

MICROCOPY

CHART

2

AD-A167 251

The J-Series Cavalry Squadron and
Its Reconnaissance Mission

by

Major Charles L. Crow
Infantry

School of Advanced Military Studies
U.S. Army Command and General Staff College
Fort Leavenworth, Kansas

13 December 1985

DTIC
ELECTE
MAY 15 1986
S E D

DTIC FILE COPY

Approved for public release; distribution is unlimited.

APPROVED FOR PUBLIC RELEASE
DISTRIBUTION UNLIMITED.

86 5 15 051

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified		1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution is unlimited.	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE		4. PERFORMING ORGANIZATION REPORT NUMBER(S)	
5. MONITORING ORGANIZATION REPORT NUMBER(S)		6a. NAME OF PERFORMING ORGANIZATION US Army Command and General Staff College	
6b. ADDRESS (City, State, and ZIP Code) Fort Leavenworth, Kansas 66027-6900		7a. NAME OF MONITORING ORGANIZATION	
7b. ADDRESS (City, State, and ZIP Code)		8a. NAME OF FUNDING/SPONSORING ORGANIZATION	
8b. OFFICE SYMBOL (If applicable)		9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c. ADDRESS (City, State, and ZIP Code)		10. SOURCE OF FUNDING NUMBERS	
		PROGRAM ELEMENT NO.	PROJECT NO.
		TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) The J-Series Cavalry Squadron and Its Reconnaissance Mission			
12. PERSONAL AUTHOR(S) Major Charles L. Crow			
13a. TYPE OF REPORT Interim	13b. TIME COVERED FROM TO	14. DATE OF REPORT (Year, Month, Day) 13 December 1985	15. PAGE COUNT 17 pages
16. SUPPLEMENTARY NOTATION			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	Cavalry, J-series Cavalry Squadron, Division 06, Reconnaissance, Divisional Cavalry Squadron	
19. ABSTRACT (Continue on reverse if necessary and identify by block number)			
<p>This study is an analysis of the J-series divisional cavalry squadron's ability to conduct reconnaissance in support of a counterattack. Division 06 was the catalyst for evolutionary changes in the conceptual employment of the squadron. The approved operational concept and force structure established reconnaissance as the primary mission of the divisional cavalry squadron while reducing its combat capabilities. The cavalry squadron is no longer a combined arms combat maneuver battalion capable of performing all combat related missions.</p> <p>Analysis reveals divisional cavalry squadrons in World War II performed combat related missions the majority of the time, while spending only three percent of their effort on reconnaissance. Studies, tests, and National Training Center (NTC) experience has revealed the viability of conducting reconnaissance by stealth. Although the new squadron is presently fielded, doctrine for the employment of the squadron is inadequate.</p>			
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION Unclassified	
22a. NAME OF RESPONSIBLE INDIVIDUAL Major Charles L. Crow		22b. TELEPHONE (include Area Code) 316-24-1900	22c. OFFICE SYMBOL AD-A167251

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE

quate, or nonexistent. Despite the fact that tanks are no longer found within the squadron, judicious employment of M3 AFV's and stealth techniques permit accomplishment of the reconnaissance mission.

The study concludes that the US Army has never adequately employed the modern divisional cavalry squadron in reconnaissance. Even without organic tanks, the J-series cavalry squadron is capable of conducting reconnaissance by stealth in support of a counterattack.

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE

The J-Series Cavalry Squadron and
Its Reconnaissance Mission

by

Major Charles L. Crow
Infantry

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input checked="" type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

School of Advanced Military Studies
U.S. Army Command and General Staff College
Fort Leavenworth, Kansas



13 December 1985

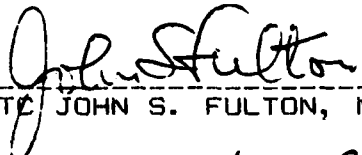
Approved for public release; distribution is unlimited.


School of Advanced Military Studies
Monograph Approval

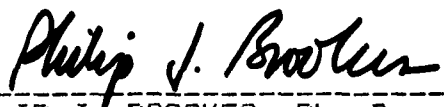
Name of Student: Major Charles L. Crow

Title of Monograph: The J-Series Cavalry Squadron of the
Heavy Division and Its Reconnaissance
Mission

Approved by:


----- Seminar Leader
LTC JOHN S. FULTON, MA


----- Director, School of
COL RICHARD H. SINNREICH, MA Advanced Military Studies


----- Director, Graduate Degree
PHILIP J. BROOKES, Ph. D. Programs

Accepted this 31st day of December 1985.

ABSTRACT

THE J-SERIES CAVALRY SQUADRON AND ITS RECONNAISSANCE MISSION
by Major Charles L. Crow, USA, 47 pages.

This study is an analysis of the J-series divisional cavalry squadron's ability to conduct reconnaissance in support of a counterattack. Division 86 was the catalyst for evolutionary changes in the conceptual employment of the squadron. The approved operational concept and force structure established reconnaissance as the primary mission of the divisional cavalry squadron while reducing its combat capabilities. The cavalry squadron is no longer a combined arms combat maneuver battalion capable of performing all combat related missions.

Analysis reveals divisional cavalry squadrons in World War II performed combat related missions the majority of the time, while spending only three percent of their effort on reconnaissance. Studies, tests, and National Training Center (NTC) experience has revealed the viability of conducting reconnaissance by stealth. Although the new squadron is presently being fielded, doctrine for the employment of the squadron is inadequate, or nonexistent. Despite the fact that tanks are no longer found within the squadron, judicious employment of M3 CFV's and stealth techniques permit accomplishment of the reconnaissance mission.

The study concludes that the US Army has never adequately employed the modern divisional cavalry squadron in reconnaissance. Even without organic tanks, the J-series cavalry squadron is capable of conducting reconnaissance by stealth in support of a counterattack.

Table of Contents

	Page
Section I. Introduction	1
General	1
Problem Statement	1
Hypothesis	2
Methodology	3
II. Background	4
World War II Doctrine -vs- Experience	4
ROAD Division	6
Division 86	7
Evolutionary Changes in Operational Concept	9
Recommended Organizational Changes .	10
Approved Operational and Organ- izational Concept	13
Doctrine	16
Soviet Reconnaissance Battalion . . .	19
III. Analysis	22
Doctrine	22
Firepower	28
Mobility	31
Command and Control	32
Target Acquisition	33
Training	35
IV. Conclusions	37
APPENDIX Division 86 Cavalry Squadron	39
Endnotes	40
Bibliography	43

SECTION I

INTRODUCTION

General

In the past, our reliance on firepower has decreased our interest in maneuver; however, faced with the capabilities of the Soviet army we must rethink our concept of tactical maneuver. Under the J-series TOE the divisional cavalry squadron's organization and combat potential has been radically altered. Historically, the emphasis has been on missions of a combat nature because of the combat potential and unique capabilities of the cavalry squadron. However, no longer can we maneuver against the enemy's strength confident in the knowledge that our superior firepower will resolve the issue. Locating the enemy's weaknesses and maximizing our mobility will be highly dependent on the most efficient use of the cavalry squadron as a reconnaissance force instead of as a fighting element.

Problem Statement

Airland Battle doctrine stresses the importance of maneuver on the battlefield. However the US Army still

emphasizes firepower to the detriment of maneuver. Beyond a doubt we must be capable of utilizing both, but the lack of real emphasis on maneuver must be corrected. At the division level, the cavalry squadron has become synonymous with fighting missions such as guard, screen and economy of force, while its use as a reconnaissance force has been neglected. This unit must provide the link between sophisticated intelligence systems and combat intelligence. Consequently its focus should be on assisting the division on retaining its ability to maneuver. Based on intelligence gathered by the cavalry, the commander must remain flexible and be capable of shifting his main effort to the line of least resistance, taking advantage of fleeting opportunities. An ancillary issue is whether or not the divisional cavalry squadron needs organic tanks to conduct reconnaissance in the counterattack. Under the J-series TOE there are no tanks in the squadron and this has prompted much controversy.

Hypothesis

The J-series divisional cavalry squadron is capable of performing its reconnaissance mission in a high intensity conflict, if employed according to the operational concept from which it was developed. It is a light reconnaissance element no longer capable of sustained combat. Consequently our traditional views on cavalry must be questioned and the reality of its limitations must be accepted.

Methodology

To determine the ability of the cavalry squadron to conduct reconnaissance, the traditional employment must be understood, as well as the rationale for the new operational employment concept. Attempting to ascertain the capability of the squadron without understanding its development process may lead to false analysis. By comparing previous and new doctrine along with the new organization, I intend to determine the squadron's ability to perform in its reconnaissance role.

SECTION II

BACKGROUND

World War II Doctrine -vs- Experience

US Army mechanized cavalry doctrine prior to the Normandy invasion in World War II emphasized reconnaissance. Cavalry units were organized, equipped and trained to perform reconnaissance employing infiltration tactics as well as fire and maneuver when required. Cavalry units were to engage in combat only to the extent necessary to accomplish the assigned mission.¹ Despite this emphasis, cavalry squadrons engaged in reconnaissance missions only three percent of the time.² This small percentage tends to substantiate the statement that "reconnaissance has always been an accepted and valuable but frequently neglected use of cavalry."³ The significant feature of this figure is that prior to actual combat, doctrine envisioned the primary task of divisional cavalry to be reconnaissance in support of combat units; however, this seldom occurred. This meant the majority of time was spent conducting operations other than reconnaissance.

The General Board was created by United States Forces,

Europe, in June 1945 to analyze the strategy, tactics and administrative procedures employed by US forces in the European Theater during World War II. Although the board was comprehensive in its approach and covered all facets of the war, two of the studies conducted were particularly significant to the cavalry. Studies #48, "The Organization, Equipment, and Tactical Employment of the Armored Division," and #49, "The Tactics, Employment, Techniques, Organization, and Equipment of the Mechanized Cavalry Units," both provided the basis for postwar cavalry organizations. The board conducted personal interviews, analyzed unit after action reports, and used questionnaires submitted to combat leaders ranging from second lieutenant to general officer to gather a complete picture of the use of cavalry in combat at all levels.*

Not surprisingly, the board concluded that reconnaissance was the least performed mission of cavalry.* Two-thirds of the junior officers interviewed by the General Board recommended that tanks be organic to the squadron.* In essence the divisional cavalry squadron in World War II had been used as a maneuver battalion conducting a multitude of offensive and defensive operations, including attacking enemy units and defending terrain. What was not ascertained by the board was whether the pre-war doctrine was wrong, or if the squadron had been misused. The focus of the General Board study and its recommendations centered on the combat

experience of the cavalry as opposed to determining whether the unit was employed according to doctrine.

Divisional cavalry was to be employed with a minimum of combat in support of maneuver forces.⁷ This led to the organization of a light reconnaissance unit utilizing stealth to accomplish its mission. Contrary to this, the cavalry was habitually used in numerous combat roles. As a result, the General Board recommended the reorganization of the squadron utilizing combined arms at the lowest level capable of performing all combat functions.⁸

ROAD Division

In 1965, under the ROAD Division, the cavalry squadron developed into a combined arms maneuver battalion with tremendous firepower capable of conducting offensive and defensive operations over a wide area in support of the heavy division. As a result, the reconnaissance mission became overshadowed in favor of combat related activities.

The cavalry squadron of the ROAD division had three armored cavalry troops organized around tanks, armored personnel carriers, infantry, scouts, mortars, and one air cavalry troop with aero scouts and attack helicopters. This organization allowed the squadron to participate in all levels of combat and perform numerous combat functions.⁹

Division 86

With new equipment on the horizon, it became clear that consideration had to be given to modification of our force structure in order to maximize the capabilities of new weapon systems. The Division 86 Study, begun in September 1978 by General Donn Starry, Commander, Training and Doctrine Command (TRADOC), was the first major attempt in many years to address new equipment and the best organization to facilitate its use. Division 86 was an outgrowth of the March 1976 Division Restructuring Study (DRS) at TRADOC. The DRS was charged by General William DePuy, then commander of TRADOC, with developing the optimum size, mix and organization of army divisions for the mid 1980's. General DePuy's intent was to provide a clear alternative to the ROAD divisional organization based on new tactical concepts and equipment.¹⁰

When General Starry became TRADOC commander, he built on the DRS initiatives already completed. Using his recent experience as a corps commander in Europe, as well as the DRS studies, he expanded the concept into Division 86 which would be the beginning by which doctrine, organization, and training could be directed toward integrating new weapons and equipment.¹¹ Interestingly enough, within Division 86 the cavalry squadron was placed under a task force designated "Target Servicing" along with infantry and armor battalions.

The prevalent view, not surprisingly, was that the cavalry was viewed in the same context as maneuver battalions, not as a reconnaissance or surveillance force.

The general principles of force design for the Division 86 study were to simplify tactical, technical and training responsibilities within designated organizations. Additionally, an improved chemical capability was desired. The specific principles of force design affecting the cavalry squadron were in command and control, and trainability. In both instances, the desire was to increase and optimize the leader-to-led ratio.¹² In the previous H-series cavalry organization, the platoon leader was held responsible for the training and employment of a combined arms platoon consisting of tanks, armored personnel carriers, scouts, infantry and even mortars at times. Not only was the leader-to-led ratio low, but the experience level required to employ successfully this multitude of weapons was high. The Division 86 study felt the increased level of sophistication of the new M3 cavalry fighting vehicle (CFV) and the M1 tank dictated a simpler organization. By reducing the platoon leaders span of control, the weapon systems capabilities could be maximized.¹³ The Division Restructuring Study (DRS) recommended the standard cavalry platoon consist of approximately six CFV's, with five scouts in each CFV.¹⁴

Evolutionary Changes in Operational Concept

Division 86 addressed the organizational problems confronting the army by seeking answers on optimizing the new equipment about to be deployed. The Division 86 task force submitted several proposals concerning new squadron organizations between December 1978 and April 1979. Each proposal contained some combination of cavalry fighting vehicles and tanks, without reducing the size of the squadron. However, on 20 April 1979, Brigadier General John Woodmansee, acting Deputy Chief of Staff for Combat Developments, TRADOC, radically altered the basic assumptions on the use of cavalry by changing the primary operational concept of the divisional cavalry squadron to reconnaissance. In conjunction with this, he proposed a three troop squadron, with each troop containing two scout (CFV) and one tank (M1) platoon.¹⁵ Sensitive to the change in concept, but firm in its conviction that the cavalry squadron should fight for battlefield information, the Armor School, with TRADOC's support, opted for troops organized with two scout (CFV) and two tank (M1) platoons.

When the Chief of Staff of the Army, General Edward Meyer, was briefed on this recommendation, he felt the squadron was too large and possessed too many tanks. Rebuffed, General Starry directed a review of the squadron in conjunction with the new Combat Electronic Warfare

Intelligence (CEWI) Battalion.¹⁶

The Reconnaissance, Surveillance, Target Acquisition Analysis (RSTA) study focused on drawing intelligence, reconnaissance and acquisition assets into a total package.¹⁷ For the first time consideration was to be given to the close relationship of the cavalry reconnaissance mission and other divisional intelligence assets, and within a month the Armor School proposed a merger of the Combat Electronic Warfare Intelligence (CEWI) battalion and the cavalry squadron. Although not accepted, it led to further studies concerning the relationship of reconnaissance, surveillance and fusion functions. At one point a pure reconnaissance squadron was even considered.¹⁸

Recommended Organizational Changes

By October 1979 General Starry had approved a light cavalry squadron of three ground troops with forty-four cavalry fighting vehicles, twelve motorcycles, six 107mm mortars, and both Nuclear Biological Chemical (NBC) reconnaissance and sensor platoons. The thirty-six man NBC platoon dramatically increased the chemical reconnaissance capability, while the sensor platoon provided radar coverage as well as a Standoff Target Acquisition System (SOTAS) ground station link. This smaller squadron, organized primarily for reconnaissance, surveillance and economy of

force missions, was tentatively approved by General Meyer. Final approval was withheld pending further study of aerial assets.¹⁹ The absence of tanks in the squadron was, and is, surrounded by controversy.

An independent TRADOC evaluation of the J-series cavalry squadron was conducted to evaluate the operational suitability of the squadron. This study found the squadron, as configured, capable of providing the Army with a reconnaissance unit with flexibility and mobility.²⁰ Results of such studies may still be questioned and further proof may be required. Until actual combat proves or refutes studies such as this, the National Training Center (NTC) provides some insights.

It is interesting to note that OPFOR reconnaissance units at the NTC face a problem similar to that of the J-series cavalry squadron, that is, light reconnaissance elements attempting to develop the situation against a defending mechanized enemy. OPFOR techniques combine stealth and speed, as well as mounted and dismounted elements to overcome the problem. Using "sneak and peek" methods, OPFOR reconnaissance units infiltrate "enemy" positions, locate obstacles and units, and identify enemy weaknesses. Information is obtained not by fighting, but by utilizing terrain, avoiding enemy contact and being smart. Based on information attained in this fashion, OPFOR commanders

repeatedly modify their attack plans and are successful in the majority of cases.**

As a rule the heavy division was expected to work within a corps framework, which would have a cavalry regiment with increased combat power available. Because of this, the divisional cavalry squadron would no longer be required to perform traditional economy of force and combat missions. By now General Starry strongly felt the cavalry squadron should be an integral part of the intelligence and reconnaissance network. The squadron was to supplement, as well as complement, electronic surveillance assets. Additionally it was felt that tanks would be more efficiently used within tank battalions, while cavalry fighting vehicles could still provide significant firepower to allow the squadron to accomplish its reconnaissance mission. Should the situation or mission dictate, tanks could still be attached to increase the fighting power of the squadron.** The final result was that the cavalry squadron would have no organic tanks.

With the issue of tanks settled, General Starry now focused his attention on the subject of aerial assets. By late 1979 the TRADOC commander had determined aerial support to be a necessary adjunct of ground reconnaissance. In response to a TRADOC directive, the Armor Center evaluated various air-ground troop ratios to determine the best mix,

and recommended the squadron consist of three ground and two air troops. The Combined Arms Center (CAC) at Fort Leavenworth disagreed, and advocated a two and two mix. General Starry sided with CAC and approved the balanced squadron in mid-June.²³

Approved Operational and Organizational Concept

In August of the same year, General Meyer approved the Operational and Organizational (O&O) Concept for Division 86. The concept envisioned the battlefield environment to be focused on a European scenario against Warsaw Pact forces. Highly mobile combined arms units clashing in meeting engagements were expected to create situations resulting in a nonlinear battlefield. Because of this, isolated units as well as degraded command and control would probably be the norm. Division 86 was to be designed with this concept in mind, utilizing new equipment and organizations.

The principal mission of the cavalry in this new division was reconnaissance.²⁴ As derived from the operational and organizational concept, the squadron missions now became: conduct detailed ground and air reconnaissance within, to the front, flanks and rear of the division; screen; facilitate command and control; line of communication (LOC) surveillance; internal surveillance to facilitate rear area combat operations (RACO); position and monitor remote

sensors; and conduct NBC reconnaissance.**

The J-series cavalry squadron (Appendix) is assigned to the Air Cavalry Attack Brigade (ACAB) primarily for aircraft supportability. However, it is normally employed under division control. It is organized with a headquarters and headquarters troop, two air and two ground cavalry troops. Each ground troop consists of three cavalry platoons with six cavalry fighting vehicles and a mortar section consisting of three 81mm mortars. Each air cavalry troop has six scout and four attack helicopters. The NBC, motorcycle, and sensor platoons are in the headquarters and headquarters troop.

A late addition to the squadron, the NBC reconnaissance platoon is responsible for minimizing the effects of chemical and nuclear strikes by conducting radiological and chemical monitoring and survey tasks. This sorely needed asset acknowledges the importance of NBC reconnaissance on the battlefield and provides the division commander the detection and identification capability previously lacking. This platoon may function as a separate entity, or may be attached to other troops, thus augmenting their capability.**

The motorcycle platoon provides increased command and control capability within the squadron, and also within the division itself when C² is degraded. It is capable of providing roadguides and messengers and maintaining contact

with adjacent units. By conducting reconnaissance in areas where contact is unlikely, this element complements both the air and ground troops. As with the NBC platoon, it may operate as an separate entity or may be attached to a troop.²⁷

The sensor platoon complements other surveillance systems within the division. Its sensors are employed in conjunction with the squadron scouts, or employed as an economy of force measure. By placing sensors in areas not under direct scout observation, the commander increases the area he is capable of monitoring.²⁸

The two ground troops have been dramatically altered. Their missions consist of surveillance, acquiring information, locating enemy units and assisting in C². The M3 cavalry fighting vehicle provides long range antitank fires, as well as close in protection with its 25mm cannon. Each troop operates under squadron control, and is capable of receiving and employing remotely emplaced and monitored sensor (REMS) teams, ground surveillance radar (GSR) teams, and NBC reconnaissance squads.²⁹

Air cavalry troops provide the mobility differential needed by reconnaissance elements. As early as 1944, it was recognized that air and ground elements complement each other.³⁰ Working in teams of two or more helicopters, air cavalry troops are capable of conducting reconnaissance

separately, or they may work in conjunction with the ground troops. The attack helicopters give the squadron an exceptionally long range antiarmor kill capability which can be massed quickly. These air troops provide agility and speed as well as depth to other division surveillance assets.³¹

Doctrine

Since the advent of Airland Battle and the evolution of Division 86, the US Army has been struggling to catch up with evolving doctrine. The J-series cavalry squadron is in the process of being fielded without a new field manual to assist in its training, consequently units must train utilizing the outdated FM 17-95, Cavalry, or employ their own tactics.

The 1977 version of FM 17-95 is based on the fighting cavalry concept. "Cavalry is a combat maneuver force of combined arms mounted in ground and/or aerial vehicles."³² It stresses emphatically that one of the major tasks of the squadron is to locate and engage the enemy. Throughout the manual a strong emphasis is placed on the use of combined arms at all levels, including tactical aircraft, in support of the cavalry to accomplish its missions.³³ With the firepower available to the H-series squadron, it is not surprising that the cavalry has been expected in most instances to be successful by destroying "sufficient enemy forces."

AirLand Battle doctrine is dynamic inasmuch as it continues to develop based on increased understanding within the army, coupled with additional study. The importance of reconnaissance and the significant role it plays in success of AirLand Battle, is becoming more evident in each manual that is published. Counterattack is the best example of offensive action in which reconnaissance is employed in the vital function of finding the enemy.

Seizing and maintaining the initiative by counterattack is a vital part of our new AirLand Battle doctrine. Clausewitz saw the counterattack as the "flashing sword of vengeance," while FM 100-5, Operations (Draft) stresses its importance in less eloquent terms. A counterattack is an attack conducted in the course of defensive combat to destroy enemy units in order to allow the defense to retain freedom of maneuver and regain the initiative.³⁴ In essence a counterattack is a form of offense seeking to throw the enemy off balance and is normally conducted within time constraints.

Once a counterattack is initiated, time is critical.³⁵ Success must be achieved before the enemy recovers his equilibrium and is able to respond. Surprise, confusion and disorganization must be prolonged as long as possible to allow the counterattack to quickly overcome or bypass enemy

strengths. The attack must move rapidly behind forward reconnaissance elements, seeking to destroy the coherence of the defense by orienting on enemy weaknesses identified by reconnaissance units.

Success will depend not only on speed, but on the ability of the attacker to maximize his combat potential. Of the complementary elements necessary in offensive operations, reconnaissance and security operations are most vital. Initially, in the close-in battle, reconnaissance elements are responsible for locating the enemy and finding gaps or flanks of which the maneuver battalions can take advantage by pushing through to get to the rear of enemy defenses.³⁶ Once a penetration is made and the counterattack develops, a movement to contact normally occurs.

During the movement to contact, retaining the initiative is imperative. As reconnaissance elements identify the best routes of advance, the "Schwerpunkt," or main effort, is changed to take advantage of fleeting moments of opportunity. Exploiting enemy confusion and mistakes requires flexibility and speed, and the attacker must react aggressively and swiftly to every opportunity that will allow rapid destruction of enemy defenses in depth.

FC 71-100, Armored and Mechanized Division and Brigade Operations, complements FM 100-5's (Draft) concept of the

offense. Divisions are to seize the initiative by taking advantage of enemy weaknesses, using speed to destroy enemy defenses throughout the depth of the battlefield. Successful offensive operations are characterized by avoiding enemy strength, focusing overwhelming combat power at critical areas and sustaining continuous momentum.³⁷ Security elements will operate far enough from the main body to allow the commander sufficient reaction time to shift the focus of his main effort to take advantage of reconnaissance.³⁸

A covering force precedes the main body. Its mission is to provide security as well as rapidly to develop the situation if contact is established. This may include the destruction of enemy resistance by the covering force.³⁹ Although in the field circular the cavalry squadron is not specifically given the covering force mission, it is pictured doing so.⁴⁰ Additionally the field circular states that the squadron is best suited for flank and rear guard operations, although these missions are not applicable to the J-series divisional cavalry squadron.⁴¹

Soviet Reconnaissance Battalion

There has been some concern as to the possibility of the divisional cavalry squadron confronting a Soviet reconnaissance battalion in combat, especially since the Soviet battalion has organic tanks.⁴² It is appropriate here

to address the organization and employment of the Soviet reconnaissance battalion. The Soviet counterpart of the US heavy division, the tank and motorized rifle division, possesses a reconnaissance battalion. The primary mission of this unit is reconnaissance. Its elements are not expected to fight, but to penetrate and report information. However, following close behind and supporting these elements are combat reconnaissance patrols whose mission is to fight.⁴³

As the reconnaissance battalion moves forward, it seeks to avoid combat while penetrating enemy positions. Although it is anticipated the battalion will seldom become engaged in combat, it does have sufficient flexibility and firepower to fight for information if necessary.⁴⁴

Organized with a headquarters and service company, two BMP companies, one scout car and one radio/radar reconnaissance company, the battalion has fifteen BMP's (tracked armored personnel vehicle), twelve BRDM's (wheeled vehicle) and six tanks.⁴⁵ These units are usually augmented with engineer and chemical elements to conduct the full spectrum of reconnaissance. Upon contact, reconnaissance subunits will attempt to use feints and flanking maneuvers to determine strength, composition and locations of enemy units.⁴⁶ Since reconnaissance subunits seek information without engagement, elements will do everything to remain unobserved and retain their ability to maneuver. Operating in groups of one to three vehicles, subunits are trained to survive and

report. Once contact is gained, reconnaissance units either seek routes to the enemy rear, or await the arrival of combat forces that will force a penetration and allow the reconnaissance elements to proceed.⁴⁷

The Soviet reconnaissance battalion, despite its organic tanks, is not expected to fight for information. It relies on small, well trained elements to infiltrate enemy defenses to gain information. This concept is supported by combat elements closely following the battalion to assist in the event significant fighting develops. The burden of combat rests on designated maneuver elements, not the reconnaissance battalion.

This is not to suggest that the US Army should mimic Soviet organization and tactics, but to demonstrate that light reconnaissance battalions using stealth is a viable option when the unit is properly used and supported. US Army doctrine must be clear and concise on the use of cavalry and stealth tactics must be practiced to be successful.

SECTION III

ANALYSIS

Doctrine

The US Army has a significant doctrinal void in the use of the divisional cavalry squadron conducting reconnaissance. FM 100-5 (Draft) alludes to the importance of reconnaissance and its relationship to maneuver, but fails to link the two together and stress the interoperability necessary for maneuver.

The key to success of the tactical offense lies in speed and mobility focused at weak points in the enemy defense. On a battlefield of the type described in FM 100-5 (Draft) and envisioned in the new operational concept, these weak points will fluctuate over time. Fluid operations will negate a significant portion of our prebattle intelligence, consequently only reconnaissance assets capable of capturing a near realtime snapshot of the battlefield will enable the commander to adjust his plan to fit radically altered situations.

FM 100-5 (Draft) addresses this eventuality by stressing

that attacks must follow successful probes in gaps identified by reconnaissance elements, and avoid enemy strengths. National Training Center experience has shown that light reconnaissance elements are capable of identifying gaps in enemy defenses that can be exploited by highly mobile combat battalions. By shifting the main effort through these gaps, the attacker will be able to avoid heavy fighting, thus conserving his strength for the decisive battle that will surely follow later. Should the attacker fail to adjust his plan to take advantage of opportunities identified by the cavalry squadron, the result may well be battle at a time and place of the enemy's choosing.

Only by taking advantage of enemy vulnerabilities will the attacker be able to maneuver. The only alternative to striking where the enemy least expects is a battle of attrition, and this is not only contrary to AirLand Battle doctrine, but a luxury the US Army can ill afford. Maneuver is necessary in all offensive operations but is especially mandatory in the counterattack. Reconnaissance is the vital element needed by the commander around which he maneuvers his combat units. It is the key that unlocks maneuver.

Counterattacks like all offensive operations should be planned using the most current intelligence available. However, it is important to remember that when a division level counterattack is planned as part of a corps operation,

it is planned at least forty-eight hours in advance. Intelligence is perishable and over time becomes outdated, consequently plans must be flexible enough to respond to new information. There comes a time, however, when plans can no longer be modified to accommodate new information, and this is when the cavalry squadron becomes important. When the attack commences, it is incumbent upon the cavalry to substantiate intelligence and determine the new situation. As this information becomes available, the commander and his plan should be flexible enough to shift the weight of the attack and adjust to opportunities identified by the cavalry.

The latest division tactical doctrine, Field Circular 71-100, does not adequately address the role of reconnaissance and the cavalry squadron in offensive operations. Supporting FM 100-5 (Draft), the circular addresses the AirLand Battle concept in broad terms. The imperatives of AirLand Battle--agility, initiative, depth and synchronization--are discussed in such a manner as to leave little doubt as to the intent. The disconnect is in the execution of the doctrine and the role played by the cavalry squadron. The cavalry is now an integral part of the acquisition and surveillance process within the division. Its primary mission of reconnaissance is not emphasized and this is a major shortfall.

The circular fails to acknowledge the new operational

concept of the squadron, and does not link the importance of reconnaissance to the ability to maneuver. Reconnaissance and successful maneuver are fundamentally interrelated. Although the importance of reconnaissance is accepted in FC 71-100, the discussion on how to use the cavalry squadron to accomplish this is weak. Reconnaissance elements must probe enemy defenses and ascertain where the least defended areas are. This information then must be transmitted to the commander so he can focus his strength against this weakness. Obviously in most cases this dictates changes to an established plan. However, without this mechanism and the ability to adjust, the attacker is doomed to a set battle where maneuver battalions will traverse predetermined routes without taking advantage of opportunities presented. Without following reconnaissance elements, combat units will not maneuver, but will blunder about the battlefield until contact is made.

Reconnaissance is an operation undertaken to obtain information by some method about the enemy.** However, this definition does not adequately address the full meaning necessary to gain an appreciation of the relationship between reconnaissance and maneuver. It is important to understand that reconnaissance is a means to an end, and by itself it is of little value. The end is maneuver, and successful maneuver is dependent upon adequate reconnaissance. As the cavalry squadron precedes the main body in a counterattack,

the scouts should always seek the path of least resistance, like water running down hill.

Scout helicopters should maneuver forward of ground reconnaissance elements and identify enemy units and obstacles. If speed is important, the ground elements should avoid the enemy and seek ways around the defenses. However, if the intent is to attack known enemy units, then ground reconnaissance should develop the situation by identifying weaknesses in enemy defenses and the best avenues of approach for an attack. In either case, this information must be relayed quickly to the combat units that are following the squadron. Based on this information and his mission, the commander will be able to adjust his scheme of maneuver to bypass enemy forces, or to concentrate combat power at the decisive location.

The close relationship between reconnaissance and maneuver is extremely important. By utilizing information obtained by reconnaissance, the commander can retain the initiative. He dictates when, where, and with what forces he will give battle, not the enemy.

FC 71-100 has not acknowledged the changes to the cavalry squadron and its inability to accomplish some missions given in the circular. No longer is the squadron capable of conducting flank and rear guard missions without

augmentation. Even if augmented to accomplish these missions, this may not be the most judicious use of a precious asset.

In counterattack operations, a covering force performs a vital function by providing security for the main body. Occasionally this element will be required to attack and destroy enemy concentrations, thus allowing the main body to continue movement without deploying. This necessarily implies the combat related function of closing with and destroying the enemy. Without explicitly stating that the cavalry squadron will perform the covering force mission, as noted earlier the squadron is depicted in the field circular conducting this mission.

As has already been shown, the J-series cavalry squadron is neither organized, nor equipped to close with and destroy enemy forces. This concept is counter to the operational concept of the new squadron. It is a light reconnaissance battalion that is to use stealth to accomplish its mission. Any reference that may indicate a "fighting cavalry" concept runs counter to how this squadron is to be employed.

FC 71-100 does not emphasize that the primary mission of the J-series cavalry squadron is reconnaissance. It is accepted that the circular addresses both H- and J-series cavalry squadrons, and the rationale for this is understood.

However, this clearly demonstrates the lack of emphasis on reconnaissance, even with the H-series squadron.

The Armor Center is presently working on a new field manual addressing the J-series cavalry squadron. The content is subject to many changes before its publication and it is beyond the scope of this paper to speculate on its final form. What is important is that the operational and organizational concept for the squadron was approved in October 1980, and the squadron is now being fielded without approved doctrine. The danger is that commanders may tend to employ the new squadron in the same way as the old, although the missions and organization have radically changed.

Firepower

Lack of tanks within the J-series squadron has been a point of contention since the squadron was approved. In essence the question has revolved around the conceptual use of the cavalry squadron. Many critics contend that cavalry needs tanks for protection, fighting for information, and "developing the situation."⁴⁹ Developing the situation means the cavalry must locate enemy units, determine their disposition and strength, and identify routes that will allow reconnaissance elements and combat units to continue their advance. Upon contact, reconnaissance elements are to deploy, maintain observation and report the situation.⁵⁰ In

the past "developing the situation" was synonymous with fighting for information, hence the concept of the fighting cavalry. This traditional view is based primarily on World War II combat experience. However, it has already been shown that reconnaissance was a small percentage of cavalry missions. To determine if the cavalry is capable of developing the situation without fighting, we must look beyond our combat experience to find an answer.

The National Training Center is not a panacea for identifying all of the US Army doctrinal issues, but it does provide some helpful insights. As already indicated, light elements are capable of performing reconnaissance without fighting for information. This would seem to substantiate the thoughts on cavalry established in the operational concepts for Division 86, and that tanks are not necessary within the cavalry squadron. Other weapon systems within the squadron are available for killing tanks should the need arise.

TOW antiarmor missiles mounted on M3's and attack helicopters provide a long range antiarmor kill capability for the squadron. Although this weapon system fails to achieve close in kill capability equal to tanks, the standoff range provides the cavalry the capability to disengage from strong forces from a distance and preserve their freedom of action. Additionally the 25mm cannon is capable of engaging

and destroying all enemy armored vehicles except the tank.

As already shown, Soviet reconnaissance battalions possess only six tanks, while the remainder of the battalion is organized around BMP's, or soft skinned vehicles. When facing this unit, the J-series cavalry squadron has the capability of effectively engaging it without being outgunned. Should this occur, it is important to remember that Soviet tactics call for its reconnaissance battalions to avoid combat and retain the ability to maneuver and provide information. This would tend to indicate their tanks will not be used to fight for information, but to assist in disengagement.

Firepower should not be viewed in isolation. Weapon systems mounted on vehicles with increased mobility give the capability of enhancing that firepower. Attack helicopters with TOW's are highly flexible weapon systems when used in conjunction with ground troops. By massing attack helicopters, the commander can rapidly change the ratio of forces in any given area. This should not be viewed as another method of fighting for information. The idea is that should the need arise to gather combat power to extract the squadron from a situation to allow itself continued freedom of action, the capability is there. No other battalion level unit can match this mobility.

Mobility

Historically, one of the greatest attributes the cavalry has possessed is its mobility differential over enemy forces. Although Soviet forces are totally mechanized or motorized, the J-series squadron still retains its mobility differential by virtue of the scout and attack helicopters.

The air troops are capable of conducting reconnaissance over a wide area at rates much faster than ground vehicles. This is a significant advantage on a nonlinear battlefield where opportunities are fleeting. By carefully maneuvering air troops in tandem with ground troops, the squadron is quickly able to identify vulnerable areas that combat units should be massed against.

The tactical mobility of the M3 is well known and need not be expounded here. What is critical for the cavalry squadron is the difference in mobility between the M3 cavalry fighting vehicle and the M113 armored personnel carrier associated with the NBC and sensor platoons. Operational concepts envision the integration of scouts with these platoons as the situation dictates. As desirable as this may be sometimes, it must be remembered that the M113 is not capable of matching the mobility of the M3 when speed is essential. Integration does not necessarily mean working side by side, but can also mean working in complementary

roles. For these elements to function as one entity, the speed of the M3 will have to be reduced, and consequently the tactical mobility advantages of the M3 will be forfeit.

Command and Control

C² is a two sided issue within the new squadron. Operational tests concluded the squadron has the ability to provide internal C² sufficient to conduct its reconnaissance mission.²⁴ The addition of the motorcycle platoon provides a significant capability to operate within a degraded C² environment.

Employment of this platoon is not limited to any present doctrine. If employed to assist in internal C² for the squadron, it obviously cannot be used to conduct reconnaissance or economy of force measures in other areas. When faced with degraded electronic communications, this element allows the squadron to maintain control to a limited degree. As shown earlier, tests have proven the cross country mobility of the motorcycle in a combat environment. Judicious use of this asset will allow the squadron commander to maintain contact between his ground cavalry troops when electronic communications is not possible. By virtue of moving about the battlefield, the motorcycle platoon provides information about a confusing, nonlinear situation.

When viewed from division level, the motorcycle platoon adds a dimension not previously available. As reconnaissance elements move forward and locate routes, the motorcycle platoon can be used as guides to facilitate the movement of the brigades without lengthy radio transmissions. Until the J-series cavalry squadron evolved, this capability was not present unless the commander used other assets such as the military police. This added feature is significant when one realizes the difficulty and danger in continuous radio transmissions.

Inherent within the cavalry squadron, the helicopters also add a significant dimension to command and control. The speed and flexibility of the helicopter is capable of lending tremendous support in fast moving situations by transmitting orders, locating units and facilitating command and control. The possibilities are almost limitless for use of the helicopter as a C² asset. The danger in using the cavalry squadron's helicopters in the C² role is that they will then not be available for reconnaissance. Uppermost in the commander's mind should be that all assets within the squadron should be used primarily for reconnaissance.

Target Acquisition

By design, the J-series cavalry squadron is primarily an information acquisition element. Its strength lies in the

variety and complementarity of acquisition assets available. The squadron possesses sufficient speed and reconnaissance assets to allow it swiftly to change its orientation based on enemy responses. The majority of acquisition systems are designed to operate within a "sneak and peek" environment. Remote sensors collect realtime combat information, intelligence and target acquisition data. Sensors are emplaced in areas not directly under scout surveillance, but in areas of anticipated enemy activity. When sensors are triggered by enemy presence, other assets can be sent to the designated area to gain direct observation.

Ground surveillance radar is an electronic security risk because of the signature emitted. When employed in conjunction with other reconnaissance assets, it must be used sparingly and under the tightest control to insure it is not targeted. As with remotely emplaced and monitored sensors, its primary use is as an economy of force that can cue direct observation by ground or air troops.

As alluded to before, the motorcycle platoon is susceptible to direct fire. Consequently, if employed in the reconnaissance role, it is best used in areas where contact is not likely. The combinations that can be conjured using sensors, radars, motorcycles, and NBC assets is limited only to one's imagination.

Because of the time required to decontaminate and the significant number of casualties possible from crossing contaminated areas, the mission of the NBC platoon is readily apparent. This element is capable of identifying contaminated areas well in advance of the main body, thus allowing time to shift forces to avoid this threat. Until the addition of the NBC platoon, little warning could be given to maneuver units concerning contaminated areas. These units had to move around the battlefield until they sustained casualties from contamination, then protective measures could be initiated. The NBC platoon provides the commander time to adjust his plan if he desires. In a highly mobile counterattack where time will always be of prime importance, continuous movement and conservation of combat strength will be paramount. The NBC platoon adds a reconnaissance capability of no mean value.

Training

The advent of the J-series squadron requires a significant change in attitude throughout the Army, but most of all within the cavalry squadrons themselves. The divisional cavalry must be a team of experts superbly trained in conducting reconnaissance by stealth. The mindset of fighting for information as a norm must be abolished. "Sneak and peek" techniques, when correctly applied as at the National Training Center, provide a continuous stream of

information on which the commander can base his maneuver. When the cavalry concentrates on fighting, its main effort cannot be toward collecting information, but must be on survival. Only training can overcome the "traditional" attitude of using the cavalry as a maneuver battalion.

SECTION IV

CONCLUSIONS

The US Army has never adequately employed the modern divisional mechanized cavalry squadron in a reconnaissance role. Experience in World War II proved that the cavalry squadron was used primarily for missions other than reconnaissance. This carried over in the organization and missions of the postwar squadron. What evolved was a combined arms maneuver battalion designed for fighting the enemy instead of finding the enemy. Although the reconnaissance mission was still basic to the cavalry, its emphasis was on combat operations.

The J-series cavalry squadron is capable of adequately supporting the heavy division in reconnaissance missions in counterattack operations if employed as operationally envisioned and organized. This squadron is no longer a combat force as "traditionally" viewed and commanders must realize its limitations. Using the squadron to fight for information is not desirable, but should the requirement exist, the squadron must be augmented with tanks.

If the fluid, nonlinear battlefield as envisioned in the

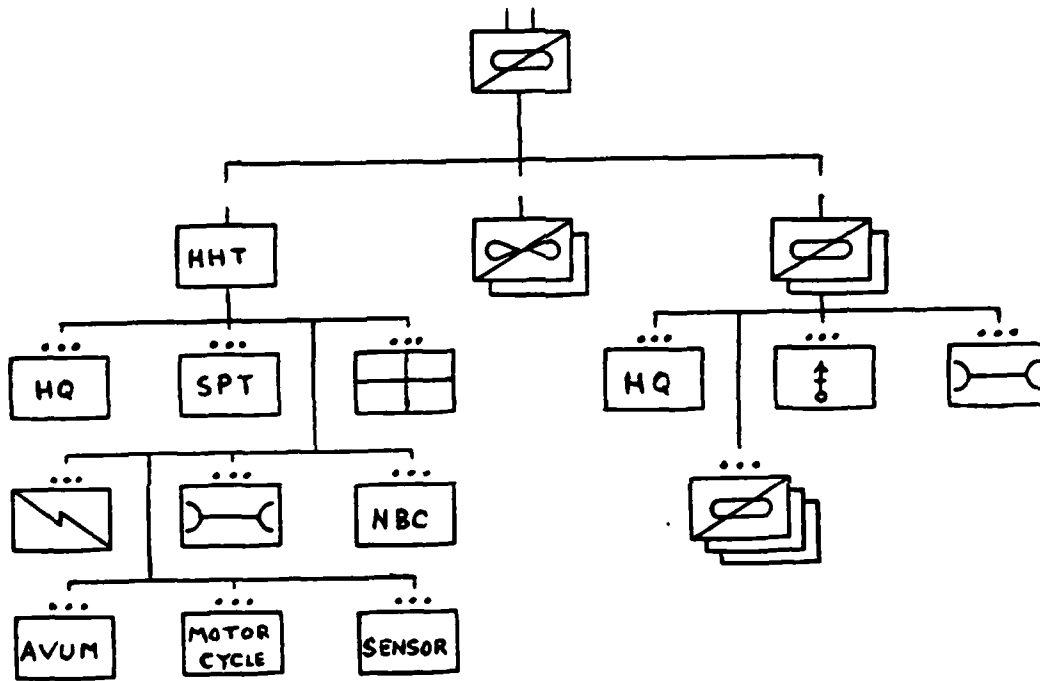
operational concept of Division 86 and FM 100-5 (Draft) is correct, the divisional cavalry squadron does not need organic tanks to accomplish its reconnaissance mission in counterattack operations. The squadron must use stealth techniques to avoid decisive engagement, and rely on its speed and flexibility to accomplish reconnaissance. As a norm, the cavalry squadron should not be expected to fight for information because it lacks combat power, and its focus must be on avoiding combat while concentrating on continuous movement.

The new cavalry squadron is a "combined acquisition unit" made up of complementary assets designed to function as a team. It depends on stealth and freedom of maneuver to accomplish its reconnaissance mission. This can be accomplished without tanks if the squadron is properly trained.

The US Army must learn to use reconnaissance as a means to identify and exploit enemy vulnerabilities. By shifting combat power in response to opportunities identified by the cavalry squadron, maneuver warfare can be achieved. LTG Hass Manteuffel, a Wehrmacht commander in World War II once observed, "Only the immediate aggressive exploitation of reconnaissance can lead to victory."*

APPENDIX

Division 86 Cavalry Squadron



NOTES:

1. Air Cavalry Troops have six scout and four attack helicopters.
2. Ground Cavalry Troops have six M3's (CFV) in each scout platoon and three 81mm mortars in each mortar platoon.

ENDNOTES

1. Cavalry School, United States Army. Employment of Mechanized Cavalry, p. 1.
2. Rozelle, Joseph. "The Armored and Mechanized Division Armored Cavalry Squadron," p. 19.
3. Ibid., p. 24.
4. Baker, Ronald. "What In The Hell Did They Do To The Cav?," pp. 3-6.
5. Ibid., p. 7.
6. Ibid., p. 5.
7. Ibid., p. 7
8. Ibid., p. 8.
9. United States Army Command and General Staff College. Armored and Mechanized Division and Brigade Operations, Field Circular 71-100, p. A-11.
10. United States Army Training and Doctrine Command. A History of Army 86, Volume I, p. 1-4.
11. Ibid., p.17.
12. Force Design Directorate, Combined Arms Combat Developments Activity. "Division 86 Final Report," p. 1-4.
13. United States Army Armor Center and Fort Knox. "Operational and Organizational Concept: Division and Corps 86 Cavalry," p. 1-1.
14. United States Army Combined Arms Combat Developments Activity. "Division Restructuring Study," p. 30.
15. United States Army Training and Doctrine Command. A History of Army 86, Volume I, p. 77.
16. Ibid., p. 77.
17. Force Design Directorate, CACDA. "Division 86 Final Report," p. 2-23.
18. United States Army Training and Doctrine Command. A History of Army 86, Volume I, pp. 77-89.
19. Ibid., p. 117-120.

20. United States Army Combined Arms Center. "Independent Evaluation Report," p. xiii.
21. Humphrey, Vernon. "Winning at the NTC: Reconnaissance," pp. 35-37.
22. United States Army Training and Doctrine Command. A History of Army 86, p. 7.
23. Ibid., p. 9.
24. United States Army Armor Center and Fort Knox. "Operational and Organizational Concept." p. 1-1.
25. Ibid., p. 3-1.
26. Ibid., p. 3-3.
27. Ibid., p. 3-4.
28. Ibid., p. 3-4.
29. Ibid., p. 3-3.
30. Cavalry School, United States Army. Employment of Mechanized Cavalry, p. 4.
31. United States Army Armor Center and Fort Knox. "Operational and Organizational Concept: Division and Corps 86 Cavalry," p. 3-3.
32. Headquarters Department of the Army. Cavalry, FM 17-95, p. i.
33. Ibid., p. i.
34. Headquarters Department of the Army. Operational Terms and Graphics, FM 101-5-1, p. 1-71.
35. United States Army Command and General Staff College. Operations (Draft), FM 100-5, p. 7-5.
36. Ibid., pp. 7-5--7-8.
37. United States Army Command and General Staff College. Armored and Mechanized Division and Brigade Operations, FC 71-100, p. 5-2.
38. Ibid., p. 5-25.
39. Ibid., p. 5-28.
40. Ibid., p. 5-26.

41. Ibid., p. 5-29.
42. Kindsvatter, Peter. "The Division 86 Cavalry Squadron," pp. 46-47
43. Mitchell, Rodney. "Reconnaissance Revisited," p. 26.
44. Headquarters Department of the Army, The Soviet Army: Operations and Tactics, FM 100-2-1, p. 7-2.
45. Headquarters Department of the Army, The Soviet Army: Troops, Organization and Equipment, FM 100-2-3, pp. 4-67--4-69.
46. Headquarters Department of the Army, The Soviet Army: Operations and Tactics, FM 100-2-1, p. 7-2.
47. Crouch, William. "Soviet Reconnaissance Operations," pp. 28-29.
48. Headquarters Department of the Army, Operational Terms and Graphics, FM 100-5-1, p. 1-96.
49. Kindsvatter, Peter. "The Division 86 Cavalry Squadron," p. 46.
50. United States Army Armor Center and Fort Knox. "Operational and Organizational Concept: Division and Corps 86 Cavalry," p. 3-7.
51. United States Army Combined Arms Center. "Independent Evaluation Report," pp. vi-xiii.
52. Manteuffel, Hass von. "Strength, Organization, Armament, and Equipment of Troops in Battle," p. 13.

BIBLIOGRAPHY

BOOKS

- Davies, W. J. K. German Army Handbook 1939-1940. New York, N.Y.: ARCO Publishing, Inc., 1973.
- Miksche, Ferdinand Otto. Attack: A Study of Blitzkrieg Tactics. New York, N.Y.: Random House, 1942. (Reprinted by the US Army War College, Carlisle Barracks, Pennsylvania, 1 December 1983.)
- Glantz, David M. August Storm: Soviet Tactical and Operational Combat in Manchuria 1945. Leavenworth Paper No. 8, Combat Studies Institute, US Army Command and General Staff College, Fort Leavenworth, Kansas, June 1983.
- Romjue, John L. A History of Army 86. Volume I and II. Volume I-Division 86: The Development of the Heavy Division. Volume II-The Development of the Light Division, the Corps, and Echelons Above Corps. Historical Office, United States Training and Doctrine Command, Fort Monroe, Virginia, June 1982.
- Sasso, Claude R. Soviet Night Operations in World War II. Leavenworth Paper No. 6, Combat Studies Institute, US Army Command and General Staff College, Fort Leavenworth Kansas, December 1982.

FIELD MANUALS AND CIRCULARS

- FC 71-100, Armored and Mechanized Division and Brigade Operations (Coordinating Draft). US Army Command and General Staff College, Fort Leavenworth, Kansas, 7 March 1983.
- FM 17-85, Cavalry. Headquarters, Department of the Army, Washington, D.C., 1 July 1977.
- FM 17-100, Divisional Cavalry Squadron (Draft). United States Army Armor School, Fort Knox, Kentucky, undated.
- FM 71-100, Armored and Mechanized Division Operations. Headquarters, Department of the Army, Washington, D.C., 30 March 1979.
- FM 100-2-1, The Soviet Army: Operations and Tactics. Headquarters, Department of the Army, Washington, D.C., 16 July 1984.

FM 100-2-3, The Soviet Army: Troops, Organization and Equipment. Headquarters, Department of the Army, Washington D.C., 16 July 1984.

FM 100-5, Operations (Draft). US Army Command and General Staff College, Fort Leavenworth, Kansas, 27 June 1985.

FM 101-5-1, Operational Terms and Graphics. Headquarters, Department of the Army, Washington, D.C., 31 March 1980.

THESIS

Bonin, John A. "Combat Copter Cavalry: A Study in Conceptual Confusion and Inter-Service Misunderstanding In the Exploitation of Armed Helicopters As Cavalry In the U.S. Army, 1950-1965." Master Thesis, Department of History, Duke University, 1982.

Rozelle, Joseph. "The Armored and Mechanized Division Armored Cavalry Squadron." MMAS, US Army Command and General Staff College, Fort Leavenworth, Kansas, 16 May 1977.

ARTICLES AND PERIODICALS

Ash, Sherwood E. "Counterattack Planning." Armor. Nov-Dec 1983, pp. 23-25.

Barbara, James C. and Brown, Robert F. "Deep Thrust On the Extended Battlefield." Military Review. Oct 1982, pp. 21-32.

Baur, Marc C. "The Deep Raid - AirLand Battle's Power Punch." Armor. Sep-Oct 1982, pp. 38-41.

Broussard, Stephen J. "Mounting the Deep Attack." Armor. Mar-Apr 1985, pp. 34-35.

Bush, Robert P. "The Division Commander's Eyes and Ears." Armor. Sep-Oct 1983, pp. 13-17.

Crouch, William W. "Soviet Reconnaissance Operations." Armor. Nov-Dec 1981, pp. 28-29.

Devries, Paul T. "Maneuver and the Operational Level of War." Military Review. Feb 1983, pp. 13-34.

Dials, Thomas A. "Economy of Force - The Cavalry Connection." Armor. Jul-Aug 1983, pp. 42-46.

Gredasov, F. "Reconnaissance in Modern Battle." Soviet Military Review. Jun 1984, pp. 14-17. use and

Holder, L. D. "Maneuver in the Deep Battle." Military Re-

- view. May 1982, pp. 54-61.
- Humphrey, Vernon W. "Winning at the NTC: Reconnaissance." Infantry. Jan-Feb 1984, pp. 35-37.
- Kindsvatter, Peter S. "The Division 86 Cavalry Squadron." Armor. Sep-Oct 1985, pp. 44-47.
- Korotchenko, I. "Reconnaissance." Soviet Military Review. Jun 1983, pp. 44-45.
- Lancaster, Michael S. "The Armor Force in the AirLand Battle." Armor. Jan-Feb 1982, pp. 26-32.
- Lancaster, Michael S. and Clemens, Jon. "AirLand Battle Defeat Mechanisms." Armor. Jan-Feb 1983, pp. 35-37.
- Ledfors, Frederick D. and O'Connor, Patrick. "Motorcycle Scouts." Infantry. Sep-Oct 1983, pp. 38-39.
- McWilliams, Harry W. and Donovan, Timothy B. "An Armored Task Force Executes A Hasty Attack." Armor. Jan-Feb 1982, pp. 13-15.
- Mitchell, Rodney B. "Reconnaissance Revisited." Armor. Nov-Dec 1981, pp. 25-27.
- Richey, Stephen W. "The Philosophical Basis of the AirLand Battle." Military Review. May 1984, pp. 48-53.
- Rosenberg, Ralph G. and Lancaster, Michael S. "Command and Control for the Division 86 Squadron." Military Review. Nov 1981, pp. 49-56.
- Starry, Donn A. "Extending the Battlefield." Military Review. Mar 1981, pp. 31-50.
- Thomas, Charles W. "Combat Intelligence for the Deep Attack." Military Review. Apr 1983, pp. 42-51.
- White, I. D. "Reconnaissance Battalion, Armored Division." Armor. May-Jun 1985, pp. 24-27.
- Woodmansee, John W. "Blitzkrieg and the AirLand Battle." Military Review. Aug 1984, pp. 21-39.

DOCUMENTS

- Blumentritt, Guenthor. "Reconnaissance." Historical Division, Headquarters, US Army Europe, Foreign Military Studies Branch, undated.
- Gonten, Jimmie L. von. "Independent Evaluation Report for the Division Cavalry Squadron of the Cavalry Brigade Air At-

tack." FTDE (Volume II, Section 7) TRADOC ACN 67413, August 1982.

Kesserling, Albert. "Small Unit Tactics - Manual for Command and Combat Employment of Smaller Units." Headquarters, US Army Europe, Historical Division, undated.

Manteuffel, Hass von. "Strength, Organization, Armament and Equipment of Troops in Battle." Department of the Army Office of the Chief of Military History, Washington, D. C., 1 Sep 1946.

Manteuffel, Hass von. "Fast, Mobile, and Armored Troops." Historical Division, US Army Europe, 24 Nov 1945.

Montgomery, Bernard L. "Armored Division in Battle." 21st Army Group, British Army, Dec 1944.

No author. "Small Unit Tactics." Historical Division, European Command, Foreign Military Studies, Feb 1952.

REPORTS

Division 86 Final Report. Force Design Directorate, CACDA, Fort Leavenworth, Oct 1981.

Independent Evaluation Report - Brigade Phase. Volume III, US Army Combine Arms Center, DRE, DIVWAG Wargaming and Analysis Report, Fort Leavenworth, Kansas, Dec 1979.

UNPUBLISHED ARTICLES

Baker, Ronald L. "What in the Hell Did They Do To The Cav?" US Army War College, Carlisle Barracks, PA., 28 Apr 1983.

Langley, Larry L. "Use of Motorbikes as Reconnaissance Vehicles." Student research paper for Independent Research Requirement at the US Army Command and General Staff College, Fort Leavenworth, Kansas, Mar 1975.

Lee, Wilbur L. "Motorbikes as Tactical Reconnaissance Vehicles." Student research paper for Independent Research Requirement at the US Army Command and General Staff College, Fort Leavenworth, Kansas, Jan 1973.

ADDITIONAL SOURCES

ST (Student Text) 101-1, Organizational and Tactical Reference Data for the Army in the Field. US Army Command and General Staff College, Fort Leavenworth, Kansas, Jun 1985.

TM-E 30-451, Handbook on German Military Forces. United States War Department, United States Government Printing

Office, Washington, D.C., 15 March 1945.

"Operational and Organization Concept: Division and Corps Cavalry." United States Army Armor Center and Fort Knox, Fort Knox, Kentucky, October 1980.

Pamphlet, "Employment of Mechanized Cavalry." Cavalry School, US Army, 1944.

"The Soviet Tank Division." Defense Intelligence Agency (DIA), DDB-1120-19-82, Sep 1982.

END

FILMED

DTIC

6-86