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An Analysis of Command and Control Doctrine for the Infantry Battalion in the Attack

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Final report 6 June 1975

A thesis presented to the faculty of the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027

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Success on the battlefield relies heavily on an effective command and control system through which the commander coordinates fire and maneuver to apply the decisive combat power at the critical place and time. This study focuses on the command and control system in use by infantry battalions during the attack in an attempt to determine whether or not there is a requirement for new or modified doctrinal guidance on which the commander can base the establishment of his command and control system. Existing doctrine is compared to current practices in an effort to determine how closely they match and whether current practices are functional from a higher echelon's functional perspective.

AN ANALYSIS OF COMMAND AND CONTROL DOCTRINE FOR THE INFANTRY BATTALION DURING THE ATTACK

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements of the degree

MASTER OF MILITARY ART AND SCIENCE

by

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Fort Leavenworth, Kansas
1975

PREFACE

Before coming to Fort Leavenworth, I served for eighteen months as an infantry brigade S2. In this capacity, I had numerous opportunities to work with and observe the command and control systems of the infantry battalions during both field training and command post exercises. I was singularly impressed by the fact that each maneuver battalion had a seemingly unique command and control system which was apparently dependent upon the desires of the commander. This impression was underscored by the changes in a battalion's command and control system which evolved after a change in commander. As so many other combat procedures and techniques had doctrinal foundations, I questioned why command and control systems at the battalion level were not prescribed in doctrinal literature. There was no answer.

Upon arriving at Fort Leavenworth, I felt that this subject was worthy of detailed research as the outcome could result in beneficial changes to doctrine. I limited the scope to infantry battalions for two reasons: one, I have served primarily with or in support of infantry

unit operations; and secondly, the results of this research effort are applicable to the U.S. Army's two active infantry divisions as well as to reserve component infantry divisions and airborne divisions which are essentially dismounted infantry once the airborne assault has been accomplished. This thesis is accomplished in the hope that a workable doctrine will emerge on which battalion commanders may base their command and control systems.

ABSTRACT

Success on the battlefield relies heavily on an effective command and control system through which the commander coordinates fire and maneuver to apply the decisive combat power at the critical place and time. This study focuses on the command and control system in use by infantry battalions during the attack in an attempt to determine whether or not there is a requirement for new or modified doctrinal guidance on which the commander can base the establishment of his command and control system. Existing doctrine is compared to current practices in an effort to determine how closely they match and whether current practices are functional from a higher echelon's functional perspective.

A survey of personnel who have served in key positions in infantry battalions was made with the intent of providing the data base on which to draw conclusions concerning current practices in the field. When synthesized with information gleaned from doctrinal materials, the major conclusion was that new doctrine was in fact required and was further addressed under specific

recommendations as to where and in what circumstances the doctrine should apply.

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"No plan survives first contact with the enemy."

von Molke

CHAPTER I

INTRODUCTION

EXORDIUM

Although the U.S. Army has done much to streamline the tactical command and control system and its inherent flow of information, little has been established as doctrinal guidance on how the infantry battalion commander exercises command and control once the attack is in progress. This thesis reconstructs, evaluates, draws conclusions and offers recommendations concerning the efficacy of established doctrinal guidance for the tactical command and control of the infantry battalion in the attack.

BACKGROUND OF THE PROBLEM

It will be shown that once the infantry battalion has crossed the line of departure in the attack, there is no doctrine available to provide guidance to the battalion commander on the establishment of his tactical command and control system. As a result, it is conceivable that each battalion will have a different command and control system

which may differ even from another battalion within the same brigade. In the process of examining the existing situation regarding tactical command and control systems, it will be shown that while the brigade and division commanders assign missions, allocate resources and designate boundaries for the attack, once the line of departure has been crossed, it is the battalion commander who must apply superior combat power at the decisive place and time to achieve success on the battlefield. It will also be brought out that the battalion commander and staff may have excellent information on which to plan the attack. This information comes from a multiplicity of sources and agencies channeled to the battalion tactical operations center. In the planning phase, the commanders and staff are functioning in an environment which allows for critical selection of information based on doctrinally established parameters. Once the attack is in progress, however, the system by which that same type of information is passed to the battalion commander is not doctrinally established and is subject to wide variation.

STATEMENT OF THE PROBLEM

This investigation analyzes the existing command and control procedures of the infantry battalion to

determine whether or not there is a need to establish doctrinal guidance for the battalion commander to base on which to establish his command and control system.

DEFINITIONS

Command and Control. The exercise of authority and direction by a properly designated commander overassigned forces in the accomplishment of his mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities and procedures which are employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of his mission.[1]

Command and Control System. The facilities, equipment, communications, procedures, and personnel essential to a commander for planning, directing, and controlling operations of assigned forces pursuant to the missions assigned.[2]

Doctrine. Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in applications.[3]

In the context of this thesis, command and control functions are under study as well as the command and control system used to perform these functions. Doctrine is further applified as being those published Department of the Army principles which the tactical commander normally finds in Department of the Army Field Manuals.

RATIONALE FOR THE THESIS

As will be discussed in the thesis, numerous concepts have been developed and tested by the U.S. Army in an attempt to facilitate the rapid flow of command and control information. The majority of these efforts, however, have been directed at increasing the quantity of information coming into tactical operations centers. Little has been done to identify the needs of the battalion commander who will probably not be in the battalion operations center during the attack. The more important aspect, then, becomes the fact that methods and procedures to transmit this information to the battalion commander are not established in doctrine. In an effort to maximize the resources available, a study and analysis of the currently existing battalion command and control system is necessary.

SCOPE

This investigation is limited to the study of the infantry battalion in a non-nuclear environment. The battalion is in the attack and has crossed the line of departure. The threat of effective electronic warfare and situational air parity is acknowledged as limiting parameters within the environment. The procedures and requirements for all information will be based on present day practices in training as determined from field operators. While the scope is aimed primarily at the command and control system of the battalion commander, some examination of developmental systems will be made to determine if extensions of these systems would fulfill the battalion commander's requirements.

ASSUMPTIONS

The officers selected for survey are representative samples of battalion commanders, executive officers and operations officers. Specific make up of the survey group will be found in Chapter IV.

The analysis of the survey results is valid.

The findings, observations and conclusions of tests conducted by the Modern Army Selected Systems Test, Evaluation and Review (MASSTER) are valid.

Parameters and characteristics of information requirements and methods of transmissions which have been observed and tested at the division level can be correlated to similar requirements and methods of transmission at the battalion level with a corresponding reduction in scope.

QUESTIONS TO BE ANSWERED

What is the nature of existing command and control procedures used by the battalion commander once his unit has crossed the line of departure in the attack?

Is there a need to establish doctrinal guidance for command and control procedures within the infantry battalion once the line of departure has been crossed in the attack?

METHODOLOGY

Detailed methodology is contained in Chapter III; however, an overview at this juncture is useful for orientation. Existing literature will be researched to establish that control measures available to the commander during the attack are limited. A review of ongoing combat developments and current thinking concerning command and control systems is also accomplished. The objective of this review is to demonstrate that while much is being done to quantify

command and control information, there is little evidence to support any qualitative improvement, particularly as concerns the infantry battalion in the attack.

A survey of available and qualified personnel at Fort Leavenworth will be conducted. Based on collation and analysis of questionnaire results as well as synthesis against current doctrine and developmental projects, findings for questions to be asked will be made. Specific details of the questionnaire construction and sample population are found in Chapter IV. These findings will provide the basis for thesis conclusions from which appropriate recommendations will be made.

CHAPTER I FOOTNOTES

[1]Department of the Army Regulation 310-25, Dictionary of United States Army Terms, 1 June 1972, p. 127.

[2]Ibid.

[3]Ibid., pp. 187-188.

CHAPTER II

REVIEW OF RELATED LITERATURE

INTRODUCTION

This chapter will examine doctrinal literature to determine whether or not there is adequate guidance provided to infantry battalion commanders for establishment of command and control systems during the attack. This examination will include command and control during planning and execution of the attack, sources of information and communications available to the battalion commander. The results of this examination are critical to the thesis. If the review shows that there is adequate guidance, then the thesis question must be modified to include whether or not infantry battalions are following that guidance and, if not, why not.

DOCTRINAL LITERATURE

Command and Control. The primary source for U.S. Army doctrine concerning command and control of the maneuver battalion in the attack is found in U.S. Army Field Manual

(FM) 7-20, The Infantry Battalions.[1] In Chapter 4, the Offense, control measures for the attack are discussed in the planning phase to include intermediate and battalion objectives, boundaries, zones of action, axis of advance, direction of attack, line of departure, time of attack, attack positions, assembly areas, phase lines, infiltration lanes and checkpoints.[2] The conduct of the attack from the line of departure to the final coordination line is also discussed here and stresses speed and use of supporting fire, however, no reference to command and control system is made. Of significant note is that the final subparagraph which addresses conditions under which redirection of the attack may occur:

> "As the attack progresses, the commander shifts the weight of the attack to take advantage of tactical success, to avoid known or suspected enemy strengths, or to take advantage of more favorable routes of approach as they are uncovered. The commander shifts the weight of the attack primarily by shifting supporting fires or employing his reserve. However, through aggressive aerial and ground reconnaissance, he may uncover ideal or adverse terrain conditions in sufficient time to turn them to his advantage or to lessen their impact on his operation."[3]

Nowhere in the discussion of the conduct of the attack are specific methods for command and control discussed in terms of where the commander should be to best influence the course of battle, or what information he

must have to base decisions subsequent to crossing the line of departure.[4]

Doctrine for planning the attack at the brigade and division level are similar to that of the battalion. Doctrine for the conduct of the attack at brigade level is also in consonance with doctrine at the battalion level;[6] however, FM 61-100, The Division, contains significant expansion on the conduct of the attack. Under the discussion of preliminary operations, the development of the enemy position is stressed. For the first time, specific requirements for commander's information are delineated and include not only target intelligence, but state the requirement for information on friendly adjacent units as well.[6] The succeeding paragraph discusses the conduct of the attack and departs from the doctrine established for battalion and brigade in that it again delineates intelligence requirements for commander's decisions.[7] Additionally, and for the first time, the commander's role is defined in at least general terms which is a departure from doctrine at the battalion and brigade level.

> "The division commander keeps himself informed of the progress of the attack, the status of his units, and the enemy situation. Depending on the battle, he is prepared to alter the organization for combat, maneuver his forces, reallocate and shift fires, or use his reserve. Decentralization of control and mission-type orders are normal.

> During the attack, the division commander moves where he can best control and influence his forces."[8]

While this guidance leaves much flexibility for the commander, it at the same time provides a point of departure for implementation and establishes a basis for operational procedures and identification of informational requirements which to this point have been absent.

FM 101-5, Staff Officers Field Manual Staff Organization and Procedures, covers staff procedures in great detail; however, it does not provide any instructions on the procedures to be utilized during tactical maneuvers, more specifically, the attack. Procedures for operations of the tactical operations center stresses maintaining current situations and status of units; however, no guidance as to when or what information should be provided to the commander for his decision-making. Similarly, no guidance is provided which specifies that the commander himself will establish these requirements.[9] Such actions would be covered in step nine of the sequence of actions in making and executing decisions; step nine being supervision by staff and commanders. Within FM 101-5, no mention of specific actions to be accomplished other than 'supervision' is found.[10] As well, the tactical operations center at any level functions for the purpose of providing command and control

in current operations. The intelligence and operations elements of the tactical operations center are responsible for maintaining all the information necessary for conduct of these operations; however, no delineation is made as to the when and how or what critical items of information require dissemination.[11]

Sources of Information. Sources of intelligence information that are generated within the battalion itself are from troops in contact, aerial and ground reconnaissance, ground surveillance radars, and when unattended ground sensors when available and attached.[12] If interpreters are available, the battalion S2 may exploit prisoners of war, civilians and captured documents on a limited basis. Tables of organization and equipment authorize interpreters in the divisional military intelligence company, which normally have teams collocated with the division's forward prisoner of war collection points. These collection points are normally located in the trains area of the division's committed brigades. It is conceivable that an interrogation team could be further attached to a maneuver battalion; however, the circumstances would have to be unusual to warrant the use of what is essentially a brigade asset at the battalion level.[13] Image interpretry support is found in a limited capacity at the division level; however, the

full complement of II support is organic to the corps.[14] Signal intelligence support is provided primarily by an Army Security Agency support unit attached to the division or higher level unit. Organic equipment of the battalion may be utilized to perform limited electronic warfare support measures which may provide intelligence information similar to signal intelligence.[15]

Information concerning status of friendly units on the flanks of a particular maneuver unit must come from the headquarters common to each unit. For example, if a maneuver battalion is flanked on the right by a battalion in the same brigade and on the left by an air cavalry troop with a screening mission which is also attached to the brigade, information concerning activity in these adjacent areas can be obtained from the parent brigade. If, however, the unit on one flank is attached to another brigade in the same division, then the information will have to come through division, the headquarters common to both units. This situation may be alleviated by the exchange of liaison officers between higher, lower and adjacent units. When liaison is not reciprocal, liaison may be established from left to right and from higher to lower.[16] Current organization of the battalion authorizes two liaison officers;[17] thus in a situation where exchange is

required for higher, lower and adjacent units, either an unauthorized liaison officer will have to be utilized or the higher headquarters will have to institute left to right liaison requirements. These liaison officers are equipped with one FM radio which operates in the battalion command net.[18]

This portion of the chapter has shown that the majority of the sources of information for both friendly and enemy activities are generated from outside the battalion (see figure 1) and there is a requirement for the flow of information to be channeled to the battalion by whatever communications dictated by doctrine (reference Communications, this chapter). Since no parameters for specific information are established by doctrine, the information is disseminated to all units without regard to urgency, content and/or relevancy to a particular unit's requirements or situation. With these procedures, the battalion commander in the attack cannot be assured of receiving all information needed by him to apply superior combat power at the decisive point in time.

Communications. Communications is the final facet of doctrine which must be addressed to complete the procedures by which battalion commanders are provided with decision making information. The Wheels study has a serious impact

Source/Activity	Bn	Bde	Div	Corps
Enemy Activity	Troops in Contact			
	Aerial/Ground Recon	x	x	x
	GSR			
	UGS	x	x	
PW's	Limited and only if interpreters are available.	MI Specialists at Bde Trains	x	x
Captured Documents	Limited and only if interpreters are available.	x	x	x
Captured Equipment	None	None	Tech Specialist	x
Image Interpretry	None	None	None	MIBARS (OV-1)
Enemy electro-magnetic emissions	Limited to use of organic equipment	Limited. ASA plt.	ASA Co	ASA Bn
Friendly units on flanks	LNO exchange	x	x	x
Fire Support	FSCOORD	x	x	x
Tac Air Strikes	TACP	x	x	x
CBR	Limited	Limited	x	x

(Source: FM 30-5 and FM 101-5)

on the capability of the battalion commander to communicate.[19] However, in addressing communications doctrine as it applies to the maneuver battalion, the most current field manuals will be examined. A comparison to current operational communications in field use will be made in Chapter VI. FM 11-50, Communications in Armored Infantry and Infantry (Mechanized) Divisions, discusses those radio nets operated by the infantry battalion as well as those nets in which the battalion is an outstation.[20] (See figure 2.) FM 7-20, The Infantry Battalion depicts a type battalion command net.[21] (See figure 3.) Both FM's specify that these are type nets, thus allowing local commander flexibility with which to reorganize their communications assets to fit the situation. Of the four FM's concerned with the battalion in the attack, none deal with specifics of command and systems communications during the attack. General comments are found concerning security prior to crossing the line of departure and using radios as the primary means of communications during the attack. However, no type communications network is shown or recommended.[22]

As contained in Army doctrine, the communications assets of the infantry battalion commander are not constrained or constricted, but rather are free to be used in any configuration deemed appropriate. What this means to

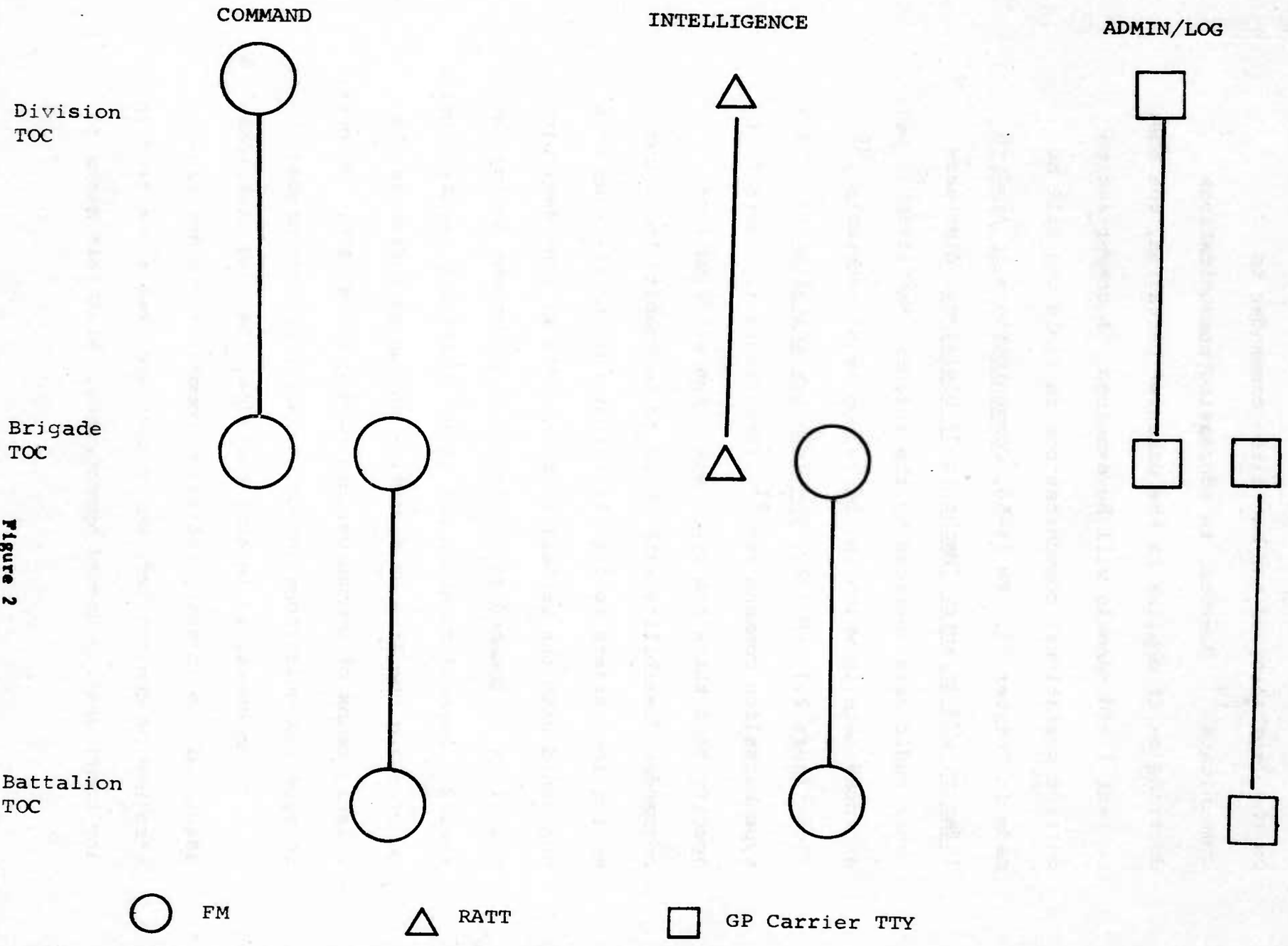

Figure 2
18

Source: FM 11-50, Communications in Armored and Infantry (Mechanized) Divisions.

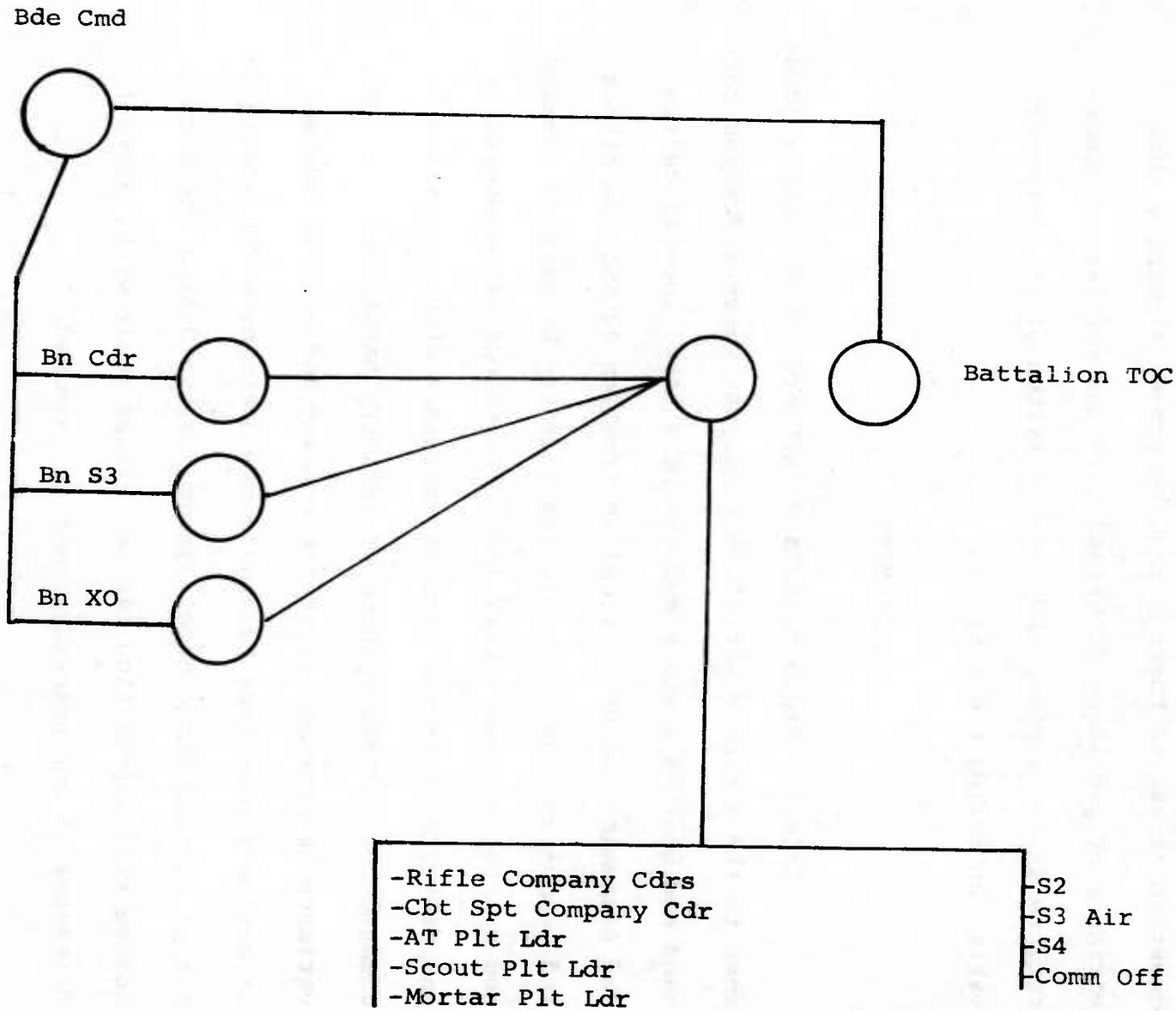

Figure 3
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Source: FM 7-20, The Infantry Battalion

the command and control system is that there is a distinct possibility that many battalions will have variances in the methods and structure of communications used in command and control systems. If there is a significant variance, the question arises, is there a requirement to eliminate this variance by providing doctrinal guidance for type communications in the command and control system of the infantry battalion during the attack?

SUMMARY

Existing Field Manuals do not provide doctrinal guidance to the infantry battalion commander which addresses command and control systems during the attack, identification and dissemination of critical information during the attack, and communications structure for infantry battalions command and control systems. This lack of guidance can conceivably manifest itself in the form of variances within existing command and control systems of infantry battalions. If this variance is detrimental to the command and control system, it may be appropriate to create new doctrine which specifies a type command and control system for use during the attack. Before this supposition can be further dealt with, current developments and practices must be examined.

CHAPTER II FOOTNOTES

[1]Department of the Army Field Manual 7-20, The Infantry Battalions, 1969, pp. 4-1 through 4-16.

[2]Ibid., pp. 4-5 through 4-8.

[3]Ibid., p. 4-8.

[4]Ibid.

[5]Department of the Army Field Manual 7-30, The Infantry Brigades, 1969, pp. 5-1 through 5-11: Department of the Army Field Manual 61-100, The Division, 1968, pp. 6-31 through 6-41.

[6]Field Manual 61-100, pp. 6-39 through 6-40.

[7]Ibid.

[8]Ibid., p. 6-41.

[9]Department of the Army Field Manual 101-5, Staff Officers Field Manual Staff Organization and Procedures, 1972, pp. 4-1 through 4-8.

[10]Ibid., pp. 5-13 through 5-14.

[11]Ibid. pp. J-1 through J-11.

[12]Department of the Army Field Manual 30-5, Combat Intelligence, 1973, pp. 3-15 through 3-24.

[13]Department of the Army Field Manual 30-9, Military Intelligence Organizations, 1973, p. 8-4.

[14]Department of the Army Field Manual 30-20, Aerial Surveillance-Reconnaissance, Field Army, 1972, pp. 7-1 through 7-9.

[15]Department of the Army Regulation, Electronic Warfare, 1973, p. 1-5.

[16]Department of the Army Field Manual 100-5, Operations of Army Forces in the Field, 1968, p. 3-3.

[17]Field Manual 7-20, p. 2-10.

[18]Department of the Army Field Manual 11-50, Communications in Armored Infantry and Infantry (Mechanized) Divisions, 1972, p. 10-7.

[19]For the full impact of the Wheels Study, see Kirk, Howard W., III, The Wheels Study: Its Impact on the Command and Control Capability on the Maneuver Battalion. (Unpublished Student Paper, USACGSC, Fort Leavenworth, Kansas): 1975.

[20]Field Manual 11-50, pp. 8-17, 9-7 and 10-7.

[21]Field Manual 7-30, p. F-2.

[22]Field Manual 7-20, pp. 4-37, F-7; Field Manual 7-30, p. 2-5; Field Manual 11-50, pp. 10-2 through 10-3, 10-7; and Field Manual 61-100, pp. 4-31, 6-37 through 6-40.

CHAPTER III

CURRENT CONCEPTS

INTRODUCTION

In this chapter, results of current studies will be reviewed to determine what developments are being made with regard to staff organization and procedures pertinent to infantry battalion command and control systems during the attack with emphasis on information processing systems. Findings, observations and conclusions from the Modern Army Selected Systems Test, Evaluation and Review (MASSTER) are the primary source in this instance. The current thinking of at least one senior officer, MG Shoemaker, is also reviewed as are command and control systems currently under development by the U.S. Marine Corps. The overall objective of this chapter is to ascertain whether or not current concepts and developments will provide refinement to existing doctrine.

Modern Army Selected System Test Evaluation and Review (MASSTER). MASSTER was first organized in 1967 to test and evaluate sensor systems and other surveillance and

target acquisition equipment but quickly expanded into other functional areas. Of interest to the research in support of this thesis are the testing and evaluation of the organizations, configurations, and operating procedures for battalion tactical operations centers and the application of automatic data processing techniques in developing the Integrated Battlefield Control System.[1] The most recent tests conducted in these areas are : IBCS: Staff Organization and Procedures (Test 113) and Staff Organization and Procedures (Test 119). Test 113 took place in April-May 1972 with the report being published in September 1972. Test 119 was conducted in November 1973 with the report being finalized in May 1974. The analysis of the results of these tests are relevant to this thesis in that they deal with the flow of information down to the battalion tactical operations center and delineate the type of information required by a maneuver unit commander in combat. It is not the author's intent to analyze all of the test reports, but rather to draw selected extracts, compile and analyze the extracts for later comparison.

Test 113 was a large systems test conducted at Fort Hood, Texas with the purpose of developing an improved command and control system for the division, brigade and battalion. Three command and control systems were evaluated

and the effect of integrating tactical automatic data processing systems was also evaluated in one of the organizational concepts.[2] As a result of Test 113, an organizational concept was recommended for further testing in MASSTER Test 119. Other recommendations as affect command and control systems included the establishment of a dedicated, one-way divisional communications voice net for dissemination of warning information, sole-user operations and intelligence telephone and teletype circuits between division and brigade for priority tactical traffic, and the substitution of a brigade FM operations and intelligence net for the existing radio teletype net.[3] More importantly, Test 113 further established the information needs for the battalion commander in a conceptual framework that requires only modification of specific detail to become a workable model for doctrinal command and control.

> "Information required to satisfy the commander's needs is forwarded directly (italics are the author's) from the developer, section or branch, to the (battalion) tactical operations center. The tactical operations center gives the commander the capability of considering essential information to assist him in making sound decisions, knowing the location and status of his subordinate elements, rapidly analyzing and comparing alternative courses of action, associated risks and resource requirements."[4]

Three questions arise out of this concept; first, if the developer, section or branch which originates this

information is external to the battalion, how is the information 'forwarded directly;' secondly, how are the specific information needs of the commander known by the individual developer, section or branch; and lastly, as the commander will probably not be collocated with the tactical operations center during the attack, how will this information be made available to the commander? If these questions can be satisfied, much of the problem of command and control systems in the attack will be obviated on the assumption that this concept would be implemented as doctrine.

MASSTER Test 119 deals with staff organization and procedures at the division level, more specifically, '...to experiment with and evaluate portions of the refinement of the baseline, Integrated Battlefield Control System, Division Level System Definition, Second Refinement...[5] The scope of the test was to evaluate command and control systems employed by personnel from an active Army division to include commanders and staffs from the division, one brigade and one battalion. All other organizations which would normally interface with these elements were represented by controllers. Evaluated elements of the division deployed at distances varying from seven to thirty kilometers from the control organization to add realism to the communications. Doctrinal communications were used between the control organization and the evaluated elements.[6]

Information needs of the commander had been previously determined in MASSTER Test 113.[7] (See figure 4.) While these information needs are stated as division level, the author has transposed these into battalion level by simply reducing the echelon specific by two. That is, wherever the requirement for the division is stated as 'battalion-size unit,' it is converted to a requirement for the battalion by stating 'platoon-size unit'. Part of the evaluation was to determine staff reaction time and subsequent information flow time. The average staff reaction time for the division staff was identified as being 58 minutes; reaction time being defined as 'the time that elapses from the recognition of an event until positive action is taken with respect to the event.'[8] The figure of 58 minutes is misleading as subsequent traceable event processing time further refined the time factor to 17.4 minutes for significant events and 36.6 minutes for routine events in the intelligence and operations areas.[9] This time does not, however, include transmission time to brigade or subsequent retransmission to battalion. At the brigade level, the adequacy, relevancy and accuracy of information received by the S2/BICC were generally good. Timeliness was rated as fair due to late arrival of information by radio teletype. The brigade S3 rated the adequacy

Information Needs of the Battalion Commander in Combat

Friendly

-Changes in political constraints (if applicable).
-Changes in status of fire or CAS priority.
-Loss of unit combat effectiveness of a platoon size or equivalent force; includes loss of DS or attached, both maneuver and support.
-Notification of intent to escalate, or likelihood of escalation to high intensity conflict.
-Strength, location and operational forces down to platoon level, includes DS and attached units.
-Changes in status of major organic items.
-Class III and V status.
-Priority of fire and CAS.

Enemy

-Major contact with or withdrawal of platoon-size or larger force.
-Change in location of platoon-size or larger unit.
-Sighting of platoon-size or larger force.
-Employment of CBR.
-Appearance of nuclear fire support weapons.
-Location, strength, and identification of unit in contact and capability of enemy units to reinforce and support.
-Current operational posture of (enemy) forces.
-Significant changes in logistic capabilities.

(Source: MASSTER Test FM 119 Report, pp. 27-29.)
As modified by the author for use at battalion level.

Figure 4

and accuracy of information as good; however, the relevancy and timeliness were rated as only fair due to communications outages. At the battalion level, the S2/BICC commented that they were sometimes unable to produce needed intelligence for the commander due to inadequate or delayed intelligence from the brigade. The S3/FSCC commented that while the information received from brigade was adequate, timely, relevant and accurate, the FSCC had not received enemy artillery information from the DS artillery battalion S2.[10]

The concepts under development in the U.S. Army today reflect a quantum jump in the level of automation and quantity of information available for decision making. In the systems being evaluated by MASSTER, however, information flows from tactical operations centers at division to brigade and to battalion and are limited by existing communications. Further, while more information is available to the commander, specific delineations as to the type and timeliness requirements with which the information must be accessed has not been addressed in terms of establishing doctrine. Thus, the doctrinal 'gap' which exists in current publications is not being filled by concepts now being developed. Were these concepts to become doctrine, it would still be left to the individual battalion commander to devise his own command and control system to support his decision making process

during the attack. The basic research question of whether there should be doctrinal guidance for this facet of tactical command and control systems remains unanswered.

Major General Robert M. Shoemaker

MG Shoemaker has been associated with the concept, development and testing of tactical command and control systems for the last several years, first as the Deputy Commanding and later Commanding General of MASSTER and as Commanding General of the 1st Cavalry Division (TRICAP) which is one of the units which actuates the concepts and developments being evaluated by MASSTER. MG Shoemaker lectures on the subject of tactical command and control at Fort Hood, the Army War College and the Command and General Staff College. These lectures provide an insight into the current thinking which shapes the development of new concepts at MASSTER and the emphasis in testing and evaluation. His views are included here as those of an experienced combat leader who has been and continues to maintain a position which affects and effects new doctrine.

MG Shoemaker asserts that the battalion commander is the battle captain, the man who controls fire and maneuver visually and by direct contact with maneuver units and artillery. He sees the role of the division and brigade commanders as assigning missions and areas of operation to

maneuver units, allocating forces and support adequate to mission and areas of operation sustaining forces, guiding synchronization of all assets, reading the battle, fighting his command and motivating. He further states that command and control systems should be optimized for mobile combat which tends to be a very short duration and conducted in spurts separated by much longer periods of relative static combat or even inactivity. The conflict between the desired and the actual is demonstrated in that U.S. divisional and lower command and control systems are optimized for long periods of relatively static combat. The systems being developed are fine for static combat, but lose much efficiency when the pace of combat increases. In that situation, the vast majority of information is at the division tactical operations center but the requirement is with the maneuver unit commander, the battalion commander. MG Shoemaker points out that the wealth of information at the division level is not wasted, that it is extremely useful for future planning, but that in the course of battle, it is the battalion commander who needs the information, particularly in highly mobile maneuvers such as attack and pursuit. In summation, the thrust of what MG Shoemaker has to say about tactical command and control is that the commander with the most information could win, the commander with the best

intelligence should win, but the commander who best directs his own forces will win, and this presupposes that the commander who has specified and received information will best direct his own forces will win, and this presupposes that the commander who has specified and received information will best direct his forces.[11]

Developments in the U.S. Marine Corps

The U.S. Marine Corps is moving in the same general direction as the U.S. Army with respect to development of automated command and control systems. The Marines have integrated a total of seven sub-systems which support combat, combat support, and combat service support functions to form the Marine Tactical Command and Control System. (MTACCS) These sub-systems are:

-Marine Integrated Fire and Air Support (MIFASS)

-Tactical Combat Operations (TCO)

-Marine Integrated Personnel (MIPS)

-Marine Air Command and Control (MACCS)

-Marine Integrated Logistics (MILOGS)

-Marine Air-Ground Intelligence (MAGIS)

-Communications (COMM)[12]

For the purpose of addressing information flow to the battalion level, only the tactical combat operations system will be discussed here. In concept the system is

very similar to the Army's Tactical Operations System (TOS).[13] TCO is designed to develop concepts, estimates and plans for operations and to provide information processing for the general staff as well as facilitating the direction and monitoring of on-going operations.[14] The concept currently undergoing testing calls for battlefield usage with some special purpose equipment likely to be placed at echelons as low as the infantry patrol. The TCO will focus on the operations function down to and including the battalion level with major emphasis placed on improving the Combat Operations Center.[15] The Combat Operations Center will then become the primary focal point for all operational information required by the commander.[16] TCO requirements have not yet been determined, however, the Marine system does not specify what and how information will be passed to the commander during the attack if he is not collocated with the Combat Operations Center. As with the Army tactical command and control systems, the Marines appear to leave the how and what to the discretion of the individual battalion commander.

SUMMARY

This chapter has reviewed combat developments in the U.S. Army and Marine Corps as well as current thinking concerning command and control systems. The developments

reported by MASSTER reflect that information processing systems will provide a significant increase in the speed and quantity of information. These systems appear to be linked from tactical operations center to tactical operations center. Further, the command and control system for the infantry battalion in the attack has evidently not yet been addressed. MG Shoemaker's comments are most appropriate when transposed to the scope of this thesis; namely that the systems under development are for a static situation. This implies that during increased levels of activity, such as the attack, automated systems lose efficiency. The U.S. Marine Corps is proceeding in the same general trend as the Army with respect to command and control systems. The focal point for information processing systems is the Marine combat operations center. The Marines, as the Army, leave the link from the operations center to the commander at the discretion of each battalion.

CHAPTER III FOOTNOTES

[1]Abt, Alan B., "Battlefield Computers," Army, 23:/ 23-28, (April 1973), p. 23.

[2]Department of the Army MASSTER, IBCS: Staff Organization and Procedures Test Report, MASSTER Test No 113, 1972, p. iii.

[3]Ibid., pp. 2-1, 2-5 and 2-13.

[4]Ibid., p. 3-97.

[5]Department of the Army Modern Army Selected Systems Test Evaluation and Review (MASSTER), Staff Organization and Procedures, MASSTER Test FM 119, 1974, p. 1.

[6]Ibid., pp. 17-28.

[7]Ibid., pp. 27-29.

[8]Ibid., p. 27.

[9]Ibid., p. 68.

[10]Ibid., pp. 305-344.

[11]Opinions expressed by MG Robert M. Shoemaker in an Address ("Command and Control of Division Operations") at USACGSC, Fort Leavenworth, Kansas, on 15 November 1974. Tapes are available in the USACGSC Library.

[12]Stewart, James J., and Bartlett, Merrill L., Test Bed for MTACCS," Marine Corps Gazzette, 57:26-31, (Jan 73), p. 27.

[13]TOS is being revised and has been redesignated Revised Tactical Operations System (RTOS).

[14]Ashby, Ronald D., "Digital C^3 in the Marine Corps," Signal, 28:34, (Feb 74), p. 34.

[15]The combat operations center is the Marine equivalent to the Army's tactical operations center.

[16]Stewart and Bartlett, p. 28.

CHAPTER IV

TACTICAL COMMAND AND CONTROL

THE BRITISH AND SOVIET VIEWS

The United States Army is not alone in its concern over command and control systems at the tactical level. Other nations have achieved the same high level of technology and mobility which makes the task of effective command and control that much more difficult. This portion of the thesis will address the philosophy of command and control as expressed by the British and Soviets; philosphies which are relevant since they most probably reflect the detailed structuring of the system at the maneuver battalion level.

The British have experienced the same burgeoning of information and the resulting staff increase due to technological progress. Their staff, however, is subdivided into only two major sections; operations which includes intelligence; and administration to include supply and logistics. The British further recognize that the outcome of military operations are decided to a large extent by the major

decisions of the field commander during the execution phase of those operations. Since these decisions are taken on the information available at the time, those decisions are only as valid as that information. With the great increase in available information and the time necessary to process that information, there is never sufficient time for proper analysis, and what analysis there is does not reflect the true 'real time' situation. In order to rectify this situation, a proposal for the establishment of two vertical data systems, one for operations and one for logistics has been made. The operational computer would have data terminals down to brigade group headquarters and regimental/ battlegroup headquarters with the overall aim to provide the tactical commander with 'real time' information on which to base tactical decisions. This increase in speed and accuracy of information flow, however, will increase the problems of the commanders rather than ease them as there will be a great tendency for the commander to remain at the source of this real time information rather than being where he should, on the scene, influencing the course of battle. The British recognize the problem of getting the information to the commander who will not be at the computer terminal, but on the battlefield; just as the U.S. battalion commander will not be in the tactical operations center during the attack,

but will be where he can best influence the course of battle.[1]

At the battalion level, similar concern over command and control problems created by technology have been expressed by at least one British military writer. Captain I.D.P. Thorne writing for the Journal of the Royal United Services Institute for Defence Studies analyzes the problem by stressing the need for control while simultaneously emphasizing the requirement for allowing the local commander to exercise initiative. In balancing this dichotomy, Captain Thorne points out that some aspects of control demand centralization; collection and dissemination of intelligence for one, and the need for rapid decision making under great stress for another. Centralization, however, at inordinately high echelons, has several disadvantages; first, a decision maker who does not know the local situation is himself absent of vital information; secondly, that decision making for the lower echelon is not his function and detracts from his actual function; and thirdly, that there will always be an inevitable delay no matter how good the communications. The commander on the ground has his decisions to make and the high level commander has his. The tactical commander should make his on the battlefield even at the risk of not having all possible information. The tactical commander's

staff must provide that information thus allowing the commander to focus on exceptional matters. Thorne's philosophy of tactical command and control reinforces Elcomb's with remarkable consistency.[2]

Equally remarkable is the concern over tactical command and control systems and the philosophy of command which the Russians express in their military writings. Many of their tactical concepts parallel U.S. Army concepts, or vice versa, and it is not surprising that the Soviets place similar emphasis on who should command, where and when. Lieutenant-General V. Reznichenko, writing in the Military Theory and Practice section of the Soviet Military Review, cites the increased decisiveness of the offensive as created by the escalated combat capabilities of the combatants, to include maneuverability and firepower. His discussion centers mainly on tactics, pointing out that:

> "...In the past, the attacking side first broke through enemy defences and only then received the possibility to conduct maneuvering actions. Modern weapons make it possible to inflict great losses on the opposing side within the shortest possible time, to make gaps in its battle formations, and the high motorization of forces allows these conditions to be used for quickly shifting efforts in depth. The possibility of quickly shifting efforts in depth and from one direction to the other, of executing bold enveloping and turning movements, of dealing surprise blows from different directions, may exclude the necessity for consecutive and methodical fighting by advancing troops from defensive positions and lines..."

While Reznichenko does not specifically discuss tactical command and control systems, it may be inferred that if his concept of increased decisiveness of the offensive is correct, that the Soviet military ground forces must have experienced a proportionate increase in command and control difficulties.

In detailed discussion of the battalion in the meeting engagement, Colonel Petrukhin reveals many specifics of the battalion commander's actions. Specifics include what type of information is required by the commander to determine the task organization and the concept of operation. Similarly, information requirements for reconnaissance are outlined. It appears that Soviet battalion commanders perform many functions which in a U.S. battalion would be performed by the commander's staff, at least in the attack. Planning for the movement to contact is extensive and orders are transmitted down to platoon leaders. What is germane to command and control are the actions of the battalion commander once the enemy has been engaged, a situation analogous to having crossed the line of departure in the attack. This article defines the actions of the battalion commander in three situations, one where the battle is proceeding according to plan, one where the enemy defends, and lastly, one where the enemy counter

attacks. The latter two situations would require more detailed information on which the battalion commander would base his decision. Though not specifically stated, it appears that the entire Soviet battalion is on the move and that a tactical operations center, as employed by U.S. forces, is either completely mobile or nonexistent.[4]

The Soviet philosophy of command and control at the battalion level is apparently predicated on planning for given circumstances as well as for contingencies. Reaction is based on prior planning and anticipation rather than reaction based on real time situation and information. The planning phase of operations receives more emphasis with regard to informational requirements. If Colonel Petrukhin's concept of battalion operations is to be matched with Lieutenant-General Reznichenko's concept of features and methods of the offense, it is reasonable to infer that the level where the increased decisiveness of the offense has impacted is not at the battalion but more probably at the regiment. If automated systems are to be used in Soviet ground forces, the regiment will be the lowest echelon to be included while the battalion will continue to rely on preplanned actions.

SUMMARY

Chapters II, III, and IV have dealt with doctrine and developments in command and control systems. These chapters form a composite on which to overlay current operating practices in the infantry battalions and should be summarized at this point.

Doctrinally, it has been established that no specific methods or procedures are provided in current field manuals for implementing command and control systems for use during the attack of an infantry battalion. Further, no specific informational needs are delineated and that no specific communications network is outlined for utilization by the infantry battalion in that attack. The conclusion that must be drawn from this synthesis is that the battalion commander is left to his own devices to design and implement his own command and control system with its supporting communications network. This conclusion leaves the researcher with questions as to what systems are in use today with U.S. infantry battalions and whether there is a requirement to provide doctrinal guidance as a departure point from which all battalion commanders could then structure command and control systems to best fit the infantry battalion in the attack?

In the major combat developments concerned with U.S. command and control systems tested and evaluated by MASSTER, the emphasis has been on developing expensive, automated systems which are most efficient during relatively static situations.[5] The link at the bottom of the system is the battalion tactical operations center.

The British and Soviets also address themselves to the impact of technology on the battlefield, however, with respect to command and control, the Soviets appear to rely on pre-planned procedures at the battalion level, with command and control systems on a near-real or possibly even automated basis being effected at the regimental level. The British are moving toward automated tactical command and control systems at the brigade, regimental and battlegroup level and are modeling their systems after similar U.S. systems. The British staff structure of only two major divisions allows for greater streamlining of their system.

It is reasonable to conclude that the battlefield of the future will have automated data links as an integral part of the information processing system. The question of how this affects the infantry battalion commander during the attack rests on the procedures actually in use in the field.

CHAPTER IV FOOTNOTES

[1]Elcomb, A.C., "Command and Control Systems," The Army Quarterly and Defence Journal, 102:159-172 (Jan 72), pp. 160-164.

[2]Thorne, I.D.P., "The Gods and the Big Battalion," Journal of the Royal United Services Institute for Defence Studies, 1117:58-60 (Jun 72), pp. 58-60.

[3]Reznichenko, V., "Features and Methods of Offense," Soviet Military Review, 9:7-10, (Sep 73), pp. 7-10.

[4]Petrukhin, V., "Meeting Engagement of a Battalion," Soviet Military Review, 5:15-17 (May 72), pp. 15-17.

[5]Opinions expressed by MG Robert M. Shoemaker in an address ("Command and Control of Division Operations") at USACGSC, Fort Leavenworth, Kansas, on 15 November 1974. Tapes are available in the USACGSC Library.

CHAPTER V

METHODOLOGY

INTRODUCTION

This chapter describes the research methodology used to gather information with which to answer thesis questions, specifically, what are the current command and control systems used by the infantry battalion in the attack. Components of this methodology include determination of survey population, survey construction, data collection mechanics, and survey reliability. Quantitative survey results are found in Appendix A. Analysis and correlation of survey data are contained in Chapter IV, Findings.

References for research methodology were Survey Research by Rackstrom and Hursh[1] and Survey Design and Analysis by Hyman.[2] Additionally, Non-Parametric Statistics by Siegal[3] and Concepts of Statistical Inference by Guenther[4] were used to provide methodological guidance for statistical validation and reliability of survey responses. CGSC computer programs were used to assist in selection of the

survey population as well as determining distribution and response confidence levels and limits.

SELECTION OF SURVEY POPULATION

Initially, the entire military population of Fort Leavenworth was considered as the survey population with a random sample envisioned. In reviewing the type information required, however, a stratification population survey appeared to be more productive than a random sample as it has a higher efficiency, i.e., a smaller number of observations is required for a given task.[5] The parameters selected for stratification were infantry branch officers present for duty at Fort Leavenworth at the time of the survey. These officers would have had past experience in maneuver battalions as the operations officer, executive officer and/or commander. To expedite determination of the stratification population, Project SAFE was utilized.

Project SAFE (Student and Faculty Expertise) is a CGSC automated information retrieval system which provides identification of personnel at Fort Leavenworth who have expertise in specific interest areas. The data base was querried for personnel within the following parameters:

Topical Qualifications: Commander, executive officer, operations officer, combat plans and orders,

command and control and tactical planning.

Geographic Area: No qualification required.

Differential Levels:

Knowledge: Significant Contribution (Level C on a scale of A through E)

Experience: Less than two years but more than one year (Level C on a scale of A through E)

Skill: Apply techniques in routine situations (Level C on a scale of A through E)

The SAFE data bank identified within the assigned parameters a total of 110 names of which 50 infantry branch officers were selected for the survey.

The underlying rationale for utilizing a stratified population is that the survey responses obtained from this selected population would be the most accurate source available at Fort Leavenworth during the period of research. Were time and money not imposed limitations, a random stratified sample of personnel currently assigned to infantry battalions throughout the active Army would have been the ideal survey population; thus providing a broader based survey population. Statistically, however, the standard error of mean is theoretically zero because all of the population within specified parameters were surveyed.[6]

SURVEY CONSTRUCTION

General Description. The survey was descriptive in nature, as discussed in Hyman's Survey Design and Analysis.[7] The phenomenon to be described was the command and control procedures currently used by the U.S. Army Infantry battalions. Hyman points out that "proper conceptualization of the phenomenon is a prerequisite to precise measurement."[8] Doctrinal guidance as provided in U.S. Army Field Manuals as previously discussed in Chapter II of this thesis are the 'conceptualization' of the phenomenon. The analysis of survey results will provide the actualization of the concept. Although descriptive surveys are normally used to study a large and hetrogeneous population, situations which require 'very concrete' information are not excluded from surveying a smaller homogeneous group.[9] In the examination of command and control systems of an infantry battalion, the requirement for 'very concrete' information is unquestionable. The small homogeneous population would necessarily be those personnel who have functioned within or utilized the battalion command and control systems. A key factor in descriptive survey research is the reduction and estimation in error to insure accurate representation of the phenomenon.[10] With the parameters of concrete information and a small

homogeneous population, the problem of error is theoretically reduced to zero if the entire population is sampled.

Developing Specific Questions. Th ee types of questions were asked; fact, information, and opinion. The fact questions were used to establish that the respondent had experience as an operations officer, executive officer and/or commander of an infantry battalion. The information questions, which were of the majority, sought descriptions of command and control procedures which the respondent had used at battalion level. Only one opinion question was asked. The fact and opinion questions were open-ended and the information questions were structured although no scaled responses or ranking methods were employed.[11]

A sample survey of typical respondents were pre-surveyed to insure that the questions were not ambiguous or ill-perceived.

Specific Questions and Rationale. A sample survey is found at Appendix A. Questions 1 through 4 are fact questions designed to determine the specific qualifications of the respondent to answer the succeeding information and opinion questions. In addition to determining that the respondent had served in the battalion, fact questions also were designed to ascertain whether or not the battalion had

participated in conventional planning and execution of battalion level attacks.

Questions 5 through 13 are information questions which were asked to determine the planning emphasis placed on terrain versus the enemy as battalion objectives as well as the influence of the higher headquarters on selection of battalion objectives. The results and analysis of these questions will input to the conceptualization of the command and control procedures after the attack and determination of any relationship between doctrine and practices in the field.

Question 14 is an information question and was specifically designed to determine the location of the battalion commander during the conduct of the attack. While several choices were provided, each respondent was also able to write in a location if the choices were inappropriate.

Question 15 was asked to determine who among the battalion staff the commander felt was most essential to assist him during the conduct of the attack. The data obtained from answers to this question will input to conclusions on determining that factors receive the commander's emphasis during the attack. Similarly, question 16 inputs to how the commander transmits orders and requests for information and receives information during the attack and

also inputs to conclusions regarding factors emphasized by commander's during the attack.

Questions 17 and 18 were unstructered open-ended questions which were designed to examine informational requirements during the attacks as well as determine the commander's emphasis and rationale for those requirements. Questions 19 and 20 follow up 17 and 18 by examining one facet of informational input, that, of redirecting the attack once the line of departure has been crossed. Question 21 asks opinion and rationale for redirection of the attack. Questions 17 through 21 are purposefully integrated in an attempt to determine if information requirements are consistent with situational events as well as to compare conceptual doctrine or lack of doctrine with actual procedures.

Analysis of information obtained from the questions is vital in answering thesis questions as stated in Chapter I. This data will also provide a basis for comparing existing doctrine or lack of doctrine with field practices to determine functional correlation.

SURVEY MECHANICS

Data Collection, Processing and Recording. Surveys were distributed through post message center channels on

1 December 1974 with a requested suspense return date of 18 December 1974. Fifty questionnaires were sent out, 37 were returned, of which 35 were valid within the established parameters. Results were compiled both numerically and by percentages for questions 1 and 3 through 21. Significant written comments were noted for questions 12 through 21. Quantitative compilations are shown at Appendices B and C. Several post survey interviews were conducted on the basis of written comments. The results of these interviews did not significantly alter the basic information contained in the respondent's survey.

SURVEY RELIABILITY

The analytical emphasis of this thesis is based on statistical inference provided by the results of the survey concerning infantry battalion command and control systems. The key to survey reliability is that the sample population be representative, representative in this case being representative of U.S. Army officers who have served in infantry battalions as S3's, executive officers and or commanders. With a sample of more than thirty, the research can be 95% confident that the population mean will be within two standard deviations of the sample mean.[12] (See figures 5 and 6.) In samples of greater than 30, the central limit

Probability for Samples with n equal to

Confidence Intervals	2	4	6	10	16	20	30 or more
± number of times the standard error							
0	0	0	0	0	0	0	0
0.50	.295	.349	.362	.371	.376	.377	.383
1	.500	.609	.637	.657	.667	.670	.683
1.5	.626	.769	.806	.832	.846	.850	.866
2	.705	.861	.898	.923	.936	.940	.954
2.5	.758	.912	.946	.966	.975	.978	.988
3	.795	.942	.970	.985	.991	.993	.997
3.5	.823	.961	.983	.993	.997	.998	.9995
4	.844	.972	.990	.997	.999	.999	...

Figure 5
54

Significance of observation

Source: Ezekial and Fox, Methods of Correlation and Regression Analysis

Probability for Samples with n equal to

Confidence Intervals	2	4	6	10	16	20	30 or more
± number of times the standard error							
0	0	0	0	0	0	0	0
0.50	.295	.349	.362	.371	.376	.377	.383
1	.500	.609	.637	.657	.667	.670	.683
1.5	.626	.769	.806	.832	.846	.850	.866
2	.705	.861	.898	.923	.936	.940	.954
2.5	.758	.912	.946	.966	.975	.978	.988
3	.795	.942	.970	.985	.991	.993	.997
3.5	.823	.961	.983	.993	.997	.998	.9995
4	.844	.972	.990	.997	.999	.999	...

Figure 5
54

Significance of observation

Source: Ezekial and Fox, Methods of Correlation and Regression Analysis

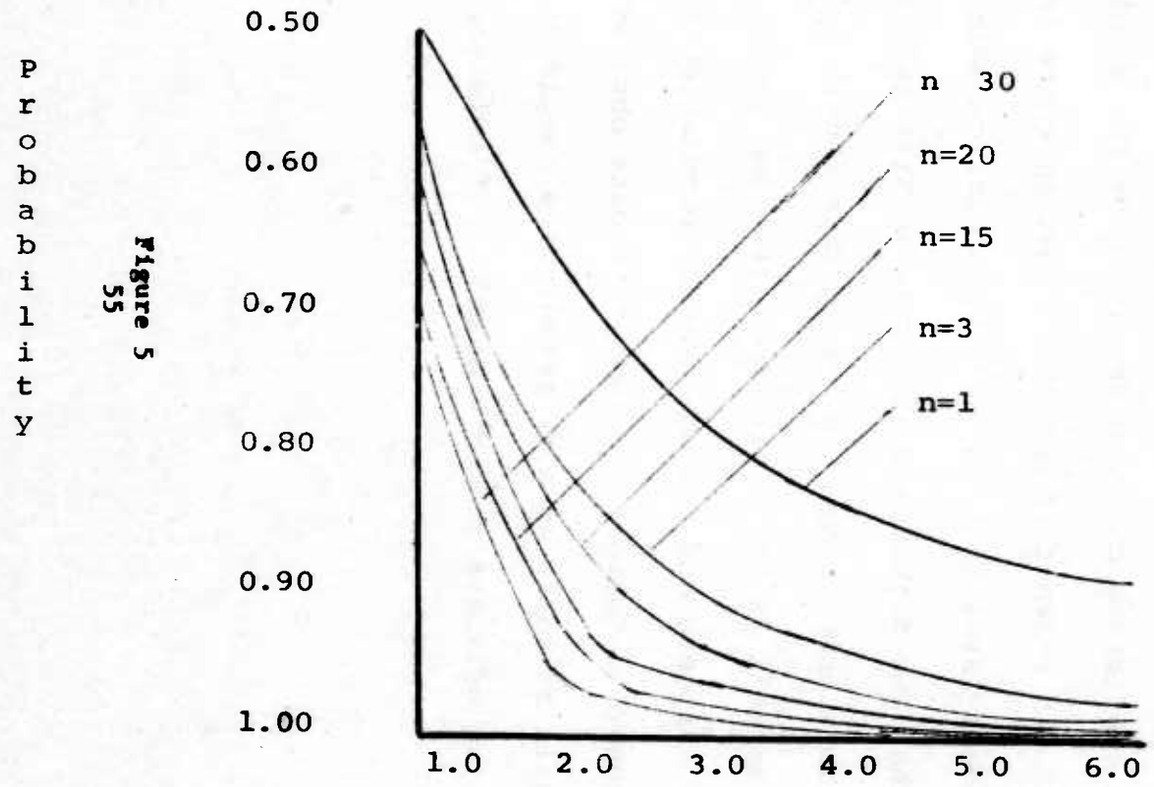

Figure 5
55

Source: Ezekial and Fox, Methods of Correlation and Regression Analysis

theorem also applies. This theorem states that when a variable is normally distributed, its distribution is completely characterized by mean and the standard deviation.[13] This instance is further refined by Blalock's observation that the more homogeneous the population, the smaller the standard deviation.[14] It follows, then, that assumptions concerning the population as a whole may appear in the sample with a high degree of certainty.[15]

As acceptance of statistical inference is based on a high confidence of a low deviation of the population mean,[16] the researcher concludes that as there is a 95% confidence level that the survey population mean will be less than two standard deviations, statistical inference is a reliable methodology for use in this thesis. This acceptance as well as the population selection method, the 70% survey response and the homogeneous population lead the researcher to further conclude that data obtained from this survey is reliable as a representative sample of S3's executive officers and/or commanders of infantry battalions.

CHAPTER V FOOTNOTES

[1]Backstrom, Charles H., and Hursh, Gerald, Survey Research, (Minneapolis: Northwestern University Press, 1969).

[2]Hyman, Herbert, Survey Design and Analysis: Principles, Cases and Procedures, (New York: The Free Press, 1955).

[3]Siegel, Sidney, Non-parametric Statistics, (New York: McGraw-Hill Book Company, 1956).

[4]Guenther, William C., Concepts of Statistical Inference, (New York: McGraw-Hill, Inc., 1973).

[5]Deming, W. E., Sample Design in Business Research, (New York: John Whiley and Sons, Inc., 1960), p. 50.

[6]Backstrom and Hursh, pp. 68-70.

[7]Hyman, pp. 68-71.

[8]Ibid., p. 68.

[9]Ibid., p. 70.

[10]Ibid., p. 74.

[11]Backstrom and Hursh, pp. 70-84.

[12]Exekial, Mordecai and Fox, Karl A., Methods of Correlation and Regression Analysis: Linear and Curvilinear, (New York: John Wiley and Sons, Inc., 1967), pp. 21-23.

[13]Kish, Leslie, Survey Sampling, (New York: John Wiley and Sons, Inc., 1965), p. 14.

[14]Blalock, Hubert M., Social Statistics, (New York: McGraw-Hill Book Company, 1968), p. 138.

[15]Ibid., p. 137.

[16]Siegel, p. 12.

CHAPTER VI

FINDINGS

INTRODUCTION

In this chapter, data obtained from the survey will be reported in an effort to furnish evidence which answers the thesis questions. The significance of this data is that it represents the current practices in maneuver battalions and, as such, is critical in determining whether or not there is a requirement for additional doctrine for command and control procedures of an infantry battalion during the attack. Responses to specific survey questions will be statistically presented and their significance applied to one or more thesis questions. Specific findings based on survey responses for each thesis question will be made in the Summary of this chapter.

RESPONDENT PROFILE

28 of the respondents (80%) had served as the commander, executive officer and/or operations officer of

an infantry battalion. The remaining 7 (20%), had served within an infantry battalion headquarters or on brigade staffs and possessed sufficient acumen and intimate knowledge of command and control procedures to allow completion of the survey with the same relative degree of expertise. Of the units represented by the respondents, 69% had participated in planning and execution of brigade or larger attacks as a part of field training exercises. This adds further qualitative support to subsequent survey results. While not shown on the questionnaire, the ranks of the respondents range from captain to colonel; the time in service range from eight to 22 years and all have had combat experience.

DATA ANALYSIS

Command and Control Procedures During Planning

Table 1

Responses from Questions 5-12 (number followed by(%))

	0%	01-24%	25-49%	50-74%	75-100%
Msn fm Bde specified:					
Terrain	4(12)	6(18)	3(8)	4(12)	17(50)
Enemy	13(37)	3(23)	2(6)	3(8)	9(26)
Terrain and enemy	2(6)	0(0)	3(9)	11(35)	16(50)
Selection of Bn Obj:					
Based on Bde Obj	5(15)	3(9)	4(12)	7(21)	14(43)
Keyed to terrain	6(19)	5(16)	0(0)	4(13)	16(52)
Keyed to enemy	14(41)	8(24)	1(3)	4(11)	7(21)
Selection of Bn Int Obj keyed to terrain:	8(23)	5(14)	1(3)	4(11)	17(49)

Comments: Many respondents made reference to the belief that securing a terrain objective carried with it the inherent mission of clearing the zone of enemy. There is no significant difference between selection of brigade or battalion objectives in terms of their being keyed to terrain or the enemy.

Table 2

Responses from Question 13	(Number followed by(%))
Most typical mission:	
Secure terrain	24(69)
Destroy enemy in zone	6(17)
Destroy enemy vic terrain	0(0)
Search and clear	5(14)

Comments: When given a clear choice between assigning a mission based on terrain, the enemy, or both, a significant percentage opted for terrain. Again, some respondent stated that killing the enemy in zone goes along with seizure of terrain. The percentage of search and clear mission selection is probably a carry over from the Vietnam method of operation.

Table 3

Responses from Question 13	(Number followed by (%))
Boundaries	35(100)
Lines of Departure	25(72)
Phase Lines	25(71)
Checkpoints	20(57)
Coordinating Points	15(43)
Limits of Advance	12(34)
Axes of Advance	9(26)
Objectives	5(14)
Areas of Operation	4(11)
Direction of Attack	2(6)
Final Coordination Line	2(6)
Landing/Pickup Zones	2(6)
Time of Attack	2(6)
Four other single choices	4(12)

Comments: These are the primary control measures used in planning the attack. The only unanimous choice was the use of boundaries. Approximately 70% selected lines of departure and phase lines, slightly more than half picked check points, and 40% used coordination points. Only 14% selected objectives as control measures. The examples shown in FM 7-20, The Infantry Battalions, use objectives, boundaries, axes of advance, lines of departure and zones of action.[1]

Command and Control Procedures During the Execution of the Attack

Table 4

Responses from Question 14 (Number followed by(%))					
Battalion Cdr's normal location:	TOC	LD	ABN	TAC CP	OP
At LD time:	1(3)	12(32) main atk	11(30)	11(30)	2(5)
Moving to the Obj	1(2)	12(30)	10(25)	15(38)	2(5)
During the Assault	0(0)	11(27) on obj	12(30)	12(30)	5(13)
Securing the Obj	2(5)	13(33)	11(28)	10(26)	3(8)

Comments: (a) Of a total 156 selections, only four (2.6%) indicated that the battalion commander is in the tactical operations center during any phase of the attack. (b) The location from which the battalion commander exercises command and control of his forces during the attack varies significantly with no one location predominating. This appears to be consistent with doctrine since no one location is specified in FM 7-20, The Infantry Battalions.[2]

Table 5

Responses from Question 15 (Number followed by (%))	
Personnel who normally accompany the battalion commander during the attack:	
Fire Support Coordinator	33(94)
S3	28(80)
Command Sergeant Major	17(50)
S2	6(17)
Air Liaison Officer	5(14)
Communications Officer	1(2)
Others	7(20)

Comments: The selections here clearly establish the importance of the Fire Support Coordinator and the S3 in the mind of the battalion commander. No other staff officer approached the preimminence of these two members of the battalion commander's command and control party.

Communications During the Attack

Table 6

Responses from Question 16 (Number only)

Method of Communication used between the Battalion Commander and the TOC

	Primary	Backup
Bn Cmd net (FM unsecure)	19	5
Bn Cmd net (FM secure)	15	2
Bn O&I net (FM unsecure)	1	4
Bn O&I net (FM secure)	1	0
"Bootleg"[3]	1	0
Wire	1	0
Air to Ground (FM)	0	1
Admin/Log net (FM unsecure)	0	3
Runner	0	1
Company net (FM)[4]	0	1

Ratio of primary to backup: 1:.55
% of FM radio reliance: 97%

Table 7

Responses from Question 16 (Number only)

Method of Communication used between the Battalion Commander and Companies

	Primary	Backup
Bn Cmd net (FM unsecure)	25	5
Bn Cmd net (FM secure)	9	2
Bn O&I net (FM unsecure)	0	0
Bn O&I net (FM secure)	0	3
Wire	1	2
Company net	5	3
Air to Ground (FM	0	1
Admin/Log net (FM unsecure)	0	1
Runner	0	1

Ratio of primary to backup: 1:.45
% of FM radio reliance: 93%

Table 8

Responses from Question 16 (Number only)

Method of Communication used between the Battalion Commander and Brigade

	Primary	Backup
Bde Cmd net (FM unsecure)	12	6
Bde Cmd net (FM secure)	22	5
Bde O&I net (FM unsecure)	1	4
Bde O&I net (FM secure)	1	4
Radio Teletype	0	4
Wire	1	2
Runner	0	1

Ratio of primary to backup: 1:.73
% of FM radio reliance: 87%

Comments: (a) Many respondents commented that secure equipment was not available in their units. Others commented that secure communications were not reliable for

various reasons. While these comments are germane to the utilization of command and control communications, a complete discussion is not warranted.[4] (b) A critical observation concerning the battalion commander's communications link to the tactical operations center surfaced in table 6. There is only a 55% backup capability planned for as indicated by the respondents. If the primary link is inoperative as a result of electronic countermeasures, battle damage, electromagnetic pulse or any number of other possibilities, only about half of the units would have had a planned, established method of backup communications. (c) 97% of both primary and backup communications links to and from the battalion commander and the tactical operations center use the FM radio. (d) Table 7 show similar characteristics for communications links between the battalion commander and the companies. There is only a 43% planned backup link and 93% of the communications are reliant on FM radio. (e) Table 8 shows a better ratio of primary to backup with an 83% backup. There is less reliance on the FM radio, approximately 87%.

Informational Requirements During the Attack

The major indication observed from responses to questions 17 and 18 were that the tactical operations center routinely passed information on both friendly and

enemy situation based on the judgment of the personnel in the tactical operations center. This observation is interrelated to the responses from question 15, personnel who normally accompany to battalion commander during the attack, as to determining which personnel comprise the tactical operations center party and who are in fact screening information for dissemination to the battalion commander. 71% of the responses indicated that battalion commanders do not specify what information they want passed to them. Several respondents cited informal Standing Operating Procedures on 'knowing what the old man wants' as the basis for what was passed to the commander during the attack.

Redirection of the Attack

50% of the responses indicated that information concerning significant changes in enemy disposition would cause the battalion commander to consider redirecting the attack while approximately 27% cited significant changes in the friendly situation as a causative factor. 20% stated that the mission would be redirected only on order from brigade.

The method of execution for redirection of the attack was evenly divided between personal or radio contact with company commanders and issuing a fragmentary order; 46% of the response for the former and 45% for the latter.

9% indicated that implementation of an existing operations plan would be used to redirect the attack.

91% felt that redirection of the attack after crossing the line of departure was feasible; however, several respondents qualified their responses by stating that while redirection was feasible, the conditions which precipitate change must be extreme. When subsequently asked what doctrinal methods were used in redirecting the attack, 39% replied by unit standing operating procedure, 29% by use of fragmentary order, 24% were unaware of any doctrinal methods, 5% used checkpoints and 2% cited operations plans.

FINDINGS

Thesis Question

What is the nature of existing command and control procedures used by the battalion commander once his unit has crossed the line of departure in the attack?

Findings:

That battalion level objectives are based on brigade objectives and terrain to a much greater degree than they are based on the enemy.

That boundaries, lines of departure, phase lines, checkpoints and coordinating points are widely used as control measures.

That objectives are not considered control measures by a significant number of battalion level planners.

That the commander's location during the execution of the attack is variable.

That the Fire Support Coordinator and the battalion S3 are the most likely individuals to accompany the battalion commander during the execution of the attack.

That many battalions experience difficulty with or are not equipped with secure voice equipment for FM radios.

That the preponderance of communications information transmitted between the battalion commander and the tactical operations center, the companies and the brigade is over the FM radio.

That 50% of the time the battalion commander has no planned or established backup communications between himself and the tactical operations center, the companies and brigade.

That information is passed to the battalion commander based on the judgment of personnel in the tactical operations center.

That battalion commander's do not generally specify what information they require for decision making during the attack.

That approximately half of the time, consideration for redirection of the attack is based on significant changes in the enemy situation.

That the redirection of the attack is accomplished primarily by fragmentary order or personal contact between the battalion commander and company commanders.

That redirection of the attack after the line of departure has been crossed is considered feasible by a significant number of respondents.

That a significant percentage of the respondents, 24%, were unaware of doctrinal methods for redirection of an attack.

Thesis Question

Is there a need to establish doctrinal guidance which delineates command and control procedures with which to provide the battalion commander with required information once his unit has crossed the line of departure in the attack?

Findings

That there is a wide diversity of control measures currently in use.

That objectives are not considered control measures by a significant percentage of battalion level planners.

That there is no unanimity in the locations of the battalion commander during the execution of the attack.

That the primary personnel selected to accompany the battalion commander are the Fire Support Coordinator and the S3.

That there is an approximate 97% reliance on FM radio for communications from the battalion commander to the tactical operations center.

That the battalion commander requires information concerning both friendly and enemy situations and that he relies on a portion of his staff to determine what is significant.

That there is diversity in the rationale and methodology concerning the redirection of the attack.

CHAPTER VI FOOTNOTES

[1]Department of the Army Field Manual 7-20, The Infantry Battalions, pp. 78-81.

[2]Ibid., pp. 83-84.

[3]As explained by the respondent, any frequency not in use but not assigned to the unit which was used for command and control was referred to as a "bootleg" frequency using his own personal callsign.

CHAPTER VII

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

SUMMARY

Questions. This thesis was generated by the initial observation that battalion command and control procedures in the attack vary significantly from battalion to battalion, sometimes even within the same brigade. The question of whether or not these procedures should have a common point of departure in doctrine, then, is the major question to be answered by this thesis. Subsequent questions posed to provide a research basis were: what in fact are current practices for command and control; what are informational requirements of the commander; and how does the commander obtain the information required for decision making during the attack?

Review of Literature. As a basis for doctrine, several U.S. Army field manuals were reviewed to determine what doctrine exists for battalion commanders to base establishment of command and control procedures. Also, communications and

informational doctrines were reviewed to ascertain the nature of communications available for command and control as well as to discover what sources and agencies are available to the commander.

Current concepts under development were also reviewed to determine if these would provide any refinement to existing doctrine. Writings from other services and countries were examined to reinforce examination of command and control procedures.

These doctrinal reviews revealed that there is no doctrinal guidance available on which the battalion commander can base his command and control procedures; that communication networks available to the battalion commander are general in nature and not specifically designed for command and control in an attack; and that much of the information required by the commander for decision making is generated by sources and agencies external to the battalion. Current trends indicate a dramatic increase in the speed and quantity of information available to automated systems within tactical operations centers. This increase has not apparently been met with delineation based on the requirements of the tactical maneuver unit commander.

Survey Findings. Key findings which impact on questions and existing doctrine include: terrain is the driving consideration

in selecting battalion level objectives; there are several types of control measures used in planning the attack; the battalion commander is in the tactical operations center less than three percent of the time during the attack; the commander rarely, if ever, delineates the type and scope of information required by him during the attack; a high degree of reliance on FM-VHF radios exists for communications between the battalion commander and the tactical operations center; there is a low percentage of planned backup communications between the battalion commander and tactical operations center; and the major causative factor precipitating a redirection of the attack is a major change in the enemy's disposition.

Synthesis. As the battalion commander and his staff plan the attack, objectives are selected based primarily on key terrain and brigade objectives. Contingency plans for redirection of the attack are rarely made. Planning for the attack is based on doctrine as contained in U.S. Army field manuals.

Execution of the attack is much less definitive than the doctrine for planning. The commander is almost never in the tactical operations center and his location varies significantly within each phase of the attack. By contrast, information generated by sources and agencies external to the battalion is passed to the tactical operations center. A

majority of the time, the battalion command net was used as the communications link between the battalion commander and the tactical operations center. Better than 70 percent of the time the commander relies on the personnel in the tactical operations center to determine what information is critical to his decision making. The most critical decisions the commander would make in the attack would be commitment of his reserve and/or redirection of the attack. Both these situations are informationally dependent on major changes in enemy dispositions. Redirection of the attack is also heavily dependent on the radio communications of the battalion command net.

The commander's decision making process is critically vulnerable in two facets of his command and control system as it is currently constructed. Initially, the source of his information is at the tactical operations center in the form of a FM radio link in the brigade command and control system. A very large amount of information concerning friendly and enemy situations is being transmitted from sources and agencies external to the battalion. The personnel in the tactical operations center have the option of: passing everything to the commander; qualitatively screening all incoming information and passing selected information to the commander based on their personal judgment; or hold all information and wait for

the commander to call and request information. Without clear cut guidance, the commander will be: flooded with information, some useful, some not; reliant upon the judgment of his tactical operations center personnel; or, constantly calling the tactical operations center to ascertain what information is available. If, in every case, the commander states his requirements prior to the attack, the required judgmental factor on the part of tactical operations center personnel would be greatly lessened and the probabilities of extremes limited.

This alleged vulnerability may be countered by the argument that most units have formal essential elements of information, other intelligence requirements, standing operating procedures and/or an experience factor of knowing what the commander needs in a given situation. The researcher would rebut this argument by pointing out that essential elements of information and other intelligence requirements are essentially requirements for information prior to the attack[1] and that the requirements during the execution of the attack may be substantially different. Standing operating procedures at battalion level will probably not be standardized, thereby perpetuating the disparity among battalions which apparently already exists; and lastly, the experience factor can be quickly negated by a change in key personnel; the

commander, the S3 or tactical operations center personnel. For these reasons, the arguments against citing the informational delineation process as a vulnerability are rejected.

More important than the lack of definitive guidance for information, is the question of how this information reliably gets to the commander. The criticality of reliable communications from the tactical operations center to the commander cannot be overstated. Without communications, a commander cannot receive information nor can he transmit orders. He is no longer in command. As currently constituted, the FM-VHF radio, using a relatively small portion of the VHF spectrum,[2] is utilized 97 percent of the time as the link from the commander to the tactical operations center. Based on survey responses, wire, runners and radios using other modulations and portions of the frequency spectrum are rarely, if ever, used. While redundancy has been stressed in command and control operations,[3] it appears that the redundancy is in the number of FM-VHF radios and not in the medium of the alternate communications link. A related vulnerability is the lack of planned backup communications. 55 percent of the time, there is a backup link, which appears to be insufficient. This deficiency harbors the same potential for depriving the commander of his command as does over-reliance on one means of communications. Loss of the primary link for whatever

reason will result in no planned communication with the tactical communication with the tactical operations center 45 percent of the time.

Threats to FM-VHF radio are many and varied. Electronic countermeasures employed at a decisive time can effectively deny a commander needed information or render the issuance of his order ineffective. Physical countermeasures such as artillery or rockets based on results of enemy communications intercept and/or radio direction finding can result in loss of key personnel as well as the commanders FM-VHF communications equipment. Electromagnetic pulse or other electronic disturbances can reduce the reliability and effectiveness of one or all of these same equipments.

In directing his unit in the attack, then, the battalion commander is critically vulnerable in his currently constituted command and control process. First of all, in delineating the type and scope of information required, secondly, in the method of passing that information to him from the tactical operations center, and lastly, in transmitting his subsequent decision to his subordinate units in the form of an order.

CONCLUSIONS

Based on the synthesis of thesis questions, the review of existing doctrine and the survey findings, a major

conclusion can be drawn and lesser ones generated to amplify the major conclusion. These conclusions will be the basis for subsequent recommendations, the implementation of which is the ultimate objective of the study. The major weakness of the conclusions is that they are based to a large extent on the data supplied by a very small sample of battalion level personnel. While statistically valid for the purposes of this thesis, a much more comprehensive survey would be desirable to totally validate these conclusions.

The major conclusion is that there is a significant degree of variance in the command and control procedures in use by infantry battalions in the execution of the attack. While it may be argued that this variance is attributable to the personalities of the commander or the situation, it is consequential that the planning of the attack to include establishment of control measures, does not exhibit this same degree of variance which would be expected if the dependent variable were the commander or situational. Rather, the researcher submits that the evidence shows that in the case of planning that definitive doctrine exists in U.S. Army field manuals on which battalion level operators can base their plans; whereas, no definitive doctrine exists on which battalion commanders can base command and control procedures. A logical corollary is that if definitive doctrine

existed, then the degree of variance would be lessened to an insignificant level. If establishment of doctrine for this facet of the attack is contemplated, an additional factor would necessarily have to be considered; that of whether or not attenuation of this variance in command and control procedures is desirable. The intent of any doctrine is to provide a principle on which commanders can base actions; not to stereotype all actions. The researcher concludes that in order to provide a common point of departure on which to structure command and control systems and procedures in the attack and to reduce the wide degree of variance in existing command and control systems and procedures, establishment of appropriate doctrine is desirable.

Two significant conclusions incidental to the major conclusion are made. First, a significant percentage of commanders do not delineate their informational requirements for decision making during the attack. This is further compounded by the facts that primary location for the majority of the information is the battalion tactical operations center and that during any phase of the attack after crossing the line of departure, the commander is not colocated with the tactical operations center. This means that tactical operations center personnel must rely on their individual experience and judgment of what information is critical to the

commander. Without definitive guidance from the commander, the probability of his particular requirements being fulfilled are significantly reduced in the researcher's opinion. It is further the researcher's opinion that if informational requirements such as those shown in figure 4 were established as doctrine, the commander would have a basis for adding or deleting requirements with relative assurance that these are valid elements of required information. As previously discussed, the intent is not to encumber the commander with rigid, inflexible requirements which must be dogmatically and slavishly fulfilled and reported; rather, the effort is to establish a basis for lessening the variable of personal judgment as to what type of information is necessary for decision making by the commander during the attack. The researcher concludes that in order to provide a common point of departure on which to base the informational requirements of the battalion commander and thereby reduce the variable factor of personal experience and judgment on the part of tactical operations center personnel, the establishment of appropriate doctrine is desirable.

The second significant conclusion is that there is over-reliance on the FM-VHF radio for communications from the battalion commander to the tactical operations center and the companies. An inter-related factor is that backup

communications are lacking in a significant percentage of the time. While existing doctrine specifies that radio is the principal means of communications during the attack,[4] the researcher submits that diversity of means of communications as well as duplicity of communications are required in view of the many, varied threats to FM-VHF radio communications equipment. Greater use of wire and messenger in the attack are the obvious short-term answers. Suggestions for future diversity in methods of communications will probably require introduction of new equipments into the battalion table of organization and equipment. This subject will be covered in recommendations. More important is the remedial action required to diversify communications during the attack. During halts, the wire link between the commander and the tactical operations center should be the primary link for passing information to the commander. Wire from the companies, particularly the main attack, to the battalion commander should be used whenever possible. Messengers can be used for lateral communications where time is not as critical a variable. All of these are possible alternatives. The germane conclusion is that existing doctrine should be revised to insure diversity of the primary and backup means of communications from the battalion commander to the tactical operations center and the companies during the attack.

RECOMMENDATIONS

Specific Recommendations. Although not normally required, the conclusions reached mandate certain specific recommendations be made. U.S. Army Field Manual 7-20, The Infantry Battalion, requires revision to expand guidance for command and control during the attack. This expansion should include specific guidance as to informational requirements during the attack as well as diversity and duplicity of communications for command and control communications. An ideal vehicle for this guidance would be in the form of a sample Standing Operating Procedure contents, similar to that found in FM 61-100, The Division, but applicable to battalion level operations.

Development of a model using existing authorized battalion personnel and equipment to provide diversity and redundancy in command and control systems can be of significant value in developing new doctrine or for modifying existing doctrine. This model should be based on two sets of data; the current table of organization and equipment as well as the modified table of organization and equipment resulting from the effects of implementation of recommendations from WHEELS and SPANNER.

Research into the role of the battalion executive officer would be useful. By doctrine, he directs and supervises the unit staff and is prepared to assume command.[5] However, he is often used to direct and supervise the combat service support effort. This is supported by personal observation as well as by the type communications structure shown in FM 7-20, The Infantry Battalion, where the executive officer is in the logistics net but not in the command net.[6] Conclusions from such a study would assist in determining requirements for the tactical operations center operations.

All future research into the battalion level command and control system should attempt to gather data from as wide a base as possible, i.e., personnel currently engaged in battalion level operations. Research must include the effects of electronic warfare as demonstrated in the 1973 Mid-East War. Research should, whenever possible, be performed in the field under simulated combat conditions. Reports from organizations such as MASSTER are invaluable to the researcher who cannot perform field research. Formulation of a command and control model and subsequent testing is extremely desirable and will contribute most significantly to the development of functional doctrine.

CHAPTER V FOOTNOTES

[1]Department of the Army Field Manual 30-5, Combat Intelligence, 1973, pp. 3-8 through 3-14.

[2]Current FM-VHF equipment is the RT-524, frequency range 30-74 megahertz. The total VHF spectrum is 30-300 megahertz. The use of a specified range such as the RT-524 facilitates enemy use of electronic countermeasures over the entire 44 megahertz.

[3]Don R. Alexander. "Shrink or Die: The Dilemma of the Tactical Command Post." (Unpublished student paper, USACGSC, Fort Leavenworth, Kansas): 1973, pp. 15-17.

[4]Department of the Army Field Manual 7-20, The Infantry Battalions, 1969, pp. F-7 through F-8.

[5]Ibid., p. 2-4.

[6]Ibid., pp. F-2 through F-3

APPENDICES

Return to MAJ N.K. Chung
Section 4

Approved for dist to: _____
Class Director
9 December 1974

Dear Sir:

I am engaged in survey research for my MMAS Thesis. The subject concerns command and control in the infantry battalion during the attack. Your name appeared on a computer printout as having expertise in the infantry battalion. Based on this expertise, your experiences and opinions are the most valid sources for research.

I would appreciate your time and effort to answer the attached questionnaire. The short term results will be in the collective analysis of the responses; however the desired long term result is to translate current practices into usable doctrine. After completing the questionnaire, use the attached envelope and drop it in the distribution box. I would like to have it back by the 20th of December 74. Thank you.

Norm Chung
Section 4

Approved by:
Research Advisor
DER, MMAS

APPENDIX A - SAMPLE SURVEY

1. Have you served as an infantry battalion commander, executive officer or S3? Yes_____ No_____

2. Please state the most recent position, unit, where and for what period. (Example: S3, 1-5th Inf, 1st Bde, 25th Inf Div, Schofield Barracks, HI From June 71 to December 72.)

_____

_____

The following questions deal with the planning of the attack as part of a brigade or larger FTX. If your last battalion level assignment was in Vietnam, many of these questions may not be applicable. Please answer those that are and skip those that are not.

3. On the average, how often did your unit take part in brigade or larger FTX's? Include ORTT's and ATT's. (Check one)
Yearly?_____ Every six months?_____ Quarterly?_____ Monthly?_____

4. How often did your unit plan and conduct attacks as part of a brigade or larger FTX? Include ORTT's and ATT's. (Check one)
Yearly?_____ Every six months?_____ Quarterly?_____ Monthly?_____

5. In planning the attack, what percentage of missions from brigade specified seizure of terrain? _____%

6. What percentage of missions specified destruction of the enemy? _____%

7. What percentage of missions specified both seizure of terrain and destruction of the enemy? _____%

8. In selecting battalion objectives, what percentage were based primarily on brigade objectives? _____%

9. What percentage of intermediate battalion objectives were keyed to seizure of terrain? _____%

10. What percentage of battalion objectives specified seizure of terrain? _____%

11. What percentage of battalion objectives specified destruction of the enemy? _____%

12. Which mission statement is most typical of those used by your unit? (check one)
_____Bn atks 010500 hrs to secure hills 105 and 155.
_____Bn atks 010500 hrs to destroy enemy in zone.
_____Bn atks 010500 hrs to destroy enemy units vic hills 105 and 155.
_____Other:_____

13. What control measures were generally used in planning the attack? (Check as many as appropriate)

_____Boundaries _____Phase Lines _____Lines of Departure
_____Axix of Adv _____Direction of Atk _____Check Points
_____Limits of Adv _____Coordinating Points _____Contact Points
_____Other:_____
_____Other:_____

The following questions deal with the execution and control of the attack once the initial elements of the battalion crossed the line of departure.

14. Where was the battalion commander's normal location during the attack?

a. At LD time:
TOC?_____ LD?_____ Airborne?_____ Tac CP?_____ Other:_____

b. During movement to the objective:
TOC?_____ With main attack?_____ Airborne?_____ Tac CP?_____
Other:_____

c. During the Assault:
TOC?_____ With main attack?_____ Airborne?_____ Tac CP?_____
Other:_____

d. While securing the objective:
TOC?_____ On the objective?_____ Airborne?_____ Tac CP?_____
Other:_____

If none of the above responses are appropriate, please describe your battalion commanders' method of influencing the course of battle in your own words.

_____

_____

_____

_____

_____

15. Who normally accompanied the battalion commander during the attack? (Check as appropriate)

CSM?_____ S3?_____ S2?_____ FSCOORD?_____ XO?_____ Co Cdr(s)?_____
Cmd pilot?_____ Others:_____

16. What communications links were normally used by the battalion commander during the attack. Please indicate P for primary and B for backup.

To TOC: ___Bn Cmd (FM unsecure) ___Bn Cmd (FM secure) ___Bn O&I (FM unsecure)
___Bn O&I (FM secure) ___RATT
___Other:_____

To Companies: ___Bn Cmd (FM unsecure) ___Bn Cmd (FM secure) ___RATT
___Bn O&I (FM unsecure) ___Bn O&I (FM secure) ___Landline
___Other:_____

To Brigade: ___Bde Cmd (FM unsecure) ___Bde Cmd (FM secure) ___RATT
___Bde O&I (FM unsecure) ___Bde O&I (FM secure) ___Landline
___Other:_____

CTB

17. What type of information was routinely passed from the TOC to the battalion commander during the attack? (Check as appropriate)

___Progress of friendly units on the flanks
___Information concerning changes in enemy disposition
___Changes in status of fire or close air support priority
___Sighting of platoon-size or larger enemy forces in the battalion AO
___Other_____
___Other_____
___Other_____

18. Did the battalion commander specifically identify the type of information to be passed to him by the TOC on a high priority basis? If so, please list the type of information identified.

_____

_____

_____

_____

19. Under what conditions would the battalion commander consider redirecting the attack, either in direction or mission?-

___Information which indicates a significant change in enemy disposition
___Information which indicates an exposed flank
___Only on order from Brigade
___Other_____
___Other_____
___Other_____

20. How would your battalion commander have executed a change in direction or mission?

___Personal contact with each company commander either in person or by FM
___Frag order
___Implement OPLAN
___Other_____
___Other_____
___Other_____

21. In your opinion, is it feasible to change the direction or mission of the attack once the battalion has crossed the LD? Yes___ No___

21a. If yes What methods to redirect the attack are prescribed in FM's and were known to you in your last battalion level assignment?

_____

_____

21b. If no why is redirect unfeasible?

_____

_____

Return to MAJ N.K. Chung
Section 4

Approved for dist to: _____
[signature]
Class Director
9 December 1974

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I would appreciate your time and effort to answer the attached questionnaire. The short term results will be in the collective analysis of the responses; however the desired long term result is to translate current practices into usable doctrine. After completing the questionnaire, use the attached envelope and drop it in the distribution box. I would like to have it back by the 20th of December 74. Thank you.

Norm Chung
Section 4

Approved by:
Research Advisor
DER, MMAS
[signature]

APPENDIX B - STATISTICAL RESULTS OF SURVEY BY NUMBER

1. Have you served as an infantry battalion commander, executive officer or S3? Yes 28 No 7

2. Please state the most recent position, unit, where and for what period. (Example: S3, 1-5th Inf, 1st Bde, 25th Inf Div, Schofield Barracks, HI From June 71 to December 72.)

_____

_____

The following questions deal with the planning of the attack as part of a brigade or larger FTX. If your last battalion level assignment was in Vietnam, many of these questions may not be applicable. Please answer those that are and skip those that are not.

3. On the average, how often did your unit take part in brigade or larger FTX's? Include ORTT's and ATT's. (Check one)
Yearly? 6 Every six months? 7 Quarterly? 8 Monthly? 3

4. How often did your unit plan and conduct attacks as part of a brigade or larger FTX? Include ORTT's and ATT's. (Check one)
Yearly? 6 Every six months? 8 Quarterly? 8 Monthly? 2

5. In planning the attack, what percentage of missions from brigade specified seizure of terrain? ____%

100-75%- 17 74-50%- 4 49-25%- 3 25-1%- 6 0%- 4

6. What percentage of missions specified destruction of the enemy? ____%

9 3 2 8 13

7. What percentage of missions specified both seizure of terrain and destruction of the enemy? ____%

2 0 3 11 16

8. In selecting battalion objectives, what percentage were based primarily on brigade objectives? ____%

14 7 4 3 5

9. What percentage of intermediate battalion objectives were keyed to seizure of terrain? ____%

17 4 1 5 8

10. What percentage of battalion objectives specified seizure of terrain? ____%

16 4 0 5 6

11. What percentage of battalion objectives specified destruction of the enemy? ____%

7 4 1 8 14

12. Which mission statement is most typical of those used by your unit? (check one)

24 Bn atks 010500 hrs to secure hills 105 and 155.
6 Bn atks 010500 hrs to destroy enemy in zone.
___ Bn atks 010500 hrs to destroy enemy units vic hills 105 and 155.
5 Other: Search/destroy/clear AO

8 CA

13. What control measures were generally used in planning the attack? (Check as many as appropriate)

35 Boundaries   25 Phase Lines   25 Lines of Departure
9 Axix of Adv   2 Direction of Atk   20 Check Points
12 Limits of Adv   15 Coordinating Points   9 Contact Points
____ Other: AO-5; Obj-5; LZ/PZ-2; Formation-1; Time of Atk-2; Atk Position-1;
____ Other: FCL-2; Zone of Atk-1.

The following questions deal with the execution and control of the attack once the initial elements of the battalion crossed the line of departure.

14. Where was the battalion commander's normal location during the attack?

a. At LD time:
TOC? 1   LD? 12   Airborne? 11   Tac CP? 11   Other: OP-2

b. During movement to the objective:
TOC? 1   With main attack? 12   Airborne? 10   Tac CP? 15
Other: OP-2

c. During the Assault:
TOC? 0   With main attack? 11   Airborne? 12   Tac CP? 12
Other: OP-5

d. While securing the objective:
TOC? 2   On the objective? 13   Airborne? 11   Tac CP? 10
Other: OP-3

If none of the above responses are appropriate, please describe your battalion commanders' method of influencing the course of battle in your own words.

____

____

____

____

____

15. Who normally accompanied the battalion commander during the attack? (Check as appropriate)

CSM? 17   S3? 28   S2? 6   FSCOORD? 33   XO? ____   Co Cdr(s)? 1
Cmd pilot? 3   Others: ALO-5; others, 6.

* 16. What communications links were normally used by the battalion commander during the attack. Please indicate P for primary and B for backup.

To TOC: ___Bn Cmd (FM unsecure) ___Bn Cmd (FM secure) ___Bn O&I (FM unsecure)
___Bn O&I (FM secure) ___RATT
___Other: ____________

To Companies: ___Bn Cmd (FM unsecure) ___Bn Cmd (FM secure) ___RATT
___Bn O&I (FM unsecure) ___Bn O&I (FM secure) ___Landline
___Other: ____________

To Brigade: ___Bde Cmd (FM unsecure) ___Bde Cmd (FM secure) ___RATT
___Bde O&I (FM unsecure) ___Bde O&I (FM secure) ___Landline
___Other: ____________

*Information not readily displayable.

17. What type of information was routinely passed from the TOC to the battalion commander during the attack? (Check as appropriate)

20 Progress of friendly units on the flanks
22 Information concerning changes in enemy disposition
22 Changes in status of fire or close air support priority
23 Sighting of platoon-size or larger enemy forces in the battalion AO
___ Other_____
___ Other_____
___ Other_____

18. Did the battalion commander specifically identify the type of information to be passed to him by the TOC on a high priority basis? If so, please list the type of information identified.

No - 25 Yes - 10

19. Under what conditions would the battalion commander consider redirecting the attack, either in direction or mission?

27 Information which indicates a significant change in enemy disposition
14 Information which indicates an exposed flank
6 Only on order from Brigade
8 Other_____
___ Other_____
___ Other_____

20. How would your battalion commander have executed a change in direction or mission?

30 Personal contact with each company commander either in person or by FM
29 Frag order
6 Implement OPLAN
___ Other_____
___ Other_____
___ Other_____

21. In your opinion, is it feasible to change the direction or mission of the attack once the battalion has crossed the LD? Yes___ No___

21a. If yes What methods to redirect the attack are prescribed in FM's and were known to you in your last battalion level assignment?

FragO-11; SOP-15; None-9; Checkpoints-2; OPLAN-1.

21b. If no why is redirect unfeasible?

Return to MAJ N.K. Chung
Section 4

Approved for dist to: _____
[signature] Col
Class Director
9 December 1974

Dear Sir:

I am engaged in survey research for my MMAS Thesis. The subject concerns command and control in the infantry battalion during the attack. Your name appeared on a computer printout as having expertise in the infantry battalion. Based on this expertise, your experiences and opinions are the most valid sources for research.

I would appreciate your time and effort to answer the attached questionnaire. The short term results will be in the collective analysis of the responses; however the desired long term result is to translate current practices into usable doctrine. After completing the questionnaire, use the attached envelope and drop it in the distribution box. I would like to have it back by the 20th of December 74. Thank you.

Norm Chung
Section 4

Approved by:
Research Advisor
DER, MMAS

APPENDIX C - STATISTICAL RESULTS OF SURVEY BY PERCENTAGE

1. Have you served as an infantry battalion commander, executive officer or S3? Yes 80% No 20%

2. Please state the most recent position, unit, where and for what period. (Example: S3, 1-5th Inf, 1st Bde, 25th Inf Div, Schofield Barracks, HI From June 71 to December 72.)

_____

_____

The following questions deal with the planning of the attack as part of a brigade or larger FTX. If your last battalion level assignment was in Vietnam, many of these questions may not be applicable. Please answer those that are and skip those that are not.

3. On the **average**, how often did your unit take part in brigade or larger FTX's? Include ORTT's and ATT's. (Check one)
Yearly? 25% Every six months? 29% Quarterly? 33% Monthly? 13%

4. How often did your unit plan and conduct attacks as part of a brigade or larger FTX? Include ORTT's and ATT's. (Check one)
Yearly? 25% Every six months? 33% Quarterly? 33% Monthly? 9%

5. In planning the attack, what percentage of missions from brigade specified seizure of terrain? ____%

100-75%-50% 74-50%-12% 49-25%-8% 24-1%-18% 0%-12%

6. What percentage of missions specified destruction of the enemy? ____%

26% 8% 6% 23% 37%

7. What percentage of missions specified both seizure of terrain and destruction of the enemy? ____%

6% 0% 9.5% 34.5% 50%

8. In selecting battalion objectives, what percentage were based primarily on brigade objectives? ____%

43% 21% 12% 9% 15%

9. What percentage of intermediate battalion objectives were keyed to seizure of terrain? ____%

49% 11% 3% 14% 23%

10. What percentage of battalion objectives specified seizure of terrain? ____%

52% 13% 0% 16% 19%

11. What percentage of battalion objectives specified destruction of the enemy? ____%

21% 11% 3% 24% 41%

12. Which mission statement is most typical of those used by your unit? (check one)

68.5% Bn atks 010500 hrs to secure hills 105 and 155.
17.2% Bn atks 010500 hrs to destroy enemy in zone.
0% Bn atks 010500 hrs to destroy enemy units vic hills 105 and 155.
14.3% Other: Search/destry/clear AO

13. What control measures were generally used in planning the attack? (Check as many as appropriate)

100% Boundaries	71.4% Phase Lines	71.5% Lines of Departure
25.7% Axix of Adv	6% Direction of Atk	57.1% Check Points
34.3% Limits of Adv	42.9% Coordinating Points	25.7% Contact Points

____ Other: AO-11.4%; OBJ-15.3%; LZ/PZ-5.7%; Formation-2.8%; Time of Atk-5.7%;
____ Other: Atk Pos-2.8%; Passage Point-2.4%, FLC-5.7%; Zones of Atk-2.8%.

The following questions deal with the execution and control of the attack once the initial elements of the battalion crossed the line of departure.

14. Where was the battalion commander's normal location during the attack?

a. At LD time:
TOC? 2.7% LD? 32.5% Airborne? 29.7% Tac CP? 29.7 Other: OP-5.4%

b. During movement to the objective:
TOC? 2.5% With main attack? 30% Airborne? 25% Tac CP? 37.5%
Other: OP-5%

c. During the Assault:
TOC? 0% With main attack? 27.5% Airborne? 30% Tac CP? 30%
Other: OP-12.5%

d. While securing the objective:
TOC? 5.1% On the objective? 33.3% Airborne? 28.3% Tac CP? 25.6%
Other: OP-7.7%.

If none of the above responses are appropriate, please describe your battalion commanders' method of influencing the course of battle in your own words.

_____

_____

_____

_____

_____

15. Who normally accompanied the battalion commander during the attack? (Check as appropriate)
CSM? 50% S3? 80% S2? 17% FSCOORD? 94% XO? ____ Co Cdr(s)? ____
Cmd pilot? ____ Others: TACP-14%

* 16. What communications links were normally used by the battalion commander during the attack. Please indicate P for primary and B for backup.

To TOC: ___Bn Cmd (FM unsecure) ___Bn Cmd (FM secure) ___Bn O&I (FM unsecure)
___Bn O&I (FM secure) ___RATT
___Other: _____

To Companies: ___Bn Cmd (FM unsecure) ___Bn Cmd (FM secure) ___RATT
___Bn O&I (FM unsecure) ___Bn O&I (FM secure) ___Landline
___Other: _____

To Brigade: ___Bde Cmd (FM unsecure) ___Bde Cmd (FM secure) ___RATT
___Bde O&I (FM unsecure) ___Bde O&I (FM secure) ___Landline
___Other: _____

*Data not readily displayable.

17. What type of information was routinely passed from the TOC to the battalion commander during the attack? (Check as appropriate)

21% Progress of friendly units on the flanks
23% Information concerning changes in enemy disposition
23% Changes in status of fire or close air support priority
25% Sighting of platoon-size or larger enemy forces in the battalion AO
8% Other_____
___Other_____
___Other_____

18. Did the battalion commander specifically identify the type of information to be passed to him by the TOC on a high priority basis? If so, please list the type of information identified.

Yes-29% No-71%

19. Under what conditions would the battalion commander consider redirecting the attack, either in direction or mission?

50% Information which indicates a significant change in enemy disposition
25% Information which indicates an exposed flank
20% Only on order from Brigade
5% Other_____
___Other_____
___Other_____

20. How would your battalion commander have executed a change in direction or mission?

46% Personal contact with each company commander either in person or by FM
45% Frag order
9% Implement OPLAN
___Other_____
___Other_____
___Other_____

21. In your opinion, is it feasible to change the direction or mission of the attack once the battalion has crossed the LD? Yes___ No___

21a. If yes What methods to redirect the attack are prescribed in FM's and were known to you in your last battalion level assignment?

FragO-29%; SOP-39%; None-24%; Checkpoints-5%; OPLAN-2%.

21b. If no why is redirect unfeasible?

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