

TACTICAL EXPLOITATION: NEGLECTED IMPERATIVE OF MODERN COMBAT

**A MONOGRAPH
BY
Major James L. Boling
Armor**



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

First Term AY 96-97

Approved for Public Release Distribution is Unlimited

19970505 176

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE	3. REPORT TYPE AND DATES COVERED MONOGRAPH	
4. TITLE AND SUBTITLE TACTICAL EXPLOITATION : NEGLECTED IMPELATIVE OF MODERN COMBAT			5. FUNDING NUMBERS	
6. AUTHOR(S) MAJ (P) JAMES L. BOLING, USA MA, UNIVERSITY OF LOUISVILLE, 1990				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) School of Advanced Military Studies Command and General Staff College Fort Leavenworth, Kansas 66027			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Command and General Staff College Fort Leavenworth, Kansas 66027			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE DISTRIBUTION UNLIMITED.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) ATTACHED				
14. SUBJECT TERMS EXPLOITATION, TACTICAL, DOCTRINE, THEORY, HISTORY			15. NUMBER OF PAGES 57	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED	

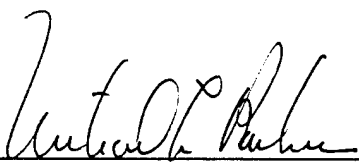
SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major James J. Boling

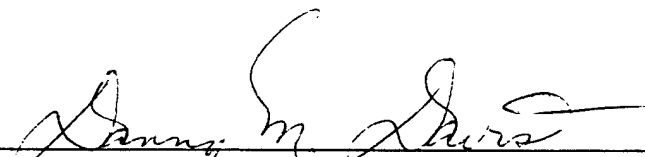
Title of Monograph: *Tactical Exploitation: Neglected Imperative
of Modern Combat*

Approved by:



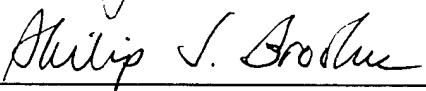
LTC Michael L. Parker, MMAS

Monograph Director



COL Danny M. Davis, MA, MMAS

Director, School of
Advanced Military
Studies



Philip J. Brookes, Ph.D.

Director, Graduate
Degree Program

Accepted this 20th Day of December 1996

Tactical Exploitation:
Neglected Imperative of Modern Combat

by

Major James L. Boling
Armor

School of Advanced Military Studies
US Army Command and General Staff College
Fort Leavenworth, Kansas

December 13th, 1996

Approved for public release, distribution is unlimited

ABSTRACT

TACTICAL EXPLOITATION: NEGLECTED IMPERATIVE OF MODERN COMBAT
by Major James L. Boling, Armor, USA.

This monograph investigates the US Army's preparedness to execute tactical exploitation during conventional symmetrical offensive operations between heavy forces. Exploitation is a critical tactical operation. Successful offensive operations impart significant, but temporary, physical and psychological benefits to the attacker. Given the time to reconstitute or regenerate forces, the defender will likely recover and force his opponent into another costly and resource-intensive attack. However, when the victor promptly and properly exploits these benefits, he is able to maintain offensive pressure. Immediate, aggressive, and continuous tactical exploitation can keep the enemy off balance and create opportunities for the attacker's operational success.

This paper examines and evaluates the US Army's present preparedness for tactical exploitation and then compares it to future requirements. The paper addresses preparedness using the organizing framework of doctrine, organization, training, material, and leader development. Operations other than war, operations in an NBC environment, and organizations outside the heavy division are outside the scope of this paper.

This study begins with a survey of classic and contemporary military thought to establish the theoretical and practical foundations for exploitation. Next, it presents a comprehensive analysis of current US Army exploitation readiness. Third, the study examines the potential future tactical value of, and opportunity for, successful exploitation. Then the monograph assesses the impact of the difference between present capability and future requirements for exploitation. Finally, the paper provides conclusions and recommendations based on material presented earlier.

TABLE OF CONTENTS

FORWARD.....	1
INTRODUCTION.....	5
SECTION I: THEORETICAL AND PRACTICAL ROOTS.....	8
SECTION II: IS THE US ARMY PREPARED FOR EXPLOITATION.....	14
Doctrinal Assessment	15
Organizational Assessment	17
Training Assessment	20
Material Assessment	23
Leadership Assessment	24
SECTION III: EXPLOITATION IN THE 21st CENTURY	29
FM 100-5 (Preliminary Draft)	30
TRADOC Pam 525-5	31
ST 71-100-2010	33
SECTION IV: BUILDING TO THE FUTURE	35
Doctrinal Recommendations	35
Organizational Recommendations	36
Training Recommendations	36
Material Recommendations	36
Leadership Recommendations	37
ENDNOTES	39
BIBLIOGRAPHY	53

FORWARD: MALAYAN PENINSULA, JANUARY 1942¹

Following a disastrous hard-fought engagement at Kampar against the Japanese 5th Infantry Division, the defending III British Corps was retreating south to occupy subsequent defensive positions after three weeks of nearly continuous combat. Thus far, the British campaign in Malaya had resulted in an uninterrupted series of costly and exhausting tactical defeats. The British defenses, focused on control of the two north-south avenues of approach into Singapore, had been consistently bypassed and enveloped by Japanese light infantry columns moving through the jungles or along primitive tracks through the rubber plantations. Casualties among junior leaders and losses of anti-tank and communications equipment were seriously degrading the fighting capability of the defenders.

The 11th Indian Division, reduced to two battered and ill-equipped brigades, was ordered into defensive positions 260 miles north of Singapore. The division's area consisted of little more than a narrow corridor of intermittent rubber plantations connected by a rough roadway bordered by heavy jungle. Brigadier Paris realized the importance of the roadway and attempted to counter Japanese enveloping tactics by deploying his two brigades in depth astride the only vehicle-capable road.² The leading brigade, 12th Brigade, began defensive preparations, but their efforts were handicapped by the Brigade's moral and physical exhaustion. Forced to work under cover of darkness because of Japanese air supremacy, little effective defensive work was actually

accomplished. However, engineers had succeeded in preparing the five bridges in the division's area for demolition. The second brigade, 28th Brigade, was resting in an area six miles south of the lead brigade, prepared to occupy nearby positions on order.³

On the afternoon of January 6th, the commander of the reinforced Japanese 42d Infantry Regiment, Colonel Ando, conducted a planning conference for the regiment's attack of the 11th Indian Division the following morning. Ando's concept was to begin the attack with a flanking infantry force followed the next day by a combined tank-infantry attack against the defenses along on the road. Major Shimada, commander of an attached tank company from 1st Tank Regiment, begged Ando to allow his company to lead a non-illuminated night attack with a tank-heavy combined arms force along the road. After a lengthy discussion the still skeptical Ando agreed to lead with Shimada's tank team supported by two infantry battalions conducting flanking attacks through the heavy jungle to the left and right of Shimada's tanks. Ando expected the tank attack to do nothing more than fix the British defenders at the road.⁴

In the pre-dawn moonlight of January 7th, 2d Lieutenant Watanabe's tank platoon, preceded by infantry sappers, assaulted the first British positions of 12th Brigade. Firing constantly, Watanabe's tanks rolled through two wire obstacles and heavy artillery fire before shooting their way through the defending infantry companies. Shimada's tanks continued forward and began engaging the artillery positions 200 yards further south as the supporting Japanese infantry overran the remaining British defenses.

Barely one-half hour had passed and already the first defending battalion was fragmented and destroyed with insignificant losses to Shimada's forces. Shimada allowed the momentum of the attack to carry his unit forward to the next battalion's defenses where it was halted by antitank mines forward of the infantry positions. Soon a fierce fight with dismounted antitank teams developed. After a series of shallow flanking attacks along unguarded primitive bypass trails, Watanabe's tanks once again fought through the British defenders.

Shimada had reached a crucial decision point. Many of the attached infantry and engineers were still fighting behind him along the road. The tanks were becoming separated from the two supporting infantry battalions of the 42d Regiment also still engaged in mopping up enemy infantry to the north or moving through light resistance in the jungles and rubber forests east and west of the road. He had already won an astonishingly successful tactical victory by destroying two British battalions, penetrating three miles into the British defenses, and capturing two key bridges.

Should he stop? In view of his accomplishments, he could hardly have been criticized for halting to consolidate his gains and clear the road to his rear. On the other hand, the ill-prepared British defense was apparently crumbling, the vital Slim River bridge lay only seven miles to the south, and his company still had about 15 operational tanks. Rapidly weighing these two alternatives, he accepted the potential risks of tactical isolation and decided to continue. Shimada contacted Ando and then ordered his tanks still deeper into the British defenses.⁵

Unknown to Shimada as he made his decision to exploit his considerable success was that his tank company had just defeated the last organized and prepared defensive position between the 42d Regiment and the Slim River bridge. At 0630, with Watanabe leading, Shimada's armored unit roared south into the last defending battalion of the 12th Brigade. The remaining British battalion was unaware of the Japanese success due to poor communications and so was caught completely by surprise.

Within an hour the entire area was a chaotic churning mass of small vicious infantry fights punctuated by tanks firing indiscriminately as they roamed back and forth through the infantrymen of both sides. Even as the last of the defenders were being annihilated, Shimada's tanks, now separating themselves completely from their infantry and engineer support, again pushed off resolutely to the south toward the bridge now only five miles away. Behind them lay the shattered remnants of half of the 11th Indian Division.

Word of the magnitude of 12th Brigade's disaster was reaching Brigadier Paris just as Watanabe's platoon gained contact with the 12th Brigade's last defenses.⁶ He immediately alerted the 28th Brigade to occupy its defensive positions along the Slim River, but the orders came too late. As the Japanese armored column moved south after an engagement with the reserve unit of 12th Brigade, they encountered elements of the 28th Brigade still moving into position. The tanks crashed through and scattered the unprepared infantry formations of 28th Brigade and raced to the Slim River bridge seizing it intact.

The bold and vigorous exploitation by a single reinforced Japanese tank company had catapulted a minor tactical success into a stunning victory of operational magnitude. It was likewise a disaster for the III British Corps. In five hours Major Shimada's tank team had penetrated over 11 miles into the 11th Indian Division's area, capturing five vital bridges and virtually destroying the division as a combat formation. The destruction of the 11th Indian Division sealed the fate of III British Corps and Singapore. The survivors of the two brigades who defended the Slim River totalled no more than 1,200.⁷

INTRODUCTION

Writing in first quarter of the 19th century, military theorist Major-General Carl von Clausewitz observed, "Unless a commander is bold and enterprising, no great results can be expected from even the most brilliant victory..."⁸ At first glance Clausewitz's concept appears counterintuitive. He indicates that great results are not synonymous with brilliant victories and that only bold commanders can reap the real fruits of an engagement somewhere beyond the immediacy of a victory already won.

Successful offensive operations impart physical and psychological benefits to the attacker. When a defeated opponent has the material and moral capability to reconstitute or regenerate forces, the attacker's advantages may be merely temporary. Given the time to use these capabilities, the defender will likely recover and force his opponent into another costly and resource-intensive attack. However, when the attacker's physical and

psychological benefits are promptly and properly exploited, as by Clausewitz's bold and enterprising commander, the attacker is able to maintain offensive pressure. Provided that his own tactical success has not brought the attacker to his culminating point, immediate and aggressive tactical exploitation can keep the enemy off balance. The loss of equilibrium imposed by continuous offensive pressure precludes the defender from resuming coherent defensive operations and creates opportunities for the attacker's operational success.

Modern US Army doctrine embraces and reinforces Clausewitz's concept of post-victory results and has coined the term, "exploitation", to describe those operations that lead from victory to real results. The US Army defines exploitation as "Taking full advantage of success in battle and following up initial gains...an offensive operation that usually follows a successful attack and is designed to disorganize the enemy in depth."⁹ US Army doctrinal publications expand on the dry verbiage of this definition to explain and emphasize the role of exploitation on the battlefield.

Army doctrine presents exploitation as a key component of offensive operations. It calls on commanders to identify and exploit their own offensive successes. Doctrine advocates exploitation as a follow on or transitional step from attack toward decisive, potentially war-winning, pursuit operations. Successfully executed, exploitation can translate successful tactical attacks into decisive offensive success at the operational level. Army doctrine clearly establishes the desirability and operational benefits of prompt and vigorous offensive tactical exploitation.

Reviewing the body of doctrinal literature, one is forced to conclude that the Army believes strongly that exploitation is important to battlefield success.¹⁰ However, in spite of the importance of exploitation established in doctrine, are US Army tactical units ready to execute offensive exploitation?

This question and its answer are not simply some idle academic speculation. If the Army's tactical units are not prepared to conduct exploitation, then the Army may be unable to leverage either its own future battlefield successes or the technological potential of near-term systems. Moreover, an inability to execute exploitation could possibly increase either the duration or the cost, or both, of future offensive operations. This is inconsistent with a uniquely American socio-military culture that demands decisive victory at the earliest possible time with minimum friendly casualties.¹¹

This paper explores the readiness of US Army tactical units to conduct offensive exploitation. It addresses US Army exploitation doctrine, organization, training, material, and leadership within the context of conventional symmetrical offensive and defensive operations between heavy forces. Operations other than war, operations in an NBC environment, and organizations outside the heavy division are outside the scope and intent of this paper.

This study is organized into four sections. Section I begins with a survey of classic and contemporary military thought in order to establish the theoretical and practical foundations for exploitation. Section II is a comprehensive analysis of current US Army exploitation readiness using the subject areas of doctrine, organization, training, material,

and leadership as an organizing framework. Section III follows with an examination of the potential future tactical value of, and opportunity for, successful exploitation. Next, section IV compares the Army's present exploitation abilities with future battlefield requirements to assess the impact of the difference between present capability and future requirements. Finally, section IV provides conclusions and recommendations based on material presented in earlier sections.

SECTION I: THEORETICAL AND PRACTICAL ROOTS

Follow-on actions to enhance the duration and extent of battlefield success, although not always termed "exploitation", have been a vitally important tactical concept for thousands of years. Both Sun Tzu's *Art of War*, (500 B.C.E.), and Vegetius' *Epitoma Re Militari*, (400 C.E.), allude to the benefits of exploitation.¹² *Epitoma Re Militari*, and other Roman military texts, guided military thought in Western Europe for more than a millennium. These Roman military concepts were the literary antecedents of Marshal Maurice de Saxe's *My Reveries Upon the Art of War*, written in 1732. Marshal de Saxe was the greatest military innovator and reformer of his, or perhaps any other, period of history. He was the first strong advocate of immediate and relentless pursuit and stated "...you should know how to reap the profits of victory...and should not be content yourself with being left master of the field only..."¹³ This idea was echoed in the 1747 version of *Instructions of Frederick the Great for His Generals* and in General Burnod's

1827 collection of *Military Maxims of Napoleon*.¹⁴ In *Maxims*, Burnod quotes Napoleon as "It is a function of the cavalry to follow up the victory and prevent the beaten enemy from rallying."¹⁵

This somewhat bland observation is an understatement of the actual importance Napoleon attached to immediate and vigorous exploitation. Noted Napoleonic authority David Chandler identifies exploitation as a key component of Napoleon's ideal battle plan and explains:

Once the breach was made, the battle per se [sic] was won; the only matter now remaining was to determine the extent of the victory. Without any interval...the exploitation phase swung into action. ... Napoleon allowed neither his opponent nor his own men the least respite after a victory...¹⁶

Perhaps the best example of Napoleon's dedication to exploitation and pursuit was the series of tactical actions executed by the French cavalry immediately after the victorious battle at Jena. Less than an hour after the issue was decided at Jena, Marshal Murat's cavalry was in Weimar, 12 miles beyond Jena, "...butchering the [Prussian] fugitives and giving them no chance to reform."¹⁷ The pursuit operations that followed Murat's exploitation covered 500 miles over a 24 day period and literally annihilated the Prussian Army.¹⁸

This shocking defeat of what was believed to be the finest army on the Continent ushered in a period of reflection and reform in the Prussian military. One of the junior architects of these reform initiatives was an officer whose future interpretations of

Napoleonic warfare would prove to be the most profound and enduring study of war.

This young officer was Carl von Clausewitz.

Clausewitz's eternal legacy to military theory is his monumental study, *On War*.

Today, *On War*, is the acknowledged theoretical and doctrinal foundation of modern Western armies. In his critical examination of Napoleonic warfighting concepts and techniques, Clausewitz provided key insights into both the vital tactical contribution of exploitation and the difficulties in its execution.

Clausewitz's model of battle was the deliberate collision between the main bodies of the opposing armies, each seeking the destruction of the other. At the conclusion of such an encounter, both attacker and defender had suffered roughly equal physical exhaustion and casualties. However, the erosion of morale and relative loss of equilibrium was proportionally greater for the defeated defenders.¹⁹ The attacker's superior morale was both the measure of immediate victory and the enabling agent for the exploitation of this victory.²⁰ For Clausewitz, an army's measure of offensive effectiveness was the degree of destruction inflicted on the enemy. In the aftermath of the engagement it was exploitation that compounded the duration and extent of the defender's destruction. "Thus a victory usually only starts to gather weight after the issue has already been decided."²¹ Clausewitz subsequently expanded these observations with a very strong theoretical endorsement of exploitation.

Meanwhile, what remains true under all imaginable conditions is that no victory will be effective without pursuit; and no matter how brief the exploitation of victory, it must always go further than an immediate follow-up. ... Pursuit of a beaten enemy begins the moment he concedes the fight... Little positive advantage would be gained...unless victory were consummated by pursuit...²²

...the importance of victory is chiefly determined by the vigor with which the immediate pursuit is carried out. In other words, pursuit makes up the second act of victory and in many cases is more important than the first.²³

After the posthumous publication of *On War*, western military thought would remain virtually stagnant until the aftermath of the slaughter of World War One.²⁴

From 1915 to 1918, the Allies in France wasted themselves in a series of bloody frontal assaults in an attempt to rupture the opposing front and gain freedom of maneuver in the enemy rear areas. The Allies acknowledged that real victory lay beyond the trenches and could only be won through the exploitation of whatever breach could be made in the enemy defense. The Allies steadfastly retained huge cavalry reserves throughout the war for use in this longed for exploitation.²⁵ However, such an exploitation was problematical. The depth of the enemy defenses lay beyond the reach of the preparatory bombardment, unimpaired German reserves reacted quickly to seal gaps in the line, and cavalry mounts were extremely vulnerable to machineguns and artillery.²⁶ Without exploitation, the few costly Allied offensive successes were ultimately in vain.

It was not until the Allied counter-offensive of August, 1918 that the physical and moral exhaustion of the German forces permitted an Allied tactical breakthrough of sufficient magnitude and duration to provide an opportunity for exploitation. After bursting through the German lines, mixed formations of light tanks, infantry, and traditional horse cavalry penetrated six miles into German territory in five hours and forty minutes.²⁷ More than simply gaining ground, the exploitation had induced a far reaching panic in the German forces which speeded the disintegration of resistance.²⁸ Coupled

with the success of tank-heavy attacks in other sectors of the front, this final offensive reaffirmed the criticality of exploitation and indicated the as yet unrealized tactical potential of the tank.

After the war, the complementary concepts of mechanization and exploitation were developed and expounded by Major General J. F. C. Fuller and Captain Sir B. H. Liddel Hart. This pair of British writers became the two most original, controversial, and prolific western military theorists of the 1920s and 1930s.

Both men believed that repetitions of the inconclusive actions of The Great War could be avoided through the development, production, and correct application of the available mechanized weapons and military technology. They believed that wholesale mechanization, the military fruit of the industrial age, would enable a renaissance of the art of rational generalship through the restoration of mobility to the battlefield.²⁹

Both Fuller and Hart championed mobility as the means of gaining access to the vulnerable rear areas of less mobile or more conventional enemy forces. Fuller laid out his tactical and technical arguments in "Plan 1919", which he had written in early 1918. The tactics of "Plan 1919" were focused on the complete defeat of the enemy by first destroying his "organization" through operations in his rear areas. These operations would be executed by tank reserves which would exploit the infantry's initial penetration.³⁰

Hart recorded his vision of the future use of mechanized forces in *The Remaking of Modern Armies* in 1927. Hart drew a parallel between the historic role of horse cavalry

and the employment of tanks. "[Tanks] are the modern form of heavy cavalry, and their correct tactical use is clear...[to be used for]...decisive manoeuver [sic] against the flanks and communications of the enemy..."³¹ Hart was firmly convinced of the tactical power of exploitation and believed that it was a key ingredient of victory. He argued that "the deeper the armored forces advanced, the greater the psychological dislocation of the enemy's command..."³²

Meanwhile, an obscure German Major by the name of Heinz Guderian followed the fluctuating development of British mechanized theory with great interest. Writing in *Achtung Panzer!* in 1937, Guderian observed:

A successful [tank] attack would bring a swift victory, which would assume considerable dimensions in breadth and depth... Here was the solution to the hitherto intractable problem -- how to exploit success. ... The tank forces would gain not only a local, tactical importance on the battlefield, but one which extended to the operational sphere...³³

In Great Britain, Fuller and Hart had focused on trying to sell a theoretical future vision of mechanized warfare to a skeptical and resistant Army. The German Army had a much different attitude toward mechanization and was already convinced of the tactical supremacy of armor by their experiences of 1918.

Writing for this audience, Guderian was able to focus on preparing a practical guide for the actual employment of Germany's embryonic armored forces. Guderian proposed an armored tactical doctrine of mobility, balanced combined arms combat power, subordinate initiative, and exploitation of tactical success in order to achieve operational results. The world would later know this new doctrine as Blitzkrieg.

Just two years after the publication of *Achtung Panzer!*, Blitzkrieg became reality with Germany's shockingly swift conquest of Poland. For the next 50 years, Guderian's vision of the employment of tank-heavy combined arms formations and their ability to propel tactical success into operational success was the zenith of military theory concerning exploitation.

Although initially slow to adapt to the implications of the success of Blitzkrieg methods, the US Army would eventually embrace, improve upon, and then practice these methods in many of its campaigns in France and Germany in 1944 and 1945.³⁴ During the war, armored exploitation eventually attracted so many able and successful practitioners that it emerged as a key element of tactical operations. By 1945, exploitation's stunning successes had guaranteed it a place in the future military doctrines of the major powers.

Exploitation enjoys deep theoretical, doctrinal, and practical roots in Western military history. From Vegetius to Guderian to Patton, warfare's theorists and practitioners have acknowledged and often acclaimed the battlefield value of exploitation. What was true in the past is still true today -- that the rapid and aggressive exploitation of tactical success is a certain path toward a greater victory.

SECTION II: IS THE US ARMY PREPARED FOR EXPLOITATION?

If exploitation is such a vital ingredient for attaining modern military success, then we are compelled to ask whether or not the US Army is prepared to conduct exploitation. What follows is an analysis of the US Army's preparedness for tactical exploitation using the organizing framework of DOTML (Doctrine, Organization, Training, Material, and Leadership).³⁵

Doctrine. Any rational doctrine must be derived from and thoroughly embrace theory.³⁶ Ideally, doctrine translates theory into a descriptive guide for accepted professional practices. For the US Army it is an "authoritative guide to how Army forces fight wars and...how the Army thinks about the conduct of operations."³⁷

Like other tactical missions, exploitation is described and placed into context by doctrine.³⁸ More significantly, doctrine is quite specific and directive with regard to planning for and conducting exploitation.

Commanders should be ready to follow [exploit] every exploitation and move to rapidly execute it when they see the opportunity. Commanders of committed forces act fast to capitalize on local successes.³⁹

[Commanders]...exploit success relentlessly...⁴⁰

Exploitation follows [the attack] immediately...⁴¹

Division commanders plan for and move rapidly to exploit at the earliest opportunity.⁴²

Continuing the attack or exploitation must be an integral part of the attack plan.⁴³

Army doctrine clearly acknowledges the importance and potential tactical contributions of immediate aggressive exploitation. However, it simultaneously presents a vision of

exploitation as something that, while certainly desirable, is almost serendipitous in nature. The doctrine describes how to capitalize on chance opportunities, not how to attack and deliberately create the opportunity for exploitation. There is a significant difference between these two intellectual approaches to exploitation.

Doctrinally orthodox attack planning begins at the line of departure and concludes somewhere near the objective with a vague notion of what to do if success falls into the attacker's lap. The planning focus is seizing the objective, not the creation of an exploitable battlefield condition.⁴⁴

This dichotomy is the product of doctrine's unstated belief in fortuitous rather than planned exploitation. This prejudice precludes full development of exploitation concepts and ensures the virtual neglect of exploitation within doctrine.

Doctrinal literature places more emphasis on the more common traditional missions such as attack or defend than on exploitation. Although page counts are not conclusive evidence of a lack of doctrinal attention, they can provide an indication of relative doctrinal emphasis. In the Army's warfighting manuals the one with the highest exploitation-to-offense page ratio is FM 100-5 at 1:18.7. Looked at another way, exploitation has only 5.4% the coverage of offensive operations.⁴⁵

A second failure in exploitation doctrine is the lack of differentiation between the two distinct types of exploitation alluded to in doctrine. This doctrinal imprecision prevents the identification and rigorous investigation of either type of exploitation. It has been remarked that "The beginning of wisdom is to call things by their right names."⁴⁶

Additional doctrinal development of exploitation is stymied until the right names are found.

The first type of exploitation is that executed by committed forces as a follow on to their own successful attacks. This exploitation may be either anticipated and planned or it may be launched through the initiative of subordinate commanders working within a higher commander's intent. A unit executes this type of exploitation when it capitalizes on whatever tactical opportunities it creates while pursuing its objectives during an offensive operation.⁴⁷

The second type of exploitation is a specific contingency mission assigned to uncommitted forces in anticipation of offensive success. Such a mission is typically assigned to reserve forces during offensive operations.⁴⁸

These two types of exploitation are not identified by separate doctrinal terminology. This paper proposes and will use the terms "hasty exploitation" and "deliberate exploitation" to identify these two types of exploitation.⁴⁹ The difference between hasty and deliberate exploitation is not merely semantic. Identification of the distinct characteristics of these two types of exploitation is significant when assessing organizational suitability for exploitation.

Organization. The Army organizes its units in order to execute doctrinal missions and tasks or those assigned to them through mission requirements. US Army heavy divisions and their subordinate brigades and battalions are the units that will execute

tactical exploitation on the modern battlefield, but has the Army properly organized these units to meet this requirement?

Any unit capable of executing offensive actions is likewise capable, by definition, of conducting hasty exploitation. A unit's ability to conduct hasty exploitation is not influenced by its organizational structure. However, organizational structure does influence a unit's ability to conduct deliberate exploitation.

Deliberate exploitation requires both the availability of an uncommitted unit previously assigned an exploitation mission and an offensive battlefield success to exploit. This success must have been developed by another unit, or other units, subordinate to the same headquarters ordering the deliberate exploitation. In short, deliberate exploitation relies on the intersection of capability, opportunity, and direction. Which units within the division have both the necessary combat power and organizational structure to execute a successful attack while simultaneously withholding sufficient combat power in reserve for deliberate exploitation?

The division as a whole is capable of deliberate exploitation.⁵⁰ Given three heavy brigades in the division,⁵¹ the division would most likely attack with two heavy brigades and retain the third heavy brigade in reserve.⁵² This reserve is "best used to exploit success"⁵³ and "the heavy brigade's inherent mobility, firepower, and shock effect make it an ideal exploiting force."⁵⁴ Additionally, the heavy division contains two attack helicopter battalions, MLRS batteries, and an air-ground armored cavalry squadron; all of

which are highly capable of initiating the division's exploitation or increasing the tempo of divisional exploitation.

The heavy brigade itself is also capable of deliberate exploitation.⁵⁵ This assumes the brigade is task organized by the division with at least three heavy battalions.⁵⁶ In offensive operations the heavy brigade will, like the division, typically organize a main attack, supporting attack, and reserve; making the reserve battalion available to exploit success.⁵⁷

Battalions do not generally execute deliberate exploitation with subordinate companies, but may conduct exploitation as part of the brigade.⁵⁸ Task organized with four companies, the battalion will usually identify one company as the reserve during offensive operations.⁵⁹ A battalion deliberate exploitation would require the commitment of this company to exploitation.

Although tactical commanders will habitually designate a reserve during offensive operations, tactical units rarely attain their initial objectives without committing their reserve force. Commanders typically commit reserve forces to seize initial objectives when attacking units become disordered or attrited and no longer have the cohesion or combat power to successfully attack their objectives. Units which may successfully maneuver to and seize their objectives often suffer such tremendous casualties in the assault that they are no longer combat effective.⁶⁰ How does this influence exploitation?

At the brigade level, placing a battalion in reserve and assigning it an exploitation mission may deprive the brigade of the offensive combat power it needs to defeat a

defending enemy and create the conditions necessary to conduct exploitation by the reserve battalion. Additionally, the actual gap in the defense created by two attacking battalions may be too narrow and congested to provide sufficient maneuver room for the commitment of this reserve battalion.⁶¹ For the battalion, the conditions necessary for the commitment of the reserve company in the exploitation are rarely achieved by the battalion. Once tactical success is achieved in the attack, battalions almost always lack the cohesion and combat power required to execute either hasty or deliberate exploitation.⁶²

This analysis of organizational considerations has identified the division and the brigade as the two tactical units most suitable for deliberate exploitation and as the units with the greatest potential to create the battlefield conditions necessary for exploitation. However, there is a great potential for the early commitment of the reserve force to secure initial objectives.

Training. The goal of US Army training is to prepare units to fight.⁶³ Training for war involves identifying and then training to standard those essential tasks units must execute successfully to win in combat. Warfighting requirements drive the Army's "Battle Focused" training.

Despite exploitation's inclusion in maneuver doctrine and its potentially decisive impact on offensive operations, divisions and brigades do not train to execute exploitation. In an interview, two experienced Battle Command Training Program (BCTP) observer/controllers, LTC Brian Knox and LTC Bill Rivera, stated that over the

past two and one-half years of BCTP rotations, not one brigade or division has either articulated exploitation as a training objective, nor executed tactical operations which they identified as exploitation.⁶⁴

Why don't units train to exploit? The answer to this question may lie in the Combat Training Center (CTC) training environment and in the doctrinal literature that supports training.

LTC Rivera and LTC Knox speculated that units do not train exploitation at the CTCs because the units know that the training conditions set by the CTC, especially by the opposing forces (OPFOR), are calibrated to the unit's training objectives. Without exploitation as a training objective, the CTCs will not present the training unit with conditions suitable for exploitation.⁶⁵ The counter to this is that, as in actual combat, units should not expect a cooperative enemy to set the conditions for exploitation. Rather, the training unit should create these conditions through the success of their attack.

Commanders derive their units' CTC training objectives through processes prescribed by the Army's training doctrine. The heart of training doctrine is the commander's development of the unit's Mission Essential Task List (METL) from his evaluation of his unit's wartime tasks and missions.⁶⁶ The METL focus allows the commander to employ scarce training resources to achieve and maintain standards of proficiency in a limited number of critical tasks. These tasks, the conditions under which the units must perform them, and the standards against which unit performance is

measured are identified in Mission Training Plans (MTPs) unique for each type unit.⁶⁷ If this literature contains voids or ambiguities, it may inadvertently skew the proper development of the unit METLs and, by extension, the training objectives units bring to the CTCs.

An examination of the brigade-level MTP is illustrative of the treatment afforded exploitation in training doctrine. Exploitation is identified as a specific mission in the brigade MTP which presents it as a mission for the brigade as a whole following a successful division attack.⁶⁸ Following the language of this paper this would be division deliberate exploitation. 71-3-MTP also addresses brigade deliberate and hasty exploitation within the context of the standards for the brigade deliberate attack. After the defeat of the enemy, these standards require the brigade to be "...prepared to conduct rapid exploitation..."⁶⁹ The brigade MTP is in consonance with tactical maneuver doctrine and does not present an obstacle to the potential development of exploitation as a METL task. However, this doctrinal treatment may also be somewhat one dimensional in that it applies only to the exploiting unit.

A more robust body of doctrine would include offensive mission subtasks for the other elements of the division that support exploitation. In current maneuver doctrine, a division typically attacks with two brigades abreast seizing two separate objectives. If a subsequent division objective is identified, the remaining heavy brigade would move forward and conduct a forward passage of lines to attack and seize this third objective. In this example, and in 71-3-MTP, the lead brigades have no stated responsibility to set the

conditions for exploitation such as clear a gap for the maneuver of the exploiting brigade, guide this brigade forward, or support its attack fires or forward reconnaissance. Without tasks such as these included in training doctrine it is unlikely that the brigades can work together toward a common goal of creating conditions suitable for exploitation.

Material. Material considerations deal with the physical domain of equipment and its capabilities. The key material question is whether or not the equipment of the division and brigade is physically able to execute exploitation. Here the answer must be an emphatic "yes."

The heavy division and its brigades enjoy an unmatched degree of tactical mobility, destructive firepower, physical protection, and communications connectivity. The M1A1/A2 tank, M2/3 Bradley fighting vehicle, M109A6 self-propelled howitzer, MLRS, and AH-64D/Longbow Apache helicopter together possess a truly awesome agility, lethality, and durability. The combat power potential of this combined arms team, now increasingly enhanced by emerging information sharing, digitized targeting, command and control warfare, and communications technologies, make it uniquely suited to the requirements of exploitation.

The material weakness in the heavy division which potentially degrades its ability to execute exploitation is logistics sustainment. Even if we assume that ammunition expenditure during exploitation may be minimal, the division's combat systems still consume a staggering amount of fuel to simply move on the battlefield. A single heavy brigade involved in offensive operations consumes a minimum of 136,000 gallons of fuel

per day.⁷⁰ This figure may increase to nearly 141,000 gallons during high tempo exploitation operations.⁷¹ Adding the divisional aviation brigade to the exploitation increases the total minimum daily fuel requirement to over 187,000 gallons.⁷²

It takes a great deal of synchronization between combat and sustainment activities to maintain the continued advance of a force this large using slow and essentially roadbound wheeled logistics vehicles. This challenge can be largely mitigated through detailed staff planning, but the greatest advantages are gained through the integration of attack and combat support aviation with ground maneuver. For example; while the heavy brigade pauses to rearm and refuel with helicopter-delivered and ground-delivered supplies, the attack helicopter battalions of the division can intensify their exploitation efforts to maintain pressure on the enemy until the heavy brigade can resume offensive operations.⁷³

Leadership. Effective command and control brings about the synergistic fusion of doctrine, organization, and material to achieve battlefield success. Central to the US Army's concepts of command and control are the leaders who direct, plan, and execute operations. The commander's concept of the operation, intent, and will provide the impetus that both drive and give coherence to tactical planning.⁷⁴

Preparing leaders for their roles in tactical planning is the function of a complex dynamic mental process that mixes individual and unit training, education, and personal experience. Leaders are mentally prepared for exploitation planning in two ways. First, when their training, education, and experience have given them the cognitive skills

necessary to identify exploitation opportunities. Secondly, when they possess the experience and doctrinal background to develop concepts and direct activities that lead to exploitation operations.

The common element in these two measures is experience. In the absence of tactical combat operations, experience in exploitation planning and execution can only come from training exercises where exploitation is conducted. Without such training exercise experiences to measure and evaluate, assessment of leader preparedness relies on leader education alone.

Formal officer education is embedded in the Army's Training and Doctrine Command school system.⁷⁵ Officers begin their tactical education and training at their branch-specific Officer Basic and Advanced Courses. For selected officers, these initial courses are followed by attendance at the Command and General Staff College (CGSC). CGSC is the single institution within the TRADOC schools system which "educates...officers in corps, division, and brigade combat operations to develop their tactical and technical proficiency [and] serves as the tactical warfighting conscience of the US Army."⁷⁶ Graduates are prepared for duty as "...field grade commanders and principal staff officers at division..." able to command and train battalions and brigades.⁷⁷

Clearly, if an officer was to be prepared to conceive of, plan, or execute tactical exploitation, this capability would be developed through this series of schools, especially CGSC.

At CGSC, in spite of the 309 classroom hours devoted to military operations, exploitation is not a feature of tactical instruction at CGSC. It is not merely that exploitation does not enjoy a coequal status within the curriculum compared to attack or defend. Rather, its that exploitation is not even discussed as a planning consideration, branch, or sequel during division or brigade offensive instruction.⁷⁸

Experience, training, and education are professional aspects of exploitation preparedness. However, there is a second aspect that merits consideration -- psychological preparedness.

Clausewitz explored psychological factors influencing the commander's readiness for executing exploitation operations. Examining the effects of offensive success and defensive defeat he observed that the mental and physical exhaustion of both winner and loser are approximately equal and "...the winning side is in almost as much disorder and confusion as the losers... For the victor, these conditions create the critical phase..."⁷⁹ Clausewitz was referring to the victor's need to consolidate and reorganize before continuing operations, weighed against the defeated defender's ability over time to regain control of his forces and reestablish a coherent defense that will curtail the attacker's exploitation. Clausewitz clearly identified the commander as the key figure in bringing order to his forces. The commander must overcome his own mental and physical exhaustion, accept the risks inherent in exploitation, and drive his own men onward.

Only these few [commanders], having accomplished the urgent task at hand, are left with enough mental energy to think of making further gains -- gains which at such a time may seem trifling embellishments of victory, indeed an extravagance. ...[So] it happens that for purely human reasons less is achieved than was possible.

What does get accomplished is due to the...commander's ambition, energy, and quite possibly his callousness.⁸⁰

For Clausewitz, the central psychological concept was the commander's capacity and determination to make rational decisions in the face of uncertainty, where uncertainty and risk were proportional.⁸¹

The demonstrated willingness of US Army leaders to accept risk in training exercises is minimal. However, training exercises make poor laboratories for assessing risk taking for several reasons.

First, leaders typically know more about the situation within the training environment than they probably would in actual combat. Less uncertainty leads to less risk when making decisions. Secondly, most leaders adopt an orthodox "by the book" approach to tactics during training in an effort to maximize subunit cohesion and minimize the difficulty of synchronizing innovative and exotic courses of action. Moreover, the present command climate of the US Army does not often reward bold aggressive decisions that embrace risk acceptance and mitigation. Rather, the Army as an institution practices and endorses risk avoidance. Lastly, except through pure accident, no one is actually killed in training. The bloodless character of training makes conservative casualty-heavy tactics more palatable.⁸²

Another aspect of risk taking in training that deserves consideration is the role of CTC observer controllers. The Army generally views observer controllers as doctrinal experts and purists sworn to support and defend doctrine. More significantly, many observer controllers sometimes see themselves in the same way. Their subsequently

strict interpretation of doctrine, coupled with the CTCs' doctrine-centric AAR methodology, offer little true support for risky or highly innovative out-of-the-box tactical solutions. Lacking encouragement from observer controllers for such solutions, units may subconsciously select more conservative courses of action that somehow seem more doctrinal.⁸³

Assessment. This section began with the question of whether or not the US Army is prepared to conduct exploitation. This question must be answered "no." Exploitation is a poorly developed and fundamentally untrained tactical mission that the US Army has the capacity, but not the proficiency, to plan and execute well.

Doctrine's rudimentary examination of exploitation is inadequate. Doctrine is handicapped by a flawed vision of exploitation's character as serendipitous and by a lack of precision in differentiating types of exploitation.

The organization of the heavy division and its subordinate brigades supports tactical exploitation and is aligned with maneuver doctrine. The capabilities and combat power resident in the division and its subunits are completely suitable for exploitation operations.

Units do not train to execute exploitation. Training doctrine and the CTCs' training environments would enable units to conduct exploitation training if they chose to do so.

The physical material assets of the division and brigade are more than equal to the task of exploitation, especially at the division level where combat aviation units are

available. Thorough and proactive staff planning and air-ground integration can mitigate the sustainment difficulties of exploitation.

Leaders lack exploitation experience because of the absence of exploitation in training exercises. Officer tactical education at the basic and advanced courses and at CGSC could largely rectify this deficiency, yet they exclude exploitation from their curriculum. Exploitation requires leaders to practice a high degree of risk acceptance and mental determination. However, training design, the trivialization of exploitation by the CTCs and their observer controllers, and the Army's institutional behavior of risk avoidance deny Army leaders the opportunities to develop or practice these necessary skills.

SECTION III: EXPLOITATION IN THE 21st CENTURY

The United States demands that the Army fight and win the nation's wars with minimum friendly casualties while simultaneously achieving a rapid and decisive victory.⁸⁴ The US Army's method to meet these seemingly divergent goals is to gain, maintain, and leverage operational freedom of maneuver. Operational commanders move tactical units in and out of combat in order to achieve and then exploit freedom of maneuver.⁸⁵ Successful tactical engagements and battles are the building blocks of operational maneuver.⁸⁶ In this context, the ultimate goal of tactical combat to enable or enhance operational maneuver. Is exploitation the tactical action that will catapult a

local success into an maneuver opportunity for the 21st century operational commander?

Several of the Army's newest publications indicate that it is.

Force development planners see the Army in terms of the current force, the next Army, and the Army after next. The preliminary draft of FM 100-5, *Operations*, addresses the current Army. The next Army is the focus of TRADOC Pamphlet 525-5, *Force XXI Operations*. BG(R) Huba Wass de Czege has examined the Army after next in ST 71-100-2010, *Mobile Strike Force 2010 Concept of Operations*. These three key documents will strongly influence the path of the US Army's future.

FM 100-5 (The current Army). FM 100-5(PD) describes the Army's operational concept as "...the core of our doctrine. ...It establishes how we expect forces to operate at every level of conflict..."⁸⁷ These operational concepts include "Exploit Success." Exploitation is so fundamental to future combat that the authors of FM 100-5(PD) have raised it to a coequal status with other more familiar Principles of War and renamed them Principles of Operations.

EXPLOITATION. Take advantage of and make permanent the temporary effects of battlefield success.

At every level, commanders must plan to secure the results of successful operations. Indeed no operation is successful until and unless it is properly exploited. Leaders must develop plans and allocate resources to insure that opportunities created by initial gains are rapidly and decisively exploited.⁸⁸

FM 100-5(PD) emphasizes execution over planning and lists Exploit Success as a central task of the art of execution.⁸⁹ Considering exploitation within the context of offensive operations, FM 100-5(PD) observes,

No attack is complete until fully exploited. Indeed, the principle reason

commanders conduct offensive operations is to exploit initial gains. ...
[Exploitation] requires planning and resourcing just as does the assault.⁹⁰

How has the prominence and criticality of exploitation grown so dramatically in the three short years between the latest published FM 100-5 of 1993 and this 1996 preliminary draft? The answer lies in the emerging battlefield technological capabilities highlighted in TRADOC Pam 525-5.

TRADOC Pam 525-5 (The next Army). FM 100-5(PD) may be seen as the result of standing in the present and shortsightedly peering toward a near term foreseeable future. TRADOC Pam 525-5, on the other hand, stands in the future looking back at the present. It provides a startling vision of the high-tempo, digitally linked, lethal 21st century battlefield while simultaneously plotting the Army's course to achieve mastery over this challenging future environment. Where FM 100-5(PD) is practical and businesslike, TRADOC Pam 525-5 is visionary and challenging.

Force XXI is the Army's self-developed image of its future contribution to the military's quest for the rapid, decisive, low-casualty victories demanded by America's strategic culture. "Force XXI seeks to...develop and field...[an] Army of the 21st century, organized to master information age technology and defeat any threat, anywhere, swiftly, with few casualties."⁹¹ TRADOC Pam 525-5 is the backdrop for this new image. It describes the most probable characteristics of both the future security environment and of an Army that can contribute successfully to America's interests in that environment. GEN William Hartzog, TRADOC Commander, has observed, "TRADOC Pam 525-5 [is]

the vision of the future, the intellectual foundation for Force XXI. It's not doctrine, but...a starter set of ideas of what might be."⁹²

The heart of TRADOC Pam 525-5's vision of the future is vertical and horizontal digitized information management that creates and shares a common user-tailored situational awareness. This potential of the Information Age is driving the 21st century battlefield from one of hierarchical command over rigid battlespace to one of internetted command within a fluid battlespace.

Yet for all this dynamic and accelerating change in information technologies, soldiers and equipment on the ground executing tactical missions will remain the bedrock of land warfare. "A general pattern of conduct for military operations has existed since the beginning of time. This pattern persists regardless of echelon and across the spectrum of conflict."⁹³ A component of this pattern examined by TRADOC Pam 525-5 is "decisive action."⁹⁴

Decisive action will possible with the battlespace domination achieved through overmatches in maneuver, firepower, protection, leadership, and information. Battlespace domination is attained and maintained through "high-tempo, all-weather, continuous operations."⁹⁵ The vital component of achieving and capitalizing on battlespace dominance at the tactical level is exploitation.

Two key Force XXI systems constitute the enabling technologies for exploitation -- information and fires.⁹⁶ Information dominance will make a near real time and near perfect situational awareness available to every tactical commander. This common

vision minimizes uncertainty and causes a significant reduction in the risks associated with decision making. Provided with a snapshot of enemy and friendly forces, commanders are able to make rapid assessments and take bold aggressive action to capitalize on fleeting opportunities for exploitation.

Information may help the commander identify exploitation opportunities, but it is firepower that creates those opportunities. The number of systems capable of delivering precision guided munitions and the accuracy and lethality of their fires will increase enormously by the end of this century. The combined destructive power of these systems, concentrated in time and space, may easily allow future commanders to execute deliberate attacks by fire alone.⁹⁷ Once fires have shocked and annihilated key enemy capabilities and units, maneuver forces previously held in reserve, still in good order, and in possession of shared situational awareness, are both available and capable of rapid decisive exploitation.

The lethal combination of shared situational awareness and the proliferation of precision guided munitions will create extraordinary flexibility and opportunities for the tactical commander. This combination is the cornerstone of the Army after next described in ST 71-100-2010.

ST 71-100-2010 (The Army after next). ST 71-100-2010 was written in 1995 as an extension of TRADOC Pam 525-5's organizational and operational concepts in support of the advanced warfighting experiment's mobile strike force (MSF) embedded in PRAIRIE WARRIOR '96. ST 71-100-2010 applied the current thinking about how to organize and

employ Information Age technologies expected to be available at the division level by 2010.⁹⁸

ST 71-100-2010 is a landmark work based on the Force XXI strategic environment and future technologies. It created a hypothetical benchmark tactical force to embrace those technologies and fight and win on the 2010 battlefield. The most striking features of ST 71-100-2010 are that it is thorough, realistic, and believable.

Although written before FM 100-5(PD), ST 71-100-2010 has the same strong emphasis on the criticality of exploitation in future combat. ST 71-100-2010 describes six essential combined arms functions of which "Follow Through with Exploitation" is one. In the subsequent examination of exploitation, ST 71-100-2010 states,

The courses of action must then follow through with exploitation of the success of the main effort. ... Given the situational awareness and battle command capabilities [the MSF] will possess, an attack would not be launched unless decisive results could be expected. The deliberate attacks of the MSF of 2010 should achieve the conditions necessary for successful exploitation.⁹⁹ ...The decisiveness [of tactical engagements] will not be assured until it is exploited...¹⁰⁰

ST 71-100-2010 provides a glimpse into tactical operations at the beginning of the 21st century reality described in TRADOC Pam 525-5. In this fluid, internetted, digitized future environment, exploitation emerges as a key component of offensive operations. In fact, exploitation is so critical that the ability of the force to create the conditions for exploitation becomes a prerequisite for the attack. Future offensive operations will focus on post-attack exploitation actions as the vital segue to operational success.

Although the 21st century will be here in slightly more than three years, on the Army's calendar the future is already here. In less time than it took most of us to graduate from high school, many Force XXI systems will move from concept, through design, to unit fielding. Our capacity to harness the awesome battlefield potential of these revolutionary military technologies will rely on innovative, visionary, and revolutionary tactics, techniques, and procedures. The preliminary draft of FM 100-5 and ST 71-100-2010 have set a mark on the wall for this evolution in which exploitation plays a decisive tactical role.

SECTION IV: BUILDING TO THE FUTURE

Today's Army is working hard to develop and field the equipment and systems envisioned by ST 71-100-2010. Yet developing and fielding new systems is not enough. The Army must begin now, with what is on hand, to build itself into an organization capable of maximizing the capabilities of these new systems. The current doctrine, organizations, training design, material, and leader development practices of the US Army must be enhanced now in order to be able to exploit and win on the battlefields of the future.

Doctrine. This paper identified two flaws in current exploitation doctrine; neglect and imprecision. FM 100-5(PD) and ST 71-100-2010 certainly correct the present neglect of exploitation in warfighting doctrine. However, they both continue to blur the

distinction between what this paper termed hasty and deliberate exploitation. Additional work needs to be done with terminology in order to more fully develop exploitation doctrine. Most importantly, exploitation doctrine must be expanded to consider the combined arms force as a whole and its role in establishing the battlefield conditions for exploitation. This expansion must reach beyond maneuver doctrine to include its supporting array of MTPs, lower echelon tactical doctrine, and appropriate tactics, techniques, and procedures.

Organization. Current Army division and brigade organizations are judged suitable for exploitation. Future organizations will also be suitable, provided they continue to provide sufficient subordinate units to allow for the designation of reserve units with the combat power and tactical flexibility to execute exploitations.

Training. Training is the weakest aspect of the Army's present exploitation capability. Divisions and brigades must start training exploitation now in order to provide experience and training exercises for the brigade commanders and division G3s of 2010 who will soon graduate from CGSC. The long standing lack of training emphasis on exploitation will take years to overcome and the development of institutional expertise will take even longer. The training doctrine and training resources are currently available and suitable to train exploitation. Commanders just need to decide to train it.¹⁰¹

Material. The material overmatch currently enjoyed by the US Army will continue well into the future. The application of emerging technologies onto existing platforms,

coupled with new digitized equipment fielding will further increase the Army's tactical edge. The current efforts to increase the lethality, information capability, tactical mobility, and operational endurance of these systems, while simultaneously decreasing their logistics demands, will significantly enhance their suitability for exploitation.

Leadership. The Army must alter its current leader development patterns in order to prepare officers for their roles in 21st century combat. Exploitation must be brought to the forefront of officer tactical training and education. The officer basic and advanced courses and CGSC must restructure their curriculum to include and emphasize exploitation. This is especially true for CGSC where future commanders and operations officers receive their last formal tactical education prior to assuming these key roles. Decision making within the context of exploitation requires risk acceptance. The ability to decide under conditions of uncertainty must be deliberately taught within the education system and then reinforced in units through positive, development-centered, and coaching leadership climates.

Conclusion. The Army can probably afford to continue to treat exploitation with indifference in the short term. But with every missed training opportunity and every uninformed graduating officer, the risk increases that the cavalier disregard of this vital tactical task will ultimately degrade the Army's future exploitation capability. In the 21st century, a US Army that can not adequately exploit its tactical successes is unlikely to achieve the rapid, decisive, low-casualty victories demanded by the American people. The Army can not get there from here with a "business as usual" approach. It was once

observed, "You have to break a few eggs to make omelettes." To paraphrase this old saw, "You have to break a few paradigms to make a future." Let's get the hammer out and get to work.

ENDNOTES

1. This vignette is based on the following sources: *Seventy Days to Singapore*, *Singapore 1941-1942*, *Singapore the Japanese Version*, and *The War in Malaya*. Complete citations for these works appear in the bibliography.

2. Falk, Stanley L. *Seventy Days to Singapore*. New York, NY: G.P. Putnam's Sons, 1975, p. 148. Hereafter cited as "Falk." Falk is quoting here from Bhargava and Sastri's, *Campaigns in South-East Asia, 1941-1942* in the 'Official History of the Indian Armed Forces in the Second World War, 1939-1945', (Calcutta, India: Combined Inter-services Historical Section, India and Pakistan, 1960). Bhargava and Sastri's original source is not identified. Paris is quoted as writing at New Years: "I loathe this talk of position and holding lines. In this country there is one and only one tactical feature that matters -- the roads. I am sure the answer is to hold the roads in real depth."

3. Percival, LTG A. E. *The War in Malaya*. London, UK: Eyre & Spottiswoode, 1949, p. 202-203. LTG Percival served as General Officer Commanding Malaya, 1941-1942. See also Falk, *Seventy Days to Singapore*, p. 149.

4. This rendition of Japanese planning is a synthesis of COL Masanobu Tsuji's *Singapore the Japanese Version*, trans. Margaret E. Lake, New York, NY: St. Martin's Press, 1960, p. 171; and Louis Allen's *Singapore 1941-1942*, London, UK: Frank Cass & Co., Ltd., 1993, p. 147-149.

5. Major Shimada's actual mental analysis and decision factors are pure speculation based on the author's experience as a US Army operations officer and tactical unit commander. Tsuji alludes to low-level decision making on p. 175-176, and states: "Such a complete victory had not been expected by either general or divisional headquarters. It was considered largely due to two young officers..." (p. 175). See also LTC Martin N. Stanton's "The Battle of the Slim River: Malaya, 7 January 1942", *Armor*, May-Jun 1996: p. 26-31. The fact of Major Shimada's decision to exploit is evidenced by his unit's subsequent tactical actions.

6. Falk, p. 151.

7. Falk, p. 152-153.

8. Clausewitz, Major-General Carl von. *On War*. Michael Howard and Peter Paret, eds. and trans., Princeton, NJ: Princeton University Press, 1976, p. 256. Hereafter cited as "Clausewitz."

ENDNOTES

9. US Army. FM 101-5-1 (Final Draft) *Operational Terms and Graphics*. Washington, D.C.: US Government Printing Office, 1995, p. 1-114.

10. This discussion of US Army doctrine is a synthesis of concepts and phrases found in FMs 100-5, 100-15, 71-100, and 71-3. A more comprehensive review and analysis of US Army exploitation doctrine is found in Section II. Complete citations for these manuals are in the bibliography.

11. US Army. FM 100-7, *Decisive Force: The Army in Theater Operations*. Washington, DC: US Government Printing Office, 1995, p. 1-1. Hereafter cited as "FM 100-7."

12a. Sun Tzu. *The Art of Warfare*. Ralph D. Sawyer, trans., New York, NY: Ballentine Press, 1994. Admittedly there is a dichotomy in Sun Tzu's work concerning exploitation. At one point, (p. 199), he advocates leaving outlets for besieged forces, (the fabled "Golden Bridge"), and warns against pressing a retreating enemy too closely. These passages clearly indicate a lack of enthusiasm for vigorous exploitation. However, Sun Tzu's discussion of "orthodox" and "unorthodox" forces, (p. 187-188), and especially Sawyer's elaboration (p. 147-150), describe tactical actions against an enemy's rear area which are enabled by conventional frontal attacks. Sawyer summarizes the work of Benjamin Wallacker, (p. 150), with "cheng refers to military operations that pin down or 'spike' an enemy, while ch'i operations are maneuvers that force the enemy off balance, bringing about his defeat." Wallacker's and Sawyer's analysis appears to indicate Sun Tzu's cautious support of tactical exploitation.

12b. Renatus, Flavius Vegetius. *Epitoma Rei Militari*. N.P. Milner, trans., 1993. In N.P. Milner, *Vegetius: Epitome of Military Science*, Liverpool, UK: Liverpool University Press, 1993. Although not explained with the precision and clarity of other topics, Vegetius discusses the use and cautions of exploitation and tactical pursuit, (p. 95, 102-103, and 107-108). The tone and content of *Epitoma Rei Militari* indicate that while Vegetius endorsed tactical exploitation, he believed that units achieved tactical decision in frontal close combat.

13. Saxe, Marshal Maurice Comte de. *My Reveries Upon the Art of War*. [Anonymous], trans., Westport, CT: Greenwood Press, 1971, p. 164. (The Greenwood Press publication is a facsimile reprint of the J. Nourse, London edition of 1757). The innovative nature of de Saxe's work is admirably addressed in the introduction to *Reveries* by BG Thomas Phillips in *Roots of Strategy*, BG Thomas R. Phillips, trans. and ed., Harrisburg, PA: Stackpole Books, 1985. De Saxe repeatedly cites Roman military practices and clearly traces the origins of many of his ideas to them. It is likely that

ENDNOTES

Vegetius' and other ancient works were de Saxe's sources of this information. BG Phillips sums up De Saxe's innovation with respect to exploitation and pursuit in *Roots of Strategy* as "[de Saxe was]...the first soldier of modern times to advocate the implacable pursuit of [a] defeated enemy." (p. 185).

14a. Frederick King/the Great of Prussia. *Instructions of Frederick the Great for His Generals*. BG Thomas R. Phillips, trans., Harrisburg, PA: The Telegraph Press, 1944. Frederick's cavalry was the finest mounted fighting force in Europe and was frequently decisive in winning victory for Frederick's Army. The King was a firm believer in the ability and suitability of his cavalry to "...crown the action and give it brilliance..." (p. 100). Frederick addresses tactical pursuit and the use of the reserve, especially cavalry, in this role (p. 93-94). Although Frederick admired de Saxe and patterned much of his early military thinking after him, de Saxe's writings on exploitation and pursuit is by far the stronger endorsement.

14b. Napoleon I, Emperor. *Military Maxims of Napoleon*. LTG Sir George C. D'Aguilar, trans., General Burnod, ed., New York, NY: MacMillan Publishing Co., 1988. Hereafter cited as "Napoleon." Dozens of different collections of Napoleon's "maxims" have been assembled and published since the 1820s. The weight of scholarly opinion seems to identify General Burnod as the editor of the first such collection in 1827. An informed discussion of the history of Napoleon's maxims is found in David Chandler's introduction to the cited volume. MacMillan's edition is taken directly from Burnod's work as it appeared in an English translation in 1901.

15. Napoleon, p. 193. The two editorial commentaries which follow this maxim, Cairnes' of 1901 and Chandler's of 1987 clarify the role of cavalry and the importance of exploitation in Napoleonic warfare.

16. Chandler, David G. *Campaigns of Napoleon*. New York, NY: MacMillan Publishing Co., 1966, p. 190. Hereafter cited as "Chandler." See also Gunther E. Rothenberg's *The Art of Warfare in the Age of Napoleon*, Bloomington, IN: Indiana University Press, 1980, p. 71-74. Chandler is generally acknowledged as the greatest living expert on the Napoleonic period. The monumental 1,095-page *Campaigns* is the classic work on Napoleonic warfare. In a more colorful section Chandler wrote "[After the gap was widened]...the pride of the French cavalry, led by the 'heavies', the cuirassiers, carabiniers, and the Mounted Grenadiers of the Guard, would thunder through, sabers ceaselessly rising and falling, to exploit the penetration and harry the reeling enemy until what was left of his cohesion snapped under the strain." (p. 189-190).

ENDNOTES

17. Chandler, p. 190. See also p. 505 for an analysis of the exploitation and pursuit after the battle at Jena-Auerstadt.
18. Rothenberg, Gunther E. *The Art of Warfare in the Age of Napoleon*, Bloomington, IN: Indiana University Press, 1980, p. 72.
19. Clausewitz, p. 231-256. This is a highly condensed synopsis of the line of reasoning fully developed by Clausewitz in p. 231-232, 253, and 255-256.
20. Clausewitz, p. 231. Clausewitz here states "Every engagement is a bloody and destructive test of physical and moral strength. Whoever has the greater sum of both left at the end is the victor."
21. Clausewitz, p. 231.
22. Clausewitz, p. 263.
23. Clausewitz, p. 267.
24. The omission of Jomini's *Art of War* from this roughly chronological accounting of the development of military theory related to exploitation is deliberate. A contemporary of Clausewitz, Jomini's commentaries on the conduct of war in the 18th century reinforce *On War* while adding nothing of substance to Clausewitz's conclusions concerning exploitation and pursuit. Jomini's most direct reference to exploitation was, "A pursuit should generally be executed as boldly and actively as possible, especially when it is subsequent to a battle gained..." (General Baron Antoine Jomini, *Summary of the Art of War*, BG J. D. Hittle, trans. and ed. In *Roots of Strategy, Book 2*, Harrisburg, PA: Stackpole Books, 1987, p. 523. Jomini's treatment can not compete with *On War's* more methodical observation and comprehensive analysis.
25. Brodie, Bernard and Fawn M. *From Crossbow to H-bomb: The Evolution of the Weapons and Tactics of Warfare*, Bloomington, IN: Indiana University Press, 1973, p. 198. The Brodies also allude to the British cavalry's dominance of the social structure and tactical thinking within the British Army and its senior officers. Field-Marshal Sir Douglas Haig was himself a cavalry officer. See also Liddel Hart's, *The Remaking of Modern Armies*, Westport, CT: Greenwood Press Inc., 1980, p. 52 for a discussion of the cavalry's long wait for offensive opportunity during World War I.
26. Guderian, Colonel-General Heinz. *Achtung-Panzer!*. Christopher Duffy, trans., London, UK: Arms and Armor Press, 1992, p. 85. This Arms and Armor Press

ENDNOTES

translation is from the original 1937 edition. MG Guderian cites a "few machineguns and rifles" as the cause of five British cavalry divisions failing to exploit tactical victory at Cambrai in November, 1917.

27. Toland, John. *No Man's Land: 1918 - The Last Year of the Great War*, New York, NY: Ballentine Books, 1982, p. 282. Hereafter cited as "Toland." Toland's covers the actions of the British Cavalry Corps in the August offensive in p. 275-282. See also Correlli Barnett's, *The Swordbearers*, Bloomington, IN: Indiana University Press, 1975, p. 348-351 for an overview of the August offensive and the roles of tanks and cavalry. Barnett argues that the mobility potential of tanks in 1918 was still effectively offset by the tactical capabilities of the still formidable German artillery.

28. Toland, p. 281. Here Toland cites the writings of Field-Marshal Hindenburg "It was said that masses of English cavalry were already far [to the] rear of the foremost German lines. Some of the men lost their nerve, left positions..." This was the famous "Black day of the German Army." Toland indicates that the success of the exploitation was a key factor in the mental and psychological collapse of General Ludendorff in the wake of the offensive, (p. 285-286).

29. Reid, Brian Holden. "J.F.C. Fuller and B.H. Liddel Hart: A Comparison", *Military Review*, May 1990: 65 and 67. Mobility is the central theme of Liddel Hart's, *The Remaking of Modern Armies* cited in the bibliography.

30. Reid, Brian Holden. *J.F.C. Fuller: Military Thinker*, New York, NY: St. Martin's Press, 1987, p. 49-51. A great deal of Fuller's subsequent writings expand on the terse military style of "Plan 1919"; most notably "Lectures on FSR III" (1931), Fullers commentary on the British tactics contained in the new Field Service Regulations. See Reid, this citation, p. 152-156. See also Sir Basil Liddel Hart, *The Sword and the Pen*, Adrian Liddel hart, ed., New York, NY: Thomas Y. Crowell Co., 1977, p. 228-233 for a text of "Plan 1919." See also MG J. F. C. Fuller, *Armored Warfare*, Westport, CT: Greenwood Press Inc., 1983, p. 97-98. This book is an annotated collection of Fuller's "Lectures on FSR III" originally published in 1943.

31. Liddel Hart, Captain B. H. *The Remaking of Modern Armies*. Westport, CT: Greenwood Press Inc., 1980, p. 59.

32. Reid, Brian Holden. "J.F.C. Fuller and B.H. Liddel Hart: A Comparison", *Military Review*, May 1990: 70. Hart coined the well known term "expanding torrent" for his concept of flooding the rear areas with armored forces by exploiting a breach made in the enemy's defense.

ENDNOTES

33. Guderian, p. 141. Here Guderian gives an outstanding account of the historical development of armored theory from World War I to the eve of World War II.

34. Weigley, Russell F. *Eisenhower's Lieutenants: The Campaigns of France and Germany 1944-1945*. Bloomington, IN: Indiana University Press. 1981, p. 14-28. Weigley does a masterful job of tracing the dynamic evolution of US Army tactics in response to tactical developments in Africa and Europe, especially the influence of Blitzkrieg on US doctrine. It is interesting to note that the doctrinal discussion of exploitation and the employment of cavalry/tanks differs little between the May, 1941 and June, 1944 editions of *US Army Field Service Regulations - Operations, FM 100-5*.

35. The DOTML framework is adapted from: US Army Chief of Staff White Paper *Force of Decision...Capabilities for the 21st Century*. Washington, DC: US Government Printing Office, 1996, p. 15. This also mirrors the structure of Chapter 4, TRADOC Pam 525-5, *Force XXI Operations*, Washington, DC: US Government Printing Office, 1994.

36. Schneider, Dr. James J. *How War Works: The Origins, Nature, and Purposes of Military Theory*. School of Advanced Military Studies Course One Syllabus AY 96-97, Ft. Leavenworth, KS: USACGSC, 1996, p. 10.

37. US Army. *FM 100-5 Operations*. Washington, DC: US Government Printing Office, June, 1993, p. v. Hereafter cited as "FM 100-5."

38. This doctrinal analysis of exploitation is drawn from Chapters 7 and 8, FM 100-5; Chapter 4, FM 71-100; Chapter 3, FM 71-3; Chapter 3, FM 71-123; and Chapter 3, FM 71-2. Full citations for these manuals appear in the bibliography.

39. FM 100-5, p. 7-9.

40. FM 100-5, p. 8-1.

41. FM 100-5, p. 8-5.

42. US Army. *FM 71-100 Division Operations (Final Draft)*. Washington, DC: US Government Printing Office, undated, p. 4-4. This document was published after the June, 1993 edition of FM 100-5. Hereafter cited as "FM 71-100."

ENDNOTES

43. US Army. FM 71-3 *The Armored and Mechanized Infantry Brigade*. Washington, DC: US Government Printing Office, 1996, p. 4-31. Hereafter cited as "FM 71-3."

44. Combest, LTC Michael. Interview by author. Ft. Leavenworth, Kansas, 27 NOV 96. Hereafter cited as "LTC Combest Interview." LTC Combest serves on the Army's FM 100-5 writing team. The general concepts of attack planning focus on objectives versus exploitation opportunities were explored during this informal interview.

45. FM 100-5 addresses "Fundamentals of the Offense" in just over 13 pages and gives exploitation a slight three-quarters of one page, (p. 7-0 to 7-12). FM 71-100 describes "Offensive Operations" in 18 pages and allocates only three-quarters of one page to exploitation, (p. 4-1 to 4-17). Exploitation is afforded one and one-half pages in FM 71-3's 44-page treatment of "Offensive Operations," (p. 4-1 to p 4-43). FM 71-2 allows two pages to exploitation from among 70 pages of "Offensive Operations." FM 71-2 *The Armored and Mechanized Infantry Battalion Task Force*, Washington, DC: US Government Printing Office, 1988, p. 3-2 to 3-69. Page counts include partial pages and diagrams. Exploitation page count includes text only.

46. Seldes, George, ed. *The Great Quotations*. Seacacus, NJ: Castle Books, 1977, p. 26.

47. FM 100-5, p. 7-9. See also FM 71-100, p. 4-4; FM 71-3, p. 4-33; and FM 71-2, p. 3-62.

48. FM 71-3, p. 4-31. This is the retitled doctrinal concept of "continuation of the attack" found at the citation. The constitution and employment of the reserve deserves some discussion. The theme developed in this paper, of assigning the mission of exploitation to the reserve, may appear incompatible with the doctrinal definition of "reserve" found in FM 101-5-1: "That portion of a force withheld from action at the beginning of an engagement so as to be available for commitment at the decisive moment." [Emphasis added]. Commander's decide when and where such transient decisive moments exist. In offensive operations, the commander may see the initial objective as the decisive point, rather than some tenuous follow on action like exploitation. It is wholly rational for commanders to focus on the objective rather than exploitation for two reasons. First, deliberate exploitation is entirely dependent on a successful attack to establish the appropriate conditions for its execution. This falls in line with the adage "first things first." Although this is somewhat shortsighted and sequential thinking, it does have merit. Secondly, an attacking unit's specified tasks from its higher headquarters are frequently terrain oriented. When the attacker's success

ENDNOTES

will be measured against seizing a terrain objective, it is reasonable and natural for commanders to look first at being successful on the initial objective.

49. The terms "hasty exploitation" and "deliberate exploitation" are the invention of the author; as are the rough definitions and explanatory remarks which follow in the next sub-section of the main text.

50. FM 71-100, p. 4-4. "The division can exploit its own success..."

51. This structure is the current modified table of organization and equipment (MTOE) for the heavy division as reflected in ST 100-3, *Battle Book*, Ft. Leavenworth, KS: USACGSC, 1996, p. 2-6. Hereafter cited as "ST 100-3".

52. Although admittedly subject to mission, enemy/weather, terrain, troops and time available (METT-T), this "typical" organization for divisional attacks is supported by FM 71-100, p. 4-8 to 4-9, which identifies divisional offensive organization centered around the main attack, supporting attack, and reserve.

53. FM 71-100, p. 4-8. (See also endnote #48).

54. FM 71-3, p. 4-33.

55. FM 71-3, p. 4-33.

56. The heavy division's current MTOE contains 10 tank and mechanized infantry battalions. Divisions which still command three brigade headquarters organize these brigades as one of four battalions and two of three battalions each. The assignment of specific maneuver battalions to a brigade headquarters is rarely changed.

57. FM 71-3, p. 4-3.

58. FM 71-2, p. 3-62. This is reinforced by US Army, FM 71-1, *Tank and Mechanized Infantry Company Team*, Washington, DC: US Government Printing Office, 1988, p. 3-13, which does not list exploitation as a task for the company when designated as the battalion reserve. FM 71-1, p. 3-1 states "Company teams will perform...[offensive operations] as part of a larger unit's exploitation..."

59. FM 71-2, p. 3-27.

ENDNOTES

60a. Rivera, LTC Guillermo and LTC Brian Knox. Interview by author. Ft. Leavenworth, Kansas, 26 NOV 96. Hereafter cited as "LTC Rivera/Knox Interview." LTC Rivera is a C2 Observer Controller for BCTP at Ft Leavenworth and has observed 9 corps/division rotations in 18 months. LTC Knox is a maneuver Observer controller for BCTP at Ft. Leavenworth and has observed 16 rotations in the last 2 1/2 years. LTC Knox stated that divisions typically fail to adequately weight the main effort which subsequently bogs down in the enemy security zone, making it vulnerable to massed artillery fires and air attacks. After suffering such attacks, the brigades are frequently incapable of mustering sufficient combat power to seize their assigned objectives. This forces the division to either halt the attack and assume defensive positions or commit the reserve to assume the mission of the main effort brigade.

60b. Bogdan, Mr. Richard. Interview by author. Ft. Leavenworth, Kansas, SEP 96. Mr. Bogdan serves as a Senior Analyst for US Army Combined Arms Lessons Learned (CALL) Center. Mr. Bogdan has previously served as a US Army tank company commander and Armor Officer Advanced Course small-group instructor. The statements concerning the tactical culmination of the battalion on or short of its objective are based on this interview. Mr. Bogdan's observations are corroborated by the author's experiences during more than 16 years of service in tactical units, especially numerous training exercises as a Regimental Cavalry Squadron S3, Tank Battalion S3, Divisional Brigade S3, and CTC S3 Observer Controller.

61. Unlike the division, where one 3-battalion brigade is considerably less than one-third of its combat power, the reserve battalion of the 3-battalion brigade is nearly one-third of its combat power. The "gap" caused by the success of the two-battalion attack may be as narrow as 1,500 meters against an old Soviet-style opponent and will probably be choked with the attackers' combat and recovery/medevac equipment. Also, the initial attack may fail to neutralize the second-echelon defending battalion. Pushing the approximately 80 vehicle systems of the reserve battalion through this busy constricted gap and through the second echelon defenses may so slow and attrit the reserve that it is rendered incapable of the exploitation it was intended to conduct.

62. LTC Combest Interview. The discussion of suitability for exploitation based on conditions rather than on organization was a portion of this informal interview.

63. US Army. FM 25-101, *Battle Focused Training*. Washington, DC: US Government Printing Office, 1990, Forward. Hereafter cited as "FM 25-101."

64a. LTC Rivera/Knox Interview. During this interview, both officers stated that units have frequently planned to capitalize on local offensive success, but that this

ENDNOTES

planning lacked the detail and thoroughness of the plan for the attack itself. The majority of such planning was in the form of "be prepared" tasks generated by "what if" considerations during the wargaming portion of the Deliberate Decision Making Process. Moreover, throughout the planning process neither before nor during the attack did the unit ever use the term "exploitation" to describe its tactical actions.

64b. Wass de Czege, BG(R) Huba. Telephonic interview by author. Ft. Leavenworth, Kansas, 2 NOV 96. Hereafter cited as "BG(R) Wass de Czege Interview." BG(R) Wass de Czege served as an Assistant Division Commander for Maneuver, (ADC(M)), for seven warfighter BCTP exercises and as a COL was a primary contributor to the 1982 edition of FM 100-5. BG(R) Wass de Czege stated that US Army units and leaders have no experience at exploitation and that exploitation is not resourced in tactical plans. He also observed that exploitation requires deliberate planning and is "not just something you do when you get lucky." He attributes the lack of exploitation planning to a general drop in competence and experience in the basics of deliberate attack. This drop began in 1993 as a result of extreme turbulence in key leaders at the tactical level. BG(R) Wass de Czege sees exploitation as a necessary element of tactical planning which should carry the unit forward, posturing it for the next engagement.

65. LTC Rivera/Knox Interview. LTC Knox and LTC Rivera also observed that during a five-day BCTP exercise with a new staff, most commanders are justifiably focused on "team building" and basic tactical operations. These observations concerning the influence of CTC training conditions on unit training objectives and staff planning were endorsed by LTC Combust during his interview with author.

66. FM 25-101, Chapter 2. The METL development process and its relationship to training is addressed throughout this chapter. See also FM 25-100, *Training the Force*, Washington, DC: US Government Printing Office, 1988, Chapter 2.

67. US Army. ARTEP 71-3-MTP, *Mission Training Plan for the Heavy Brigade Command Group and Staff*. Washington, DC: US Government Printing Office, 1988. Hereafter cited as "71-3-MTP." This is representative example of US Army MTPs. The Preface and Chapter 1 address the structure and content of this and similar manuals.

68. 71-3-MTP, p. 3-11.

69. 71-3-MTP, p. 3-11.

70. US Army. ST 101-6, *G1/G4 Battle Book*. Ft. Leavenworth, KS: USACGSC, 1993, p. 2-4. The figures used here come from the "Separate Mech Bde w/M1/M2" listing

ENDNOTES

which is roughly equal to the divisional brigade with routine division/corps "slice" elements.

71. US Army. FM 101-10-1/2, *Organizational , Technical, and Logistical Planning Factors(Volume 2)*. Washington, DC: US Government Printing Office, 1987; w/ Change 1 dated 1990, p. 2-54. The figures used come from a simple arithmetic comparison between the "Standard - 001" and the "POL Intense - 002" usage profiles applied to the 136,000 gallon baseline figure. Hereafter cited as "FM 101-10."

72. FM 101-10, p. 2-97 and 2-55. "POL Intense - 002" usage profiles applied to the SRC 17201J220 "CAV BDE AIR ATK (CBAA)(AH-64).

73. US Army. FM 1-111, *The Aviation Brigade*. Washington, DC: US Government Printing Office, 1989, Chapter 4. These concepts are supported by this chapter which addresses the employment of the aviation brigade in offensive operations.

74. FM 100-5, p. 2-11 to 2-12. FM 100-5 also addresses the functions of leadership on p. 6-6 and 6-7.

75. US Army War College, *Army Command, Leadership, and Management: Theory and Practice -- A Reference Text*. Carlisle Barracks, PA: US Army War College, 1995, p. 20-9 to 20-17.

76. US Army. Command and General Staff College (USACGSC), CGSC Cir 531-1, *US Army Command and General Staff College Catalog Academic Year 1995-1996*. Ft. Leavenworth, KS: USACGSC, 1995, p. 1-13. Hereafter cited as "CGSC Cir 351-1." This is properly the mission of the Center for Army Tactics. The "warfighting conscience" phrase is from a 1993 quote attributed to GEN Franks, TRADOC commander.

77. USACGSC Cir 351-1, p. 3-3.

78. This assertion is based on a review of USACGSC Cir 351-1 and USACGSC AY 96-97 syllabi for Courses C310 "Combat Operations" and C320 "Corps and Division Combat Operations." This review was reinforced by informal discussions with AY 95-96 graduates of CGSC who stated unanimously that exploitation was never addressed by faculty or within course materials during tactical instruction. MAJ Robert Warburg, AY 96-97, stated "The focus of CGSC isn't on tactics. The focus is on the deliberate decision making process. Tactics are strictly secondary to the process." This echoes the findings of MAJ Frank Abbott in *Tactical Pursuit and the Moral Domain*, (SAMS Monograph),

ENDNOTES

School of Advanced Military Studies, Ft. Leavenworth, KS: USACGSC, 1993), p. 38. The hours of tactical instruction cited are the sum of C130 "Fundamentals of Combat Operations" (81 Hours), C320 "Corps and Division Combat Operations (116 Hours), and C950 "Prairie Warrior '96" (112 Hours). These hours are from CGSC Cir 351-1, p. 3-14 and 3-15.

79. Clausewitz, p. 263.

80. Clausewitz, p. 264.

81. Clausewitz. This assertion is a highly condensed synopsis of the ideas fully developed by Clausewitz in Book 1, Chapter 3 "On Military Genius", Book 3, Chapter 6 "Boldness", and Book 3, Chapter 7 "Perseverance."

82. The contents of this paragraph and the explanations for the Army's lack of imagination and risk taking in tactical exercises is based on the author's more than 16 years of service in US Army tactical units, especially numerous training exercises as a Regimental Cavalry Squadron S3, Tank Battalion S3, Divisional Brigade S3, and CTC S3 Observer Controller.

83. Parker, LTC Michael L. Informal interview by author. Ft. Leavenworth, Kansas, 5 DEC 96. LTC Parker is a former division cavalry squadron commander and graduate of the School of Advanced Military Studies at Ft. Leavenworth. The BCTP program is especially susceptible to this phenomenon. BCTP exercises are preceded by a series of seminars facilitated by BCTP for the division commander and staff. These seminars serve as the catalyst for the divisions tactical thinking and planning during their BCTP experience. If certain doctrinal topics are not addressed in these seminars, then those topics fail to gain the attention of the division's leadership because they do not seem to be important to BCTP. During their interview, cited above, LTC Rivera and LTC Knox stated that exploitation is not a discussion topic in BCTP seminars.

84. FM 100-5, p. 1-5.

85. FM 100-7, p. 5-1. See also p. 7-3 and 7-4 for an overview of operational exploitation of tactical success.

86. FM 100-5, p. 1-3.

87. US Army. FM 100-5 (Preliminary Draft), Operations. Unpublished preliminary draft dated 28 NOV 96, p. II-1. Hereafter cited as "FM 100-5(PD)."

ENDNOTES

88. FM 100-5(PD), p. II-1-6.
89. FM 100-5(PD), p. III-3-1.
90. FM 100-5(PD), p. IV-1-7.
91. Singley, George T., III. "Today's Investments Shape Tomorrow's Force," *ARMY*, May 1995: 48. In May, 1995 Mr. Singley was Deputy Assistant Secretary of the Army for Research and Technology.
92. Hartzog, GEN William W. "Crossing the Threshold Into a New Age," *ARMY*, May 1995: 22.
93. Boyd, BG Morris J. "A Milestone in the Army's Journey into the Next Century," *ARMY*, May 1995: 27. In May, 1995 BG Boyd was Deputy Chief of Staff for Doctrine, Headquarters, TRADOC.
94. US Army. TRADOC Pam 525-1, *Force XXI Operations*. Ft. Monroe, VA: HQ TRADOC, 1994, p. 3-18. Hereafter cited as "TRADOC Pam 525-5."
95. TRADOC Pam 525-5, p. 3-9.
96. US Army. Command and General Staff College (USACGSC), ST 71-100-2010 (Draft), *Mobile Strike Force 2010 Operations: Principles, Tactics, Techniques, and Procedures for the 2010 Digitized Force at Division Level*. Ft. Leavenworth, KS: USACGSC, 1995, p. 6-10. Hereafter cited as "ST 71-100-2010." This discussion of the relationship of fires and information to exploitation opportunity and capability is reinforced by interviews with BG(R) Huba Wass de Czege and LTC Michael Combest.
97. BG(R) Huba Wass de Czege Interview. BG(R) Wass de Czege believes that DIVARTY's capability in 2010 will enable the delivery of approximately 7,000+ precision guided munitions in roughly 10 minutes. This compares favorably with a target set of some 2,200 vehicles in an enemy division.
98. ST 71-100-2010, p. 1-1.
99. ST 71-100-2010, p. 3-7.

ENDNOTES

100. ST 71-100-2010, p. 3-9. The central concepts of offensive exploitation are fully developed in Chapter 6, section 2, "The Pattern of Tactical Offensive Operations" and in pages 6-10 and 6-11.

101. LTC Rivera/Knox Interview. V Corps and 1st Armored Division have taken an important first step in this direction. For their next BCTP warfighter exercise these units identified "exploitation" as a training objective. However, BCTP is anticipating the creation of suitable conditions to support this objective vice forcing the training units to create the battlefield conditions.

BIBLIOGRAPHY

- Abbot, MAJ Frank. *Tactical Pursuit and the Moral Domain*. (SAMS Monograph). School of Advanced Military Studies, Ft. Leavenworth, KS: USACGSC, 1993.
- Allen, Louis. *Singapore 1941-1942*. London, UK: Frank Cass & Co., Ltd., 1993.
- Barnett, Correlli. *The Swordbearers*. Bloomington, IN: Indiana University Press, 1975.
- Bogdan, Rick. Interview by author. Ft. Leavenworth, Kansas, September, 1996.
- Bond, Brian. *Liddel Hart: A Study of his Military Thought*. New Brunswick, NJ: Rutgers University Press, 1977.
- Boyd, BG Morris J. "A Milestone in the Army's Journey into the Next Century." *ARMY*, May 1995: 25-28.
- Brodie, Bernard and Fawn M. *From Crossbow to H-bomb: The Evolution of the Weapons and Tactics of Warfare*, Bloomington, IN: Indiana University Press, 1973.
- Calvo, MAJ Mark W. "Digitizing the Force XXI Battlefield." *Military Review*, May-June 1996: 68-73.
- Chandler, David G. *Campaigns of Napoleon*. New York, NY: MacMillan Publishing Co., 1966.
- Clausewitz, Major-General Carl von. *On War*. Michael Howard and Peter Paret, ed. and trans., Princeton, NJ: Princeton University Press, 1976.
- Combest, LTC Michael. Interview by author. Ft. Leavenworth, Kansas, 27 November 1996.
- Cordtz, Dan. "War in the 21st Century: The Digitized Battlefield." *Financial World*, August 29th 1995: 47-49.
- DuPont, Daniel G. and Richard Lardner. "Force XXI." *Armed Forces Journal International*, October, 1994: 45-51
- Falk, Stanley L. *Seventy Days to Singapore*. New York, NY: G.P. Putnam's Sons, 1975.
- Frederick, King/the Great of Prussia. *Instructions of Frederick the Great for His Generals*. BG Thomas R. Phillips, trans., Harrisburg, PA: The Telegraph Press, 1944.
- Fuller, MG J. F. C. *Armored Warfare*. Westport, CT: Greenwood Press Inc., 1983.
- Guderian, Colonel-General Heinz. *Achtung-Panzer!* Christopher Duffy, trans., London, UK: Arms and Armor Press, 1992.

BIBLIOGRAPHY

- Hartzog, General William W. "Crossing the Threshold Into a New Age." *ARMY*, May 1995: 21-24.
- Jomini, General Baron Antoine. *Summary of the Art of War*. BG J. D. Hittle, trans. and ed. In *Roots of Strategy, Book 2*, Harrisburg, PA: Stackpole Books, 1987.
- Liddell Hart, Sir B. H. *The Remaking of Modern Armies*. Westport, CT: Greenwood Press Inc., 1980.
- Liddell Hart, Sir B. H. *The Sword and the Pen*. Adrian Liddell Hart, ed., New York, NY: Thomas Y. Crowell Co., 1977.
- Liddell Hart, Sir B. H. *Strategy*. New York, NY: Frederick A. Praeger, Inc., 1968.
- McCarty, MAJ Gary J. *Operational Exploitation: Easier Said Than Done*. (SAMS Monograph), School of Advanced Military Studies, Ft. Leavenworth, KS: USACGSC, 1990.
- Milner, N.P. *Vegetius: Epitome of Military Science*. Liverpool, UK: Liverpool University Press, 1993.
- Morelock, MAJ Jerry D. "The Legacy of Liddell Hart." *Military Review*, May 1986: 65-74.
- Napoleon I, Emperor. *Military Maxims of Napoleon*. LTG Sir George C. D'Aguilar, trans., General Burnod, ed., New York, NY: MacMillan Publishing Co., 1988.
- Parker, LTC Michael L. Informal interview by author. Ft. Leavenworth, Kansas, 5 DEC 96.
- Percival, LTG A. E. *The War in Malaya*. London, UK: Eyre & Spottiswoode, 1949.
- Phillips, BG Thomas R., trans. and ed. *Roots of Strategy*. Harrisburg, PA: Stackpole Books, 1985.
- Pickar, MAJ Charles K. *Blitzkrieg: Operational Art or Tactical Craft?* (SAMS Monograph). School of Advanced Military Studies, Ft. Leavenworth, KS: USACGSC, 1992.
- Reid, Brian Holden. "J.F.C. Fuller and B.H. Liddell Hart: A Comparison." *Military Review*, May 1990: 64-73.
- Reid, Brian Holden. *J.F.C. Fuller: Military Thinker*. New York, NY: St. Martin's Press, 1987.

BIBLIOGRAPHY

- Rigby, MG Joe W., "Digitizing Force XXI: A Team Effort." *ARMY*, May, 1995: 36-44.
- Rivera, LTC Guillermo and LTC Brian Knox. Interview by author. Ft. Leavenworth. Kansas, 26 November 1996.
- Rothenberg, Gunther E. *The Art of Warfare in the Age of Napoleon*. Bloomington, IN: Indiana University Press, 1980.
- Saxe, Marshal Maurice Comte de. *My Reveries Upon the Art of War*. [Anonymous]. trans., Westport, CT: Greenwood Press, 1971.
- Schneider, Dr. James J. *How War Works: The Origins, Nature, and Purposes of Military Theory*, School of Advanced Military Studies Course One Syllabus AY 96-97, Ft. Leavenworth, KS: USACGSC, 1996.
- Seldes, George., ed., *The Great Quotations*, Seacacus, NJ: Castle Books, 1977.
- Singley, George T., III. "Today's Investments Shape Tomorrow's Force." *ARMY*, May 1995: 46-58.
- Stanton, LTC Martin N. "The Battle of the Slim River: Malaya, 7 January 1942." *Armor*, May-Jun 1996: 26-31.
- Sun Tzu. *The Art of Warfare*. Ralph D. Sawyer, trans., New York, NY: Ballentine Press, 1994.
- Toland, John. *No Man's Land: 1918 - The Last Year of the Great War*. New York, NY: Ballentine Books, 1982.
- Trythall, Anthony John. *'Boney' Fuller: Soldier, Strategist, and Writer 1878-1966*. New Brunswick, NJ: Rutgers University Press, 1977.
- Tsuiji, COL Masanobu. *Singapore the Japanese Version*. trans., Margaret E. Lake, New York, NY: St. Martin's Press, 1960.
- US Army. *Army Command, Leadership, and Management: Theory and Practice -- A Reference Text*. Carlisle Barracks, PA: US Army War College, 1995.
- US Army. ARTEP 71-3-MTP, *Mission Training Plan for the Heavy Brigade Command Group and Staff*. Washington, DC: US Government Printing Office, 1988.
- US Army. CGSC Cir 531-1, *US Army Command and General Staff College Catalog Academic Year 1995-1996*. Ft. Leavenworth, KS: USACGSC, 1995.
- US Army. Chief of Staff White Paper, *Force of Decision...Capabilities for the 21st Century*. Washington, DC: US Government Printing Office, 1996.

BIBLIOGRAPHY

- US Army. FM 1-111, *The Aviation Brigade*. Washington, DC: US Government Printing Office, 1989.
- US Army. FM 25-100, *Training the Force*. Washington, DC: US Government Printing Office, 1988.
- US Army. FM 25-101, *Battle Focused Training*. Washington, DC: US Government Printing Office, 1990.
- US Army. FM 71-2 *The Armored and Mechanized Infantry Battalion Task Force*. Washington, DC: US Government Printing Office, 1988.
- US Army. FM 71-3 *The Armored and Mechanized Infantry Brigade*. Washington, DC: US Government Printing Office, 1996.
- US Army. FM 71-100 *Division Operations*, (Final Draft). Washington, DC: US Government Printing Office, undated.
- US Army. FM 71-123, *Tactics and Techniques for Combined Arms Heavy Forces: Armored Brigade, Battalion Task Force, and Company Team*. Washington, DC: US Government Printing Office, 1992.
- US Army. FM 100-5, *Field Service Regulations - Operations*. Washington, DC: US Government Printing Office, 1941.
- US Army. FM 100-5, *Field Service Regulations - Operations*. Washington, DC: US Government Printing Office, 1944.
- US Army. FM 100-5 *Operations*. Washington, DC: US Government Printing Office, 1993.
- US Army. FM 100-5 *Operations*, (Preliminary Draft). (Unpublished draft, 1996).
- US Army. FM 100-7, *Decisive Force: The Army in Theater Operations*. Washington, DC: US Government Printing Office, 1995.
- US Army. FM 101-5-1 (Final Draft) *Operational Terms and Graphics*. Washington, D.C.: US Government Printing Office, 1995.
- US Army. FM 101-10-1/2, *Staff Officers' Field Manual: Organizational, Technical, and Logistical Planning Factors (Volume 2)*. Washington, DC: US Government Printing Office, 1987; w/ Change 1 dated 1990.

BIBLIOGRAPHY

- US Army. ST 71-100-2010 (Draft), *Mobile Strike Force 2010 Operations: Principles, Tactics, Techniques, and Procedures for the 2010 Digitized Force at Division Level*. Ft. Leavenworth, KS: USACGSC, 1995.
- US Army. ST 100-3, *Battle Book*. Ft. Leavenworth, KS: USACGSC, 1996.
- US Army. ST 101-6, *G1 G4 Battle Book*. Ft. Leavenworth, KS: USACGSC, 1993.
- US Army. Syllabus, USACGSC AY, 96-97 "Course C310 - Combat Operations." Ft. Leavenworth, KS: USACGSC, 1996.
- US Army. Syllabus, USACGSC AY, 96-97 "Course C320 - Corps and Division Combat Operations." Ft. Leavenworth, KS: USACGSC, 1996.
- US Army. TRADOC Pam 525-5, *Force XXI Operations*. Washington, DC: US Government Printing Office, 1994.
- US Army. TRADOC, *Battle Labs Force XXI: Defining the Future*. (Booklet), Ft. Monroe, VA: HQ TRADOC, 1995.
- Wass de Czege, BG(R) Huba. Telephonic interview by author. Ft. Leavenworth, Kansas, 2 NOV 96.
- Weigley, Russell F. *Eisenhower's Lieutenants: The Campaigns of France and Germany 1944-1945*. Bloomington, IN: Indiana University Press, 1981.