

THE BRIGADE AVIATION ELEMENT: PROVIDING THE BRIGADE COMBAT
TEAM WITH THE ABILITY TO PLAN AND SYNCHRONIZE AVIATION
ASSETS INTO THE GROUND COMMANDER'S SCHEME OF MANUEVER

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ABSTRACT

THE BRIGADE AVIATION ELEMENT: PROVIDING THE BRIGADE COMBAT TEAM WITH THE ABILITY TO PLAN AND SYNCHRONIZE AVIATION ASSETS INTO THE GROUND COMMANDER'S SCHEME OF MANUVER, by Major Scott Dickey, US ARMY, 59 pages.

This study will first analyze the Brigade Aviation Element (BAE) and determine if the BAE can provide the Brigade Combat Team (BCT) commander with a staff component capable of integrating aviation assets into the BCT scheme of maneuver. Next, it will explore how the BAE as an organization can contribute to the task and purpose of the BCT, as outlined within doctrine. Finally, this study will determine if the BAE, as outlined within doctrine, can accomplish the assigned tasks. If the BAE is found inadequate, the study will provide suggested changes or additions to the BAE.

This thesis concludes the ARFORGEN process will ensure that the recommended changes are made with respect to doctrine, organization, material, and facilities. The careful considerations to the training, education, and personnel elements within the BAE may result in a better prepared BAE. The addition of an Unmanned Aircraft System (UAS) expert can provide the BAE with a desperately needed subject matter expert. The BAE must continue to educate BCT staffs and ensure the training is completed prior to deployment. The careful coding of each position and the emphasis that aviation branch puts on the BAE positions can ensure BCT's have the correct aviator and level of experience within the BAE staff sections.

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ACRONYMS

AAR	After Action Report
ADAM	Air Defense and Airspace Management
AKO	Army Knowledge Online
AMPS	Aviation Mission Planning System
ASE	Aircraft Survivability Equipment
A2C2	Army Airspace Command and Control
BAE	Brigade Aviation Element
BAO	Brigade Aviation Officer
BCT	Brigade Combat Team
BOS	Battlefield Operating System
COE	Contemporary Operating Environment
CTC	Combined Training Center
ECOORD	Effects Coordinator
EM	Enlisted Member
GWOT	Global War on Terror
ILAR	Integrated Logistics Aerial Resupply
ISR	Intelligence, Surveillance, and Reconnaissance
JMRC	Joint Multinational Readiness Center
LAN	Local Area Network
LNO	Liaison Officer
MEDEVAC	Medical Evacuation
MRX	Mission Rehearsal Exercise

MDMP	Military Decision-Making Process
MTT	Military Training Team
NCO	Noncommissioned Officer
OPLAN	Operation Plan
OIF	Operation Iraqi Freedom
OEF	Operation Enduring Freedom
PR	Personnel Recovery
ROZ	Restricted Operations Zone
TACOPS	Tactical Operations Officer
TAIS	Tactical Air Integration System
TTP	Tactics, Techniques, and Procedures
TOC	Tactical Operations Center
TACP	Tactical Air Control Party
TADIL	Tactical Digital Information Link

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CHAPTER 1

INTRODUCTION

The Brigade Aviation Element (BAE) has visibility of the Army Vice Chief of Staff, General Richard Cody, based on his tactical unmanned aircraft system (TUAS) readiness message that was published in 2005: “Brigade and Battalion Commanders should leverage their Brigade Aviation Element expertise, which should in turn coordinate for oversight and courtesy visits from divisional aviation professionals” (ALARACT 257, 2005). Within the newly introduced TUAS at Brigade Combat Team (BCT) and the integration of the newly formed BAE, the Vice Chief gives additional advice to the field on the training of the BAE: “Units not deployed should seek specialized training for unit personnel in aviation safety, tactical operations, aviation maintenance, and standardized aircrew training” (ALARACT 257 2005). The level of attention the BAE has received signifies the importance the BAE has as a staff section within the BCT. The BAE can provide the BCT with a staff section capable of synchronizing combat multipliers.

This study will first analyze the BAE and determine if the BAE can provide the BCT commander with a staff component capable of synchronizing aviation assets into the BCT scheme of maneuver. Next, it will explore how the BAE as an organization can contribute to the task and purpose of the BCT, as outlined within doctrine. Finally, this study will determine if the BAE, as outlined within doctrine, can accomplish the assigned tasks. If the BAE is found inadequate, the study will provide suggested changes or additions to the BAE.

Primary and Secondary Research Questions

Is the BAE an adequate staff element within the BCT to provide the proper synchronization of aviation assets within the BCT scheme of maneuver? To answer this, we must first find answers to the following questions:

1. What is the current task organization of the BAE?
2. What is the task and purpose of the BAE within the BCT?
3. How does doctrine identify the roles of personnel within the BAE?

Based on After Action Reports (AARs) from Operations Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), can the BAE perform all tasks as outlined within the doctrine?

1. If the BAE cannot execute all assigned tasks as assigned within doctrine, what changes should Army aviation make?
2. How should the BAE be organized, manned, equipped, and trained to accomplish the doctrinal missions?

Background of the Problem and the Research Question

During a rotation in April 2006 at the Joint Multinational Training Center (JMRC), I personally experienced the impact a BAE can have on aviation operations at the Squadron/Battalion Level. The initial BAE consisted of one Army Major, with no official relationship to either the aviation brigade or BCT. Additionally, the BAE had no dedicated equipment or personnel assigned, other than the before mentioned Major. With the cooperation of the BAE Major, BCT Commander and Aviation Task Force Commander, personnel from within the Aviation Task Force augmented the BAE and the BAE was staffed as outlined within doctrine. The Aviation Task Force provided an

additional aviation captain and aviation operations specialist. The addition of these personnel and additional equipment provided the BAE with a chance to succeed. Based on the efforts of all the above, the BCT Commander was able to maximize the combat effectiveness of the aviation assets in support of the BCT.

As the Army took on transformation, the birth of the BAE took place within the BCT staff. The Aviation Task Force Study in late 2003 determined that the BAE should “be structured similar to the BCT Fire Support Cell” (ATF Study 2003). Similar to the legacy Brigade Fire Support Element, the BAE has six assigned personnel. The BAE consist of three officers, two non-commissioned officers (NCOs) and one enlisted member (EM). This structure provides a more robust, mature, mission-focused staff than the previous aviation structure within the BCT. Each of the assigned soldiers bring unique skills to the team such as Aviation Planner, Unmanned Aerial Vehicle Expert, and other aviation related skills.

Based on the Army’s force transformation, the BCT became the principle building block and fighting force. With the focus now on the BCT, its assets began to grow and with new technology (such as the introduction of the UAS), the issue of airspace control would also become a task for the BAE.

In several After Action Reports on the performance of the BAE from BCT’s deployed in combat zones, rotations through the National Training Center and Joint Readiness Training Center have characterized the BAE as being unable to provide the necessary 24-hour coverage for all aviation assets within the BCT. The BCT continues today to struggle with this issue, and currently has restructured its staff to combine the Air Defense and Airspace Management Cell (ADAM) with the BAE to conduct the

mission task. It is clear that the BCT is looking for a solution and based on the current strength of the BAE, it cannot perform as designed.

This thesis will conduct a thorough analysis of the BAE from its inception to the present day, and analyze the facts to determine if the BAE can provide the BCT commander with a staff element capable of synchronizing aviation assets within the BCT scheme of maneuver.

Definitions

For purposes of clarity, this document defines a number of key terms below. This brief glossary is to aid the reader (regardless of background) in understanding the analysis that will follow. Related to the BAE, the aviation community brings with it several different types of soldier skills and systems to assist in the planning and execution of aviation-related missions. The majority of these definitions are in various Army publications.

Army Airspace Command and Control (A2C2). Army airspace command and control ensures that forces coordinate their use of airspace. A2C2 also improves the force commander's ability to command and control those forces using airspace. An effective Army airspace command and control (A2C2) system enables all the War Fighting Functions (WFF) to function efficiently while synchronizing air operations to support the commander's intent. In addition, A2C2 supports command and control (C2) requirements during force projection operations, causing them to be fully integrated into the theater.

Aviation Mission Planning System (AMPS). The AMPS is an automated system that provides mission planning and synchronization for aviation operations designed specifically for aviation brigade and below. The AMPS provides the automated

capabilities to plan, rehearse, and synchronize aviation missions. The aviation A2C2 Liaison Officer's (LNOs)--with the AMPS connected on the tactical operations center (TOC) local area network (LAN) and HF radio backup--can pull aviation mission planning to refine airspace requirements (FM 3-52 2002, 5-6).

Aviation Operations Specialist (15P). Aviation Operations Specialists assist in daily operations of the largest fleet of aircraft in the world with hundreds of transport, passenger, and combat airplanes and helicopters. The aviation operations specialist is responsible for maintaining accurate flight information, which keeps operations safe and efficient. Aviation Operations Specialists prepare and provide flight information for air and ground crews. Additionally, the Aviation Operations Specialist is primarily responsible for scheduling and dispatching tactical aircraft missions. Some of the duties of this position are: process local and cross-country flight clearances, plan flight schedules and air crew assignments, coordinate flight plans, keep flight logs on incoming and outgoing flights, alert crash crews of emergencies, safeguard classified materials, interpret and post weather reports and maintain individual flight records and functional files (TC 1-400 2006, 1-4).

Tactical Airspace Integration System (TAIS). The Tactical Airspace Integration System (TAIS) is a mobile, airspace management system providing combined air-ground battle space management based on joint service and information system inputs. The TAIS is mounted in rigid wall shelters on two HMMWVs and is fully self-contained. Each shelter receives the recognized air picture through several communication links such as military radars, Patriot, AWACS, and civilian airport radars. TAIS provides the visualization of four dimensions for situational awareness, airspace deconfliction, and

fratricide avoidance. TAIS takes the input provided through these various radar and data communication links, and displays both two-dimensional and three-dimensional, near-real-time situational awareness views of the battle space. With these situational views, TAIS operators are responsible for the deconfliction of current and planned airspace usage, and provide this information to Division or Corps Commanders located in a Tactical Operations Center (TOC) as well as aviation, artillery, and air defense command posts and civilian agencies such as the Federal Aviation Administration. This advanced visualization gives battlefield commanders a complete picture of both the air and ground battle space, enabling the synergy of judgment combined with information as a multiplier of combat power (FM 3-52 2002, C-0).

Tactical Operations (TACOPS) Officer. The Aviation Tactical Operations Officer is the commander's tactical advisor and a technical source. He assists the ground or air commander and the operations officers in the planning, coordination, briefing, and execution of tactical Army Aviation and warfare in a combined/joint environment. Additionally, he provides commanders technical/tactical expertise of Army airspace command and control (A2C2), personnel recovery, electronic warfare, threat analysis, digital operations, and joint tactics, techniques, and procedures. He will develop, implement, and manage the Personnel Recovery, Aviation Mission Planning Systems (AMPS), Fratricide, Threat Analysis, and Aircraft Survivability Equipment (ASE) programs. At the Brigade Aviation Element (BAE) level, Tactical Operations Officers, in conjunction with their primary tasks, recommend and assist in the integration of tactical Army Aviation warfighting capabilities into the ground commander's scheme of maneuver. The unit's wartime mission is what training and execution is based on. Tactical

Operations Officers develop threat training; ASE; personnel recovery programs; and tactics, techniques, and procedures (TTPs) that must be emphasized in training and be well executed in combat (TC 1-400 2006, 1-4).

The Army Battle Command System (ABCS). This US Army program consists of related, connected, or related and connected automated systems. One component of ABCS, Tactical Airspace Integration System (TAIS) provides A2C2 and airspace management capabilities. The A2C2 system includes standardized common message and report formats, common data links, and battlefield-automated systems. These support the battlefield operating systems of fire support, maneuver, intelligence and electronic warfare, air defense, and combat service support. With the differing and complex systems used by each of the war-fighting functions, the ABCS brings each automated system together to provide the common operating picture.

Unmanned Aerial Vehicle (UAV). An unmanned aerial vehicle (UAV) is an aircraft with no onboard pilot. UAVs can be remote-controlled (i.e., flown by a pilot at a ground control station) or can fly autonomously based on pre-programmed flight plans or more complex dynamic automation systems. UAVs are currently used for a number of missions, including reconnaissance and attack roles. A UAV is capable of controlled, sustained level flight and powered by a jet or reciprocating engine. The acronym UAV in some cases will also represent UAVS (Unmanned Aircraft Vehicle System). The Federal Aviation Administration (FAA) and US Air Force has adopted the acronym UAS (Unmanned Aircraft System) to reflect the fact that these complex systems include ground stations and other elements besides the actual air vehicles (TC 1-400 2006, G-1).

Limitations

One of the limitations of this study is the lack of extensive documentation on the Brigade Aviation Element and how it performed during recent operations in support of the Global War on Terrorism (GWOT). The BAE is in the midst of change as I conduct this analysis. The Army collaboration portal on AKO provides a forum for discussion of such issues as AARs from units returning from Operation Iraqi Freedom/Operation Enduring Freedom, and the discussion was at the forefront during numerous senior leaders' conferences. This study takes full advantage of these resources as they become available. The United States Army Aviation War Fighting Center (USAAWC) is the proponent for the BAE. Constant contact and shared knowledge with the USAAWC was maintained during the research to ensure the legitimacy of the research.

Delimitations

Since this study focuses on the BAE as part of the Army transformation, it discusses the BAE from its inception to its present day configuration. The newly developed BAE is in the early phases of fielding and numerous systems are being developed to support the success of the BAE. This may create the need to adjust the structure of the BAE. This study will not try to predict the changes that might occur in the BAE, but will focus primarily on its ability, as structured currently, to provide the BCT commander with an adequate force or adequate support.

Significance of the Study

As the Army embraces transformation, the Aviation branch has given birth to the BAE as an attempt to provide the BCT with a staff element capable of integrating and

controlling aviation assets within the BCT scheme of maneuver. A recent article in *Infantry* magazine discusses the reasons for the newly founded BAE:

The Brigade Aviation Element (BAE) concept evolved as part of Army Transformation and was identified as a solution for integration after the Aviation Task Force reviewed lessons learned from Operations Iraqi Freedom and Enduring Freedom, and countless combat training center (CTC) rotations. Across the board, aviation and ground maneuver continued to lack the synchronization desired by all. Historically, Army aviation provided liaison officers for short durations only; these LNOs were outstanding pilots, but lacked the proper equipment, air-ground integration and Army Airspace Command and Control (A2C2) training, and often the right number of people necessary to perform the required planning. (Marnon 2005, 14)

Does the BAE provide nothing more than a robust LNO team incapable of performing the task as assigned by doctrine--or can it provide a force within the BCT to control aviation assets and provide the expertise in planning to provide aviation assets at the correct time and place within the BCT scheme of maneuver? As the BCT transforms, the BAE has to provide a staff section to accomplish the assigned task and ensure that it provides the resources and capable soldiers to meet and exceed the standards. The BAE is the most crucial position in the Aviation field other than command positions and as a result must be the most sought-after position within the aviation community, second to command. The ability to work at a BCT level synchronizing numerous assets is a key position filled by only by the best and brightest and future aviation battalion commanders.

CHAPTER 2

REVIEW OF LITERATURE AND METHODOLOGY

Is the BAE adequately staffed element within the BCT to provide the proper synchronization of aviation assets within the BCT scheme of maneuver? To answer this, we will first need to address the following questions:

1. What is the current task organization of the BAE?
2. How does doctrine identify the roles of assigned personnel within the BAE?
3. What is the task and purpose of the BAE within the BCT?

Three major categories of information serve to answer these questions: Army publications, training circulars, and aviation-related briefings. A review of the BAE during recent operations in support of GWOT and rotations through the maneuver training centers will enable us to answer the primary research question.

Army Training Circular TC 1-400, *The Brigade Aviation Element*, breaks down the current task organization of the BAE. The BAE organization consists of a six-man team, with a Major as the officer in charge. A Captain serves as the Plans Officer and the second in charge, with a rated Chief Warrant Officer 3 as Tactical Operations (TACOPS) Officer. Each of the positions above are filled with rated and qualified army aviators, thus being able to perform flight duties as a pilot. A 15P (Aviation Operations) Sergeant First Class serves as the Operations NCO, and a 15P Staff Sergeant with UAS experience is Assistant Operations NCO.

TC 1-400 further breaks down the roles of each position within the BAE. The primary duty of the Brigade Aviation Officer (BAO) is to lead the BAE and integrate

aviation into the ground scheme of maneuver. He or she is separate from the aviation brigade and works directly for the BCT. The BAO accomplishes this by close coordination with the BCT S3, commander, and BCT staff. The BAO is the aviation subject matter expert (SME) for the BCT commander and S3. In this capacity, he or she is responsible for advising the BCT commander and staff on the status and availability of aviation assets and their capabilities and limitations. The BAO recommends and helps coordinate priorities and allocations of aviation assets, and helps determine the priorities for their employment.

The BAE Plans Officer is an aviation Captain and has the same duties and responsibilities as the BAO. Through alternating shifts with the BAO, the BAE Plans Officer provides the BAE a 24-hour capability. During surge operations, the BAO and the BAE Plans Officer may work the same shift to maximize efforts.

The Aviation Operations Specialist has the responsibilities to assist the BAO, BAE Plans Officer, TACOPS Officer, and Aviation Operations Sergeant. Additionally, the Aviation Operations Specialist must operate automation and communications equipment, such as the AN/VRC-83 ultra high frequency (UHF)/very high frequency (VHF) secure Have Quick radio, AN/VRC-100 high frequency (HF) communications system, AN/FSQ-211 tactical airspace integration system (TAIS) airspace workstation (AWS). The operation of this equipment ensures the dissemination of aviation mission planning information via automated systems (TC 1-400 2006, 1-4).

The BAE TACOPS officer is a CW3 and has the following duties and responsibilities as outlined in TC 1-400:

Advises BAO/Plans Officer on Army aviation aircraft weapons system employment.
Advises the BAO/Plans Officer on Army aviation survivability measures/countermeasures.
Advises the BAO and BCT staff on appropriate aircraft survivability equipment (ASE) techniques and procedures.
Assists with airspace planning.
Coordinates integration of joint assets for each major operation.
Conducts the ASE portion of the risk management process.
Integrates the BCT operation plan (OPLAN) into the theater airspace structure.
Manages the personnel recovery (PR) program.
Integrates Army aviation into BCT PR operations and the BCT MEDEVAC plan.

Figure 1. TACOPS Officer

Source: Department of the Army, Training Circular 1-400, *Brigade Aviation Element Handbook* (Washington, DC: Headquarters, Department of Army, 2006), 1-2.

TC 1-400 continues to interpret the task and purpose of the BAE. The BAE is a planning and coordination cell whose major function is to incorporate aviation into the ground commander's scheme of maneuver. The BAE focuses on providing employment advice and initial planning for aviation missions, unmanned aircraft systems (UASs), airspace planning and coordination, and synchronization with the Air Liaison Officer (ALO) and the effects coordinator (ECOORD). The US Air Force's, ALO, assists the BCT commander with integrating the Air Force assets into the ground scheme of maneuver. The BAE also coordinates directly with the aviation brigade or the supporting Aviation Task Force (TF) for detailed mission planning. The BAE must possess the transportation and communications capabilities to operate from two locations simultaneously. Additionally, it is necessary to staff and equip the BAE for 24-hour operations.

There is not an extensive amount of literature available to answer the final question: Is the BAE an adequate staff element within the BCT to provide the proper synchronization of aviation assets within the BCT scheme of maneuver? This study will use the Center for Army Lessons Learned (CALL), Army Knowledge Online portal and additional professional literature to conduct analysis and research.

Research Design

To examine the BAE and its ability to synchronize aviation assets within the current BCT scheme of maneuver, the analysis will first define the BAE and its current structure, and then define the roles within the structure and the responsibilities of the BAE staff element within the BCT. After establishing the base, the study will use the Doctrine, Organization, Training, Material, Leadership/Education, Personnel, and Facilities (DOTMLPF) to conduct an analysis of the BAE. Finally, the study will provide recommended changes to the BAE as the study dictates. The DOTMLPF elements, discussed below, will assist during the analysis chapter of the thesis, much as it does as a part of the Joint Capabilities Integration and Development System (JCIDS) (F-100 2006, 2-20). These elements serve as an analytical tool used to help assure a synchronized warfighting capability.

To ensure the complete understanding of the DOTMLPF elements and what they can provide, a quick review of the elements is appropriate. The analysis of doctrine includes the current doctrinal publications, Tactical Techniques and Procedures (TTPs), operational procedures, regulations, and policies that govern the way the military conducts business. The analysis of the organization incorporates the actual need of an organization to conduct an operation, the organizational characteristics, and looks at the

opportunities and challenges in utilizing them to perform an operation. The review of training involves the actual training necessary to enable the organization to provide the required performance and support for the mission. By looking into the material associated within an organization the analysis incorporates the material required to support the organization such as weapons, platforms, communication equipment, medical equipment transportation, and training software. The analysis of leadership and education incorporates the management and implementation of change across the DOTMLPF spectrum. The review of personnel encompasses the ability to ensure the assigning of qualified personnel, whom possess the correct knowledge, skills, abilities and competencies needed to perform the required task or job position for the organization. The investigation of facilities provides an examination of the supplies, engineer support, and logistics required for the organization to accomplish its assigned mission.

The research process will resemble a flowchart. Each box on the chart is a question that the research data must answer. The oval represents a question that DOTMLPF analysis must answer. Figure 2 is an overall view of the process.

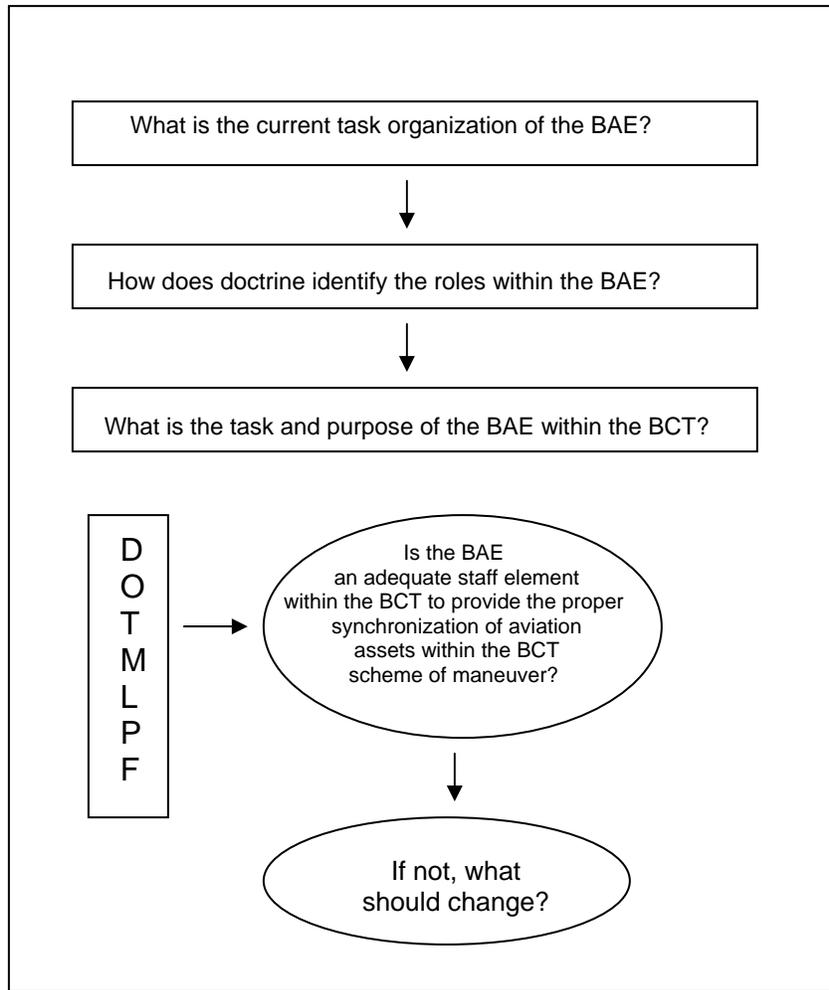


Figure 2. Research Design

Source: Inspired by MAJ Mark A. Tolmmachoff, “Is Army Aviation Doctrine Adequate for Military Operations Other Than War?” (Master of Military Art and Science thesis, CGSC, Fort Leavenworth, KS, 2000), fig. 2, 15.

CHAPTER 3

ANALYSIS

This chapter will present an analysis of the BAE related to the DOTMLPF elements. The use of the DOTMLPF analysis is the same as the analysis of capabilities during the Army Force Development process as a part of the Army Organizational Life Cycle Model (AOLCM). The AOLCM is a very dynamic process and focuses on the identified capability gaps, perceived deficiencies or shortcoming in the current force structure (F-100 2006, F103AC-4). “The Force Development Process consists of defining military capabilities, designing force structures to provide these capabilities, and translating organizational concepts based on doctrine, technologies, materiel, manpower requirements, and limited resources into a trained and ready Army” (F-100 2006, F103AC-4). Phase I of the Army Force Development process, generating organization capabilities, is an analysis of organizations capabilities based on the DOTMLPF elements. Within each of the elements of DOTMLPF, the analysis will break down the BAE with a brief background on the issues within the respective element, historical facts associated within each element, and give recommendations for changes where needed. Upon the conclusion of this chapter, the succeeding chapter will summarize the recommendations and then answer the primary and secondary research questions as outlined in the beginning chapters.

Doctrine

Doctrine that supports the new BAE can be found in both Army regulations and Army training circulars. This section will conduct a brief analysis of the current doctrine

that supports the Brigade Aviation Element and determine if the doctrine is adequate. The US Army, under transformation, is rewriting numerous regulations. You can find the definition of the BAE, an explanation of how it is organized, and an outline of how to incorporate the BAE into the BCT within these regulations. The concepts outlined within, specifically the TC 1-400, *Brigade Aviation Handbook*, and FMI 3-04.101, *UEX Aviation Brigade Organization, Training, and Operations*, clearly identify the role and functions of the Brigade Aviation Element. Within FM 3-90.6, the infantry regulation that governs Brigade Combat Team operations, nests concepts from TC 1-400 and FMI 3-04.101.

FMI 3-04.101 provides the Brigade Aviation Element members with a great source of information, and provides the members with a well-defined mission and role within the BCT. The field manual (FMI 3-04-101 2005) breaks down the reason for establishing the BAE and outlines its genesis: “The genesis of the BAE concept is found in the history and practice of the air assault division. The close bond formed by this special group of aviators and their infantry counterparts has resulted in aviation being fully integrated into every operation” (FMI 3-04.101 2005, 1-7). This can provide the BAE member with a clear understanding of how the BAE evolved into its current configuration.

Each of the supporting manuals contains the defined task and purpose for each member of the BAE. TC 1-400 outlines the BAE organization early in the document and provides the task and purpose of each member. The training circular serves additionally as a resource of information across the full spectrum of aviation operations. Unlike FMI 3-04.101, the training circular does not provide as much detail to the BAE member on what their role is in the BCT. The FMI 3-04.101 provides the BAE member with more

details on what their respective role is within the BCT staff: “The BAE helps reduce fratricide risk by fostering communication, coordinating A2C2, and keeping both aviation and ground units informed of friendly locations” (FMI 3-04.101 2005, 3-19). Much the same, FM 3-90.6 specifies the actions of the BAE and provides the BAE member with clear task and purpose.

The FM 3-90.6 Brigade Combat Team Operations explains in detail how to incorporate the BAE into the BCT staff. This document, combined with the aviation-specific manuals, provides BAE members with great tools to educate themselves on their respective role within the BCT. There is no contradiction of information between the BCT manual, Aviation FM’s, and TC’s in relation to the BAE. In addition to explaining the role of the BAE within the BCT, FM 3-90.6 describes in detail how the BAE is synchronized into the differing staff sections of the BCT. These examples are in three of the base chapters and one appendix within FM 3-90.6.

Chapter 4 of FM 3-90.6, “Intelligence, Surveillance, and Reconnaissance Operations,” provides a detailed description of how the BAE is synchronized within the ISR planning of the BCT. Chapter 4 recognizes that the BAE is a member of the BCT ISR working group, and further describes how the BAE provides UAS coordination. The introduction of the UAS to the BCT brings the ability to tie numerous UAS platforms to the BCT ISR plan. Chapter 4 clearly explains to the user the planning considerations and identifies clear tasks that the BAE must provide to the UAS units, as shown below in figure 3.

4-110. The BAE is the aviation planning and coordination cell organic to the BCT that synchronizes manned and unmanned air vehicle operations into the BCT scheme of maneuver. It works with the ISR, targeting, and A2C2 working groups

to prepare mission orders for UA units. UA mission orders should include the following information:

- AO for the UA unit.
- Mission statement.
- Time window for the UA mission.
- Task organization.
- Reconnaissance objective.
- PIR and IR that need answers.
- LD or line of contact (LC).
- Initial NAIs.
- Routes to AO.
- FSCM and airspace control measure (ACM).
- Communications and logistics support.

Figure 3. ISR Planning

Source: Department of the Army, Field Manual 3-90.6, *Brigade Combat Team* (Washington, DC: Headquarters, Department of Army, 4 August 2006), 4-10.

Chapter 4 continues to provide the user with detailed planning considerations for the UAS and explains the different types of UASs and how they are employed. The chapter provides a description of the Raven, Hunter, and Shadow, providing details about each system include payloads and video terminals associated respectively. As the UAS field continues to develop new systems, the BAE must provide the BCT with details on the emerging technology.

Chapter 8 of FM 3-90.6, “Fire Support in the Brigade Combat Team,” provides another example of how to integrate the BAE within the BCT staff. The Tactical Air Control Party (TACP) section of the chapter explains how the BAE/ADAM cell provides linkage between the BCT airspace and the Joint Airspace controlled by the JTAC or JFACC. The understanding of how to incorporate the BCT within the Joint operations by the BAE can provide a combat multiplier to the BCT. Chapter 8 also explains the

targeting group and the roles within the BCT. The BAE is a staff element included within the targeting working group. The ability of the BAE to synchronize assets within the BCT and ensure coordination is completed will ensure visibility of aviation operations within the ACO-ATO and provide better situational awareness to the joint air space users.

Chapter 12 of FM 3-90.6, “Sustainment Operations,” provides the BAE with a detailed description on how to integrate aviation sustainment operations with the BCT. The transportation section provides the BAE with an explanation of how they synchronize assets for aerial delivery: “Integrated logistics aerial resupply (ILAR), which includes Army helicopters and fixed-wing (i.e., Sherpa) aircraft, plus the use of joint precision airdrop system (JPADS) and other enablers, supports the BCT’s requirement for the use of aerial delivery as a routine method of resupply” (FM 3-90.6 2006). Additionally, this chapter provides the BAE with detailed accounts on how to incorporate medical support with MEDEVAC and CASEVAC operations.

Appendix D of FM 3-90.6, “Army Airspace Command and Control,” provides the BAE member with detailed explanation of the A2C2 task within the BCT. The coordination of the BAE within the A2C2 working group provides the BCT with a single staff element responsible for the synchronization of the JFAC, Fires, UAS, and Army aviation elements. The critical part of A2C2 is the change of airspace while conducting aviation operations. In the midst of an operation, it is likely the A2C2 plan will need adjustments. Battalions have their own UAS, but they do not have a formal A2C2 element. Their BN S3-Air coordinates and deconflicts airspace for all battalion UAS missions. Their oversight and automation link for airspace management is the ADAM/BAE section of the BCT. The battalion S3, or his S3-Air, requests ACM

adjustments through the BCT ADAM/BAE section. The ability of the BAE to react to immediate changes within the airspace and facilitate an ever changing environment can result in a successful mission executed safely. This section provides the doctrine to govern this process as the BCT staff coordinates with the BAE.

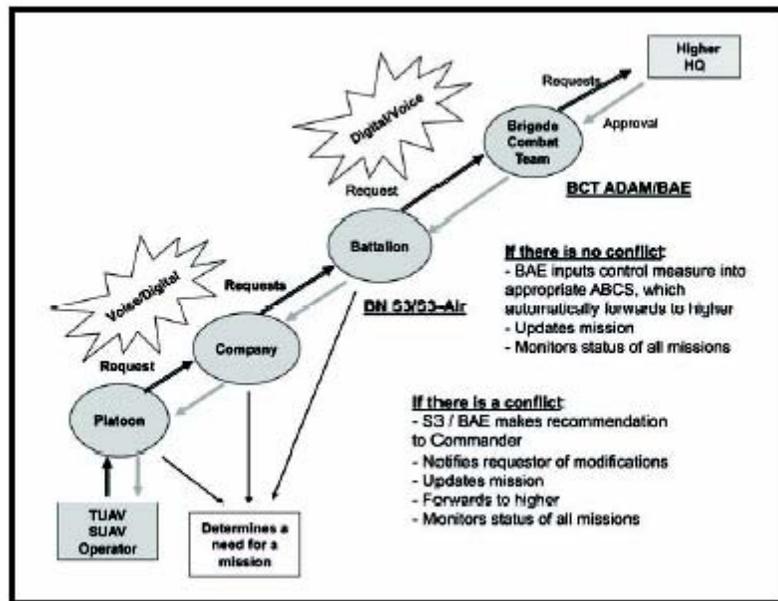


Figure 4. A2C2 Plan Adjustment

Source: Department of the Army, Field Manual 3-90.6, *Brigade Combat Team* (Washington, DC: Headquarters, Department of Army, 4 August 2006), D-8.

The doctrine supporting Brigade Aviation Element’s synchronization into the Brigade Combat team is limited to only the few documents discussed. However, the current revision of doctrine incorporates the inputs from existing BAE’s. The current FMI 3-04.101, *UEx Aviation Brigade Organization, Training and Operations*, and FM 3-90.6, *Brigade Combat Team Operations*, though only two manuals, provide a wealth of

information and doctrinal guidance to a member of the BAE. The aviation field manuals provide the BAE with base knowledge of what their respective task and purpose is, with respect to BAE. The BCT field manual provides the BAE with a detailed account on how the BCT staff synchronizes with the BAE. As the roles and equipment evolve within the COE, the BAE will have the task of continuing to provide Aviation community with AAR comments to ensure doctrine is updated and the BAE is successful.

Organization

This section focuses on analyzing the organization of the BAE. The current organization of the BAE consists of a six-member team and provides the BCT with several functional area action officers. Can the current BAE organization provide the BCT commander with the ability to synchronize the aviation assets twenty-four hours a day in two different locations (TC 1-400 2006)?

As discussed early, the genesis of the BAE came from Air Assault Division. The Air Assault Division had an Aviation staff element within each Infantry Brigade and they had a special bond and understood how to synchronize assets based on habitual relationship. However, with the introduction of the Unmanned Aircraft Systems (UAS) within the BCT and the digitization of the common operational picture, the BAE provides the BCT commander with more resources than before. The UAS provides additional recourses to the BCT along with the habitual relationship. The current organization provides a field grade officer to serve as the officer-in-charge of the BAE and an assistant for planning and second in command of the BAE. The time associated with the rank of Captain and Major is five to six years for each rank. The differing levels of experience between a one-year time in grade, captain and a senior captain with up to seven years in

grade, the BCT commander may have differing levels of resources, based on the individuals experience level. When assigning the individual to a position, the careful consideration of time in grade will provide for a better understanding of experience level.

The aviation tactical operations officer is a single resource with no redundancy within the BAE. As the TACOPS officer, he or she is only one-deep; the ability to provide 24-hour coverage thus becomes limited. In today's operating environment, the TACOPS officer can arguably be more important to operations than any other BAE member. The numerous mediums within the BCT TOC and the training the TACOPS officer receives is critical to the planning and execution of air operations. Only having one TACOPS officer within the BCT limits the depth in a critical field and can have impacts at all levels if not resourced properly.

With the currently assigned two non-commissioned officers, the BAE can provide continual coverage twenty-four hours a day. However, these 15P, aviation operation specialists, have limited experience with unmanned aerial systems. The growing number of UAS's within a BCT area of operations increases the demand on airspace deconfliction and having no subject matter expert on UAS within the BAE can be disastrous. The shortage of a 15Q, UAS operation specialist, results in the BCT having no subject matter expert on UAS operations.

The BAE has one junior enlisted Soldier authorized. With the manning of radios, maintaining two vehicles and the daily operations pulling members of the BAE into planning boards or cells, the one BAE enlisted Soldier is unable to complete all task without additional assistance. The shared responsibility of the equipment and daily task of the BAE within the BAE, regardless of rank, can reduce the burden of the enlisted

member. However, when other members are pulled away from their respective task to assist the enlisted member may come at a cost to the mission.

More alarming than the significant shortage of Soldiers to accomplish the assigned task is the failure of some units to properly man the BAE. Additionally, ARFORGEN process timeline, the late assignment of key members to the BAE or some unfilled positions continue to plague the BAE's relevance. The Army's ARFORGEN process is the manning, equipping and training of units to facilitate combat force to the Combatant Commander. The ARFORGEN process has three components: reset/ train pool, ready pool, and available pool. Numerous examples of units not being able to operate the base requirements of the BAE have populated the AAR slides at maneuver centers. Based on the ARFORGEN timeline, some key members of the BAE are being assigned just short of the Mission Readiness Exercise (MRX) or deployment. The ability of the BAE to synchronize aviation assets within the BCT becomes reliant on their relationship within the BCT. A late assignment just pushes this process later down the timeline and can result in an ineffective BAE.

Under the SBCT organization, the ADAM Cell and the BAE combine to provide the BCT with more resources dedicated to providing better synchronization of assets. With the combination of the ADAM cell and the BAE, the shared responsibility ensures the success of the BCT. Figure 5, outlines the basic structure and responsibility. The BAE continues to provide the BCT with planning and synchronization of aviation operations into the ground scheme of maneuver and are the lead on A2C2. Meanwhile, the ADAM cell plans air defense, participates in A2C2, and provides Tactical and Digital data Links (TADIL) and Sentinel feeds to the Tactical Air Integrated System(TAIS). Additionally,

the ADAM cell brings six more Soldiers to assist in the responsibilities in analyzing airspace use to determine and resolve conflicts. The shared responsibility of reviewing conflicts of airspace with immediate airspace request and developing and coordinating the A2C2 annex reduces the impact of the BAE operating alone. The material analysis section of this chapter will discuss the equipment the ADAM cell provides to the BAE cell.

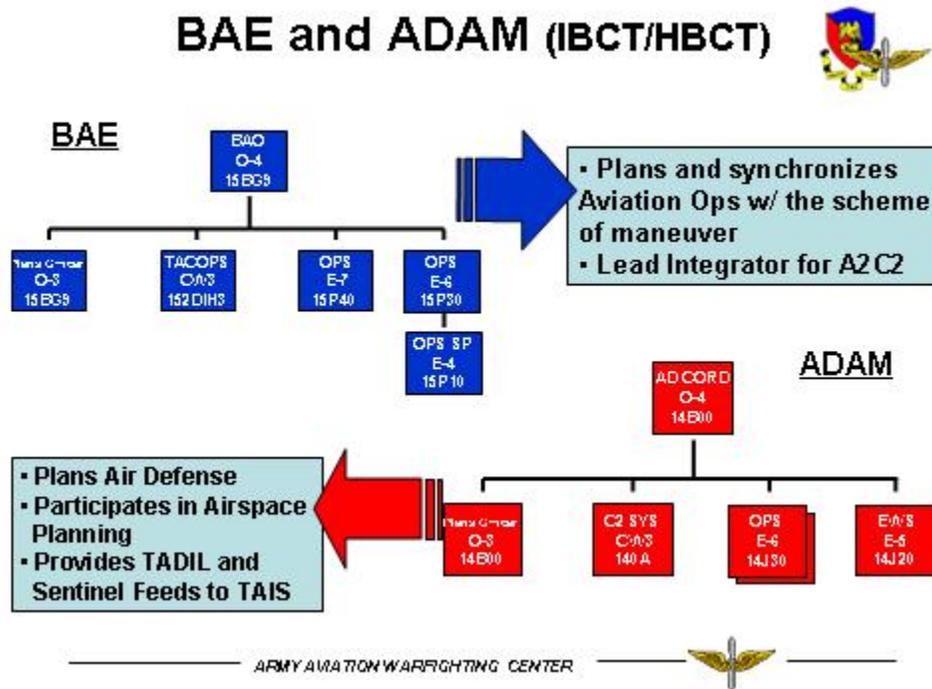


Figure 5. BAE and ADAM Organization

Source: LTC Ray Gentzyl, “Brigade Aviation Element, BAE, Executive Overview” (US Army Pre-Command Course Brief, January 2007), Slide 5.

The liaison officer (LNO) assigned to the BAE and how it is organized within the BCT is normally overlooked. The BAE/LNO TTPs, as listed in Figure 6, can provide the BAE with more resources and can assist in the synchronization of BCT assets. The three

TTPs as outlined by the Eagle Team in Figure 6 can provide different outcomes for the BCT and provide the BAE with a division of duties. The first TTP is the BAE operating purely. This provides no division of duties and can result in the BAE and supporting aviation unit having limited parallel planning. The second TTP provides the most assistance to the BAE in performing its mission. However, this may result in a delay in supporting the maneuver Battalion based on immediate tasking or coordination time delay. The third TTP provides optimal support to the maneuver battalion supported by aviation elements. The LNO team can provide direct coordination with the supporting aviation element while coordinating with the BAE to synchronize airspace.

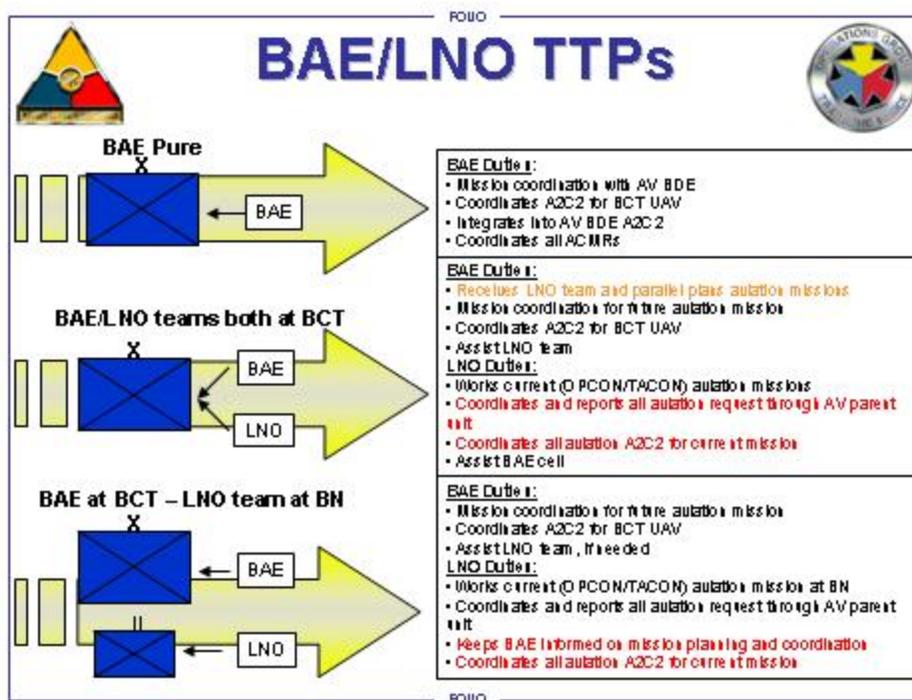


Figure 6. BAE/LNO TTPs

Source: Major Cain Baker, "Eagle Team BAE Brief" (National Training Center, Combat Aviation Trainers, Ft. Erwin, California, 2006), Slide 9.

The LNOs can provide the BCT with more resources to accomplish the mission. However, it is essential that the aviation unit carefully consider where they will assign these positions. Numerous AAR's indicate that officers assigned to LNO positions are unfamiliar with their duties or are inexperienced officers, resulting in limited input (Eagle Team BAE Brief 2006, Slide 9). This careful consideration can provide better support to the BCT and result in the aviation element having a clearer understanding of the ground scheme of maneuver plan.

The BAE is manned as designed to ensure the BCT's ability to synchronize assigned aviation assets. The addition of several positions can provide the required twenty-four hour coverage and result in an efficient BAE. The most critical aspect of this is the replacement of a 15P NCO with a 15Q NCO to provide the UAS expertise. Additionally, the assignment of an additional TACOPS officer and enlisted Soldier provides depth within the respective position.

Training

Within the DOTMLPF elements, the element of training the BAE and its members receive is critical to the successful integration with the BCT staff. This section will conduct a complete analysis of the training the BAE receives as a staff section and consequently look at each member of the BAE and the training they have received at this point of their career. The discussion of each members experience level will not occur during this section. The analysis of experience level within the BAE will occur during the personnel section.

The training conducted within the BAE is limited, based on when the organization is manned and equipped. As discussed during the organization section of this chapter, the manning of the BAE can be counterproductive to the BAE and can consequently impact the training of the BAE. An example is the BAE formed three months before deploying to theater. The initial home station training can be comprised of SOP reviews and BCTP's exercise. Army aviation branch at Fort Rucker provides a Mobile Training Team (MTT) that can provide subject matter experts to the BAE and close the gap on some areas of concern. The final training event the BAE undergoes is the Mission Readiness Exercise conducted at one of the maneuver training areas prior to deployment. This is the final training exercise before the BAE is deployed.

Each team member of the BAE provides a different level of expertise and comes from different training backgrounds. The overlapping ranks within the BAE can provide common training within and become a baseline of training to draw from as the BAE conducts operations. This training analysis is based on normal professional development of the individuals assigned to the BAE with the understanding that there may be cases outside the norm. The analysis of the individuals is broken down into three categories of Officer, Non-commissioned Officer, and Warrant Officer.

The officers assigned within the BAE come from a common training background. Each officer attends the Basic Officer Course and Flight School. Unique to the aviation community, these officers may come from differing aviation communities. Officers receive training primarily in three separate communities consisting of lift, attack and scout. While there are some parallels to the training within each community, there are more differences between the three. The Captain assigned to the BAE may or may have

not attended the Captain's Career Course prior to being assigned. The Captain Career Course provides the officer extended education related to aviation operations and a study of doctrine within the Army. This training provides the assigned member a better understanding of how to support the maneuver commander's tactical plan.

The Army Aviation Warfighting Center has several initiatives within the education system to bridge the gap between the field and current systems being fielded. One particular initiative in the Captain's Career Course (CCC) is the addition of ABCS and AMPS training. This is a new initiative by Fort Rucker to ensure the Commanders in the field have additional tools and an understanding of how to implement these tools (PCC Brief AVC3 2006, slide 10).

The officer continues his training inside the aircraft following the CCC and post company command will attend Command General and Staff College or as they pin on Major. The CGSC training provides additional training at the tactical, operational, and strategic levels of operations and enhances the Officers understanding of how to integrate into the BCT staffs. The block level exercises put the CGSC student through scenarios operating from the perspective of the Joint level Commander, Division Commander and through Brigade Combat Team Commander. Within each of these exercises, the education of systems at each level and how they are used provides the CGSC student a better understanding at different levels of operations.

The Warrant Officer assigned to the BAE brings a wealth of aviation and Aviation systems knowledge to the BCT staff. Initially the Warrant Officer attends the warrant officer basic course and flight school, and then goes to a unit, much like the commissioned officer. Unlike the commissioned officer, however, the warrant officer

stays within the line troops and becomes proficient both tactically and technically. The Warrant Officer attends different types of training consisting of a TACOPS course, aircraft survivability equipment course, and warrant officer senior course. All of these courses are available to all Warrant Officer's regardless of being assigned to Aviation unit or BCT.

The NCOs and Enlisted Soldiers bring the foundation to the BAE with the training received within their respective pay grades. The Soldiers assigned to the BAE may have attended several schools to assist the BAE in completing the assigned task. The attendance of military occupational skills school, flight operations specialist provides the base for controlling aviation operations and attendance of Basic Non-commissioned Officers (BNCOC) and Advance NCO course provide the Soldier with doctrinal studies and a better understanding of combined operations.

Some of the areas not covered within the BAE and individual training aspect of the BAE can lead to some shortfalls within operations of the BCT. For the purpose of this analysis, the focused training shortfalls analyzed is UAS operations, A2C2 operations, and staff integration.

The introduction of UAS to the Army has created a new demand for training on the synchronization and coordination related to the A2C2 structure within the battle space. The inability of the BAE to understand the resource the UAS can provide, limits the effectiveness of the BCT ISR plan. The National Training Center provides an example of how the BAE's limited training with UAS leads to the failure to react to the ISR plan. "Synchronization between the ISR planner and BAE is critical to successful UAS teaming" (CALL NTC Trends 2006, slide 2). This is an example how the UAS

operations is planned and conducted but not synchronized within the BCT ISR plan. An additional example can be seen by each time an aircraft takes off, the crew can provide input to the ISR plan if the BAE is synchronized within the BCT ISR plan and provided the aircrew with a comprehensive ISR plan.

The A2C2 training becomes a greater issue with the introduction of the UAS at Company and Platoon level within the BCT maneuver Battalions. The ability to control the airspace and synchronize assets within the BCT controlled airspace becomes an overwhelming task for the BAE members if they are untrained on how to manage airspace. An example of this is the clearance of fires within the BCT area of operations. Based on third and fourth quarter trends at the National Training Center during 2006, the ability of the BAE to integrate within the fires and effects planning and ISR development can reduce the counter-fire reaction time from 10 minutes down to 2-3 minutes (CALL NTC Trends 2006, slide 1).

The limited training the BAE members have in participating in the planning cells or boards as a part of the BCT, can have an impact on the ability of the BAE to synchronize aviation support from the supporting aviation units. The BAE's staff estimate provides to the BCT commander with these facts relating to the supporting aviation unit and can ensure that the supporting aviation unit is synchronized into the ground scheme of maneuver. During the second step of the Military Decision Making Process (MDMP), the BAE can provide the BCT staff with critical facts such as crew rest cycles, aircraft availability, and airframe hours. This provides the BCT commander with critical information that will help further develop his ground tactical plan.

As the Army continues to transform, Soldiers also must continue self-development and ensure they stay familiar with organizational changes. Each member of the BAE is a representative of the aviation branch and the training conducted within the aviation community. The ability to provide an effective staff element depends directly on the training each Soldier has received prior to or while assigned to the BAE.

Material

This section conducts the analysis of the materials associated with the BAE as a part of the BCT. Currently, the fielding of equipment to support the BAE is occurring as quickly as possible. However, the speed of the Army's transformation has resulted in shortfalls in equipping of these formations and resulted in formations deploying without newly designed equipment. Many units may be forced to incorporate changes now and assume risk on the slow equipping process.

The prevailing issue within the BAE is the equipment associated with maintaining the A2C2 of elements assigned within the BCT. The BAE members have experience within the aviation community operating Aviation Mission Planning Systems (AMPS) and Army Battle Command System (ABCS). As the members are assigned to the BAE, they find themselves operating the Command Post of the Future (CPOF), AMPS, Voice Over Internet Protocol (VOIP), and ABCS. The ability to field and train the BAE members on all of the systems proposes a serious shortfall in equipping and training the BAE in maintaining A2C2. In addition to the technical training the BAE members receive, it is critical they understand how the systems work within the Army and the Joint services.

The BAE ability to provide the BCT and supporting aviation element with current Airspace Control Order (ACO) from the JFACC can result in mission success or the lack of support based on lack of understanding of what the assigned equipment can provide. The ABCS Connectivity Slide in figure 7 offers understanding about how the assigned equipment can provide both the BCT and aviation battalion with a common operational picture and result in the deconfliction of airspace within the BCT maneuver area. The ability of the BAE to use this equipment can provide the BCT with better support in CAS and AI from both the Army and the Air Force.

ABCS Connectivity (6.4)

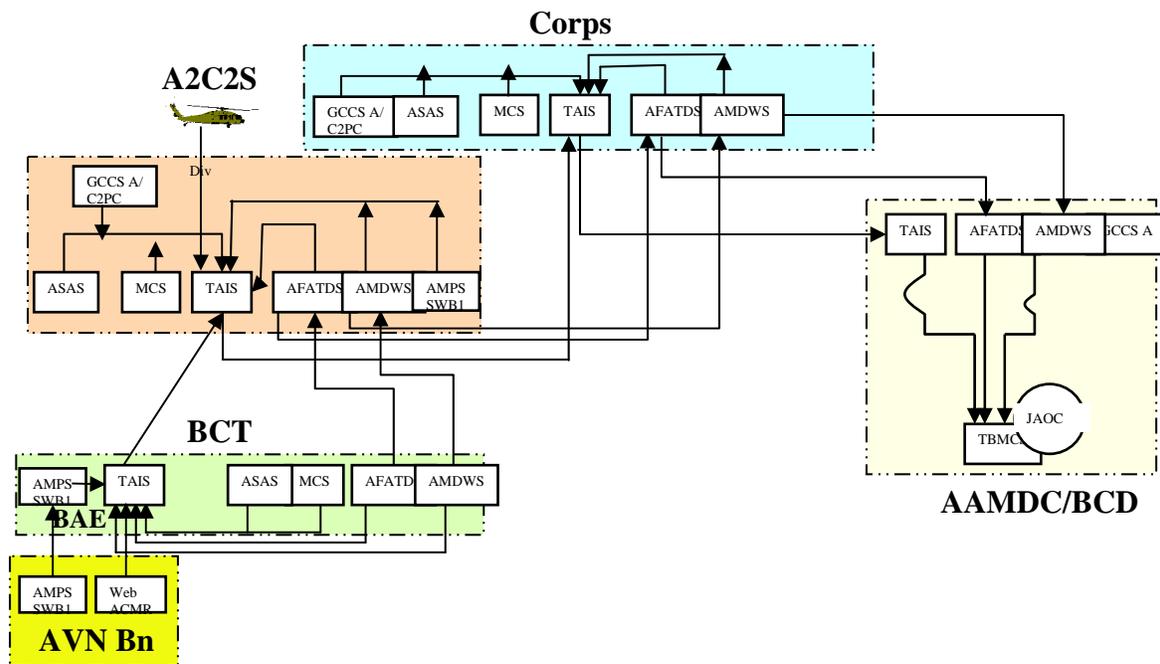


Figure 7. ABCS Connectivity (6.4)

Source: LTC Ray Gentzyl, “Brigade Aviation Element, BAE, Executive Overview” (US Army Pre-Command Course Brief, January 2007), Slide 8.

The ability to operate in two separate locations with the assigned equipment and personnel directly has an impact on providing 24-hour coverage to the BCT. Due to limited personnel and equipment, the ability to provide the 24-hour coverage and common operational picture in two locations is impossible unless additional resources are provided to the BAE. The ability of the BCT to provide additional equipment to the BAE will ensure the BAE provides the mission support as outlined within doctrine. The limitations are seen currently in the fielding of assigned equipment prior to deployment; until the ARFORGEN process can catch up with the deployments, this will continue to plague the BAE.

Leadership

Within the DOTMLPF elements of ARFORGEN, this section of the chapter will conduct an analysis of the leadership element. The analysis will also discuss the education within the leadership of the BCT and BAE. Based on numerous accounts from formal AARs from the Combined Training Centers and combat operations in support of OIF/OEF, the leadership's lack of education on the role of a BAE have severely limited the effectiveness of the BAE. The analysis of AAR comments come both from the inability of the BCT to synchronize the BAE with the BCT staff and the aviation community not understanding the role of the BAE within the BCT staff.

The education of the BCT staff is key; it is critical to the success of the BAE and their ability to synchronize efforts within the BCT staff. The days where a limited experience LNO populates the ground maneuver staff is no longer accepted. Now the BAE provides the BCT commander with a sizable staff of professionals that if integrated properly can provide the commander with timely support to accomplish the respective

mission. Now more than ever, the BAE must educate the BCT staff members on the differing aspects within the aviation community and their ability to impact the ground maneuver commander's plan: "BCTs lack understanding capabilities/limitations of subordinate battalions (i.e., crew rest, maintenance requirements, and employment considerations)" (CTC Lessons Learned, 2006). Much like the aircrews that conduct Air Integration briefs to their supportive ground maneuver force, the BAE is responsible for educating the BCT staff on aviation operations. The ability of the BAE to educate the BCT staff provides the entire BCT staff a better opportunity to synchronize their assets against the enemy.

The education of the BAE/ADAM cell within the BCT staff on how to manage airspace can become critical to the success of the BAE. Each member of the BAE staff section must bring a clear understanding of how to manage A2C2. The danger of a BAE not understanding the A2C2 structure and developing separate control measure can lead to a situation that limits the effectiveness of the BCT: "Separately planned aviation control measures lead to impaired situational awareness, division of effort, and possible fratricide" (CTC Lessons Learned 2006). The employment of the Raven (UAS) at the Battalion level not in coordination with the BAE or A2C2 is a common example of this lesson learned.

The education of the BAE and their respective role in providing a direct link to the Joint airspace user to provide immediate CAS support can provide the BCT with a great combat multiplier. The lack of education of the BAE on Joint capabilities will limit the ability of the BCT to bring additional assets to bear on the enemy. All too often, the ability to incorporate Restricted Operation Zone (ROZ) and other preplanned control

measures within the Joint airspace is worked around, and the understanding of airspace deconfliction becomes less when operating below coordinated altitudes. The ability of the BAE to educate the BCT staff on the ACO and the planning process can result in enhanced joint fighting capabilities.

The BAE can provide Army aviation support to the BCT thru the Air Mission request (AMR) process. The aviation force provides the BCT and BAE education on how this process works can ensure the correct support. The education of the BAE and ensuring their understanding of the parallel planning process can reduce the time for getting aviation support. As seen below, in figure 8, the AMR process begins and ends with the BAE.

The leadership and education of the BAE does not stop with the BCT staff. The education of the Combat Aviation Brigade or supporting aviation task force becomes critical in the success of the BAE and ultimately the BCT. The senior aviation commander or designated staff member must ensure they are in constant communication with the BAE element. The differing role of the BAE and aviation commander's role is outlined within doctrine. However, the aviation commander's staff that is able to relay the operational capability of the aviation force through the BAE is what will ensure for successful synchronization of aviation assets.

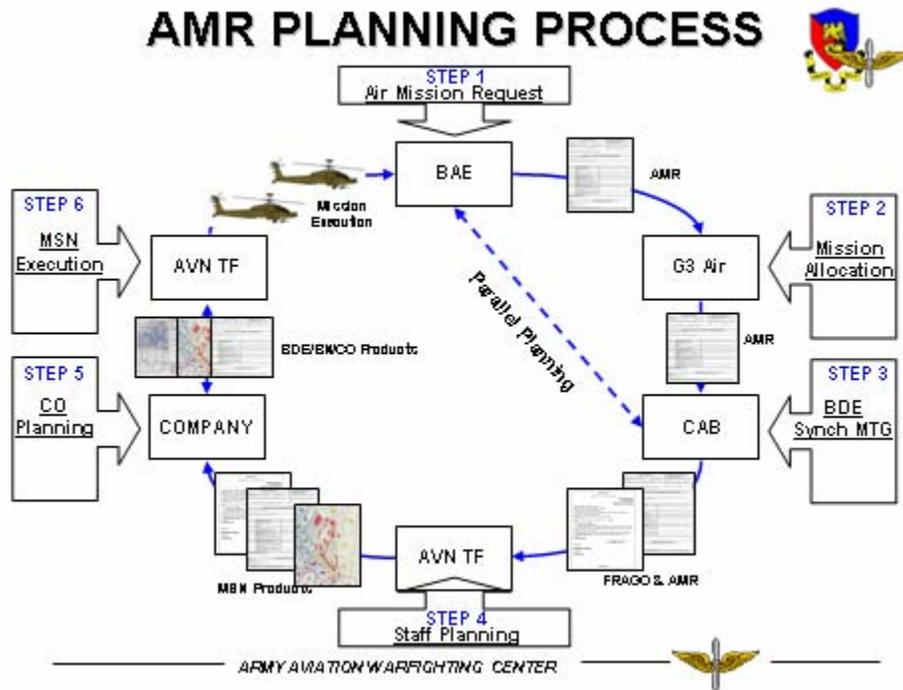


Figure 8. AMR Planning Process

Source: LTC Ray Gentzyl, "Brigade Aviation Element, BAE, Executive Overview" (US Army Pre-Command Course Brief, January 2007), Slide 32.

The BAE has to provide the supporting aviation task force with a clear understanding of the ground maneuver plan and the control measures associated with the BCT plan. At times, this may require the BAE to put on the "infantry hat" and make sure the aviation force is equipped with the information. "Aircrew members execute missions with incomplete BCT maneuver graphics, friendly obstacle plan graphics, fire support graphics, and enemy disposition graphics" (CTT Lessons Learned 2006). The continued education of the aviation community on the applicability of understanding the ground maneuver plan and the required information needed to support the plan can result in better support to the BCT.

Key to the education of the BCT is providing aviators as LNOs with the experience and understanding of their role within the BAE. The senior aviation commander must ensure the LNO assigned to support of the BCT is tactically and technically proficient and can represent the aviation commander during the planning phase of the operations. The LNO with no experience can be detrimental to the success of the BCT. The ability of the LNO to provide the BCT with a subject matter expert on how the aviation unit conducts operations can pay dividends to the success of the ground tactical plan.

The education and leadership of the BAE and CAB can provide the BCT with staff sections capable of providing expert support to planning and synchronizing of aviation operations in support of the BCT. Education of the aviation community on the ground scheme of maneuver and tools required to execute the mission can enhance the support of the BCT. Likewise, the education of the BCT staff on aviation-peculiar issues will ensure the base understanding of aviation capabilities and limitations. As the Army continues to transform and the force continues to change, the constancy of education will continue to play a role in the BAE success.

Personnel

Within the personnel element of the DOTMLPF, the limited ability of the BAE to synchronize assets can be limited within this one particular element. As the BAE is formed, it becomes paramount that the Soldiers assigned within the section be carefully screened to ensure the best are assigned to serve as BAE members. Several key factors can take this somewhat well organized staff element and turn it into a non-provider within the BCT. The analysis of personnel is conducted in three areas. First, the analysis

of experience of each position, what the position brings to the BAE and determine if it is correct or if some recommended changes can provide the BAE with a better staff element. Second, the analysis of how within the personnel community the assignments officer can determine the correct mix of assigned Soldiers based on their respective background within Army aviation. The third area is analyzed whether the correct amount of focus is being placed on the importance of the positions within the BAE. Lastly, a recommendation, if required, for areas of possible improvement.

Within the BAE as it is currently organized, there are six different positions. The levels or grades identify the experience level required to operate within the BCT staff. However, the experience level based on the current coded position can provide great disparity within the assigned Officers and enlisted Soldier. The NCOs and Warrant Officer ranks appropriately represent the level of experience at that respective grade.

A careful analysis of Majors assigned to the BAE can show differing levels of experience that greatly influence the mission success of the BAE. This analysis does not take into consideration the differing factors of self-motivation or individual professionalism. The rank of Major provides a junior field grade level OIC within the BAE. This provides a false expectation that the BAE Major has successfully completed company command and attended the Captain's Career Course. However, the rank of Major can bring differing levels of experience. Under new guidance, a Captain can be promoted to the rank of Major and never have commanded a company in aviation. The newly pinned-on Major provides an experience level of around the 10th year of service. The position is not a Military Education Level (MEL) IV level position. The level IV code can provide the BCT with a field grade that has completed CGSC/ILE and has a

higher level of experience and understanding of Army and Joint operations. Additionally, the Major who has completed S3/XO duties within the aviation community can bring to the BCT an individual that has the tactical and technical experience at the field grade level and understands the dynamic associated with organizational level leadership. To ensure the success of the BAE, the proper selection of the senior aviator must be tied to the coding of the position. Currently, HRC and the Brigade commander to whom a BAE is assigned are carefully managing each position. The coding of the BAE OIC position as a Key and Developmental (KD)-qualified major, completed two years as S3 or XO, and CGSC/ILE graduate can narrow the requirements for the BAE and ensure the officer is qualified to perform at the BCT level.

The Captain assigned to the BAE brings a wide variety of experience, much the same as the Major. The assigned Captain can bring between four and nine years of experience. The current coding of the captain does not differentiate between the two types of Captains, pre-command and post-command. The current officer professional timeline, the Captain completes basic course, flight school, and maybe has one to two years experience in an operational assignment as he or she pins on captain. The rank of Captain within the BAE needs to be coded as a Captain Career Course graduate and Company Command complete. This provides the BAE with a subject matter expert within the position and someone that has the experience and knowledge to operate at the BCT level.

The assigned position of 15P10, operations specialist, can reduce the ability of the BAE greatly unless careful screening of those assigned is taken. This position is not coded to keep the newly trained 15P right out of the schoolhouse from being assigned.

This position needs to be coded much the same as the two officer positions, differing in the levels of experience. Currently the aviation commander takes on responsibility of filling the assignment in conjunction with his respective Command Sergeant Majors input. The proper coding of the position would ensure the correct Soldier fills this slot. The assigned 15P needs to be of the rank of E4 and have performed exemplarily at the Battalion and Brigade level. The importance of receiving an assignment at the Brigade level ensures the Soldier has had experience operating at the Brigade level and they would bring experience in the operating systems at the BAE.

The careful consideration of the background of each Soldier assigned to the BAE can provide the BAE with a wide variety of Soldiers with differing backgrounds within the aviation community. When forming the BAE, the assigned officer can come from a mixture of aviation communities differing from Lift, Scout, and Attack. They can provide the BAE with some experience in the differing missions within the aviation community. The BAE can provide the BCT with a multicultural background of aviation Soldiers.

The addition of the proper codes within each assigned position of the BAE can provide the correct mixture of Soldiers and result in a balanced and effective staff element in the BCT. However, the changes must take place to ensure the proper attention is placed on the assignment of each BAE Soldier. The position of BAE OIC must be the most sought-after position, outside command, by future aviation battalion commanders. This position must be one that is handpicked by Human Resource Command (HRC) and filled with Soldiers on track to become future battalion commanders. The assignment to the BAE provides the aviation Soldier with the best experience on how to synchronize aviation into the ground commanders scheme of maneuver.

Facilities

The analysis of facilities within the DOTMLPF of the BAE is severely limited based on documented facts. The analysis of facilities is limited to the location of the BAE within the BCT structure, and how well the facilities can help the functionality of the BAE.

The location of the BAE cell within the BCT is driven by the BCT commander and can have differing effects based on the location. Currently the only TTPs for the location of the BAE can be found in the PCC briefing with limited discussion of how this affects the BAE's performance. The three approaches to the positioning of the BAE as depicted in figure 9 (PCC BAE Brief 2006, slide 12) provides the commander with a BAE co-located with the plans section, the BAE as a separate entity within the operations section, and the final location as a member of the fires sections within the operations cell.

The option of placing the BAE as a separate element within the plans cell is the less effective measure. Placing the BAE away from the operations section of the BCT staff reduces its ability to synchronize aviation assets during operations. This places the BAE outside the circle of ISR planning, fire support coordination, and airspace de-confliction with the ADAM cell. The only benefit to placing the BAE within the plans section is the ability to synchronize operations early within the planning cycle.

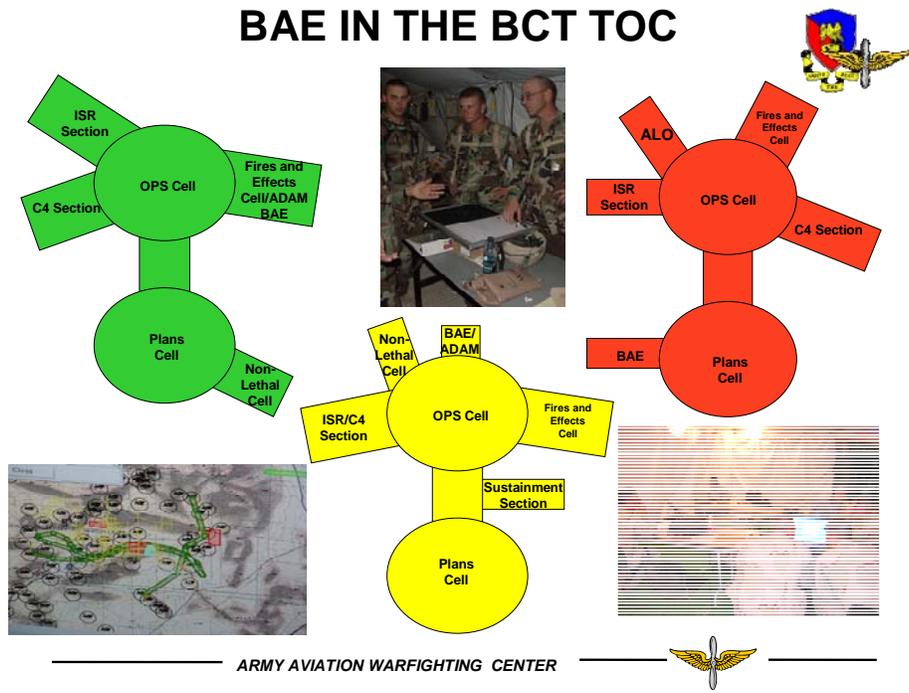


Figure 9. BAE in the BCT TOC

Source: Major Cain Baker, “Eagle Team BAE Brief” (National Training Center, Combat Aviation Trainers, Ft. Erwin, California, 2006).

The facility layout of the TOC with the BAE and ADAM cell co-located within the operations cell provides the BAE team with the ability to synchronize airspace planning. Numerous mediums within both of these sections assist in providing the BCT commander with the common operational picture. Locating the BAE within the operational circle provides the BCT commander with direct access to the airspace controllers. The only shortcoming of this facility layout is the disconnect with plans. The BAE OIC must understand this and must ensure the tie into plans is coordinated.

The best method of facilities layout is the co-location of the BAE, ADAM, and the plans and effects cell. The placement of the BAE in the operations cell, co-located with the ADAM cell for airspace deconfliction and system tie-in, and additionally places

the BAE in the effects planning cell, to provide better planning requirements for future effects. The combination of these three staff elements and the location of an ISR cell and operation center can ensure the BCT commander has the synchronization and planning of aviation assets with the BCT staff.

The basic analysis of facilities within the BAE can be limited to how the BCT commander determines the layout. There are many different ways in which to lay out the BCT TOC and the positioning of the BAE may be different based on the Infantry METT-TC. The BAE OIC has an implied task to ensure the BAE is positioned correctly within the BCT TOC to provide the BCT commander with a staff element that is capable of synchronizing the aviation assets within the different staff sections and ensures airspace deconfliction within the battle space.

Summary

This concludes the analysis of the BAE based on the elements of DOTMLPF. The following chapter is the conclusion chapter, and will provide the summary and recommendations based on the analysis of the BAE. The conclusion chapter will answer the primary and secondary research questions and provide future recommendations for changes to the BAE. The analysis of the BAE is a snapshot in time based on the current organization, as the BAE exists today. Further analysis of the BAE may lead to differing recommendations as the BAE is updated through the ARFORGEN process.

CHAPTER 4

CONCLUSIONS

This chapter will provide an overview of the analysis of the BAE with recommendations and answers to the research questions as outlined in the introduction. The elements of DOTMLPF provide the framework of the analysis, and include the recommendations within each element. The analysis overview leads to the answering of the primary and secondary research questions. The conclusion of this chapter offers recommendations for the BAE.

Answering the Primary and Secondary Research Questions

This report has presented the design and organization of the BAE, the description of the role of the BAE, and what each assigned Soldier can provide. The understanding of the BAE and how it is outlined within doctrine and manned by key positions leads to the ability to answer the primary research question: Can the BAE provide the BCT commander with a staff element capable of synchronizing aviation assets into the ground scheme of maneuver? With a complete analysis of the BAE using the DOTMLPF elements, the current BAE can provide the BCT with a staff element to incorporate aviation assets into the ground scheme of maneuver. As the BAE is outlined by task in purpose within the doctrine, under its current organization, it can provide an effective staff element to the BCT.

Review of DOTMLPF Analysis

Current doctrine provides the BAE members and the BCT staff with a baseline to draw from and conduct operations. The doctrine within the aviation community that

covers BAE operations is FM 3-101, *Aviation Brigade Operations*, and TC 1-400, *Brigade Aviation Element Handbook*. Each of these manuals provides the staff components with guidance and doctrine for employment of the BAE. Each document defines the organization and task associated within the BAE. The *Aviation Brigade Operations* Manual provides the BAE and CAB staff with guidance and doctrine to guide each staff on what their respective role is and what the relationship is between the two.

The Infantry doctrine associated with the BAE is FM 3-90.6, *Brigade Combat Team Operations*. This Army field manual provides the BAE and BCT staff the guidance and doctrine to guide the BAE on how to integrate into the BCT staff. The BCT manual also gives a brief discussion on the composition of the BAE and the roles associated. This manual gives examples on how to integrate the BAE into the differing BCT working groups and cells, such as the integration of the BAE into the ISR working group and the ability to synchronize aviation assets to the ISR plan. The field manual provides guidance on how the BAE incorporates into the fires and effects planning group and the functionality of airspace deconfliction. The manual additionally provides the BAE with their role in providing sustainment support to the BCT, such as the guidance of the BAE role in support of MEDEVAC operations and aerial lift operations. FM 3-90.6 provides more than just task and purpose to the BAE staff; it provides the how to for the BAE. This field manual is paramount to the BAE's ability to incorporate aviation assets into the ground commander's scheme of maneuver.

Based on the analysis of the BAE with respect to the organization element, the current organization can provide a better staff element to the BCT than the old LNO concept. However, careful considerations must be applied to the manning of the

organization, shortage of key personnel, and the addition of certain MOS skills. The current lack of providing personnel or fulfilling each position within the BAE as designed by MTOE results in an ineffective BAE. The BAE as an organization cannot synchronize aviation assets in support of the ground scheme of maneuver if the organization is not manned as designed. Based on the ARFORGEN process and the BAE being a new concept, the process will take time before the manning can meet the requirement. The aviation commander and BCT commander need to become fully engaged in ensuring the BAE is fully manned. The lack of a fully manned BAE has been an issue during several CTC rotations and even during OIF/OEF deployments.

The ability of the tactical aviation units to fully man the BAE with the required LNOs can add to the effectiveness of the BAE. Several TTPs are used within the BCT for the integration of LNOs within the BCT. Based on the experience and manning of the LNOs is a direct correlation to the output during the operation. Placing the LNO under the BAE provides the BAE with better division of duties and assists in the planning process for synchronization of aviation assets early. The technique of pushing LNOs down to the maneuver battalions within the BCT can provide better understanding of the ground tactical plan. The success of this technique is dependent on the LNO's constant coordination with the BAE to ensure the aviation assets are synchronize within the BCT ground scheme of maneuver.

The BAE as currently organized has no UAS expert assigned to either assist the BCT with the education of what the UAS provides or the resources to develop procedures to deconflict airspace usage by the UAS. The addition of a 15Q, UAS operations specialist, or the replacement of one of the existing 15P would provide the BAE with the

subject maneuver expert on UAS operations. The addition of the 15Q will provide the BAE with a subject matter expert on how to incorporate the UAS into the Commander's scheme of maneuver.

Currently, the BAE has limited depth in the position of TACOPS officer and enlisted Soldier. The addition of an additional TACOPS officer would provide the BAE with more depth in the position and make the capability of providing 24-hour coverage more manageable. The addition of an enlisted Soldier will also provide depth to the BAE in managing daily task and equipment.

Based on the analysis of training associated with the BAE, the BAE must undergo numerous training events to ensure the members can effectively employ their assigned systems and provide better understanding of their respective roles within the BCT. The training received by the members during normal progression through the ranks must provide exposure to the concept of the BAE and the systems associated with the BAE. An initiative by the Army Aviation Warfighting Center has implemented several changes to the basic and advanced course within each of the BAE member's education. The addition to system training, like AMPS and TAIS, in the aviation captain career course can provide members a better understanding of how to employ the systems assigned to the BAE. This training provides the BAE members with exposure to the AMPS and ABCS system and the roles within the aviation community.

If the BAE OIC has attended the Command and General Staff College (CGSC), they can provide the BAE with a better understanding of how the BCT staff operates different working groups/cells and provide a better understanding of the joint operating environment. The training received during attendance at CGSC provides the member

with extensive training on the different planning groups or operating cells within the BCT staff. This understanding will ensure the BAE understands their respective role within the BCT staff. The Joint operating environment will assist the BAE in understanding the process within Joint operations. The ability of the BAE to incorporate the BCT elements into the Joint operations can maximize the effect of the BCT. An example of this can be demonstrated by the BAE's ability to ensure that BCT operations are synchronized within the ATO.

The training received by the Warrant Officer in numerous additional skill courses provides the BAE with a technical expert. Such courses as Aircraft Survivability and Equipment (ASE), TACOPS, and Joint Fires Coordination Course are available for the Warrant Officer to attend. The training a senior warrant officer receives from the basic and advanced warrant officer courses enhances the member tactical perspective as a member of the BAE. The Additional Skill Identifier (ASI) training received provides the BAE with a technical expert. The combination of basic core curriculum and ASI training provides another exceptionally trained member of the BAE and ensures the ability to provide the BCT with the ability to synchronize planning within the ground maneuver commander's scheme of maneuver.

Initiatives by the Army Aviation Warfighting Center have provided exceptional training for the BAE members. The changes within the Captains Career Course and Warrant Officer courses have resulted in better-trained aviators from the basic and advance courses. The addition of the Mobile Training Team (MTT) provides expert instruction by subject matter experts on the BAE and the BCT. This MTT provides the BAE with up-to-date TTPs on how to synchronize aviation into the BCT scheme of

maneuver, A2C2 operations, UAS operations, and automated system training. The future holds resident training for BAE members, but currently the MTT provides the gap filler prior to the school's completion. This team can provide for the BAE the first look at some systems within the BAE and offer an understanding of how to integrate into the BCT.

The analysis of the material associated with the BAE finds the ARFORGEN process has not yet caught up with all assigned BAEs. Based on the BAE being just recently formed and the ARFORGEN process having a lengthy time line, the ability to ensure that each BAE is fielded at 100% of its assigned equipment has proving too much for the procurement process. BAE's have deployed to numerous training events lacking the assigned equipment to integrate the BAE into the ABCS system, or the late fielding of equipment affected the training conducted by the BAE. As the Army continues to go through the ARFORGEN process, AAR comments on material impact will be lessened and the BAE will be less affected by material shortages.

The analysis of leadership and education of the BAE presented numerous findings. The continued education of the BCT on aviation operations and specific planning considerations can provide the BCT staff with a better understanding of how to integrate aviation into the ground scheme of maneuver, including the understanding of the maintenance structure and how key planning tools can assist in forecasting combat power of the aviation force. The forecasting of aviations support by the BAE can provide the aviation force the ability to forecast requirements and adjust crew rest cycles to better support the ground commander. The education of the BAE on how to coordinate support through the Combat Aviation Brigade with the AMR process can better facilitate the

support of the ground commander. Parallel planning within the AMR process and the role of each element can ensure the BAE can process and approve AMRs submitted within the BCT.

Educating the BCT on airspace and the use of airspace can enhance the effectiveness of the BAE. Each member of the BAE must understand how to deconflict the airspace and the importance of ensuring the airspace is deconflicted. The education of the BAE on how they deconflict airspace and how they can provide joint fires to the ground commander through the ATO cycle can provide the ground commander with numerous combat multipliers. A2C2 is an education process by both the aviation and BCT community, and the better understanding of the A2C2 process can provide a safer environment and provide better support to the ground commander.

Personnel analysis and the impact each member has on the BAE provides numerous examples of a well-designed BAE and how, if positions are carefully considered and manned, can result in differing levels of experience in a BAE. Each assigned position within the BAE provides the correct experience level within the specific assigned skill. However, based on the differing levels of experience within each grade, the BAE can be manned as designed but not have the required experience level to optimize the BAE effectiveness. An example can be seen from the OIC position of the BAE. The Major assigned as OIC can come with differing levels of experience. The most likely experience factors have come from company command and attending the Captain's Career Course. The Captain may have commanded a company that did not have aircraft or UAS and, at an extreme, may not have had commanded in the aviation community.

This will result in differing levels of comfort when recommending to the BCT how to employ aviation assets within the ground scheme of maneuver.

The OIC position can be coded to ensure that Major's assigned to the position is an aviator with experience in commanding aviation assets, has attended CGSC, and has successfully completed the key and developmental positions in an aviation community. This can provide the BCT commander with the desired level of experience and result in the proper synchronization of aviation assets. The Major that has completed CGSC brings the required training to incorporate into the BCT staff and provide an understanding of the joint environment. The major that has completed the key and developmental positions within the aviation community provides an individual that understands aviation operations and has participated in the organizational leadership as a field grade. The coding of the OIC position can ensure the BCT commander has the experience level in the position to maximize the combat multipliers. Each position can be coded the same to ensure not only that the position is filled by the proper rank, but that the rank also provides the individual with the proper experience to perform the assigned task.

The analysis of the material associated with the BAE leads to limited impacts on the effectiveness of the BAE. The facilities associated with the BAE have limited impact, based on the current operational environment the Army is in today. However, careful consideration of where the BAE is placed within the BCT facilities can provide differing levels of effectiveness. The positioning of the BAE within the operation cell provides the BCT with a staff section that is able to effectively synchronize and deconflict air operations. Additionally, the co-location of the BAE, ADAM, and effects cell within the BCT facility provides for better synchronization of the aviation assets in the planning

process. Understanding how the emplacement of the BAE within the BCT facility, and how that decision can influence the effectiveness of the BAE, is one the BCT staff must consider carefully.

Summary

The recommendations within each of the DOTMLPF elements can provide a more effective BAE to the BCT commander. The ARFORGEN process will ensure that the recommended change to doctrine, organization, material, and facilities is met. The careful considerations to the training, education, and personnel elements may result in a better-prepared BAE. The education of the BAE members on their roles within the BCT and the BCT education on what the BAE provides to the BCT can provide for better synchronization of aviation assets within the ground commanders scheme of maneuver. The addition of a UAS expert can provide the BAE with a desperately needed subject matter expert. Based on the numerous assets flying through the BCT area of operations the emphasis on command and control of UAS assets can ensure a deconflicted airspace and provide a better synchronize ISR plan. The BAE must continue the educate BCT staffs and ensure the training is completed prior to deployment. The careful coding of each position and the emphasis the aviation puts on the BAE position can ensure we have the correct aviator and level of experience in the BAE jobs.

The premier job for non-command positions within Aviation branch must be the BAE positions. If the BAE OIC position is managed properly and the experienced personnel are placed in the positions the BAE will succeed. From the enlisted Soldier to the field grade aviation officer the assignment to a BAE position can provide better understanding of how the BCT is employed and provide the individuals with a better

understanding of how to synchronize aviation assets into the ground commander's scheme of maneuver.

REFERENCE LIST

- Baker, Major Cain. 2006. "BAE Integration and Synchronization on the Brigade Staff." Web Site (<https://www.us.army.mil/bae.portal/>.) Last visited March 10, 2007.
- Baker, Major Cain. 2006. "Eagle Team BAE Brief" National Training Center, Combat Aviation Trainers, Ft. Erwin, California.
- Gentzyel, LTC Ray. 2007. "Brigade Aviation Element, BAE, Executive Overview." US Army Pre-Command Course Brief. January.
- Marnon, Paul V., Lieutenant Colonel, and Robert D. Carter. 2005. Manning, Equipping, Training and Deploying the Brigade Aviation Element. *Infantry Magazine*, September, p.52.
- Packett, MG Virgil L. II. 2006. "CG Aviation Update" Fort Rucker, Al. US Army Pre-Command Course Brief. January.
- Reyburn, Major Mike. 2007 "Aviation Captains Career Course (AVC3)." US Army Pre-Command Course Brief. January.
- Tolmmachoff, Mark A. 2000. "Is Army Aviation Doctrine Adequate For Military Operations Other Than War?" Master of Military Art and Science thesis, CGSC, Fort Leavenworth, KS.
- US Army. 1996. Field Manual 100-13, *Battlefield Coordination Detachment (BCD)*. Washington DC: Headquarters, Department of Army, 5 September.
- _____.2002. FM 3-52. *Army Airspace Command and Control in a Combat Zone*. Washington DC: Headquarters, Department of Army, 1 August.
- _____. 2004. Joint Publication 3-52, *Army Airspace Command and Control in Combat Zone*. Washington DC: Headquarters, Department of Army, 30 August.
- _____.2005. Field Manual 3-101, *Aviation Brigade Operations*. Washington DC: Headquarters, Department of the Army.
- _____.2005. Field Manual Interim 3-4.101, *UEx Aviation Brigade Organization, Training and Operations*. Washington DC: Headquarters, Department of Army, 26 April.
- _____.2006. Field Manual 3-90.6, *Brigade Combat Team*. Washington DC: Headquarters, Department of Army, 4 August.
- _____.2006. Training Circular 1-400, *Brigade Aviation Element Handbook*. Washington, DC: Headquarters, Department of Army.

_____. 2006. Army Regulation 3.0, *Army Operations*. Alexandria, VA: Army Publications and Printing Command.

_____. 2006. F-100, *Changing the Army*. US Army Command and General Staff College, Ft Leavenworth, Kansas. August.

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