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BRIGADE INTELLIGENCE OPERATIONS
Implications for the Nonlinear Battlefield

A Monograph
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ABSTRACT

BRIGADE INTELLIGENCE OPERATIONS: Implications for the Nonlinear Battlefield.
By Major Terry B. Wilson, USA, 46 pages.

This monograph examines tactical-level intelligence practices to serve brigade commanders better on the future battlefield. It seeks to determine the capabilities warranted for a brigade-level intelligence staff so that the commander's needs for timely, accurate, and sufficient information will be adequately served. The monograph relies on a study of historical documents and current doctrine concerning intelligence practices at the tactical level. The model for future brigade operations is the AirLand Battle Future Umbrella Concept.

The monograph begins by examining how the battlefield continues to grow. This theoretical phenomenon is principally caused by advances in weapons technology, increased mobility, and battlefield communications improvements. Its significance is that it greatly expands the commander's area of interest. This is the area of responsibility for the S2 to analyze the enemy and terrain as they may affect brigade operations. Under the AirLand Battle Future concept, the battlefield is expected to continue to grow, producing continued challenges for the S2.

The monograph examines intelligence practices from WWII to the present focusing on the evolution of doctrine, organization, equipment, and training. Our past practices were deficient in meeting the commander's needs for timely, accurate, and sufficient information to support decision making. Through their evolution, intelligence practices and doctrine have made significant strides in meeting these needs. While doctrine has evolved to provide useful tools for the S2, the organization and equipment have remained austere. Equipment required to process and analyze information, particularly automation, remains a void. This still makes rapid dissemination of information a shortcoming. Training attempts to fill the void that exists in the size of the staff and lack of automation.

The monograph concludes that planned improvements in collection technology will support the commander's needs for information on the future battlefield. However, the nonlinear battlefield will over-tax the current intelligence processing capability at the brigade. The All Source Analysis System needs to be fielded to the brigade level in the future.

The S2 should be able to meet the commander's needs for information to support decision making as long as intelligence and operations continue to work as a team. The commander of the future must still focus his requirements effectively. The S2 must continue to be aggressive in acquiring and disseminating information.

Table of Contents

INTRODUCTION

Today's battlefield has grown immensely for the small unit. Technological advances in the areas of mobility, lethality, and communications have taught us that if we want to survive on the battlefield, we must disperse.[1] If we seek to find and destroy our enemies, we will have to find him as he is also dispersed. Technological advances shape the battlefield equally for both sides. Neither side can afford to be caught in concentrated formations at the wrong place or the wrong time.[2] Technology does not stand still, either. It creates new conditions and forces us to imagine what the future battlefield will look like.

We can expect the future battlefield to continue expanding in width, depth, and height. The concept for AirLand Battle Future and the nonlinear battlefield evolved from several sources. First, it is an attempt to protect a force through dispersion. It also provides a capability for rapidly concentrating against an enemy decisive point or "center of gravity".[3] Finally, it is a vision of a battlefield that enables a small force to defeat weaker points of a larger force.[4] This is critical to the American way of war as we attempt to gain decisive results at the least possible expense in both dollars and lives.[5]

The AirLand Battle Future Umbrella Concept provides a vision of what to expect on the future battlefield. It

expands current AirLand Battle concepts, emphasizing seizing the initiative at all levels.[6] "Tactically, the focus is to identify the enemy force, destroy it with long-range indirect fires, isolate it from reinforcement, and then use maneuver forces and fires to complete destruction of attritted enemy forces in depth."[7] Future units are expected to control larger portions of the battlefield.[8]

One of the more significant features of the concept is the need to fight nonlinearly. The tactical nonlinear battlefield is defined as:

> A battlefield upon which the command either by chance or the lack of maneuver forces to cover all the terrain, has placed his forces in dispersed, noncontiguous areas from which he can operate to destroy enemy forces within his area of operations. Emphasis is on destruction of enemy force rather than terrain retention. 9

This nonlinear concept implies taking risk as areas will be left unoccupied. Technological advances in surveillance systems are thus key to success in this type of warfare as they locate enemy positions and concentrations. These systems must also identify where the enemy is not operating by monitoring the unoccupied areas.

As we visualize this larger or expanded battlefield, we cannot help but imagine the problems commanders at all levels will have in seeing the battlefield and controlling events in assigned areas of operations. The commander must know his assigned area of operations as he did in the past.

He also must know a considerable amount of information about the area and events in areas adjacent to his assigned battlefield area. This is his area of interest.[10]

On the future battlefield, the intelligence officer at all levels must be concerned with satisfying a commander's needs for information within expanded areas of interest. Given the mobility offered a commander in an armored or mechanized force, his area of interest may exceed several hundred kilometers a day. The cruising range of an M1A1 tank before requiring refueling is 289 miles.[11] With today's intelligence collection systems, this distance can and does overtax the brigade commander's ability to see the battlefield. The brigade S2 attempts to define the terrain and the enemy within the commander's area of interest.

The brigade S2 will be challenged with larger areas of interest, the nonlinear battlefield, and brigades that will conduct relatively independent operations. In order to satisfy the commander's need for timely and accurate information, the S2 must have the doctrine, structure, training, and equipment necessary to cope with the changing battlefield. Intelligence Preparation of the Battlefield (IPB) principles provide sound doctrine for examining terrain and the threat, even on an extended battlefield. But doctrine, no matter how sound, cannot replicate actual combat experience. As battles become more fluid and

brigades must reorient direction from day to day, it becomes critical to rapidly know the ground and enemy situations. However, analytical capability at the brigade level is limited. The brigade S2 must have the information for the commander at hand within minutes of receipt of a change in direction. This requires rapid access to information and rapid processing and analysis available only through automated support.

The primary mission of the brigade intelligence officer is to provide timely, accurate information to support both target development and situation development in support of command decision making. This mission will dominate tomorrow's expanded battlefield even more than today's.

To support target development, situation development, and the decision making process, the S2 must know the battlefield and the enemy. His charge is to provide accurate, timely information on the enemy and terrain to reduce the commander's uncertainty. What we must know, and what this monograph will attempt to answer is: Does the brigade S2 presently have the capability to provide the information necessary to satisfy his commander's intelligence needs on the future battlefield?

To answer this question, I will limit this monograph to an examination of operations in a mid- to high-intensity environment. Though many applications of the intelligence

functions are applicable in a low-intensity environment, I have focused the paper to deal with only one key issue. The exception to this rule is a brief historical look at Vietnam intelligence operations since they significantly influenced our doctrine and force structure.

As a preface to the detailed discussion of the research question, I will briefly explore the theory of the growing battlefield. This is important to the study of the S2's responsibilities. It defines the geographic area of responsibility or, put into modern doctrinal terminology, the area of interest.

I then intend to explore the research question by examining past and present intelligence practices at the brigade or regimental (brigade equivalent) level. As we look at history and current practices, I will focus on the cornerstones of the combat development process by examining what the S2 had to work with in terms of doctrine, force structure, equipment, and training. This will provide a good idea of the tools available to accomplish his mission.

After I examine the tools available to the S2 (doctrine, organization, equipment, and training), I will evaluate his capability to provide information to support the commander's operations by the following criteria:

-Can the S2 perform his mission rapidly enough to provide the commander answers to his information requirements in order to reduce his uncertainties?

-Does the S2 accurately portray information concerning the enemy and terrain conditions?

-Is the information sufficient to support operations?

-Is the information that is gathered and portrayed what the commander needs to make his decisions?

I expect to be able to make a subjective evaluation of past and present intelligence practices, successes, and failures by comparing them to these criteria. The criteria directly relate to the dominant mission of the S2 - providing information.

In my conclusions I will analyze each criteria as we look towards the future battlefield. I will use the AirLand Battle Future Umbrella concept as a guide for this. Implications for the future are imbedded in this analysis.

THE GROWING BATTLEFIELD

Before an in-depth examination of tactical intelligence trends and future needs, a brief explanation of the growing or expanding battlefield is in order. This is important to understand the scope and complexity of the intelligence officer's responsibility to provide accurate and timely information to the commander. As a first step, we will define the commander's area of operations and area of interest.

> Tactical commanders will fight the enemy in an area of operations, a specific zone or sector assigned to them. But they must also identify and monitor enemy

> activities outside their areas of operations which could affect their future operations. This larger area of interest will vary in size and shape from operation to operation. It should include all enemy activities which might affect the friendly force throughout the duration of the operation in question, and may therefore extend forward, to the flanks, and to the rear of the area of operations. 12

The area of interest then becomes the focus of intelligence analysis for the S2. This area is examined in detail using the IPB process so that the S2 can provide information necessary to reduce commander uncertainty and to support the command decision making process. This is not a new phenomenon. Commanders have always been concerned with where they plan to fight battles and analyzing both the enemy and terrain prior to battle.

We need to comprehend the difficulty in gathering the information needed by the commander on the complex and expanded battlefield. This comprehension may aid us in coping with the more expanded battlefield of the future. A first step is gaining insight into the growing battlefield dimensions and understanding why the battlefield continues to grow.

There are three main causes for the growth of the battlefield: weapons technology, mobility, [13] and battlefield communications technology. Each contributed over time to extending the width and depth of the battlefield. These technologies caused significant adjustments in tactics because of their impact on the

dynamics of battle. I will briefly describe how these technologies contributed to the theory of the "empty battlefield"[14] and then examine how this theory can be extended into the future.

As weapons became more lethal over time, armies constantly sought means to avoid heavy losses. One means was dispersion. "A dense firing line suffers critical losses... in proportion to the density of the space occupied."[15] "...The soldiers overwhelming desire to live, above all other considerations... led to battlefield dispersion..."[16]

This dispersion phenomenon began with the development of shouldered firearms.[17] It continued with each technological advance. In WWI the machine gun and improved artillery accuracy aided in changing what most thought would be a short, fast paced, offensive war into a long, entrenched stalemate.[18] In later wars, aerial weapons and weapons of mass destruction, particularly nuclear weapons, created expansion of the battlefield in depth as well as width. Dispersion is one doctrinal method available to counter firepower to make soldiers and systems difficult to locate and destroy.[19]

Weapons lethality resulting from changing technology was the chief cause for dispersion on the battlefield.[20] Overcoming dispersion in order to concentrate firepower

required mobility. Although perceived as a means for overcoming accurate fire, the result of mobility was a continued expansion of the battlefield.

During the US Civil War, the railroad provided the Union Army a means for moving soldiers to battlefields rapidly in order to concentrate combat power.[21] Use of the railroad during WWI provided the German Army the ability to posture forces forward rapidly. But mobility offered by the railroad did not provide the protection needed to overcome the lethality of the machine gun and destructiveness of artillery. Improvements in tactical mobility offered by the tank[22] and the airplane were the eventual solutions.

While offering the protection needed against lethal weapons, the tank, airplane, and eventually the helicopter provided the commander considerable tactical mobility. The German "blitzkrieg" tactic and Patton's race to the Rhine in WWII stand as examples of how the battlefield expanded in depth. An enemy's territory could be penetrated by hundreds of miles in a matter of days. Friendly lines of communications required protection so that precious fuel could be advanced to the tanks to continue pursuit.

With this more expanded battlefield caused by increased lethality and mobility came the necessity for improved communications to enable a commander to control units over

long distances. During the US Civil War the telegraph was instrumental in providing instruction and coordination between major units.[23] From WWII on, the radio dominated control. Today's technology provides the ability to communicate from the Pentagon to the foxhole should it be deemed necessary. Such a capability provides the ability to control forces over greater and greater distances. This allows a commander greater flexibility to maneuver forces anywhere within his area of operations. This, too, expands the battlefield as the commander can contol forces and firepower over much greater areas.

These greater areas cause significant information requirements for the commander and his intelligence officer. The S2 will have significantly greater areas to analyze in support of the commander's needs for information. If technology continues to advance weapons lethality, mobility, and improve communications, the battlefield will continue to expand. This will continue to increase the need for information so commanders can make more accurate decisions more frequently.

Even one of intelligence's chief critics, Carl von Clausewitz, admits to the increased reliance on intelligence when forces become more dispersed. "It is of course true that as operations become more and more fragmented, more diversified and specialized, the role of intelligence will

in general have to increase..."[24] In the next section we will examine how intelligence doctrine, structure, equipment and training have been used to meet the commander's needs for information in combat.

A HISTORICAL LOOK AT TACTICAL INTELLIGENCE

Examining historical examples provides insight into the evolution of our current tactical intelligence systems and practices. It also demonstrates both successes and failures to meet commanders' information needs. This does not mean that we must tie our hands to only what worked in the past in building an Army for the future. That would be dangerous because history is usually only a snapshot of what happened. Things that failed yesterday may be great successes tomorrow. History does teach us to expand our thoughts, gain lessons, and to be able to think better.[25]

I will examine several historical eras to analyze trends in our intelligence practices. Specifically, I will look at our practices during WWII, the Korean Conflict, and the Vietnam War. These eras provide an appreciation for how smaller unit intelligence operations were conducted and a historical perspective for looking at the future battlefield and intelligence systems. I will focus on the brigade and regiment operations and will later make comparisons to current operations and practices.

In the European Theater during WWII commanders took

considerable risk in conducting operations because of a lack of combat intelligence. After the Normandy landing, and during our pursuit to the French-German border, enemy forces were weak and fairly predictable. Intelligence officers could almost certainly be correct in stating that enemy forces were sporadic and not expected to defend aggressively. This intelligence picture changed as we drew closer to the German border. Still, our intelligence staffs continued to brief that the enemy was expected to be less than aggressive. Uncertainty as to enemy intentions, dispositions, and capabilities prevailed.

This uncertainty was not rare in all operations in the European Theater. A Command and General Staff College Analytical Studies Subcourse conducted 7 - 21 June 1946, indicated that the doctrine for combat intelligence was generally sound during WWII, flaws in execution were numerous. The analysis stated that:

-Little emphasis was placed on evaluation of enemy capabilities.
-Additional personnel, including specialists, were needed at all levels.
-The value of patrols had been overstated.
-Higher echelons did not focus intelligence information provided to lower echelons. Lower units (brigades/regiments) were sent a mass of useless unevaluated information.
-Regiments do not have the time to sort out long-winded G2 reports.
-Regiments and battalions need additional communications means for rapid dissemination, and additional personnel to aid in dissemination.
-The most valuable information came from

interrogation of prisoners.

-Tactical reconnaissance reports were slow and incomplete. Means for furnishing photographs to lower units was not expeditious. 26

The analysis provides some insights directly related to our criteria for timely, accurate, and sufficient information to support decision making. Divisions normally provided interrogators and photo interpreters to the brigade or regiment to support the S2's needs. Because the S2s had a relatively austere staff, they relied heavily on division G2 analysis. They also lacked personnel and radios to aid in rapid dissemination of information. Both the reliance on higher level analysis and lack of radios contributed to less than success in meeting the criteria for timely information.

The regimental S2 section was small during WWII. It usually consisted of one or two officers and one or two NCOs. Most built a reconnaissance team to seek specific information. For instance, regiments and battalions of the 28th Division created patrols of volunteers who conducted reconnaissance missions.[27] When used, these reconnaissance patrols could provide the accurate information needed to support decision making.

Many S2s merely copied division G2 annexes and published them as the regimental annexes.[28] This meant that information provided to the commander was not tailored to the commander's needs. Additionally, intelligence personnel were not specifically trained in intelligence

analysis so that they could carefully analyze information and meet the criteria for sufficiency.

During the period between WWII and the Korean War, US intelligence collection and processing capability was reduced along with the rest of the Army. In 1950, the surprise attack by North Korea forced another surge in capability. When MG Charles Willoughby, General Douglas McArthur's G2 in Japan, began intelligence operations, he had only two Korean linguists on his staff.[29] It took the Army a considerable amount of time to overcome this deficiency.

Collection assets were again concentrated at upper echelons. Divisions had light spotter aircraft, primarily used for artillery spotting; however, these aircraft had a photographic intelligence capability exploited by G2 personnel. The regimental S2's primary collectors were reconnaissance patrols and observation posts. The spotter aircraft and regimental reconnaissance assets were the primary tactical level collectors. The newly formed Army Security Agency later provided support to the division as well.

The ASA would not be ready to support operations until late in 1950.[30] The ASA was the controlling agency for all Signals Intelligence (SIGINT) policy and operations. After finally arriving in theater and building up their capability, they provided support to divisions and higher

units. Regiments could request information through G2 channels.

Division had become the hub for most collection and tactical analysis. This meant that we had not provided any better capability to the regimental level than existed during WW II. Our equipment during the Korean Conflict, especially early on in the war, was identical to that used in WW II. The same problems in meeting the commanders' needs for timely, accurate, and sufficient tactical intelligence information still existed. The trend for centralized analysis at the higher echelons was to carry over into our next major conflict, the Vietnam War.

In Vietnam we learned much more about combat intelligence. But due to the nature of the enemy and the types of operations conducted, we could not always meet the requirements of our commanders. The primary requirement of tactical intelligence during this war was to produce targets for immediate combat response.[31] This meant providing locations of enemy units and camps in an extremely difficult environment. Operational requirements demanded that the tactical intelligence effort serve both immediate target acquisition and planning and assessment. Still, tactical echelon intelligence structures were austere. Most who served in tactical units felt that tactical intelligence was inadequate to meet their needs, especially early in the war.

> At the height of the war, over 2500 intelligence personnel were active within Vietnam. Most of these specialists were employed in obtaining strategic information, while few were devoted to tactical units as officers. 32

Reasons for the inadequacy included:

-Lack of trained, qualified personnel (particularly analytical).
-Lack of an effective data base.
-Lack of timeliness - tied to systems being consolidated at higher echelons when the user of information was two or three echelons lower than the system.
-Collection - processing - analysis - dissemination took a long time, precluding timely receipt and use of needed intelligence information. 33

The Army Security Agency was responsive to national level tasking but slow in answering tactical queries. Information in some cases was passed to tactical unit commanders without informing their intelligence sections. 34

The nature of the enemy and his tactics contributed to our inability to provide accurate targeting to our commanders. Also, the nature of the environment made collection even more difficult. We were operating in an environment where the enemy could hide easily. Our units were responsible for significantly large areas that could not be occupied in linear fashion. Commanders were demanding better performance from the intelligence community, especially for targets that could be destroyed by our superior weapons technology.

Still, our intelligence structure was a top - down system where we concentrated both analysis and collection at the highest levels. Our operations were so swift and diverse, primarily due to the use of the helicopter for mobility, that tactical level data bases could not keep up with the enemy unless they could rely on information being provided from centralized analytical centers.

For the intelligence system to have been a total success in Vietnam, it would have required rapid collection, processing, analysis, and dissemination to the user in sufficient time to be useful. Concentrating analysis at high levels precluded rapid processing and dissemination.[35]

As a result of the Vietnam War and a visualization of a need for more productive intelligence collection at the tactical echelons, Army Security Agency units and other intelligence units were assigned to divisions. This eventually led to our current Combat Electronic Warfare Intelligence (CEWI) structure.

With the validated need to push information to the user, division to battalion, came the responsibility for analysis and dissemination. In WWII, Korea, and Vietnam we were learning the basics of our profession and more and more that the responsibility of the tactical intelligence officer was to provide timely, accurate information concerning the

enemy and the environment. Though we knew these responsiblilities were inherent in the job, our propensity to centralize assets precluded efficiency. Dissemination mechanisms and analysis improved significantly over time. Also, as intelligence practices became more tactically oriented and structures were developed to support tactical intelligence, we began to focus more on supporting the commander's decision making process. This will be developed more clearly in the next section during a discussion of current capabilities and practices.

CURRENT PRACTICES

The intelligence and electronic warfare system, as we know it today, evolved as a result of lessons learned from the Vietnam War. The Army combined the tactical signals intelligence operations of the Army Security Agency with other tactical intelligence operations. This combination was eventually termed Combat Electronic Warfare Intelligence (CEWI). CEWI units were specifically designed to provide all-source collectors to the division and corps.[36] As discussed in the previous section, collectors were centralized at division level and not assigned to subordinate brigades and battalions. Divisions then have the key responsibility to provide information gathered by these collectors to their subordinate units. Brigade S2s, responsible for meeting their commanders' needs for enemy

and terrain information, receive support from division controlled collectors.

This section will concentrate on the current brigade intelligence system as designed to meet the commander's needs on today's AirLand battlefield. To do this I will examine doctrine, organization, equipment, and training. I will also look at field practices to see if the current capabilities meet the goals of providing timely, accurate intelligence information to meet the brigade commander's decision making needs.

The base doctrine for all combat operations comes from FM 100-5, Operations, dated May 1986. In this manual we find the basic requirements for intelligence functions at all levels. The manual basically states that intelligence provides an accurate picture of the battlefield. Intelligence is also command driven.

> Commanders provide direction for the intelligence effort by articulating the priority intelligence requirements (PIR) and information requirements (IR) needed in the decision making process. To ensure that intelligence provides the basis for timely tactical decisions, commanders must plan and control intelligence operations with the same level of interest and personal involvement that they devote to combat operations. 37

At the brigade, the S2 is the senior intelligence officer. He plans and directs the collection effort and supervises the analytical effort. He must seek answers to the commander's PIR and IR as rapidly as possible to meet

the commander's decision cycle. The brigade S2 has numerous doctrinal references to assist in his responsibilities in the process. Again FM 100-5 states:

> The intelligence officer (G2 or S2) must inform the commander and all others concerned regarding the enemy situation and capabilities, terrain and weather. He__
> -Conducts continuous intelligence preparation of the battlefield (IPB).
> -Directs intelligence collection activities.
> -Assesses their results.
> -Refines the requirements for further collecting efforts.
> -Develops targets.
> -Provides OPSEC information to the G3. 38

To accomplish this mission the brigade S2 views all units, soldiers, and equipment as potential sources of information. As a guide for realizing the intelligence potential of these sources, FM 34-80, Brigade and Battalion Intelligence and Electronic Warfare Operations, provides the doctrinal guidance for the S2. The thrust of the manual is consistent with the direction of FM 100-5 in that it states:

> An S2's first and most important responsibility is to provide the intelligence his commander needs to make sound tactical decisions. He uses every means available to develop timely, complete and accurate intelligence to satisfy these needs. 39

The S2 has a Battlefield Information Control Center by doctrine that assists in reconnaissance and surveillance planning, analysis, and dissemination of information. Though requiring some updating, FM 34-80 is a comprehensive tool for the brigade intelligence staff. It explains all

the systems available at division that can assist the S2 in satisfying his commander's needs.

The manual alone, though, does not provide the S2 with all the tools he needs to do his job. The S2 must know and understand intelligence at all levels. FM 34-1, Intelligence and Electronic Warfare Operations, describes the entire IEW system. The S2 must understand the basics and many specifics of situation development, target development, electronic warfare, and counterintelligence. These are the major components of IEW doctrine. Though FM 34-80 explains systems available at division and describes assets that could be placed in support of a brigade, or could be located in a brigade area of operations, the S2 must also use FM 34-10, Division IEW Oerations, to fully understand their employment.

A key responsibility for the S2 is managing the IPB process. All of these manuals provide brief explanations of the IPB process, but do not provide specifics on how to perform IPB. The S2 must use FM 34-130, IPB, which provides detailed information on techniques and procedures for this important function. Additionally, FM 34-3, Intelligence Analysis, explains how to conduct or perform intelligence processing and analysis, a key adjunct to the IPB process. There are other 34 series manuals that are useful to the S2 that deal with specific types of intelligence operations

and procedures including collection management, counterintelligence and electronic warfare.

In order to most efficiently perform his duties, the brigade S2 must understand employment of all ground and aerial based collection and electronic countermeasures systems. Though FM 34-80 states that MI Battalion (CEWI) assets are generally deployed in general support of the division, there are times based on METT-T when an IEW company team is either attached or placed in direct support of the brigade. This would occur either because it is standard procedure for the division, as in airborne and air assault divisions, or when a brigade conducts relatively independent operations for the division or is separated due to its mission.

In addition to understanding how to employ collection systems and the IPB process, the S2 must also be a threat expert. He must study military and non-military materials for all his contingency areas and his commander's areas of interest and know the threat. This is no easy task in a small army where units may have several contingency focus areas.

A review of doctrine would not be complete without examining the doctrine for the brigade itself. FM 71-3, Armored and Mechanized Infantry Brigade, provides a brief explanation of S2 responsibilities. It also provides a short section on IPB. The information in this manual is

general and its intent is to educate or provide a common reference to other than S2 personnel. To discover what is precisely required of the S2 you must refer to the Brigade Mission Training Plan: ARTEP 7-30-MTP or ARTEP 71-3-MTP. The following are the critical tasks identified for the S2:

-Brigade performs intelligence operations.
-Intelligence information is disseminated.
-S2 section prepares the intelligence estimate.
-S2 section prepares the intelligence annex to the OPOPD.
-S2 section develops a security plan.
-S2 section identifies intelligence requirements.
-S2 section establishes the OPSEC data base.
-S2 section plans for aerial reconnaissance and security.
-S2 section prepares/processes planned tactical air reconnaissance/surveillance requests.
-S2 section maintains the brigade intelligence data base.
-S2 section assists in implementation of OPSEC measures.
-S2 section manages the intelligence effort.
-S2 section analyzes incoming information from maneuver elements in conjunction with intelligence received from higher headquarters.
-S2 section processes combat information and intelligence.
-S2 section disseminates combat information/intelligence. 40

Along with each of these tasks are lists of subordinate tasks that include conducting continuous IPB, preparing reconnaissance and surveillance plans, and maintaining complete order of battle information, terrain data, and weather data. This list is not much different from the G2's critical task list at division or corps. The brigade's area of interest is just smaller.

Fortunately, the brigade S2 does not have to perform all these tasks himself. The Division Tactical Operations Center Support Element (DTOCSE) is supposed to provide analysis support for weather, terrain, and enemy. They have all-source analytical capabilities that far surpass the brigade capabilities. This support includes IPB support, at least from the division perspective. The brigade S2 then refines these products for his commander's area of interest.[41]

To execute this doctrine, the S2 section is thinly manned. The current brigade S2 section in a heavy division consists of:

MAJ	35D	Brigade S2
CPT	35D	Assistant S2
1LT	35D	BICC Officer
SSG	96B	Senior Intel Analyst
SGT	96B	Intelligence Analyst
E4 and E3	96B	Analyst
E3	11B	Track Driver[42]

The organization is designed to support intelligence planning and analysis. It is an extremely austere organization providing the minimum necessary to operate continuously. There is no current operational capability as was the case in WWII where interrogators and reconnaissance personnel were attached to the brigade S2. The S2 section

normally has a two-person Intelligence and Electronic Warfare Support Element (IEWSE), an officer and an NCO, attached from the division MI battalion. The IEWSE monitors reports transmitted by the SIGINT processing platoon to the Technical Control and Analysis Element (TCAE) of the MI battalion and extracts information pertinent to the brigade. It also communicates brigade priorities directly to the MI battalion operations center. The IEWSE acts as a liaison for MI battalion assets operating either in support of the brigade or merely operating in the brigade area of operations.[43]

With such an austere staff, the brigade S2 has few equipment needs. The section has an M577 staff track and a wheeled vehicle for transportion and communications. It acts as the net control station for the brigade intelligence net and participates in the division intelligence net. The brigade S2 has an additional radio for the wheeled vehicle for operating on the move or for monitoring the brigade command net. There is no intelligence specific equipment assigned to the S2 section. Occasionally, an S2 section will have a MICROFIX computer to assist in data base maintenance; however, this would be an anomaly as the fielding plan for the MICROFIX issues these only to division level, not to the brigades.[44] The Maneuver Control Station (MCS) as it is fielded will be issued to the S2. It

currently has limited data base manipulation and storage capability. Improvements in terrain analysis capabilities when fielded with the improved Battlefield Planning System will be of great assistance in the future.

Officer and enlisted training in tactical intelligence and analysis is conducted at the Intelligence Center and School, Ft. Huachuca, Arizona. For officers it consists of the officer basic and advance courses. The basic course is approximately six months long and includes basic soldier and leader skills, operations at battalion and brigade level, IPB, threat, intelligence processing and analysis, IEW systems and capabilities, and low-intensity conflict. It culminates with a brigade and battalion level operations and intelligence exercise. The course is designed to prepare officers to be platoon leaders and staff officers (either BICC officers or battalion level S2s).[45]

The advance course is also approximately six months long and is split evenly into two phases. The first phase is an update to what was taught in the basic course, including overviews in each of the areas discussed above. The second phase provides captains an additional specialty as a strategic analyst, counterintelligence officer, imagery intelligence officer, or signals intelligence officer.[46] The MI Officer Advance Course is designed to prepare officers for utilization as a battalion S2, brigade S2,

company commander, staff officer, or specialist in one of the MI functional areas. With the exception of several specialty schools, this is the highest level of education provided the intelligence officer. Most training comes from on the job experience and personal/professional education and reading programs. These are probably the most important aspects of intelligence training.

Like officer training, training enlisted analysts also takes place at the Intelligence Center and School. The 96B MOS is the enlisted All-Source Intelligence Analyst. Training occurs at various stages in the 96B career beginning with Advanced Individual Training. Training emphasizes the IPB process, data base maintenance, journal keeping and other records keeping techniques, map work, threat, and an overview of other intelligence systems. Again, the bulk of training occurs, as it should, on the job. NCO training occurs within the NCO Education System and includes soldier-leader skills and advanced intelligence skills.

The training programs for officers, NCOs, and enlisted soldiers are constantly refined for improvement. Officers and NCOs can effectively perform their duties at any echelon of command. The on-the-job training experience provides the detailed techniques that are learned over time and normally cannot be learned in a school environment.

Now that we have examined the basics of current doctrine, structure, equipment and training, we can make some inferrences as to its adequacy to support the commander's needs for information. Comparing current capabilities to past capabilities, the overriding qualitative edge goes to the current system. Now that military intelligence is an established and trusted professional field, even austere staffs can operate efficiently. This is not to say that the systems are free from faults. They are much improved over the WWII practices. WWII provided a relatively ad hoc organization with little to no training for combat intelligence personnel. Collection support during WWII came from higher echelons. Through WWII and Korea there was an emphasis on interrogation and imagery intelligence. Toward the end of WWII, during the late stages in Korea, and in Vietnam signals intelligence grew in prominence. It was an operational-strategic system that could be used to provide support to tactical echelons.

The later all-source view of intelligence gave all-source capabilities to the division. Though the division tends to retain intelligence assets in general support of the division, they provide superb support to the total needs of the division when arrayed linearly to cover the entire division front. The division system is usually

supported by corps systems which provide deeper capabilities and cover gaps for the division. Occasionally, based on METT-T, the division provides IEW assets attached or DS to a brigade. This is viewed as rare as the sum total of IEW systems can provide the best support to the brigades when arrayed linearly so the assets can mutually support each other.

The brigade S2 section remains as austere as in the past, but has a much improved all-source analytical capability. This improved capability exists because of the creation of a professional intelligence corps and is a result of improved training. The section still relies heavily on support from the division G2. The rank structure designed in the TOE fits the needs of the brigade. A major as the S2 provides the experience needed for the job (the primary training mechanism for intelligence officers). Unfortunately, there are not enough majors in the MI branch to fill brigade S2 slots so commanders must now settle for captains. Though technically proficient, the captain serving as a brigade S2 usually lacks the experience necessary to fully accomplish all that is required.

Staff austerity remains a significant problem in the S2's ability to adequately analyze information and provide intelligence to the command. Filling the slots in peacetime is also a concern. When brigade S2s attend National

Training Center rotations, they usually receive augmentations to bring them up to required strength levels.[47] While this supports the field exercise, it is not an accurate reflection of the readiness and teamwork of the assigned personnel. The unit rotating also receives "an MI company plus - sometimes with a TCAE slice..."[48] (NOTE: The TCAE is the Technical Control and Analysis Element organic to CEWI organizations. It performs SIGINT analysis and roughly equates to a fire direction center for electronic warfare.) This also provides a false picture of the norm according to doctrine. While MI assets will be operating over an entire division sector, exercises at the NTC focus on support to the brigade. This tends to speed information into the brigade which is convenient, but is not an accurate reflection of the time required for single-source and all-source processing performed by the MI battalion and the division G2 section.

Current lack of automation slows down the IPB process. While the MCS will provide an improved capability to analyze terrain, today the S2 must perform map reconnaissance, personal reconnaissance, or rely on input from others. The S2 must also wait for products from division. Division has a terrain topography team, weather team, and an All Source Production Section (ASPS) to perform detailed IPB. Their products are available to the S2 when they can be delivered

to the brigade in time to assist in planning. In fast-paced operations, this is rarely effective.

Maintenance of IPB related files, terrain analysis, weather analysis, enemy order of battle, and event templating are currently manual processes at the brigade. The MCS will assist with this in the future but will not be able to meet all of the S2's needs. Storage capacity is limited and it will only be as good as the division input since they hold many of the intelligence specialists. The future analysis system for division and higher is the All Source Analysis System (ASAS). It will be used throughout the division and corps, but not fielded to the brigade and battalion levels.[49] In his MI 2000 "White Paper", the Office of the Army Deputy Chief of Staff for Intelligence realized this shortcoming. "Connectivity to the ASAS...(is) absolutely essential to provide the link to higher headquarters...in support of brigade requirements."[50] The brigade S2 will be cut off from ASAS products unless the information is transmitted via radio or transfered from ASAS into MCS.

In the next section we will look at the AirLand Battle Future concept and visualize the battlefield under this concept. We will also analyze whether current capabilities can meet the needs of the brigade commander for timely and accurate information to support decision making in the future.

THE FUTURE BATTLEFIELD - CONCLUSIONS AND IMPLICATIONS

The AirLand Battle Future (ALB-F) Umbrella Concept provides a glimpse at a possible future battlefield. Technology will certainly increase detection of enemy forces and friendly forces. Increased mobility will allow forces to travel further, faster. Increased lethality will be used to create conditions necessary to destroy enemy forces at vulnerable points by maneuver. The key to success seems to be near perfect intelligence through knowing where the enemy is throughout the detection, fires, and maneuver phases of the battle.[51]

According to the concept, divisions will still command and control activities of brigades. Nonlinearity points the Army toward considering "...structuring our current forward-deployed forces into multi-functional, highly mobile combined arms brigade packages."[52] These brigade packages should "...come with those unique assets that are not available in the gaining division and to have the C2, fires, intel, and logistics interfaces to hook into the division base."[53] (emphasis added) Also, "while future units will be smaller, and more mobile and lethal, they will be required to control and influence a larger portion of the future battlefield."[54]

As discussed in the theory section of this monograph and as expected in the ALB-F concept, the battlefield will

continue to expand. This gives the brigade commander and his S2 even more area to understand and cope with. "Sensor and automation technologies that facilitate seeing the battlefield..."[55] will provide more detailed information on the area of interest than in the past. Analysis will continue focusing on the IPB process to determine suitable and unsuitable terrain and weather conditions for maneuver and operations.

The same sensor technology, particularly with adding the Joint Surveillance and Target Acquisition Radar System (JSTARS) and unattended aerial vehicle (UAV) technologies will enable the S2 to provide information on enemy forces in near-real time. These systems will certainly aid in decision making. However, communications from ground stations at division to the brigade must be equally perfect as the intelligence in order for the information to get to the commander as rapidly as needed for planning and executing operations and decisions. Target and situation development is a continuous process throughout the maneuver phase of battle.[56] The brigade S2 must be able to cope with continuous monitoring of the situation even while on the move.

Force structure envisioned for the future brigade includes a reconnaissance platoon. This organization will

act as an additional "feeler" designed to pull the brigade in the right direction. The UAV will function as an additional set of eyes, pinpointing enemy positions and, together with information provided by the division and higher sensor systems, enabling the S2 to identify enemy vulnerabilities and weaknesses that can be exploited by the brigade.

With all this new capability in mind we now should be able to answer whether the current brigade S2 structure will be capable of meeting the mission requirements on the future battlefield. We will answer this by walking through the criteria presented in the introduction.

Commanders must receive information rapidly enough so that uncertainties can be eliminated. Complete attainment of this goal is probably impossible. If provided the target development and situation development information from division and higher as envisioned in the ALB-F concept, the brigade S2 will be able to more rapidly process and disseminate information. However, without significant communications improvements and assistance in terrain analysis in the same near-real time as our sensors, this may be difficult to do. If brigades conduct independent operations on a nonlinear battlefield, division will be pressed to focus its efforts on the main effort. There still can be only one main effort. This means that if the

brigade is not the main effort, it will have to accept risk and something less than perfect intelligence. The implication is that the brigade will have to perform on the future battlefield with essentially the same amount of information it has available on today's battlefield.

If the MCS and ASAS are used to more rapidly process and disseminate information, they will add to supporting both timeliness and accuracy of information. The S2 will use the MCS as its enemy situation and terrain situation data base. The MCS will update the data base with information provided by division and brigade sensors. The data base is only as good as the entries made. A danger exists in that division uses the ASAS as its data base manager and must transfer information to the MCS to be usable by the brigades. This takes time and effort. As long as this occurs regularly, the S2 will be able to accurately portray enemy information. As long as the brigade receives terrain information from the division and can use the UAV to update its terrain data base, it can accurately portray terrain conditions in the future as well. This may require additional manpower for monitoring UAV transmissions and performing detailed terrain analysis when the brigade conducts independent operations. Perhaps a trained topographer should be permanently assigned to the brigade just as they are at division.

If the data base is complete and information is entered and transferred from division to brigade, the requirement for sufficiency should be met. The UAV and a dedicated reconnaissance platoon also provide a capability to focus on the commander's information needs

Finally, the key to success is ensuring that the information that is gathered and portrayed is what the commander needs to make his decisions. Doctrine says that this is the mission of the intelligence process. This criteria is also the most difficult to meet and requires much subjectivity. The doctrine in place requires the commander to determine what questions he needs answers to. He develops PIR and IR. These must be well thought out and well articulated. Even though sensors will be accurate in the future, they still must be pointed in the right direction. They will be pointed that way only if commanders at all levels key on what information they need to make sound decisions.

The enemy will also be an unwilling player in the whole process. He will attempt to disrupt our sensors through interference, lethality, and deception. We will still have to prioritize coverage of the areas of interest. And as discussed earlier, the expanded battlefield and nonlinear operations will require considerable sensor coverage. Surely there will not be a blank check for sensor systems so

we can cover every contingency all the time. The S2 will still have to conduct aggressive IPB and aggressive collection and analysis. This question will be answered better during future conflicts. It cannot be answered today.

CONCLUSIONS

Though we expect changes on the battlefield, war continues to be an act by two dynamic and adjusting entities. At the brigade level the S2 has many challenges to coping with the changes. He must see a larger more dispersed battlefield, know the enemy, manage information and sources. He is provided an austere staff and must rely on a system of collectors which include systems from battalion through the national level. The divisional MI battalion is planned to retain control of future ground based SIGINT/EW assets and, with corps, will control UAVs, even though brigades are charged with conducting more independent operations. We will have to continue looking to see if General Support is the best way to employ these assets. That is perhaps a question best answered in another monograph.

Key to an S2's success is his interface with his commander and S3. In the past, the S2 had trouble identifying exactly what the commander needed. This was prior to creation of MI as a credible profession. Today,

the commander must continue to better articulate what he needs to know to make decisions. This provides focus to the S2. Collection assets are limited today. Though they will be more accurate tomorrow, they will probably still be less than what we think we need. Certainly our enemies will try to make them less successful. The battlefield will continue to grow as well, and assets must be focused on the right portion of the battlefield. Our IPB process must continue to be refined and to grow. It is a process that works today and should continue to work in the future. Automation will support the process.

If I had to make any recommendation for future doctrine based on my research, I would wish to see aggressiveness added to the IEW process. Aggressive collection and analysis for the S2 is what initiative is to the maneuver commander. Maybe with aggressive intelligence support our centralized systems in Vietnam would have better met the needs of the tactical commanders. The trend for aggressiveness in intelligence practices is present in NTC rotations and present in the IPB process. Maybe it is time to document it as a tenet of the IEW system.

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