

AD-A234 156

2

**Collection Management and Dissemination:
The Anchor in the Race Against Time**

**A Monograph
by
Major David R. Manki
Military Intelligence**



**School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas**

First Term AY 89/90

Approved for Public Release; Distribution is Unlimited

90-3176

REPORT DOCUMENTATION PAGE

Form Approved
OMB No 0704-0188
Exp Date Jun 30 1986

| | | | |
|---|---|--|----------------------------|
| 1a REPORT SECURITY CLASSIFICATION <i>UNCLASSIFIED</i> | | 1b RESTRICTIVE MARKINGS | |
| 2a SECURITY CLASSIFICATION AUTHORITY | | 3 DISTRIBUTION/AVAILABILITY OF REPORT <i>APPROVED FOR PUBLIC RELEASE DISTRIBUTION UNLIMITED</i> | |
| 2b DECLASSIFICATION/DOWNGRADING SCHEDULE | | | |
| 4 PERFORMING ORGANIZATION REPORT NUMBER(S) | | 5 MONITORING ORGANIZATION REPORT NUMBER(S) | |
| 6a NAME OF PERFORMING ORGANIZATION <i>SCHOOL OF ADVANCED MILITARY STUDIES, USAC & GSC</i> | 6b OFFICE SYMBOL <i>(if applicable) ATZL-SWV</i> | 7a NAME OF MONITORING ORGANIZATION | |
| 6c ADDRESS (City, State, and ZIP Code) <i>FORT LEAVENWORTH, KANSAS 66027-6900</i> | | 7b ADDRESS (City, State, and ZIP Code) | |
| 8a NAME OF FUNDING/SPONSORING ORGANIZATION | 8b OFFICE SYMBOL <i>(if applicable)</i> | 9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER | |
| 8c ADDRESS (City, State, and ZIP Code) | | 10 SOURCE OF FUNDING NUMBERS | |
| | | PROGRAM ELEMENT NO | PROJECT NO |
| | | TASK NO | WORK UNIT ACCESSION NO |
| 11 TITLE (Include Security Classification) <i>COLLECTION MANAGEMENT AND DISSIMINATION: THE ANCHOR IN THE RACE AGAINST TIME (U)</i> | | | |
| 12 PERSONAL AUTHOR(S) <i>MAJ DAVID R MANKI, USA</i> | | | |
| 13a TYPE OF REPORT <i>MONOGRAPH</i> | 13b TIME COVERED FROM _____ TO _____ | 14. DATE OF REPORT (Year, Month, Day) <i>90 / 1 / 16</i> | 15 PAGE COUNT <i>47</i> |
| 16 SUPPLEMENTARY NOTATION | | | |
| 17 COSATI CODES | | 18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number) | |
| FIELD | GROUP | INTELLIGENCE TRAINING, MILITARY INTELLIGENCE | |
| | | OPERATIONAL INTELLIGENCE STRATEGIC INTELLIGENCE | |
| 19 ABSTRACT (Continue on reverse if necessary and identify by block number) <i>SEE ATTACHED</i> | | | |
| 20 DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS | | 21 ABSTRACT SECURITY CLASSIFICATION <i>UNCLASSIFIED</i> | |
| 22a NAME OF RESPONSIBLE INDIVIDUAL <i>MAJ DAVID R MANKI</i> | | 22b TELEPHONE (Include Area Code) <i>(913) 684-2138</i> | 22c OFFICE SYMBOL |

ABSTRACT

COLLECTION MANAGEMENT AND DISSEMINATION: THE ANCHOR IN THE RACE AGAINST TIME. by MAJ David R. Manki, USA, 42 pages.

AirLand Battle doctrine has greatly increased the need for timely, accurate intelligence. It has also expanded intelligence responsibilities in time and space.

This paper uses nine Battle Command Training Program evaluations, three Command and Control Evaluation System command evaluation reports, and Intelligence Center and School evaluation criteria to evaluate the individual and collective abilities of the intelligence system to provide timely, accurate intelligence to the commander. The paper reviews the mission, individual and collective training, personnel requirements, and automated system support which enables the intelligence system to function efficiently.

This study concludes the current intelligence system cannot produce accurate, timely intelligence to support AirLand Battle doctrine because of the increased scope of the intelligence mission, inadequate individual and collective training, personnel shortages, and significant problems in fielding automated systems to help speed up the intelligence process.

The implications of this study suggests a thorough review of the force structure, training, and automation requirements needed to support AirLand Battle doctrine.

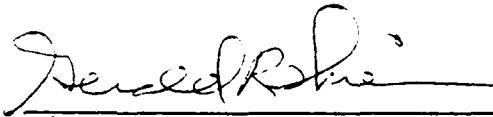
SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major David R. Manki

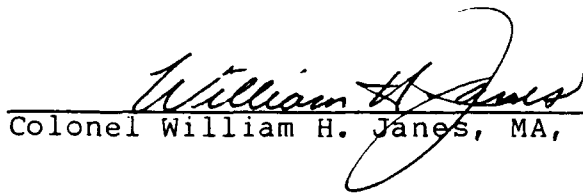
Title of Monograph: Collection Management and
Dissemination: The Anchor in the Race
Against Time

Approved by:



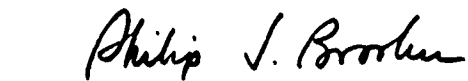
Lieutenant Colonel Gerald Thiessen, MS

Monograph Director



Colonel William H. James, MA, MMAS

Director, School of
Advanced Military
Studies



Philip J. Brookes, Ph.D.

Director, Graduate
Degree Program

Accepted this 26th day of March 1990



A-1

ABSTRACT

COLLECTION MANAGEMENT AND DISSEMINATION: THE ANCHOR IN THE RACE AGAINST TIME. by MAJ David R. Manki, USA. 42 pages.

AirLand Battle doctrine has greatly increased the need for timely, accurate intelligence. It has also expanded intelligence responsibilities in time and space.

This paper uses nine Battle Command Training Program evaluations, three Command and Control Evaluation System command evaluation reports, and Intelligence Center and School evaluation criteria to evaluate the individual and collective abilities of the intelligence system to provide timely, accurate intelligence to the commander. The paper reviews the mission, individual and collective training, personnel requirements, and automated system support which enables the intelligence system to function efficiently.

This study concludes the current intelligence system cannot produce accurate, timely intelligence to support AirLand Battle doctrine because of the increased scope of the intelligence mission, inadequate individual and collective training, personnel shortages, and significant problems in fielding automated systems to help speed up the intelligence process.

The implications of this study suggests a thorough review of the force structure, training, and automation requirements needed to support AirLand Battle doctrine.

| Table of Contents | | Page |
|-------------------|---|------|
| I. | Introduction..... | 1 |
| II. | Section I: Intelligence Production Structure: A Historical Background..... | 7 |
| III. | Section II: Training for Speed and Accuracy... | 7 |
| IV. | Section III: DTGCSE Employment Doctrine..... | 13 |
| V. | Section IV: Evaluating the Intelligence Production System..... | 16 |
| VI. | Section V: Conclusions..... | 35 |
| | Endnotes..... | 37 |
| | Bibliography..... | 40 |

INTRODUCTION

Time is everything; Five minutes makes the difference between victory and defeat.

Admiral Nelson 1

The great thing is to get the true picture of what ever it is.

Winston Churchill 2

AirLand Battle (ALB) Doctrine has propelled military intelligence (MI) from the periphery to center stage in planning and executing All operations. ALB doctrine depends on timely, accurate intelligence to attain positive results and the demand for good intelligence has expanded MI's area of responsibility.

Today, MI must provide 24 hour support to the close, deep, and rear operations commander. The Division G2 is responsible for supervising continuous intelligence planning and production for these operations. The actual production of intelligence is done by the Division Tactical Operations Center Support Element (DTCOSE).

Continuous support requires a flexible intelligence system. The heart of that system is the intelligence cycle. The cycle consists of directing, collecting, processing, and disseminating intelligence. The intelligence produced impacts on each tenet of ALB doctrine.

Intelligence allows the commander to wisely choose where to take action. It lets him see the battlefield so

he can use his mental and force agility to defeat the enemy. It gives him depth to use his resources effectively and finally, it lets the commander synchronize battlefield events to mass his combat power at the critical point.

Training drives the planning and execution of ALB doctrine. Combat training centers (CTCs) were developed to provide a realistic environment to evaluate these elements. The results of the training exercises have been more positive when intelligence is used to drive the planning and execution of ALB doctrine.

The purpose of this paper is to determine whether the DTOCSE can produce accurate, timely intelligence to support ALB doctrine. It is important to note, accuracy and timeliness often work against each other. It is incumbent upon the DTOCSE to manage the level of accuracy required against the timeliness factor. This is the challenge for the DTOCSE.

Section I gives an overview of how the intelligence production organization has changed in the division since 1956. It concludes with the current configuration of the DTOCSE, the principle intelligence producer for the division.

Section II reviews intelligence training which supports intelligence production. I will use the individual training plan for the 96B, Order of Battle Analyst and Army Training and Evaluation Program (ARTEP)

for the division to show the current standards for timely, accurate intelligence direction, collection, production, and dissemination to support ALB doctrine.

Section III outlines how the DTCCSE is employed to support the commander in his execution of ALB doctrine.

Section IV assesses the ability of the DTCCSE to rapidly and accurately plan, direct, collect, process, and disseminate intelligence to support the commander. I will use seven Battle Command Training Program (BCTP) rotation lessons learned packages and the corresponding Army Command and Control Evaluation System (ACEES) command evaluation reports used by the Army Research Institute, to form the basis of my assessment.

Section V will outline my conclusions.

SECTION I: INTELLIGENCE PRODUCTION STRUCTURE

A HISTORICAL BACKGROUND

From 1956 to 1976, the G2 received MI support from the Divisional MI Company, attached to the division from the Field Army MI battalion. It augmented the G2 Section organic to the division.

The production of intelligence for the division was split between the Analysis and Production Section of the MI Company and the Operations Branch of the G2 Section. They were responsible for all intelligence functions to include analysis and production, prisoner interrogation,

imagery interpretation, and counterintelligence.

Figure 1 shows the divisional MI Company as shown in Table of Organization and Equipment (TO&E), 30-17D dated 3 December 1957.³ Figure 2 shows the G2 Section as shown in TO&E 37-4E dated 15 July 1963.⁴ Both list the number of authorized officers, warrant officers, and enlisted soldiers.

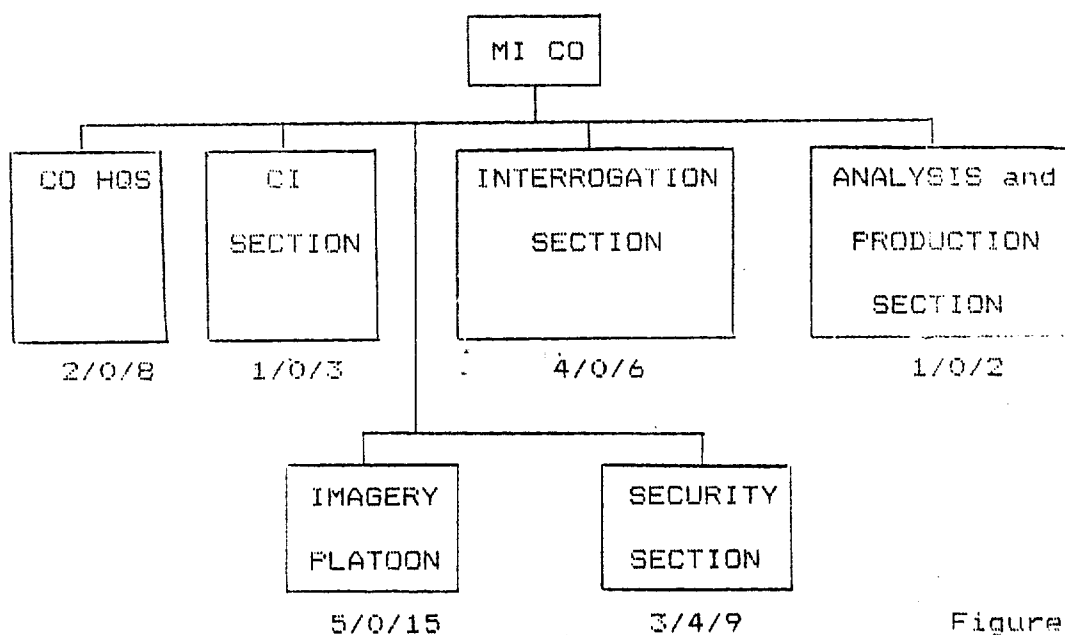


Figure 1

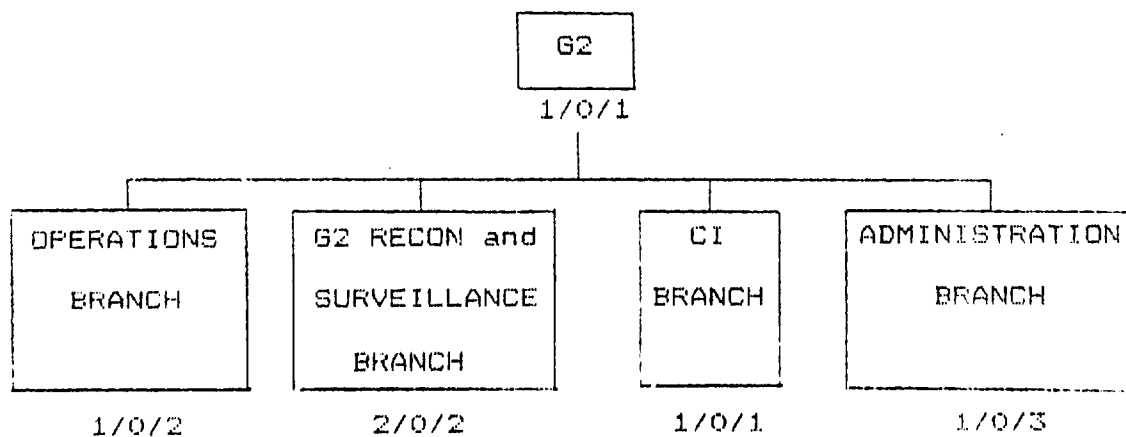
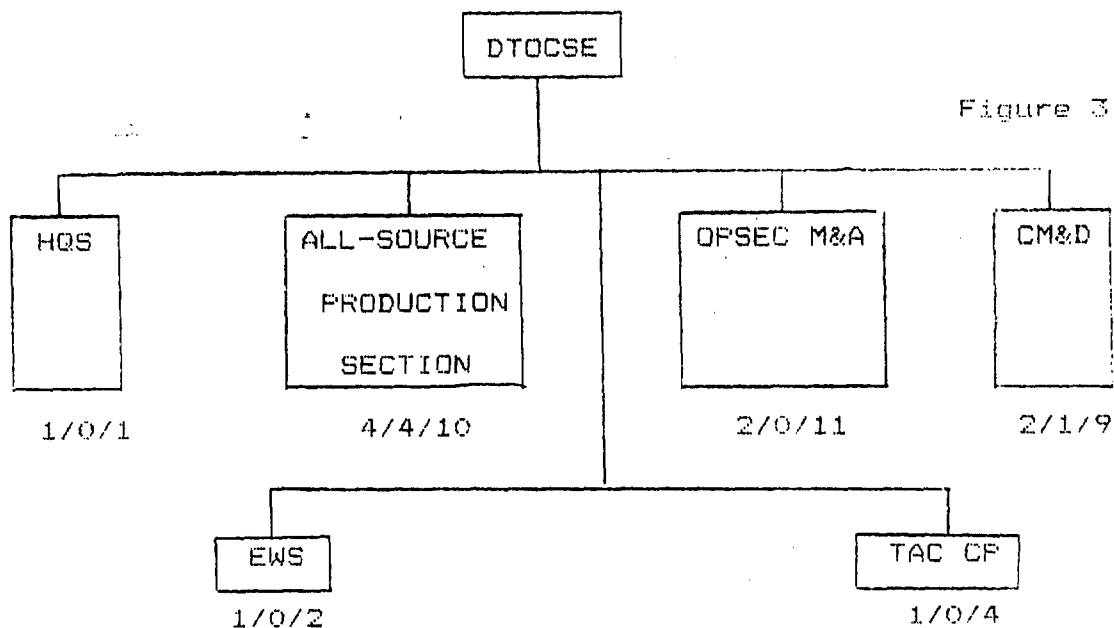


Figure 2

In 1975, the Army revised its MI support concept. Combat Electronic Warfare and Intelligence (CEWI) battalions were created to provide the division with greater organic intelligence support. The DTOCSE became the intelligence producer at the division level. Figure 3 shows the DTOCSE as depicted by TOE 30-166H-8 dated 15 June 1976 with its authorized officers, warrant officers, and enlisted soldiers.⁵



The current TOE is the "living" TOE. The DTOCSE remains the primary intelligence producer at the division level. Figure 4 shows the DTOCSE as depicted by TOE 87004L1 dated 21 August, 1989 with its authorized officers, warrant officers, and enlisted soldiers.⁶

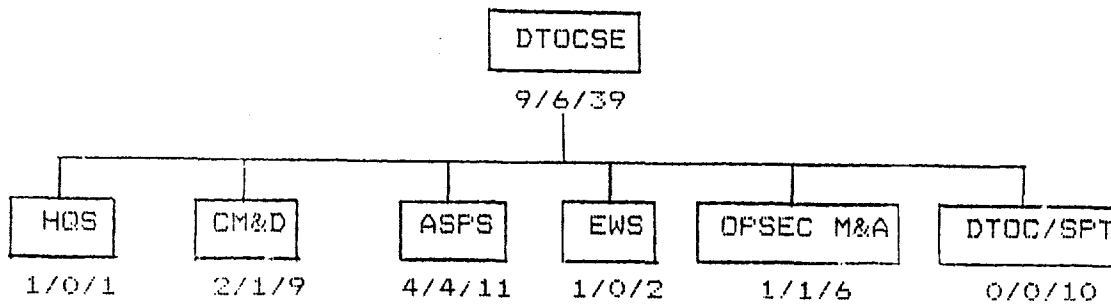


Figure 4

The two intelligence producing sections of the DTOCSE are the Collection Management and Dissemination (CM&D) Section and the All-Source Processing Section (ASPS). The CM&D Section performs the collection management function. It turns the commander's intelligence requirements into collection tasks. Missions for organic MI assets are forwarded to the MI battalion. Missions for non-MI assets are sent to the G3 for tasking. The division CM&D sends the requests to the corps CM&D when they cannot be collected by division assets. The section also disseminates information and intelligence to higher, subordinate, and adjacent units.

The ASPS does the division's Intelligence Preparation of the Battlefield (IPB) and incorporates information from all sources to be analyzed and processed to meet the commander's needs. It maintains the data bases, identifies gaps in the collection effort, and receives national intelligence products and sensitive information from the Special Security Office (SSO).

SECTION II: TRAINING FOR SPEED AND ACCURACY

Training develops speed and accuracy in intelligence production. The 96B, Intelligence Analyst, 350, Warrant Officer Order of Battle Analyst, and the 35D, Tactical Intelligence Officer are the key soldier analysts who produce intelligence in the DTOCSE. I will use the 96B-10, Intelligence Analyst program of instruction (POI) to provide an overview of how they are trained. This basic analyst course is given in one form or another to all students; officer, enlisted, and civilian. I will also use the (ARTEP) 71-100-MTP, Mission Training Plan, Division Command Group and Staff, to highlight the collective tasks of the intelligence production process.

The Intelligence Analyst is trained in tactical intelligence analysis production and procedures to include: Soviet threat weapons, equipment, and organization; Army of Excellence/AirLand Battle Doctrines; intelligence and electronic warfare systems and doctrine; IP3; collection management; recording of information using records and files; and dissemination of intelligence.⁷

The 96B-10 Intelligence Analyst course dedicates 299 hours to teaching the basic procedures of directing, collecting, processing, and disseminating intelligence information. The following is an excerpt from the 96B-10 Intelligence Analyst POI dated 20 August, 1987.

| SUBJECT | HOURS |
|----------------------------------|-------|
| Soviet Threat Doctrine | 39 |
| US Army Doctrine | 11 |
| Recording Combat Information | 27 |
| IPB | 46 |
| Collection Management | 57 |
| Tactical All-Source Production | 23 |
| Dissemination | 50 |
| Situation Map/Overlay Techniques | 48 |

All soldiers graduating from the basic analyst course are well trained in the mechanics of intelligence production. However, analysis is a synthesis of mechanics, knowledge, and experience. Most analysts suffer from a lack of knowledge of US and Soviet doctrine, tactics, and systems because the course does not cover these areas in sufficient detail. Further, indepth knowledge is gained only through years of vigorous training and self study. Once the soldier leaves the Intelligence Center and School, there is no standardized training program to fill the gaps in knowledge due to inadequate training time.

Directing the collection effort is one of these areas. It is a complex task requiring extensive knowledge of doctrine, tactics, and systems. It consists of analyzing requirements, determining the collection asset capability and availability, and then tasking/requesting

assets to provide the information. This complicated soldier level task is above the expertise of the junior analyst expected to direct the collection effort.

For example, enlisted soldiers are expected to know the effects of weather on personnel, equipment, and supplies to include employment of equipment i.e., altitude, density vs employment of rotary-winged aircraft.⁸ They must be able to identify and list the collection agencies available and indicate which orders and requests for information could be assigned to each agency.⁹ These tasks are much too complicated for soldiers with limited military experience. Speed and accuracy cannot be achieved with the level of training and experience our junior analysts possess. Experienced analysts would be hard pressed to meet the requirements presented in the Skill Level 1/2 Soldier's Manual.

The collective task taken from ARTEP 71-100-MTP states, the G2 Section will translate indicators into missions for the collection assets.¹⁰ This task is done in concert with the CM&D Section. The separate tasks include, who is to be tasked, what they will look for, and where and when they will look. They have not been trained to direct the intelligence system to this level of detail and any progress made in this phase must be verified by their supervisor. The verification process takes precious time and processing speed quickly becomes an issue.

Curiously absent from the task standard, is any

reference to time in evaluating the directing process. All aspects of intelligence production are time sensitive and assets must be directed to collect information in a timely manner to help the commander. Yet, time is not a criterion used to evaluate individual and collective training.

Processing intelligence information is also time sensitive. For the analyst, it begins with administrative procedures. Journals, files, and maps are maintained, documents are correctly filed, and reports must be properly disseminated. The focus of training and evaluation is to make the soldier a good intelligence clerk.

The enlisted intelligence analyst is not required to evaluate information. He is only required to assist in evaluating information. His main performance objectives are to extract, compile, and file data according to specified requirements. He categorizes information into groups and presents them immediately to the supervisor.¹¹ The thrust of training is again to make the analyst an administrator. Both skills must be mastered to become an analyst, but the administrative skills are the ones which are currently evaluated in detail because they are easily quantifiable.

Collectively, the DTOCSE is tasked to produce intelligence products. The standards are to provide products which accurately portray the enemy's current and

future probable course of action, provide data on enemy vulnerabilities, order of battle, weather, and terrain. Intelligence must be in sufficient detail to allow the commander and his staff to mass combat power, exploit enemy weakness to accomplish the assigned mission, and plan for future operations.¹²

This standard assumes the analyst has an indepth knowledge of the enemy doctrine, tactics, and systems. The collective knowledge and experience in the DTCCSF is not that comprehensive. The analysts are not trained or experienced enough to provide this type of information. The senior intelligence production capability rests with five Warrant Officers and one Major who are responsible for this task. It is not possible to produce the quality of intelligence required with this level of expertise.

The dissemination of intelligence would appear to be straight forward. However, the analyst is faced with a number of reports and summary formats to produce and disseminate. They include the intelligence summary, the situation report, a periodic intelligence report, intelligence annexes, spot reports, intelligence estimates, and oral briefings. This is not an inclusive list, but provides a picture of how complicated the dissemination process can be.

The soldier is well trained in presenting facts and using these various formats. For example, he is required to draft an intelligence estimate for dissemination using

FM 34-1. Intelligence and Electronic Warfare Operations. Appendix B as a reference. The intelligence estimate is very complicated and time consuming. Once completed, the estimate is checked for accuracy by the supervisor, generally another junior analyst. This duality of work among junior analysts does not lend itself to timely dissemination or an accurate intelligence estimate. The performance measure in the Soldier's Manual concludes the draft must be submitted within the allotted time with all available facts, but no measure of accuracy or time is specified in the evaluation criteria.

Speed is critical to dissemination at all levels of command. In the division, dissemination is a complex process which requires administrative ability and uninterrupted communications. The division area of operation has grown dramatically since 1955. The major dissemination link to these dispersed units is the division FM operations and intelligence (O&I) net. All division subordinate commands subscribe to the O&I net and the CM&D Section in the DTOCSE serves as the net control station (NCS) for the net. The majority of intelligence reports are received and disseminated over this net.

The US Army depends almost exclusively on electronic communication channels for dissemination. There are limited available, alternative means to disseminate intelligence to the division. Couriers are no longer in the force structure and the US Army does not train Morse

code operators for communications purposes. Technology has increased our ability to communicate, but has also limited our ability by making us dependent upon the electromagnetic spectrum.

The intelligence community attempts to provide timely, accurate intelligence to the division commander but falls short of this goal. Analysts are not initially trained in sufficient detail to know US and enemy forces capabilities and there is no standardized training program within the units once the soldier leaves the school environment. The Soldier's Manual and ARTEP lack realistic evaluation standards for directing, collecting, producing, and disseminating intelligence. Notably, strict guidelines for timeliness and accuracy are not among the evaluation criterion. Technologically, reporting and dissemination rely primarily on electronic means. It is convenient and fast but is vulnerable to jamming, intercept, and electronic malfunction. There appears to be limited flexibility in our reporting and dissemination scheme.

SECTION III: DTOCSE EMPLOYMENT DOCTRINE

The DTOCSE is organic to the Division Headquarters and Headquarters Company. The individual sections are integrated with the G2 and G3 and work as extensions of and act in the name of the G2.¹³ In the field, the DTOCSE

is normally collocated with the Division Main CP to provide responsive intelligence support to the headquarters. The current organization of the DTDCSE is shown in Figure 4.

The two key intelligence producers in the DTDCSE are the CM&D and ASF Sections. The CM&D Section has 12 soldiers who perform the individual tasks required to provide 24 hour support to the division. The CM&D Section may be organized along functional lines to complete these tasks. The following is a model of how to organize the CM&D section with the allocated personnel: Collection Management Cell, two soldiers; intelligence journal and NCS, two soldiers; situation map, two soldiers. This simple organization consumes half the allocated slots in the section to accomplish these functional tasks. The other six soldiers would be employed on the second 12 hour shift to provide continuous support to the division.

The ASFS provides intelligence analysis and production support to the division. It has 19 authorized soldiers to perform these vital tasks and organizes along functional lines. The following is a model of how the ASFS can be organized with the allocated personnel: order of battle files and situation map, three soldiers; division IPB, two soldiers; current intelligence analysis/future operations, three soldiers; administration, one soldier; targeting, one soldier. Again, this model employs half

the soldiers allocated to the section. The remainder would be expected to provide the second 12 hour shift to support the division.

Intelligence support is required at the Tactical and Main CPs however, the DTDCSE does not provide personnel support to the Tactical CP. This is a major change in the organization of the DTDCSE under the L Series TO&E. It eliminates five personnel slots and the Tactical CP section from the force structure.

Personnel support for the Tactical CP comes from the G2 section. This ad hoc Tactical CP cell provides intelligence support to the close operations commander. The Tactical CP cell operates continuously and must monitor the division's deep and rear operations to help plan current operations. The Tactical CP must focus on operations which are expected to occur in the next 24 hours. They are tasked to assist the division Main CP G2 staff determine the identification, disposition, and strength of enemy units in contact.¹⁴

ARTEP 71-100-MTP outlines ten major functions which must be performed in support of the close operation. They are the same tasks which must be accomplished by the DTDCSE. The cell must log information, analyze the sources and content of the information, disseminate intelligence, and plan for upcoming operations. These tasks are as critical at the Tactical CP as they are at the Main CP; however, they are done with limited personnel

assets. A footnote to the task in the ARTEP states, intelligence functions performed in the Tactical CP are primarily informational in nature. Paramount intelligence functions are performed in the DTOCSE.¹⁵ The recognition of the scope of the task with this statement, does not relieve the Tactical CP from the responsibility of providing the same quality 24 hour intelligence support to the close battle.

The employment of the DTOCSE is a function of the experience of the G2 and the intelligence required by the commander. There are no standard functional positions in the CM&D or the ASPS and intelligence doctrine does not dictate which positions must be manned at all times. The overriding consideration is to ensure the intelligence assets are properly directed, information is collected and analyzed, and the finished intelligence is disseminated. The evaluation standards for the accomplishment of the tasks does not consider timeliness or accuracy in specific terms.

SECTION IV: EVALUATING THE INTELLIGENCE PRODUCTION SYSTEM

Evaluating the division intelligence system in detail is a new phenomenon. It is being done through the Battle Command Training Program (BCTP) and the Army Command and Control Evaluation System (ACCES) currently being tested by the Army Research Institute (ARI).

The purpose of the BCTP is to enhance the combat proficiency of division and corps commanders, major subordinate commanders and associated battle staffs, and to afford the opportunity to practice the principles of AirLand Battle doctrine at more echelons of command.¹⁶

The ACCES is being developed for corps and division level exercises. The goal is to produce a quantitative evaluation of how effectively a CP operates as it plans and controls its units in support of the mission. The system is still under development but it provides some rather startling but uniform findings in all the units evaluated.

I will use the BCTP and ACCES after action reports to show how effective the DTCSE is in directing, collecting, processing, and disseminating intelligence information using timeliness and accuracy as the evaluation standards. These two programs provide an overview of the capabilities and limitations of the DTCSE in a condensed tactical environment.

The CM&D is responsible for directing the collection effort under the supervision of the G2. The G2 receives the commander's guidance and translates mission tasks into priority intelligence requirements (PIR) which become tasks for the collection assets. These requirements go to the ASPS for review to identify information already in the data base. If the information is not available, the ASPS sends the requirement back to the CM&D for collection.¹⁷

There are many individual steps in directing the intelligence process. Requirements must be administratively registered, validated, consolidated, prioritized, and refined as requirements. The two soldiers allocated in the division CM&D model would be hard pressed to support the G2 section during this initial phase due to the number of requirements they would be expected to process.

There are other actions taking place during this phase. The ASPS is busy producing division level IPB products for the subordinate units. The data base is being updated and intelligence gaps are identified and forwarded to the CM&D for action. The ASPS is analyzing incoming reports and informing the CM&D when PIR have been answered. Situation maps are also being posted in both sections and the administrative logs are being prepared. This concurrent activity takes place in each section which limits cross section assistance.

It is important to note upfront, the DTOCSE does not have the personnel to support continuous operations without substantial augmentation. The ACCES evaluation reports noted, the accuracy and timeliness of intelligence products decreases significantly after 72 hours.¹⁸ This is partially due to a lack of personnel. Every intelligence element undergoing training at the National Training Center, BCTP, or home station evaluation has 100% of their authorized intelligence strength. Normally, the

fillers are borrowed from other units or the element is augmented by soldiers from units who will undergo training during the next rotation. One unit undergoing the BCIP had a 100% overage in senior enlisted soldiers in the DTDCSE.¹⁹ Overages are the norm, not the exception for every rotation.

The filler personnel are poorly trained and they create more problems than they solve. They require additional supervision and cannot be used to do tasks trained intelligence soldiers are required to do. This leads to officers doing tasks to save time instead of analyzing information and planning for future operations. The BCIP reports noted routine DTDC functions were regularly performed by officers. Officers in the DTDC, rather than NCOs regularly posted maps, maintained staff journals, posted charts, operated communications equipment, and processed messages.²⁰ This problem is perpetuated by every unit undergoing training.

No organization or leader wants to admit they cannot do the mission with the allotted resources. Consequently the commander receives a false impression of his intelligence capability due to a bastardization of the system or plain hard work. ALB doctrine louts continuous operations and MI cannot support the execution of the doctrine without the circumvention of the system.

The grade structure in the DTDCSE does not support timely, accurate intelligence production and

dissemination. The soldiers lack experience and training. Currently, 65% of the soldiers in the DTDCSE have less than five years of military experience by grade alone.²¹ They do not have the data base of knowledge and experience to support the G2 and work through complicated intelligence problems.

Directing the intelligence process is part of that complicated problem and all units from battalion to corps suffer similar difficulties. Directing begins with the formulation of the PIR. The PIR are consistently developed by the G2 and CM&D Sections in a vacuum. The commander, G3, and fire support element are not included in this process.

Normally, the commander approves the G2's PIR without changes but valuable planning and coordination time is lost. In one case, it took three hours for the G2 and CM&D to translate the commander's guidance into PIR.²² Despite lengthy development, the PIR are typically generic and do not give the collection assets specific indicators to observe and report.²³ These comments were noted in 30% of the after action reports.

Generic collection requirements only provide volume reporting. In this scenario, everything is reported. It does not help the collection manager and analyst who are looking for specific information to analyze and target, to have dozens of messages to interpret. Quality, not quantity is required.

Typically, the G2s focus their intelligence collection effort on the close battle instead of planning for operations 24-48 hours out. Intelligence fixation with the close battle limits planning and impacts on the commander's ability to shape the battlefield and adapt to changing events. As the exercises progressed, the DTDCSF found itself exclusively involved with the close battle.²⁴ The Tactical CP intelligence cell is responsible for the close battle but did not play a definitive role in these exercises because of the close focus of the Main CP.

The changing situation and new intelligence requirements force changes in the focus of the PIR. Habitually, the PIR do not change to meet new intelligence needs. The DTDCSE was not able to change PIR during the exercise because of the rapid pace of the battle and communications problems. Evaluation of the information was slow because of the volume of traffic and new PIR were obsolete as soon as they were drafted. Communications problems hampered efforts to disseminate the PIR and subsequently, the collection effort was not responsive due to intelligence assets collecting information against old requirements.²⁵

IPB is a way to focus intelligence assets and guide the collection effort. In all cases, the initial IPB products are excellent because they are prepared in advance. They provide accurate avenues of approach and coordinated named and target areas of interest. Once the

battle begins, the IPE products are not updated and do not focus the intelligence and targeting assets.²⁶ This lack of direction hampers the commander's ability to track the enemy force across the battlefield and plan for future operations.

During a crisis or deployment, the initial known enemy order of battle (OB) is given to the division ASPS by the corps. The section has the task of updating the OB to include changes in equipment and personnel strength, combat capability, composition, and tactics. The three soldiers given this task in the model may have difficulty initially processing the volume of information while reviewing the data base for FIR. The updating and review of the data base is done manually, whether making pencil changes to the intelligence workbooks or transcribing data into the computer. It takes time to do the job accurately.

The after action reports note the initial OB data bases are not updated in a timely manner.²⁷ This leads to gaps in intelligence holdings which further impact on collection planning and analysis. For example, units may appear to be stronger or weaker due to slow administrative procedures which do not account for enemy replacements or casualties. Analysis and planning depend on an accurate data base. The commander does not need historical analysis, he needs intelligence information to make good decisions for future operations.

Collecting information is a continuous process. The

CM&D is responsible for the division collection plan. It is based on gaps in intelligence and information needed to plan for future operations. It must be comprehensive and cover the entire area of operations and area of interest.

The division collection agencies are listed to ensure the entire battlefield can be observed and all assets employed. This allows the collection manager to review assets and their capabilities to collect information. PIR are translated into specific orders or requests which ensures accuracy in reporting. Assets are tasked where to look, when to look, what to look for, and how to look. They are also given a time when the information will be needed by the analyst. This is important because it is the basis for timely reporting.

Collection of intelligence information is discussed in great detail but the detailed planning to implement the results of the discussions do not take place. Generally, the initial collection plan is good but is not used effectively after H-Hour, D-Day.²⁸ It is not systematically updated to revise the PIR, driving the collection assets to collect new information. Due to the pace of battle, it is not coordinated with the brigade reconnaissance and surveillance plans to maximize the use of all intelligence assets. This waste of resources leads to overtasking certain MI assets.

Consistently, all assets are not used to collect information.²⁹ The normal information gatherers are

heavily tasked but the artillery, aviation, and engineer units are rarely used. The problem is one of training to use non-MI assets for intelligence purposes and knowing their capabilities to collect information. By overtasking assets, the entire process is further disrupted.

Collection of information is impeded by over tasking and a lack of prioritization which leads to late reporting.

The CM&D repeatedly compounds the collection problem by not placing mandatory report times on the requests for information. The normal turn around time for combat information from the brigade to the division should be less than three hours for brigade and battalion collection assets. During the exercises, the average turn around time for information from brigade to division was three to six hours with no interim reports required.³⁰ This tremendous time gap does not help the collection manager and analyst do their job efficiently. It impacts on the tasking process by perpetuating intelligence gaps and slowing intelligence analysis.

The processing phase is where combat information becomes intelligence. Processing requires judgement, experience, and intellectual honesty.³¹ It has three phases: recording, evaluation, and analysis. Recording information is the process of incorporating information into the data base. The means must be able to handle the volume of information and intelligence arriving in the DTCSE. It must allow for timely retrieval and

dissemination of intelligence products.

There are many devices used to record information. Examples are the intelligence journal, the OB workbook, and the situation map. Information is recorded in these devices once it has been evaluated for pertinence, reliability, and credibility.³²

These three factors prioritize processing to increase speed, validate sources for further tasking, and establish the accuracy of information going to the analyst and commander. Each of these steps are integral to the analysis process.

Analysis consists of assessment, integration, and deduction. These three steps are the critical tasks the analyst must complete. It is his job to let the commander know what can happen, not what has happened, or what will happen. There is no substitute for intelligence which analyzes all options and prioritizes them for the commander's final decision.

The volume of information coming into the CM&D is increasing due to improvements in communications and our ability to down-link intelligence systems directly to the MI Battalion, the division, or corps. The quantity of information coming into the CM&D quickly overwhelms the recording process. The CM&D averages 50 reports per hour which are manually logged into the system.³³ They must be accurately input to aid retrieval and to avoid errors in the data base. The requirement for accuracy further

compounds the backlog of messages and in the CM&D alone, it can be as much as one hour.

Paradoxically, the requirement for speed is hampered by the need to prioritize the messages to gain speed in processing intelligence. Too often, the volume of traffic and the inexperience of the analysts lead to a lack of prioritization.³⁴ When this happens, all information is processed with the same urgency and many early warning indicators are not acted upon because they become lost in the system and are overcome by events.

This time lag leads to an inaccurate picture of the close battle and intelligence gaps in preparation for future operations. The severity of the problem is quantitatively shown in the ACCES reporting figures. 45% of the information posted on the situation maps was at least six hours old.³⁵ 45% of the situation maps could not "pinpoint" enemy units within one grid square while a full 60% of friendly units could not be located within one grid square.³⁶ These revealing figures impact on collecting information, targeting, particularly with precision munitions, and ultimately on our ability to analyze the enemy and plan for future operations. Timely, accurate reporting are the key factors in an accurate battle picture.

Analysis of battlefield events normally trails actual events by as much as one to two hours at division level. This is due to the directing, collecting, and reporting

problems already mentioned and their focus on future operations. To help speed up the analysis process during the exercises, many analysts stopped comparing new information with the data base.³⁷ They realized the data base was no longer valid because of the volume of unprocessed message traffic. They took all new information at face value because of the pace of the battle. This is a disturbing trend highlighted in 75% of the after action reports.

Once the data base is invalidated, there is no means to establish the reliability and credibility of the information coming into the DTOCSE. The breakdown in administrative procedures leads to a breakdown in evaluation and analysis. This problem coupled with the general lack of experience of the analysts, makes the commander vulnerable to deception operations. The need to process intelligence more rapidly led to the elimination of the requirement for accuracy. However, both are dependent upon each other in the intelligence process.

Another technique used to speed "analysis" is to pass all information straight to the subordinate units. This immediately creates a backlog in outgoing message traffic, a backlog in incoming message traffic to the units, and a lack of analysis for intelligence production. The DTOCSE in effect becomes an information relay station instead of a focal point for intelligence processing.

The responsibility of evaluating incoming reports is

placed on a finite number of personnel. The model shows the evaluation cell has three soldiers to process raw information into intelligence. This task is too big for the limited number of analysts in the cell. Highlighting this fact is the BCTP finding that the accuracy and timeliness of intelligence reporting falls below 50% after three days of continuous operations.³⁸ The information cannot be processed with enough speed and accuracy to disseminate it to the users in a timely manner.

The CM&D Section is normally responsible for disseminating intelligence information. There are three primary means of disseminating intelligence. Electronically through the O&I net, orally through intelligence briefings, and by written communications such as annexes, summaries, and estimates. The use of the means varies according to the location of the user and the urgency of the intelligence report.

The O&I net is the primary means used to disseminate intelligence because of the requirement for speed and accuracy. It satisfies these requirements and provides an immediate feedback link to the analyst if there are uncertainties raised by the reports. The Army anticipates completely automating the intelligence process within the next few years.³⁹ Automation will speed the flow of information throughout the intelligence system and will ironically create a backlog of information. Automation will not help the analyst determine enemy courses of

action. This will remain the bottleneck in the intelligence system. No G2 will allow a computer to make his decisions for him.

Written communication is used when there is a large volume of information to be disseminated. Intelligence annexes and summaries are the most widely disseminated written products. Increasingly, graphic information such as IFB overlays and synchronization matrixes are used to disseminate information. They provide a picture of battlefield events which further enhances understanding.

Briefings are generally used to provide updates and summaries of recent or projected events. They are the most comprehensive means of disseminating information but are also the most time consuming.

Dissemination is the final step in the intelligence cycle. It can either increase the value of intelligence by rapid dissemination, or it can by itself, destroy the usefulness of the product through late reports. It reaps the cumulative effects of the problems encountered by the first three phases of the process.

Generally, the CM&D Sections cannot physically disseminate the intelligence rapidly enough to forestall a back log of messages. All evaluations noted as the tempo of the battle increased, the dissemination of intelligence information and products is degraded.⁴⁰ Incoming and outgoing messages are administratively logged in and out by the same personnel. The model showed two soldiers

allocated to complete this task. The volume of incoming and outgoing messages is too great for them to process efficiently and more time is lost during this phase. Further analysis shows spot reports take an average of 30 minutes to go from the division to the brigade once the information is processed.

Logging outgoing message traffic is critical to ensure the messages get to the units that need them. The BCTP and ACCES reports note a dramatic drop in the efficiency of dissemination after 72 hours of continuous operations. The evaluation found 50% of the spot reports sent to the brigades were not reflected on the brigade's incoming logs.⁴¹ This could be a function of poor administration at an isolated brigade, however, the 50-60% figure is consistent across the units evaluated.

Written intelligence products are also susceptible to loss. Despite the size and length of the written products, summaries and overlays are lost when using the facsimile machine, Maneuver Control System (MCS), and liaison officers to disseminate intelligence and spot reports.⁴²

The timeliness of written products disseminated by courier will be slower than by electronic means. During the exercises, it took an average of two hours to deliver an intelligence summary from the division to the brigade.⁴³ Any ad hoc courier system set up by the G2 is not part of the force structure and further depletes the

number of soldiers working in the DTOCSE and G2 Section.

Organizationally, even routine changes such as shift changeover, reports to higher headquarters, and the displacement of the headquarters, brings the entire intelligence cycle to a halt.

Shift changes require briefings on past, present, and future operations. The units evaluated did not have a system established to transfer information from one shift to another. Shift briefings had to be developed by the same personnel directing, producing, and disseminating the intelligence products. This preparation takes time away from their primary duties. During this transition time, messages were misplaced, reported information was not evaluated, and the general continuity of the intelligence system was broken.

Reports to higher headquarters are normally done according to standard operating procedure. Routinely, the division will provide a lengthy intelligence report to the corps every 12 hours. This necessary burden takes away from the mission of supporting the division. The initial routine reporting is timely, however, after three days, the reports no longer reach the corps on schedule.⁴⁴ The late reports were due to the pace of battle and overwhelming task of support to the division, not communications problems.

Displacement of the DTOCSE brings tremendous problems. Typically, the production and dissemination of

intelligence grind to a halt once the division Main CP moves. The Tactical and Rear CPs do not have the tools or the knowledge to take over the operation. Dual data bases, situation maps, collection plans, and communication links have to be fabricated on short notice. The average gap in intelligence production was four to six hours each time the DTOCSE displaced during the exercises. One BCTP after action report noted the division lost the capability to process intelligence for approximately fifteen hours while the DTOC was being moved.⁴⁵ This is an extreme case but shows the gravity of the problem.

The soldiers fighting under the AirLand Battle concept cannot afford this or any other lapse in intelligence support. It is incumbent upon the MI community to surface these critical issues instead of trying to "work" the problem and give the commander a false picture of his intelligence capability.

The intelligence production system is fundamentally sound but it has several glaring problems that must be addressed. First, the intelligence mission must regain a focus. The MI community tries to answer all requirements instead of focusing on the two essential elements of information. They are enemy location and enemy strength (personnel, equipment).⁴⁶ These elements form the basis of a clear intelligence mission statement and all other requirements must be prioritized to support this mission.

Second, recruiting good soldiers to become analysts

must become a priority. MI must recruit soldiers who have served an initial tour, preferably with the combat arms. It is a waste of resources to train soldiers to analyze the enemy when they do not have a basic understanding of how the US Army functions.

Third, individual and collective training at the Intelligence Center and School and at unit level must be totally revised. It begins with quality instructors teaching young analysts. Currently, instructors are chosen at random to fill personnel vacancies. They are not chosen because of their knowledge or ability to teach. Quality training begins with quality trainers.

The instructors must create a training program that gives the soldier a foundation for analysis. For example, the analyst course does not study the history of warfare. This is a gross oversight of one of the basic building blocks of analysis. This requirement may extend the hours of the course but the overall length of a course does not ensure quality instruction. The hours must be intensively managed to get the most out of the time allotted.

The individual and collective tasks in the evaluation manuals must meet the realistic accuracy and timeliness guidelines outlined by the BCTP and ADCES programs. These quality and timeliness guidelines must be implemented throughout the entire training program to include a comprehensive, standardized unit training program.

Fourth, the DTDCSE needs more soldiers to do the job.

If this is not feasible, the grade structure must be changed to increase the level of experience in the DTDCSE. This is the only way the element will be able to increase the timeliness and accuracy of intelligence production. As stated, automation will not be able to do the analysis. This step requires an experienced human analyst.

Fifth, automation will increase the amount of information coming in and going out of the DTDCSE. The long awaited ALL-Source Analysis System (ASAS) will be a tremendous boost for intelligence production.⁴⁷ The system will alleviate some problems and create others.

ASAS is very expensive and each division and corps will have to be equipped from scratch. Each collection element will have to have a computerized system to interface with the main ASAS element. This cost may make the system vulnerable to budget cuts.

Cost also becomes a factor in the redundancy of systems. These automated systems are located well forward, yet are not hardened. They can be easily destroyed which will require replacement systems. Today, difficult choices have to be made. No nation can afford to have a reserve of expensive equipment in storage. This is the political reality.

One often overlooked fact in this equation is that it takes trained soldiers to operate the equipment. It takes soldiers to input the data into the system and it takes soldiers to analyze the data. There is no way to do away

with these personnel and training costs.

The cost of intelligence production continues to increase daily. MI must make sure the benefits of technology do not eliminate the most potent intelligence production system in the inventory, the trained soldier.

SECTION V: CONCLUSIONS

This study demonstrates that the current DTCOSE cannot produce accurate, timely intelligence to support ALB doctrine. It fails due to the increased scope of the intelligence mission, inadequate individual and collective training, personnel shortages, and significant problems in fielding automated systems to help speed up the process. The good news is these problems have solutions which can be implemented quickly under good leadership. The underlying problem is an over reliance on technology to gather, maintain, and now interpret information.

MI has devised an outstanding system to support the commander. The MI doctrine is sound, but due to budget constraints, personnel cuts, and technological advances, MI has come to rely on machines to do the soldier's job. For example, IPB is a great asset for systematically portraying the battlefield for the commander and staff. However, the matrices and IPB products cannot do for the commander what the analyst does. He synthesises the hard information from the technical systems with the intuitive

human side of war. The skilled analyst is able to take bits of information from the art and science of war, and transform them into a usable intelligence product.

Currently, MI has placed great emphasis on technology to help collect and process information. Great strides have been made in the race against time using technological advances. The area that has been neglected and will continue to be the drag on the system, is the human factor.

ALB doctrine is a "people oriented" doctrine. It is based on the commander providing sound guidance and junior leaders making good decisions within that framework to execute the plan. These decisions are based on good leadership training and good intelligence. Good intelligence also requires good intelligence training for soldiers. MI must emphasize a more balanced approach to their support to ALB doctrine. ALB doctrine cannot succeed without good intelligence and good intelligence cannot be produced without good intelligence soldiers. Unless significant changes are made to combine technology with better trained soldiers to take advantage of their combined strengths, the CM&D cannot support ALB doctrine and will continue to be the anchor in the race against time.

ENDNOTES

1. COL Robert Debs Heinl, Dictionary of Military and Naval Quotations, (Annapolis, Maryland: United States Naval Institute, 1966), p.325.
2. Ibid. p.161.
3. U.S. Department of the Army, Table of Organization and Equipment 30-170, (Washington, D.C.: U.S. Government Printing Office, 3 December, 1957), p.I-02.
4. U.S. Department of the Army, Table of Organization and Equipment 37-4E, (Washington, D.C.: U.S. Government Printing Office, 15 July, 1963), p.2.
5. U.S. Department of the Army, Table of Organization and Equipment 30-166H-8, (Washington, D.C.: U.S. Government Printing Office, 15 June, 1976), p.I-02.
6. U.S. Department of the Army, Table of Organization and Equipment 87004L1, (Washington, D.C.: U.S. Government Printing Office, 21 August, 1989), p.I-02.
7. U.S. Army Intelligence Center and School, Fort Huachuca, Arizona, Program of Instruction Intelligence Analyst, 243-96B10, (Fort Huachuca, AZ, 1987), pp.3-28.
8. U.S. Department of the Army, Soldier's Manual Intelligence Analyst, FM 34-96B1/2 (Washington, D.C.: U.S. Government Printing Office, April 1980), p.2-227.
9. Ibid. p.2-323.
10. U.S. Department of the Army, Army Training and Evaluation Program, Mission Training Plan, Division Command Group and Staff, ARTEP 71-100-MTP, (Revised Coordinating Draft) (Ft. Leavenworth, KS: U.S. Army Combined Arms Training Activity, 1989), p.5-86.
11. FM 34-96B1/2, p.2-193.
12. ARTEP 71-100-MTP, p.5-8.
13. U.S. Department of the Army, Division Intelligence and Electronic Warfare Operations, FM 34-10 (Ft. Huachuca, AZ: U.S. Army Intelligence Center and School, November 1986), p.3-6.
14. Ibid. p.3-3.
15. ARTEP 71-100-MTP, p.5-37.

16. U.S. Department of the Army, Training the Force Course Manual, (251) (Ft. Leavenworth, KS: U.S. Command and General Staff College, AY 88-89), p.L3-1-5.

17. U.S. Department of the Army, Collection Management, FM 34-2 (S/NF) (Ft. Huachuca, AZ: U.S. Army Intelligence Center and School, November 1986), p.2-1.

18. Battle Command Training Program Final Exercise Report War Fighter 89-5 (WFX 89-5) (S) May 1989, (Ft. Leavenworth, KS: Combined Arms Training Activity, May 1989), p.II-51.

19. Battle Command Training Program Final Exercise Report War Fighter 88-1 (WFX 88-1) (S) November 1988, (Ft. Leavenworth, KS: Combined Arms Training Activity, November 1988), p.IV-3.

20. Battle Command Training Program Final Exercise Report War Fighter 88-2 (WFX 88-2) (S) June 88, (Ft. Leavenworth, KS: Combined Arms Training Activity, June 1988), p.IV-10.

21. Ibid. p.III-7.

22. Battle Command Training Program Final Exercise Report War Fighter 89-4 (WFX 89-4) (S) April 89, (Ft. Leavenworth, KS: Combined Arms Training Activity, April 1989), p.IV-2.

23. Ibid. p.IV-2.

24. WFX 88-2, p.III-1.

25. WFX 89-5, p.III-4.

26. Battle Command Training Program Final Exercise Report War Fighter 89-3 (WFX 89-3) (S) February 1989, (Ft. Leavenworth, KS: Combined Arms Training Activity, February 1989). p.III-4.

27. WFX 88-4, p.IV-3.

28. Battle Command Training Program Final Exercise Report War Fighter 89-10 (WFX 89-10) (S) September 1989, (Ft. Leavenworth, KS: Combined Arms Training Activity, February 1989), pp.IV-5-IV-13.

29. Battle Command Training Program Final Exercise Report War Fighter 88-3 (WFX 88-3) (S) February 1988, (Ft. Leavenworth, KS: Combined Arms Training Activity, February 1988), p.IV-8.

30. WFX 88-1, p.IV-3.

31. COL Phillip B Davidson and COL Robert R. Glass, Intelligence Is For Commanders, Harrisburg, PA: Military Service Publishing Company, 1948), p.39.

32.U.S. Department of the Army, Intelligence and Electronic Warfare Operations, FM 34-1 (Ft. Huachuca, AZ: U.S. Army Intelligence Center and School, July 1987), pp.3-45-3-48.

33.Battle Command Training Program Final Exercise Report War Fighter 89-5 (WFX 89-5) (S) May 1989, (Ft. Leavenworth, KS: Combined Arms Training Activity, May 1989), p.III-2.

34.WFX 88-3, p.IV-9.

35.Army Command and Control and Evaluation System Assessment. (S) Contract Number MDA 903-96-C-0407, March 1989, (McLean, VA: Defense Systems INC. March 1989), p.III-37.

36.Ibid. p.III-36.

37.WFX 88-4, p.IV-3.

38.WFX 88-2, p.V-31.

39.U.S. Department of the Army, Intelligence Analysis, FM 34-3 (Washington, D.C.: U.S. Government Printing Office, January 1986) p.8-0.

40.WFX 89-3, p.III-2.

41.WFX 88-4, p.V-153.

42.WFX 89-10, p.III-6.

43.WFX 89-3, p.III-6.

44.WFX 88-1, pp.V-23-V-70.

45.WFX 89-3, p.III-5.

46.COL Elias C. Townsend, Risks, The Key to Combat Intelligence, (Harrisburg, PA: Military Service Publishing Company, 1955), p.6.

47.U.S. Department of the Army, Intelligence and Electronic Warfare (IEW) Systems, TC 34-1 (Ft. Huachuca, AZ: U.S. Army Intelligence Center and School, November 1987), p.2-6.

BIBLIOGRAPHY

- Chandler, LTC Stedman, and Robb, COL Robert. Front Line Intelligence. Washington, D.C.: Infantry Journal Press, 1946.
- Davidson, COL Phillip B. and Glass, COL Robert R. Intelligence Is For Commanders. Harrisburg, PA: Military Service Publishing Co., 1948.
- Heymont, Irving. Combat Intelligence in Modern Warfare. Harrisburg, PA: Stackpole Co., 1960.
- Hopple, Gerald W. and Watson, Bruce W. The Military Intelligence Community. Boulder, CO: Westview Press Inc., 1986.
- Reichelson, Jeffrey T. The U.S. Intelligence Community. Cambridge, MA: Ballinger Publishing Co., 1985.
- Sweeney, LTC Walter C. Military Intelligence, A New Weapon In War. New York, NY: Frederick A. Stokes Co., 1924.
- Townsend, COL Elias C. Risks, The Key to Combat Intelligence. Harrisburg, PA: Military Service Publishing Co., 1955.
- Van Creveld, Martin. Command In War. Cambridge, MA: Howard University Press, 1985.

ARTICLES and PERIODICALS

- Hall, MAJ Wayne M. "AirLand Battle Doctrine and IEW Operations." Military Intelligence, July 1986.
- Johnson, MAJ John F. and Otis, GEN Glenn K. "A Commander's Prospective on the Tactical Intelligence System." Military Intelligence. April 1986.
- Lincoln, Douglas H. "Intelligence Processing - The ASAS Connection." Military Intelligence, July 1988.
- Nowak, COL Leonard G. "Division Intelligence: Left in AirLand Battle Dust?" Military Review. December 1987.
- Sorley, 1LT Brian S. "Automation in Intelligence Dissemination." Military Intelligence. July 1988.

GOVERNMENT DOCUMENTS

- Field Manual 34-1 Intelligence and Electronic Warfare Operations. Washington, D.C.: Headquarters, Department of the Army, 2 July 1987.

Field Manual 34-1 Intelligence and Electronic Warfare Operations. Washington, D.C.: Headquarters Department of the Army, 2 July 1987.

Field Manual 34-3 Intelligence Analysis. Washington, D.C.: Headquarters, Department of the Army, 13 January 1986.

Field Manual 34-10 Division Intelligence and Electronic and Warfare Operations. Washington, D.C.: Headquarters, Department of the Army, 25 November 1986.

Field Manual 34-96B1/2 Soldier's Manual Intelligence Analyst (MOS 96B). Washington, D.C.: Headquarters, Department of the Army, 25 April 1980.

Field Manual 100-5 Operations. Washington, D.C.: Headquarters, Department of the Army, 5 May 1986.

Army Training and Evaluation Program 71-100-MTP. Mission Training Plan, Division Command Group and Staff, Revised Coordinating Draft. Washington, D.C.: Headquarters, Department of the Army, 1989.

Training Circular 34-1 Intelligence and Electronic Warfare (IEW) Systems. Washington, D.C.: Headquarters, Department of the Army, 6 November 1987.

Training the Force Course Manual (P251). Fort Leavenworth, KS: U.S. Army Command and General Staff College, AY 88-89.

SPECIAL REPORTS and UNPUBLISHED MATERIAL

Combined Arms Training Activity, "Battle Command Training Program Final Exercise Report War Fighter 88-1 (WFX 88-1) November 1988 (S)." Ft. Leavenworth, KS: November 1988.

Combined Arms Training Activity, "Battle Command Training Program Final Exercise Report War Fighter 88-2 (WFX 88-2) June 1988 (S)." Ft. Leavenworth, KS: June 1988.

Combined Arms Training Activity, "Battle Command Training Program Final Exercise Report War Fighter 88-3 (WFX 88-3) February 1988 (S)." Ft. Leavenworth, KS: February 1988.

Combined Arms Training Activity, "Battle Command Training Program Final Exercise Report War Fighter 89-3 (WFX 89-3) February 1989 (S)." Ft. Leavenworth, KS: February 1989.

Combined Arms Training Activity, "Battle Command Training Program Final Exercise Report War Fighter 89-4 (WFX 89-4) April 1989 (S)." Ft. Leavenworth, KS: April 1989.

Combined Arms Training Activity, "Battle Command Training Program Final Exercise Report War Fighter 89-5 (WFX 89-5) May 1989 (S)." Ft. Leavenworth, KS: May 1989.

Combined Arms Training Activity, "Battle Command Training Program Final Exercise Report War Fighter 89-10 (WFX 89-10) September 1989 (S)." Ft. Leavenworth, KS: September 1989.

Commander, U.S. Army Intelligence Center and School, "Program of Instruction - Intelligence Analyst 243-96B-10." Ft. Huachuca, AZ: 25 September 1985.

U.S. Army Research Institute for the Behavioral and Social Sciences, "ACCES Assessment Command Post Exercise (U) 17 December, 1986." Defense Systems, Inc. Contract Number S617-0309300, McLean, VA. 17 December 1986.

U.S. Army Research Institute for the Behavioral and Social Sciences, "ACCES Assessment Command Post Exercise (U) 5 August, 1987." Defense Systems, Inc. Contract Number S770-0309400, McLean, VA. 5 August 1987.

U.S. Army Research Institute for the Behavioral and Social Sciences, "ACCES Assessment of a First Battle Driven CPX (U) 28 March, 1988." Defense Systems, Inc. Contract Number MDA 903-96-C-0407, McLean, VA. 28 March 1988.

U.S. Army Research Institute for the Behavioral and Social Sciences, "ACCES Assessment Command Post Exercise (U) 15 June, 1988." Defense Systems, Inc. Contract Number MDA 903-96-0407, McLean, VA. 15 June 1988.

U.S. Army Research Institute for the Behavioral and Social Sciences, "ACCES Assessment Command Post Exercise (U) 31 October 1988." Defense Systems, Inc. Contract Number B-PG-30-012050, McLean, VA. 31 October 1988.