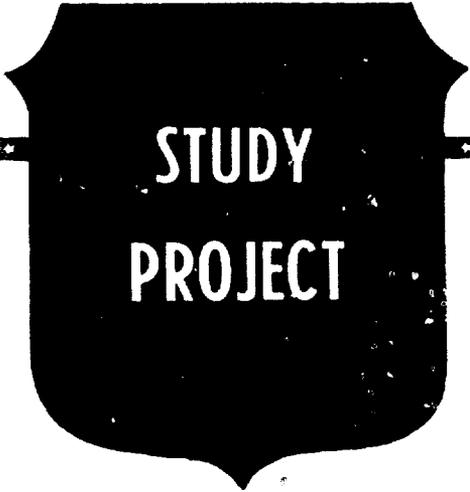


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THE AERIAL EXPLOITATION BATTALION: SOLUTION TO THE "TIMELY" INTELLIGENCE DILEMMA AT CORPS AND BELOW

BY

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MILITARY STUDIES PROJECT

by

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ABSTRACT

AUTHORS: William G. Shaver, LTC, AV  
J.W. Thurman, LTC, AR

TITLE: The Aerial Exploitation Battalion: Solution to the  
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The genesis of this paper occurred when both authors, unknown to each other at the time, participated in the Winter Reforger 85 (January 1985). Both experienced what a tactical difference the use of a small portion of the AEB's capability to collect, quickly analyze, and rapidly disseminate combat information to all participants could make. The FULL capabilities of the AEB seem to be misunderstood by the intelligence and operational community. Continued inability to deliver combat information and intelligence in a timely manner to the tactical commander is unacceptable. No appreciable improvement is anticipated for the next two to five years in the current ability of our communications systems to correct the situation. A solution, even a partial one, must be identified. This paper makes that attempt. The paper outlines those capabilities and how they might be applied throughout the Army. These capabilities, it must be emphasized, if well understood can be used if we go to war tomorrow. The essence of our effort is how the AEB can assist the commander by rapidly collecting, processing, and disseminating intelligence. Additionally, the paper describes how the asset may be used as an emergency communications system during warfighting.

## INTRODUCTION

The primary purpose of this paper is two fold: to highlight the tactical intelligence capabilities and the communications interface that "can" occur between a Military Intelligence Battalion (Aerial Exploitation), the AEB, the commander's and their intelligence staffs from echelons above and below corps. Plus, the paper will offer some tactical examples as they apply to the basic tenets of the AirLand Battle Doctrine. The focus of the paper is oriented on the employment of intelligence systems supporting units at corps and below. We view the corps as the lowest echelon capable of executing AirLand Battle but realize that divisions, regiments, and other corps units will conduct offensive and defensive operation in concert with the corps objectives.

It seems that we in the Army are always waiting for the next "super gadget" of some kind to provide the miracle service that will carry the day on the battlefield. Unfortunately, those gadgets perpetually seem to be several years in our future. In fact the shortfall is not always in the gadgets but can lie in the operators who exploit their products. The Aerial Exploitation Battalion (AEB) was never billed as a "super gadget" but it does fit that definition. It exceeds our ability to fully utilize the system.

Currently, the AEB is not used at its optimum capability. The intended thrust of this paper is to promote a better understanding and use of ALL the capabilities of the Army's AEBs.

If we went to war tomorrow the AEB would offer, as a minimum, the following capabilities:

- \*Timely intelligence to echelons above and below corps.
- \*Active Cuing
- \*A communications capability that could be used in tactical emergencies, and which offers the corps and division commanders reliable, rapid, and encrypted communications. It has the potential of a theater wide net.
- \*Intelligence coverage during redeployment of units
- \*Limited analytical ability, limited only in the numbers of analyst and operators authorized and assigned.
- \*Suppression of Enemy Air Defenses (SEAD).
- \*Easy transition from peace to war.

A description of the organizational structure of the AEB is found in FM 34-22 dated March 1984. However; in addition to the Field Manual, this paper is aimed more at stretching the imagination regarding use of the AEB as well as raise questions concerning current employment tactics which seem to inhibit

optimum use of the unit. Several factors exist that inhibit realization of the benefits of the units full capability. A penchant exists in the intelligence community to use it only as a front-end collector and not use the full computer assisted analytical capability. Others make the erroneous assumption that the unit is not survivable during wartime; then proceed to physically locate the unit (European setting) where it is almost assured of destruction on the ground. An organizational reticence seems to have developed because of a turf question of whether the AEB belongs to the Aviation or the Military Intelligence (MI) branch. Obviously, the unit is a valuable intelligence tool, so the answer to that turf issue question should be clear. The unit should be placed completely under the umbrella of the MI branch. This will enable the organization to realize tactical optimization. The unit will not attract the good people it must have if confusion exists as to which branch manages their career. The best organizational solution is to insure their career track is completely under the control of the intelligence branch. The AEB is the most prolific producer of intelligence for the tactical commander. However, the turf struggle between the aviation and military intelligence branches is having a deleterious effect on the units. This detracts from the mission and sub-optimizes the abundant capabilities of the AEB.

It must be emphasized that the AEB is not an intelligence panacea; however, there is not a single tactical situation that will confront the commander in which participation of the AEB cannot significantly raise the probability of his success.

However, priorities of employment will need to be established. Currently, during peacetime, the two units in Europe have a real-world mission and via the Tactical Commanders Terminal (TCT) can downlink to echelons above and below corp and also to the sister services. It should be noted these two units conduct the same mission in wartime as they do in peacetime. Therefore, the transition to war for the AEB should be quick.

#### BACKGROUND

The two AEB's in Europe belong to the respective MI brigades at corps. It is the Army's only organic resource that has the ability to see the deep battle for corps and subordinate units. The AEB is capable of Communications Intelligence (COMINT) and Electronic Intelligence (ELINT) plus Direction Finding (DF) for both these types of signals. Additionally, the unit has the Side-Looking Airborne Radar (SLAR) plus a limited photo capability. By direct observation and participation by one of the authors as an AEB battalion commander, it is felt that neither the full capabilities of the AEB nor the great potential impact these capabilities can have on the battlefield are well understood. During peacetime and wartime the unit, although a corp asset, must disseminate intelligence to echelons above and below corps. Currently the AEB has the real world mission to collect and disseminate intelligence to each of these levels. The COMINT section of the AEB consists of six RC-12D aircraft and a Ground Processing Facility (GPF). The system known as the

Improved Guardrail-V (IGR-V) is capable of direct near real time linkage to commanders at echelons above and below corp. The nerve center of the Guardrail system is the GPF. Figure One is an example of the setup of the Improved Guardrail system.<sup>1</sup> The aircraft acts as the "big antenna", collecting signals and downlinking through the wide band data link dish antenna to the GPF. Processed intelligence returns in reverse sequence to the commander. For the commander the Tactical Commanders Terminal (TCT) is the most important link in this entire process. It is capable of receiving teletype information via an encrypted teleprinter simplex UHF radio link and transmitting/receiving voice information via an encrypted half-duplex voice UHF radio link. The TCT is rugged and can be easily employed, either fixed or mobile, providing a suitable antenna site and electrical (generator) power is available.<sup>2</sup> The TCT weighs approximately 150 pounds, rectangular in shape, and measures approximately 48X30 inches. The important fact to know about the Guardrail sensor and communications system is that it can collect, analyze, and disseminate combat information and some types of hard intelligence in 5-30 minutes.<sup>3</sup> The length of time required is a function of a large number of variables. The one ingredient that will always speed up the entire process is clearly delineated intelligence requirements by the commander and his intelligence staff.

The AEB has two other sensor platforms that are as significant as the Guardrail. The Electronic Intelligence sensor (ELINT) known as Quicklook is flown aboard the RV-1D Mohawk

aircraft. The sensor is designed to identify and locate all types of noncommunication emitters on the battlefield. Intercept results are stored on tape in the aircraft for retrieval on the ground and detailed analysis. Additionally, the information can be data linked from the aircraft to an ELINT ground processor. The ground operator can receive all the information or retrieve specific information while the aircraft is in flight. Urgent reports can be relayed to using units through the aircraft via secure voice. As an alternate means of communication, the ELINT information can also be transmitted via the Guardrail TCT communications link.<sup>4</sup> The RV-1D downlinks to an ELINT processor at the AEB and also at corps. The unit has analysts that provide a very detailed look at the collected signals from each mission and publish reports of their findings. Hot Reports can go out in minutes. However; a detailed mission report can take several hours to complete. The corps analysts incorporate the Quicklook data with data from other ELINT sensors and produce a report that is normally lengthy and can range from minutes to hours in production. Unfortunately, normal dissemination to the units is via existing communications links, and usually takes six or more hours to arrive at the destination. The ELINT sensor is particularly useful against air-defense radars. This is especially helpful in any type of cross FLOT operations with aircraft or in the role of Suppressing Enemy Air Defenses (SEAD).

Noteworthy is the development of the new Guardrail/Common Sensor (GR/CS) system fielded in Korea during FY 86. The ELINT sensor is removed from the RV-1D and placed aboard the RC-12.

The ELINT processing facility is located in the Guardrail Ground Processing Facility. The essence of the Guardrail/Common Sensor system is placing the ELINT and COMINT sensor on a common platform (RC-12) and the information in a common ground processing facility for faster dissemination of combat information and intelligence. Additionally, this arrangement greatly enhances the important cuing aspects of the GR/CS. This system is a quantum improvement over an excellent existing system and will be a welcome addition to the European theater. This paper will not provide additional information on the GR/CS. That would violate the original purpose of attempting to describe ways for more timely intelligence dissemination in Europe with the sensors currently available and for the foreseeable future (2-5 years).

The third sensor in the AEB is the Side Looking Airborne Radar (SLAR). Most people are familiar with this sensor mounted on an OV-10 Mohawk aircraft. SLAR is a moving and stationary target detector capable of providing stand-off surveillance of large areas. Information collected by SLAR can be presented in near real time in the aircraft and simultaneously transmitted to ground data terminals. These terminals are normally found at corps, division, separate brigades, Armored Cavalry Regiments (ACR) and with the imagery interpretation section of the AEB.<sup>5</sup> Again, as with the other sensors if information of great urgency needs quick dissemination, alternate communications link would be available through the Guardrail TCT link.

## SCENARIO

For the ensuing pages imagine a European setting with war imminent in 3-5 days. The Federal Republic is cloud covered and forecast to remain that way for 72 hours. The highest intelligence priority at all levels of command to include the National Command Authority is to ascertain what the Soviets "intend" to do with their nuclear and chemical weapons. All national intelligence assets have been tasked. Friendly forces are beginning to move into their combat positions as prescribed by the European General Defense Plan (GDP). To fulfill the theater and corps commander's intelligence requirement the only organic asset that can "see deep" is the Aerial Exploitation Battalion. Until the actual outbreak of hostilities both European AEB's are still able to fly the border and thus get extended range coverage. During this critical period both units have been ordered to give "continuous surveillance" along the entire international border.

## AEB SURVIVABILITY

As the AEB's conduct their missions during the current peacetime conditions, the physical location of the unit and protection from direct fire or saboteurs may not be critical. This may lead to possibly the greatest danger of all which is a false sense of security. During the period immediately preceding hostilities and during actual warfighting, the AEB should have

the highest priority for physical location, security, and physical protection. The unit is a corp asset. It is the only corps asset that will provide information on combat developments within the corps area of interest. During actual hostilities our satellites may be killed or blinded. It is reported that currently the Soviets are capable of blinding our satellites. Obviously, if during warfare we are unable to depend on our intelligence gathering satellites the warfighting effort would be seriously impaired.<sup>6</sup> Actual hostilities would increase the dependency on organic systems currently assigned at corp and below. The criticality of the survivability of such a system as the AEB would increase dramatically. Very little effort has been exerted to protect these units from either direct or air delivered ordnance. Currently these units are located within their respective corp rear boundaries. Current thinking assumes that knowledge of the outbreak of hostilities will be in time to move the AEB's from their present locations. That is a relatively hazardous assumption and incurs the needless risk of completely losing the AEB. During peacetime, some protective measures should be taken to raise the probability of survival during warfighting. At a minimum, the unit should be placed in the theater rear area as far west as European geography will allow and offered some form of direct fire protection. The time to take these measures is now, because the commander's intelligence needs will be critical just prior to and during the early days of actual hostilities. To break the unit down during this period and road march anywhere, regardless of distance, will result in a shortage of information at the most critical time.

The rate of movement is only 20-30 miles per hour over improved roads. These same roads may be filled with refugees and saboteurs. Not only does this deny the commander intelligence at a crucial time, but one risks losing the asset forever. Given all the limitations on ground movement of the AEB the risk is not worth taking. Ideally, hardened sites for the Ground Processing Facility (GPF) and revetments for aircraft should be made available now. However, in keeping with the Army policy of equipment mobility, the AEB can be moved by the Air Force C-5 Galaxy. However, ground movement of the GPF and other types of equipment is slow and limited to improved roads plus the availability of truck tractors which are large enough to tow 45-55,000 pound trailers.

Detractors of the units have a favorite theme that the unit is not survivable and the aircraft will all be shot down in a matter of days. I have found these people know nothing of the intricacies of survivability on the ground or the tactics required for survival in the air. If detractors are allowed to dismiss the unit as not survivable then any action someone might take to protect unit vulnerabilities can be just as easily dismissed. This is lazy and shallow thinking. The AEB, as with any unit, will have to prepare for survival in peacetime then fight for its survival during wartime. The AEB is survivable but not without modification of current complacent thinking. Flight tests have shown the highly maneuverable Mohawk to be survivable. The RC-12 is much less maneuverable and is not as survivable. However, some steps can be taken to enhance survivability of both aircraft during warfighting. For example, we must look closely

at how we traverse the entire area of operations from the instant of takeoff until arrival in the mission area. The aircraft should remain as low and fast as possible. The airspace will be extremely crowded at the lower altitudes (500 feet and below). At least four lethal hazards exist: enemy air defense, friendly air defense, friendly aircraft crowding the skies (hopefully), small arms fire (friendly and enemy). Confusion will reign supreme. Once the aircraft arrive in the mission area, which will be at some standoff distance from the Forward Line of Own Troops (FLOT), the aircraft will pop up to mission altitude and may only be able to remain for 15-30 minutes. The aircraft may then return to low altitude and traverse to a different area and execute the same type of pop-up technique. Tactics will have to be varied and imaginative to be successful. All that is entirely possible and can be accomplished. However, to continue using our current "airline pilot" approach to tactics will surely end in rapid loss of the asset. Generally, the hard tactical training required by aircrews that would enhance survivability is rare. Lack of maneuverability of the RC-12 increases the difficulty of surviving. Because the AEB is needed (required) for warfighting a different highly maneuverable aerial platform is needed as soon as possible. Preferably an aircraft could be bought "off the shelf" to avoid expensive development costs. It is inappropriate to name types of aircraft. However, as a minimum, any aircraft that is procured should be dual piloted, all weather day or night, high altitude, have an exceedingly long loiter time (6-8 hours), haul all the sensors on one airframe (COMINT, ELINT, SLAR, and possibly a jammer). However, the most overriding

requirement is that to every extent possible the aircraft must be combat survivable. In our opinion, the AEB is valuable enough in its peacetime and wartime roles to warrant the expenditure. It will be demonstrated later in this paper that the AEB is the only intelligence asset that can keep up with rapidly maneuvering forces, keep the information assimilated, and then make timely dissemination. Without rapid intelligence dissemination for execution of the dynamic AirLand Battle doctrine---we will fail.

#### AEB LIMITATIONS

If a commander requires continuous surveillance (twenty-four hours per day) for an indefinite period of time the unit could not perform the task. Generally, the major limiting factor associated with the COMINT portion of the AEB is manpower. The Table of Organization (TOE) strength of the unit allows essentially for one shift of operators, analysts, and sensor repair personnel. One mission will endure for 11-14 hours. Repetitive missions of that duration and one shift of personnel would be quickly rendered ineffective. The equipment, both sensor and aircraft, is very reliable. The RC-12 maintenance is contracted and sustained at about the 90% operational readiness level. The sensor equipment is good, but the unit would need additional repairmen to sustain continuous surveillance. If soldiers cannot be available then sensor contract maintenance represents a "quick fix" to the problem.<sup>8</sup>

The major limiting factor of the ELINT and SLAR sections is maintaining the sensors. Under the burden of continuous surveillance, maintenance of the Mohawk aircraft would also become a limiting factor. All of the above could easily be overcome with additional spare parts, personnel, and/or contract maintenance.

Other limiting factors are not so easily solved. If one agrees with the idea of protecting the resource by stationing the AEB well to the rear, then the present Aviation Intermediate Maintenance (AVIM) support for the Mohawk would be inadequate thus contributing to aircraft down time. The AVIM support belongs to the corps Transportation Aircraft Maintenance Battalion that generally operates somewhere in the corp rear area. During a critical intelligence collecting period, the AEB should not be required to move at all and should be located as far in the theater rear as geography will allow. The AEB needs to be totally self-sufficient in all phases of operations. The AVIM platoon, with all the necessary logistics codes should be assigned to the AEB by the TOE, or the Mohawk, which is the only AEB aircraft the maintenance battalion supports, should be completely supported by contract maintenance similar to the RC-12. Increased unit readiness and high mission completion rates would be the result. The multiple reasons why contract maintenance is advocated so strongly are as follows: Army strength ceilings, availability of trained personnel, and lack of retention. The AEB must operate at high efficiency and contract maintenance seems to offer a palatable solution. Incidentally,

if the corp aircraft maintenance battalion should continue supporting the AEB, then the geographic distance between support and supported units could be as much as 75-125 miles. The support battalion cannot cope with such a distance in a timely manner. This will contribute to inefficient execution of the AEB's primary mission.

The following limitations are mentioned only because several senior commanders have shown an interest in developing additional capability for the AEB in the High Frequency (HF) collection and jamming area. Because of classification difficulties these subjects will not be discussed further; however, serious consideration should be given to both areas.

#### AEB CAPABILITIES

As previously stated, the primary reason for writing this paper was to highlight the capabilities of the AEB. It appears by current utilization that these capabilities are not well understood. The capabilities most overlooked are the rapid processing, analyzing, and dissemination of large amounts of selected information to anyone owning a Tactical Commanders Terminal (TCT), plus the capability provided by the TCT of an alternate means of communications. Figures two and three at Annex A offer graphic portrayal of the Improved Guardrail capabilities.<sup>9</sup>

In the future we have badly needed systems coming on line such as the All Source Analysis System (ASAS) and the Air Force

Enemy Situation Correlation Element (ENCE), that together make up the Joint Tactical Fusion Program. This is designed to give commanders a complete picture of the battlefield. This program will form the "central nervous system" of the air land battle and deep attack which relies on speed, maneuverability, superior communications, and high technology to win against greater numbers. The commander must have the information in time to predict what the enemy will do. A reference in point was Vietnam where we had the good information, but could not get it to the commander in time to make a difference. Voluminous amounts of information remain a problem. However, a commander and the G2/G3 can assist in the assimilation process of this large amount of information by sharply defining what is critical information and what he must know in some detail.<sup>10</sup>

The new Improved Guardrail of the AEB is capable of performing a significant number of the intelligence tasks required at the operational and tactical level of warfighting. The essence of the AEB is that it can collect, process, and disseminate more information and intelligence than ever before possible. The system can be sharply focused on only those areas of high interest or take a very broad area approach. In either mode, the system can process and disseminate information/intelligence to any commander owning a TCT in 5-30 minutes. Additionally, the AEB can reduce a large amount of the superfluous information. This reduces the assimilation burden at the receiving unit thereby making more time available for an appropriate tactical reaction.

The unit can respond to macro or micro intelligence requests from command levels above and below corp. Consequently, a strong case can be made in the European theater that the AEB can effectively work at all levels of command (theater through division). This ability may be necessary if, for whatever reasons, other intelligence sources become unreliable. A great feature of the TCT data link is that all the owners of the TCT can, if necessary, net with each other through the Ground Processing Facility (GPF) at the AEB. In effect, a theater wide encrypted communications net could be created for use by commanders in emergency situations. It must be emphasized that for those minutes when the system is used for communications the COMINT intelligence collecting and dissemination process is at a complete stand still. Timely communications that otherwise would not get through could be the ingredient that carries the day against the enemy. Obviously, that type of emergency communications could link theater, corps, and our sister services thereby creating a rudimentary fusion center. Here it must be stressed that the idea described above is not in competition with the development of any future system. The capability is stressed because it is available today and highly useful in a warfighting situation. One must not be misled. This is not an intelligence panacea; however, it can deliver adequate information when there may be no other source of information for brief or extended periods of time during an actual warfighting situation.

A situation could develop where satellites are blinded or completely destroyed. No confidence is exhibited that the current "history writing" communications system will deliver the

necessary information in a timely manner. If in a situation where the corp headquarters is moving or is in some way incapacitated, the AEB could cover the corps move and perform as a mini-all source center for corp units. A good case could be made to have the majority of the corp intelligence assets located well in the rear with the AEB. This would enhance continuity of operations, survivability, and the very important mutual cuing of the various assets. Cuing would probably be quicker, more spontaneous, and used more frequently. That might sound ambitious; however, it is technically feasible because of the GPF computer's ability to handle voluminous amounts of information coupled with the rapid dissemination features of the TCT. The major limiting factors are the small numbers of operators, analysts, and electronic repair people authorized and assigned. All this should emphasize that the unit has the capability to be more than just a "front end collector." However, this is the very limiting manner in which the unit is currently employed. This narrow approach to unit employment does not allow the unit to be used to full capability and, in my opinion, has been a major contributor to the AEB not being well understood and underutilized. Obviously, this denies the commander a robust tactical intelligence asset. The AEB craves to be more than just a "front-end collector."

Hopefully, it has become apparent from this paper how vital the TCT link is for information and intelligence input to the commander. However, this capability is more often than not relegated to gathering dust. The TCT is seldom turned on during the real world peacetime mission of the AEB. During exercises

the units did not know how to set-up, orient the antenna, nor repair the TCT. The TCT is a simple, reliable, easy to use piece of equipment. Again, a lack of understanding of the capability of the AEB leads to this type of non-use and a sub-optimization of the entire battalion.

Another issue, mentioned earlier, that has led to sub-optimization of the unit is the question of parentage. The unit was born and nurtured by the Military Intelligence Branch. The AEB has since been claimed by the Aviation Branch shortly after its birth some three years ago. The Aviation and MI branches are attempting to reach some agreement on the issue, and words here should not obstruct those discussions. However, the only reason to include the subject is to make the following point. If the AEB is to be used to the optimum extent then the unit needs to be stocked with dual qualified intelligence and aviation people. The unit is for and about collecting, processing, and rapidly disseminating tactical intelligence or combat information. To organizationally short change this unit can deal a crippling blow to our chances of successful warfighting particularly in a fluid non-linear battlefield. Again, this will be the only unit that can repeatedly, in 5-30 minutes, get the rudimentary information on enemy location and type of unit to the commander. The two branches must take the high road on this turf question and build an organization to optimize use of the AEB.

The nerve center of the AEB is the Ground Processing Facility (GPF). This center can operate on commercial power or five 100 Kilowatt generators. The facility houses the very rugged main

computers. The first Improved Guardrail that was fielded in October of 1984 ran on generator power for one full year with a 95% mission completion rate. A first rate demonstrated capability.

The unit can execute day or night and near all weather. The aircraft have a near all weather capability. The unit is organized for each of the sensors namely, SLAR, Quicklook, and Guardrail to operate independently of each other. Some situations may dictate independent operations. However, it may be better that each sensor be employed in close proximity to the GPF because of the availability of the rapid dissemination capability of the TCT network. Additionally, proximity makes it easier to take advantage of sensor cuing. However the speed of dissemination is the determining ingredient and that will dictate employment tactics for the AEB.

#### INTELLIGENCE AND THE AIR LAND BATTLE DOCTRINE

Air land battle describes the Army's approach to generating and applying combat power at the operational and tactical levels. It is based on securing or retaining the initiative and exercising it aggressively to accomplish the mission. The optimum results are obtained when powerful blows are struck against critical units or areas whose loss will degrade the coherence of the enemy operations in depth. <sup>11</sup>

Operational planning must be focused on decisive objectives yet be flexible enough to create opportunities to capitalize on enemy vulnerabilities at critical times. Intelligence planning has to be driven by the tempo of battle and oriented toward the enemy centers of gravity that yield the largest payoffs in their destruction or neutralization. Our attention must now turn to discussing intelligence collection and dissemination as it applies to the four basic tenets of the AirLand Battle doctrine: initiative, agility, depth, and synchronization.

#### INITIATIVE

Initiative is defined as setting or changing the terms of battle by action. It implies offensive action that forces the enemy to conform to our operational purpose or tempo. It also allows subordinate units independent action in a framework of the higher commanders intent.<sup>12</sup>

Intelligence collection and dissemination then must be allowed the same latitude of action if it is to provide viable support to the commander. Each echelon of command must task not only his organic intelligence collection systems but request the support of the next higher echelon collection capabilities that enhance his ability to see the battle in his sphere of influence and interest. While most commanders are very adept at orchestrating the collection efforts of their own organic intelligence systems, they often overlook or do not demand specific support from the intelligence systems available at their next higher headquarters. Unfortunately, some commanders are

content to be force feed intelligence that may or may not be relative to their actions. The commander must place as much emphasis on intelligence initiatives and innovations as he does maneuver. The intelligence collection and dissemination systems must be taxed heavily and results demanded.

In the defense, initiative implies quickly turning the tables on the attacker. The attacker must be stripped of his ability to set the time, place, and tempo of battle. Intelligence assets must be targeted against those centers of gravity that initially gives the attacker the ability of offensive action. We must concentrate and attempt to draw conclusions on the specific functions that provide coherence to the enemy operations and defeat those functions or centers of gravity. Intelligence collection must be focused on quickly identifying the course of action to which the enemy is committed, then identifying targets that can frustrate or preempt that course of action.

In the offense, intelligence targeting should be in concert with the actions oriented toward continuing the attack, thus recognizing the functions or centers of gravity that provide coherence to the enemy's defense. It also implies quick recognition of his efforts to maneuver or mass his fires or forces to defeat our attack. Intelligence planning in the offense requires the same thinking ahead as maneuver planning.

How then does one apply initiative to intelligence collection and dissemination? First, commanders must take the personal initiative to understand the capabilities and limitations of the intelligence systems which see the battlefield. Secondly, they must understand how intelligence is disseminated. Intelligence

staff sections at each echelon must take the initiative to understand the scheme of maneuver as well as they understand the overall collection plan. They must be adept at recognizing the key events that unfold on the battlefield which could disrupt the operations plan or alter its tempo. They must be just as quick to confirm or argue the situational assumptions on which the operational planning was based. Air Land Battle Doctrine is based on the premise of centralized planning and decentralized execution. Intelligence activities must follow the same premise. Planning of intelligence collection must be centralized while considering subordinate maneuver commander's intelligence needs. Consequently, the dissemination of collected information must be decentralized so that it arrives to the commanders in a timely manner.

#### AGILITY

Agility on the modern battlefield is the ability to outmaneuver the opponent in an orchestrated effort. Responsive intelligence systems must be a prerequisite in the continuum of operational planning. Timely and continuous identification of enemy units, strength, disposition, and specific location of supporting weapons systems will allow the supported commander the opportunity to concentrate his forces against the enemy's vulnerabilities. The dissemination of intelligence to the maneuvering units must be continuous and spontaneous. Changes of enemy locations, movements, or reallocation of fire support must be immediately disseminated. Near real time battlefield

information as opposed to delayed hard intelligence will better serve the commander's efforts to anticipate future events.<sup>13</sup>

The same agility required in maneuver is required of intelligence collection systems. Traditional employment techniques of collection and dissemination methods cannot be the rule. The intelligence systems must be tailored to support the operations at each echelon. Some assets that normally provide surveillance for the corps may be temporarily tasked for specific support to a division that has the priority of effort. Calculated risks that are required when performing dynamic maneuver must be taken accordingly with our collection systems.

#### DEPTH

If operations are extended in space, time, and resources, their intelligence systems must be employed around the same parameters. Adequate reconnaissance must be provided for the area of immediate influence so the commander can control the near battle, simultaneously reconnaissance must be provided in the areas of interest and beyond our area of concern to allow interdiction of follow-on-forces. Command and control elements must be identified throughout the dimensions of the battlefield so their influence on the action can be disrupted. Intelligence collection must be employed to provide the commander the ability to see the entire spectrum of his battle. Near real time battle intelligence needs cannot overshadow requirements for looking deep; consequently, intelligence collection assets cannot be

totally weighted to the deep battle while the near battle is being lost.

#### SYNCHRONIZATION

FM 100-5 defines synchronization as the arrangement of battlefield activities in time, space, and purpose to produce maximum relative combat power at the decisive point. It also concludes that it is both a process and a result.<sup>14</sup>

The intelligence effort supporting maneuver must be as synchronized as the deployed forces and their supporting fires. We would contend that since the enemy situation is the starting point of planning combat operations, all intelligence systems, reconnaissance, and flow of information must be in synchronization with all phases of operations. If not then the battle will surely lose its overall synchronization.

Intelligence systems at each echelon must not only be in synchronization with their commander's operations, but just as importantly, all other systems providing support. Clear definition or taskings must be issued to each intelligence system to provide maximum economy of force for the reconnaissance effort. They must be employed to make the greatest contributions relative to their capabilities and limitations. In some cases, areas of reconnaissance effort must be deconflicted to expand the overall reconnaissance effort; consequently, intelligence systems must be overlapped to provide redundant confirmative information. Intelligence staffers and commanders must fully understand the

intent for synchronization and how important it is to a fast moving battle.

The collection of intelligence prior to combat operations is a vital task. Initial and continuous intelligence preparation of the battlefield must be conducted to give the commander a continuing assessment of enemy capabilities. Every resource available to the commander must be utilized to provide the intelligence and information requirements relative to the operations. Units in contact with the enemy and all supporting systems must be utilized to provide the commander his battle eyes and ears.

If operational art involves the fundamental decisions about when and where to fight and whether to accept or decline battle, the broad vision and ability to anticipate on the commanders part will require a thorough integration of the intelligence collection systems at each echelon of command.

Since no echelon of command is solely or uniquely concerned with operational art, it is imperative that the commander at each echelon understand the capabilities and employment techniques of his intelligence collecting systems. Not only should he understand the systems organic to his organization, but those of higher echelon organizations that provide combat information and intelligence as well. The commander will better be able to demand specific intelligence information if he understands the capabilities and limitations of the collection systems that provide him intelligence support. Valid and reliable combat intelligence is too great an asset to be understood and employed by the collectors alone. The commander

must be as concerned over intelligence collection and dissemination as he is with the operational maneuver of his forces. Intelligence collection systems will only be fully utilized if commanders, and staff officers, know what to demand of the supporting systems and organizations that operate the system.

Today's battlefield will be characterized as chaotic, intense and highly destructive. It is expected that the battle will be nonlinear and characterized by rapid and orchestrated movement to gain positional advantage. In such an environment the intelligent use of advanced highly lethal weapons systems will be the deciding factors of war. The speed of maneuver and the high volume of fires demands that the intelligence collections and disseminations match the tempo of maneuver. The commander's concerns over not only the near battle but deep operations as well as rear operations place additional demands on our intelligence collection systems. FM 100-5 outlines doctrine that requires attacking forces to isolate the battle area in great depth as well as to defeat enemy forces in deeply echeloned defensive areas. Doctrine for the defense requires early detection of attacking forces, prompt massing of fires, interdiction of follow-on forces, and containment and defeat of large formations by fire and maneuver. Offensive and defensive actions will often take place simultaneously at each echelon. Prosecution of battle of this magnitude further drives the imperative of appropriate intelligence collection and rapid dissemination.

All too often processed combat intelligence has arrived too

late to be a factor in the commanders decision making processes. This is due in a large sense to the inability to process massive amounts of information, bottle necks created by turf guarding of staff sections at each echelon and, unfortunately, a lack of initiative by both the users and collectors.

Wide ranging surveillance, target aquisition sensors, and communications systems are available now. A better understanding of their capabilities and employment techniques of these systems coupled with a re-thinking of who gets the intelligence data will go far to increase not only intelligence collection but will render great benefits to the dissemination process.

If these superb intelligence systems exist why then is the dynamics of intelligence collection and dissemination lagging behind the operational tempo? In some cases an over-cautious commander could let intelligence lag retard his operational tempo. This over dependence on hard core intelligence, instead of being able to operate with combat information, coupled with an aggressive opponent's initiative would absolutely contribute to assured defeat.

In some cases the principal intelligence void is traceable directly to the maneuver commander. All too often commanders rely on their intelligence staff sections to plan and execute intelligence collection and dissemination without providing appropriate planning guidance or priority of collection effort. All too often the Priority Intelligence Requirements (PIR) stated in the basic operational plan or order are vague or list mom and apple pie type priorities. Similarly, the intelligence collection plan drafted by the intelligence staff sections may

not be phased, orchestrated, or consistent with the commander's operational intent.

How then do we synchronize our intelligence efforts with the operational tempo? The Aerial Exploitation Battalion with its capabilities offers at least a partial answer to the question. As we have examined those capabilities we hope that your thoughts and imagination have been stimulated. We must make full use of this capability that is available to the Army today. By fully understanding the capabilities of the AEB and its organic assets, commanders at each echelon can better orchestrate their intelligence efforts. By the nature of its organization and the capabilities of its organic collection and dissemination systems the AEB can effectively cover the corps area of interest. The AEB can effectively collect battlefield information required to fight the deep, near, and rear battle simultaneously. It also has the capability to disseminate the information to owners of the TCT at corp, division, regiment, and separate brigade simultaneously.

Let us now focus on how we fully integrate the capabilities of the AEB into the maneuver division's intelligence systems. At the risk of stating the obvious, combat information collected by the AEB has equal value to the division commander and the corps commander. While the division requests for information are usually met by corps collection efforts, the dissemination of that information may only be sent to the corps G-2 section for analysis, sanitation, or all source integration before it reaches division. While this elevates the problem of information overload on the division, it also expands the elapsed time of dissemination of the collected information. The corps G-2

section does not have a monopoly on the processing of combat information. Most of the combat information available to corps can be simultaneously analyzed at division. Speed of acquiring information at either command level is the most important factor. Any time gained on formulation of the Intelligence Preparation of the Battlefield (IPB) process is time available for planning of combat operations. Delayed information seriously degrades the commander's ability to anticipate events in a fluid, non-linear, chaotic battle environment.

The TCT's organic to the division, regiment, and separate brigades, and the corps G-2 sections are identical equipment and have the ability to net with the other TCTs via the GPF. Therefore the capability exist to simultaneously provide corps and division with the same information. While not all information collected is pertinent to a specific division commander, the AEB has the capability to isolate and disseminate that information relevant to a division's geographically defined area of interest. This is key to solving the problems of information overload at division level. As the AEB is collecting information for the entire corps, the division commander's information request can be simultaneously honored provided his intelligence request include a geographical description of his area of interest. The information gained not only provides intelligence asset redundancy and confirmation of the division's collection efforts but also expands the depth of the reconnaissance/surveillance efforts.

We must assume, for the sake of professional competence, that the analysts in the division G-2 section will dust off the TCT

and more aware of the TCT's capabilities. However, we are not confident that the maneuver commanders at brigade and division level are fully aware of its existence much less its proper use.

For sake of argument, let us assume that we as maneuver commanders are not fully aware of the capabilities of this valuable asset. The TCT organic to corps, division, and separate brigades has the following capabilities: transportable, can receive teletype information via an encrypted teleprinter UHF radio link, can transmit/receive fully encrypted voice, equipped with audio alarm and light signals to indicate incoming traffic, completely mobile, quick erect/takedown antenna with a rapid orientation capability.<sup>15</sup>

Simply understanding these capabilities is not enough. We must utilize these capabilities on each training exercise and integrate these capabilities in our day to day operations. The day the war starts is a day too late to get smart on this asset.

If one argues that every commander is familiar with the capabilities of the TCT and utilize it effectively, we pose the question: Why is there only one in the division? The TCT is normally located at the division G-2 section at the main command post. As the division Tactical Command Post provides redundant and alternate command and control for the division when the division main deploys or redeploys a similar redundancy is required for the down links provided by the TCT. Therefore, a TCT must be made available for the tactical command post. This would provide the necessary flow of information as either the main command post or tactical command post moved.

Placing the TCT into operation takes about ten minutes. It

does not have the capability to function on the move. Therefore the requirement for an additional TCT at division exists. The TCT with all the associated equipment can be purchased for approximately 25,000 dollars.<sup>16</sup> No additional manpower should be required.

As previously discussed the TCT's have the capability of providing secure voice and teletype communications over long distance. While utilizing the TCT down links as a pure communications system detracts from its primary intelligence mission, this capability cannot be overlooked as an alternate emergency source of communications if a failure occurs in our normal communication systems. Any commander with access to the TCT can talk secure voice direct to any other TCT providing the aircraft is on station for automatic relay. Security and anti-jamming of the TCT would be enhanced by the addition of some sort of directed beam antenna from the TCT to the aircraft. The aircraft has the capability of directed beam communications with the GPF.

The authors also argue that the assets of the AEB if employed properly are more survivable than the collection systems of the Combat Electronic Warfare Intelligence (CEWI) battalion in the division. The aviation assets of the AEB can collect information at ranges far exceeding those of the CEWI battalion. This provides a standoff capability that is relatively secure against all but the longest range enemy Air Defense Systems. The inherent mobility of the airframes used as collectors also provide enhanced survivability as opposed to the relatively stationary assets of the CEWI battalion. The authors are not

downplaying the value of the CEWI battalion because it's assets are invaluable to surveillance of the near battle. We are merely stressing the ability of the AEB to service the divisions intelligence needs when the organic CEWI battalion assets are moving or when their systems become degraded or destroyed.

The survivability and mobility of the airborne collections systems also provide the only asset that can keep pace with the deep ground attacks outlined in our AirLand Battle doctrine. In a scenario in which the corps commander has stabilized the near battle and has generated the combat power to allow him to attack deep with a division sized maneuver force, the AEB provides the optimum support for an operation of this magnitude. In this scenario the assumption must be made that the maneuver element conducting the deep attack will receive the priority of intelligence collection effort vice the divisions that are stabilizing the near battle. We hope this is a valid assumption due to the inherent risk associated with a deep ground attack

Priorities of collection effort must be initially focused on the best possible place to force a penetration to attack deep. Intelligence Preparation of the Battlefield (IPB) must also focus on identifying the path of minimal enemy opposition so the attacking force can overpower, bypass, contain or isolate units enroute to the primary deep objective. Continuous surveillance must be conducted to identify enemy force counter maneuvers threatening the attack force. Supporting weapons systems such as Air Defense and Field Artillery assets that can effect the attacking force axis of advance must be quickly located and neutralized.

Once the deep attack has reached the objective or has accomplished the desired effect, then continuous surveillance must be made along the division axis of advance to prevent a disruption of lines of communication, route of follow on forces or egress routes if the division is forced out of the enemy rear. The CEWI battalion assets do not possess the mobility, standoff, or survival characteristics to conduct and sustain an operation of this magnitude.

If we seriously consider deep maneuver attack, the assets of the AEB must be dedicated specifically to that maneuver effort. Without the intelligence the operation should not go and the AEB is the only organic intelligence asset that can cover the operation. A study and integration of the AEB capabilities should become an integral part of the overall training objectives of every division exercise.

During the annual Reforger exercise in January 1985 and the Field Training Exercise Central Guardian the AEB was tasked as a white force (neutral) to provide intelligence service to both the Red and Blue forces. Incidentally, this was the first field exercise for the newly formed V Corps AEB. The major V Corps units participating in the exercise included the corps Headquarters, the 3rd Armored Division, the 8th Infantry Division (Mechanized), V Corps Artillery, the 11th Armored Cavalry Regiment, 3rd Support Command, 130th Engineer Brigade, 205th Military Intelligence Brigade, and the 12th Combat Aviation Brigade. The Reforger units included the 4th Infantry Division (Mechanized), the 197th Infantry Brigade, and the 1st Ranger Battalion 75th Infantry.<sup>17</sup>

The simultaneous direct down link by the AEB to both the corp and the maneuver divisions provided the commanders near real time combat information and intelligence. As an experiment, the RC-12D aircraft was used to provide real time information to air assault forces via manual links between the air assault flight lead, the Guardrail and Quicklook aircraft, and the V Corps all-source intelligence center. This capability allowed the air assault forces the opportunity to select the safest flight corridors for cross FLOT operations. By having the inherent retransmission capability similar operations could be conducted over long distance. The main feature of the system is that instant flight deviations could be made as new threat information became available. The tactical implications are significant. 18

The authors participated in the exercise as the commander of the 3rd Squadron 12th Cavalry, 3rd Armored Division's Cavalry Squadron and as the commander of the 1st Military Intelligence Battalion (Aerial Exploitation). The 3rd Squadron 12th Cavalry was originally given the mission of division reserve for the offense portion of the exercise. The squadron was reinforced with a tank company, a mechanized infantry company and an engineer company. The primary mission given to the Squadron was to exploit any success of the brigades in the attack or, simply stated, identify a gap or weakness in the enemy's defense and strike deep to disrupt the continuity of the Blue forces overall defense.

On the early morning of the 3rd day of the exercise the division commander tasked the squadron to pass through the two

lead brigades at their boundaries and attack diagonally from southeast to northwest. This diagonal attack across the division front would allow the squadron the opportunity to find the seams or boundaries of the Blue forces defenses. Once this seam was identified the squadron was to continue the attack to disrupt the enemy's defense in depth. The operation was totally successful. As the 3rd Armored Division thrust west with the 1st and 3rd Brigades sweeping in to the Blue lines the 3rd Squadron 17th Cavalry attacked Northwest to isolate large elements of the defending blue force. The after action report revealed that this force was estimated to be five to seven battalions.<sup>19</sup>

This success is owed in a large part to the intelligence support that the AEB provided the division. This real time information flow was key to the squadron's ability to bypass, contain, or outmaneuver the opposing forces. Once the squadron penetrated the main defensive line of the Blue forces, continuous information of enemy locations was provided by the division intelligence officer. This information was being collected by the AEB and disseminated direct to the G-2. Once identified the squadron simply took the path of least resistance through the blue force defensive system. The AEB identified a large troop concentration in the division's northwest sector of the area of responsibility. The squadron's mission was changed to continue the attack, pin down the reported enemy forces and contain them until the division could maneuver to destroy them in place with 1st Brigade and bypass with 3rd Brigade to the South.

This action resulted in total success for the 3rd Armored

Division. The squadron's quick move was greatly assisted by the real time information received from the assets of the AEB. It is not our intent to down play the organic collection assets of the division and their part in the exercise. Although only a portion of the AEB capabilities were engaged during the exercise we do feel that the AEB more than proved its tactical worth to provide the real time information necessary for success on a dynamic battlefield.

#### SUMMARY

Throughout the corps area of interest the AEB is the only intelligence system organic to the corps that has the capability to passively intercept and execute direction finding against communications and electronic emitters plus actively identify moving and stationary targets with radar. The unit then produces intelligence that is rapidly and simultaneously disseminated to corps and below for targeting and cuing of other intelligence assets. The Tactical Commanders Terminal (TCT) organic to corps, division, regiment, and separate brigades provide those commanders with the down link from this valuable intelligence asset. Through this TCT link exists the capability for rapid and reliable emergency communications between commanders.

A better understanding and use of the AEB's capabilities by the commanders at corps and below will enhance our ability to orchestrate the overall intelligence collection efforts. Total integration of the AEB's capabilities with those of the

collection systems organic to division and regiments will greatly enhance the commanders capability to see the battlefield.

The commanders must emphasize the utilization of the AEB capabilities on each training exercise. Intelligence planning for its employment at each echelon must become routine. All measures discussed in the paper to enhance survivability of the AEB should be given priority and enacted immediately. The numerical disadvantage of NATO forces demands perpetual and rapid information on the enemy. Without this rapid flow of information we will surely fail. If war comes tomorrow, imaginative use of the AEB will fill a large portion of the information void. Hopefully, this paper has provided some helpful information about the capabilities of the AEB and provided a challenge to commanders and their intelligence and operations staffs to apply their dynamic imagination to a dynamic asset that will help them succeed on a dynamic battlefield.

UNCLASSIFIED

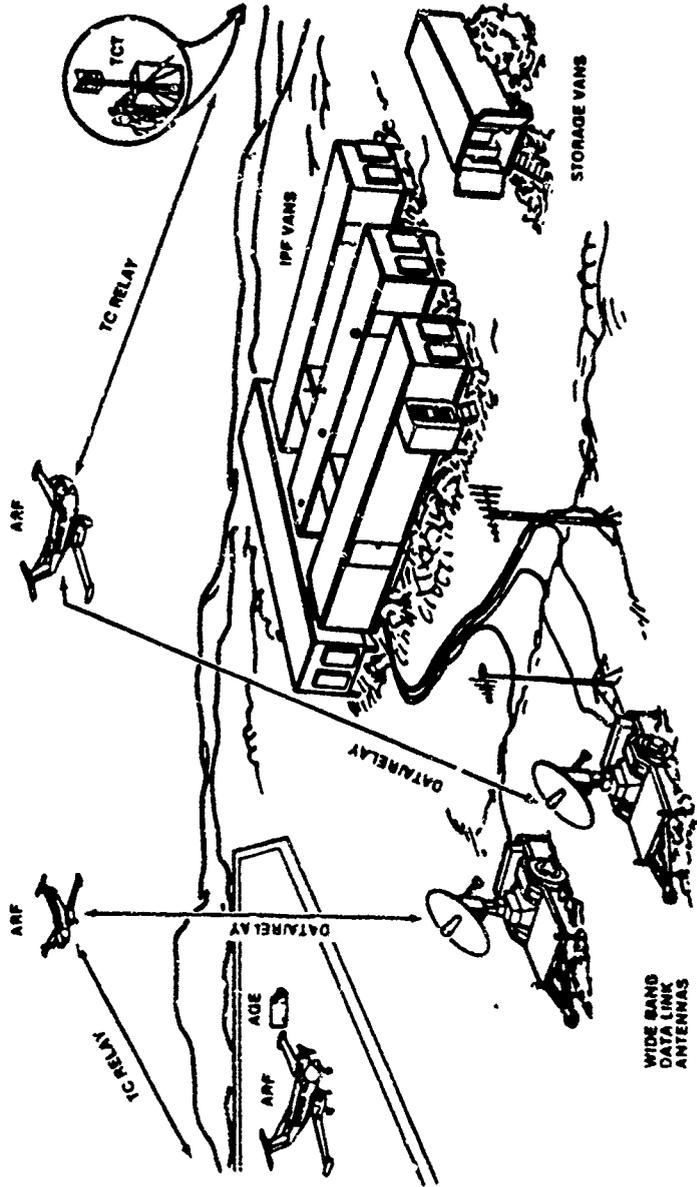


FIGURE 1. THE IMPROVED GUARDRAIL SYSTEM

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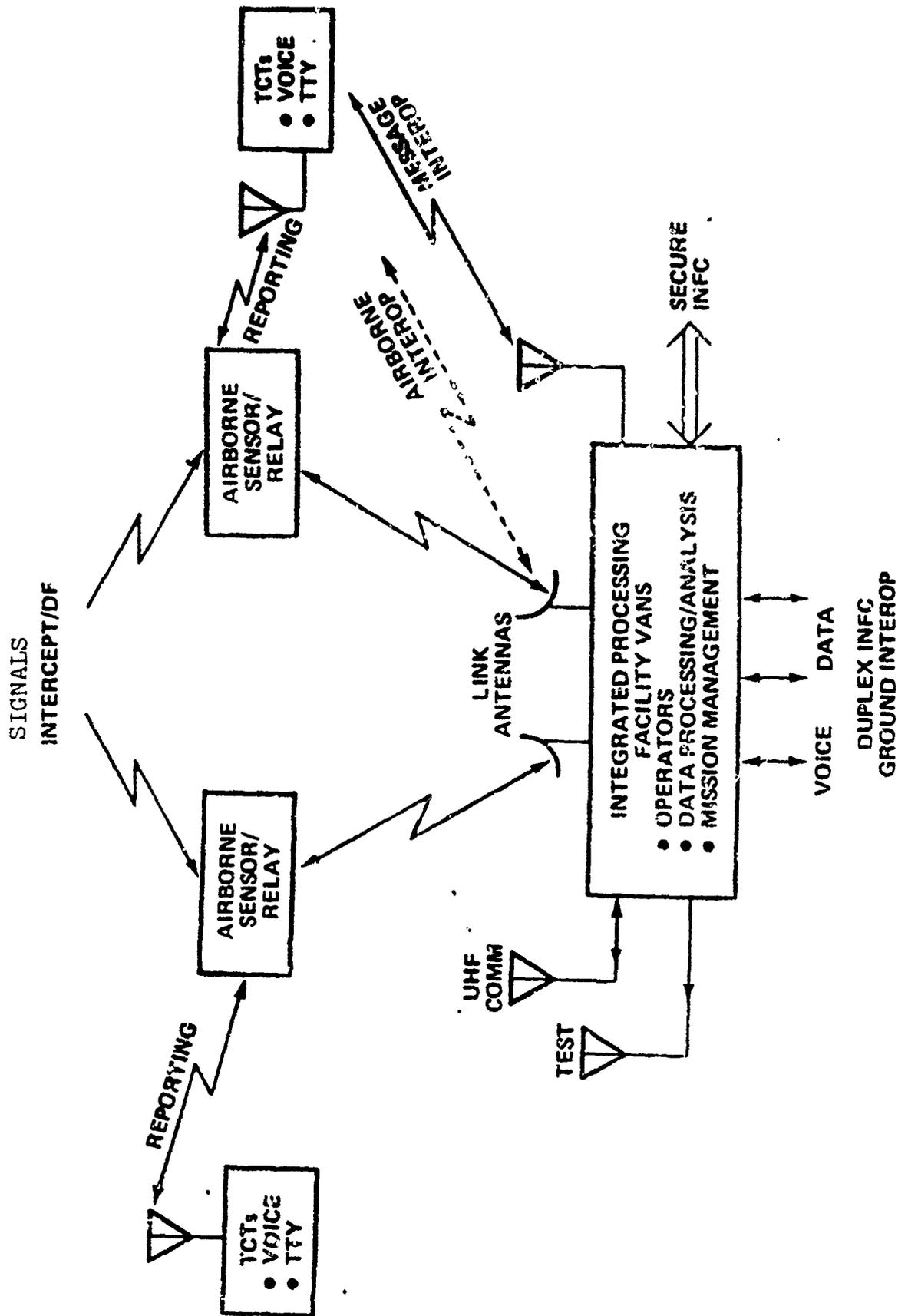


FIGURE 2. IMPROVED GUARDRAIL SYSTEMS INTERFACE

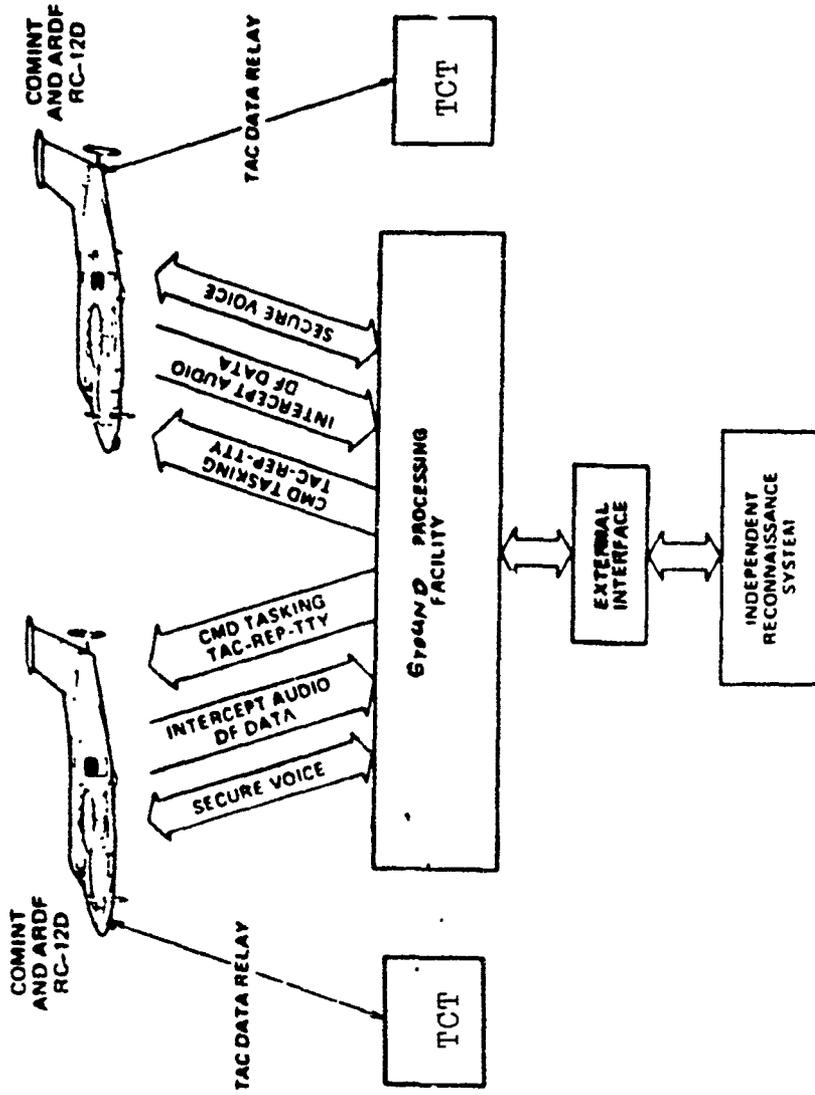


FIGURE 3. IMPROVED GUARDRAIL TOTAL SYSTEM CONCEPT

## ANNEX B

### ACRONYMS AND ABBREVIATIONS

ACR	Armored Cavalry Regiment
AEB	Aerial Exploitation Battalion
AGE	Auxillary Ground Equipment
AMIM	Army Modernization Information Memorandum
ARF	Airborne Relay Facility
CECOM	Communications and Electronics Command
CEWI	Combat Electronic Warfare Intelligence
COMINT	Communications Intelligence
DF	Direction Finding
ELINT	Electronic Intelligence
FLOT	Forward Line of Own Troops
GPF	Ground Processing Facility
GDP	General Defense Plan
GR/CS	Guardrail/Common Sensor
HF	High Frequency
IGR-V	Improved Guardrail-V
INFC	Interface
IPB	Intelligence Preparation of the Battlefield
KW	Kilowatt
MI BN (AE)	Military Intelligence Battalion (Aerial Exploitation)
SEAD	Suppression of Enemy Air Defense
SLAR	Side Looking Airborne Radar
TCR	Tactical Commanders Relay
TCT	Tactical Commanders Terminal
TTY	Teleprinter
UHF	Ultra-High Frequency

## ENDNOTES

**Special Note:** All references contributed in a general way to the composition of this paper, except for those specifically highlighted by footnotes in the main body. The overwhelming majority of the material is a result of personal experiences of the two authors as they operated independently of each other in the European environment.

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