# The Glass Balls of the Brigade Aviation Element:

## The Brigade Aviation Officer in Combat

**Major Erick "Zeke" Sweet II, U.S. Army**

BATTALION AVIATION OFFICERS continue to distinguish themselves as valuable members of the ground brigade combat team (BCT) and are leading the way in the integration of Army Aviation and unmanned aerial vehicles in wartime operations. In military parlance, "juggling glass balls" is a common metaphor for having to accomplish multiple critical tasks simultaneously. Three "glass balls" have emerged that define the brigade aviation element's (BAE) success in support of ground units during combat: air-ground integration, unmanned aerial vehicle integration, and airspace management and Army airspace command and control. The following narrative of the combat experience of an aviation brigade in the Multi-National Division-Baghdad area of operations from 2005 to 2006 provides insight into those enduring issues that affect the BAE's operations across the Army.

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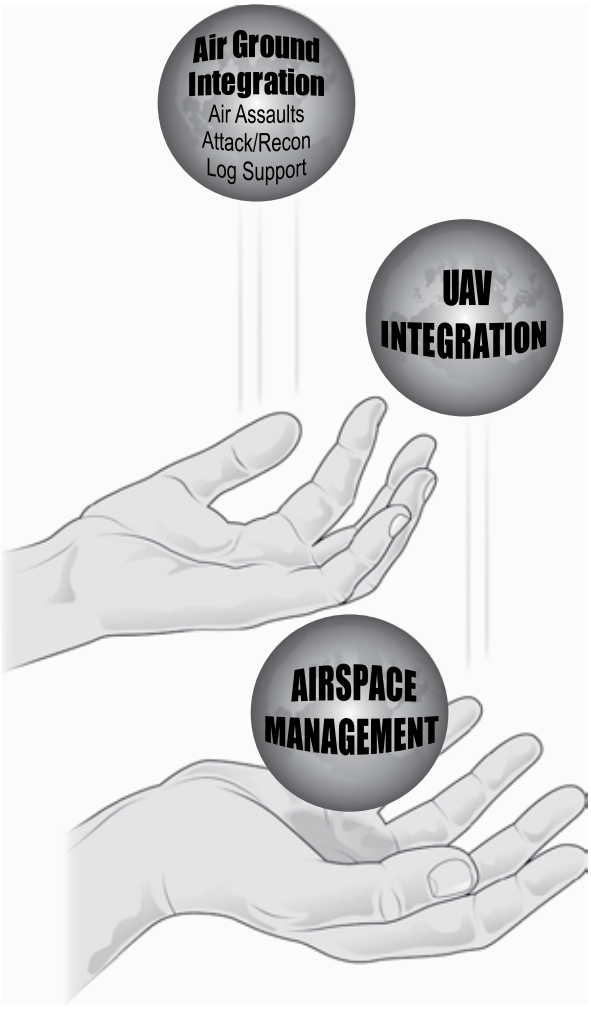
PHOTO: U.S. Army SSG Adam Jeter with 5th Squadron, 73d Cavalry Regiment, 3d Brigade Combat Team, 82d Airborne Division, launches a Raven unmanned aerial vehicle during a joint air assault operation planned and led by the Iraqi Army and Iraqi National Police, in the Ma'dain area, east of Baghdad, Iraq, 26 June 2009. (U.S. Army, SSG James Selesnick)

## Glass Ball Number 1: Air-Ground Integration

The obvious "glass ball" of the brigade aviation element is air-ground integration. Army aviation is unique in that it traverses all aspects of military operations from kinetic combat operations to combat service support logistics missions. Thus, brigade aviation officers must dabble in every aspect of BCT operations and support operations to integrate aviation to its full potential.

**Training and integrating.** With accelerated deployment timelines and limited garrison training opportunities, brigade aviation elements must conduct air-ground integration (AGI) training at every possible turn, and help the BCT commander identify key AGI skills that the unit wishes to hone prior to deployment. A simple convoy delivering trucks to the rail yard can quickly turn into an integrated training opportunity with attack or reconnaissance aircraft providing route security while reporting to the convoy commander and the parent unit tactical operations center through multiple communication networks. The more opportunities our junior ground leaders have to integrate and communicate with aviation assets, the more effective their communication will be in combat. If a football coach has a star receiver he never uses at practice, he cannot be upset when the receiver




does not know the plays on game day. Similarly, if aviation assets are never integrated into ground unit training until the execution of a combat training center rotation, or even real combat operations, the unit cannot expect aviation performance to be at its best. Granted, these integration challenges can be overcome ad hoc, but the preferred method is to integrate aviation into combined arms training from the outset.

The relationship of the brigade aviation element with its supporting aviation unit is critical to successful air-ground integration. Strong professional relationships with the corps staff training officer, combat aviation brigade staff training officer, and the subordinate aviation battalion training officers streamline the coordination process and improve integration. If fully informed about the challenges facing the employment of aviation assets from the combat aviation brigade point of view, the battalion aviation officer can communicate those issues and explain their effects on BCT operations.

For example, if an aviation unit surges air crews to support a large scale operation, then the brigade aviation officer can address the subsequent loss of those aviation assets during the operation or immediately afterwards, while crews recycle themselves to their steady-state battle rhythms or play maintenance catch up, therefore squashing any angst. At the beginning of mission planning, the brigade aviation officer can provide the cost or benefit analysis of such a surge. For this to be effective, the element must open and maintain clear lines of communication with corps and division training and air operations, combat aviation brigade staff, and the commander himself. Brigade aviation elements must also be careful not to delve too deeply into the maintenance status of individual airframes or the fighter management cycles of individual crews. The better approach is to assist the ground commander with identifying his desired effects, weigh the costs and benefits of any surge in aviation support, and then allow the aviation unit to execute as necessary to achieve the desired end state. In this respect, the brigade aviation element is a sort of permanent liaison officer for aviation, although the element's final loyalties must always be to the ground units they serve. This may not preclude the need for an aviation unit liaison officer, especially for large scale missions like a battalion air assault, but the ability of the brigade aviation element to inform and educate the ground commander on the limitations of aviation assets will produce huge dividends over time. In execution, the brigade aviation element can segment its air-ground integration focus into three main areas:

- Air assaults and tactical air movements.
- Attack and reconnaissance aviation integration.
- Logistics and administrative aviation support.

**Air assaults**. Air assaults have become a staple of combat operations in Operation Iraqi Freedom and Operation Enduring Freedom. Once relegated almost exclusively to the light infantry community, air assault operations have proliferated throughout the Army. The 4th Infantry Division executed over 60 air assault operations and an additional 70 tactical air movements in the Multi-National Division-Baghdad area of responsibility during a six-month period in 2006—an impressive display, considering

***Air assaults have become a staple of combat operations in Operation Iraqi Freedom and Operation Enduring Freedom.***

the large areas of built-up terrain and the fact that a large chunk of these missions were in support of traditional heavy-armored or mechanized combat units.[1] With the complex early warning systems that our enemies employ to thwart ground infiltration, air assaults often provide the surprise and flexibility that spells the difference between mission success and the infamous "dry hole." Restricted terrain, like that in Afghanistan, is another driving factor in the popularity of the air assault. In many cases, there is simply no other way to get to the mission location.[2]

Thus, the brigade aviation elements must be ready. Clear standard operating procedures for air assault planning products and events is the first step to a smooth and timely planning process. The element serves in the traditional role of the battalion staff training officer for air operations, but it expands that role to assist the ground unit on how best to employ its aviation assets to achieve success. The brigade aviation element acts as the battalion training air officer, air mission commander liaison officer to the ground unit, ground unit liaison officer to the aviation unit, and primary BCT staff planner all in one. As with any air movement mission, the key points of information that need fidelity up front are—

- Where is the objective?
- Are there any proposed landing zones from the ground unit?
- What is the number of passengers and amount of equipment to be moved?
- What is the tentative time-on-target or requested mission timeline?

The brigade aviation element assists by prompting the ground unit to arrive at the initial planning conference (or air mission coordination meeting) with an 85 percent solution for its ground tactical plan. Failing to accomplish this critical step can cause delays and complications in the planning process for all involved units.

The aviation unit will assist by outlining what it expects from the brigade aviation element in the air assault planning process. Most aviation units will reserve the right to plan flight routes and final landing zone directions for themselves; however, in a time-constrained environment, the element may be able to provide some preliminary planning products to the aviation unit to expedite its planning.

Lastly, brigade aviation elements can fully expect to control the primary pickup zone for the ground BCT. This control is challenging since the current team Modified Table of Organization and Equipment does not provide the element with the necessary vehicle and communications equipment to perform the mission to standard. With the air defense airspace management shelter vehicle tied to the brigade combat team's tactical operation center, the brigade aviation element often must beg and borrow for pickup zone equipment. Pickup zone manpower can also be a challenge for large-scale or sustained missions. Thus, the brigade aviation element must identify its pickup zone control needs up front and work with team leaders to establish set procedures to acquire personnel and equipment quickly for pickup zone control missions.

**Attack and reconnaissance aviation integration**. When employing attack and reconnaissance aviation assets, brigade aviation elements can help their ground units maximize aviation effectiveness by enforcing a few key standards. First, ensure that the unit provides a clear task and purpose for the aviation assets in the mission request.

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**Air assault to capture an insurgent High Value Target northwest of Baghdad in 2005.**

For instance, a poorly worded task and purpose might be: "Observe the outer cordon to identify enemy leaving to objective." This task and purpose is too vague to give aviators a clear focus. A properly worded task and purpose might be: "Concentrate observation on the alleyways to the north and east of the objective between checkpoints 3 and 4." This articulation better focuses task and purpose.

Although aviation is very flexible and can cover a lot of ground in a short period of time, many ground commanders overestimate the ability of air crews to see everything at once. Brigade aviation elements can educate and coach ground unit commanders on how to submit an accurate and clear focus for their aviation support.

The second key standard is to ensure that aviators and ground formations have the same graphics that provide a common operating picture. Often, units submit air mission requests without checkpoints, building numbers, or phase lines. The lack of common reference points causes challenges in air-ground integration. In many cases the graphic control measures only apply within the boundaries of the objective area or route being covered. Once enemy action causes the unit to exit the original lines of those graphics, there must be common points of reference that will allow both air and ground crews to find targets, identify friendly locations, and synchronize their fires. By setting clear standards and providing examples of good air-ground integration graphics up front, brigade aviation elements can ensure that aviation assets are effective.

The third key standard involves marking conventions. Clear standard operating procedures for marking both friendly and target locations is an integral component of air-ground integration. With myriad options to choose from, all players must identify, understand, and track which signals mean what during the mission execution. Infrared strobes, infrared chemlite "buzz saws" (swinging an infrared chemlite on a string), and laser "ropes" (moving a visible laser in a circular fashion in the air so that aircraft can identify the laser spot) are common night markings for friendly locations. Lasers, tracer rounds, or even simple voice communications work well for target marking at night. Proper care must be taken to identify the origin of a laser versus the laser hit spot to prevent confusion and possible fratricide. Day markings can be more challenging and difficult because the markings are less obvious. Most target designations must be done with reference to a friendly location using a VS-17 signal panel or colored smoke. Use of the pink side of the VS-17 to designate key leaders or convoy and patrol commanders is highly effective.

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One technique that worked particularly well for the 1st BCT, 10th Mountain Division, in Multi-National Division-Baghdad was to paint orange panels with a four-digit identification marker (that was easily visible from the air) on the rooftops of all brigade combat team vehicles. When combined with a legend and frequency card, these marking conventions allowed aviation units to report items of interest to individual patrols and greatly improved the overall situational awareness of air crews with respect to friendly unit locations. Initially the apprehension was that the enemy would use these markings to target key military leaders or units, but in practice the opposite effect was observed. Over time, local nationals came to recognize and trust these patrols based on their markings and actions. This led to an increase in local-national intelligence against the insurgency. In fact, during a Qada governance meeting, a battalion commander introduced himself to a local leader who subsequently identified the battalion commander from his vehicle marking and further stated that he was impressed with the battalion's ability to quell the insurgency in his local neighborhood.[3] While it was clear that both sympathetic local nationals and enemy insurgents used the markings to identify friendly unit and patrol activities, the ability of the enemy to identify these markings for any effective method against coalition forces was inconclusive at best. However, what is certain is that the positive effect on air-ground integration was tangible.

A final standard that can greatly enhance attack and reconnaissance air-ground integration is to encourage the use of aviation assets in support of

steady-state operations. When attack/recon aviation is able to support daily patrols, a level of cooperation and familiarity emerges between ground and air units that greatly enhances air-ground integration effectiveness in case troops come in contact with enemy forces. The 1-1 Marines, attached to 1st BCT, 10th Mountain Division, in Multi-National Division-Baghdad during operations in 2005–2006, began employing attack aviation daily in support of steady-state patrols in a particularly dangerous area. Based on daily use of aviation assets and their willingness to push these assets to user levels—whether platoon or squad—their ability to identify possible enemy sniper positions, improvised explosive device locations, and ambush sites greatly improved. More importantly, as pilots and patrol leaders worked through the initial friction of combined arms operations, there emerged a level of cooperation and mutual respect that—when combined with proven tactics, techniques, and procedures—caused the air-ground integration to be seamless and responsive during enemy contact. The Marines took care to alter their requests for aviation support at varying times, in varying locations, and for varied durations. This variance prevents aviation patterning, which could result in effective enemy targeting of friendly aircraft. Once the word got out on the effectiveness of the air-ground integration, steady-state use of aviation quickly spread to all land-owning battalions in the BCT. Soon the brigade aviation element was inundated with attack aviation requests—a good problem for a staff section charged with integrating aviation in the ground scheme of maneuver. Granted, many missions were unsupported due to multiple teams requesting limited aviation resources. But the productive use of attack aviation in steady-state operations resulted in increased effectiveness during enemy contact when air-ground integration mattered most.

**Logistics and administrative aviation support**. The third primary air-ground integration venue, and often the most-used, pertains to logistics and administrative movements. With current enemy tactics, techniques, and procedures favoring the use of improvised explosive devices to attack coalition vehicles transitioning between separated coalition bases, air movement is often the travel method of choice. Dental and medical appointments, supply transactions, and transport for leaves are only a handful of myriad administrative air mission requests that often inundate aviation units. By setting clear aviation usage priorities at BCT level, nested with division or higher headquarters priorities, the brigade aviation element can help sort out and accommodate these numerous requests. Smart combinations of missions and periodic missions to common destinations can help the element assist the combat aviation brigade in efficient use.

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**Sling load operation, Camp Liberty, Baghdad, Iraq, 2006.**

Aerial resupply can also be a valuable asset to outlying bases and minimize ground convoy exposure to dangerous routes. Brigade aviation elements must coordinate closely with the BCT logistical leaders, in particular the brigade support battalion staff and brigade support operations officer. Since the aerial resupply is largely a logistical mission, the support officer must take the lead, with the element helping coordinate for the aviation support. Conducting sling-load training, identifying air assault- and pathfinder-qualified personnel to build loads and run the pickup zone, conducting precombat inspections of sling sets and

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pallet equipment, and training forklift operators to internally load equipment onto CH-47 helicopters are some of the key tasks that brigade aviation elements can prepare for in partnership with the brigade support officer. Such cooperation reduces the number of convoys and allows for flexible, timely delivery of essential supplies. The 1st BCT, 10th Mountain Division, used this aerial resupply technique to good effect. While partnered with 2-4 General Support Aviation Battalion in the 4th Infantry Divison, the BCT executed weekly aerial resupply to each of its outlying forward operating bases, reducing team logistical convoys to a trickle. Critical to success were clearly defined load standards which all players agreed upon and close coordination between the BCT logisticians and the aviation unit coordinating through the brigade aviation element.

## Glass Ball Number 2: Unmanned Aerial Vehicle Integration

Most brigade aviation officers will tell you that if it flies, it must be a brigade aviation element responsibility. Thus, elements may find themselves covering everything from Aerostat balloon operations to airport point of debarkation command and control. Unmanned aerial vehicles (UAVs) are no exception. However, with the Aviation branch gaining proponency for aerial vehicle operations in April of 2006, the brigade aviation element must be the champion for their use in support of BCT operations. The two most commonly fielded vehicles at team level are the RQ-11 Raven and the RQ-7 Shadow.

**Raven**. The Raven small unmanned aerial vehicle is a simple system to employ. Qualification training is just two weeks long, and operators often equate the job to flying a remote control airplane. Raven operators are selected from their unit's existing military occupational specialties to serve as an additional duty. Thus, it is critical that the Raven program at the BCT level likewise remain simple. Unlike an aviation unit equipped with trained instructor pilots to administer the unit aircrew training program, the average Raven system is assigned at company level to an enlisted Soldier with only two weeks of qualified instruction. Therefore, the Raven aircrew training program must be easy to maintain and simple in nature. For such an uncomplicated system, readiness level progression and full aviation flight records may be overkill. Instead, a Raven aircrew training program might be better served with a single check ride upon arrival at the unit, much like an annual proficiency and readiness test evaluation for aviators. Subsequent annual evaluations would also be required, but not tied to any birth month. Instead, they could be tied to the calendar year so that busy ground units can ensure that all Raven operators maintain high standards of execution, but are afforded greater flexibility in the conduct and timing of those annual evaluations. Multi-National Corp-Iraq hosted a pilot version of the Raven Master Trainer Course in 2006. Designed to train Raven operators to act as aircrew training program stewards and master trainers for the Raven system, this course is a crucial step in the formalization of Raven operations at the BCT level and will undoubtedly serve our branch well as we seek to infuse some aviation culture into the unmanned aerial vehicle community.[4] However, until Raven

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**SPC Joseph Tilletski launches an RQ-11 Raven UAV, 2005.**

operators are recognized with their own military occupational specialty or skill identifier, we must be careful not to overcomplicate a simple and effective system, or we risk degrading its combat effectiveness in support of ground unit operations.

In terms of Army airspace command and control, Raven small unmanned aerial vehicles can operate in the same altitude band as most rotary wing assets. With a preferred altitude less than 1,000 feet above ground level, de-conflicting rotary wing assets is critical. Resolving conflicted airspace is best achieved with restricted operating zones. By submitting restricted operating zones through the tactical airspace integration system for inclusion on the airspace coordination order, the BCT provides visibility on the unmanned vehicle operation times and locations to all airspace users. Of course, a clearly outlined method of informing key airspace users of short-notice missions is paramount. As the only battalion level aerial intelligence, surveillance, and reconnaissance asset, one of the Raven's greatest strengths is its flexibility, so the ability to employ it on short notice is crucial.

Also crucial are immediate airspace alerts that inform potential airspace users of conflicting requirements. By using radio check-ins with the BCT tactical operations center or brigade aviation element, transiting aircraft can gain immediate situational awareness on unmanned aerial vehicle missions and deconflict themselves laterally or by altitude to allow both assets to continue their mission safely. In an extreme case, the rotary wing asset can request an "autoland" of the unmanned vehicle to prevent any possible conflict. For preplanned missions, easily identifiable terrain features like canals and roads allow for easy deconfliction of unmanned aerial vehicle and rotary wing traffic. This requires direct radio communication between the Raven operators and the rotary wing assets but is effective and provides means to ensure mission success.

The Raven vehicle has logged over 250,000 hours in support of combat operations in both Afghanistan and Iraq with only one Army airspace command and control incident. Even then the aircraft returned to base under its own power without issue.[5] This is testament to the fact that unmanned aerial vehicles and rotary wing assets can successfully and safely coexist when properly managed. They have an incredible track record when one considers the high volume of unmanned vehicles and rotary wing traffic in the same airspace in both theaters. Critical to maintaining this track record is the use of restricted operating zones to alert all airspace users of unmanned aerial vehicle operations. A clearly defined method of immediate alert for short-notice missions and the use of traditional deconfliction measures (altitude and lateral separation) allows simultaneous operations.

To maximize the combat effectiveness of the Raven, battalion commanders should select Raven operators who are technically capable and self-disciplined. Raven operators are often required to execute missions with limited supervision, and they must be able to think on their feet. Selecting a few noncommissioned officers is always smart. Units must also employ their Ravens regularly. Flight skills are perishable, and regular intelligence, surveillance, and reconnaissance missions will ensure that the unit's Raven operators hone their skills when needed in support of more complicated missions such as cordon and search operations. The Raven is an effective deterrent to improvised explosive devices and indirect fire when used at low altitudes over known enemy hot spots. This can help disrupt enemy activity and force them to employ less desirable tactics that make them more vulnerable to coalition targeting.

On the whole, the Raven is a simple and effective intelligence, surveillance, and reconnaissance tool at the battalion level. Brigade aviation elements can assist in its use by helping to enforce high standards, coaching units on ways to maximize its effectiveness, and ruthlessly monitoring and enforcing clear Army airspace command and control standards to prevent conflicts with other airspace users.

**Shadow**. The Shadow tactical unmanned aerial vehicle comes with a far more robust support structure in the form of the tactical unmanned vehicle platoon. Thus the brigade aviation element

***…unmanned aerial vehicles and rotary wing assets can successfully and safely coexist when properly managed.***

SPC James B. Smith Jr.

**An RQ-7 Shadow Unmanned Aerial Vehicle readied for launch at Forward Operating Base Warhorse, Iraq.**

oversight of Shadow tactical unmanned vehicle operations is less critical than for Raven small unmanned aerial vehicles. However, the brigade aviation element can provide some key assistance to tactical unmanned aviation vehicle platoons.

As the most requested aerial intelligence, surveillance, and reconnaissance asset at the BCT level, the tactical unmanned aerial vehicle has become a mainstay for all aspects of team operations. Thus, the airspace command and control issues in the Shadow vehicle altitude band are of particular concern to the brigade aviation element. Unlike the Raven, which is most likely to encounter conflicts with rotary aircraft below the coordinating altitude, the Shadow often operates above the coordinating altitude under positive control of the Air Force control and reporting center. Tactical unmanned vehicle operators conduct in-flight coordination using online chat rooms; however, the brigade aviation element assists by submitting restricted operating zones and flight routes to get the Shadow to and from their mission areas. In the Multi-National Division-Baghdad area of operations, the control and reporting center uses the common geographic reference system keypad to deconflict Shadows from fixed wing and various other aerial intelligence, surveillance, and reconnaissance platforms. By submitting preplanned restricted operating zones through the brigade aviation element, the tactical unmanned aerial vehicle platoon can help deconflict airspace more specifically than the large keypads and offer other airspace users the ability to operate within the same keypad.

Currently, flight-records training conducted during the tactical unmanned aerial vehicle fielding train-up lacks substance. While this is sure to be addressed as the Aviation branch takes over proponency from the Military Intelligence branch, there may still be a lag as units field and employ the Shadow system. Thus, tactical unmanned aerial vehicle platoons often require some mentoring from the brigade aviation element noncommissioned officers (occupational specialty 15P) in proper record maintenance. By training the Shadow platoon noncommissioned officers on records, the element can help establish enduring standards of flight record keeping.

Tactical unmanned aerial vehicle operations vary greatly from theater to theater and even from one operational area to another within a tactical theater. Thus, the brigade aviation element must diligently explore the procedures in a given area of operations and help the Shadow platoon address airspace challenges. As its tactical unmanned aerial operations transition from a military intelligence-focused culture to an aviation-focused one, the brigade aviation element's involvement with Shadow operations will greatly increase. Keeping the overall focus on the tactical unmanned aerial vehicle platoon, the most reliable and responsive asset for intelligence, surveillance, and reconnaissance in support of the BCT, is important.

## Glass Ball Number 3: Airspace Management and Army Airspace Command and Control

What is an air defense airspace management cell? That is the first question many brigade aviation officers ask when they arrive at a BCT. Most ground BCT Modified Tables of Organization and Equipment do not list the brigade aviation element at all. Rather, aviation staff slots fall under the air defense airspace management cell. In partnership with air defense artillery Soldiers, this cell provides

U.S. Air Force, SSGT Robert Barney

**Soldiers prepare to move a Patriot Air Defense Missile system to a different location on an undisclosed base in Southwest Asia, 25 July 2009.**

the BCT with Army airspace command and control and airspace management capabilities.

While the initial reaction may be to try to operate independently, the most effective method of accomplishing airspace command and control and airspace management is to synthesize the efforts of the air defense artillery and aviation Soldiers as a truly cohesive air defense airspace management cell. The digital systems that the air defense artillery side brings to the fight are invaluable in managing airspace. In fact all air defense airspace management cell systems are fielded to most BCTs as part of a "282 airspace management" shelter which includes four primary systems that allow the cell to manage the team airspace successfully:

- Air missile defense work station.
- Air defense systems integrator.
- Tactical operations center intercommunications system communication suite.
- Tactical airspace integration system.

Each of these systems provides key individual contributions, but when used in concert through the air defense systems integrator, the synergistic effect far outweighs the sum of its parts. The ability to conduct sustained 24-hour operations almost requires the aviation and air defense artillery sides of the air defense airspace management cell to coordinate their efforts. Neither can sustain operations independently with the personnel assigned. However, with cross training, the cell is more than capable of executing long-term operations.

Differentiation between airspace "management" and airspace "control" is important. The air defense airspace management cell does not have an organic capability to control any airspace. Thus, the term "management" is more accurate. This constitutes coordination with the airspace controlling agencies such as the Air Force control and reporting center, combined air operations center, and whichever Army air traffic control unit may be controlling airspace below the coordinating altitude, if any. Through constant communication and coordination with these agencies, the BCT air defense airspace management cell can shoulder many of the responsibilities traditionally handled by the division Army airspace command and control cell. This includes the clearance of airspace for immediate fires and controlled detonations, activation of airspace control measures, deconfliction of rotary wing, fixed wing, and unmanned aerial vehicle assets, and Army airspace command and control for large tactical operations like air assaults.

This also allows the air defense airspace management cell to provide the team commander and staff with a near real-time picture using the combined effects of all the air defense artillery and tactical airspace integration system. The feeds from the Sentinel radar through the air missile defense systems and air defense systems integrator, combined with the tactical airspace integration systems air track feeds over the Secret Internet Protocol Router Network, provide a reliable and accurate picture of all airspace users in the BCT area of operations. This can assist in Army airspace command and control duties and provides the team with a common operating picture.

The processing of airspace control measures is a key component of the air defense airspace management task, and it is where the tactical airspace integration system makes its value known. This is particularly important when deconflicting unmanned aerial vehicle missions. The ability to submit these requests digitally from tactical airspace integration systems to the combat air operations center allows every intermediate command node to track and process the requests quickly. This greatly improves the situational awareness at all levels of command and prevents delays in immediate airspace usage requests.

Another key aspect of airspace management includes usage of the tactical operations center intercommunications system "commo package" to communicate with all airspace users in the BCT's area of operations. From rotary aircraft check-ins to direct radio communication with firing batteries and monitoring of air traffic control and Joint tactical aircraft controllers frequencies, the brigade aviation element can enhance its situational awareness via radio communications while also playing a direct role in preventing airspace command and control conflicts. On more than one occasion, air defense airspace management and brigade aviation element cells have been able to contact transiting rotary wing aircraft to inform them of immediate unmanned aerial vehicle missions in their flight path, thus averting possible mishaps.

One item that could greatly enhance the effectiveness of the brigade aviation element would be the addition of a air traffic control noncommissioned officer (15Q) to the team. This could be done at the expense of one of the 15P noncommissioned officer slots, but would provide an understanding of airspace and control issues not currently found in the cell. Proper schooling for the air defense airspace/brigade aviation element cell can also help enhance its airspace management capability. If select members of the cell could attend the Joint airspace command and control course, the resident expertise to effectively interact with those key airspace controlling agencies would be greatly enhanced.

The benefit of managing airspace at the BCT level is that the responsiveness of airspace clearance is improved, which results in quicker counter-fire missions, less Army airspace command and control conflicts, and better situational awareness of airspace user activity in the team area.

## Lasting Impact

In closing, brigade aviation elements are making a lasting impact in the integration of aviation and unmanned aerial vehicles while providing a valuable airspace management function to the ground BCT commander. To do this effectively, element personnel need to stay focused on their stated duties. Too often, brigade aviation elements are targets for additional duties and tasks that take them away from their given mission. Aviation branch needs to continue to man the brigade aviation elements with its most talented officers, warrant officers, and noncommissioned officers since they are on point for our branch. With sustained initiative, enthusiasm, and competence, brigade aviation elements will continue to make the combined arms fight a successful reality and will greatly enhance integration of aviation and unmanned aerial vehicles into combat operations. ***MR***

**NOTES**

1. MAJ Michael Higginbotham, former S3, 3-4 AHB, 4th ID, personal interview via email, 25 June 2006, Taji/Baghdad, Iraq.
2. MAJ Jerry Lewis, former brigade aviation officer, 3d BCT, 10th MTN Division, personal interview via email, 27 June 2006, Bagram, Afghanistan.
3. LTC Kevin Brown, former commander, 2-22 IN BN, 10th MTN Division, personal interview, 27 June 2006, Baghdad, Iraq.
4. MAJ Robert Blanchette, APM UAS, guest attendee at MNC-I UAS Conference, Al Faw Palace, Camp Victory, Baghdad, Iraq, 10 June 2006.
5. Blanchette, interview via email, 30 June 2006.