measures, etc.) increase mission effectiveness while decreasing risk. Airspace management is especially important during offensive operations, including movement to contact and attack. The supported BCT can leverage air assault, heavy lift, medical evacuation, manned-unmanned teaming, and reconnaissance capabilities typically resident within the multi-function aviation task force or combat aviation brigade. All of these capabilities can achieve the desired effect with an effective airspace management plan. Managing airspace in this dynamic and complicated operational environment at the NTC can overwhelm a BCT if not properly planned and rehearsed.

The NTC Aviation Combat Trainers (Eagle Team) have and continue to refine these recommendations based on the insight and data we collect from DA rotations. We will also continue to share this information through every available means, including the Eagle Team Army Knowledge Online website (https://www.us.army.mil/suite/page/665938). We currently brief aviation battalion and brigade commanders at the Fort Rucker and Fort Leavenworth Pre-Command Courses. We also have a variety of outreach initiatives, tied into the Aviation Enterprise and the U. S. Army Aviation Center of Excellence that provide feedback and observations as doctrine and institutional training. We also remain linked with the Joint Readiness Training Center, Joint Maneuver Readiness Center, and Centers of Excellence (CoE) including the Maneuver CoE at Fort Benning, as we collaborate and share information. As always, your feedback is encouraged and essential.

Now, more than ever, Army Aviation needs to leverage technology in the form of simulations. With the realism and availability of these virtual or constructive tools rapidly increasing, we can conduct individual, collective, or staff training while minimizing the risk to Soldiers and reducing resources required. At the NTC, the Eagle team has observed the benefits utilizing simulation devices at home station in preparation for a rotational unit's NTC deployment. Working through a unit's systems and processes during a command post exercise or mission command exercise can be very beneficial as we develop our young leaders on the military decision making process, staff integration, and knowledge management.

GEN Shinseki, the 34th Army Chief of Staff, used to say, "If you don't like change, you are going to like irrelevance even less."[6] The Army is going through many changes - transitioning to DATE, drawing down in Afghanistan, consolidating and reorganizing, while adapting to current conditions. These changes are necessary in order to remain a viable, versatile, and relevant Army. With change comes turbulence and also many opportunities. We will continue to capitalize on these great opportunities, including those here at the NTC, adding to the Army's legacy - fighting and winning wherever the Nation calls, continuously training Soldiers and growing leaders capable of overcoming challenges and accomplishing any mission.

Train the Force! Army Strong!

Endnotes:

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3. Ibid., p. 5.
4. Dennis Steele. "Decisive-Action Training Rotations: 'Old School Without Going Back in Time.' Army Magazine, February 2013, p.26-37.
5. LTC Charles R. Bowery Jr. "Editor's Notes." United States Army Aviation Digest, April-June 2013, p.2.
6. Dao, James published 10 November 2009. "No Longer a Soldier, Shinseki Has a New Mission." The New York Times, retrieved from http://www.nytimes.com/2009/11/11/us/politics/11vets.html?pagewanted=all.

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Acronym Reference

ADP - Army doctrine publication
ATP - Army techniques publication
BCTs - brigade combat teams
CAM - combined arms maneuver
DA - decisive action
DATE - decisive action training environment
NTC - National Training Center
UAS -unmanned aircraft system
WAS -wide area security

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Strategic Landpower for the Company Commander

CAPSTONE: Leading the U.S. Army into the 21st Century

By GEN Robert W. Cone and CPT Jon D. Mohundro

In Iraq and Afghanistan, a generation of officers grew up solving strategic dilemmas at the company and platoon levels. Well-versed in the requirements and responsibilities of an Army at war, this generation must guide the Army into an ever-evolving and uncertain future. In order to navigate through the complexities in front of us, the Army needs capable, adaptable leaders now more than ever who champion the Army's strategic purpose and goals. With that, one of the most important discussions over the next few years will be how company commanders understand and implement the Army's central role in strategic landpower.

Over the last two years, the Army has put a lot of great people to work examining every facet of our training, doctrine, and warfighting capability. We did not do this to examine where we stand today. Rather, all of this effort was aimed at figuring out two things: what kind of Army we will need to meet future challenges, and what we have to do to build that Army even as we continue fighting in Afghanistan and remain engaged throughout the world. Much of what we concluded is available in a single brief document – TRADOC Pamphlet 525-3-0, The U.S. Army Capstone Concept, http://www.tradoc.army.mil/tpubs/pams/tp525-3-0.pdf. If you have not read it yet – please do so.

We won't summarize an already brief document in this article. Instead, we will discuss how the newest and most vital ideas relate to the execution level – the company. While things have been written about strategic maneuver, nothing has been written about its application at the tactical level. Although some ideas may be new, much of what must be done remains the same – training, standards, and understanding the human environment. This is a result of the unchanging character of the Army's basic strategic problem and mission. As in prior eras, as part of the joint force, our Army must retain its ability to protect U.S. national interests, execute any mission assigned to us, and win on any battlefield around the world.

Given our national strategy, we are required to field an Army capable of waging war decisively. Fielding a ready and responsive force with sufficient depth and resilience to wage sustained land combat is central to our mission, and that force must be able to conduct both combined arms maneuver and wide area

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security. A ready, robust, responsive force deters adversaries, reassures allies, and, when necessary, compels our enemies to change their behavior. Maintaining such a force requires high levels of adaptability throughout each echelon of the Army. Only Soldiers with tactical skill and operational flexibility can effectively respond to changing tactical situations in support of our nation's strategic goals and interests.

This is where the company commanders fit into the concept of strategic landpower. Much like company grade officers did in Iraq and Afghanistan, the company commander of the future must be mentally agile enough to thrive within the parameters of mission command. Developing leaders who can do so, while providing clear task and purpose to their subordinates, will be critical to the success of any mission across the range of military operations. Effective Army commanders, including those at the company level, do not use fiscal constraints as an excuse for failing to develop the best possible mix of training, equipment, and regional expertise they can within their formations. Rather, they motivate their people and guide their units in a way that makes optimal use of available resources to create adaptive, effective forces.

Our Army has three primary and interconnected roles: prevent conflict, shape the international environment, and win the nation's wars. The company commander has important responsibilities in each of these.

Prevent Conflict

It is prudent here to define what a conflict is. Since the term gets thrown around a lot and attached to a lot of different situations, it is easy to misunderstand the doctrinal meaning. Conflict is an armed struggle or clash between organized groups within a nation or between nations in order to achieve limited political or military objectives. Irregular forces frequently make up the majority of enemy combatants we face now, and may continue to do so in the future. Conflict is often protracted, geographically confined, and constrained in the level of violence. Each one also holds the potential to escalate into major combat operations.

Many of the contingencies to which the United States responded militarily in the past 50 years have been appropriately defined as "conflicts." The same can reasonably be expected in the future, but with the addition of cyberspace.

As was true during the Cold War, many of our greatest successes in the future will not occur on the battlefield; rather, maintaining peace may be our greatest achievement. This will be no easy task, as global tensions and instability increase in ungoverned or weakly-governed spaces around the world. History has taught us that without a capable, highly trained land force the United States has little influence in many of those spaces. That land force, our Army, must remain the best equipped, best trained, and most combat ready force in the world if it is to have the strategic effect we seek. That readiness is built from the bottom up.

This is the first critical point where company commanders must help shape the future. As owners of the training schedule, commanders have the critical role in developing team, squad, and platoon skills. Commanders ensure that broadening training like language, geographical, and cultural familiarization is done effectively, in a rigorous manner. Soldiers from the generation that fought in Iraq and Afghanistan will not be satisfied with training focused on artificial scenarios and made-up adversaries, so their commanders need to be innovative about preparing well-coordinated, realistic training. Subordinates must be challenged and they have to feel their challenges have a direct linkage to future operations. In order not to lose 12 years of combat-proven leader development, company grade officers must find a balance between building an Army prepared for the range of military operations and succumbing to pressure to "get back to the way it used to be."

Unfortunately, possession of such a trained and ready force is useless if it cannot affect regions where trouble is brewing. As units reposition from overseas bases and return to the United States, it becomes more crucial than ever for the Army to adopt an expeditionary mindset and improve its expeditionary capability. To do so, the Army is aligning units to specific geographical regions and arranging them into scalable and tailored expeditionary force packages that meet the needs of the Joint Force Commander across the range of military operations. In short, our Army will be better postured to generate strategic influence anywhere in the world, and as part of the joint force, deter aggression.

In this construct, company commanders must conduct operational environment training specific to their region. Becoming familiar with the people, cultures, and languages of the region in which one's unit will operate is critical to the success of a Continental U.S. based Army. Conventional-force companies learned much over the past 12 years as they executed missions historically reserved for special forces. War is fundamentally a human endeavor, and understanding the people involved is critically important. Company commanders cannot now ignore the hard-won lessons of their predecessors by ignoring one of the special forces' key tasks of understanding

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the operational environment. Those who meet this intent and enforce standards during this training will ensure we pay those lessons forward to the next generation.

Shape the Operational Environment

During peacetime, the Army is continuously engaged in shaping the global environment to promote stability and partner nation capabilities. We do this for several reasons, the most important of which is maintaining peace in pursuance of American national security interests. Where conflict has already broken out, engagement helps keep it contained and may even lead to a peaceful resolution. By helping to build partner capacity and trust, forward engaged Army units greatly add to regional and global stability. Moreover, by building strong relationships of mutual trust, we facilitate access and set the conditions for success in any future combined operation in a particular region or country.

But what are shaping operations, and how are they executed at the company level? Shaping operations are defined as those operations, occurring at any echelon, that create or preserve conditions for the success of the decisive operation. Thus, engagement by regionally aligned forces positively shapes the environment in which the Army operates throughout the range of military operations. This aligns with the notion of the "strategic corporal," which recognizes that in the information age the actions of individuals and small groups can have widespread impact well beyond what was intended at the time. Every action has a reaction, and it is necessary for junior officers to be aware of the role their Soldiers and unit play in the overall strategic goals of our nation.

As part of regionally aligned shaping operations, the Army will employ a careful mix of rotational and forward-deployed forces, develop relationships with foreign militaries, and conduct recurring training exercises with foreign partners to demonstrate the nation's enduring commitment to allies and friends. Where we share mutually beneficial interests with an ally, the Army enhances that partner's self-defense capacity and improves its ability to serve as a capable member of a future military coalition. More capable allies generate a stabilizing influence in their region, and tend to reduce the need for American military interventions over time.

Shaping operations do not end with planned training engagements by forward deployed units. Other actions the units or even small groups of individual Soldiers take can have a shaping effect. Those actions will run the gamut from brigade - or division - sized assistance after a natural disaster to a single act of kindness to a foreign student in an Army school who later rises to high levels in his nation's armed forces. Regardless of the specific activities that have a shaping effect we conduct, all should convey to our intended audiences the clear message that while we are committed to peace, our nation protects its friends and defends its interests. Instilling this understanding among our Soldiers and junior Non-Commissioned Officers (NCOs) is one of the vital roles the company grade officer plays in the execution of strategic landpower.

But there is a caveat. What may be the standard for us is not necessarily useful or welcomed with our host nation partners. So, shaping also entails tailoring our delivery of security assistance to our counterparts in ways appropriate for their culture and military capabilities. Company commanders can gain great success here by applying key interpersonal skills to know, understand, and be humble when dealing with officers, NCOs, and Soldiers from other armies.

Win the Nation's Wars

Despite our best efforts to shape a stable global environment and prevent conflict, violence is likely to remain endemic to the human condition. As been said, "Only the dead have seen the end of war." While we do everything possible to prevent the outbreak of war, we must ensure there never will be a day when the U.S. Army is not ready to fight and win wars in defense of our nation.

What is a war? Historically, war has been defined as a conflict carried out by force

of arms, either between nations or between parties within a nation. However, as we consider hostile acts in cyberspace, the definition of war and acts of war will continue to evolve. For example, large-scale cyber attacks against government operations or critical infrastructure – such as in the 2008 Russian-Georgian conflict – can reasonably be considered acts of war. Leveraging the technological savvy of today's Soldiers requires leaders with an engaged interest in their development. This will require junior leaders from the same generation who are as adept at leader development as they are technologically competent.

To defend our Nation, the Army must maintain the capacity to conduct strategically decisive land operations anywhere in the world. Though we will always conduct such operations as part of a joint force, we also acknowledge that war is a clash of wills that requires the ethical application of violence to compel change in human behavior. Here, company commanders make a dramatic contribution to the application of strategic landpower by being tactically and technically proficient in the execution of combined arms maneuver and wide-area security. Without successful tactical execution, the best strategic concepts are doomed to failure.

The U.S. Army Capstone Concept lays out the details of what capabilities the Army must sustain, as well as provides some guidance on how the force may be employed in the future. But it all boils down to one crucial point; an Army that cannot win on the battlefield is of little worth to the security of the nation. As everyone is aware, we are facing austere times ahead. This fiscal reality cannot be an excuse for not doing our duty or losing sight of our purpose. In the final analysis, this country will one day - maybe soon - ask us to deploy to some distant land, close with and destroy an enemy, and then build a secure and lasting peace. Our Army is uniquely qualified to ensure the training necessary to make those things happen, thanks to the strength of our NCO Corps. Commanders must leverage the experience of their senior NCOs and find creative ways to properly train the fundamentals, despite resource constraints. We've successfully done it before in our Army, and we are counting on our young leaders to do it again.

Conclusion

It was often platoon and company leadership who took the lead solving strategic issues in Iraq and Afghanistan. It will continue to be platoon and company leaders who keep the Army the well-trained and globally-responsive force our Nation needs to deter our adversaries, protect our friends, and defeat our enemies in the 21st Century. The U.S. Army must have company commanders who understand Strategic Landpower and their role in it. Seek out opportunities to ingrain your training events within the framework of Strategic Landpower. Write articles on your branch's professional journal discussing the impacts of Strategic Landpower for your specialty. You can find the Strategic Landpower White Paper on the TRADOC internet homepage at http://www.arcic.army.mil/app_Documents/Strategic-Landpower-White-Paper-06MAY2013.pdf , and on company commander discussion forums. This White Paper is the primary reference for Strategic Landpower concepts and the one jointly approved by the Army Chief of Staff, the Marine Corps Commandant, and the Commander of United States Special Operations Command.

It is the responsibility of senior Army leaders to set the conditions to make you, and our Army, successful. Your senior leaders appreciate what you do every day. These will be challenging, but exciting times, and I thank you for your service and sacrifice as we move towards making the Army of 2020 and beyond the best in the world.

General Robert W. Cone is the present Commander, United States Army Training and Doctrine Command. His previous assignments include Commander, III Corps and Fort Hood and Deputy Commanding General, Operations for U.S. Forces, Iraq. GEN Cone was commissioned as an Armor officer and has served in numerous roles within Cavalry and Armored Cavalry Regiments. He has numerous deployments to Iraq and Afghanistan.

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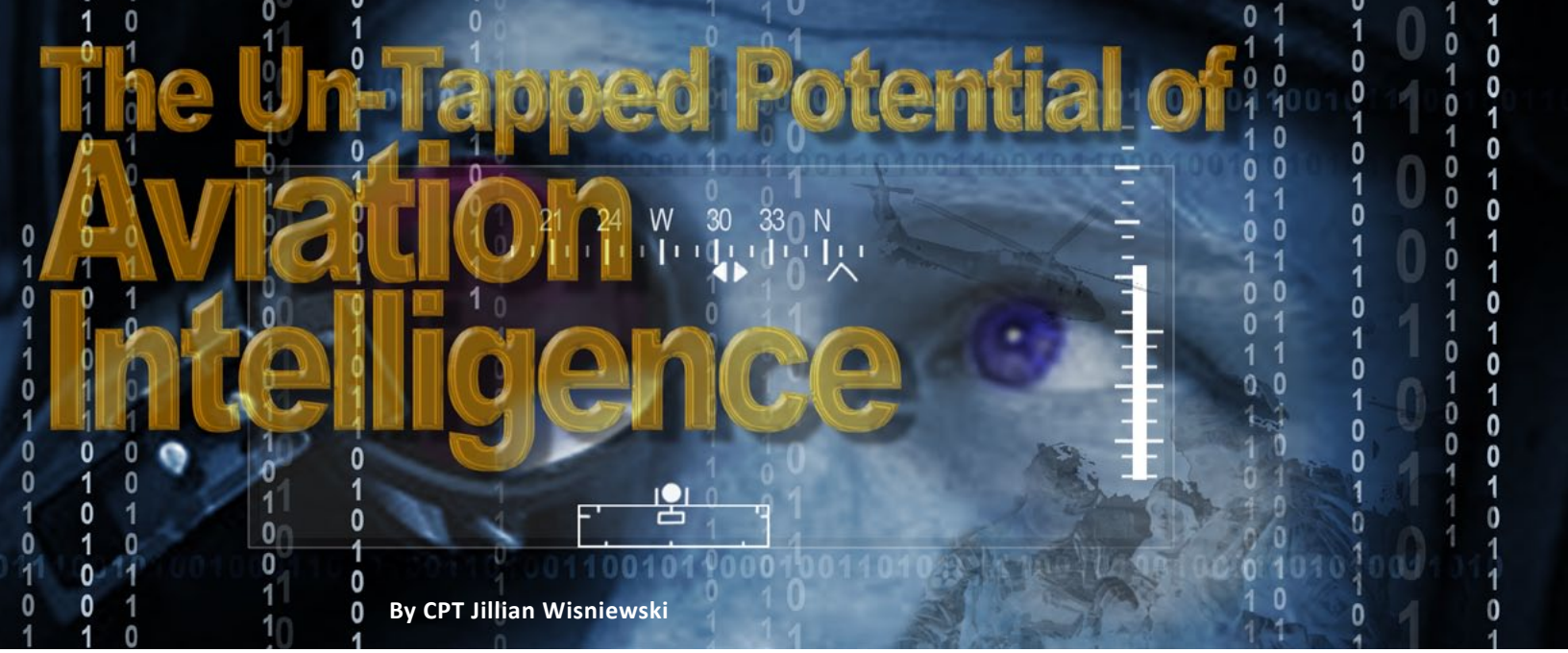

The Un-Tapped Potential of Aviation Intelligence

By CPT Jillian Wisniewski

Most aviators and intelligence professionals agree that something about tactical aviation intelligence just isn't working. Aviators tend to think that intelligence analysts simply don't understand how to assess the enemy as it pertains to aviation specific missions. Intelligence analysts tend to think that aviators know very little about how to employ intelligence analysts. Neither party is incorrect. Intelligence analysts do not learn about aviation missions in their fundamental training, and aviators do not learn adequate intelligence operations to be able to gainfully and efficiently employ an intelligence section. I think both parties are seeking to answer the question: What is the best way to employ an intelligence section in aviation?

Aviators and Intelligence

I served as the S-2 for 7-17 Air Cavalry Squadron, forward deployed to Jalalabad, Afghanistan as Task Force Palehorse in 2009, and as the Brigade S-2 for 159th Combat Aviation Brigade (CAB). In total, I served with aviation intelligence for the better part of five years. However, it wasn't until I served two years teaching military intelligence to aviators in their basic courses and Captain's Career Course at the U.S. Army Aviation Center of Excellence, Ft. Rucker, AL, that I truly began to see the severity of the disconnect between these two fields. Instead of interpreting aviation intelligence strictly though my experiences with Fort Campbell's heavily air-assault focused mindset, I had the opportunity to work with students of diverse backgrounds representing practically every aviation unit in the active duty, National Guard, and Army Reserve. In earnest, it was astounding and disappointing to see that fewer than ten percent of the Aviation Captain's Career Course's (AVC3) students felt that they had good S-2s in their previous units. In small group training, I spent twelve hours with each group, guiding them through intelligence analysis techniques and practical exercises in building an intelligence collection plan from the ground up. Most rewarding in that process is how meticulously it led my students to identify named areas of interest—you know, those things S-2s just "throw on the map." By the end of the training, many students critiqued that their perspective of Military Intelligence changed significantly, and they now believed they could have an in-depth conversation with their own S-2 in the future. These conversations may be the start of a remedy for the aviation intelligence field.

In my experience out of the classroom, the most common question pilots asked my shop was "What are you going to do with this information?" Unfortunately, few aviators have faith that the S-2 will use their information for anything significant. When aviators return from any mission, they debrief the S-2 on the entire experience, explaining and providing pictures of what they saw or did not see and providing basic mission information. When there is significant activity, like an engagement with the enemy, the pilot uses this time to piece together the experience from start to finish, consolidating all the details of the battle. This requires a significant amount of time and mental effort from an often-exhausted pilot, so it's no wonder they are curious about the results.

The data trail of a pilot's debrief shouldn't end in the S-2's database. An intelligence analyst should treat a pilot like a sophisticated sensor: he can collect data in multiple locations through human and technological sensors and provide a detailed view of the battlefield that an unmanned or remote sensor cannot replicate. No other sensor flies with the same frequency in a particular area and interacts with numerous ground units and personalities in a wide spectrum of operations across multiple areas of responsibility. Furthermore, no other sensor can truly incorporate the human factor of curiosity, which leads him to maneuver and view objects or activities in unpredictable ways that leads to a more in-depth understanding of human action-reaction chains on the battlefield. After about sixty days of routine flight, a pilot possesses a detailed, inherent knowledge of the battlefield environment and the adversary within it. It is up to the S-2 to extract that knowledge from him and combine it with the multiple intelligence disciplines available to piece together a comprehensive view of the threat and environment. This extraction only begins with the debrief.

The information contained in the debrief should feed into multiple products. The S-2 creates storyboards or intelligence and reconnaissance summaries immediately,

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while other products, like reconnaissance photos, require cross-referencing with intelligence reports that help corroborate the activities. When that occurs, the S-2 should consolidate the pictures and reporting to produce and disseminate the all-source product to relevant units. Other products, such as long-term or targeting-support assessments may take longer or require more information to complete. For example, if a pilot collects information in certain named areas of interest (NAIs) in support of answering priority intelligence requirements (PIR), his immediate data from a mission may hold little value by itself. However, collecting small details over a long period of time has momentous value in understanding complex enemy operations, like his logistics cycle or steady-state operational patterns, and aviation units are most capable of providing such data. It is in providing this long-term reconnaissance capability that makes the aviation unit integral to a ground force commander's understanding of his area of operation (AO).

This potentially invaluable product of steady state aerial reconnaissance rarely becomes a reality in aviation intelligence for a variety of reasons. It is cumbersome, requiring a systematic approach such as bi-weekly data analyses to stay on task. It requires an in-depth knowledge of data management or the ability to dedicate the majority of someone's effort to maintaining and streamlining the database. It needs full support/enforcement from the unit commander and S-3, especially in fostering a climate wherein the intelligence section and aviators work together. In short, it requires building a team with not only the knowledge and expertise to accomplish the task, but also the understanding to execute operations based on the results of the team's analysis.

This steady state collection can be most frustrating to pilots. Often, they see no immediate gain for conducting the reconnaissance. This is especially true when they see an activity that could be nefarious, like people digging along a roadway when there is no scheduled construction, yet there is no ground element nearby to take action, relegating the pilots to do nothing more than report the activity. Passive reconnaissance is counter to human nature. When pilots see a suspicious activity, they want to be able to do something about it. Aviators also voice frustration in having to provide detailed data to the S-2 when there is nothing significant to report. For statistical analysis, that mentality is a fatal mistake, as each recorded data point assists in forming statistical significance and a degree of certainty to an overall assessment. Negative reporting helps analysts piece together activity patterns in context of time and space. If a pilot doesn't report that he was present in a NAI just because nothing happened, then it looks as if no one ever checked the NAI except when activity occurred. More importantly, if pilots don't understand the big picture or intent behind what they are collecting, they are not prepared to provide sufficient feedback to support a collection plan. Pilots must have some understanding of the commander's PIR and how the collection plan supports it so that they can provide essential information and constructive feedback to the S-2 about the experiences that they encounter. For instance, a pilot may have to look for "groups of two to three military aged males" in a certain NAI, which the S-2 may have assessed as an indicator that a certain activity is occurring, yet the pilot may understand through his routine flights and conversations with the ground elements that this gathering in the NAI is actually a local group of farmers or other benign gathering of locals. If this exchange of information between the pilot and S-2 never occurs, then the S-2 may never adjust the indicator and will keep asking for the same information, thus perpetuating the cycle of frustration between the collector and analyst. Lastly, pilots rarely see the fruits of their labor. When developing the S-2 and aviation team, it is supremely beneficial for the S-2 to present assessments and findings derived or directly resulting from pilot feedback. Even if the pilots aren't keenly interested in a detailed description of some aspects of the threat, occasional threat updates actively briefed at the company level or below will foster a trusting relationship. It is always reassuring to know that there are fruits to one's labor and that the staff element is diligent in holding up its end of the bargain.

When the intelligence section and aviators understand and respect each other's roles, they can be a truly effective team on the battlefield, doing much more for the ground unit than is typical in a single mission window. The scope of aviation capabilities extends far beyond the rudimentary search for improvised explosive devices or providing a security escort. On today's battlefield, ground units employ aviation assets more than ever to help them fight an increasingly elusive enemy. Aviation can employ deception simply by being present, or absent, at key times in the battle. This can only happen with interaction among other intelligence platforms, which can tell the pilot in real time how the threat perceives his action. By listening, watching, and interacting with the threat, the pilot can gain instrumental knowledge about the adversaries' responses to friendly forces' tactics. Those friendly forces can use that knowledge in future operations to gain an advantage. However, this exploitation cannot occur if the pilot does not capture and archive this knowledge so that the staff can reference it in mission analysis. Similarly, because of the frequent employment of aviation assets, the aviator is the most consistent sensor on the modern battlefield and is thus the most economical sensor for steady-state collection of visual indicators. By capturing his reconnaissance efforts in a well-organized database, the S-2 can incorporate the pilot's data into the all-source analysis of the operational area. In a sense, the aviator allows the ground commander to see the forest beyond the trees.

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Getting There from Here: Changing a Mentality

In order to build an S-2 shop that is capable of performing the aforementioned tasks, it is up to the commander to determine who will lead the intelligence section, and one of the biggest debates is whether the S-2 will be an Army Aviation All- Source Intelligence Officer (15C) or a Military Intelligence All-Source Intelligence Officer (35D). Sometimes this decision is less about the military occupational specialty and more about the personality or competency. Before we embark on a discussion concerning who is more qualified to do what, let us just examine some of the common barriers, misconceptions, and essentials of an effective aviation intelligence section.

More Than the Surface-to-Air Fire Headquarters

What aviators tend to think is that the aviation intelligence section is the surface-to-air fire (SAFIRE) headquarters in any given theater. While aviation intelligence logically should be the SAFIRE headquarters, it should not perform this duty at the expense of neglecting the ground threat. Aviation and Infantry have intertwined roles. In some way, each aviation mission set supports the ground element. Logistical resupply, route or convoy security, aerial reconnaissance, transportation, air assault, and close combat attack are all aviation missions that directly support ground elements. I firmly believe that since aviation mission sets derive importance from a ground unit's operational needs, air threat will follow ground threat. It is essential to know the threat from the ground perspective first, and that knowledge will serve as the backbone when deciphering the threats' capacity to target helicopters.

In general, aviation does not focus on personalities or high value individuals, simply because aviators are not on the ground, targeting individuals or influencing a population through face-to-face engagements. Knowing who, or what group, has a presence in a given area will help determine the specifics of what tactics they will employ against our forces. For instance, in many places there is a difference between the foreign or seasonal fighter and the local fighter. A foreign fighter tends to come to an area for a specific purpose, such as fighting against a particular group or target in order to help accomplish a higher objective. He may employ more lethal tactics or decide to lead attacks toward population centers; he might take more risks at the expense of himself or the population in order to accomplish his goal. A local fighter may fight for various reasons such as supporting an organization or cause, simply keeping a foreign adversary out of his village, or to feed his family. The difference between the two is their history, or their roots. One is fighting in his own backyard near his family and community, and the other is not. For the fighter who is not invested locally, collateral damage is not his concern. This may play out as attacks against aircraft over or within population centers. The local fighter might be more inclined toward harassing tactics, like hasty small arms fire, as if to tell our forces to stay away or provide a reminder that our presence is not welcome. Many factors influence each of these fighters, but knowing the enemy personalities in depth, and which one is in power at a given time, allows an analyst to further pinpoint the potential outcomes based on the current threat conditions.

The Language Barrier

I gave my first intelligence brief for an aviation mission during training at the Joint Readiness Training Center. I had no idea where to start with intelligence products, so I broke out my intelligence doctrine from my basic course and began fitting the models as best as I could. I made it all the way through my intelligence preparation of the battlefield (IPB) products to the most dangerous course of action before one pilot had a question. "This brief sounds really detailed and everything, but what are each of those red icons on the map?" He was referring to the red enemy icons, diamond-shaped with various details denoting a specific type of enemy capability or weapon system. I felt immediate relief. In that moment it became blatantly apparent to me that perhaps we were speaking different languages. So, as long as we were all starting out on relatively even ground, we could now begin our lesson in communication.

Language immersion is probably the best solution for this ailment. The S-2 simply needs to interact with pilots, fly with pilots if possible during training, and suffer through the give and take that comes with the steep learning curve of any new position. Each airframe wants or expects different information from the S-2, based on the missions specific to the aircraft. Chinooks carry people and things from place to place, so they are big, making them ideal targets, and powerful, making them capable of flying at higher altitudes and taking off at practically a vertical lift. Knowing these unique elements helps an intelligence analyst think about how the enemy might target the aircraft, what weapons and tactics are more lethal than others. Conversely, Apaches are attack helicopters, so they are capable of quick maneuver, pinpointed targeting, and can carry quite an arsenal of weapons. Apache pilots aren't as concerned with what the enemy will do to them (unless the enemy has sophisticated anti-aircraft weapons), they want to know how to best protect the forces on the ground or in the air, which means, how to find and destroy the enemy. It might take a while for the S-2 to understand that giving a grid coordinate for a target reference point or targeted area of interest is not as good as giving the Apache pilot the grid plus the altitude so that they can best employ their systems in battle. Only interaction will teach these small lessons and many more, which means the S-2 section should incorporate into as many training exercises and relevant pilots' classes as possible.

Know What an Intelligence Analyst Can Do

As a fledgling young analyst running my first intelligence shop, I tried to produce helpful products, but I was pretty sure they were garbage, or at best sophomoric. Like I said, I was fledgling. Generally someone would say to me, "Good job!" or "Looks good!" or my favorite, "What's the weather going to be like?" I started to wonder if my aviation leaders knew what I learned in the Military Intelligence Basic Officer Leadership Course, hoping that they could push me further. I have learned that most aviators tend to think we know IPB very well (we do), that we know weather (we kind of do), and that we know physical and personnel security incredibly well (we do not). An analyst fresh out of his basic course will know much more than IPB. He will also know how to build a targeting packet, the targeting process, how to create a comprehensive collection

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plan, what each of the seven intelligence disciplines can do and how to leverage them in his collection plan, how to assess a friendly mission, how to write PIR, and how to use intelligence reach-back capabilities. He should know a little something about the weather, although he is not qualified to give the official weather brief to pilots. If he was paying close attention, he should also know how to further his own education through Project Foundry, which is intelligence training for intelligence personnel that doesn't require unit funding. There is little training on physical or personnel security because those aspects do not take the majority of our time when completed in accordance with the regulations, as they are shared tasks with other proponents and staff sections. How a unit chooses to employ this skillset will determine what caliber of products their intelligence section produces.

Challenge the S-2, Early and Often

The Army is refocusing its training and education on the basics as it regroups from its current conflicts to prepare for a diverse set of potential conflicts in the future. Instead of attempting to assimilate the young analyst to methods that have long since disconnected with doctrine or perhaps never were part of any doctrine, mentor him to apply his doctrinal models from the schoolhouse so that he develops an in-depth understanding of the aviation mission. By exploring problems using systematic approaches, the bi-product is often a detailed understanding of the mission at hand and the analytical methods applied. Only after becoming an expert at applying his basic craft should the analyst be ready to branch out into other non-traditional methods. Analysis requires education and thought, and the more proficient an analyst becomes at fundamental tasks, the better he will perform assessments in a time-constrained environment.

Finally, whether the S-2 is a 35D or 15C, it is best to define the limits of his influence in the cockpit. The S-2 should identify the threat and possible courses of action and then let each airframe employ their individual aircraft survivability equipment (ASE) package and defensive flying techniques in accordance with their standard operating procedures. It is not necessary to attempt to make an S-2 proficient at employing ASE and evasive maneuvers for each airframe—aviators don't employ an S-2 to tell them how to fly their aircraft. Tactics and techniques used by each aviator to best employ their ASE should be left up to the newly renamed aviation mission survivability officer (formerly the tactical operations officer) to direct in concert with each company's chain of command. This officer could help the S-2 become familiar and conversant with these systems and techniques in order to assist the S-2 in understanding the threat from an aviator's perspective.

Perform a Self-Diagnosis

Every aviation unit is unique, as every commander will have his or her own perception of what the aviation intelligence officer should provide. Some will prefer a 15C, some will prefer a 35D, and some will simply prefer a specific personality type. It is up to each unit to perform a self-diagnosis of how to get the intelligence section up and running to meet the commander's intent. If the S-2 is a 15C, does he have adequate knowledge of the intelligence field? Sometimes the career course isn't enough because it spends less time on the basics and more time on more in-depth analysis techniques and intelligence capabilities. A six-month course simply cannot replicate the knowledge that intelligence experience and networking provides. If this is the case, there are many Project Foundry courses that can help build a network as well as enhance one's knowledge of basic intelligence concepts. Aviation officers serving in Intelligence positions may go to such training without using unit funds. If the S-2 is a 35D, does he know enough about aviation? Can he learn on the job with the unit, or does he need more intensive, formalized training? Currently no such training exists, but it might be possible for him to piggy-back off of relevant courses taught at Fort Rucker or attend various aviation threat conferences that occur periodically in the aviation intelligence community. An alternative solution, which requires no time away from the unit, would simply be to augment the S-2 shop with aviators if possible. My squadron commander did this with our S-2 shop, so I had two grounded aviators (medically or otherwise) who were able to answer many questions and provide the aviator perspective during the analysis and production aspects of the intelligence cycle. Another solution would be to institute a mentorship program, wherein aviation leaders mentor intelligence analysts to guide and develop them into the type of analyst that best suits the unit. Surely there are other options out there; the solution simply depends on the outcome of the self-diagnosis.

Conclusion

As I reflect on the time I spent teaching (May 2011 to June 2013), I tend to think that I only imparted a small amount of my knowledge of the Intelligence field, but even this small amount seemed to make a remarkable difference in the attitudes, perceptions, and overall willingness of my students to think as an analyst. Only time will tell whether this education made a difference. It is my hope that those captains become commanders, S-3s, executive officers, or staff members who strike up a conversation with the S-2 to exchange knowledge and set the conditions for a seamless integration of aviation operations and intelligence.

CPT Jillian Wisniewski is currently earning her Master's Degree through the Massachusetts Institute of Technology's System Design and Management Program. CPT Wisniewski's previous duty positions include S-2 for 7-17 Air Cavalry Squadron, S-2 for the 159th Combat Aviation Brigade, and Maneuver Branch Chief in the Combined Arms Division at the United States Army Aviation Center of Excellence, Fort Rucker, AL where she also served as an Academic Instructor and Military Intelligence subject matter expert. She has one deployment to Afghanistan. Following completion of her Master's Degree, CPT Wisniewski will teach Systems Engineering at the U.S. Military Academy, West Point, NY.

Acronym Reference

AO – area of responsibility	NAI – named area of interest
ASE - aircraft survivability equipment	PIR – priority information requirements
IPB – intelligence preparation of the battlefield	SAFIRE – surface-to-air fire

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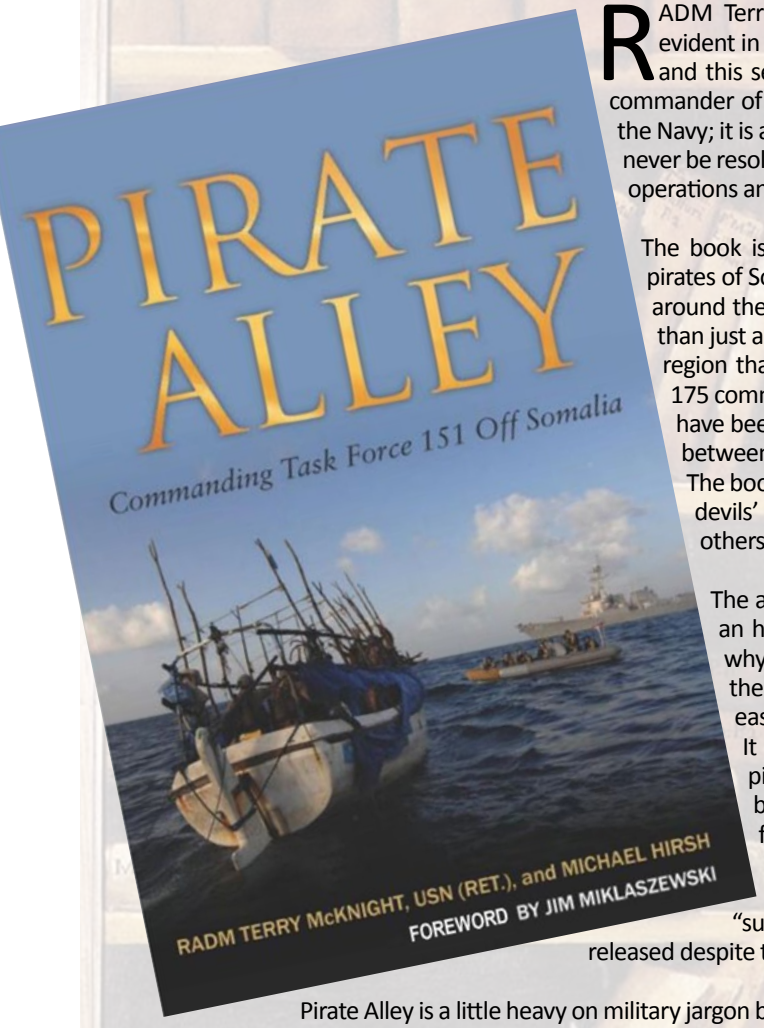
TURNING PAGES

~ book reviews of interest to the aviation professional

Pirate Alley:
Commanding Task Force 151 Off Somalia

By RADM Terry McKnight, USN (Ret.) and Michael Hirsh. U.S. Naval Institute Press, U.S. Naval Institute, 291 Wood Road, Annapolis, MD 21402. p272. Available in hardcover and ebook at http://www.usni.org/store/catalog-fall-2012/pirate-alley.

A book review by CW3 Jared Jones



RADM Terry McKnight knows his craft well, and his passion for this topic is evident in Pirate Alley. He has a long and rich history in the United States Navy, and this serves him well as he looks back and examines his time as the first commander of Task Force 151. But his story is more than reflection of 31 years in the Navy; it is an ultimatum: U.S. Policy must change or the true issues of piracy will never be resolved. Pirate Alley is a must read for anyone interested in current naval operations and, more specifically, the challenges faced in fighting piracy.

The book is a compelling piece of non-fiction that explores the modern day pirates of Somalia and the unique security issues of that area, specifically in and around the Gulf of Aden. It doesn't take long to realize that this story is more than just about fighting pirates on the high seas - it is about stabilizing a specific region that has far reaching global effects. In the last five years alone, over 175 commercial vessels have been hijacked and more than 3,000 of their crew have been taken hostage. To further complicate matters, links have emerged between the pirates and transnational criminal networks and terrorist groups. The book digs down to the root causes of piracy while at the same time plays devils' advocate. For some, piracy has become a necessity of survival; for others, a chance to rise above the poverty stricken masses.

The authors are not afraid to "tell it as it is," with no punches pulled. It is an honest and insightful look at this seafaring crime, and clearly shows why more must be done to make a difference. The book brings to light the great difficulty of the situation, and shows that there are really no easy answers. The authors do, however, offer several possible solutions. It becomes clear that there are numerous complexities of prosecuting pirates. Among these: securing evidence, bringing in witnesses, half broken court systems in Africa, or something as seemingly simple as finding real estate to jail suspected or confirmed pirates. One of the biggest challenges the Navy struggles with is the "catch and release" of pirates; a bizarre and counterproductive U.S. Policy in which "suspected pirates" who are more or less caught in the act are often released despite the overwhelming evidence against them.

Pirate Alley is a little heavy on military jargon but does a good job of explaining the terms. The book isn't the action packer thriller that the title may initially imply and is not to be confused with the book of the same name by Stephen Coonts, but it is full of facts and points of view from authorities who understand piracy, Somalia, and the culture of eastern Africa and the Middle East. The authors employ an interesting choice of dialogue - questions asked and points made are exchanged between the text of the book and quotations from interviews - forming a kind of dialogue between the authors and the experts. Much of this dialogue comes from Jatin Dua, a Ph.D. candidate at Duke University, who was able to get an inside look at Somali pirate villages. Other highlights of the book include a detailed account of the SEAL Team 6 rescue of Captain Richard Phillips of the Maersk's Alabama.

This is a story not just about the actions of our Navy, but the joint efforts of many nations, to include China and Russia, and how we are all working together to make a difference. Pirate Alley is a good read and recommend it to anyone interested in global security, joint operations, or of course, modern day piracy.

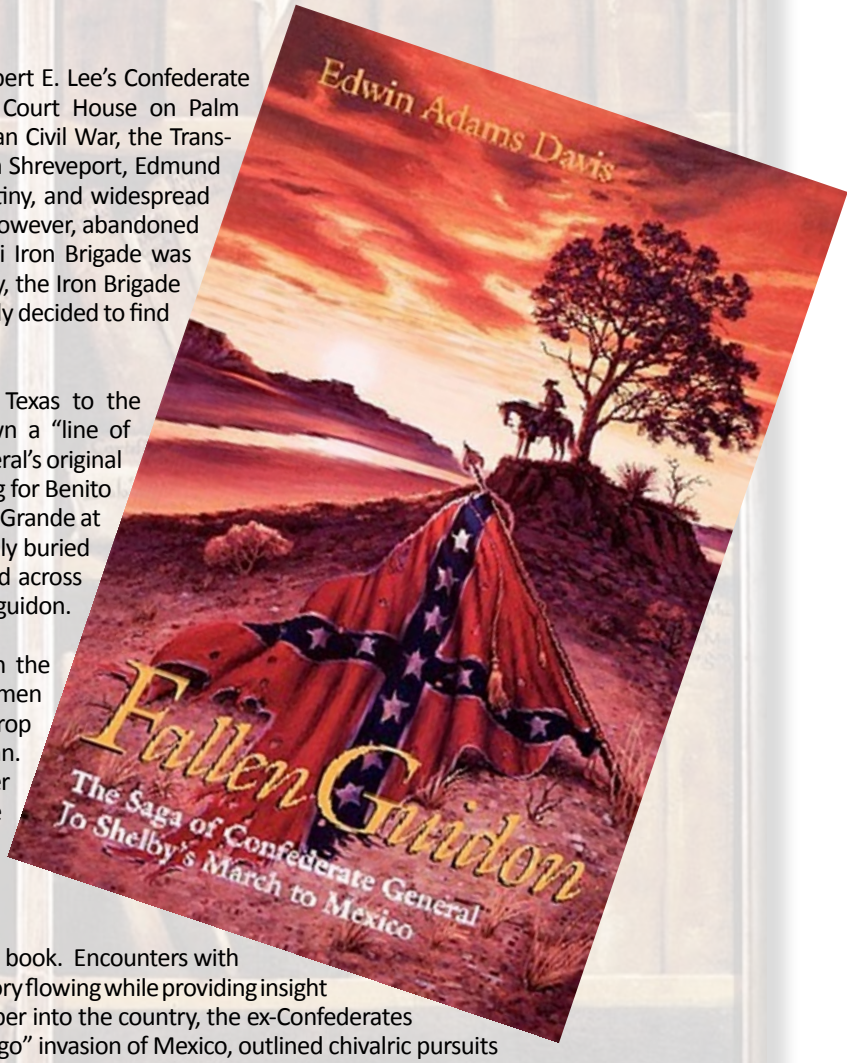
TURNING PAGES

~ book reviews of interest to the aviation professional

Fallen Guidon:
The Saga of Confederate General Jo Shelby's March to Mexico

By Edwin Adams Davis. FALLEN GUIDON: THE SAGA OF CONFEDERATE GENERAL JO SHELBY'S MARCH TO MEXICO. College Station: Texas A&M University Press, 1995. 174pp. Maps and bibliographical essay. Cloth, ISBN 0-89096-683-4; paper, ISBN 0-89096-684-2. http://www.amazon.com/Fallen-Guidon-Confederate-General-Shelbys/dp/0890966842

A book review by CW5 Robert B. Reynolds



The Civil War ended with the surrender of General Robert E. Lee's Confederate forces to General Ulysses S. Grant at Appomattox Court House on Palm Sunday, 9 April 1865. In the final days of the American Civil War, the Trans-Mississippi South was in anarchy. From his headquarters in Shreveport, Edmund Kirby-Smith had lost control of units. Rioting, looting, mutiny, and widespread insubordination were rampant. Not all of the Rebel units, however, abandoned military discipline. Brigadier General Jo Shelby's Missouri Iron Brigade was one such unit. Comprised of Missouri and Arkansas cavalry, the Iron Brigade refused to surrender. Shelby and his men, instead, collectively decided to find sanctuary in Mexico.

FALLEN GUIDON traces Shelby's movement from North Texas to the Mexican Border, across to Piedras Negras, and then down a "line of march" through the Mexico interior to Mexico City. The general's original vision was to offer his brigade's services to the forces fighting for Benito Juarez to restore the Mexican Republic. On reaching the Rio Grande at Eagle Pass, Texas, in June 1865, the Confederates symbolically buried their Rebel battle flag in the bottom of the river and moved across to start their new lives as hired guns following their brigade guidon.

However, Shelby's plans fell apart. After negotiating with the Juarezista garrison commander, the general learned that his men preferred to offer their sabers to the Imperialists working to prop up the tottering regime of the Hapsburg Prince Maximilian. The former Rebels declared their allegiance for yet another lost cause. The "Iron Brigade" siding in opposition to the forces of national self-determination. Loyal to the wishes of his men, Shelby submitted, promising to lead his troops to the court of Maximilian in Mexico City.

The brigade's cross-country trip is the interesting part of this book. Encounters with Republican troops, bandits, partisans, and Indians keep the story flowing while providing insight into conditions in the interior of 1865 Mexico. Dipping deeper into the country, the ex-Confederates recollected stories of their childhood regarding the last "gringo" invasion of Mexico, outlined chivalric pursuits that involved pistol duels, and a bloody rescue of a woman imprisoned in a hacienda. French commanders eyed them with suspicion. Keen to prove their loyalty, the Iron Brigade engaged in ad hoc warfare at Matehuala, where the Missourians and Arkansans rescued the French 82nd Line Regiment from sure disaster at the hands of Mariano Escobedo's Juarezistas.

Shelby's military successes earned him an audience with the Emperor. When Shelby arrived in Mexico City, however, the Austrian told the ex-Confederates to go home. At the time Maximilian had a surplus of Europeans at his disposal and he did not want to provoke the government of the United States by employing former Rebels. Broken, the hard-riding Iron Brigade saddled its last review while in Mexico City before finally disbanding. Shelby and most of the men went home. Some ex-Confederates went on to serve alongside Union veterans with the Juarezistas.

FALLEN GUIDON may not be an authoritative work, but it is does provide some entertaining and useful tidbits for students of the American Civil War.

Aviation Digest 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 Kevin W. Mangum, Commanding General, 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 first certificates have been mailed to authors of Aviation Digest Volume 1 Issue 4 (Oct-Dec 2013). We "owe" the authors of the first three issues their Certificate of Appreciation and as the saying goes – "the check is in the mail" or will be as we complete the print, approval, and signature process. 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 selects three articles that are forwarded to the CG for selection of one as the Aviation Digest Annual Writing Award. The CG is not restricted to the three selected by the Editorial Review Board and may select any other article he deems more qualified. The author of the article selected will receive a Certificate of Appreciation annotating his article as the Aviation Digest Article of the Year and a coin from the CG.

The authors selected for the 2013 Aviation Digest Annual Writing Award are:
MAJ Corby Kohler and LTC (Ret) Christopher Takarta, PhD, co-authors of "*Intelligence Support to Army Aviation is Broken – Does Anyone Care ?"*, published in Volume 1/Issue 2, 2013 (April-June 2013, pg. 30).

What criteria are used to make selection of an article for the Aviation Digest Article of the Year?

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 insure 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?

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Ultramarine blue and golden orange are the colors traditionally associated with the Aviation Corps. The flame signifies the combat mission and quick strike capabilities of the unit. The twelve tongues allude to the Brigade's numerical designation. The griffin, a fabulous creature with the body of a lion and the head and wings of an eagle, symbolizes courage, alertness and swiftness and reflects the attributes of the Aviation Brigade.

The shoulder sleeve insignia was authorized on 9 March 1988. (TIOH Drawing Number A-1-746)

12TH COMBAT AVIATION BRIGADE

A mythological phoenix symbol, depicted in heraldry as a demi-eagle with wings displayed rising out of flames of fire and said to represent hope and life eternal, is the basis for this design. Thus the blue wings symbolize the organization's aircraft rising triumphant out of the tempering fires of combat, signifying hope and the continuity of life throughout hardships. The Aviation colors, blue and orange, are represented in the wings and flames and the total number of the tongues of flame and the wings equal the numerical designation of the unit.

The distinctive unit insignia was originally approved for the 12th Aviation Group on 10 July 1967. It was re-designated for the 12th Aviation Brigade on 16 March 1988.

Unit Motto - "Wings of Victory"
The unit motto reflects the 12th Combat Aviation Brigade's relationship with V Corps (Victory), which it was assign to on and off from 1973 through V Corps' deactivation in 2013.

The 12th Combat Aviation Brigade first organized as the 12th Aviation Group at Fort Benning, Georgia, on 18 June 1965. The unit deployed to Vietnam and located at Tan Son Nhut Air Base (Saigon) in August as a command element for non-organic Army aviation units and by November 1965 the group consisted of 11,000 personnel and 34 aviation units. The unit was relocated to Long Binh and assigned to the 1st Aviation Brigade on June 29, 1966.

Upon its return to the United States in March 1973, the 12th Aviation Group became a major subordinate command of the XVIII Airborne Corps, Fort Bragg, North Carolina. In November 1979, the 12th Aviation Group deployed to Lindsey Air Station, Wiesbaden, Germany as a major subordinate command of the United States V Corps. In April 1984, Headquarters Company, 12th Aviation Group moved to Wiesbaden Air Base.

In October 1987, under Army-wide restructuring, the 12th Aviation Group was re-designated as the 12th Aviation Brigade.
The 12th Aviation Brigade deployed to Southwest Asia in August 1990 in support of Operations Desert Shield and Desert Storm and then maintained a presence in Iraq from 1991 to 1996 to ensure the safety of the Kurdish citizens during Operation Provide Comfort.

The Brigade deployed Soldiers to Hungary and Bosnia in 1995 during Operations Joint Endeavor and Joint Guard. In April 1999, the Brigade deployed to Tirana, Albania in support of NATO Operation Allied Force in Albania, Macedonia, and Kosovo.

The 12th Aviation Brigade returned to Iraq in support of Operation Iraqi Freedom (OIF) where it conducted full spectrum combat operations during each of its deployments in 2003, 2007, and 2009.

In February 2005 the 12th Aviation Brigade deployed to Afghanistan, in support Operation Enduring Freedom. During this deployment, the Brigade supported Earthquake Humanitarian Relief Operations in Pakistan. In April 2012, the Brigade conducted a second deployment to Afghanistan in support of Operation Enduring Freedom.

On 7 August 2006, the units of 4th Brigade, 1st Infantry Division combined with units of both the 12th Aviation Brigade and the former 11th Aviation Regiment and were re-designated as the 12th Combat Aviation Brigade, attached to the 1st Armored Division.

Since its organization in 1965, the 12th Combat Aviation Brigade has served as a key member of the combined arms team, dedicated to the preservation of peace. The Brigade's motto, "Wings of Victory," continues to exemplify the standard by which the brigade conducts its missions in support of the United States of America.

Campaign Participation Credit

VIETNAM
Defense
Counteroffensive
Counteroffensive, Phase II
Counteroffensive, Phase III
Tet Counteroffensive
Counteroffensive, Phase IV
Counteroffensive, Phase V
Counteroffensive, Phase VI
Tet 69/Counteroffensive
Summer-Fall 1969
Winter-Spring 1970
Sanctuary Counteroffensive
Counteroffensive, Phase VII
Consolidation I
Consolidation II
Cease-Fire

SOUTHWEST ASIA
Defense of Saudi Arabia
Liberation and Defense of Kuwait

WAR ON TERRORISM
Afghanistan:
Consolidation I
Transition I (pending close out)

Iraq:
Liberation of Iraq
Transition of Iraq
Iraqi Surge
Iraqi Sovereignty
New Dawn

DECORATIONS

Meritorious Unit Commendation (Army), VIETNAM 1967

Meritorious Unit Commendation (Army), SOUTHWEST ASIA 2003-2004

Meritorious Unit Commendation (Army), IRAQ 2009-2010

Republic of Vietnam Cross of Gallantry with Palm, VIETNAM 1966-1967

Republic of Vietnam Cross of Gallantry with Palm, VIETNAM 1967-1968

Republic of Vietnam Cross of Gallantry with Palm, VIETNAM 1969-1970

Republic of Vietnam Cross of Gallantry with Palm, VIETNAM 1970-1972

Republic of Vietnam Civil Action Honor Medal, First Class, VIETNAM 1969-1970

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Threat & Intelligence Preparation of the Battlefield

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