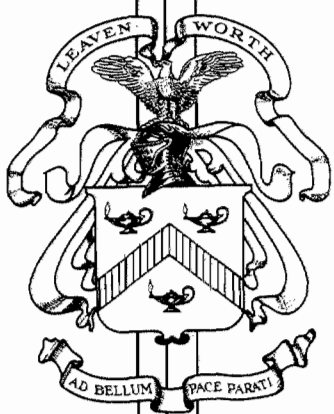
Combined Arms in Battle Since 1939

Roger J. Spiller
General Editor



U.S. Army Command and General Staff College Press
Fort Leavenworth, Kansas
1992

Library of Congress Cataloging-in-Publication Data

Combined arms in battle since 1939 / Roger J. Spiller, general editor.
p. cm.
Includes bibliographical references.
1. Unified operations (Military science)—History—20 century.
2. United States—History, Military—20th century. 3. Military history, Modern—20th century. I. Spiller, Roger J.
U260.C66 1992
355.4'0973'0904—dc20

92-11472
CIP

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Introduction

In 1927, Lieutenant Colonel George C. Marshall left his faculty position at the Army War College for a tour of duty as the assistant commander of the U.S. Army Infantry School at Fort Benning, Georgia. Marshall was already well known in the U.S. Army. He had been a student and then an instructor at Fort Leavenworth's Army service schools—later the U.S. Army Command and General Staff College—while only a lieutenant. He had also served two tours of duty in the Philippines, and after America's entry into World War I, he rose steadily through the staff of the American Expeditionary Forces (AEF) in France to become the G3 (Operations) officer of the General Headquarters, AEF. Immediately after the war, Marshall served as aide-de-camp to General John J. Pershing, the former commander of the AEF and now chief of staff of the Army. Although Marshall finished the war as a colonel, this rank was only temporary; not until 1920 was he to win a regular promotion to the rank of major.

But when he arrived at Fort Benning, Marshall's thoughts were on his army's performance in World War I, and what he remembered, he did not remember fondly. He had been part of an AEF staff that seemed to specialize in highly elaborate, tightly knit operational plans that had little or nothing to do with the realities on the front lines, nothing to do with the actualities of troop handling in ordinary tactical situations. Marshall thought that the U.S. Army had benefited from coming into the Great War so late, when the enemy was worn out. Any professional officer who took pride in how the U.S. Army had handled itself, Marshall thought, even under such favorable conditions, was merely deluding himself.

The school that Marshall found at Fort Benning in 1927 was as self-satisfied as the U.S. Army of which it was a part. The instruction was stilted; lectures were read to the students. Even then, the students were provided with highly precise maps of the local terrain, and these, combined with the near-perfect intelligence on aggressor forces they were allowed, made tactical problems highly stylized and easily predictable. Nine years after the conclusion of World War I, the U.S. Army—long since largely demobilized and sliding toward record low budgets and total strength—was slipping into the time-honored mental and physical routines of garrison life. There was no threat on the horizon, none at least the American people wanted to notice, and so there was no pressing or overt reason for those inside the Army to worry much about maintaining its warlike proficiency.

But Marshall's knowledge of military history and his soldier's faith that sometime in the future he would again be called to war drove him to resist the inertia that was then settling over his army. In his view, an army's most perishable skills were the ones learned in the hard school of combat itself, where a soldier's imagination, inventiveness, practicality, and common sense were of more value than any amount of school technique learned by rote.

Twelve years after he assumed his duties at the Infantry School, Marshall would become chief of staff of the United States Army, taking office on the day German forces invaded Poland, effectively beginning World War II. Then, the whole Army was his to transform. But in 1927, Marshall's world was confined to Fort Benning. Here, he resolved he would make a difference. After he arrived, he made his educational philosophy abundantly clear:

> I insist we must get down to the essentials, make clear the real difficulties, and expunge the bunk, complications, and ponderosities; we must concentrate on registering in men's minds certain vital considerations instead of a mass of less important details. We must develop a technique and methods so simple and brief that the citizen officer of good common sense can readily grasp the idea.

The qualities Marshall demanded of both his faculty and students at Fort Benning could be developed in a number of ways, most of them comparatively unorthodox for his time. He decreed that school lectures would no longer be read to the students; indeed, he refused to allow instructors to bring their notes to class. For tactical problems, accurate maps were replaced with out-of-date and incomplete ones. On occasion, no maps were allowed at all. Throughout, Marshall insisted his men be schooled to make a decision at the proper time with incomplete information. He was not interested in producing an officer whose only accomplishment was technique or, worse yet, one who was competent in tactical theory but would fail when he tried to execute it. He wanted Fort Benning to give back to the Army quick-thinking, inventive, and practical soldiers.

Marshall's conception of the successful professional soldier had been shaped during his time as a student at Fort Leavenworth under the tutelage of Major (later Major General) John F. Morrison. It had been Morrison's standard of "tactical simplicity" that Marshall had taken with him into World War I, and it had been that standard that the U.S. Army had failed to meet. Both Morrison and, after he joined the faculty at Leavenworth, Marshall assumed that a thorough knowledge of military history was essential to the formation of a professional soldier and was a field of knowledge that was critical to the officer who meant to meet his obligations to his soldiers, his army, and his nation. Both men would have agreed that without a knowledge of mili-

tary history, an officer could not properly understand his profession. Taking a page from his old teacher's approach, Marshall's use of military history at Fort Benning was as practical as it was intense.

Marshall thought that the use of case studies from military history could be as instructive as any theoretical or fictitious tactical problem. He was particularly interested in using history to set a problem in which a student would be forced to analyze a decision taken in the heat and confusion of battle, and Marshall was fortunate to have instructors in the Fourth Section (History and Publications) of the Infantry School who placed before the students just this sort of problem.

Major (later Major General) Edwin F. Harding was the chief of the school's Fourth Section. Harding conceived of the idea of commissioning officers who had served in World War I to write a book full of brief essays on the tactical problems they had encountered, problems that particularly conveyed some lesson for the officer who had only imagined what combat must be like. Harding was able to call upon the considerable talents of a young lieutenant (later major general) in his section, Charles T. ("Buck") Lanham. According to Marshall, it was Lanham who did the lion's share of the work, both on the original and subsequent edition. The eventual result was what is now regarded as a minor classic of literature, *Infantry in Battle*, first published in 1934 and then substantially revised in 1938.

Not long after he finished his tour at the Infantry School, Marshall wrote to an old friend about some of the conclusions on military education he had made as assistant commandant: "Many regard the military history phase of our schooling as entirely theoretical and our problems in pure tactics as the practical. My experience has almost led me to an exactly contrary view." Marshall was not reluctant to put his views in print when he wrote the introduction to *Infantry in Battle.* During peacetime, he wrote, "the thinking of an army becomes increasingly theoretical," and to Marshall's way of thinking, this was certainly no compliment. The cases in *Infantry in Battle* were published as an antidote to this tendency so that reality could replace fantasy in modern tactical thinking. In this way, military history could be placed at the service of an army as a professional soldier's laboratory, a place, unconstrained by peacetime economics, where the soldier could prepare his imagination for the challenges of combat. It was a place where experience could be given a voice, where the veteran could speak to the beginner.

When *Infantry in Battle* was finally published by the Infantry Journal Press in 1938, the world was vibrating with military action, moving toward what in retrospect seems an inevitable global war. Hitler's Germany had annexed Austria and would dismember Czecho-

slovakia. The Sino-Japanese War was in full flood. Even while the Soviet Army's high command was suffering a purge, the army itself was beginning to build a huge armored and motorized force. Even in Prime Minister Neville Chamberlain's England, the government was beginning to stockpile food in the event of war. One year to the day after *Infantry in Battle* was published, World War II finally erupted.

During the course of the war, the profession of arms was revolutionized. No conflict in military history, before or since, has so engulfed the world's peoples. The geographic scope and the extent to which the world's governments mobilized for the war overwhelmed military wisdom. The distance and speed of strategic and operational movements were without precedent and exceeded the imagination of even the most inventive interwar military commentators. Armies employed their new weapons in greater harmony and to a deadlier effect than ever before. Military leaders at all echelons of command struggled to exercise control over the power their governments had placed in their hands. The consummating act of the war, the detonation of atomic bombs over Hiroshima and Nagasaki in 1945, even called into question the worth of military knowledge itself.

For years after the war, the U.S. Army conducted its affairs as though military history had been completely overtaken by modern events. Marshall's vision of military history as a laboratory for the professional soldier was laid aside. Inside the Army and even beyond, the prevailing attitude was that military history began anew when the bombs were dropped on Japan. Military history, it was believed, could hardly enlighten professional soldiers confronting the demands of mass warfare and modern weapons. For more than a generation, American professional soldiers went to war with only the military history they could learn on their own. Their higher schooling focused on weapons and techniques, the form rather than the substance of war.

In the meantime, the discipline of military history itself changed. Once regarded as the special preserve of soldiers, after World War II, the study of military history took its place in some universities as a subject worthy of intense and systematic investigation. George Marshall refused to write his memoirs after the war, but he did not hesitate to lend himself and his name to the establishment of a foundation that was intended to encourage and disseminate knowledge of military history. The military history that grew out of World War II expanded its scope of inquiry: the context in which armies grew and operated attracted the attention of scholars, in uniform and out, to subjects that before the war only rarely found a readership. The result was not the forsaking of the kind of military history that Marshall was brought up on; instead, even more and better "tactical" history made its way

to the professional officer's bookshelf. By the 1970s, U.S. Army officers were not only reading more military history than ever before, they were writing more as well. Eventually, military history returned to the professional officer's curriculum in the Army's institutions of higher military education and has taken its rightful place as an essential consideration in the Army's work in training, doctrine, and professional education.

The U.S. Army Command and General Staff College (CGSC) at Fort Leavenworth experienced all these changes. By the 1980s, the Combat Studies Institute (CSI)—a department of military history whose work would have reminded Marshall of his old Fourth Section at the Infantry School—had been established as one of CGSC's five academic departments. From its inception, CSI was intended to be not only a teaching department but a research institute whose mission was to engage in original investigations on subjects that had a bearing on the contemporary concerns of the U.S. Army. Under the aegis of CSI, a series of Leavenworth Papers and other studies in military history have been published since 1980. The Army's renewed interest in military history is manifested in CSI's publishing record: since its establishment, CSI has researched, written, and published numerous studies in modern military history, distributing more than 900,000 copies. Its faculty, a group of uniformed and civilian military historians, has along the way won an international reputation as one of the most expert collections of scholars in this field.

In the spring of 1991, the faculty of CSI began a collaborative project to publish a modern version of Marshall's *Infantry in Battle.* The worlds of both the professional soldier and the military historian had changed enormously since Marshall's book was published. And yet, it seemed to us, the benefits that awaited the professional soldier who studied military history were more important than ever. What Marshall sought from the study of military history was a professional soldier who was not so entangled in routine and technique that he forgot the essential nature of military leadership itself: a creative capacity for invention and innovation under the most trying and unpredictable conditions. It was no accident at all that Marshall's original book began with a chapter titled "Rules." The chapter's opening lines deserve to be quoted in full:

> The Art of War has no traffic with rules, for the infinitely varied circumstances and conditions of combat never produce exactly the same situation twice. Mission, terrain, weather, dispositions, armament, morale, supply, and comparative strength are variables whose mutations always combine to form a new tactical pattern. Thus, in battle, each situation is unique and must be solved on its own merits.
>
> It follows, then, that the leader who would become a competent tactician must first close his mind to the alluring formulae that well-

> meaning people offer in the name of victory. To master his difficult art he must learn to cut to the heart of a situation, recognize its decisive elements and base his course of action on these. The ability to do this is not God-given, nor can it be acquired overnight; it is a process of years. He must realize that training in solving problems of all types, long practice in making clear, unequivocal decisions, the habit of concentrating on the question at hand, and an elasticity of mind, are indispensable requisites for the successful practice of the art of war.
>
> The leader who frantically strives to remember what someone else did in some slightly similar situation has already set his feet on a well-traveled road to ruin.

Although *Infantry in Battle* was the inspiration for this book, we have not felt obliged to follow strictly the organization of the original. Marshall's book had twenty-seven chapters. Each of his chapters contained several "examples," followed by a conclusion meant to articulate their lessons. Many of the examples were contributed by officers who were writing about their own experiences in World War I, and this approach necessarily limited the book to American examples. Similarly, Marshall's writers focused on infantry tactics because the U.S. Army's doctrine at the time held that the mission of all the other combat arms was to advance the work of the infantry. Still less was it possible at the time to take notice of operations in concert with naval and air forces. The combined arms revolution still lay ahead, and at a time when there was no Joint Chiefs of Staff, to have offered chapters on "joint" operations probably would have struck Marshall, in his damning phrase, as "entirely theoretical." And although many of those who contributed to *Infantry in Battle* fought in a war that allied the forces of several nations, the book did not address issues that modern soldiers know as combined operations.

The reader will find other, more subtle changes from the original in this book. Marshall and his men believed that the requirements of military leadership changed little over the centuries. *Infantry in Battle* could as easily have been written about Greek Hoplites as American soldiers in World War I. Modern students of military history have come to understand that the *context* in which military leadership must operate has a distinct bearing on how effective that leadership finally is. Elsewhere in his writings, George Marshall showed that he understood this principle very well. He was adamant throughout his professional life that American soldiers needed a different kind of military leadership, one attuned to the special attributes of a democratic citizenry in a country whose fundamental reason for existence was the sustenance of human liberty and dignity. Those attributes have been shaped, in the first instance, by the nation's own set of experiences, and even as this is being written, those experiences are in a constant state of motion

and change. Any book that means to take up such questions where Marshall left off could not avoid incorporating their teachings.

Consequently, *Combined Arms in Battle Since 1939* has been written to reflect its own times, not Marshall's. The thirty-six chapters that follow have been chosen to reflect changes in the military art since Marshall's times. Each chapter deals with one case drawn from recent military history that illustrates and illuminates a problem with which a modern professional soldier may someday have to contend. Each case is set in its strategic and operational context, explained in detail, and briefly analyzed.

The book is intentionally designed to be read piecemeal, a chapter at a time, in order to make it as broadly useful to professional soldiers no matter where or in what capacity they are serving—in the field, on the staff, or in the Army's institutions of higher military education. Recognizing that some readers may want to know more about a particular case, we have included a bibliography following each.

The authors of *Combined Arms in Battle Since 1939* are all presently faculty members of the Combat Studies Institute. All the research and writing for this book have been in addition to their regular teaching, administrative work, and other research projects. Some of their chapters are derived from secondary works; others are the result of considerable original research. The final shape of each chapter was determined over a period of several months, during which the writers read and commented on their colleagues' work in a series of editorial meetings. In the end, however, each chapter is the author's own, and for that reason, his name precedes his work. A general list of the contributors is at the end of this book. The administrative staff of the Combat Studies Institute and CSI editors, Marilyn Edwards, Don Gilmore, and Carolyn Conway, have been of critical importance in the planning, editing, and publishing of this book. It is a privilege to be associated with them all.



Roger J. Spiller
George C. Marshall
Professor of Military
History and General Editor,
U.S. Army Command and General
Staff College Press
Fort Leavenworth, Kansas

1

Airborne Operations

Seizing and Holding the German Bridges at Arnhem, September 1944

Lieutenant Colonel Robert D. Ramsey III

On 8 August 1944, the Allies created the First Allied Airborne Army (FAAA), with Lieutenant General Lewis H. Brereton as its commander. The FAAA was an unprecedented combined organization consisting of airmen and soldiers from Britain, Poland, and the United States. Brereton commanded over 50,000 soldiers in the British I Airborne Corps (the 1st Airborne, 6th Airborne, and 52d [Lowland] Divisions and 1st Polish Independent Airborne Brigade [commanded by his deputy, Lieutenant General F. A. M. Browning]) and in Lieutenant General Matthew B. Ridgway's U.S. XVIII Airborne Corps (the 17th Airborne, 82d Airborne, and 101st Airborne Divisions). In addition, Brereton had the U.S. IX Troop Carrier Command with over 1,300 C-47 transport aircraft under Major General Paul L. Williams (along with the RAF's 38th and 46th Groups—old bombers used as tugs for gliders—under Air Vice Marshal Leslie Hollinghurst). With a portion of these forces, Brereton conducted the largest airborne operation of World War II, Operation Market-Garden.

As the Allies raced across France, the FAAA found itself under tremendous pressure to participate in the destruction of German forces, which appeared imminent. Since the FAAA was a pet project of both General George C. Marshall and Lieutenant General Henry H. ("Hap") Arnold, General Dwight D. Eisenhower encouraged his subordinates, as well as Brereton, to develop an imaginative and daring concept for the use of the FAAA. Accordingly, in its first forty days, the FAAA considered eighteen separate airborne operations: five were developed into detailed plans, and three reached the point of execution. The last, Operation Comet, a reinforced division drop to secure the bridges at Arnhem, was canceled on 10 September. In fact, Browning threatened to resign over this risky operation. As the Allies approached the German border, the opportunities to use the FAAA from its bases in Britain were steadily diminished.

On 10 September, Brereton received instructions to support Field Marshal Bernard L. Montgomery's 21st Army Group in its attempt to

flank German defenses by moving north into Holland to cross the Rhine River. Montgomery proposed that Brereton secure key bridges along his axis of advance by dropping three and one-half airborne divisions while Montgomery attacked along that axis with the British XXX Corps. Market was the airborne operation, Garden the XXX Corps' advance. That evening, Brereton stated to his commanders and key staff officers his intention to seize the bridges with "thunderclap surprise" by using the U.S. 101st Airborne Division in the south from Eindhoven to Veghel; the U.S. 82d Airborne Division in the center from Grave to Nijmegen; and the British 1st Airborne Division, with the Polish Brigade, for the bridges over the Rhine at Arnhem. The plan called for the XXX Corps to advance the sixty-four miles to Arnhem in forty-eight hours. Although an operation of this magnitude was unprecedented in its boldness and complexity, the new, enthusiastic FAAA staff worked diligently and quickly to execute Market in less than a week.

With little available time, Brereton made some fundamental decisions. First, he decided that this operation, unlike all others in the war, would occur during daylight since moonlight would be nonexistent during the operation and Brereton's aircrews were not well trained for night navigation. In addition, weak German air and ground forces in the area could be better attacked during daylight. Second, Brereton decided to make only one airlift on D-day, carrying 16,500 of the 35,000 soldiers behind German lines. To facilitate XXX Corps' advance, priority went to the U.S. 101st Airborne Division, then the U.S. 82d Airborne Division, and finally the British 1st Airborne Division. After receiving contradictory advice from his air commanders, Brereton agreed with Williams that the expected loss rate, estimated at 30 percent, and a shortage of ground crews to perform maintenance made the use of the initial lift force for a second lift impossible. In addition, Williams, the airlift commander, argued that it was important to start each lift with fresh, fit crews. Williams was naturally concerned with airlift problems, not the ground commanders' plight. These decisions, along with optimistic intelligence reports, affected operations at Arnhem.

Major General Roy E. Urquhart, a combat veteran of Sicily and Italy, was new to the British 1st Airborne Division. His Market-Garden mission was the most difficult and the most important: to seize and hold the bridges at Arnhem for forty-eight hours. Allied headquarters expected German resistance to be disorganized and no larger than brigade size, with a few armored vehicles. Urquhart's initial concept was to land his four brigades—two parachute, one airlanding, and the Polish parachute—close to both ends of the bridges simultaneously, achieving Brereton's "thunderclap surprise." Unfortunately, intelligence indicated that enemy flak, as well as terrain unsuitable for drop zones

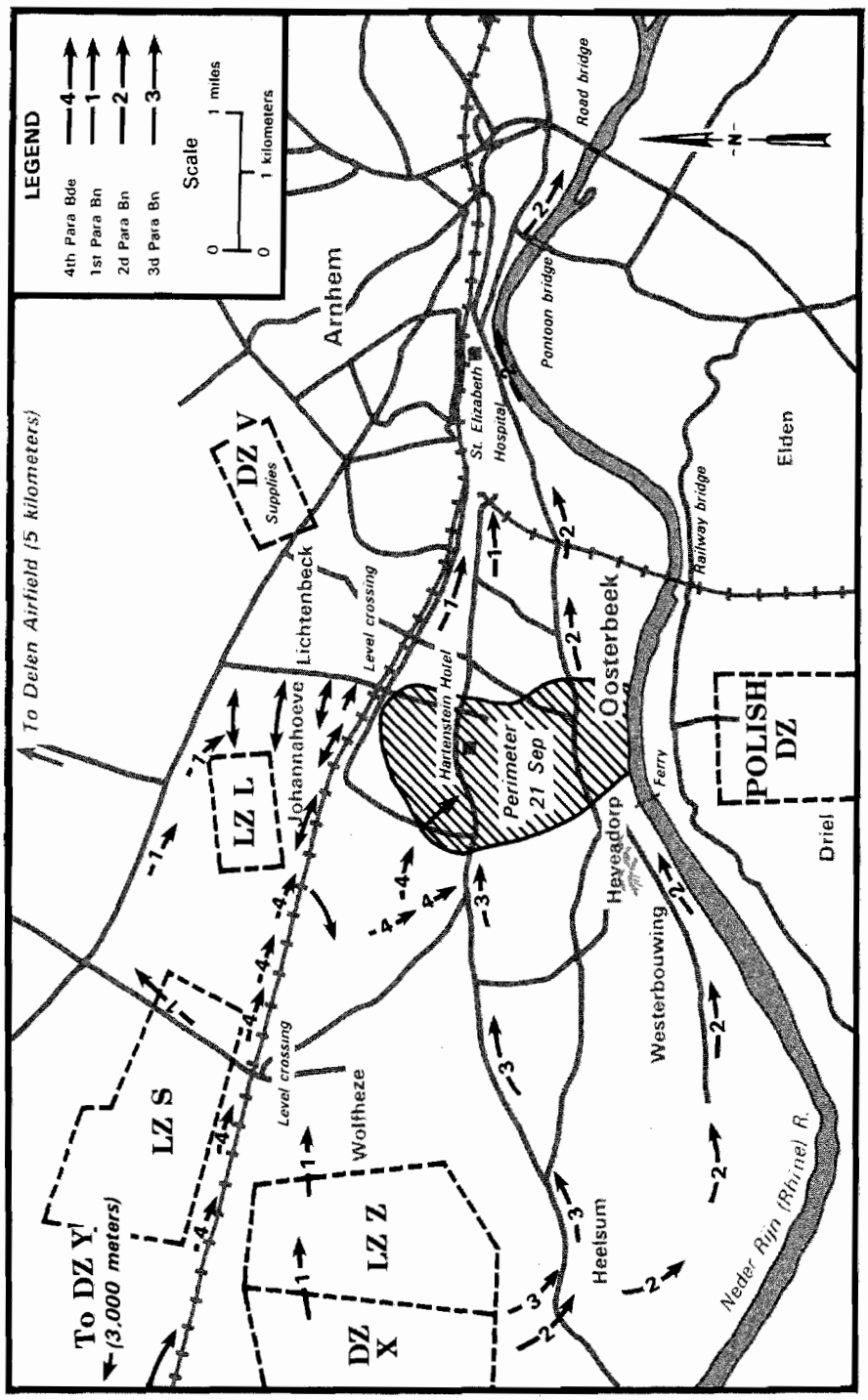
(DZs) and landing zones (LZs), made that impossible. After a long discussion with his RAF advisers, Urquhart was forced to choose DZs and LZs north of the Rhine and eight miles west of Arnhem.

Unlike the two U.S. divisions—which put maximum infantry strength, nine battalions, on the ground with the first lift—Urquhart believed that it was more important to get artillery and division troops on the ground early. Consequently, his D-day lift of 145 C-47s and 358 gliders put the 1st Parachute Brigade and most of the 1st Airlanding Brigade on the ground—less than six battalions, with division troops and two 75-mm artillery batteries. When the RAF refused to support a predawn glider coup de main on the bridges, Urquhart decided to use the 1st Airborne Reconnaissance Squadron, his reconnaissance unit, for that purpose.

Given limited lift assets, Urquhart was forced to plan both for the immediate seizure of the bridges and for the buildup of his four brigades. On D-day, the 1st Airlanding Brigade—minus part of a battalion and other divisional units—would land to secure the DZ and LZ for the D+1 arrivals. The 1st Parachute Brigade would jump and then advance with three battalions to Arnhem to seize the bridges. On D+1, the 4th Parachute Brigade, with the remainder of the divisional units, would arrive. Then, both the 4th Parachute Brigade and 1st Airlanding Brigade would advance into Arnhem. On D+2, the 1st Polish Airborne Brigade would jump south of the Rhine, completing the arrival of the four brigades deemed necessary to take and to hold Arnhem. However, on D+2, the XXX Corps was scheduled to arrive. The piecemeal arrival of units over several days at distant DZs and LZs shaped Urquhart's plan.

Sunday, 17 September, was D-day. From 22 airfields throughout Britain, 1,534 aircraft with 491 gliders carried the 16,500 men of the FAAA's first lift (see map 1). An intensive flak suppression bombardment was conducted the night before, as well as prior to, the arrival of the C-47s. The placement of the troops was almost flawless. Moreover, aircraft losses were less than 3 percent—well below the projected 30 percent. Urquhart was particularly fortunate. The Germans failed to hit a single 1st Airborne Division plane or glider. Furthermore, only twenty-three gliders had aborted. The air force had done an excellent job getting the men to the proper LZs and DZs west of Arnhem. Brereton's decision to make the unprecedented daylight airborne assault made this the most successful airborne drop of the war.

At 1300, exactly as the XXX Corps advanced, the gliders of the 1st Airlanding Brigade landed with divisional troops. An hour later, the 1st Parachute Brigade jumped without difficulty. By 1530, the 1st Airlanding Brigade had secured the DZ for the D+1 drop. The 1st Para-



Map 1. Arnhem, 17—20 September 1944

chute Brigade, with the 1st Airborne Reconnaissance Squadron leading, began moving toward Arnhem. As the 1st Parachute Brigade advanced with three battalions abreast—the 1st Parachute Battalion in the north, 3d Parachute Battalion in the center, and 2d Parachute Battalion along the river road—the 1st Airborne Reconnaissance Squadron, with its gun jeeps, raced ahead on the direct route toward Arnhem.

Unknown to Urquhart, German forces in the Arnhem area were more numerous and better equipped than expected. The hasty preparations for the operations, together with the general chaos of the German retreat, made it almost impossible for the Allies to determine the German strength at Arnhem. Aerial photographs, reports from the Dutch Resistance, and signals intelligence from Ultra provided contradictory clues. Not only did ad hoc German combat groups exist, but the remnants of the II *SS* Panzer Corps were refitting east of Arnhem. The German reaction to the Allies was swift. By 1700, German armored reconnaissance vehicles moved toward the DZs. Elements of the 9th *SS* Panzer Division—brigade size and with armor—focused on Arnhem, while elements of the 10th *SS* Panzer Division moved on Nijmegen to the south.

A meeting engagement occurred west of Arnhem. The 1st Parachute Brigade began its fight, not at the bridges as hoped, but en route to them. With limited mobility and few antiarmor weapons, the 1st and 3d Parachute Battalions, along with the 1st Airborne Reconnaissance Squadron, were halted before dark. Communications problems led Urquhart to move forward with the 1st Parachute Brigade during its advance. When his vehicle was destroyed by indirect fire, he was unable to return to his headquarters. Attempts by the 1st Parachute Brigade to fight through the German forces in the dark increased British losses, some from friendly fire. The chaotic nonlinear fighting, combined with the aggressive enthusiasm of 1st Parachute Brigade troopers—attacking without adequate fire support—created heavy casualties, particularly among leaders. Fortunately, the 2d Parachute Battalion, commanded by Lieutenant Colonel J. D. Frost, met no resistance. By 2030, the 2d Parachute Battalion occupied the north end of the main highway bridge in Arnhem with about 500 men. Two attempts to take the bridge during the night failed. By dawn of D+1, Frost occupied a strong defensive position. His only source of help, the remnants of the 1st and 3d Parachute Battalions, each down to about 100 men, was halted by German hasty defenses west of Arnhem. In less than twenty-four hours, the 1st Parachute Brigade lost its offensive capability. To continue the advance required fresh troops.

Command and control continued to be a problem on 18 September. Radios failed to work, both within the division and to higher head-

quarters. Only the artillery nets worked with any reliability. What is more, Urquhart remained cut off from his units on D+1. Crucial decisions were not made because no one knew the real situation or where Urquhart was. In Urquhart's absence, the commander of the 1st Airlanding Brigade acted as the 1st Airborne Division's commander. Bad weather in Britain delayed the arrival of the 4th Parachute Brigade until 1500. By 1700, after discussing a plan to attack toward Arnhem and receiving the 7th King's Own Scottish Borderers (KOSB) Battalion from the 1st Airlanding Brigade, the 4th Parachute Brigade's commander ordered an advance to the east. Attacking late in the day without surprise, fire support, and knowledge of German intentions, the 4th Parachute Brigade bogged down in the dark, just as the 1st Parachute Brigade had the day before. Aggressiveness and dash again produced high casualties with minimal results. German indirect fire and close air support were devastating. By the end of D+1, Frost doggedly held the bridge at Arnhem against increasingly adverse odds. The 4th Parachute Brigade had blunted its own advance against a reinforced German defensive line.

Urquhart reappeared on the morning of D+2 after his combat elements had been committed. Reinforcement by the 1st Polish Brigade was canceled because of bad weather. In the afternoon, Urquhart decided to establish a bridgehead at Oosterbeek, near a ferry site. The 1st Airlanding Brigade (-) and divisional troops occupied the perimeter, joined by the survivors of the 1st Parachute Brigade. The 4th Parachute Brigade now was fighting for its life. Conducting a hasty withdrawal under fire in the daylight, the 7th KOSB lost two-thirds of its strength in less than one hour. Both the 156th Parachute and 10th Parachute Battalions, now at 50 percent strength, had about 250 men each. The fighting was severe. In less than 2 days, the 1st Airborne Division had lost 3,500 out of 5,500 men, the majority of casualties in the infantry battalions. Few officers or noncommissioned officers survived unscathed. Urquhart was disappointed that the XXX Corps had failed to arrive and hoped that its arrival was imminent.

On Wednesday, 20 September, D+3, Urquhart was able to talk directly with Frost for the first time by using the civilian telephone system. Both received a discouraging, candid appraisal of what each could expect from the other—basically nothing. Repeatedly attacked, Frost could hold only for a short time longer. The 2d Parachute Battalion's gallant fight described by Brigadier General James M. Gavin, commander of the U.S. 82d Airborne Division, as "the outstanding independent parachute battalion action of the war," would be for naught if the XXX Corps failed to arrive soon. The arrival of the 4th Parachute Brigade at Oosterbeek provided Urquhart another shock. It had ex-

hausted itself in less than thirty-six hours; only about 500 of its infantrymen remained. The 156th Parachute Battalion was down to two officers and forty-seven men. Fortunately for the British, the Germans became more cautious as they probed the perimeter. The best the 1st Airborne Division could do was to hold and hope that either the XXX Corps or 1st Polish Brigade would arrive soon.

By dawn on D+4, resistance at the Arnhem bridge ceased. The 2d Parachute Battalion no longer existed. At Oosterbeek, Urquhart reorganized his defenses, consisting of fewer than 3,000 men, mostly divisional troops. To add to his problems, weather continued to hinder resupply, and the division ammunition dump exploded from enemy fire. Just as things were bleakest, two incidents raised the morale of the 1st Airborne Division. First, communication was established with the 64th Medium Field Artillery Regiment at Nijmegen, eleven miles away. For the first time during the entire fight, friendly fire support was provided; it kept the Germans at bay. In the afternoon, despite bad weather and heavy flak, the 1st Polish Brigade jumped south of the Rhine. Only 2 battalions with about 750 men arrived at the jump site. Aircraft turned back without dropping the third battalion. The Poles wanted to cross the river that evening, but no boats arrived. Isolated, Urquhart sent the following message at 2144: "Our casualties heavy. Resources stretched utmost. Relief within 24 hours vital." The 1st Airborne Division was in danger of destruction.

The worst weather of the entire operation occurred on 22 September. The XXX Corps' reconnaissance units linked up with the Poles and provided reliable radio relay for the 1st Airborne Division. For the first time, both Urquhart and the XXX Corps understood each other's situation. Efforts from 22 to 24 September by the Poles and the Dorsets from the British 43d Division provided reinforcements: 250 Poles and 400 Dorsets. Finally, on 23 September, close air support became available in limited numbers. Besides bad weather and the destruction of the two air control parties' radios early in the fight, the Second Tactical Air Force (TAF) had been forbidden by the FAAA from flying when lift or resupply missions were in the air. No one coordinated with the Second TAF to interdict German reinforcement of the Arnhem area. As a result, German units moved about with almost complete freedom. While Allied air support missions were more numerous when weather permitted, they were too late to help the 1st Airborne Division.

Finally, on 25 September, D+8, Urquhart received permission to withdraw across the Rhine River while in contact with the enemy—a delicate and complex operation. As Urquhart made his plan, he drew on his prewar preparation for a promotion examination that required him to study the withdrawal from Gallipoli. At 2145, in the midst of a

heavy rainfall and covered by the artillery fire of the XXX Corps, the 1st Airborne Division commenced its withdrawal. By 0230 on D+9, the last remnants of the 1st Airborne Division—military policemen who had volunteered to remain behind to ensure that German prisoners of war did not expose the withdrawal—reached the southern bank of the Rhine. Market was over for the 1st Airborne Division.

What were the results? Losses were high. Of 10,003 Allied soldiers and airmen north of the Rhine, only 2,398 were evacuated: 1,741 from the 1st Airborne Division, 422 glider pilots, 160 Poles, and 75 Dorsets. The remainder—1,200 killed in action and 6,642 prisoners of war or missing in action—were lost during the fighting. The 1st Airborne Division ceased to exist as a fighting unit. Despite Montgomery's claim that the operation was 90 percent successful for the 1st Airborne Division, it was a failure. The 1st had not captured the bridges, and the XXX Corps did not link up in time. Brereton considered the operation a "brilliant success." Perhaps his focus was on the two U.S. divisions and the daylight landings rather than the reason all the units were delivered. The bold, imaginative plan had failed. Without the bridges over the Rhine, a fifty-mile salient leading nowhere of importance to the Allies had been created.

Why did the 1st Airborne Division fail? First, Montgomery's plan for Market-Garden was too ambitious. To expect that the XXX Corps could advance sixty-four miles along one road in forty-eight hours assumed almost flawless execution of a complex plan. Friction affects simple plans, but it can act even more disconcertingly on complex ones. Second, time was in too short supply to prepare adequately for an operation of this complexity. Important things were left undone. Intelligence was scanty and inaccurate, especially in regard to German forces, flak density, and DZ and LZ terrain assessments. Liaison with the I Airborne Corps, XXX Corps, and Second TAF was poor. The general euphoria and the intense desire to use the FAAA combined to create this hasty operation. Badly wanted, it was badly executed. Third, while Brereton's decision to conduct a daylight operation permitted an accuracy unrealized in previous airborne operations, his decision not to attempt a second lift on D-day was disastrous for the 1st Airborne Division. Urquhart was forced to fight one brigade against an objective expected to require four. If no follow-on lifts had been planned, an attack on D-day with six battalions, instead of three in the 1st Airborne Brigade, would have been possible. Urquhart was seriously constrained in his planning options for this operation.

To improve his chances for success, Urquhart could have done some things differently. First, the DZs and LZs were too far from the objectives. Faulty intelligence, along with the emphasis on air considerations

rather than ground operations, created this problem. At least the glider coup de main could have been attempted. Second, command and control could have been enhanced by greater emphasis on training before the operation and by Urquhart's remaining in a position to control this complex operation, particularly through D+1. Regardless of what else Urquhart could have done, the simple fact remains that the best airborne forces, when left alone and unassisted for extended periods of time, do poorly against even remnants of heavy forces.

As Bernard Fall said, "A parachute is merely a means of delivery, but not a way of fighting."

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2

Airmobile Operations

The 1st Cavalry Division's Exploitation of Helicopters in the Ia Drang Valley

Lieutenant Colonel Arthur T. Frame, U.S. Army, Retired

In the late 1950s and early 1960s, a few thoughtful and farsighted U.S. Army officers began integrating Army aviation into battlefield maneuver. Rooted in the airborne concepts and techniques of World War II and driven by advances in helicopter development during and after the Korean War, military planners created new principles that combined light infantry, supporting artillery, and aviation to generate maximum shock power and maneuver on the modern battlefield. These planners, as part of two boards, reviewed Army aviation requirements and developed concepts pivotal to the evolution of airmobile operations.

Lieutenant General Gordon B. Rogers chaired the first board, the Army Aircraft Requirements Review Board. The Rogers Board, formed in early 1960, reviewed the Army Aircraft Development Plan, discussed roles and missions of Army aviation, assessed combat surveillance requirements, and detailed procurement plans. In addition to making recommendations on observation, surveillance, and transportation aircraft, the Rogers Board recommended an in-depth study be conducted to explore the concept and feasibility of air-fighting units. The Rogers Board also provided essential aviation guidance for development, procurement, and personnel planning.

On taking office in 1961, Secretary of Defense Robert S. McNamara believed that more could and should be done in the areas of Army aircraft development and the adaptation of airmobile capabilities. In April 1962, McNamara formed an ad hoc task force to reexamine aircraft requirements and the role of Army aviation. The U.S. Army Tactical Mobility Requirements Board, known as the Howze Board after its president, Lieutenant General Hamilton H. Howze, investigated, tested, and evaluated the organizational and operational concepts of airmobility. The board concluded that the "adoption of the Army of the Airmobile Concept—however imperfectly it may be described and justified in this report—is necessary and desirable. In some respect the transition is inevitable, just as was that from animal mobility to motor."

The board recommended the creation of an air assault division with 459 aircraft as compared to about 100 in a standard division. The new division, the 11th Air Assault Division, tested the airmobile concept, and its deployment to Vietnam in September 1965 as the 1st Cavalry Division (Airmobile) changed the way U.S. forces conducted land warfare. The use of helicopters for reconnaissance, command and control, troop transport, attack gunships, aerial rocket artillery, medical evacuation, and supply was tantamount to a revolution in maneuver.

The 1st Cavalry Division was not the first U.S. combat unit to fight in an airmobile role. In fact, combat helicopters were used as early as December 1961. In 1965, a Marine contingent and the Army's 173d Airborne Brigade and 2d Brigade, 1st Infantry Division, were deployed to Vietnam. Furthermore, while the 1st Cavalry Division was the first airmobile division, it was not the only division to use airmobile techniques. Airmobile operations occurred in Vietnam on a daily basis. That conflict is replete with examples of airmobile operations, from the smallest—using 2 or 3 helicopters to insert long-range reconnaissance patrols or Special Forces teams—to multidivisional operations like Junction City—where over 249 helicopters were used to make 8 battalion-size airmobile assaults. But as author Shelby Stanton maintains, "No single engagement demonstrated the basic validity of air assault as strikingly as the 1st Cavalry Division's Ia Drang Valley Campaign." Now, whole divisions were no longer constrained by the tyranny of terrain.

In the Ia Drang Valley or Pleiku campaign, the newly arrived 1st Cavalry Division (Airmobile) used its air assault assets to locate and battle North Vietnamese Army (NVA) regulars on the Pleiku plateau in South Vietnam's central highlands. In this series of engagements, an NVA regular division met a U.S. Army airmobile division on the battlefield for the first time.

To facilitate making contact with the enemy, the 1st Cavalry Division was positioned at An Khe in the central highlands. In the 37-day campaign, 1st Cavalry helicopters moved infantry battalions twenty-two times and displaced artillery batteries sixty-six times across distances of up to seventy-five miles. In addition, helicopters transported troops over difficult terrain and enemy defenses and conducted raids, reconnaissance, and screening.

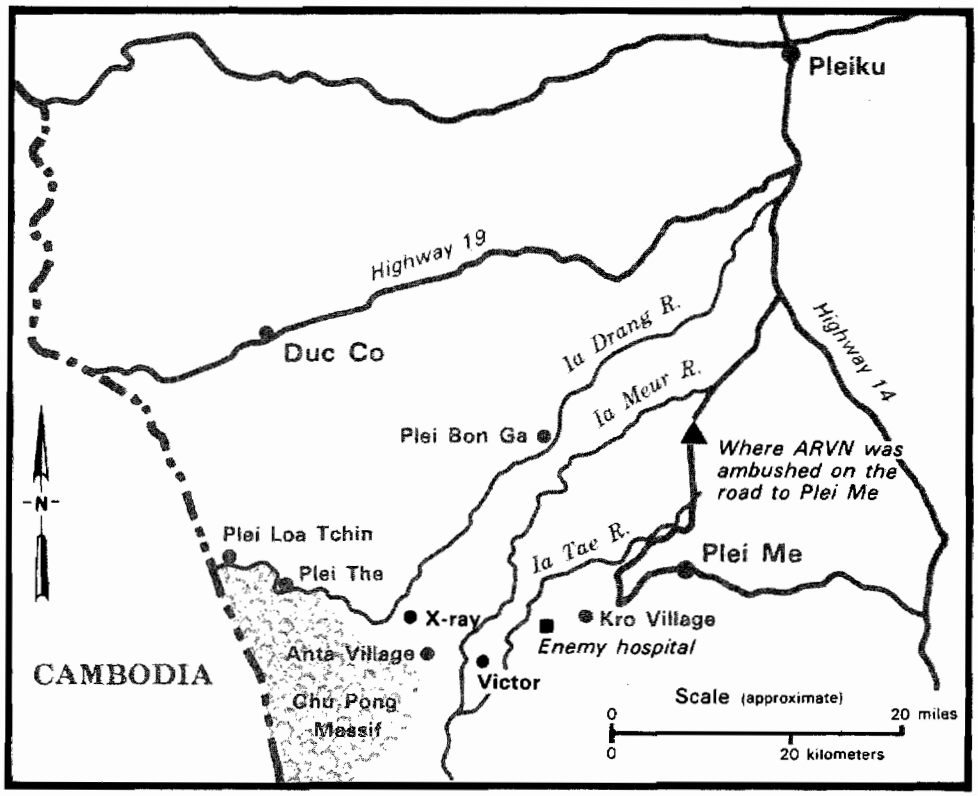
The NVA initiated the campaign with a major offensive in the western plateau of the highlands in Kontum, Pleiku, Binh Dinh, and Phu Bon Provinces. Three regular NVA regiments under the control of a division-size field front headquarters were to destroy the Plei Me, Dak Sut, and Duc Co Special Forces camps and the South Vietnamese' Le Thanh district headquarters. Finally, the offensive would seize

Pleiku, virtually cutting the south in half. The NVA 32d and 33d Regiments initiated the action on 19 October with a favorite NVA "lure and ambush" technique, laying siege to the camp at Plei Me and waiting to ambush an Army of the Republic of Vietnam relief column. With the help of 1st Cavalry's artillery and close air support, however, neither the siege nor the ambush was successful, and the mauled NVA regiments withdrew west toward Cambodia and their base camps at the foot of the Chu Pong massif. In pursuit, the U.S. Army committed its airmobile division.

On orders, elements of the 1st Brigade, 1st Cavalry Division, and supporting units fanned west toward Cambodia in search of the elusive enemy. Scout helicopters and gunships searched the terrain, strafing those small groups of fleeing NVA soldiers they were able to spot. On 1 November, aerial scouts of the 1st Squadron, 9th Cavalry, spotted a band of enemy soldiers and assaulted them with aerorifle platoons. After a brief skirmish, the scouts uncovered a fully stocked regimental hospital. Later that afternoon, aided by gunships from the 1st Squadron, 9th Cavalry, three rifle platoons at the hospital site held off an entire NVA battalion for six hours. Using intelligence gathered at the hospital, the 1st Squadron set several traps two days later, successfully ambushing elements of the NVA 66th Regiment. Later, during an NVA counterattack, U.S. units employed aerial rocket artillery for the first time at night in a close support role.

For the next week, fighting was sporadic. U.S. forces identified and located the NVA 33d and 66th Regiments, but the 32d's location was still in doubt. After searching the area for twelve days, the U.S. 1st Brigade, on 9 November, turned over the search to the 3d Brigade. On 14 November, the 1st Battalion, 7th Cavalry, spearheaded by elements of the reconnaissance squadron, searched the area near the Ia Drang River around the Chu Pong massif, hoping for a possible airmobile assault against the NVA. The 1st Battalion was supported by sixteen lift helicopters and fire support from two 105-mm howitzer batteries at Landing Zone (LZ) Falcon, nine kilometers east of the search area. However, one battery was not airlifted to LZ Falcon until the morning of the 14th.

At dawn on 14 November, Lieutenant Colonel Harold G. Moore, commander of the 1st Battalion, 7th Cavalry, reconnoitered the eastern side of the Chu Pong massif in a scout helicopter, looking for likely landing zones. He chose a clearing at the base of the massif (later designated LZ X-ray) because it was large enough to land eight to ten helicopters (see map 2). Moore wanted to airland the first company, consolidate it, and then land the entire battalion. After returning to his base camp at Plei Me, Moore briefed his company commanders



Map 2. The area around LZ X-ray

and, in keeping with standard airmobile doctrine, arranged for artillery preparation fires on X-ray to begin twenty minutes before his troops would touch down. This artillery preparation was to be followed immediately by a thirty-second aerial rocket artillery barrage. Then, escort gunships would sweep the landing area with fire seconds before the troop-carrying Hueys were to land.

Moore designated 1030 as the LZ touchdown time for the initial assault landing. The artillery fires, however, did not begin until 1017, delayed by the faulty positioning of LZ Falcon's artillery. After thirteen minutes of artillery preparation, sixteen Hueys loaded with the lead elements of Moore's battalion headed southwest toward LZ X-ray. As the transports approached within two kilometers of the landing zone, aerial rocket artillery pounded the site for thirty seconds, followed by fire from escort gunships. The helicopters immediately ahead of the low-level troop carriers flew racetrack patterns on either flank, raking the landing zone with machine-gun and rocket fire. As helicopters slowed for touchdown, their door gunners and on-board infantrymen fired into the grass and trees on X-ray's perimeter.

The helicopters landed the lead element of B Company, 1st Battalion, 7th Cavalry, and, by 1050, were returning to Plei Me for the remainder of B Company and lead elements of A Company. Unfortunately, the 1st Battalion, 7th Cavalry, landed right in the middle of the NVA staging area for a planned second attack on Plei Me. The NVA forces were eager to fight. Once consolidated, B Company began patrolling and came under heavy enemy fire that continued for the next three days.

Sixteen helicopters in five succeeding lifts airlanded battalion elements at LZ X-ray. A Company followed B Company unopposed into the landing zone, and the perimeter expanded. C Company arrived next, with little opposition, but as the helicopters airlanded D Company, they took numerous hits. The enemy killed one infantryman before he could dismount and wounded two helicopter crewmen. Moore radioed the second flight of eight helicopters to turn back until LZ X-ray could be stabilized. Supported by artillery, air strikes from the Air Force, and division gunships, the battalion had airlanded into X-ray by 1500.

According to airmobile doctrine, reserve forces must be able to reinforce quickly should assaulting units be unknowingly inserted too close to larger enemy formations. At LZ X-ray, the 1st Battalion, 7th Cavalry, faced elements of the NVA 33d and 66th Regiments. But because the 3d Brigade was involved in ongoing search operations and its units were too widely scattered, only B Company, 2d Battalion, 7th Cavalry, was available to reinforce the 1st Battalion. By 1990 that evening, B Company had been inserted into LZ X-ray, while the remainder of the 2d Battalion, 7th Cavalry, and the 2d Battalion, 5th Cavalry, gathered at two different landing zones and prepared to reinforce the morning of the 15th. These units had been held back on 14 November to protect them from intense enemy fire. Throughout the 14th, 1st Battalion's S3, in a command and control helicopter, circled over X-ray monitoring the tactical situation and relaying information to the brigade. At the same time, the 1st Battalion's artillery and tactical air control liaison officers directed artillery fire and air strikes on the NVA. Meanwhile, departing helicopters evacuated casualties from LZ X-ray to LZ Falcon for treatment and further evacuation. Just before dark, helicopters resupplied troops with ammunition, rations, medical supplies, and water.

The NVA harassed and probed LZ X-ray's perimeter all night, but 4,000 rounds of artillery fired from LZ Falcon kept the enemy at bay. After first light on 15 November, the NVA made a desperate bid to annihilate the Americans. At 0800, the U.S. 2d Battalion, 5th Cavalry, marched overland from LZ Victor to reinforce the 1st Battalion, 7th Cavalry, at LZ X-ray. At 0900, A Company, 2d Battalion, 7th Cavalry,

airlanded at LZ X-ray and became embroiled in the fight. By 1000, concentrated U.S. artillery and air strikes blunted the NVA attack, and only sporadic sniper fire continued. Shortly before noon, the lead elements of the 2d Battalion, 5th Cavalry, came under heavy enemy automatic weapons fire 800 meters outside of LZ X-ray's perimeter. After the 2d Battalion quelled that resistance, the fight at X-ray was over, despite continued sniper fire and several company-size probes during the night.

By dawn on 16 November, enemy attacks had run their course. Still wary of the enemy situation, however, Moore ordered intense firing on the NVA, which not only netted several NVA snipers but also broke up a platoon-size enemy attack that was about to begin. By 0930, the remainder of the 2d Battalion, 7th Cavalry, arrived at LZ X-ray, and B Company and the 3d Platoon, A Company, 2d Battalion, 7th Cavalry, moved back to the division base camp for a much-needed rest and reorganization.

The 2d Battalion, 5th Cavalry, and the remainder of the 2d Battalion, 7th Cavalry, held LZ X-ray for another night and then abandoned it on 17 November to allow B-52s to strike the area. The 2d Battalion, 5th Cavalry, moved to LZ Columbus, and the 2d Battalion, 7th Cavalry, moved to LZ Albany, both to the east, to be airlifted out. The move to LZ Columbus went without a hitch, but as the 2d Battalion, 7th Cavalry, approached LZ Albany, it triggered an NVA ambush that struck the battalion in the flank and split it in half. The battle disintegrated into skirmishes and hand-to-hand fighting between splintered groups. The fighting continued until evening when reinforcements finally were able to reach the scene. The battle continued throughout the night, inflicting heavy casualties on the Americans. But as daylight approached, the NVA retreated. With the end of action at LZ Albany, the Ia Drang Valley campaign ended.

In the Ia Drang campaign, the 1st Cavalry Division annihilated two regular North Vietnamese Army regiments (which had to be completely re-formed in Cambodia) and validated the U.S. Army's concept of airmobile warfare. From that point on, airmobility would remain a major instrument of war employed by the United States and other countries.

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3

Amphibious Operations

Tarawa: The Testing of an Amphibious Doctrine

Dr. Jerold E. Brown

The most difficult of all military operations is an opposed amphibious landing. The very nature of such a landing assures high risk. Moving men and equipment across open water and unprotected beaches in the face of carefully calculated fire is an extremely dangerous proposition. Furthermore, the defender has the advantage of time and space. He is more knowledgeable of the terrain on which he is fighting, and he often has the time to prepare his defenses in considerable depth, erecting a wide variety of obstacles designed to canalize landing craft into undesirable landing sites or lethal fire zones. He can also use elaborate systems of tunnels and trenches to move reserves, redeploy forces, or respond to other crises in engaging the landing force.

The invasion force, on the other hand, is totally self-contained. It must carry every conceivable item it will need. It will serve as fire support base, commissary, evacuation hospital, communications center, recovery and maintenance depot, and command post until an adequate beachhead is secured to move those activities ashore. Moreover, the invasion commander will always have an imperfect knowledge of events and conditions ashore until the objective is taken. However skillfully he employs deception or surprise, he will eventually have to tip his hand to the defender as to when and where the attack will occur. Historically, therefore, amphibious operations have been attempted only rarely, and seldom have they been successful. Perhaps the only operation more difficult than landing on a hostile beach is withdrawing from one.

After the abysmal failure by the British to maintain and exploit their beachhead at Gallipoli in 1915, many military experts concluded that modern firepower had made the already difficult task of amphibious operations impossible. Therefore, European armies, as well as the U.S. Army, devoted little attention to the problem of amphibious operations after World War I. The U.S. Marine Corps, however, found itself in a serious predicament in the years following the war. During the war, the Marines had served in France with considerable distinction as regular infantry. Many Army leaders believed that this should be

the continuing role for the Marines. Faced with a parsimonious Congress and the reduction of capital ships necessitated by the Washington Naval Treaty, the Navy questioned whether it could continue to maintain the Marines. What limited manpower and resources the Marines could muster were used to sustain colonial infantry in Latin American interventions. Within this milieu, the Marine Corps began to cast about for a more significant mission.

In 1921, Major Earl H. Ellis wrote a paper that offered a solution to the Marine Corps' dilemma. Ellis' paper dealt with the problem of wresting control of bases in the central Pacific in the event of war with Japan. He suggested that it might be possible, after all, to land successfully on and seize defended islands. Based on Ellis' proposals, the Marine Corps began the difficult process of developing a doctrine to accomplish this objective. Thirteen years later, after numerous exercises, both in the schoolhouse and with the fleet, the Marine Corps published the "Tentative Manual of Landing Operations," its protodoctrine for amphibious operations.

Doctrine, however, is merely theory. No matter how soundly it is based on past experience and solid staff work, there are no guarantees that it will achieve success. Only under the rigors of combat, with all its infinite possibilities for mischance and confusion, can doctrine be thoroughly and definitively tested. Thus, nine years after the appearance of the "Tentative Manual of Landing Operations," the Marine Corps was yet to demonstrate the efficacy of its nascent amphibious doctrine.

Although Allied forces in World War II conducted several seaborne invasions in 1942, none were staged against heavily defended, open beaches. The first real opportunity to test the Marine doctrine came in November 1943 at Tarawa atoll in the Gilbert Islands. Composed of more than a dozen coral atolls 2,000 nautical miles southwest of Honolulu, the Gilberts stretch 500 nautical miles in an area of the Pacific 3 degrees north and south of the equator, between 172 and 176 degrees west longitude. The British declared the Gilberts a protectorate in 1892 and established an administrative headquarters at Tarawa. Tarawa is a typical Pacific atoll ninety miles north of the equator, a hook-shaped chain of small islands surrounding a lagoon approximately eighteen by thirteen miles in size. The westward opening to the lagoon is protected by a coral reef that lies just beneath the surface of the Pacific. The highest elevation on Tarawa is fifteen feet above sea level.

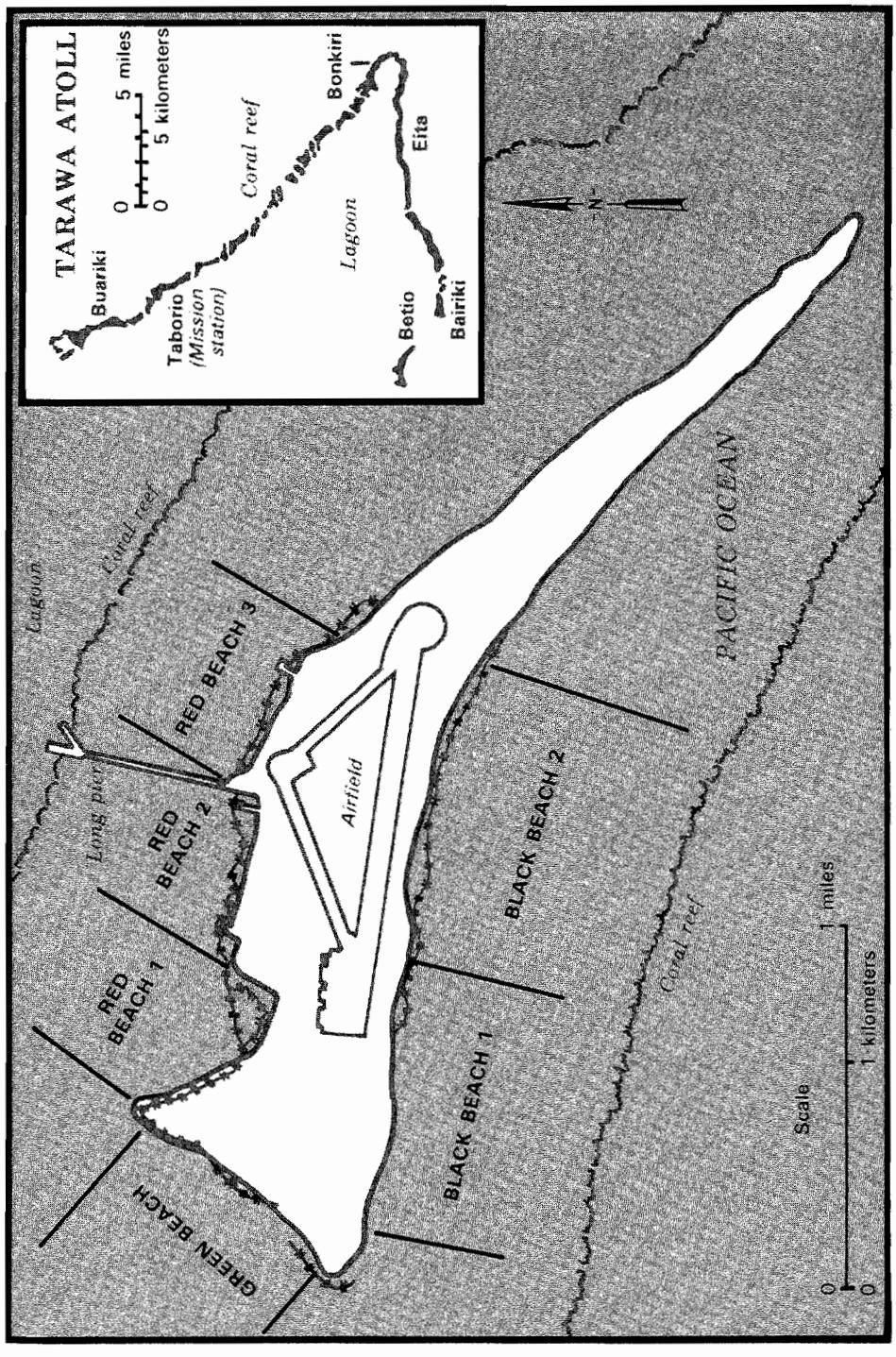
The barb in the Tarawa hook is formed by Betio Islet, less than 300 acres of hard-packed coral sand liberally sprinkled with coconut palms. The island has no distinguishing natural features and would be of little importance except that an opening through the reef into

Tarawa lagoon lies at its north end. It was probably because of this access into the relative protection of the lagoon that a British trading company established a copra station on Betio at the beginning of this century. To facilitate loading copra onto ocean-going vessels, the British built a long pier on the lagoon side of the island that reached to the deep water outside the reef. The long pier was the only significant structure on Betio when a Japanese task force landed in December 1941, evicted the British manager and his staff, and constructed an airfield.

By November 1943, the Japanese had turned Betio into a substantial fortress. About 5,000 naval infantry manned an extensive system of reinforced concrete blockhouses, coconut-log bunkers (covered by 3 or 4 feet of coral sand), steel pillboxes, and carefully placed gun pits—all connected by an elaborate network of tunnels and slit trenches. A score of heavy guns in hardened revetments, including four 8-inch guns removed from the British naval base at Singapore, commanded virtually every approach to the island. Rear Admiral Keiji Shibasaki, sent to Tarawa because of his reputation as a superb tactical commander, was so confident in his defenses that he remarked that Betio could not be taken by a million men in a hundred years. He could not have been more mistaken.

The Tarawa landing was part of Operation Galvanic, conducted by the V Amphibious Corps under the command of Holland M. ("Howling Mad") Smith. Galvanic called for the 2d Marine Division, under the command of Major General Julian C. Smith, to land at Tarawa, while the Army's 27th Infantry Division landed at Makin atoll to the north and a smaller Marine unit landed at Abemama atoll to the south. Clearly, however, Tarawa was the most important landing of the three.

Of the many details to be worked out by the V Corps staff over the next two months, the most important were on which beach to land and when to land. Betio is like a lazy triangle lying on its side, three miles long from west to east and about three-quarters of a mile wide at the base. The south side of the triangle presented the best landing beaches. These beaches were closest to the airfield, one of the primary objectives, and were on the seaward side of the island, closer to where the invasion fleet would anchor (see map 3). The staff designated these landing areas Black Beach 1 and Black Beach 2. The narrow base of the triangle, designated Green Beach, lay close to the opening through the reef into the lagoon, and landing craft would not have to climb over a reef to reach this shore. Along the Black and Green Beaches, the Japanese had constructed extensive obstacles, both above and below the water line.



Map 3. Betio Islet

That portion of Betio that faced the lagoon was designated Red Beaches 1, 2, and 3. Not only did the Red Beaches offer some protection from the open sea, Smith's staff concluded that they were the least heavily defended. Furthermore, a long pier was on this side of the island, and it could play a significant role in getting men ashore. Also, a seawall of coconut logs just above the high-tide line would provide some protection from small-arms fire to the men who reached it. The great disadvantage in using the Red Beaches was the precise navigation required by the small craft in carrying men and equipment ashore. Each wave of the invasion force would have to pass through the opening into the lagoon, turn to the starboard (at a predetermined point) in open water, maintain its position in formation as it approached the beach, and then mount the reef before proceeding ashore to discharge troops and cargoes at designated points. Despite these obstacles, the staff selected the Red Beaches for the landing.

The question of timing was even more problematical than that of choosing a landing beach. Doctrine called for landings at high tide. This was necessary so that the landing craft could clear as many defensive obstacles and land as far up the beach as possible. On a coral atoll, the landing craft would also have to get over the reef. The tides at Tarawa atoll are among the most capricious on earth. Without reliable charts and with little agreement among the intelligence experts, the staff struggled with the problem. Other factors, however, ultimately determined the time schedule. Washington was pressing for a quick offensive victory, and the Tarawa landing would have to coincide with the other Galvanic landings. Finally, Smith confirmed D-day as 20 November 1943. The tides would not be favorable.

The invasion force, composed of the 2d Marine Division (which had been training in New Zealand) and most of the support forces coming from Hawaii, rendezvoused on D-2. In accordance with doctrine, Navy and Marine aircraft had already flown a hundred sorties against Betio, saturating the island with bombs and strafing anything that moved. As the fleet approached Betio, its big guns worked over the island's defenses one last time, especially the area immediately behind the landing beaches. All reports indicated that nothing was left alive on Betio. Later analysis showed that about one-third of the defenders were indeed killed in the preinvasion bombardment, but that still left all too many Japanese to greet the Marines when they came ashore.

A little after 0800 on Saturday morning, 20 November, three reinforced amphibious battalions of the 2d Marine Regiment (commanded by Colonel David Shoup on board the first wave of landing craft and amphibious tractors [amtracs]) began moving toward Red Beaches 1, 2, and 3, abandoning the holding pattern they had maintained for more

than four hours. Almost immediately, things went wrong. Many of the heavy guns on Betio had not been put out of action. They began to unleash a deadly hail of shrapnel and antiboat rounds into the tightly packed landing craft as they neared the reef, inflicting the first casualties on the attackers. The amtracs paused briefly as they reached the reef, then climbed over it and proceeded toward the beach. The Higgins boats, however, with a draft of about 4 feet, could not get over the reef, and they began discharging their cargoes into the water about 600 yards out. Blistering machine-gun and small-arms fire reached out to meet the Marines, who were unable to return fire as they waded toward shore laden with arms, ammo, and equipment. The majority of Marines who died on Tarawa did so as they struggled to reach shore.

Once ashore, confusion persisted. Many of the companies did not land at their designated points or found themselves inextricably mingled with other units. One of the three battalion commanders was killed within a few minutes of hitting the beach, and another panicked under the severe fire and told his amtrac driver to withdraw toward open water. The seawall, behind which many Marines initially found some cover from enemy small-arms fire and where the Navy corpsmen had set up aid stations, turned out to be a mixed blessing. The amtracs and tanks that had come ashore were now penned between the beach and the water, and Japanese fire destroyed or disabled a large number of them. Thus, the second wave that was to come ashore was delayed, leaving the men who first reached the beach to struggle on their own. By late afternoon, the battle had deteriorated into a series of small unit fights all along the beach. Penetration by the invasion force was limited to no more than a few hundred yards in most places, and numerous Japanese strongpoints continued to inflict heavy losses on the Marines. Colonel Shoup, wounded himself, directed the fight from a makeshift command post and aid station.

The first night was the hardest time for the men on the beach. Constantly threatened with counterattacks, snipers, and infiltrators, they got little or no sleep. Furthermore, many Marines had long since drained their canteens and emptied their cartridge belts. No more supplies would come ashore until morning. The wounded suffered greatly. Those that lay in the aid stations on the beach could only wait for morning and evacuation; the uncollected wounded could only hope that their buddies got to them before the enemy did.

Sunday morning, D+1, saw little improvement in the Marines' situation. The 1st Battalion, 8th Marines, landing on Red Beach 2 a little after 0630, drew withering fire from almost as many enemy guns as the troops experienced the previous morning, and once again, the landing troops suffered heavy casualties in the water. Stiff resistance

continued throughout the day, and the Marines had to destroy each Japanese strongpoint at a heavy price. Basic infantry weapons, grenades, flamethrowers, and explosive charges were the tools necessary for this task. Meanwhile, Navy destroyers cruised back and forth outside the reef providing fire support with their 5-inch guns. But with less than fifty yards in some cases between their positions and the Japanese, the Marines were reluctant to call for fire except when they had no alternative. Sunday ended with more of Betio in Marine hands, but the island was not yet secure, and the Marines prepared for another tense, sleepless night.

As the third morning dawned, the Marines found their position considerably improved. In the first place, the incoming tide now lifted the Higgins boats over the reef for the first time and allowed them to reach the beach before dropping their bow ramps. At midmorning, the Marines began their final assault on the big reinforced concrete structure housing Admiral Shibasaki's command post. Finally reaching the top of the building, they poured gasoline down one of the air vents and threw a match in after it. Thus ended Shibasaki's command and, seemingly, the will of many Tarawa defenders to continue resisting. Large numbers of Japanese began to take their own lives, and the Marines cleared much of the western portion of the island, pushing the remaining enemy into the narrow tail of land to the east by late evening. The battle for Betio was won, but it was not over.

The final act on Tarawa atoll was a series of nerve-racking banzai attacks that began just after dark on the third night. In each case, a mob of enemy charged the Marines' position with swords and bayonets. They came in a frenzy, seeking the final approval of their emperor by their glorious death. They were met by artillery, machine-gun fire, and tired Marines with bayonets who, in many cases, were also out of ammunition. The last attack came about 0400 on Tuesday morning—just seventy-two hours after the first Marines had begun loading into their landing craft.

Military experts and historians have long debated the strategic importance of Tarawa. Some have argued that wresting Tarawa from the Japanese was both unnecessary and too costly—1,027 Marine and Navy dead, 88 missing, and 2,292 wounded. Although the Japanese had a land-based air capability in the Gilberts, so the argument goes, they could not reach any major U.S. bases nor could they appreciably interdict shipping in the central or South Pacific. Furthermore, the critics maintain, the loss of life on Betio was not at all justified since the airfield was never used to support subsequent operations in the advance across the Pacific.

These arguments overlook two essential points. Although the airfield on Betio did not play a further role in America's war effort, one should not underestimate the importance land-based aviation held in the early years of World War II. As late as 1943, most military stategists believed that only land-based air forces could adequately support offensive operations. The fighting in the Solomons and New Guinea a year earlier had seemed to confirm that view. The fast carrier task force, with the ability to provide offensive support as well as fleet security, was then only in an early stage of development. Its future was still uncertain, although its proponents were already proselytizing among the skeptical. All this considered, the airfield on Betio was a legitimate military objective in November 1943.

Finally, one must consider the role of Marine Corps amphibious doctrine in Operation Galvanic. Until the Marines landed on Betio, amphibious doctrine was just theory. The Marines believed that they could land on a hostile beach and take their objective, but they had not yet proved that it could be done. The only way the Marines could prove the validity of their doctrine was to conduct an actual amphibious landing under fire and succeed. They did that at Tarawa.

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4

Antiarmor Operations

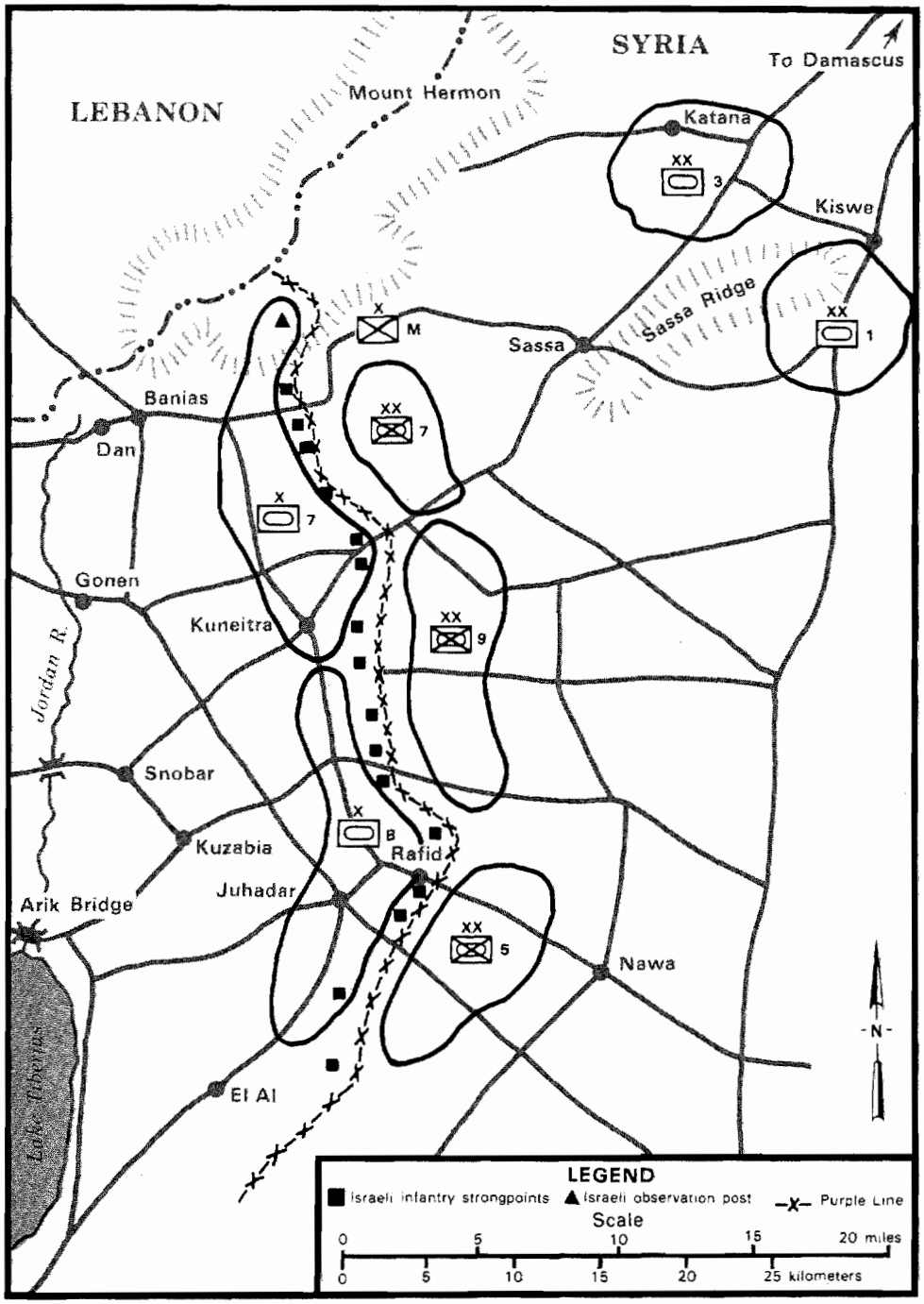
Antiarmor Operations on the Golan Heights, October 1973

Major George E. Knapp

The results of the 1973 Arab-Israeli War stimulated much postwar doctrinal discussion and examination among military analysts about the future of armor and antiarmor operations. The central issue was whether the tank could survive on a modern battlefield now dominated by antitank weapons of the kind used so extensively by the Arabs in the 1973 war. The postwar debate affected the development of doctrinal concepts by the United States military in several ways. One result was that the Army sought to procure a new tank, a new infantry fighting vehicle, and an antiarmor weapon system that might give common infantrymen the ability to defeat enemy armor at close, medium, and long ranges. At the operational level of war, the Army developed and adopted a doctrine of Active Defense based largely on the perceived "lessons" of the battle for the Golan Heights, fought in the earliest days of the 1973 war.

In many ways, the battle for the Golan Heights mirrored the U.S. Army's image of how it would have to fight a war in Central Europe. American doctrinaires viewed the all-out assault model of Syria, a Soviet client, as a reflection of Soviet doctrine. For that reason, the Americans drew lessons more readily from the battle for the Golan than from the action on the Suez front, where the Egyptians conducted a deliberate attack, with limited objectives—a mode of attack considered by some as uncharacteristic of Soviet doctrine. So, as General Donn A. Starry admitted in an interview in 1987, the 1973 battle for the Golan Heights became the model for the U.S. Army's doctrine of Active Defense. This doctrine integrated concepts of maneuver, firepower, and command and control, with special emphasis on combined arms tactics. But at its heart lay the notion that the tank was still the best antitank weapon. Why was this so? The answer to that question is contained in the Israel Defense Forces' legendary defense of the Golan Heights in the war (see map 4).

The topography of the Golan Heights made it critical terrain to both the Syrians and the Israelis. The Golan dominates the eastern bank of the Jordan River from the Israeli-Lebanese border in the north



Map 4. Start positions on the Golan front, 6 October 1973

to Lake Tiberias sixty-five kilometers to the south. A force on the Golan can observe and bring fires onto the entire northern part of Israel. At its widest point, the Golan is about thirty kilometers from east to west, so the battle area represents a rough rectangle enclosing about 2,000 square kilometers—the size of Rhode Island. The ancient trade route from the Mediterranean Sea to Damascus crosses the northern third of the Golan and is one of the main avenues of approach along which the Israelis expected a Syrian attack. Farther to the south, another route crosses the Golan nearly diagonally from the Syrian town of Nawa in the southeast, through Rafid at the edge of the Israeli occupation zone, to Banais and Dan in the northwest corner of the Golan near the Lebanon border. Along the way, several roads lead toward the west through Kuzabia, Snobar, and Gonen to the Jordan River bridges. In the far south, a route turns southwest from Rafid and goes through Juhadar and El Al, to the south of Lake Tiberias. The Israelis improved the Golan's existing north-south network of trails so that they could shift their forces more rapidly to meet the potential Syrian threat. Therefore, the entire Golan was passable for armor, although trails in the northern third of the area were rough.

Along the 1967 cease-fire line, called the Purple Line, the Israelis constructed a defensive belt that included an antitank ditch, minefields, concrete observation posts, and tank-firing positions. Although formidable in itself, this line was not sufficient to stop a determined Syrian assault. Three Israeli formations totaling fewer than 3,000 troops manned the Golan's defenses on 6 October 1973. The Barak Armored Brigade manned the southern portion of the Purple Line from Rafid to Kuneitra, while the 7th Armored Brigade occupied that part of the line north of Kuneitra to the slopes of Mount Hermon. Parts of an infantry brigade, in squad- and platoon-size groups, occupied the scattered strongpoints along the Purple Line. Together, these formations fielded fewer than 200 tanks, including Centurions and some World War II-era Shermans. The brigade also wielded forty-four pieces of artillery, all self-propelled. The Israelis expected sufficient advanced warning of any Syrian attack, and the Golan forces' mission was to act as a tripwire and to delay the Syrian advance until Israeli reserves could mobilize and deploy.

The Syrians, on their part, had constructed three defensive belts, following the Soviet model. These lay in successive arcs perpendicular to the road that ran between the Purple Line and Damascus about forty-five kilometers to the northeast. The first defensive belt was less than two kilometers from the Purple Line. The second was along the Sassa ridge, and the third lay roughly between Katana and Kiswe. The Syrians placed many obsolete tanks and artillery pieces along these defensive lines, but they also integrated their modern and fully inte-

grated antiaircraft system into the defenses. This almost proved decisive during the course of the war. Into these lines, the Syrians and their allies put five divisions and several separate brigade-size formations.

The Arabs arrayed their offensive forces along the Syrian defensive belts. In the north, among the Mount Hermon foothills, was a Morroccan brigade. To its south, the Syrian 7th Infantry Division, reinforced with an additional armored brigade, stretched to the Kuneitra-Damascus road. The Syrian 9th Infantry Divison, also reinforced with an additional armored brigade, covered the center from opposite Kuneitra in the north almost to Rafid in the south. The Syrian 5th Infantry Division, similarly reinforced with tanks, lay along the approach to Nawa-Rafid. Behind these infantry divisions were two Syrian armored divisions in reserve. The 3d Armored Division lay between Sassa and Katana, in position to reinforce the northern axis of attack, while the 1st Armored Division, near Kiswe, prepared to add its strength to the southernmost axis. Most important, these divisions represented the Syrian operational reserve and were responsible for the defense of Damascus. Additionally, the Syrians had three independent armored brigades—two infantry brigades and one mechanized brigade—available for action. During the course of the war, Syria also was reinforced by an armored division from Iraq, armored brigades from Saudi Arabia and Jordan, and commando brigades from the Palestine Liberation Army. The total Syrian-led force included about 60,000 soldiers, 1,200 tanks, 600 pieces of artillery, and more than 900 antiaircraft guns and missile launchers.

At 1400 on Saturday, 6 October 1973, the three Syrian infantry divisions attacked across the Purple Line and into the Golan Heights. The Syrian operational objective was to retake the Golan, which was part of the territory it lost to the Israelis in 1967. This meant driving to the Jordan River and then moving along its extent from the Lebanese border in the north to Lake Tiberias in the south. Beyond that immediate objective, the Syrians may have planned to continue their attack into Galilee, but they expected the United Nations to impose a cease-fire before that eventuality unfolded. To reach the Jordan River, the Syrians planned to have their infantry divisions breach the Israeli antitank ditch, bypass the isolated observation posts, and drive hard to the west with an overwhelming mass of tanks and armored personnel carriers. Surprise was a key element in their plan, and they expected to reach their operational objectives before the Israeli reserves effectively intervened. It was a remarkable achievement that the Syrians managed to get their force in its attacking position and start their offensive before the Israelis could begin their mobilizations. By doing so, the Syrians created the battle conditions that dominated the first thirty-six hours of the war and led directly to the armor battle on the Golan.

The Syrian attack was typically Soviet in its execution. It began with a brief but intense barrage along a broad front by all available artillery, aircraft, tanks, and mortars and capitalized on Syrian numerical superiority along the two main routes into the Golan. The Syrian 7th Infantry Division tried to break through north of Kuneitra in order to seize the upper Jordan River in the vicinity of Gonen. The 5th Infantry Division followed a similar plan south of Rafid, with the Arik bridge area as its objective. In the center, the 9th Infantry Division advanced on a broad front to tie down Israeli forces and cut the north-south road from Kuneitra to Rafid. Unlike the other infantry divisions, the 9th had a limited objective that was really designed to help the flank divisions get past the main Israeli defenses. The Syrians kept their armored divisions in reserve ready to exploit success on either flank, but significantly, not on both flanks. The Syrian plan was for one of the armored divisions to protect Damascus regardless of any perceived success on the Golan Heights.

The Syrian attack was characterized by success and failure. In the way of success, the Syrians achieved surprise and pressed their attacks against increasingly frantic Israeli defenses. Morever, they massed their combat power at critical points on the battlefield and pressed their attacks home. In addition, they thwarted the Israeli Air Force's attempts to break up their attacking columns. What is more, they identified tactical opportunities in the Rafid area and committed one of their reserve armored divisions at the right moment. On the other hand, the Syrians failed to recognize the magnitude of the operational and tactical surprise they had achieved, and this central failure led to their ultimate defeat. They also failed to breach the Israeli defenses north of Kuneitra. Because they tried to push too many vehicles across the tank defenses without adequate infantry and artillery support, they lost many tanks and personnel carriers at the antitank ditches and in the killing zones near the Purple Line. Furthermore, they failed to employ their artillery rapidly and effectively to suppress Israeli tank fires and to eliminate Israeli artillery. The Syrians also failed to properly "mop up" bypassed Israeli positions, which continued to prevent Syrian supply columns from keeping up with the armored advance. The Syrians also failed to push sufficient air-defense assets far enough forward to protect their leading armored columns from Israeli air power. On balance, the Syrians wasted their operational and tactical advantage, and though they fought impressively, they squandered the opportunity to win the battle for the Golan Heights.

If the Syrians failed to capitalize on their initial advantage, it was in large measure due to the epic defensive battle that the Israelis waged in those first thirty-six hours. But the ferocity of that defense was exactly what the Syrian high command had expected. They saw a

determined, well-prepared defense supported by artillery and air power and sustained by the rapid mobilization of Israeli reserves. Consequently, the Syrians stayed with their original operational plan and reinforced their success in the southern Golan while holding their remaining armored division in reserve before Damascus. This decision seems sound based on the evidence available to the Syrians at the time. However, had the Syrians committed both their reserve divisions, they might have broken through on both axes of advance and reached the Jordan River in strength before the Israelis reinforced. What might have happened at that point is conjectural, but it seems likely that the United Nations would have attempted to impose some sort of cease-fire, ending the war within seventy-two hours and leaving Egypt on the east side of the Suez and Syria again in possession of the Golan Heights.

The battle in the Golan sharply contrasted with the Suez action. At the Golan, the Syrians forced the outnumbered Israelis into thirty-five hours of tank gunnery and armored maneuver, but because the Israeli positions so effectively dominated the Syrian approach routes, Syrian armored losses were severe. Much of the action by the Israelis and Syrians seemed modeled after U.S. and Soviet doctrine respectively. Syrian artillery pounded suspected Israeli positions, forcing Israeli tankers either to close their hatches and fight with restricted vision or to expose themselves to shell fragments in order to retain visibility. This suppression by the Syrians forced the Israeli armor to shift constantly between positions, but as a rule, the Israeli tankers accepted these risks and scored many antiarmor hits, suffering greatly as a consequence. Initially, Israeli tanks scored hits at very long ranges as the Syrians fought their way across the antiarmor obstacles. Later, as the Syrians penetrated deeper into the Golan, especially during the first night of the war, tank engagement ranges were very short—often less than 100 meters.

As the Syrian offensive waned and the Israelis counterattacked into Syria, the antiarmor balance shifted in favor of the Syrians. Significantly, this action resembled the earlier engagements on the Suez front, in which Israeli armor found well-prepared and confident Arab infantry armed with antitank guided missiles (ATGMs) and rocket-propelled grenades (RPGs). These troops were covered by surface-to-air missiles (SAMs), held reasonably secure flanks, and had good terrain to defend. In response to these defenses, the Israelis determined not to press their attacks deeper toward Damascus. Possibly, the antiarmor lessons that the Israelis had already learned on the Suez front played some part in this decision.

If the Syrian infantry had been successful earlier in securing the Purple Line crossing sites and flushing out the Israeli armor beyond,

then the outcome of the armor and antiarmor battle for the Golan might have been different. The Syrians decided to lead their assault with infantry divisions, reinforced with armored brigades and supported with massive artillery fire, but the Syrian infantry did not achieve its objectives. The Syrians should have dismounted and crossed the antitank ditch in swarms so dense that the few Israeli observation posts would have been overwhelmed and the Israeli armor forced to abandon its long-prepared firing positions. Instead, the Israeli armor was allowed to whittle steadily away at the Syrian tanks and personnel carriers. This was one of the key failures by the Syrians in the first hours of the war.

The Syrians also failed to commit both of their reserve armored divisions at the critical moment. While it is difficult to fault this Syrian command decision in light of the ultimate result in this theater of war, still the Syrians might have achieved a breakthrough in the north similar to the one they made in the south if they had committed their reserve divisions within the first thirty-six hours of battle.

In terms of the debate over whose equipment was the best, U.S. and Soviet equipment received mixed reviews. U.S.-produced tanks proved vulnerable because of their relatively high profile, exposed commanders' positions, and inadequate machine guns. At the same time, the high profile allowed U.S.-built tanks to depress their gun tubes and work from defilade positions better than the low-profile Soviet-built tanks. Morever, U.S. tanks were easier to drive and less fatiguing to ride in (but they were more prone to maintenance failures). In addition, U.S. tanks proved superior in long-range sighting capabilities and accommodated more communications equipment, which improved fire control. Soviet-produced tanks proved more difficult to operate and inferior in both fire control and sighting.

Israeli combat operations proved superior to those of the Syrians in the areas of gunnery, recovery, sustainment, communications, and tank-to-tank cooperation. The majority of Syrian hits did not permanently destroy Israeli tanks, even if the hits penetrated their armor. Gunnery ranges, especially on the Golan, varied widely from point blank to several kilometers. Hits were widely distributed over different areas of the tanks, and this suggested a reevaluation of the relative value of frontal armor. Few tank hits produced immediate, catastrophic crew kills. Thus, forward recovery and repair were keys to preserving Israeli tank strength. The Israelis claimed that every one of their tanks on the Golan was hit at least once by enemy fire. Syrian sustainment operations suffered from attrition by Israeli artillery, tank fires, air power, and bypassed infantry positions along the Purple Line. Israeli crew training proved superior to that of the Syrians in the areas of

cooperation among tanks, suppressive fires, moving by bounds, and use of range cards and prepared positions.

Military experts around the world drew several conclusions about the nature of antiarmor warfare from the 1973 Arab-Israeli War. Military authorities believed that the ATGM and its supporting cast of RPGs and recoilless rifles dominated the armor battles on the Suez front, although Israeli tanks and aircraft played a large role in defeating the Egyptian armored reserve. In the Golan Heights area, however, tanks dominated the armor battle until its latter stages, when Israeli armor came up against the Syrian defenses before Damascus. Therefore, from the analyst's point of view, neither the ATGMs nor the tanks themselves proved to be the decisive antitank weapons. In the United States, this conclusion fueled the debate that resulted in AirLand Battle doctrine. That doctrine's emphasis on a balanced force for the modern battlefield took into consideration the fact that tanks operating alone are, as Trevor Depuy suggested, "more vulnerable and consequently less valuable, than when employed as part of a combined arms team."

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5

Attack Helicopter Operations

Attack Helicopters in Lebanon, 1982

Dr. George W. Gawrych

While the Vietnam War saw the evolution of the helicopter from a troop transport and medical evacuation vehicle to a close air support weapon, Israel's 1982 invasion of Lebanon witnessed the emergence of attack helicopters as tank killers. In the 1973 Middle East War, the Israelis employed helicopters primarily to transport ground troops, evacuate casualties, and resupply combat units. By 1982, however, both the Israelis and the Syrians had purchased attack helicopters and were developing their own particular doctrines for their employment.

The Israel Defense Forces (IDF) became interested in attack helicopters in the mid-1970s. In 1975, Israel purchased six American-made AH-1G Cobra helicopters. These Cobras were equipped for close air support with 7.62-mm machine guns, M-19 grenade launchers, and rocket pods. In addition, the IDF upgraded the AH-1Gs to "Q" versions with TOW antitank missiles. Then, in 1978, Israel bought its "first real" attack helicopters, AH-1S Cobras and Hughes 500 MD Defenders. By 1982, Israel's attack helicopter inventory had expanded to forty-two: twelve Cobras and thirty Hughes 500 MDs. The attack helicopters belonged to the Israeli Air Force (IAF).

In 1982, the IDF invaded Lebanon, applying a doctrine that emphasized attack helicopters in a close air support role. These rotary-winged craft were to support troop movements through mountainous areas. Thus, when Israeli tanks or artillery failed to place targets under sufficient fire, ground forces were to appeal to the IAF for attack helicopters to help in the close fight. In some cases, attack helicopters were to be attached to army units for specific operations. Initial Israeli practice in 1982 seemed to follow this prewar concept.

To some degree, the Syrian Armed Forces (SAF) were prepared to meet the Israeli helicopter threat. In the 1973 war, both the Egyptians and the Syrians had based their air defense, in part, on movable antiaircraft weapons and used portable antiaircraft missiles (previously designed for use against fixed-wing aircraft) to attack helicopters. In one early engagement, for example, a Strella SA-7 downed an Israeli Cobra that had responded to an appeal for close air support.

Between the 1973 and 1982 wars, Syria also invested in attack helicopters. In 1982, the SAF possessed some sixteen French-made Gazelles (with HOT missiles) and twelve Soviet-manufactured Mi-24 Hinds (with tubes for the Sagger AT-3 missile). But unlike the Israelis, the Syrians gained some valuable combat experience using their attack helicopters in Lebanon before 1982.

In 1976, the SAF moved into Lebanon to quell the Lebanese Civil War. Over the next seven years, the Syrians maintained a military presence in the country that often involved armed clashes with Lebanese warring factions. In some instances, the SAF relied on helicopters for close air support. But the Syrian high command also expanded their role. Syrian pilots flew attack helicopters, in pairs or larger formations, in some interdiction missions. Thus, by the 1982 conflict with Israel, the Syrians had experimented with a wider concept for the employment of attack helicopters.

The 1982 war began at 1100 on 6 June as an Israeli-Palestine Liberation Organization (PLO) struggle. To clear the PLO's military presence from the border area with Israel, the Israeli cabinet initially approved the IDF's advance into Lebanon to a depth of forty kilometers. This occupation would ensure that northern Israel was outside the maximum range of Arab artillery, resulting in a much-needed respite for its inhabitants.

The Israeli cabinet, in its directive, instructed the IDF to avoid a war with Syria if at all possible. The Israelis hoped that the Syrians would stand idly by while the IDF destroyed the PLO's military organization in southern Lebanon, where the Palestinians had established a ministate outside the control of the Lebanese central government.

In Lebanon since the outbreak of the Lebanese Civil War in 1976, Syrian troops were mainly deployed in the Beirut area and the Bekaa Valley in eastern Lebanon. Any major Israeli thrust north toward Beirut posed a serious military threat to the Syrian forces deployed forward in the Bekaa Valley. From the Syrian perspective, the farther north the Israelis moved up the coastal and central axis in Lebanon, the more the Syrians would feel their flank exposed and might eventually regard themselves as threatened with encirclement.

In 1982, the Israeli drive up the central axis west of the Lebanon Mountains set off a short war with Syria. Here, the main Israeli force—the 162d Armored Division minus a tank brigade—was commanded by Brigadier General Menachem Einan. One week before the outbreak of the war, the 162d Armored Division was conducting maneuvers in southern Israel when Einan received orders to move north. The Israeli high command decided to await developments on the battlefield before issuing further orders to Einan.

On 6 June at 1530, or four and one-half hours into the war, Einan finally learned his mission: to take the central axis and capture the Besri bridge near the town of Jezzin (see map 5). This action would protect the flank of the Israeli forces moving along their coastal axis in the direction of Beirut. A follow-on mission would take Einan farther north to the Damascus-Beirut highway.

The first engagement between Einan and the Syrians took place near Jezzin on the night of 7—8 June. Jezzin lies at a critical road juncture in south-central Lebanon. One road passes through the town to the southern Bekaa Valley; the other heads north. Israeli control of Jezzin would pose a direct threat to the Syrians, for the Israelis would gain access to the Bekaa Valley from the west. Concerned about this possibility, the Syrian command dispatched the 424th Infantry Battalion to the town and later reinforced it with a reduced tank battalion and a commando unit.

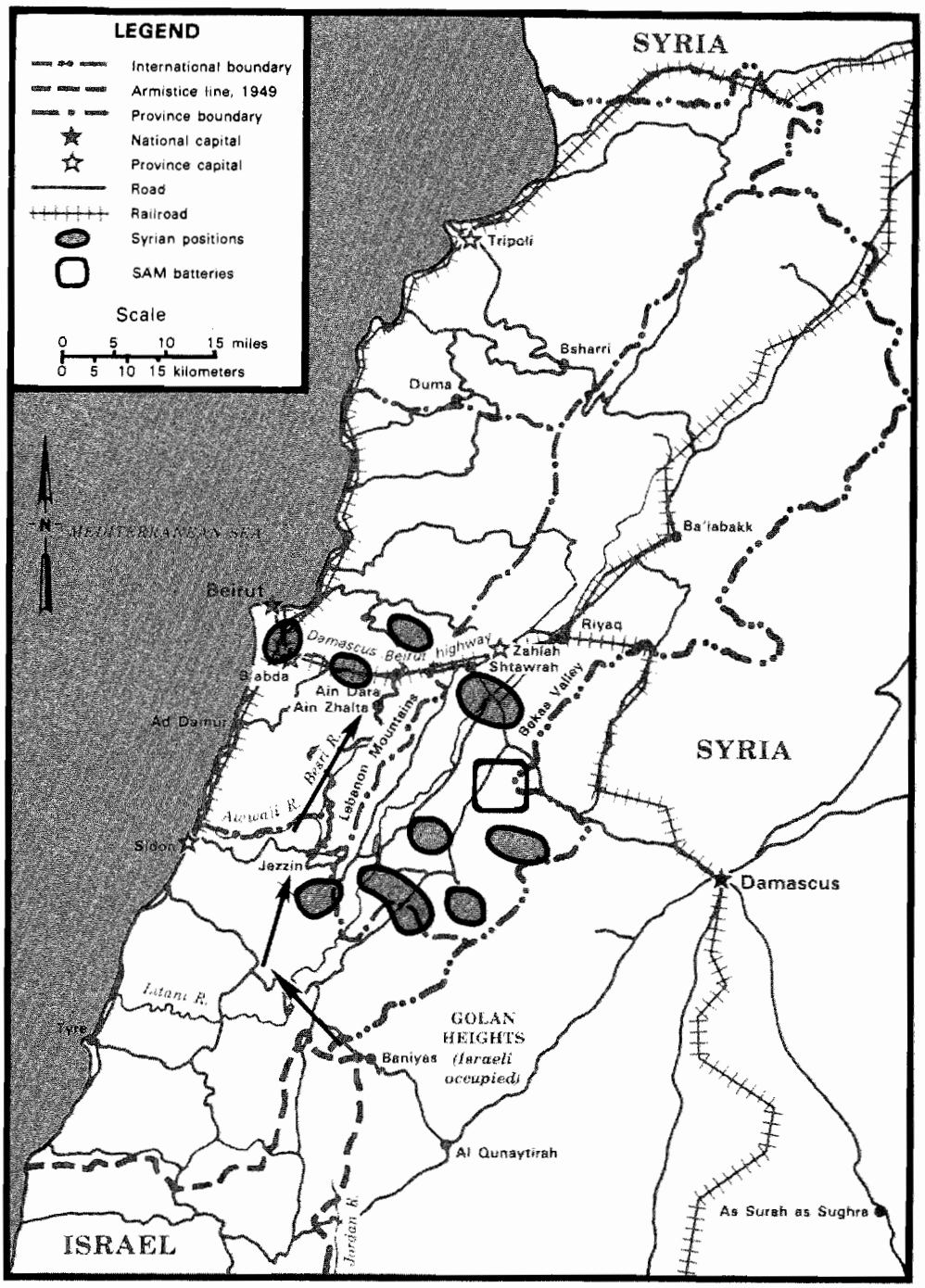
As Einan's task force moved past Jezzin at 0100 on 8 June en route to the Besri bridge, elements of his reduced division came dangerously close to the Syrian positions. Indeed, an exchange of fire between the Israelis and the Syrian defenders ensued at the town's outskirts. Rather than be diverted by a major battle, Einan left a blocking force and pushed north. The Israeli cabinet, however, now approved a major assault on Jezzin with other forces for the next morning. Israel and Syria were entering into a major confrontation.

Early that same morning of 8 June, Einan seized the Besri bridge. The Israeli high command now ordered a rapid advance to Ain Zhalta, a town some ten kilometers south of the Damascus-Beirut highway. While moving to his next destination, Einan suddenly encountered an unfamiliar weapon, the attack helicopter.

At 1530 on 8 June, his soldiers heard a beating noise overhead, followed by the swish of two HOT missiles. The third Israeli tank in the column suffered a hit. Then, the French Gazelle made a second run, this time setting the same tank ablaze with another hit. The disabled tank prevented any further advance, since the road it traveled on was narrow, with a sheer drop on one side and a cliff on the other.

This engagement represented the first strike by an Arab attack helicopter in an Arab-Israeli conflict. The effect was much like that in World War I when the Germans first encountered the tank. Israeli sources have discussed the general panic and shock that struck Israeli tank crews. The 1973 war had prepared the IDF for the antitank missiles of Arab infantry but not for those of Arab attack helicopters.

Because they had proved unable to defend themselves, Israeli tankers felt vulnerable after this attack. The Gazelle's HOT missile had a



Map 5. Einan's axis of advance into Lebanon

range of more than four kilometers, well beyond that of the turret-mounted machine guns on Israeli tanks. Not expecting such an attack, Einan's force apparently lacked any portable antiaircraft missiles that might have equalized the range. Unavoidable confusion and tension consequently spread among the Israeli tankers. The Israeli Armor Corps confronted a new nemesis for its first-line tanks.

The effectiveness of the Syrian attack helicopters, however, declined appreciably after 9 June. On that day, the IAF effectively destroyed seventeen of the nineteen SAM (surface-to-air missile) batteries in the Bekaa Valley, thus removing any effective Syrian air umbrella over eastern Lebanon. This brilliantly executed operation gave the IAF air supremacy over Lebanon, thereby dramatically increasing the vulnerability of Syrian Gazelles and Mi-24 Hinds.

Despite Israeli mastery of the air, however, Syrian attack helicopters continued to conduct operations until 25 June, when the final cease-fire officially ended hostilities between Israel and Syria. Until then, the Syrians recorded kills employing various tactics that took advantage of the mountainous terrain of Lebanon. Using terrain masking and pop-up tactics, the Syrians managed to slow down or stop Israeli advances along narrow roads or tracks, in some instances inflicting devastating damage to Israeli vehicles. The Israelis admitted to losing seven tanks to the Gazelle's HOT missiles, whereas Israeli forces claimed they downed only twelve Gazelles. (No figures were found for the Mi-24 Hinds.)

The Israelis retaliated with their own attack helicopters. Taking a page out of a Syrian manual, the IAF began to fly the AH-1S Cobras and Hughes 500 MDs on independent search-and-kill missions behind enemy lines in a specific interdiction role. This step represented a marked departure from what had been exclusively the domain of IAF fixed-wing aircraft.

Now, Israeli helicopter pilots, for surprise and shock, used the mountainous terrain to hide their movements. The Hughes 500 MD, a relatively light helicopter with four TOW antitank guided missiles, was especially suited for such employment because of its high agility and low sound levels. Emulating the Syrians, Israeli pilots masked their movements, taking advantage of deep gorges, wadis, and mountains to strike at unsuspecting Syrian targets.

Einan eventually had sweet revenge on the Syrians with Israeli attack helicopters. At Ain Dara, a village north of Ain Zhalta and some three kilometers south of the Damascus-Beirut highway, the Syrians put up stiff resistance. Unable to dislodge the Syrian defenders, Einan called in several air strikes and tank-killing sorties, the latter to strike targets not easily accessible to his own tanks and artillery.

Here, Israeli helicopters managed to destroy a number of Syrian tanks. Eventually, Einan abandoned his frontal attack and bypassed Ain Dara for a position that also provided a commanding view of the vital highway linking Beirut with Damascus.

The conclusion of the war between Israel and Syria brought much discussion in both countries on the future role of the attack helicopter. In Israel, Major General Israel Tal, known as Mister Armor, came to regard the helicopter as a key to outflanking and enveloping the enemy on the armor-saturated battlefield of the Middle East.

Though impressed with the attack helicopter's overall performance, both the Israelis and the Syrians experienced problems in its employment. Perhaps the greatest problem was that of friendly fire. The Israelis suffered relatively high casualties to their ground troops from attacks by their own helicopters; the Syrians, although silent on this matter, no doubt experienced the same problem. Israeli pilots had some difficulty identifying vehicles. A better command, control, and communications system, as well as more sophisticated identification methods, would have avoided some mistakes, but not all.

There were other limitations to helicopter use as well. Attack helicopters were vulnerable to the enemy's air force and air defense. The IDF admitted to the cancellation of a number of missions owing to heavy concentrations of SA-7s and other antiaircraft guns, including the ZSU-23-4. For their part, the SAF faced a difficult challenge employing attack helicopters once the IAF gained air supremacy over Lebanon on 9 June. Weather conditions were also an important variable in assessing the feasibility of an operation. Another limiting factor was the night: Israel's attack helicopters lacked night-fighting capabilities, which the IAF only developed after the war. Finally, neither side had enough attack helicopters to mass for maximum effect.

The war in Lebanon emerged as the formative period for the attack helicopter in the Arab-Israeli conflict. Both Israel and Syria appreciated the mobility, flexibility, and lethality provided by attack helicopters. Each side made high kill claims for their helicopters, perhaps in part to win support for future development of this new weapon. Thus, current statistics on helicopter kills in the war are impossible to verify.

Regardless of the dilemma of quantifying kills, the attack helicopter clearly had a significant impact on the battlefield in the 1982 war. After the war, Israel and Syria expanded their inventories, the Syrians on a much larger scale than the Israelis. Figures for 1989 listed Israel with forty AH-1S/Q Cobras and forty Hughes 500 MDs versus their total in 1982 of forty-two helicopters. On the other hand, Syria went from sixteen to fifty Gazelles and from twelve to fifty Mi-24s during the same period. The Israelis and Syrians had introduced the attack

helicopter into the 1982 Arab-Israeli War. Nine years later, coalition forces in Operation Desert Storm integrated attack helicopters into their scheme of maneuver. By then, some military leaders regarded attack helicopters as a separate maneuver element that had ushered in the rotary-wing revolution to warfare.

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6

Combat Engineering

Egyptian Engineers in the Crossing Operation of 1973

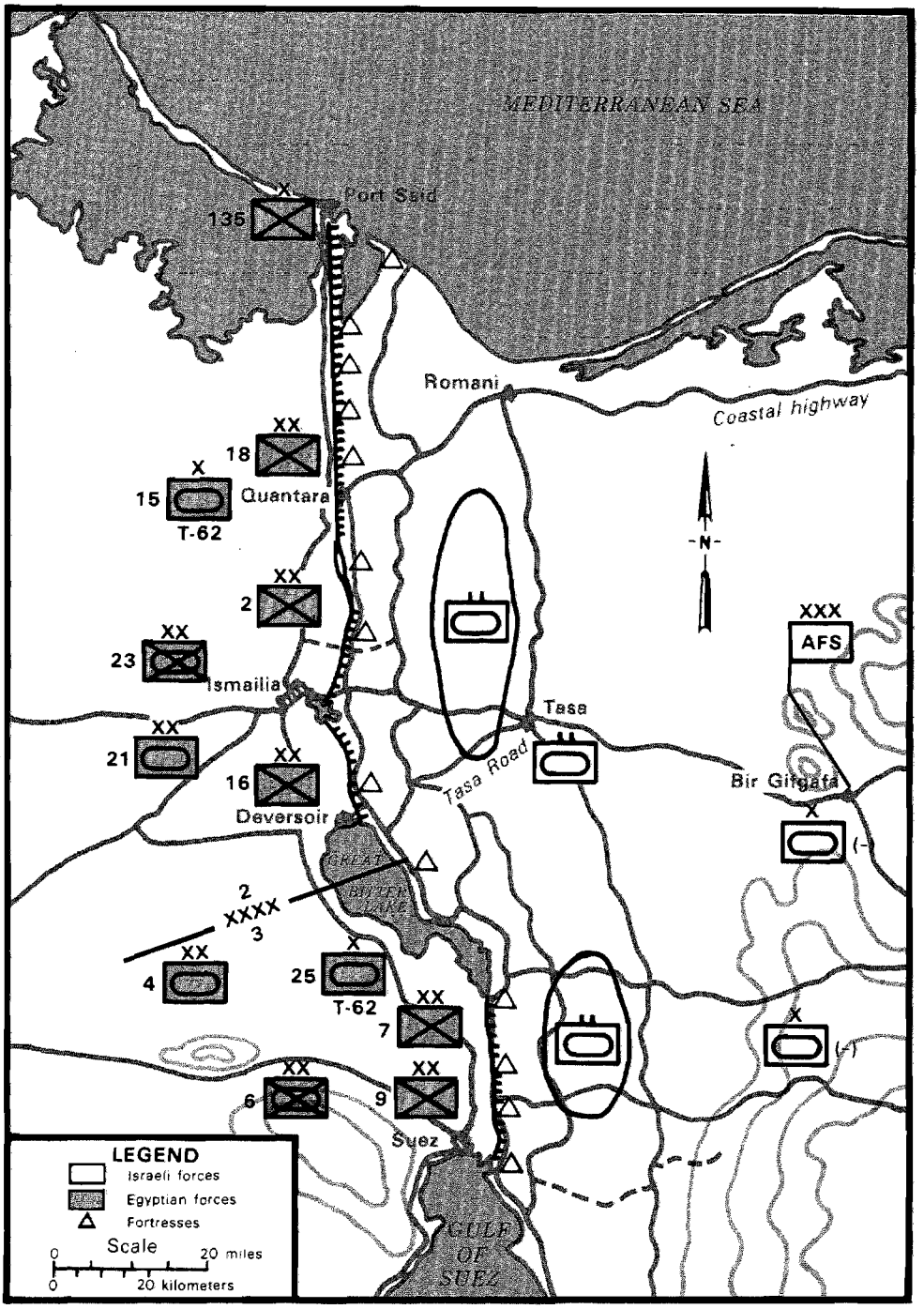
Dr. George W. Gawrych

For Egypt to gain any military or political success against Israel in the 1973 Middle East War depended on the Egyptian Armed Forces first crossing the Suez Canal, then assaulting the Bar Lev Line, and finally establishing secure bridgeheads on the eastern bank. These challenges were essentially an engineering problem, and therefore, the achievement of the operation is, in many respects, a saga of the perseverance and ingenuity of the Egyptian Corps of Engineers.

The 1967 Arab-Israeli War had suddenly changed the strategic situation in the Middle East. Israel occupied the entire Sinai Peninsula, gaining for the first time a defensible frontier with Egypt along the Suez Canal. Despite the decisive defeat of its army, however, the Egyptian regime refused to adopt the posture of a defeated nation. Consequently, less than a month after the war, hostilities between the two countries broke out with an artillery duel ushering in a long war of attrition (1967—70). The Suez Canal now emerged as the new battleground of the Arab-Israeli conflict, and Israel eventually found itself suffering an unacceptable level of casualties defending the canal.

Toward the end of 1968, the Israeli General Staff decided to take advantage of the natural barrier presented by the Suez Canal and created fortified positions all along its 160-kilometer length. These concrete fortifications would help Israel avoid the high casualties caused by the massive Egyptian artillery fire directed against Israeli troops on the east bank. In 1969, Israel completed what became known as the Bar Lev Line, named after then chief of the General Staff, Lieutenant General Haim Bar Lev.

Designed as early-warning observation posts along the Suez Canal, the Bar Lev Line also served as an elaborate system of fortifications to deter the Egyptians from launching a major amphibious operation. After the conclusion of the war of attrition in 1970, a new Israeli military leadership closed some fortifications, cutting their total from around thirty to approximately twenty. Despite this reduction, the Bar Lev Line still presented a formidable barrier (see map 6). Consequently, the Egyptian General Staff devoted a great deal of time, effort, and



Map 6. The Sinai front (initial dispositions), 6 October 1973

resources in developing a plan for overcoming the line, and the Egyptian Corps of Engineers played a key role.

The first major obstacle in the Israeli defenses was the Suez Canal. Constructed in the desert, the canal is an artificial waterway 180 to 220 meters wide and 16 to 18 meters deep. To prevent sand erosion, the canal's banks are lined with concrete that rises above the water line. At high tide, the water flows a meter below the top of the concrete wall; at low tide, the water runs three meters below the top (four meters below in the southern part of the canal).

The Israeli General Staff incorporated the Suez Canal into its defensive plan for the Sinai (called Dovecoat). At the water's edge of the canal, the Israelis constructed vertical sand ramparts that rose at an angle of 45 to 65 degrees and to a height of twenty to twenty-five meters to prevent the Egyptians from landing tanks and heavy equipment without prior engineering preparations on the east bank. Israeli military planners expected that the Egyptians would need from twenty-four to forty-eight hours to establish viable bridgeheads.

Behind the forward line of fortifications, Israeli military planners stationed a single armored brigade responsible for three tactical areas. Each tactical area contained a tank battalion of forty tanks, whose primary mission was to move forward and occupy the vacant spaces between the fortifications in case of an Egyptian attack. Behind these defensive tactical areas, the Israel Defense Forces positioned two armored brigades. One was to reinforce the forward armored brigade while the second prepared to counterattack the Egyptian main effort. Should the regular armored brigades prove inadequate for defeating the attacking Egyptian troops, then the Israeli government would mobilize its reserves. This step involved the implementation of another plan.

To help overcome the Israeli defenders in the Sinai, the Egyptian General Command in Cairo assigned 6 major tasks to the Corps of Engineers: to open some 70 passages through the sand barrier; build 10 heavy bridges for tanks and other heavy equipment; construct 5 light bridges, each with a capacity of 4 tons; erect 10 pontoon bridges for the infantry; operate 50 or so ferries; and pilot close to 1,000 rubber boats for the initial assaults. Of the six tasks, the first was by far the most critical.

In fact, the success of the crossing operation hinged on the Egyptians' ability to breach the earthen embankments before the Israeli Army could react with sufficient force to repel them. The Egyptians needed to clear passages seven meters in width. This project alone would involve 1,500 cubic meters of sand. Even with the attainment of strategic surprise at the outset of the war, the Egyptian's worst-case

scenario expected Israeli tank companies and battalions to counterattack within fifteen to thirty minutes—with an armored brigade on the scene in two hours. The Egyptians could ill afford to expend twenty-four hours creating breaches in the sand barrier for the passage of armor and heavy equipment while Israeli reserves raced to the canal.

Breaching methods involving explosives, artillery, and bulldozers were too costly in time or required near-ideal conditions. For example, 60 men, 600 pounds of explosives, and 1 bulldozer required 5 to 6 hours, uninterrupted by enemy fire, to clear 1,500 cubic meters of sand. But getting a bulldozer on the east bank while protecting the congested landing site from Israeli artillery would be nearly impossible during the initial hours of the assault phase. Construction of the much-needed bridges would consequently begin much too late.

The solution to the engineering dilemma proved simple but ingenious: a water pump. The Corps of Engineers under Major General Gamal Ali would use high-pressure pumps as water guns to blast open passages in the sand. While previous pumps for such a project had been too heavy and depended on electric power, by the end of 1971, an Egyptian officer suggested a small, light, gasoline-fueled pump as the answer to the crossing problem. In response, the Egyptian military purchased 300 British-made pumps and found that 5 pumps could blast 1,500 cubic meters of sand in 3 hours. In 1972, the Corps of Engineers acquired 150 more-powerful German pumps. Now a combination of two German and three British pumps cut the time down to only two hours. The Israelis apparently failed to appreciate the significance of the water cannon and expected a much longer completion time for any such effort.

The Egyptian Corps of Engineers also participated in the deception plan to surprise the Israel Defense Forces. The corps, for example, failed to complete certain projects to give the appearance of unpreparedness for offensive operations. Meanwhile, the engineers worked to ensure secrecy in approach areas to the canal and hid troop dispositions. A sand rampart was constructed on the western side of the canal to conceal final Egyptian troop movements. To prevent the compromise of the date and time of the offensive, the Egyptian General Command told the troops the night before the attack that they were to conduct an exercise the next day to help the Corps of Engineers strengthen defensive positions near the Suez Canal.

When the war broke out at 1405 on 6 October 1973, the Egyptian engineers were poised to perform their numerous assignments. The first infantry wave began at 1420 and involved approximately 1,000 rubber boats and 8,000 men. Special boat battalions provided two engineers for each rubber boat. Once across, the two engineers piloted their boats

back to the west bank, while the infantry scaled the ramparts. At 1430, an Egyptian soldier raised his national flag on the east bank.

After scaling the ramparts, the Egyptian infantry bypassed strongpoints to establish ambush positions for the anticipated Israeli counterattacks. Meanwhile, combat engineers followed the infantry screen and began clearing the minefields that the Israelis had placed around and between the strongpoints. The immediate goal was to establish bridgeheads to a depth of three to five kilometers.

The second assault wave focused on tackling the sand barrier. The Corps of Engineers had formed some seventy engineer groups specially tailored for this task. Each group had to breach a single passage. Working from wooden boats, these engineers attached their hoses to the water pumps and began attacking the sand obstacle. Many breaches occurred within two to three hours—according to schedule.

In some areas, however, the engineers experienced unexpected problems. The Egyptian Third Army, in particular, had difficulty in its sector in the south. Here, the clay proved resistant to high-water pressure, and the engineers experienced delays in their breaching operation. According to one Egyptian source, engineers in the Second Army erected their bridges and ferries within nine hours, whereas the Third Army's engineers needed sixteen.

Breaching the sand barrier created mud one meter deep in some areas. Thus, the engineers had to fix floors for the passage of heavy vehicles. Among the materials used were wood, rails, stone, sandbags, steel plates, and metal nets.

Two hours after the initial landings on the east bank, ten bridging battalions on the west bank descended to the water's edge to place bridge sections into the water. The Egyptians used the BMP heavy folding pontoon bridge. This Soviet-made bridge allowed the Egyptians to shorten the erection time of bridges by a few hours and to repair damaged bridges more rapidly by simple unit replacement. The use of the BMP bridge caught the Israelis and many Western armies by surprise.

Within an hour of their descent, bridging engineers began their work, while a dummy bridge battalion constructed light bridges to serve as decoys. The dummies effectively diverted Israeli pilots from the real bridges. Meanwhile, the other engineers worked frantically to build the landing sites for fifty or so ferries.

By 0800 on the second day of the war, the Egyptian Corps of Engineers had made a successful crossing operation. Ten heavy bridges, two for each of the five infantry divisions involved in the crossing, were operational, and some 80,000 troops, 500 tanks, and 11,000 vehicles

had crossed the canal—all at a loss of only 170 men. It took some 15,000 engineers organized into 35 battalions to make the crossing possible.

Each engineer battalion had a specialized mission, such as manning the boats or building bridges. Initially, the majority of the engineers focused on the actual crossing, working to erect or repair bridges, for example. Other engineers, however, supported the assaulting commandos and infantrymen who penetrated to a depth of five kilometers east of the canal to establish ambushes for counterattacking Israeli armor.

Combat engineers were essential for the establishment and consolidation of the bridgeheads. Each Egyptian division possessed an engineer battalion, and they cleared antitank and antipersonnel mines, relying mainly on either Soviet-made mine probers or mine rollers.

The success of the crossing operation also depended on the detailed planning and timely transportation of five infantry divisions, each reinforced with an armored brigade. To get across the canal as fast as possible, each piece of equipment, bridge, unit, and headquarters moved according to a fixed timetable and specified destination. To facilitate efficient movement of these units, the Corps of Engineers constructed an elaborate road system—some 2,000 kilometers of roads and tracks—to move troops rapidly to the canal with the maximum of protection and minimum of congestion. Extensive field exercises and rehearsals removed glitches and limited friction. Military police, in cooperation with engineers, worked to keep timetables on schedule.

The Egyptian General Staff needed competent leaders in order to follow such timetables. Egypt had suffered defeat in the 1967 war in large measure because of poor military leadership. An undisclosed number of officers had abandoned their troops in battles. A noted Egyptian writer referred to these officers as "chocolate soldiers," that is, ones who melt away in the midst of battle. To solve the leadership problem, the Egyptian General Staff devoted much time and effort in developing leaders who, by example, gained the confidence and trust of their men. Officers were expected to command at the front, similar to their Israeli counterparts.

The Egyptian Corps of Engineers, like the rest of the armed forces, needed exemplary commanders at the senior level to lead them in battle. When the Third Army experienced delays in breaching the earthen embankments, Major General Gamal Ali, the director of the corps, personally visited the sector. Brigadier General Ahmad Hamdi, commander of engineers in the Third Army, lost his life on 7 October while actually directing bridge construction. He represented the type of military leaders Egypt needed, not just in the engineer corps but in the entire armed forces.

With their successful crossing operation and establishment of bridgeheads to a depth of twelve to fifteen kilometers in the Sinai, the Egyptian Armed Forces rightfully etched a place in the annals of modern military history. Analysts of this feat have tended to focus on how Egypt achieved strategic deception and surprise, or they have concentrated on the Egyptian employment of the SAM (surface-to-air missile) systems and antitank weapons to neutralize the Israeli Air Force and Armor Corps respectively.

Despite the significance of the above accomplishments, the Egyptian Armed Forces still faced the obstacles of the Suez Canal and the Bar Lev Line, and surmounting this challenge was essentially an engineering problem. The Egyptian Corps of Engineers accomplished its mission in part because of meticulous planning, elaborate preparations, vigorous training, and commendable execution according to a set-piece battle plan. The use of water cannons and the BMP bridges meant that the Egyptians could establish their bridgeheads before the Israelis could organize a large-scale counterattack.

Egyptian ingenuity and Soviet weapons thus combined to undermine Israeli military strategy. The accomplishments by the Egyptian Corps of Engineers in particular stand as a lesson of what a Third World army can achieve if its political and military leaders devise a war strategy that cleverly balances their military's capabilities with those of their adversary.

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7

Communications

Allied Special Operations: Jedburgh Teams, Summer 1944

Dr. Samuel J. Lewis

General Dwight D. Eisenhower, commander of the Supreme Headquarters, Allied Expeditionary Force (SHAEF), possessed a unique weapon to assist his invasion of the Continent in June 1944—some 100 three-man special operations teams, code-named Jedburgh. Great Britain's Special Operations Executive (SOE) and the American Office of Strategic Services (OSS) formed a combined office in London that evolved into the Special Forces Headquarters (SFHQ). It was subordinate to SHAEF's G3 branch. Brigadier (Sir) Colin McV. Gubbins originated the concept of Jedburgh teams "to raise and arm the civilian population [in occupied territory] to carry out guerrilla activities against the enemy's lines of communication." Jedburghs were uniformed volunteers from France, the United Kingdom, United States, Belgium, and Holland who were rigorously screened and trained. SFHQ created the Jedburgh teams in early 1944 at SOE's Milton Hall facility near Peterborough, some seventy miles north of London. SHAEF and SFHQ also created special forces detachments (each with about twelve officers and twenty men) for each army and army group headquarters to coordinate special operations with the field army.

Communications was vital for coordinating Allied operations behind German lines. The SOE constructed networks of agents in occupied France whose main link to London was by radio. The Jedburgh teams constituted a "strategic reserve" to be sent as needed to known resistance groups to provide training, weapons, and communications. An SOE agent would arrange the reception committee for a Jedburgh team. The SOE agents, Jedburghs, and the special forces detachments all communicated through SFHQ's two radio stations on the outskirts of London (see figure 1). The senior British officers who sanctioned the Jedburgh concept insisted that the special forces detachments would command and control resistance activity in their army or army group sector. Yet those same special forces detachments could not contact the Jedburgh teams or resistance groups directly; they could only do so indirectly, through SFHQ.

Some, but not all, Jedburgh teams experienced trouble with their

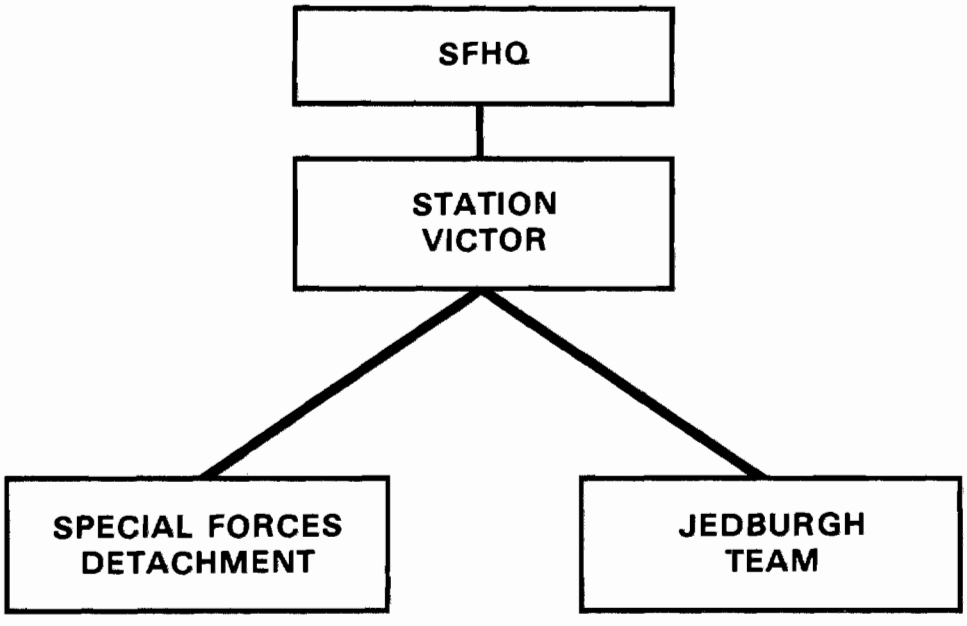


Figure 1. Communications channels for SFHQ

radio sets—troubles that began during the first training exercises in England. Frequently, the radios or their crystals were lost during parachute drops. Also, sometimes faulty packaging caused the radios to shatter on impact. Other Jedburgh teams, whose radios did function, frequently observed that no one in London seemed to listen to their messages.

Major William Colby, who later served as director of the Central Intelligence Agency, summarized these difficulties in describing his experiences as leader of Team Bruce. Colby's team departed Harrington Air Base in England on the night of 14 August 1944 in a black B-24 Liberator named "Slick Chick." Several hours later, the three parachutists and their numerous packages and containers rained on the peaceful town of Montargis, France. Since this location was some twenty miles from the planned drop zone and far too close to German combat units, the team departed rapidly without its radio and much of its equipment. Consequently, Team Bruce was unable to contact London until 17 August, when it used another SOE agent's radio. The team remained tied to this agent's radio until 28 August when SFHQ finally provided a replacement set. Colby subsequently observed that SFHQ provided so little information to his team on Allied operations and plans that he was forced to seek out the U.S. Third Army headquarters for guidance. SFHQ's later botched attempts to dispatch C-47 aircraft to Auxerre led Colby to observe, "The handling of this operation by

the London Headquarters was such as to destroy what faith we had in it."

Jedburgh Team Basil expressed similar discontent with its radio messages from London. On 25 August, its radio was destroyed in the parachute drop, but SFHQ provided a replacement the following day. The team operated in the Doubs area, assisting agent "Ligne" to organize and train resistance groups. When its mission concluded, the team observed that London invariably had verified receiving its messages "but never [gave] any indication of whether the requests would be answered. In actual fact they never were. London instead expressed verbose sympathy for casualties which only wasted our time deciphering."

Team Ephadrine parachuted into the Savoie Department on the night of 12 August to coordinate the operations of the French and Italian resistance forces. The team leader, Lieutenant Lawrence E. Swank, died as a result of a shooting accident. The second in command, Lieutenant Louis Donnart, did not criticize the radio set or procedures but did observe: "We were never kept in the picture of the intentions of the High Command after D-Day. In consequence, we could not always direct our activities in the right direction at the proper times." He also suggested that the Jedburgh teams would have been more effective if they could have communicated with each other.

Perhaps the most frustrating Jedburgh operation was that of Team Graham, led by Major (later General) M. G. M. ("Bing") Crosby. It did not parachute but, rather, landed in the Basses-Alpes in a C-47 early on 13 August. The team was promised a radio operator. One never arrived, however, which meant that the team had no communications whatsoever with SFHQ. Team Graham had only several days to train its resistance group, which soon expanded to about 250 armed men. As fate would have it, Team Graham was in the direct path of Task Force Butler, a mechanized force designed to advance north from the beaches of southern France. Crosby sought out the lead American unit and met General Butler on 19 August at Sisteron. Butler's mobile force was particularly weak in infantry, so one would expect the Americans to appreciate the assistance of local volunteers familiar with the terrain. The Americans, however, basically ignored the French Resistance and its reports on the terrain and location of the enemy. Team Graham returned from its mission on 25 September 1944.

The experiences of the eleven teams parachuted into northern France reflect both the strengths and weaknesses of SFHQ's communications. Team Jacob used a neighboring Special Air Service (SAS) party's radio from 15 August to 18 September, before the team was wiped out in the Vosges Mountains. Apparently, the team's radio broke

on landing, as did the replacement radio sent by SFHQ. On the other hand, Team Aubrey experienced no communications problems during the nineteen days it operated north of Paris (even though its radio operator, Sergeant Ivor Hooker, came down with the mumps). The team provided SFHQ with valuable reports on German airfields and troop movements in the area. Team Augustus also experienced no communications difficulties during its operations from 15 to 30 August in the Aisne Department. On 30 August, the team received a message from SFHQ to move north and capture several bridges over the Somme River. Until 30 August, when the German Army caught and killed the three Jedburghs, the team provided London with valuable reports on German troop movements.

Team Andrew worked with the CITRONELLE inter-Allied mission in the Ardennes Forest from 15 August to 8 September, when they linked up with advancing American ground forces. In the drop, it lost its radio crystals along with other equipment and hence depended on the CITRONELLE radio throughout the operation. Following a firefight with the Germans, the group remained in hiding, low on ammunition, until the Allied ground forces approached. In similar fashion, Teams Benjamin and Bernard remained together because one of their radios was destroyed during the drop. Although able to contact SFHQ, effective German security drove them into hiding in the Argonne Forest until the U.S. Third Army arrived.

Team Alfred parachuted into the Oise sector on 24 August 1944, a mere eight days before American ground forces overran the area. Its radio worked perfectly, but the team received none of the arms deliveries it requested. In addition, like Team Augustus, on 30 August, it received instructions from SFHQ to seize and hold several bridges over the Somme. This request was as unrealistic for Team Augustus as it was for Team Alfred. Team Arnold's radio also worked quite well, but to little avail. Team Arnold landed near Epernay at about 0300 on 25 August, but the U.S. 7th Armored Division arrived on the morning of 28 August.

Team Archibald parachuted into the Nancy area at 0110 on 26 August. The team's radio also broke on landing, but its SOE agent reported its arrival and requested another. The team had few complaints regarding communications. Team Stanley, which entered the Haute-Marne Department on 31 August, was pleased with its radio but observed that SFHQ ignored its messages. The team suggested that, in the future, teams should have the ability to call for air support. Team Philip parachuted into the Meurthe-et-Moselle Department early on 1 September. It managed to communicate with London, although its radio operator became separated from the team. The team was never able to

contact the resistance organizer sent to meet it and ended its mission in Verdun attempting to obtain weapons from SFHQ to arm French volunteers. SFHQ provided them no weapons.

The final Jedburghs dispatched in 1944 were the six Dutch-speaking teams supporting Operation Market-Garden. Team Dudley parachuted near Overijssel, a mere ten miles from the German border, at 0045 on 12 September. Its radio worked properly, but zealous German security forces impelled the team to move fifteen times between then and 24 November. On that date, SFHQ directed all personnel in Holland to break off contact with the resistance and cease broadcasting. The American Jedburgh managed to exfiltrate, while the two Dutch members of the team remained behind. Team Edward landed in a glider at 1410 on 17 September near Groesbeek with the British Airborne Corps headquarters to which it was attached. Team Edward had one of the few corps radios that worked, and the corps commander used the Jedburgh's radio to ask SFHQ about the situation in Arnhem. Team Edward later used the Dutch Resistance's telephone lines to contact the British 1st Parachute Division in Arnhem. Its mission completed, the team returned to England on 28 September to be debriefed. Team Daniel II worked with the U.S. 101st Airborne Division, with whom it dropped on 17 September near Zon, Holland. Both the team's radios were lost during the drop, so it was unable to contact SFHQ throughout its mission. After helping the division a good deal, the team returned to England on 27 September. Team Claude accompanied the ill-fated British 1st Parachute Division into the Arnhem airhead on 17 September. The team lost its radio set during the drop and hence had no communications with SFHQ. It fought as infantry at the Arnhem bridge. One Jedburgh managed to exfiltrate back to the Allied lines. Team Clarence accompanied the U.S. 82d Airborne Division to Groesbeek, Holland. The team lost its radio in the drop but managed to pass information to Team Edward via Dutch telephones. The team performed liaison work with the Dutch Resistance until late September when it returned to London. From 3 October to the end of the year, Team Stanley II trained and organized Dutch volunteers into conventional infantry companies in the Nijmegen area. It did not operate behind enemy lines and had no communications problems.

These last six Jedburgh operations in Holland differed from those in France. The Allies could not trust the Dutch Resistance, which had been infiltrated by the Germans earlier in the war. For the most part, these Jedburgh teams functioned as miniature special forces detachments, deploying with their respective divisions and the one corps headquarters. But here, too, the teams were hostages to unreliable radio insertions. The teams that attempted to parachute in with their radios usually lost them during the drop.

While the Jedburgh teams discussed thus far were largely unsuccessful, several other Jedburgh teams achieved remarkable results. One of the most successful operations was that of the first Jedburgh team deployed, Team Hugh, led by Captain (Sir) William Crawshay. It dropped at 0140 on 6 June south of the Loire River in the Indre Department, where it worked with the French Resistance for the next three and one-half months. They assisted SAS Team Bullbasket until the Germans grew weary of the latter and hunted it down. Throughout Team Hugh's stay, it arranged for parachute drops of weapons and equipment while it trained and organized resistance groups. As the team's ambushes became more effective, the Germans ceased traveling in small groups and sought security in large columns. Team Bruce responded by reporting the location of such columns to SFHQ for air strikes. In early August, SFHQ instructed Crawshay (through a series of British Broadcasting Corporation blind transmissions) to escalate sabotage missions. At the same time, the local French Resistance became worried that the Germans would destroy the valuable Eguzon power station before retreating. As a result, Team Bruce requested a large special operations force from SFHQ to save the facility. London responded by dispatching OSS Operational Group "Patrick." Although the Germans withdrew without destroying the plant, this was one of the few instances that SFHQ complied with such a request from a Jedburgh team. Crawshay desired to bring maximum force to bear on the German LXIV Corps, which was attempting to march from the Bay of Biscay back to Germany. Consequently, SFHQ arranged to fly Crawshay to London in a C-47 (known as a "Dakota operation"), where he requested larger and more responsive air strikes and the advance of U.S. Army ground units across the Loire.

While SHAEF provided neither to Crawshay, apparently, SFHQ treated Team Bruce differently from many other Jedburgh teams. Why did Team Bruce prove so effective vis-à-vis several of the more troubled teams? Obviously, the team used its radios more effectively and efficiently than many other teams. Also, since Team Bruce was the first team deployed and had the longest unbroken link with SFHQ, it perhaps received more attention and care from SFHQ. A problem with the radio nets in general, however, was that they were overworked. In his study on the six Jedburgh teams deployed to the Finistère Department, Elliot Rosner demonstrates that while SFHQ received 1,300 messages from the field in June, that number increased to 2,180 in July and 7,912 in August. SFHQ was simply overwhelmed by the proliferation of resistance groups and special operations teams across France. Timing, then, undoubtedly influenced SFHQ's ability to communicate effectively with Jedburgh teams and resistance groups in the field.

Communications remains inseparably linked to organization and command and control. Jedburgh communications difficulties were obviously part of a much larger problem. The generals who approved the Jedburgh concept did so with the understanding that the special forces detachments at army and army group headquarters would command and control the Jedburgh teams. The special forces detachments may have been successful in performing a number of functions, but they failed to command and control the special operations forces behind enemy lines. Special forces detachments, in fact, could only communicate with Jedburgh teams through SFHQ. The command and control that did exist, therefore, devolved to SFHQ. Not surprisingly, most of the communications problems appeared in August, when SFHQ deployed Colby's team and so many others to the field without a properly organized scheme for command and control. The later Jedburgh operations in support of Market-Garden clearly demonstrate, however, that even the correct organization for command, control, and communications is of limited value when radios are lost or broken during insertion.

The effectiveness of special operations teams obviously depends on a myriad of factors too numerous and complex to be addressed here. The operations of these selected Jedburgh teams in France and Holland do, however, demonstrate the critical importance of effective communications in such missions. The first step in acquiring such communications remains obtaining effective and reliable radios, the lack of which bedeviled so many of the Jedburgh teams. Communications itself, however, remains inseparably tied to organization, command and control, and the purpose of those missions. Special operations teams with effective radios cannot reach maximum efficiency if the message centers cannot receive and evaluate their message traffic. And, finally, the headquarters that commands and controls special operations teams must have the ability to communicate with those teams rapidly.

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8

Deception

Deceiving the Enemy in Operation Desert Storm

Dr. Thomas M. Huber

From 24 to 28 February 1991, coalition forces in Operation Desert Storm drove the Iraqi Army out of Kuwait, making this operation one of the most successful campaigns waged in modern times. One of the reasons for this triumph was General H. Norman Schwarzkopf's skillful use of deception.

The Chinese classical writer Sun Tzu maintains that all warfare is based on deception. Schwarzkopf's Central Command (CENTCOM) headquarters was mindful of this premise in waging the U.S.-Iraqi struggle. First of all, Schwarzkopf's planners made use of several things they knew about the enemy. One of these was that Saddam Hussein, the Iraqi president and commander in chief, had few reconnaissance resources besides his air force, and even his air reconnaissance assets were weak. U.S. CENTCOM planners also knew that Saddam's army was accustomed to fighting set-piece battles employing massed head-on assaults against Iranian forces and so might be disposed to expect and prepare for such fighting in the future. Thus, CENTCOM strategists encouraged Saddam to expect a frontal attack by the coalition forces where he was strongest, along the Kuwaiti-Saudi Arabian border. The coalition accomplished this by arraying all its forces in a heavy double line along that front during Operation Desert Shield. Massed assaults, breaching methods, and the like were also emphasized in CENTCOM briefings to the press (for Iraqi consumption).

The surprise element in the U.S. attack derived in part from the Iraqis' failure to recognize the maneuver capabilities of the coalition forces across the open desert. To attack from the west meant attacking across the desert, and few Iraqi staff officers believed U.S. forces could operate freely across that featureless terrain. Schwarzkopf's planners also took advantage of the limited observation capabilities of the Iraqis by applying the coalition's superior air power, beginning on 17 January 1991. Coalition air forces systematically destroyed the capabilities of the Iraqi Air Force, thus making it almost impossible for the Iraqis to observe the disposition of U.S. and coalition forces. Only after the Iraqi Air Force was neutralized did the repositioning of coalition assets begin.

On 17 January, several hours after the air campaign had commenced, Schwarzkopf inaugurated a colossal movement of forces northwestward, away from the Kuwaiti border and along the Iraqi border. In short, the whole second line of massed troops along the Kuwaiti border, including the U.S. XVIII Airborne Corps and VII Corps, moved 200 miles to the northwest. This movement began with the redeployment of the XVIII Airborne Corps in late January. Schwarzkopf shifted the XVIII Airborne Corps from the far right to the far left of the coalition line, an average distance of 360 miles. A force of light and heavy elements, the corps moved by air and on the ground to fill the new west end of the coalition line. To elude Iraqi intelligence, the corps was held south of Tapline Road. This limited the XVIII Airborne Corps' tactical intelligence capability, which extended out only about thirty kilometers, until cross-border operations were authorized in mid-February. Planners also feared that Bedouins in the area might report troop movements. To minimize this possibility, Saudi Arabian light units had been sent in beforehand to clear the area of as many Bedouins as possible.

The VII Corps moved deftly from the left of its old position to its new one, an average distance of 140 miles. It began moving at about the same time as the XVIII Airborne Corps, placing its 1st Cavalry Division (transferred from XVIII Corps to VII Corps), the 1st Infantry Division, and the British 1st Armored Division conspicuously on line. The VII Corps deliberately left a gap on its left between itself and the XVIII Airborne Corps to encourage the Iraqis to believe that the coalition line ended with the VII Corps' position. The VII Corps' other armored elements, the 1st and 3d Armored Divisions and the 2d Armored Cavalry Regiment, were moved into line only later in the deployment, reaching the line on 17 February, where their presence intentionally surprised the Iraqis.

The VII Corps also achieved surprise through leaving behind an entire decoy military base south of the Wadi al-Batin, with mock missiles, fuel dumps, radio traffic, trucks, and tanks, while at the same time making abundant use of multispectral close combat decoys. This deception made it harder for the Iraqis to realize that all of VII Corps' forces were being evacuated to the west. U.S. planners also fielded special teams along the Kuwaiti border to set up mock headquarters in the rear of would-be assault axes. These headquarters aired a high volume of encrypted radio messages so that Iraqi listeners would have the impression that major forces were operating in the area. In fact, the headquarters consisted of only a few troops using portable equipment at otherwise deserted sites.

Between 17 January and 17 February, CENTCOM had secretly moved most of two full combat corps, totaling 100,000 men and 1,200 tanks, an average distance of 200 miles to the west of the original line. The logistical aspect of all this was especially significant and difficult, since Schwarzkopf prudently insisted on positioning enough food, water, fuel, parts, and ammunition to meet the needs of this force for sixty days. Three enormous depots were created along the new northwestern part of the line for this purpose, which required a torrent of traffic along two-lane Tapline Road, a truck passing along it every fifteen seconds. Hundreds of thousands of tons were moved along the road in a flow that moved 24 hours a day for 2 weeks and employed some 65,000 armored and support vehicles. Traffic of this density would have been extremely vulnerable to enemy air power—had there been any.

Meanwhile, coalition air bombardments continued to be directed at targets in Kuwait—not targets to the west—to suggest that Kuwait would be the object of the main ground attack. Air targets were shifted west only just prior to the 24 February assaults. Skirmishing along the Kuwaiti border was also maintained to draw the Iraqi planners' attention. Similarly, just west of the Kuwaiti border in the VII Corps' sector, the 1st Cavalry Division and the 1st Infantry Division conducted counterreconnaissance raids after 9 February.

Further deception was achieved during the last few days before the coalition attacked. The U.S. 1st Marine Division, previously deployed opposite the al-Wafra oil fields near the coast of the Persian Gulf, rapidly moved westward to the bend in the Kuwaiti border. The 2d Marine Division, which had been stationed east of the 1st, also broke camp and established new positions farther west. The purpose of these moves was to allow the Marines to assault into a sector of the Iraqi fortifications where they were not expected.

An additional dimension of deception activity, besides masking the stealthy relocation of the XVIII Airborne Corps and parts of the VII Corps and the westward movement of the 1st and 2d Marine Divisions, was the coalition's demonstration of amphibious assault capabilities. As part of this ruse, an impressive amphibious assault task force was stationed conspicuously off the coast of Kuwait. This fleet was comprised of forty amphibious landing craft, the largest such force to be assembled since Inchon. The force contained the most up-to-date, equipment-laden amphibious ships, as well as aircraft carriers to provide preparatory air bombardments, close combat support, and helicopter airlift. Battleships provided offshore artillery support. For movement

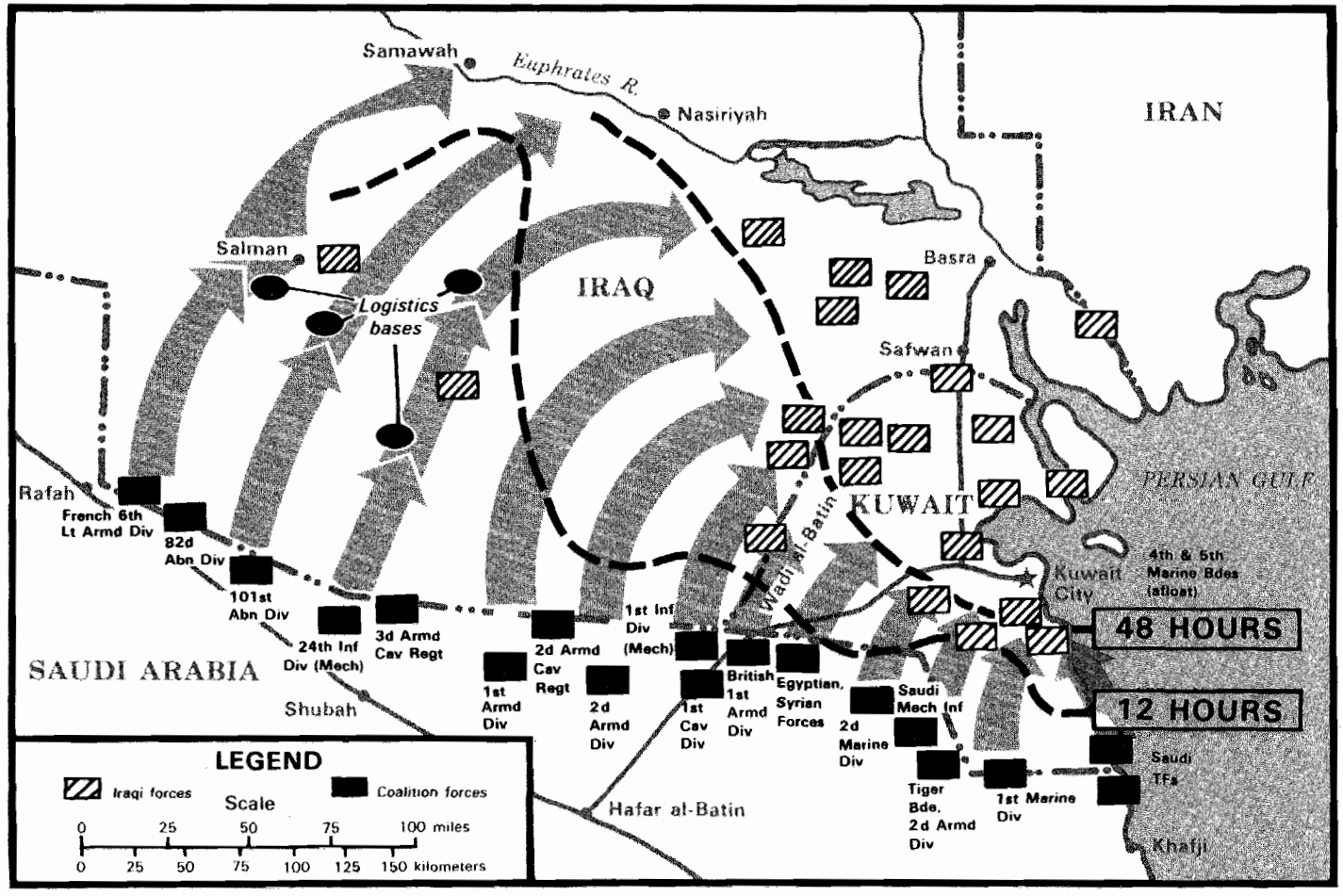
to the beach, these forces were equipped with new LVTP-7s (landing vehicle, track, personnel), LCAC (landing craft air cushion) hovercraft, and CH-53E Super Stallion helicopters, among other things. In short, this was a powerful and credible force stationed threateningly close to the Iraqi defenses along the coast.

U.S. CENTCOM regularly made references to the press concerning the training, capabilities, and presence of the amphibious force in the Persian Gulf and, later, off the coast of Kuwait. On 1 February, *Newsweek* magazine carried a feature article on the planned amphibious invasion. To keep the idea of a beach assault in the news, large-scale amphibious rehearsals were conducted, including, notably, the one held during the last 10 days of January in which 8,000 U.S. Marines landed on the coast of Oman.

Moreover, in this period before the main campaign began, Navy SEALs (sea-air-land teams) carried out numerous missions along the Kuwaiti coast to gather information on the beach gradients and firmness of the sand, the nature and location of minefields, and the disposition of enemy forces. Carrier air and naval artillery missions were also executed throughout the period to support suspicions of a major coalition amphibious assault.

Coalition forces also conducted other deception measures once the main ground operations began on 24 February (see map 7). As part of this deception, the 1st and 2d Marine Divisions, at 0400, attacked the Iraqis at the east end of the eastern sectors where coalition planners wanted the Iraqis to think all the assaults would take place. The Marine divisions moved forward violently before the northwestern parts of the line became active. The Marines attacked through the first defense line of minefields, barbed wire, and fire-trench barriers, then struck on into the second line of defenses, successfully breaching these also. Both divisions then streamed through the opening into the Iraqi rear in Kuwait. The object of these assaults was not only to break through and destroy the Iraqi positions, which they did, but also to fix Iraqi forces and to confirm, for a time, the Iraqis' assumption that all of the coalition attacks would occur on the Kuwaiti front. These assaults were apparently successful in all these objectives.

All the coalition forces vigorously demonstrated against the Iraqi positions in this sector. Notably, the U.S. 1st Cavalry Division launched a mock attack against the Iraqi line just west of Wadi al-Batin, the broad valley that marks the western boundary of Kuwait. The intention,



Map 7. Operation Desert Storm, 24—25 February 1991

again, was to confirm for the Iraqis that the main axis of attack would be at the west end of the Kuwaiti border, not farther west in the desert. This attack also sealed Iraqi forces in the Kuwaiti elbow so they could not attack the XVIII Airborne Corps and VII Corps' three logistics depots after the assault began. At the easternmost extremity of the line, the 5th Marine Expeditionary Brigade came ashore at Saudi ports to serve as a reserve behind the Saudi forces attacking the Iraqi lines adjacent to the coast.

To the northwest, airmobile forces of the XVIII Airborne Corps air assaulted deep into Iraq, establishing forward staging areas. The French 6th Light Armored Division secured the Salmon airstrip. On the following day, the 101st Airborne Division blocked Highway 8. According to the original plan, the VII Corps was supposed to delay its advance for a day while the Iraqi forces were drawn into battle in the vicinity of Kuwait. Coalition forces, however, were so successful that the delay was unnecessary and Schwarzkopf ordered the VII Corps to advance earlier than planned, on the afternoon of 24 February. When Iraqi strategists finally realized that the major assault sector was in the northwest, they could do little in defense.

So that Iraqi commanders would continue to anticipate an amphibious attack, U.S. amphibious support vessels along the coast remained positioned as if threatening to attack, and the battleships *Missouri* and *Wisconsin* and carrier-based aircraft continued bombardments. The object was to fix the six Iraqi infantry divisions deployed along the shoreline, and this was achieved. Iraqi strategists made no early effort to withdraw their forces from the coastal defense works, with the consequence that those forces were rapidly pinned against the coast by the 1st and 2d Marine Divisions, which had broken through the lines in the south.

All in all, the deception measures implemented by the U.S. forces were extremely successful. Iraqi forces initially developed fortifications along the 150-mile southern border of Kuwait and along the 100-mile-long coastline. Between August 1990 and February 1991, the Iraqis only extended their lines another fifty miles farther westward along the Iraqi-Saudi border. Many Iraqi heavy guns in Kuwait City were later found to be mounted pointing out to sea and incapable of being easily moved to face an inland enemy, like the guns at Singapore during World War II.

After the ground campaign began at 0400 on 24 February, Iraqi forces remained in their positions, crammed into a 200-mile-long wedge

along the southern border and eastward shoreline of Kuwait. The thousands of men and guns arrayed along the Kuwaiti coast were wasted once the campaign began. At the same time, the XVIII Airborne Corps and VII Corps, attacking across a 200-mile front on the Iraqi-Saudi border, were almost unopposed. In short, hundreds of thousands of Iraqi troops were enveloped in the trap sprung by the VII Corps. All of this was possible because of the efficiency of CENTCOM's deception plan. Today's AirLand Battle doctrine mandates reliance on force multipliers such as technology, mobility, and deception. The experiences of Desert Storm exemplify that deception is crucially effective as a force multiplier.

Large-scale deception was especially difficult in Desert Storm because of the omnipresence of the electronic media and its reporting capability. On the other hand, the media often emphasized U.S. capabilities and provided their estimate of U.S. intentions. Since troop movements can be reported instantaneously, the achievement of deception poses unprecedented challenges for modern commanders. Schwarzkopf overcame this challenge by feeding information to the news-hungry journalists about activity along the east end of the Kuwaiti border, not the west end, and about a possible amphibious assault. The early engagement of Iraqi forces and U.S. Marines at the eastern village of Kafji also may have accidentally served Schwarzkopf's purpose of focusing media attention on the east. Schwarzkopf did not give false information; he merely gave a misleading emphasis to true information.

Deception during Desert Storm also was achieved at the presidential level by President George Bush, who consistently gave the impression to the Iraqis that political realities obliged him to send U.S. forces into Kuwait rather than across Iraq's borders—despite the obvious military advantages of avoiding a direct attack into Kuwait. Using deception, Bush shrewdly exploited the political environment to make the militarily implausible appear plausible.

Although the coalition forces used deception in innovative ways, some forms of deception were not utilized. The coalition found it difficult to deceive the Iraqis as to the order of battle or the time of the attack. This was because the order of battle was accessible to the Iraqis through the press, and the timing of the attack was known almost exactly because it followed so closely on the United Nations-mandated deadline for Iraq to withdraw from Kuwait. The Iraqis were misled mainly about the location of the attacks. But in most cases, it is advantageous for an enemy to be mistaken also about the composition of fighting forces and the time and place of their attack.

Also, security for the deception plan was not perfect. A lap-top computer containing details of the plan was stolen from the car trunk of an assistant to the British joint commander for the Persian Gulf. The computer disappeared while the car was parked at Acton in west London and was returned anonymously to the Ministry of Defense three weeks later. There is no evidence that the plan reached the Iraqis, but it is clear that the security surrounding the plan was imperfect.

Despite these shortcomings, however, Operation Desert Storm was uniquely successful, in large part because its skillful deception plan allowed the CENTCOM commander to strike the enemy where he was unprepared and bring overwhelming force to bear on the decisive point of the battlefield.

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9

Decisiveness

The German Thrust to the English Channel, May 1940

Dr. Gary J. Bjorge

Decisiveness is the quality of character that keeps a commander focused on achieving his mission. A decisive commander has the determination and strength of will to push his forces to make a greater effort. On the offense, he seeks to maintain forward momentum built by earlier successes; when on the defense, he strives to regain the initiative. Essentially, the decisive commander exploits opportunities to inflict the greatest possible damage on the enemy and gain the greatest possible advantage for his side.

Many examples can be cited to illustrate the importance of decisiveness in planning and in fighting on the battlefield. Few campaigns do this better than the German invasion of France and the Low Countries in May 1940. In this campaign, decisive commanders shaped the planning process and, by pressing the fight, made a great contribution to victory. Interestingly, this campaign also shows how vacillation and indecision can hamper operations and diminish the fruits of victory.

In late September 1939, following the joint German-Soviet conquest of Poland, Hitler turned his attention westward toward France and Great Britain, the two nations that had declared war on Germany following its invasion of Poland. On 27 September, in a move that surprised his military commanders, Hitler announced his desire to launch an autumn offensive against France through the Low Countries. On 9 October, he issued a directive ordering the German Army's General Staff to develop a campaign plan.

The General Staff responded on 19 October with *Fall Gelb* (Plan Yellow), which envisioned a large offensive through the Netherlands and central Belgium to the sea. The main effort was to be launched on the northern wing by Army Group B, a massive 43-division force that included most of the armored and mechanized divisions in the army. In the center, opposite Luxembourg, the twenty-two divisions of Army Group A were to move forward and cover the southern flank of Army Group B as it advanced. On the southern wing, opposite the Maginot Line, Army Group C's eighteen infantry divisions were to defend the Siegfried Line. The objective of the campaign was to provide

a broad protective zone for the Ruhr industrial area while establishing favorable conditions for air and sea operations against Great Britain and land operations against France.

Fall Gelb bore similarities to the famous Schlieffen Plan of 1914, but it was much less ambitious. The Schlieffen Plan had envisioned the German Army moving in a great arc through Belgium and northern France to take Paris and finally crush the entire French Army against the Swiss frontier. *Fall Gelb* sought only a partial victory. Senior German Army commanders had no hope of achieving strategic surprise and assumed that the strong defenses and natural obstacles in the area to be crossed and the relatively even force ratios between the two sides made it impossible to defeat the Allies decisively in a single campaign. After this initial campaign, another would have to follow.

When Army Group A's chief of staff, General Erich von Manstein, first read *Fall Gelb*, he was appalled. He feared that such an offensive would inevitably lead to a stalemate. He doubted that Army Group B could maintain a rapid pace of advance because it would be attacking large forces manning strong defensive positions. Furthermore, he felt that Army Group A lacked the strength to prevent the Allies from establishing a defensive front from the end of the Maginot Line to the lower Somme River. Also, Manstein was not convinced that the 23 August 1939 Nazi-Soviet Pact had completely eliminated the Soviet threat to Germany. He was against a plan that risked the German Army's offensive capability for hope of only a limited victory.

Manstein thought it better to shift the main effort from Army Group B to Army Group A and send a massive armored force westward through the Ardennes region to cut off and destroy all Allied forces expected to be in Belgium. Manstein believed that such a *sichelschnitt* (cut of the sickle) maneuver could achieve strategic surprise, favorably shift the balance of forces in the west, and make it impossible for the French to organize a strong defense for the rest of their country. This potentially decisive operation justified the risks involved.

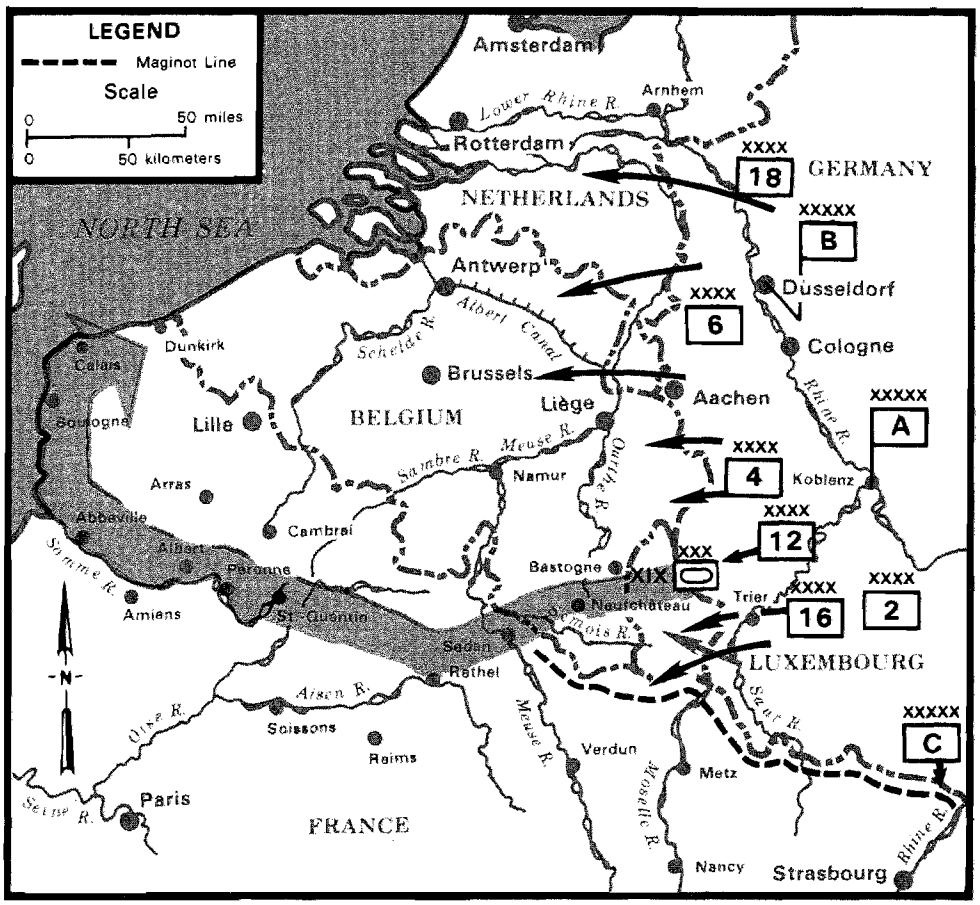
Army Group A's commander, General Gerd von Rundstedt, agreed with Manstein and, on 31 October, forwarded a proposal of Manstein's concept to the General Staff. Despite Manstein and Rundstedt's continued agitation for the proposal, the General Staff remained unresponsive. In late January 1940, the Army High Command (to free itself of Manstein's challenges of the General Staff plan) appointed him commander of a newly forming infantry corps. It looked unlikely that Manstein's plan would be accepted. But on 17 February, Manstein and other new corps commanders were called to Berlin to meet with Hitler. After lunch, Hitler invited Manstein into his study and asked him what he thought about the upcoming offensive on the Western Front.

Manstein forcefully expressed his ideas, and Hitler agreed with his analysis. Three days later, an operation order embodying Manstein's ideas was issued. His persistence had at last been rewarded.

Manstein gave the German Army a plan that might lead to a decisive victory in the west; General Heinz Guderian turned that possibility into a battlefield reality. After Hitler decided to shift the main effort of the offensive to Army Group A, its size was increased to some forty-five divisions assigned to three armies. On the right wing was the Fourth Army under General Gunther von Kluge, in the center was the Twelfth Army under General Wilhelm List, and on the left wing was the Sixteenth Army under General Ernst Busch. The bulk of German armor was attached to the Twelfth Army under the control of a newly created panzer group commanded by General Ewald von Kleist. Of the three panzer corps in Kleist's panzer group, one was Guderian's XIX Panzer Corps, with three armored divisions, the 1st, 2d, and 10th. Guderian's mission in the offensive was to lead the advance through the Ardennes to Sedan and force a crossing of the Meuse River. Because of Guderian's decisive leadership, his corps accomplished this and much more.

In the 1920s, Guderian had become interested in tanks and, by the end of the decade, was one of the German Army's foremost tank experts. He believed that massed armor, properly supported by the other arms, would play the decisive role on future battlefields. By 1935, he was convinced that this role should include deep penetrations into the enemy rear to disrupt lines of communication and command and control networks. Guderian, however, had difficulty creating the armored force necessary to execute this vision of warfare because there were many high-ranking skeptics within the army, resources were scarce, and the Versailles Treaty had placed limitations on German rearmament. Hitler, however, changed the situation. He was fascinated by tanks and supported the growth of German armored forces. During the war against Poland, armored forces were not concentrated for mass, deep attacks. Nonetheless, they fought effectively and proved their value. Now, in May 1940, these forces were massed in the greatest concentration of tanks yet seen. The attack through the Ardennes to the sea was to give Guderian the opportunity to put his theories of mobile warfare into practice.

The German offensive began early on the morning of 10 May (see map 8). At 0530, Guderian crossed the Luxembourg frontier with elements of the 1st Panzer Division. He was extremely confident in the ability of his officers and men and had no doubt that his corps could push all the way to the English Channel. He had complete faith in his three division commanders, all of whom shared his belief that once



Map 8. Germany's offensive against France, May 1940

armored formations had broken into the clear in the enemy's rear, they should continue to advance as far as possible. He hoped that his superiors would give him the freedom to do just that.

Guderian's first challenge from his superiors came on the first night of the offensive, when the panzer group headquarters, in response to a report that French cavalry was moving up from the south, ordered the 10th Panzer Division to change its direction to meet the threat. Since Guderian wished to maximize the forces available to him at Sedan, he immediately asked that the orders be canceled. The panzer group headquarters finally did so, and the 10th Panzer Division resumed its westward movement. No French cavalry appeared.

By the evening of 12 May, elements of the 1st and 10th Panzer Divisions had captured Sedan, and preparations were under way to attack across the Meuse River. This attack was successfully carried

out on 13 May, and by the next afternoon, German forces were fighting some ten miles west of Sedan. On 15 May, Guderian kept his forces fighting in an effort to break completely through the French defenses, but that night, he received orders to halt. Guderian was furious. Halting the advance might give the enemy time to regroup and would diminish the advantage his forces had gained through surprise. To cancel this order, Guderian contacted the panzer group's chief of staff and then talked to Kleist himself. During their heated discussion, Guderian told Kleist that his action could result in a repeat of the 1914 "Miracle of the Marne," where the French had hastily organized a defense and ended Germany's chances for a quick victory. Finally, Kleist relented and granted Guderian permission to resume his advance for another twenty-four hours in order to clear space for the advancing infantry corps that would be holding the bridgehead.

The fighting to cross the Meuse and expand the bridgehead had been heavy and had taken its toll on German forces. When Guderian visited his forward units on the morning of 16 May, fatigue showed on the faces of his officers and men. This concerned Guderian, because he had learned on the previous day from a captured French document that the French were becoming desperate in their effort to stop his advance. Now was the time to keep the pressure on. To encourage his men, Guderian assembled his companies and told them what was on his mind. He read them the captured message; explained its significance; expressed his appreciation for what they had accomplished to date; and told them that if they continued to push forward, they would soon be in the clear. This action had the desired effect, for his men advanced with renewed vigor. With French resistance slackening, the lead units advanced over forty miles before nightfall.

Guderian thought such rapid advances should be armor's role in war, but his actions were too daring for some of his superiors, especially Hitler. Guderian felt he should exploit emerging French battlefield weaknesses. Hitler, however, was becoming increasingly fearful of a French attack from the south and wanted Kleist to wait for the infantry to catch up with his panzer units. Kleist had tried to rein in Guderian with his order on the night of 15 May, only to see him advance forty miles on 16 May. In the early morning hours of 17 May, Kleist ordered Guderian to stop his advance immediately and to meet him at Guderian's airstrip at 0700. When the two generals met, Kleist berated Guderian for disobeying orders; Guderian responded by asking to be relieved of command. Kleist agreed and ordered Guderian to transfer his command to the most senior general in his corps. After Guderian returned to his corps headquarters, he sent a message to Rundstedt saying that he would be handing his command over to General Rudolph Veiel and would then fly to the army group headquarters to make a

full report. Almost immediately, he received a reply asking him to wait there until List arrived. List arrived early in the afternoon and explained that the order to stop the advance had come from the Army High Command and had to be obeyed. He did, however, authorize a "reconnaissance in force," under the condition that the corps headquarters not move. List also told Guderian that he could not give up his command.

After List left, Guderian immediately set his reconnaissance in force in motion. To keep the Army High Command from monitoring his movements, he left his corps headquarters in place and had wire laid between it and his advanced headquarters. Around 0900 on 18 May, the 2d Panzer Division reached St. Quentin on the Somme River. To its left, the 1st Panzer Division was moving toward Peronne. By the evening of 19 May, the XIX Corps was on the Cambrai-Peronne line.

During the night of 19—20 May, Guderian regained his freedom of movement and was authorized to attack Amiens. He assigned this mission to the 1st Panzer Division and ordered the 2d Panzer Division to push on to Abbeville and the sea. On the morning of 20 May, Guderian observed the attack on Amiens. The city fell quickly, and after a brief tour of the area, Guderian went north to join the 2d Panzer Division at Albert. There, the division commander reported that he was nearly out of fuel and proposed stopping for the day. Guderian disagreed, ordered a redistribution of fuel, and continued the advance. As a result, elements of the 2d Panzer Division reached Abbeville (sixty miles away) by 1900, and during the night, a battalion reached the coast. This marked the end of the drive across France. In only ten days, Guderian's corps had moved from Germany to the English Channel and had cut all lines of communication between France and the Allied armies in Belgium. His decisive leadership had contributed to a rapid, decisive victory.

Having overcome French resistance and the nervousness of superiors, Guderian now sought to destroy the Allied armies. His plan after reaching the coast was to turn north and rapidly capture the Channel ports. The 2d Panzer Division was to capture Boulogne, the 1st Division Calais, and the 10th Division Dunkirk. These events, however, did not materialize. First, Guderian wasted a day (21 May) waiting for orders from above. Next, the 10th Panzer Division was temporarily detached from his command and placed in panzer group reserve. Still, by 24 May, Guderian's corps had taken Boulogne, surrounded Calais, and was approaching Dunkirk. Then, suddenly, Hitler issued his famous order that stopped the advance of German ground forces outside Dunkirk and left the destruction of Allied forces cornered there to the Luftwaffe. Guderian was stunned, but he obeyed.

The Luftwaffe, however, failed to destroy the Allied armies, and by the time German ground attacks resumed three days later, the Allies had organized a strong defense. From 28 May to 4 June, when Dunkirk fell, 226,000 British and 112,000 French and Belgian soldiers were evacuated to England, despite German efforts to stop them. The result could still be considered a German victory. As Churchill put it, "Wars are not won by evacuations." However, to Guderian, the successful evacuation of Allied troops was a great German failure brought on by indecision and confusion. He always regretted that this opportunity for a decisive victory had been lost.

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10

Defensive Operations

The Defense of the No Name Line in the Korean War

Major Robert E. Connor

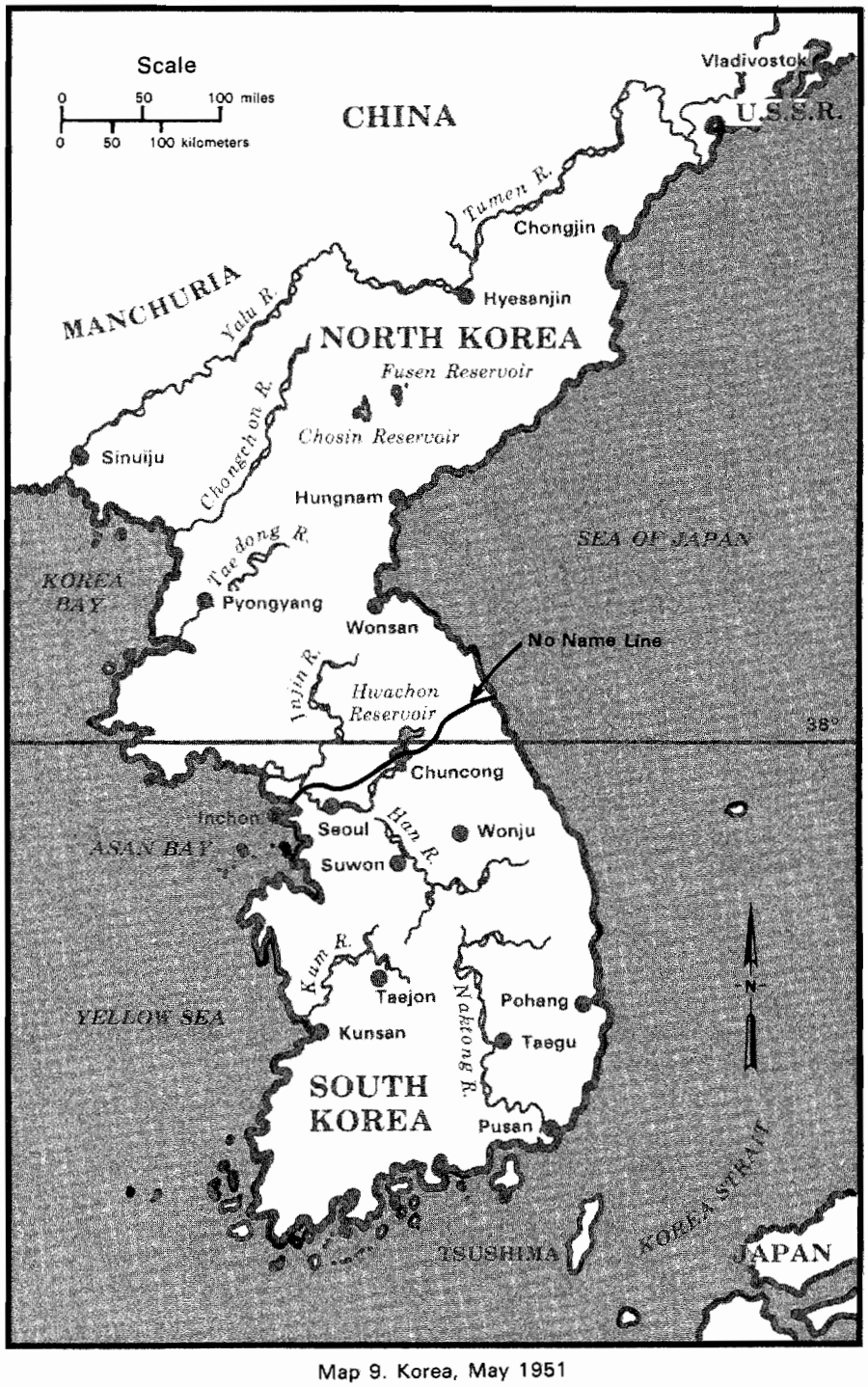
The defense of the No Name Line (see map 9) during the second phase of the Communist Chinese Forces (CCF) Spring Offensive in the Korean War vividly demonstrates how the purposes of the defense can be successfully achieved when resourceful and resolute senior commanders insist on high standards of preparation from subordinate leaders, commanders, and staffs at every level. The conduct of the defense by the U.S. X Corps and the 2d Infantry Division in Korea from 16 through 22 May 1951 is a study in the imaginative use of reserves and the combat power of combined arms. In this operation, UN forces reversed a nearly disastrous situation by employing a strong defense.

By May 1951, the Korean War was in its eleventh month. Much had happened. MacArthur's masterful turning movement at Inchon (15—25 September 1950) had broken the ring forged around Pusan by the North Korean People's Army (NKPA) after its invasion of South Korea in June 1950. Advancing north, UN forces subsequently closed on the Yalu River. But on 25 November 1950, the CCF intervened.

In the face of this devastating reversal, UN forces evacuated North Korea entirely and withdrew to a line (named "Line B") running from the Imjin River across the 38th Parallel to the east coast and went over to the defense. The third CCF offensive in January retook Seoul, but a UN counteroffensive (Operation Ripper) succeeded in nearly restoring the line along the 38th Parallel once more.

On 22 April, the CCF initiated the first phase of its Spring Offensive, with the main effort exerted on the U.S. Eighth Army above Seoul. After desperate fighting, the enemy thrust was blunted, and the UN defensive line restored. The CCF's attempt on General James A. Van Fleet's left convinced the new Eighth Army commander that this would continue to be his area of highest risk. He therefore weighted the defensive line on his left by placing the U.S. I and IX Corps there.

CCF intentions during the first two weeks in May 1951 remained vague. Reconnaissance aircraft caught glimpses of massive troop move-



Map 9. Korea, May 1951

ments, but the purpose of these concentrations remained inconclusive and obscure to the Eighth Army G2. Nevertheless, activity by the Communist forces fit a pattern that preceded other CCF offensives. By 10 May, the G2, Lieutenant Colonel James Tarkenton, reported that an all-out CCF offensive aimed at Seoul was imminent. The continuing shift of CCF forces to the east had convinced Tarkenton and Van Fleet that the enemy's main effort would seek to rupture the seam between the U.S. I and IX Corps in the 24th Infantry Division area. Based on this analysis, Van Fleet canceled his planned "Detonate" offensive and prepared to defend against an estimated Chinese force of perhaps twelve or thirteen divisions in the CCF-NKPA's main effort and an additional six to ten divisions in a secondary effort in the east. All considerations of what is today called METT-T (mission, enemy, terrain, troops, and time available) seemed to favor this assessment. The terrain was especially favorable for a Chinese attack. The probable invasion area had good road networks and offered a close approach to Seoul.

The problem with this assessment was that the CCF was a force completely unlike the UN forces facing it. The CCF was essentially an all-light infantry formation with few supporting branches and negligible logistical support. This was made apparent by the inability of the Chinese to sustain its previous offensives. The CCF moved by stealth and attacked at night on foot—always on foot. Thus, the treacherous terrain in eastern Korea posed no insurmountable obstacle to the CCF. In fact, the terrain provided the Chinese a profitable avenue for exploitation. Moreover, it was defended by only four Republic of Korea (ROK) divisions.

The CCF's plan was both audacious and grandiose. The CCF's intent was to annihilate the U.S. X Corps by overrunning two ROK corps in the east, thus coming in behind the U.S. 2d Infantry Division and rolling up the U.S. X Corps. This accomplished, the CCF would make a dash to Wonju, cut west below the Man River, and then advance either to Suwon, completely enveloping Seoul, or strike south to Pusan. This wishful Chinese scenario, however, was not seriously considered by the Eighth Army planners.

Anchoring the U.S. X Corps line in the east was the U.S. 2d Infantry Division. It was oriented northwest on the No Name Line and disposed west to east as follows: the 9th Infantry (tied in with the 1st Marine Division); the 38th Infantry (plus the Dutch Battalion); and Task Force Zebra (armor and infantry)—farthest east adjoining the ROK 5th Division. The 23d Infantry was in corps reserve.

When intelligence in the days immediately before the Chinese attack suggested a massive easterly movement by the CCF, the 2d Infantry Division made frenzied preparations. The division distributed operation

plans to units dealing with an exhaustive list of contingencies. In addition, soldiers stretched mile after mile of barrier wire in front of division defensive positions. Engineers also placed numerous and carefully sited minefields. The division gave the greatest emphasis to powerful artillery support. Included in this formidable array of firepower were the division's four organic battalions, further buttressed by the self-propelled howitzers of X Corps' artillery. Artillery planners considered all possible exigencies, had vast amounts of ordnance stockpiled, and employed all guns with great care.

The defensive preparation insisted on by Lieutenant Colonel Wallace Hanes of the 3d Battalion, 38th Infantry—located on Hill 800 near the center of the line—was exemplary. Hanes demanded that his commanders and troops attend assiduously to all aspects of defensive preparation, especially to individual fighting positions. Troops dug deep, erecting sufficient overhead cover to offer protection from artillery bursts. If the enemy overran Hanes' positions, he intended to call in artillery (armed with proximity fuses) on his own lines, thus catching the enemy in the open while his men lay safe in their holes. This intention sparked a new wave of enthusiasm in the 3d Battalion's digging efforts.

A special combat outpost line (named "Roger Line") was established 4,000 yards forward of the No Name Line and manned by elements of the 38th Infantry. This regiment sent out seemingly endless patrols that experienced little enemy contact. When contact was made, the CCF-NKPA soldiers invariably turned and fled. The commander of the 2d Infantry Division, Major General Clark R. Ruffner, desperate to fix the enemy's position, ordered the 9th Infantry minus its third battalion (in division reserve) to move forward of the Roger Line. Task Force Zebra, holding the division's right flank, also sent armor patrols forward to make enemy contact. Neither attempts were successful. As the middle of May neared, however, Communist force density and resistance increased. The 2d Infantry Division sent out company-size and larger "power patrols" to deal with these concentrations.

The expected CCF attack began early on the evening of 16 May against the U.S. X Corps and ROK I and III Corps. The point of attack shocked the UN forces. Expecting an all-out attack against Seoul, Van Fleet was amazed when reports came to him of a massive attack (some fifteen CCF and five NKPA divisions) developing far to the east in rugged, untraveled terrain.

Within a few hours, most of the ROK regiments deployed to the right of the U.S. 2d Infantry Division disintegrated. As the hours passed, the situation in the ROK sector became disastrous. American advisers to the ROK units were left stranded to fend for themselves;

most were killed or captured. In all, some 40,000 ROK soldiers were involved in this largest rout of the Korean War.

The vacancy left by the routed South Koreans exposed the U.S. 2d Infantry Division's entire right flank. Since the 2d Division was attacking to the northeast, an enormous enemy force now confronted its rear. (At the same time, the 2d became the right wing of the UN line.)

Six CCF divisions struck the 2d Infantry Division on 16 May, Task Force Zebra (the 1st and 2d Battalions of the 38th Infantry) initially being the hardest hit. The 1st and 2d Battalions called for fire support and immediately received an awesome response. As the hours wore on, these artillery barrages ultimately broke the back of the CCF attacks in this sector.

After the initial attacks on the night of 16 May, Ruffner realized that his right flank was vulnerable. Calling up his reserves, he reinforced Task Force Zebra with the French Battalion and the 72d Tank Battalion. The next morning, he got the 2d and 3d Battalions of the 23d Infantry from corps reserve as well.

The night of the 17th was very hard for the men of Task Force Zebra, especially those in the 38th Infantry. But despite repeated CCF attacks, the task force stubbornly held its positions, inflicting heavy casualties on the Chinese infantry. On Zebra's left, where the 38th Infantry was posted, the 2d Battalion of the 38th was mauled on the outpost line. This unit caught the brunt of the massed CCF attacks. The Chinese swarmed over the U.S. companies and isolated and overran Company E of the 2d Battalion. The battalion's commander asked to be pulled back from the outpost line to save his unit from annihilation. Permission was granted, and the Dutch Battalion was called up from the reserve to bolster the now-reinforced No Name Line.

At dawn on 17 May, fanatical CCF attacks continued in the 1st Battalion, 38th Infantry's sector. To relieve the beleaguered battalion on Hill 1051, the Dutch Battalion mounted a counterattack and was badly mangled by the Chinese.

That same morning, at X Corps headquarters, Van Fleet conferred with Lieutenant General Edward M. Almond, and they assessed the situation. Although the 2d Infantry Division was fighting valiantly and the artillery was responding magnificently, the situation was critical. The 2d's right was completely exposed, and units on the front were so engaged as to make any shift to reinforce the right impossible. Almond expressed fears that the X Corps' and possibly the Eighth Army's rear areas were in jeopardy. He insisted that he needed all the Eighth Army's reserves for the emergency on his right, where he would deploy them by regiment to deny the enemy that flank. Van Fleet, still uncon-

vinced that this was the enemy's main effort, released only the 15th Infantry from army reserve, along with one artillery battalion, to aid Almond. Before releasing the entire 3d Infantry Division and extra artillery, Van Fleet wanted to wait a day or two to be absolutely sure Seoul was safe.

Van Fleet was determined to reverse this dangerous situation. He insisted that it would do no good to fall back anywhere along the line; in fact, he ordered that under no circumstances should any commander make such a decision. Approval to fall back would rest with each unit's next higher commander, and only if a battalion-size or larger unit became combat ineffective could such a decision be justified. The idea was to defend with such tenacity and vigor as to inflict intolerable losses on the CCF and to go over to the offense as soon as possible.

On the morning of 18 May, however, it became painfully clear that the 2d Infantry Division could no longer hold the No Name Line above the town of Hangye. Hence, Almond authorized a fallback to a new line farther south, one running more directly east to west. This caused a reshuffling of units in order to get the battered 38th Infantry some relief. The 15th Infantry, when it arrived, would be positioned to support two ROK divisions brought up to extend the line farther to the right.

Both the 23d and the 38th Infantries had veritable gauntlets to run in their withdrawal routes to the new line. As the 38th moved back, it was surrounded by overwhelming Chinese forces on three sides. The indomitable fighting spirit of the U.S. infantrymen was bolstered throughout the retrograde movement by the skillful use of tactical air support, armor support (the 72d Tank Battalion), and artillery. These vital assets notwithstanding, both units suffered heavy casualties.

This withdrawal did not include the 3d Battalion, 38th Infantry. Deeply ensconced in its bunkers on Hill 800, the 3d, after suffering some earlier, temporary reversals, had broken up several CCF attacks on the night of the 18th by going underground into its carefully prepared positions and then calling in concentrations of artillery fire with proximity fuses. In fact, when told to withdraw in order to straighten up the now-modified No Name Line, the 3d's commander complained bitterly.

By 19 May, the reorganized line of the 2d Infantry Division was holding firm. Leading elements of the 3d Infantry Division, ready to fight, were arriving at their prearranged positions after traveling halfway across Korea. By now, any lingering doubts about the enemy's main thrust had evaporated. The 2d Infantry Division had been cruelly tested, but the courage of its soldiers, coupled with outstanding air and artillery support and the new reserve units, ensured its ability to hold the modified No Name Line.

Now, Van Fleet believed, was the time to turn on the CCF. The Chinese had been on the offensive for two and one-half days. They had gained twenty or more miles against the ROK units on the right and ten against the 2d Infantry Division. If past experience held true, the CCF was overextended; its culminating point had been reached. If X Corps mounted a counterattack to the northeast, tens of thousands of CCF troops would be cut off and destroyed. The I and IX Corps would also advance to drive the enemy north. Almond agreed with the plan but insisted that after he let the CCF go a little deeper, he would need the 187th Airborne Regiment as shock troops to begin his thrust north. On 20 May, this new plan, "Detonate," was initiated by a I and IX Corps advance. Effective air sorties and artillery concentrations stabilized the situation in the X Corps sector. On 23 May, X Corps began its counteroffensive, but because of diplomatic considerations, it fell short of Van Fleet's desired objectives. Nonetheless, the tide had turned. UN forces were now in a more favorable position for future peace talks (which ultimately led to a cessation of hostilities).

The steadfastness of X Corps and, in particular, the 2d Infantry Division had allowed the UN Command the time necessary to assess the enemy's intentions correctly and force him to exhaust his resources before his objective had been realized. A lesson to be drawn from the American experience in May 1951 is that even in the face of disaster, a resolute, energetic defense—skillfully directed and supported—can turn the tide in favor of the defender.

To achieve victory in battle, it is imperative to gain and retain the initiative. Once initiative is lost, for whatever reason, it must be regained quickly. The command in Korea never lost sight of that reality. Even when in a defensive posture, UN forces continuously and aggressively searched for an opportunity to regain the offensive. The action of 16—22 May 1951 demonstrates that a defense, properly conducted, sometimes can force an enemy to reach its culminating point short of its objective. This situation can serve as a springboard for offensive action by friendly forces.

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11

Discipline

The Execution of Private Eddie D. Slovik

Dr. Jerold E. Brown

Discipline is essential in every military organization. An undisciplined army is merely a mob. Without discipline, the cohesion that welds individual soldiers into units and makes them behave in certain ways in the face of impending danger disintegrates. With that disintegration, officers lose control, their orders are wholesalely disregarded, and they become indistinguishable from their troops and are swept along in a relentless tide. Each soldier seeks to salvage his own life and possessions without regard for his comrades or the consequences of his actions. The collapse of discipline can be infectious, spreading at first from man to man, then to adjacent platoons and companies, and eventually to an entire army. Thus, the ability to enforce discipline in the face of the enemy is of vital importance to military commanders at all levels.

Throughout history, armies have employed a variety of tools, including the threat of death, to instill discipline in their ranks. Officers and soldiers alike have found cowardice especially repugnant not only because it undermined the qualities of manliness and honor that have always been an integral part of the military ethic but because it threatened the well-being and safety of entire organizations. Therefore, commanders have dealt quickly and harshly with those individuals who deserted or shirked their duty under hazardous conditions. In the Roman legions, cohorts that broke during battle or failed to press the attack vigorously suffered decimation—the execution of every tenth man. In medieval armies, cowards and traitors were treated alike: judgment was summary, execution swift. Although civil jurisprudence in Western nations progressed substantially by the twentieth century, modern armies still dispensed severe and certain punishment for desertion, much as their predecessors had, with one exception—the United States.

From the end of the American Civil War until World War II, no American soldier was executed for cowardice or desertion, even during wartime. This period included twenty-five years of internecine conflict on the frontier with the Indians, the Spanish-American War, the

Philippine-American War, World War I, and a number of interventions and expeditions in Latin America. Until World War II, the U.S. Army punished deserters with imprisonment, fines, loss of pay and benefits, and dishonorable discharge.

The eighty-year hiatus, however, came to an end on 31 January 1945 when a firing squad shot Private Eddie D. Slovik to death. Thus, Slovik—twice a deserter, unrepentant, and spurning an offer by the division judge advocate to drop all charges if he would return to his unit—acquired the distinction of being the only American soldier in this century to suffer death for cowardice. Slovik's execution not only broke the unofficial ban on such executions but also opened a heated and continuing debate about how the U.S. military should impose discipline in the future. The Slovik case illustrates the problems and pitfalls of instilling discipline in a citizen army under fire. The issue is one that concerns every officer and noncommissioned officer (NCO) responsible for leading and motivating men in battle.

Whatever disciplinary system an army may have, it must always begin with the raw material society provides it. Eddie Slovik was perhaps not typical of the World War II draftee, but he was not all that atypical either. Born and raised in Detroit, Slovik was the product of an unhappy childhood. He dropped out of school at age fifteen, repeatedly ran afoul of the law over the next seven years, and served time in several Michigan penal institutions. Slovik evidently learned the lessons of the street and prison yard well: never put into the system more than you have to and always push the rules as far as you dare. (He would later rely on this spurious wisdom during his tenure in the 109th Regimental Stockade in France.) After being released from prison in April 1942, Slovik met Antoinette Wisniewski and married her in November 1942. In the meantime, his local Selective Service board had classified him 4-F—unfit for military service. Thus, the next year was the best of Slovik's short life: he had an attractive young wife; he was steadily employed, and his wartime wages were good; and he did not have to worry about the draft.

In November 1943, Slovik's seemingly idyllic world was shattered when his draft board reclassified him 1-A and ordered him to report for military training in January 1944. William Bradford Huie, author of *The Execution of Private Slovik*, would raise the question as to the fairness of the decision to reclassify, then draft, Eddie Slovik. But the focus of the draft was not fairness. Rather it was a system designed to mobilize manpower efficiently. Only then, to the extent possible, was it meant to be equitable.

That the United States had the legal power to induct Slovik into military service and subject him to military discipline cannot be

questioned. Slovik was physically fit, although he may not have been psychologically or emotionally fit. World War II was creating ever greater demands for manpower, and the big push in Europe had not yet begun. The Army had already lowered its physical qualification standards to meet the demand for ground force replacements. If Slovik was marginally fit, so were many thousands of other draftees in 1944. Thus were the demands of the war.

Huie also questions the humanity of the replacement system. To be sure, an individual replacement system creates problems, for it will always be impersonal. Individual soldiers will not deploy with those buddies and NCOs they trained with, and even the training itself may be less than thorough. The replacement has yet to learn what soldiering is all about. In fact, most of his military survival skills will be acquired on the job. Nevertheless, after seventeen—later reduced to thirteen—weeks of training, he should understand what is expected of him; he should know his duty. The unit the replacement goes to may know little and care less about him, but he is expected to pick up his load and carry it. He will be nameless and faceless, the new guy, the "cherry," or just plain "newbee." Whether and how long he lives will depend, to a substantial degree, on luck.

This was clearly the situation for Slovik when he arrived at Omaha Beach on 20 August 1944 and was assigned to G Company, 109th Infantry, 28th Infantry Division. The 28th had arrived in France just one month before Slovik joined it. Yet the division had already seen substantial fighting, had suffered heavy casualties, and had one commanding general relieved and a second killed in action. The 28th continued to fight across France, Belgium, and Germany, participating in some of the fiercest battles of the European war. The prospect of serving in such a unit was not a happy one to a young replacement, lonely, homesick, lacking self-confidence, and looking for a way out.

Over the next forty-five days, Slovik served with his unit for less than forty-eight hours. During that time, Slovik absented himself twice. The first time he was "lost" (for forty days), after which he voluntarily returned to G Company. Within twenty-four hours, however, just as the division was preparing to attack the Westwall, Slovik left the unit a second time. On the morning of 9 October, he voluntarily surrendered to a detachment of the 112th Infantry and submitted a written confession of his desertion. He further stated that he would desert again if sent back to his own unit. He apparently believed that the worst that could befall him would be imprisonment (and physical safety) in the stockade.

Following a brief investigation, Slovik was charged with desertion under Article 58 of the Articles of War and court-martialed on

11 November 1944. Colonel Guy Williams, the division finance officer, presided over a nine-member panel that found Slovik guilty after a short deliberation. Although Slovik pleaded not guilty, he presented no evidence in his own behalf; he apparently believed that he would be incarcerated and that would be the end of it. Under Article 43, a sentence of death required "the concurrence of all the members of the said court-martial." Having obtained that unanimity, Colonel Williams sentenced Slovik to death.

Between 11 November and his execution, several significant events occurred. A number of high-ranking officers reviewed the court-martial record and acted on Slovik's conviction. In addition, Major General Norman D. Cota, commanding general of the 28th Division, conferred with the division judge advocate and approved the sentence. Furthermore, Slovik petitioned General Dwight D. Eisenhower for clemency. At Eisenhower's headquarters, a staff of lawyers, including Brigadier General E. C. McNeil, the Army's foremost legal authority, reviewed the case in detail and advised Eisenhower to confirm the sentence.

At this time, the German Army counterattacked in the Ardennes, breaking through the Allied lines along a sixty-mile front and penetrating as far west as Celles, more than fifty miles from its starting point. Allied casualties mounted into the tens of thousands, and some units reported large numbers of men leaving their posts and fleeing to the rear. Although heavy fighting and superior Allied materiel broke the German offensive far short of its objective, the battle convinced Allied leaders that the war was not yet won and that stern measures would be necessary to spur the troops on to final victory. Clearly with the gravity of the situation in mind, Eisenhower confirmed Slovik's sentence on 23 December. If he had been searching for an example of how he intended to deal with serious breaches of discipline, Eisenhower could not have found a more timely case. On 23 January, Eisenhower signed a second document ordering the execution. A twelve-man firing squad carried out the sentence a few minutes after 1000 on 31 January 1945.

William Bradford Huie's *The Execution of Private Slovik* defines the debate over Slovik's fate. In addition to questions about the fairness of Slovik's draft classification and the replacement system, Huie is highly critical of the United States' prosecution of the war, which, according to Huie, was far more costly in lives than perhaps necessary. He further challenges the Army for singling out Slovik for execution when the sentences for all other convicted and condemned deserters were eventually commuted and they were freed. Was Slovik the most flagrant case of desertion? Why was Slovik's sentence not appealed to the president? Did it serve any purpose to make an

example of Slovik? Finally, was the treatment Slovik received at the hands of the U.S. Army just? What Huie does not address is the role of discipline in maintaining effective combat units.

To all the questions he raises (and a number of others), Huie concludes that the Army handled the entire Slovik affair rather badly. He repeated this position in 1963 when he angrily responded to remarks made by President Eisenhower (the first and only time the former president spoke publicly about the case) in a nationally televised interview. Huie is clearly sympathetic toward Slovik; Slovik was really a victim rather that the master of his own fate.

In June 1977, issues raised by Slovik's execution again surfaced when David M. Eichhorn, a rabbi who had served as an Army chaplain in France in 1945, stepped forward with alleged information on how Slovik had been selected for execution. Testifying before the Board for the Correction of Military Records, Rabbi Eichhorn told of six candidates for execution being given psychological examinations at Eisenhower's insistence. Slovik was the only one given psychological "clearance." Thus, Slovik was selected for execution, from Eichhorn's perspective, by a rather capricious and unjustifiable method. Eichhorn's account, however, was based on hearsay and speculation. Eichhorn had never met Slovik, Eisenhower, or any of the other principal players in the drama and had no documentation or corroboration. His testimony served only to muddle the issue further rather than to clarify it.

More poignant than Eichhorn's revelation—and more disturbing for those concerned with military crime and punishment—was a mea culpa article by Benedict B. Kimmelman, published in the September-October 1987 issue of *American Heritage*. In November 1944, Captain Kimmelman, a dentist by profession, was detailed to serve on Slovik's court-martial. Like the other division staff officers sitting on the panel, he had never seen combat. This was not an unusual situation; most court-martial panels in combat theaters are composed of staff officers. For obvious reasons, officers in forward combat units cannot be pulled back just for court-martial duty. Since justice and the maintenance of discipline demand swift action, officers behind the lines nearly always deal with alleged miscreants. Thus, Kimmelman found himself sitting in judgment of Eddie Slovik. He first had voted for Slovik's conviction, then for his execution.

Subsequent experience, however, caused Kimmelman to have a change of heart, and he regretted the decision that led to Slovik's death. After Slovik's court-martial, the German Army captured Kimmelman and a number of other 28th Division staff officers when the Germans overran the small town of Wiltz a few days after launching the Ardennes offensive. These few days under fire and the next six

months in a prisoner-of-war camp in Germany convinced Kimmelman that, given the chance to do it over, he would not vote the death penalty for Slovik. When Kimmelman learned that Slovik had actually been executed, he railed at the injustice and became a harsh critic of the military justice system. "[Slovik] got a fair trial under the circumstances, but in retrospect, the circumstances were not fair," he wrote. What would have made the circumstances fair? "I came to believe front-line offenses ought to be judged only by front-line personnel," Kimmelman asserted. The validity of Kimmelman's conclusion and his own pangs of conscience notwithstanding, it is not at all clear that Slovik would have been judged any differently by a panel of combat veterans.

The nature of the public debate has considerably skewed the basic issue in the Slovik case. That debate has focused on the use of the most extreme punishment for an individual who did nothing more than refuse to engage the enemy. Every published article has noted that Slovik was "the only American soldier shot for desertion" in World War II. That other men may have died because Slovik refused to perform his assigned duty is an issue never raised. After all, that is an imponderable on which one can merely speculate. Nor has Slovik's responsibility been an issue for discussion. In the final analysis, however, Private Eddie Slovik was solely responsible for his own fate. He was guilty by his own admission, he violated the military justice system, and he paid a price for his crime.

That brings us back to the basic dilemma confronting those military commanders concerned with maintaining order and motivating men to stand in the face of great hazard. War is a risky and dangerous business. Few men willingly and cheerfully place themselves in harm's way. Armies have historically imposed strict and certain discipline to compel men to do what they are not otherwise inclined to do. As the Slovik case clearly demonstrates, that may not be a realistic or desirable course of action in the future. Whether it is possible to motivate men in battle effectively without resorting to the severest disciplinary tools will remain one of the enduring challenges of leadership in the army of a constitutional democracy.

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12

Doctrine

Active Defense

Dr. Christopher R. Gabel

Doctrine is the collective body of thinking and writing that describes how a military organization expects to fight. It identifies the mission, assesses the enemy's capabilities, and suggests how the assets available should be orchestrated and employed to attain the desired ends. An effective doctrine addresses all three levels of warfare—the strategic, operational, and tactical—and links them together. Doctrine supports strategy by assuring that military operations will further national goals. Basic doctrinal decisions at the strategic level—such as choosing the offense or defense, limited or total war, lightning war or protracted conflict—then filter down to the operational level. At this level, doctrine facilitates the structuring of campaigns that will accomplish strategic goals. It assures that useful battles are fought and at a reasonable cost. At the tactical level, doctrine seeks to assure that those battles are victories by describing how the arms and services should be organized effectively on the battlefield. At all levels, doctrine must be realistic, asking only the possible of one's forces and addressing real-world threats and objectives. It must be consistent, displaying a continuity of purpose at the strategic, operational, and tactical levels. Finally, it must be accepted by those who put it into effect. The dictionary definition of the word "doctrine," after all, includes the phrase "system of belief."

Creating doctrine in wartime is empirically easy to do—the process of trial and error will eventually produce a workable doctrine if defeat can be deferred long enough for the right answers to emerge. It is much more desirable, however, to create the soundest possible doctrine in peacetime. The challenge here is that of predicting what the next war will be like when it finally arrives. Whether formulated in peace or war, doctrine should always be flexible, and the military organization that frames it should always be prepared to modify it when circumstances demand. Changes in national policy, shifting balances of power, and deployment of new technology should always trigger a reassessment of doctrine.

Just such a situation confronted the U.S. Army in 1973. The

demands of the Vietnam conflict had forced the Army to defer modernization for nearly a decade. The war also produced an antimilitary sentiment in American society that was reflected in declining appropriations and in the elimination of conscription. This meant that the Army was not just outdated but also impoverished in terms of men and resources. These and other problems contributed to a crisis in morale and discipline. The Army lacked a sense of mission and lacked confidence in itself.

General William E. DePuy, who became the first commander of the Army's new Training and Doctrine Command (TRADOC) in 1973, took it upon himself to establish a new doctrine for the Army. In the past, the Army's written doctrine had always lagged behind practice, being more a codification of "the way things are" than a description of "the way things should be." (For example, to find the Army's doctrine for World War II, you should look to the 1944 edition of FM 100-5, not the 1939 version.) DePuy undertook to reverse that process and use the medium of published doctrine to force change upon the Army. His efforts culminated in the publication of an entirely new FM 100-5 in 1976. The Army called the new doctrine the "Active Defense."

Active Defense embraced major changes at the strategic, operational, and tactical levels. The national strategy that Active Defense served was the Nixon Doctrine, a post-Vietnam restructuring of national security that identified the Soviet threat in Europe as the most dangerous challenge to American interests. The Warsaw Pact had utilized the Vietnam decade to upgrade its forces significantly, both qualitatively and quantitatively. U.S. forces in Europe, by contrast, had declined in effectiveness in response to the demands of the Vietnam War. DePuy, who always insisted on facing reality squarely, insisted that the disparity of forces in Europe mandated a new defensive doctrine for American forces.

Within this context of the strategic defensive, Active Defense had as its key operational element the concept of the "first battle." Traditional American operational art, as manifested in the two world wars, was predicated upon the numerical superiority of American manpower and materiel. Such superiority had been the product of a massive and time-consuming process of national mobilization. DePuy recognized that the forward positioning of U.S. forces and the tempo of modern warfare precluded the luxury of losing the early campaigns of the next war while national mobilization got under way. Moreover, the heavily outnumbered U.S. forces in Europe would lack the strength to mount a defense in operational depth, hence the need to fight forward: there could be no trading of space for time. Thus, DePuy insisted that the

first battle had to be a victory and that it be fought at or near the forward line of troops.

The "first battle" concept obviously placed enormous demands on tactical execution, and it is at the tactical level that Active Defense had the most to say. DePuy, a tactical commander in both World War II and Vietnam, was concerned that the Vietnam conflict had produced a generation of officers whose tactical expertise was inappropriate to the European scenario. Vietnam had been largely an infantry war in which airmobility and an overreliance on firepower had dulled the Army's appreciation for the use of terrain. Moreover, American tacticians had grown used to unchallenged air supremacy. The circumstances in any European war, DePuy felt, would make Vietnam-style tactics inapplicable.

Heightening his concern was the vast increase in battlefield lethality that became dramatically evident in the course of the 1973 Arab-Israeli War. This conflict showed that tank guns had become thirteen times more lethal, round for round, than they had been in World War II. Coupled with this was the unexpected lethality of precision-guided antitank missiles. The armored forces involved suffered a staggering 50 percent loss rate in only two weeks of combat. Equally worrisome was the ability of Soviet-designed antiaircraft systems to challenge Israeli air superiority over the battlefield. From this conflict, DePuy deduced that successful armies of the future would have to combine arms more effectively; demonstrate higher levels of tactical skill, leadership, and morale; and be able to concentrate forces rapidly at decisive points.

Working from this baseline, DePuy made the tank-antitank battle the central element of Active Defense tactics. He believed the tank was the decisive element in ground warfare but recognized that the tank could not fight alone on the modern battlefield. Hence the need for an all-branches combined arms effort, with tactical air power becoming a full member of the team. From the German Army, DePuy borrowed the *panzergrenadier* concept—infantry transported in, and often fighting from, armored personnel carriers whose main function was the elimination of enemy antitank weapons and obstacles. Artillery's key task was to suppress the overwatch weapons that would cover enemy attacks. Tanks and other antitank weapons had the central mission of destroying enemy armor by shooting first and shooting effectively.

Indeed, the terms "fire superiority" and "suppression" were the keys by which U.S. forces were to defeat a numerically superior and technologically equal foe. Active Defense spelled out in detail the way friendly forces were to use the terrain to protect themselves from enemy fire while using their own weapons to maximum effectiveness. Ultimately, tactical success depended on the force ratios brought to bear. DePuy

estimated that a successful defense required a 1-to-3 ratio of friendly to enemy forces, whereas a successful attack on the modern battlefield demanded a 6-to-1 superiority. (Not surprisingly, Active Defense admonished commanders to attack only when the rewards to be won clearly outweighed the risks.) Given the numerical inferiority of friendly forces, a chief requirement for successful combat would be the concentration of combat elements at the critical place and time. Such timely concentration of forces depended on sound intelligence using high-technology sensors to locate enemy concentrations, an aggressive covering force to disclose enemy strength and intentions, high mobility of all assets, and the willingness to take risks elsewhere in order to mass at the decisive point. Under Active Defense doctrine, there was no reserve in the traditional sense; instead, any force not confronting the enemy's main effort was considered to be a reserve of sorts.

In addition to elaborating the actual tactics in considerable detail, Active Defense doctrine redefined the functions of the different echelons of command. The job of the corps and division commanders was to provide the appropriate force ratios at the decisive point on the battlefield. Brigade and battalion commanders formed combined arms teams out of the forces provided to them and conducted the fight, taking care to maximize firepower and utilize maneuver to the best effect among preselected battle positions. Company, troop, and battery commanders were responsible for defeating the enemy without unprofitably expending their own scarce resources. Everybody's mission was to "fight outnumbered and win."

When Active Defense became official Army doctrine with the publication of the 1976 version of FM 100-5, DePuy believed that he had established Army doctrine for years, if not decades, to come. Much to his surprise and disappointment, the Army as an institution rather quickly rejected it. Part of the Army's discontent focused on the actual content of the written doctrine itself. Critics charged that Active Defense was a doctrine based on weapons systems, not soldiers. DePuy's FM 100-5 contained an entire chapter on weapons but devoted less than a page to leadership. Others asserted that the doctrine overstressed defense at the expense of offense. The U.S. Army's tradition of offensive warfare could not and should not be swept aside, said the critics. They also pointed out that, even in a strategically defensive scenario, offensive operations and tactics are necessary to securing victory (as opposed to preventing defeat).

Other voices questioned DePuy's assessment of Soviet operational and tactical art. Specifically, they pointed out that the Soviets attacked with forces echeloned in depth, whereas DePuy's Active Defense focused almost exclusively on the immediate "close-in" battle. Put another way,

Active Defense did not offer guidance to corps and higher commanders on how to wage their battle at the operational level of war.

Finally, critics questioned the preoccupation with Europe that permeated Active Defense. Although the NATO-Warsaw Pact confrontation was the Army's top priority, it was also the least likely contingency. The most likely next war would come outside of Europe, where Active Defense would be of little use, leaving the Army to fight without a doctrine.

Thus, in assessing the doctrine of Active Defense with respect to the three levels of war, one can say that it addressed strategic requirements admirably, but it neglected the operational level. At the tactical level, the Army was unconvinced that Active Defense could produce victory.

This last concern points to an entirely separate arena in which Active Defense failed as a doctrine. Doctrine should be an agreed-upon body of thought based on the general consensus of the army that uses it. Instead, Active Defense was largely the product of one man's mind, was actually written by a small circle of men handpicked by DePuy, and was then imposed upon the Army without dialogue or debate. Although it is commonplace in military circles to disparage the practice of decision making by committee, in the field of doctrine writing, consensus is essential. DePuy's Active Defense is a case study in the drawbacks of generalizing from one's own experience. No individual, no matter how perceptive, can hope to encompass and understand every aspect of war, which is, after all, one of mankind's most chaotic activities.

Active Defense also exemplifies one of two diametrically opposed philosophies regarding the purpose of doctrine. In 1974, prior to DePuy's taking on the task of writing the doctrine himself, Major General John H. Cushman, commanding general of the Combined Arms Center, produced a draft of FM 100-5 that DePuy rejected. Cushman believed that written doctrine should be descriptive rather than prescriptive. His version of doctrine was an exposition of what usually works in war, designed to guide the judgment of field commanders whose ingenuity and imagination would actually determine the actions taken on the battlefield. DePuy, by contrast, believed that doctrine should prescribe the "right way" to do things. Active Defense prescribed concrete techniques, not general principles. Ultimately, the Army found DePuy's doctrine to be inflexible, restrictive, and out of keeping with the traditions of an officer corps to whom initiative is a highly prized attribute.

The publication of a new version of FM 100-5 in 1982 marked the end of Active Defense as an official doctrine. The new doctrine, AirLand Battle, was very much a product of Active Defense, notwithstanding

the dramatic differences in philosophy and content that separate the two. General Donn A. Starry, who succeeded DePuy as commander of TRADOC in 1977, had been a major contributor to the formulation of Active Defense, but his experience as a corps commander in Europe (1976—77) led him to recognize the validity of the many criticisms leveled against it. Under his leadership, TRADOC addressed those criticisms and, in the process, created AirLand Battle. To cope with enemy follow-on echelons, AirLand Battle deepened the battlefield in space and time and returned the offensive to its place of primacy in American doctrine. In answer to those who criticized Active Defense for ignoring the human dimension of battle, Starry made leadership, morale, and initiative key concepts in AirLand Battle. Finally, having come to recognize the limitations of rigid, prescriptive doctrine, Starry caused AirLand Battle to be written in the Cushman mode—as a guide to judgment, not a formula to be obeyed.

Thus, the doctrine of Active Defense, although ultimately rejected, served the Army well. It forced the Army to face unpleasant realities about modern warfare and to seek realistic solutions. One result of this was an upsurge in realistic training and in unit readiness. Moreover, the process of creating Active Defense doctrine caused the Army to forge closer ties with an important ally, West Germany, and with the U.S. Air Force's Tactical Air Command. (Indeed, the term "airland battle" had its origins in DePuy's FM 100-5.) And even in its death throes, Active Defense educated the Army by making it read its own doctrine: never before had so many officers debated the fundamental issues surrounding the Army's approach to warfare. Finally, although his doctrine of Active Defense proved ephemeral, DePuy established the precedent of using published doctrine to actively integrate and, when necessary, alter every aspect of the Army's activity. Future historians may well mark this as one of the great watersheds in the institutional history of the U.S. Army.

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13

Economy of Force

Repulsing the North Koreans Along the Naktong, 1950

Dr. William G. Robertson

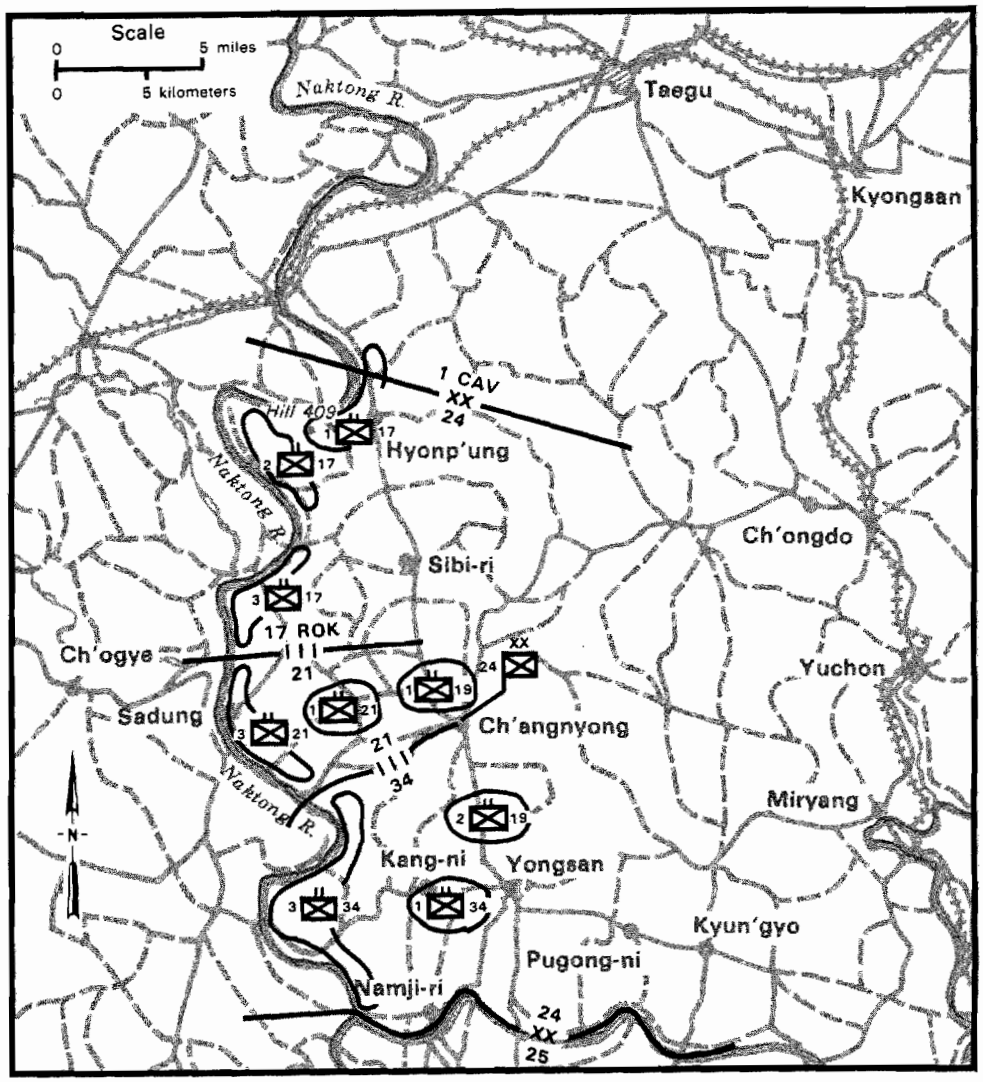
In July 1950, the United States committed ground combat troops to South Korea in an effort to halt a North Korean invasion across the 38th Parallel. Initially, those American troops consisted of the 24th Infantry Division, which had been part of the four-division force garrisoning Japan. Understrength, undertrained, and underequipped, the 24th Infantry Division was ill-suited to be thrust into heavy combat in mountainous terrain in midsummer. The results were predictable. In a series of disasters from 5 July to 22 July—Osan, Ch'onan, Chonui, Choch'iwon, Kum River, and Taejon—the division was routed from successive defensive positions. By the time the 1st Cavalry Division relieved the 24th, the latter had withdrawn more than 100 miles, and its strength had declined to 8,660. Thirty percent of the division had become casualties, including more than 2,400 missing in action, and copious amounts of equipment had been lost. Among the losses was the division's commander, Major General William F. Dean, who was taken prisoner at Taejon. Major General John H. Church replaced the missing Dean on 23 July.

As the North Koreans continued their drive southward down the Korean peninsula, the 24th Infantry Division once again entered combat, but with no better results than before. Finally, on 1 August, Lieutenant General Walton H. Walker, Eighth Army commander, ordered all U.S. and Republic of Korea (ROK) forces to withdraw behind the Naktong River. This maneuver shortened Walker's front while utilizing the natural barrier of the Naktong to shield the major port of Pusan. Previously, U.S. and ROK divisions had operated independently, with their flanks unprotected, a situation the North Koreans exploited regularly. Now, for the first time, the ground held by U.S. and ROK units had decreased to the point that a more or less continuous line could be formed. The resulting Pusan Perimeter ran northward approximately 100 miles from the Korea Strait, then eastward 50 miles to the Sea of Japan. Three U.S. divisions held the western side of the perimeter, while ROK forces extended the line eastward. Forced to use all available troops, Walker assigned the battered 24th Division to the middle of the American line.

The sector of the Pusan Perimeter occupied by the 24th Division extended from the junction of the Nam and Naktong Rivers northward along the Naktong to the vicinity of the village of Hyonp'ung. The distance from the Nam to Hyonp'ung by air was twenty-two miles, but via the twisting course of the Naktong, it was thirty-four miles. Flowing through a valley averaging 1,000 meters in width, the Naktong was wide but shallow, with the water depth varying from 1 to 3 meters. All man-made crossings had been obliterated within the division sector, but the low water levels in the summer of 1950 had created numerous places where foot traffic, but not vehicles, could cross unimpeded. Both sides of the river valley were delineated by hills averaging 200 meters in height, with occasional peaks reaching 300 meters. Only at the far northern end of the sector, where a 409-meter hill stood on the east bank, was the terrain on one side of the valley dominated by that on the other. Elsewhere, the only notable difference between the valley walls was that more gullies led down to the river on the eastern side than on the western. All of the hills were bare except for occasional clumps of grass and scrub pine.

With a division strength on 5 August of only 12,368 soldiers (including 486 men attached and 2,000 ROK troops), Church clearly did not have enough force to man his 34-mile defensive trace strongly at all points. He therefore resorted to the principle of economy of force. The 1949 edition of Field Manual 100-5, *Field Service Regulations, Operations*, describes economy of force as follows: "The principle of economy of force is a corollary to the principle of mass. In order to concentrate superior combat strength in one place, economy of force must be exercised in other places." Obviously, Church would have to hold some segments of his long line thinly in order to concentrate significant combat power in more critical areas. Church believed the northern sector of his line would be harder to defend than the southern, primarily because of its inadequate road net. Assuming that the North Koreans would reach the same conclusion, he created a defensive scheme that relied on strong reserves to counterattack and repulse penetrations of his lightly held front lines. Within that general framework, Church concentrated much of his strength on his center and right. By the evening of 5 August 1950, all elements of the 24th Infantry Division were in their assigned positions along the Naktong (see map 10).

Complying with the economy-of-force principle, Church spread his units most thinly on the division's left (southern) flank. There, the 34th Infantry guarded twenty-three kilometers of river frontage from the Nam-Naktong confluence northward. Accounting for much of the 34th's frontage was a prominent bulge in the center of the regimental line



Map 10. The sector occupied by the 24th Infantry Division, 5 August 1950

where the Naktong made a wide loop to the west before resuming its southward course. The resulting salient, approximately five kilometers deep and six kilometers wide at the base, was known as the Naktong Bulge. Because the division still retained its peacetime organizational structure of two battalions per regiment, the 34th's commander covered his front with one battalion and kept the other in reserve as a counterattack force. These dispositions ensured that the frontline battalion's three companies would be responsible for enormous frontages; for example, one company would defend a line 11.5 kilometers long.

The entire regimental position was supported by two artillery batteries and an engineer company.

Church concentrated most of the division's strength on his center and right. North of the 34th Infantry lay the sector of the 21st Infantry, Church's best U.S. unit. Without a significant salient, this sector was markedly smaller—only twelve kilometers in length. It did, however, contain several potential crossing sites, as well as the division headquarters, eight miles to its rear. Like his neighbor to the south, the 21st's commander placed one battalion in line and held the second in reserve. Attached to the 21st was the 14th Engineer (Combat) Battalion, while two artillery batteries provided support. On the 21st's right was a thirty-kilometer sector held by the ROK 17th Regiment, which was temporarily attached to the division. The 17th, Church's largest unit and highly regarded by its American allies, was also supported by two artillery batteries. The division reserve, which was concentrated behind the center of the division's line, consisted of the two-battalion 19th Infantry, part of the 3d Engineer (Combat) Battalion, and fragments of the division's reconnaissance and tank companies.

Well before dawn on the morning of 6 August, the North Korean 4th Division attacked across the Naktong into the 24th Infantry Division's sector. Although all three frontline regiments were struck, North Korean activity on the division's center and right was localized and relatively insignificant. In contrast, on the division's left center, the North Koreans penetrated to the base of the salient in the 34th Infantry sector. Church had guessed wrong; the enemy had attacked the weakest company of the weakest regiment of Eighth Army's weakest division. When the initial counterattack by the 34th Infantry's reserve battalion failed, Church was forced to commit both battalions of his reserve regiment, the 19th. Neither battalion obtained its ultimate objectives, but the regiment's final position within a mile of the river at least established a firm shoulder on the northern flank of the enemy bridgehead. Still, twelve kilometers of river frontage lay open to enemy exploitation under cover of darkness. Now that the North Koreans had committed themselves, Church clearly would have to revise his defensive plan.

Complicating Church's problem was Eighth Army's decision to move the ROK 17th Regiment elsewhere in the Pusan Perimeter. Planned for 6 August, this movement was delayed twenty-four hours by the North Korean attack, but it could be postponed no longer. Thus, amid a major counterattack by his already depleted division, Church had to find additional units to guard nearly thirty kilometers of front. Again, Church employed economy-of-force means. Believing the North Korean main effort to be in the Naktong Bulge and hoping that the

enemy had little additional strength to trouble him elsewhere, Church reversed his previous troop distribution scheme. Now, it was the division's center and right that must be held thinly while troops massed for the counterattack effort on the division left. Accordingly, Church created Task Force Hyzer—composed of Lieutenant Colonel Peter C. Hyzer's 3d Engineer (Combat) Battalion augmented by the 24th Reconnaissance Company—to replace the ROK 17th Regiment on the division's right on 7 August.

For the next three days, the bulk of the 24th Infantry Division's combat elements mounted a series of counterattacks to reduce the salient created by the North Korean penetration. Aiding the division's own 19th and 34th Infantry regiments in these counterattacks were two battalions of the 9th Infantry, which had been attached to the 24th from the 2d Infantry Division. Initially separate, the counterattacks were eventually coordinated by the assistant division commander, Brigadier General Pearson Menoher. In spite of Menoher's best efforts, the counterattacks failed to erase the enemy penetration. Instead, the North Koreans retained the initiative and drove through a gap in the 24th Division's line toward Church's headquarters at Ch'angnyong and the division's main supply route (MSR) to Miryang. In response, Church moved the division headquarters fifteen miles eastward to Kyun'gyo. He also thinned the forces on the division's center and right even further, transferring one battalion from the 21st Infantry and the 24th Reconnaissance Company from Task Force Hyzer. Both units joined the counterattack force. Finally, late on 10 August, Church created an ad hoc formation, Task Force Hill, to control all counterattacking units.

Named for Colonel John G. Hill, commander of the 9th Infantry, Task Force Hill commenced operations on the morning of 11 August. That day, the 24th Division's counterattacks again were unsuccessful. Meanwhile, North Korean elements seized the division's MSR and cut all land communication forward from the division command post. In response, Church ordered Task Force Hill to cease offensive operations. Next, he further weakened his right flank by withdrawing an engineer company from the 21st Infantry's sector to aid in reopening the MSR. The engineers joined the 24th Reconnaissance Company in a drive toward Kyun'gyo from the west. Finally, Church created Task Force Hafeman, a conglomeration of headquarters and support detachments. This new formation stood between the division headquarters and the North Koreans. Again, Church had employed the economy-of-force principle in making his dispositions. Hoping that his center and right could be safely screened by a mere handful of troops, he concentrated his division's efforts on the threat to his MSR.

Late on the evening of 11 August, Church received information that the North Koreans were becoming more active on his right. By the next morning, approximately 900 enemy troops had crossed the Naktong just beyond the division's right flank in the vicinity of Hyonp'ung. With his MSR still blocked, Church continued to use the bulk of his forces to clear the road. At the same time, he calculated that Task Force Hyzer and the remaining battalion of the 21st Infantry could hold their positions to the north. Every reinforcement Church received, including several battalions from the 2d and 25th Infantry Divisions, was committed to stabilizing the situation on the division's left-center. By 13 August, this massive effort had reopened the division's MSR and permitted the resumption of the original counterattack to regain the Naktong line. Unfortunately, at the same time, Eighth Army extended the 24th Division's sector northward, to include the Hyonp'ung penetration, without providing the division additional resources.

On 14 August, Task Force Hill resumed its counterattacks. That day, the 24th Division received 289 replacements, the first significant quantity since the beginning of the battle. In response to the North Korean crossing near Hyonp'ung, Church sent the replacements to the 21st Infantry units still in place along the river. He also directed Task Force Hyzer to patrol aggressively in an effort to mask the division's weakness on its right. Even with most of the division's strength assigned to it, Task Force Hill was unable to drive the North Koreans back across the Naktong, and its counterattacks stalled on 15 August. To assist the 24th Division, Eighth Army now offered Church the temporary use of the 1st Provisional Marine Brigade. With this promise of major augmentation, Church believed he could spare a few more troops for his right flank. Accordingly, he sent a battalion of the 23d Infantry north to relieve Task Force Hyzer from its position in the line. This battalion began to probe North Korean positions on Hill 409 near Hyonp'ung on 16 August.

Using the Marines as a spearhead, the 24th Infantry Division counterattacked again on 17 August to restore its original defensive trace along the east bank of the Naktong River. While the counterattack progressed in the left-center of the division sector, one battalion of the 21st Infantry, the 3d Engineer (Combat) Battalion, and a battalion of the 23d Infantry held the remainder of the division's front. Near Hyonp'ung, the battalion from the 23d aggressively continued its probe of the North Korean positions on Hill 409. These probes revealed that part of the North Korean 10th Division remained east of the Naktong but was making no effort to expand its small bridgehead. The enemy's quiescence permitted Church to remain focused on the 24th Division's left. After severe fighting, Church's forces on the evening of 19 August successfully ejected the North Koreans from the now-famous salient,

thus ending the First Battle of the Naktong Bulge. The 1st Provisional Marine Brigade left the sector the next day, and the 24th Division was relieved by the 2d Division on 24 August.

Economy-of-force operations require commanders with limited forces to assess their situation, prioritize their tasks, and accept prudent risks at points other than their main effort. During the First Battle of the Naktong Bulge, Church made such assessments daily. When the North Korean attack showed his initial dispositions to be inadequate, he quickly redistributed his forces. For the remainder of the battle, the 24th Infantry Division concentrated its strength on the division's left-center and counterattacked to regain lost ground. At all times, Church manned the 24th's right with the absolute minimum of force he believed he could prudently spare from the action on the left. Indeed, as the location of the North Korean main effort became obvious, Church shifted additional units from his right to the counterattack axis. Only when the flow of reinforcements significantly increased his overall strength did Church direct some of the new assets to his center and right. Eventually, after much hard fighting, the 24th Division's original position along the Naktong River was restored. By doing so much with so little, Major General John H. Church and the 24th Infantry Division provide a perfect example of economy-of-force operations.

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14

Endurance

The British Triumph of Endurance in the Falkland Islands War

Major Gary D. Rhay

Combat is often a struggle of men against the environment as much as it is men against men. In military operations, the soldier's ability to function adequately even when deprived of creature comforts and sleep often determines the efficiency and success of operations. Thus, maintaining a high level of physical endurance is essential in sustaining combat operations. The British campaign against the Argentines in the Falkland Islands in 1982 provides a good example of how the physical endurance of soldiers affects the outcome of battles.

The Falkland Islands had been a point of contention between the British and Argentines since England occupied the islands in 1833. After recurrent failures in negotiations, on 2 April 1982, the Argentines moved to resolve the conflict by invading the Falklands and capturing the small garrison of British Royal Marines in control of the islands. Three days later, in rapid response, Prime Minister Margaret Thatcher ordered a British naval task force to retake the Falklands. On 21 May 1982, the British invaded.

Located some 480 miles northeast of Cape Horn, at 52 degrees latitude, the Falkland Islands are remote and generally inhospitable, stormy in winter and barren in summer. Generally speaking, the temperatures during the British campaign were numbingly cold, and most soldiers wore up to seven layers of clothing. Sometimes, however, the temperature rose to just above freezing. These occasional warm periods, according to the British, increased the likelihood of the soldiers incurring exposure injuries. Both the British and the Argentines considered the weather conditions in the Falklands appalling. The rain often swept fiercely across the bleak, treeless landscape, cutting through waterproof clothing and inundating the soldiers' trenches.

In addition to bad weather, the rugged Falklands' terrain—described as the worst possible terrain through which to stage a forced march—affected the soldiers' ability to function, compelling them to trudge through rocky valleys and hills as well as peat bogs. Stony stretches

of jagged granite often ran for miles. When encountered, rivers and streams had to be waded. Moving on foot was unbelievably hard. In one case, British soldiers took two and one-half hours to cover four kilometers in bringing supplies forward. The soldiers, soaked by mist and sweat, stumbled through boggy heather and clambered over 100-yard-wide stone runs to haul ammunition and supplies up the slopes before returning immediately to gather more. Because of the terrain and cold, misty weather, the marching pace dropped to half speed.

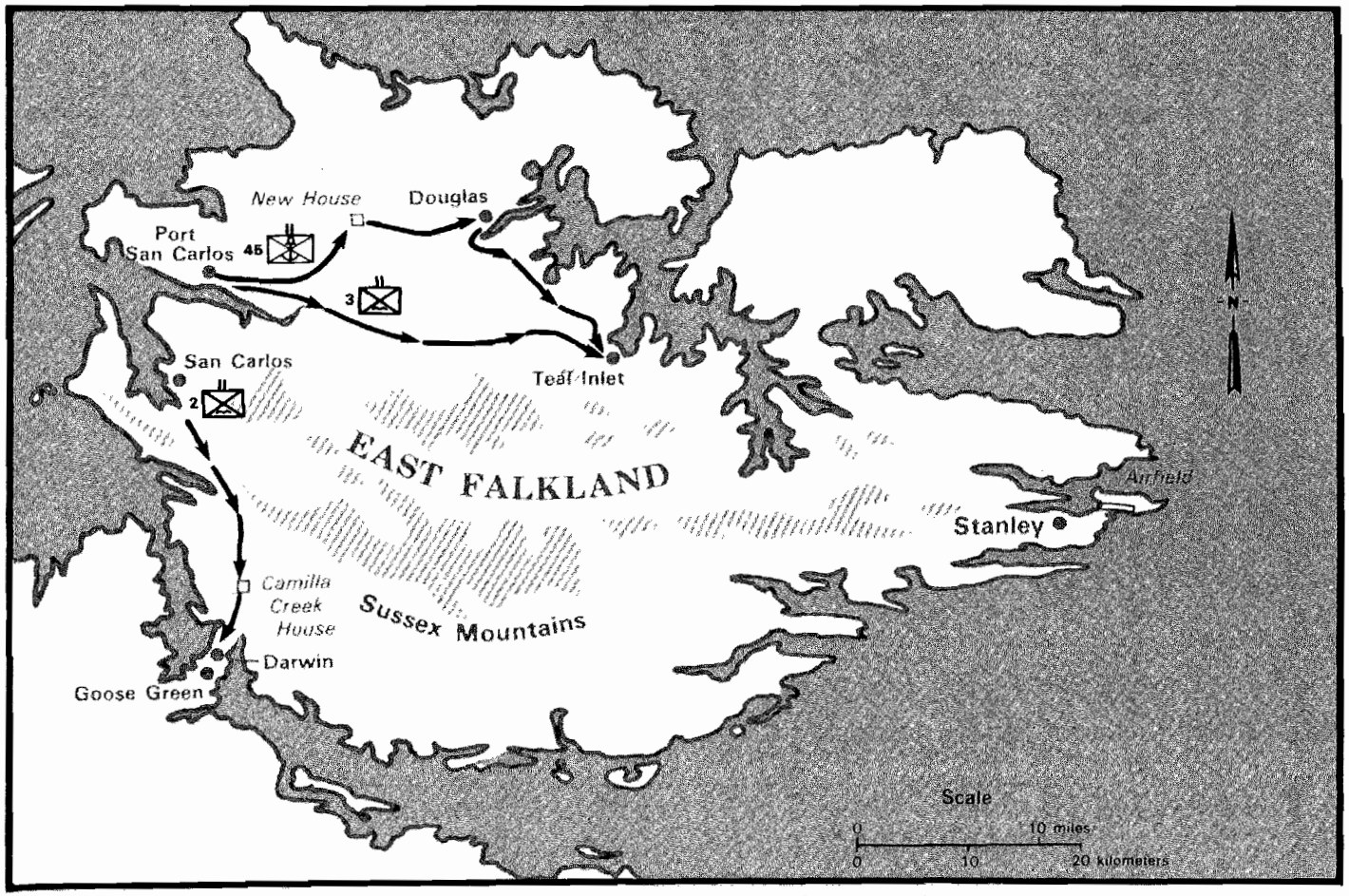
From the start, both sides in the conflict attempted to limit the mobility of their adversary. The British sought to reduce the Argentine garrison's mobility by destroying as many of their helicopters as possible. The Argentines, on their part, sank the *Atlantic Conveyor*, a British transport that carried vital supplies and helicopters. This left the British only eleven lift helicopters for all troop, equipment, and logistical movement ashore.

To regain their offensive mobility, the British realized that they would have to move out of the beachhead on foot. So began the famous "yomp" or forced cross-country march by the 3 Commando Brigade. Since the soldiers' packs weighed up to 120 pounds, the men strapped them on while still seated and then had to be helped to their feet by their comrades. Once underway, their route took them up and down hills; along rocky valleys; and through stone runs, peat bogs, and rivers. The blizzards and freezing temperatures along the fifty-mile trek were punctuated by brief firefights.

On 27 May, the 3 Para (3d Battalion, the Parachute Regiment) left its beachhead perimeter at Port San Carlos and marched continuously for twenty-four hours. The paratroops, having spent a bitterly cold night in the open without sleeping bags (which caused fourteen paratroops to be evacuated due to exposure), wearily stumbled into Teal Inlet on the 28th. They had covered the twenty miles of trackless terrain in thirty-three hours (see map 11).

Also on 27 May, the 45 Commando Battalion, Royal Marines, moved out on the first phase of its march, a thirteen-hour stint that covered fourteen miles. The boggy terrain—some of the most harrowing on the island—was covered with numerous lumps and tufts of grass that appeared to be designed to turn ankles. Most of the marines maintained their good humor and marched stoically through the bleak night.

At 0200, they bedded down, only to be drenched in their sleeping bags by torrential rain before dawn. On the second morning, without respite, they left their heavy haversacks and marched into Douglas settlement to join the 3 Para at Teal Inlet. The march was not without cost: the men were wet and exhausted, and most had cold, blistered,



Map 11. Initial British movements, 26—30 May 1982

and injured feet. From Teal Inlet, the 3 Commando Brigade was poised to advance on the main Argentine positions at Stanley.

During this first phase of 3 Commando Brigade's movement, the 2 Para (2d Battalion, the Parachute Regiment) attacked Goose Green. The bulk of 2 Para's warm clothing was still on board the transports, unavailable to the men. Laden with ammunition and sagging at their knees, the soldiers of the 2 Para staged forward up the Sussex Mountains. It was a long, hard climb with slippery footing, and some men, overbalanced by their heavy packs, fell to the ground like beached turtles until they could be helped to their feet by their comrades.

Once established on the Sussex Mountains, 2 Para patrols moved toward Goose Green. A platoon-size force moved by helicopter to within two kilometers of Camilla Creek House. From there, it took four hours to cover the remaining two kilometers—a testament to the difficulty of the terrain. Because of lack of support, the platoon withdrew after three days, short of food and suffering from injured feet and exhaustion.

Two days later, the 2 Para moved forward to an assembly area in the vicinity of Camilla Creek House—an arduous march across difficult country. No vehicles and only limited helicopter lifts were available to support the operation. Because of the situation, the 2 Para would travel as lightly as possible. Soldiers would carry ammunition, two water bottles, food for two days, weapons, and a minimal number of radios. Some companies even left their entrenching tools behind. At least two platoons, which rejoined the battalion en route from patrolling, fought without helmets, which they left behind to lighten their loads.

The paratroops carried two 81-mm mortars and ammunition, three Milan guided-missile launchers, seventeen missiles, and six light machine guns. The Royal Artillery, Royal Navy, and air strikes would provide the bulk of the fire support.

The weather was moderate for the Falklands as the 2 Para traveled south to Camilla Creek House. As darkness settled, the 2 Para began to close its ranks. Moving down the road in the darkness, the men became torpid, their heads bowed and backs aching. When the soldiers halted, they gratefully sank to the ground and leaned back on their packs to ease the strain on their shoulders. At each stop, men dozed and had to be awakened. Weighted down with medical supplies and equipment, the medical section tried desperately to keep pace with the battalion. Captain Hughes, a medical officer who had gone without sleep for two days while attending patients on the Sussex Mountains, fell and suffered a hairline fracture in his ankle. Hughes walked through the rest of the campaign with a badly swollen ankle, only accepting treatment three weeks later after the campaign ended.

Other support troops experienced similar problems. The forward air controller fell and twisted his ankle but was carried forward by the battalion's support company and evacuated the next day. The Blowpipe antiaircraft missile sections also struggled forward, encumbered by their launchers and missiles.

Many of the marchers later noted that one of the worst things about their trek was the psychological pressure of not knowing how much farther they had to go. The men staggered on through the night, the sweat chilling their backs and the cold seeping up from the road. They pushed on, confident that they would eventually arrive at their destination.

Finally, Camilla Creek House loomed ahead, the dark silhouettes of the buildings standing out on the landscape. The lead company cleared the buildings, and the battalion closed in. Although the Argentines had apparently left in some haste due to British artillery fire, the battalion commander decided to risk occupying the buildings and suffering the same fate. Staying warm was worth the gamble. After establishing blocking positions on the approaches, the companies eventually jammed themselves into the large farmhouse and outbuildings.

As soldiers commonly do, they adopted some amazing sleeping positions. The staff section crammed into a coal shed, their bodies huddled against the walls, their feet sprawled to the center. One squad occupied a lavatory, while another crowded into a pantry. Not everyone rested. Two patrols moved forward to observe the enemy positions in the vicinity of Goose Green.

At dawn, the patrols had excellent observation of several enemy positions that were invaluable for planning the attack. Eventually, however, the Argentines observed the exposed British positions and forced them to withdraw under fire. At first light, the British commander realized that Camilla Creek House was in a hollow, hidden from the Argentines' view. It seemed an ideal place for the battalion to hide before attacking the next night.

Around noon, however, the British Broadcasting Corporation (BBC) reported that "a parachute battalion is poised and ready to assault Darwin and Goose Green." The commander was incredulous, and as everyone fumed, the battalion was ordered to disperse and find available cover. The battalion had to abandon what was an obvious target.

The BBC, patrols, and air strikes had now thoroughly alerted the Argentines, and any British movement in the open was suicidal. The rest of the day, the battalion remained on the bleak landscape, without its heavier equipment and warm clothing, left behind on the Sussex Mountains. Fortunately, some paratroops carried small individual heat-

ing units to warm their rations and tea. It was a long day as the British waited for darkness to continue the attack.

At nightfall, orders were given, and the battalion redeployed in the darkness. Meanwhile, helicopters moved equipment from the caches on the Sussex Mountains to Camilla Creek House. As in most operations, not all military equipment went forward. As a result, only three of the support company's machine-gun tripods were shipped.

The battalion's fire support team moved forward at 2300: the Milan platoon (three launchers), the machine-gun platoon (three guns with tripods and equipment and three without), snipers, assault engineers (as ammunition carriers), and the naval gunfire control team. Only the marine Blowpipe section was brought forward. The Royal Artillery gunners, unable to keep up with the battalion, were left at Camilla Creek House to protect the artillery deploying there. By 0200, the fire support team had arrived in position across the bay from the Argentine artillery positions. After the British settled into their positions by 0230, the team called for Royal Navy gunfire on enemy artillery.

One company and the reconnaissance platoon spent the night reconnoitering routes and securing the battalion's start lines. The going was difficult. The streams on the maps turned out to be at the bottoms of steep ravines. At 0220, the assault companies began their march on Goose Green. Because of the ravines, their approach was as difficult as the reconnaissance, and men were forced to move in single file.

The attack on Goose Green began three and one-half hours before dawn. The men encountered no mines or barbed wire, and the first engagements with the Argentines were uniformly successful. Because the 2-inch mortars had been left on the Sussex Mountains (due to the weight involved), the battlefield was left unilluminated.

In the dark night, the H.M.S. *Arrow* could provide only a limited number of flare rounds, and the fighting rapidly became confused as the paratroops encountered scattered enemy positions. Then, the *Arrow*'s only gun jammed and even that support ceased. As casualties mounted, evacuation operations commenced. Enemy fire hampered this slow and painful process. As there were no stretchers, the casualties were laid on ponchos and carried hammocklike, which was exhausting to the carriers.

As first light broke over the battlefield, 2 Para's attack began to bog down as the Argentines brought the paratroops under intense fire. Daylight seemed to bring the enemy renewed confidence, and the Argentines increased their indirect fire. Lack of ammunition soon became a problem for the pinned-down British units. To alleviate this, stretcher-bearers going forward carried loads of ammunition, which gave them no time to rest.

The deadlock was broken shortly after noon when the British battalion commander was killed while assaulting an enemy trench. The outrage generated by his death, along with skillful action by the battalion's second in command, helped the British paratroops regain the initiative and capture Darwin. The wind was now blowing at fifty to sixty knots across the battlefield, dramatically affecting the accuracy of the 105-mm howitzers, so the British ceased their fire. As evening approached, the 2 Para closed in on Goose Green from two sides.

Darkness was settling in when the British observed Argentine helicopters landing to the south of Goose Green to disembark troops. The British drove these Argentines off by artillery fire. The injection of fresh Argentine troops just as the 2 Para was feeling the deleterious effects of the long and arduous battle could have been disastrous. The battalion had left the Sussex Mountains forty hours earlier and had been fighting heavily for the last twelve hours, all with little sleep. The soldiers had almost run out of ammunition and energy, so the decision was made to consolidate, reorganize, and wait for morning.

Through the long, shadowy night, the paratroops huddled in their positions, cold and clammy, unable even to take off their soaked boots to put on dry socks. In the rear were still many wounded to be evacuated. In the forward area, the wounded, cold and wet, suffered in the darkness. Snow began to fall, and the firing fell off.

During the night, the battalion prepared to attack Goose Green. The new battalion commander, Major Keeble, was confident his unit could storm the settlement in the morning. The complete discomfort that he and his men were experiencing ensured that they would let nothing stand between them and proper cover. As it happened, the Argentines surrendered the following day, on 29 May, without renewing combat. For its part, the 2 Para sorely needed a respite to allow the men to dry out and recover.

The Falklands campaign is replete with examples of British endurance in combat, from Harrier jump-jet pilots flying nearly round-the-clock sorties to foot soldiers "yomping" the seventy-plus miles from San Carlos to Stanley. It is a testament to the endurance of British soldiers that they carried 120-pound loads to Goose Green and were still capable of conducting violent combat operations.

British soldiers met all the privations with an extraordinary capacity for pain and discomfort. Many spent seventeen days in the open in the dirty, wet, and cold environment. It is a measure of the soldiers involved that despite the abysmal weather, terrain, fatigue, and fear they incurred that they went on to accomplish their mission.

Training was one of the keys to the success of the British Royal Marines of the 3 Commando Brigade. The marines and paratroops were well trained in conditions similar to those in the Falklands, which allowed them to endure hardships on the island. Additionally, they took every opportunity on the voyage to the South Atlantic Ocean to train physically for the campaign ahead, conducting runs around the promenade deck of the S.S. *Canberra*, among other physical activities. The second key to the British success was the confidence the men had in their leaders who, by example, endured the same privations as their men. Morale was the final key to British success: while things went wrong and supplies and equipment were not brought forward, the soldiers' spirits never flagged and were excellent throughout the operation.

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15

Environment

The 84th Smoke Generator Company's Operations at the Moselle River, September 1944

Major Terry L. Siems

In the early morning of 10 September 1944, men of the 10th Infantry, 23d Armored Infantry Battalion, began crossing the Moselle River. Within seventy-two hours, they had established a bridgehead and crossing site and had routed the Germans from the terrain that dominated the site.

One of the keys to their success was reinforcement, and the key to this reinforcement was bridges. But as long as the Germans manning the casemate artillery at Fort Driant observed activity on the Moselle River from the high ground above the west bank and the German guns on the east bank roved freely within range of the river, the responsibility for erecting a bridge and retaining it would rest on an untested U.S. company's ability to produce a smoke environment that would conceal the engineers' bridge-building activities and the assault force's advance.

A month before the Moselle crossing, the U.S. Third Army, commanded by Lieutenant General George S. Patton Jr., had become operational. Shortly thereafter, it began its rapid march across France. By the late summer of 1944, the German Army pursued by Patton was in a desperate condition. Much of its equipment had been abandoned, morale was low, and replacements and supplies were nonexistent. In August, however, Patton's lead units began to outrun their supplies of oil, gasoline, and ammunition. Eventually, due to a lack of supplies, the Third Army halted east of the Meuse River. This delay lasted for nearly a week while supplies caught up with the army. When the advance resumed on 6 September, the Third Army found that the Germans had caught their second wind and were no longer in full retreat. In fact, they had developed excellent defensive positions behind the Moselle River and were prepared to contest every inch of ground and counterattack to recover any lost ground.

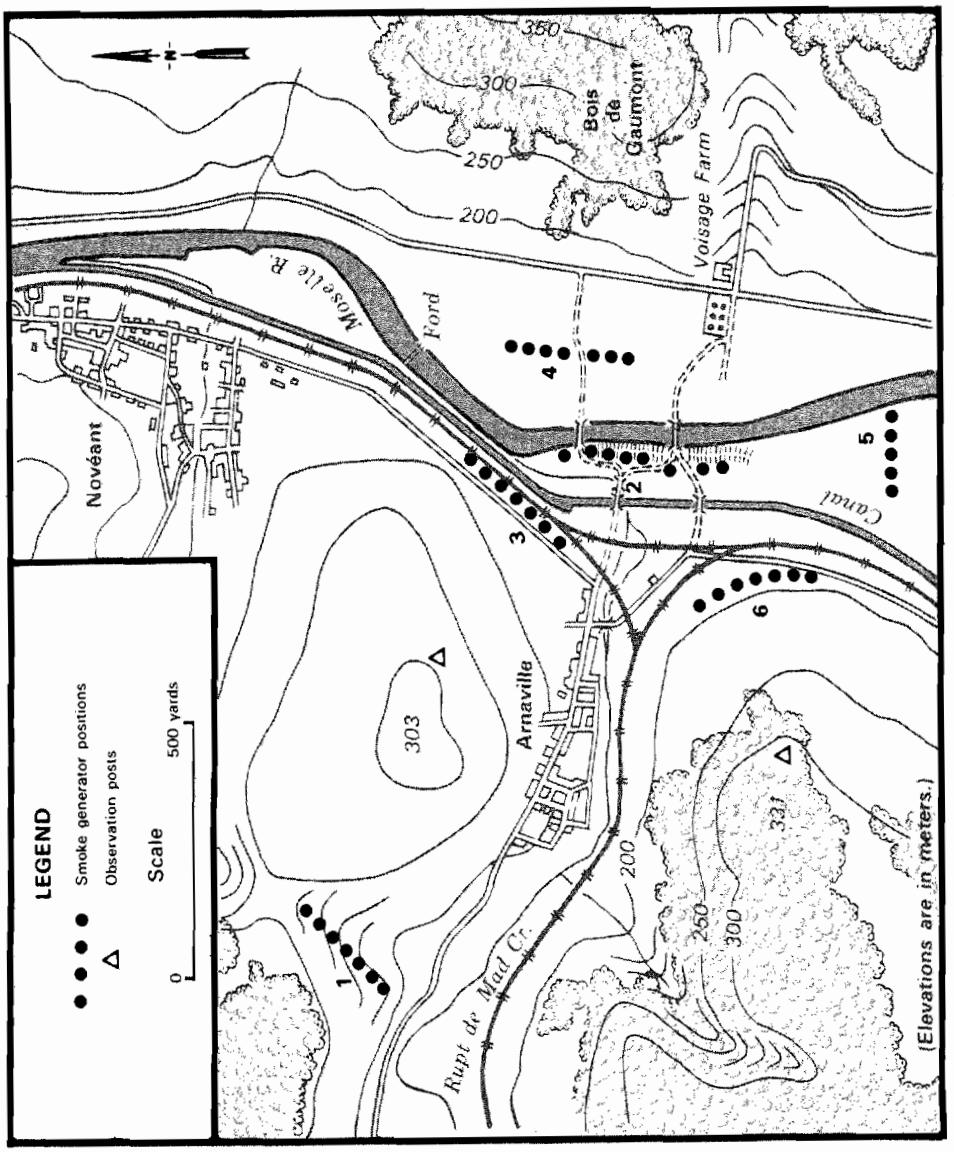
On resuming his advance, Patton was to seize crossing sites over the Moselle. Since the Germans commanded the high ground above

the eastern bank of the river, Patton planned to use a new technique, a large forward smoke screen, to hide his assault and bridging operation. The 84th Smoke Generator Company, which had been attached to the 5th Division on 6 September, was selected for the job. The 84th was under the operational control of the 1103d Engineer Combat Group, which was to construct the bridges (supervised by the 5th Division's chemical officer). The 84th was to cover the site with smoke on the morning of the 10th so assault troops could cross the Moselle. To achieve surprise in the attack, no artillery preparation would be conducted.

Screening assault and bridging sites with smoke was a new experience for many U.S. troops since members of such special units were usually assigned to transportation, guard, or security duties. Thus, after the Normandy invasion, only four of twelve smoke generator companies assigned to the European Theater of Operations (ETO) were available for forward-area smoke operations, and only two of these remained operational. Like most of the other smoke generator units in the ETO, the 84th had only trained for rear-area antiaircraft missions and not for assault support. Moreover, its units had never operated in the front under continuous heavy fire. In addition, the 5th Division, the assault force at Arnaville, had never been supported by a smoke generator unit in a river crossing. Furthermore, the engineers from the 1103d, who would build the bridge, had never done so under the cover of a large-area smoke screen. This would be the first smoke operation of its kind in the ETO. (Prior to this operation, however, smoke screens had been used successfully in North Africa and in the Italian campaign.)

In September 1944, at the proposed crossing site at Arnaville in the narrow valley of the Moselle, a canal, river, and railroad roughly paralleled each other in a belt about 400 to 500 yards wide (see map 12). East of the river was a flat strip of land 1,000 yards wide, beyond which the terrain rose to hills occupied by the Germans. A small creek, the Rupt de Mad, flowed under the railroad and canal and emptied into the Moselle. The roads running north and south on both sides of the Moselle marked the boundary line between the flat land and the beginning hills. On clear days, the Germans could observe five or six miles down the river toward Metz and three to four miles up the river valley, which included the Arnaville area and selected crossing sites.

In a meteorological study of the area, the 5th Division's chemical officer, with the aid of air force and artillery reports and local resident interviews, determined that the prevailing winds were westerly and of low velocity. Accordingly, the division chemical officer and the 84th's commander placed the smoke generators on a line behind Hill 303, some 2,300 yards west of the crossing site. In this way, the prevailing



Map 12. Smoke generator operations at Arnaville, 10—15 September 1944

winds would carry the smoke to the crossing site, covering U.S. troops and the flat terrain east of the river. Because the wind was not expected to shift during the course of the operation, no attempt was made to place generators near the crossing site itself. (This proved to be a serious mistake.) Another reason for not placing the generators near the crossing site was the 84th's lack of experience under fire. The commanders felt that the protection of Hill 303 would provide cover for the smoke generator operators from artillery and small-arms fire and help to steady them as they set up their equipment. To further ensure that the smoke generator company was protected, observation posts were established on Hills 303 and 331. The 5th Division's chemical officer, who was at the crossing site, maintained contact with these observation posts by radio. Meanwhile, the engineers had tactical control of the smoke operations. During the night of 9—10 September, the 84th moved into position 1.

The 84th was equipped with the new mobile M-2 mechanical smoke generator. When World War II began, the United States had a limited capability in smoke generation. Shortly after the attack on Pearl Harbor, the United States organized smoke generator units to aid in the defense of the Panama Canal; the locks at Sault Sainte Marie, Michigan; and aircraft plants on the West Coast. The first smoke generator developed was the M-1 or ESSO model, which remained in the United States and Panama. The major drawback to this generator was its size: it weighed 3,000 pounds and expended 100 gallons of fog oil per hour. In contrast, the M-2, a mobile generator, weighed only 172 pounds and drew its fog oil from an external supply source, usually a 53-gallon drum. Also, the M-2 consumed only fifty gallons of fog oil per hour and could generate smoke in one minute—compared to three to five minutes for the ESSO. The fog oil used was a petroleum distillate. The smoke produced from fog oil resembled natural fog and was extraordinarily enduring, frequently extending five or more miles downwind. Moreover, it could obscure targets during day or night. In addition, to supplement the M-2's smoke screen, the 84th had M-1 and M-4 smoke pots available.

The fog oil needed for the M-2s was located in the Third Army depot at Troyes, 180 miles to the rear. Since the 84th did not have enough organic transportation, the 5th Division's quartermaster trucks hauled the fog oil to the 84th's supply area, located four miles to the rear of Hill 303. Company trucks then carried the fog oil forward to the generators. Forty-eight generators were available for the operation, and the twelve at position 1 were scheduled to begin producing smoke at 0600 on 10 September.

The combat operation began on schedule, with the crossing site well covered with smoke. After crossing the river, the 1st and 2d Bat-

talions, 10th Infantry, advanced to their hilltop objectives. The advance went well until the winds shifted from the west to the north-northeast at 1000. Now, the Germans had a clear view of the bridge site. Fortunately, the engineers had not yet moved their bridging equipment to the riverbank. During the time that the site had been covered by smoke, the 2d Battalion had crossed the river, wounded men had been evacuated, and new supplies had been pushed forward. But with the smoke gone, the German artillery now had complete command of this exposed area.

In an attempt to reestablish the smoke screen and again conceal troop movements, four generators were moved near the river, behind an abandoned railroad embankment (position 2). By noon, smoke from the new generator site once again covered the bridgehead. Now, operations by the 84th became confused and the smoke generators low on oil. The assistant division commander and the division chemical officer searched for leaders of the 84th Smoke Generator Company. The 84th's commander could not be found, and the executive officer was on the far side of the river searching for new positions. Meanwhile, the company had abandoned position 1, leaving its oil and equipment behind. Finally, the 84th's first sergeant was found and was able to organize part of the company to move the oil, generators, and spare parts forward to the new positions. The company commander appeared in the late afternoon and was promptly relieved.

In order to maintain the smoke screen regardless of the wind's direction, the 84th established several new positions. One of these, position 3, paralleled the Arnaville-Noveant road and was augmented by a jeep-mounted generator that moved along the road to fill in gaps in the smoke screen. During the night, crews took eight generators across the river to position 4, which was ready for operation on 11 September. Two emergency positions, 5 and 6, were located south of Arnaville but were never needed for the operation.

On 11 September, the generator crews in position 3 began producing smoke, and for several hours, crossing activities on the bridgehead proceeded without German interference. Meanwhile, several large pieces of bridging equipment had been hauled to the river, and construction was about to begin. At around 0900, an engineer officer—who probably was influenced by the lack of enemy fire—ordered the smoke generators turned off, since they hampered the engineers' operations. When the smoke cleared, the Germans promptly destroyed some of the heavy equipment and disrupted the bridging operations. Smoke was soon reestablished. Fearing that the Germans had been able to pinpoint the original crossing site during the lull in the smoke screen, the engineers moved the crossing site 300 yards downstream. Now, the control of

smoke operations was taken from the engineers and returned to the division chemical officer and the 5th Division commander.

Subsequently, a great debate ensued on whether to continue using a smoke screen. The engineer commander felt that too much emphasis had been given to smoke. Besides, the smoke interfered with the men working on the bridgehead. The 5th Division commander, in contrast, maintained that a smoke screen should be continued, citing the damage the Germans had inflicted on the bridgehead on 11 September. Late on 14 September, the engineers completed the bridge at the southern site, and the following day, U.S. combat battalions captured the dominating hill in the area. This site was secured at the cost of 725 casualties in the 10th Infantry, 13 killed and 100 wounded in the 1103d Engineer Combat Group, and 2 killed and 7 wounded in the 84th Smoke Generator Company.

The bridge was finally secured, but the need for smoke continued. The Germans still had dominating positions at Fort Driant and near Metz. On 21 September, the 161st Smoke Generator Company relieved the 84th and continued to produce smoke at the bridge site until 25 September when XX Corps decided that smoke was no longer required. Once the smoke cleared, the Germans promptly destroyed the treadway bridge and damaged the pontoon structure, which stopped all traffic. The 84th returned to establish a smoke screen.

The operations of the 84th Smoke Generator Company at the Moselle River demonstrate that smoke can be used effectively in assault and bridging operations, and many lessons can be learned from this operation. From the beginning of its operation, the 84th was plagued with logistical problems. While the 84th had sufficient trucks to transport supplies in its immediate area of operations, it lacked organic transportation and had problems transporting men, equipment, fuel, and supplies from the rear area. Commanders at Arnaville solved these problems in the short term, but in the future, logistics problems should be addressed in the planning phase of operations.

Another lesson learned in this bridging operation was that smoke generators must be placed close to crossing sites, and plans must be developed for their resupply. In addition, definite control of large-area smoke screening must be established early in an operation. At the beginning of the Arnaville operation, the engineers controlled the smoke, which seemed logical. However, when the engineers lifted the smoke screen and the Germans rained down destruction on the engineers and assault troops, control reverted to the division commander. In future operations, smoke generator units should be controlled at the division level from the outset, where the full scope of the battle is better understood.

In such operations, changes of wind direction also must be accounted for, because when wind directions change unexpectedly, the results may have disastrous effects on unprepared soldiers. Maintaining accurately placed smoke screens was difficult at the Moselle, and redundancy should have been planned as part of the operation.

In addition, the men of the 84th should have been given proper combat training to prepare them for this operation. Historically, smoke generator companies had operated only in the rear areas. Thus, the 84th's generator operators were not trained to function in the dangerous and unpredictable environment of the front. Also, generator operators became fatigued because only one operator was assigned to each generator. The 84th should have had more operators. Additionally, more support personnel should have been attached to the division to repair damaged and faulty generators.

The use of smoke in the assault and bridging operation at Arnaville was its first employment in the ETO, and it was a success. Clearly, in future wars, generating smoke to conceal operations should be used to manipulate the environment to gain advantages over the enemy.

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16

Fire Support

Assessing the Adversary at Dien Bien Phu

Lieutenant Colonel James R. McLean

The village complex of Dien Bien Phu lies in the center of a large valley in northwestern Vietnam approximately 180 miles from Hanoi. This rich, fertile valley is some 12 miles long and 8 miles wide and is completely surrounded by tall, jungly mountains whose peaks rise to over 3,000 feet in many places. By 1953, the village had served as an administrative center for the Vietnamese government for over seventy years, being an important marketplace for two important local cash crops—rice and opium. An important regional crossroads, it sat on Provincial Road 41, the major north-south highway in the area, and controlled Vietnamese access to Laos, only eight miles to the west.

It was at Dien Bien Phu in November 1953 that French colonial forces threw down the gauntlet to the Vietminh, challenging them to engage in a great battle that would determine the outcome of the long and bitter Indochina war. Neither side dreamed that within six months the French would suffer such a crushing defeat there that they would sue for peace a day after the village fell.

The war between the French and the Communist Vietminh was in its seventh year when General Henri Navarre arrived in Indochina in May 1953 as the new theater commander. In the aftermath of World War II, French energies were devoted to reconstructing their nation, creating a new domestic political consensus, and coping with the threat of Soviet expansion in Europe. France's global strategic goal was to return to its prewar status as a major colonial power, but the French had very limited resources available for this purpose. Although Indochina was one of the most important regions where French military forces were deployed in the early 1950s, Europe still remained their main interest. Thus, Navarre's mission was to defeat the Vietminh insurgency and restore French political prestige and influence in the area—but to do so with limited men and materiel.

Opposing the French were Vietnamese Communist nationalists under the leadership of Ho Chi Minh. Ho had organized the Vietminh to oppose Japanese occupation forces during World War II and continued to lead them against France when that country attempted to

reestablish colonial rule in 1946. His goal was to create a unified, independent Vietnam under his leadership. The senior Vietminh commander was Vo Nguyen Giap, a former history teacher and long-time supporter of Ho Chi Minh. With the cessation of hostilities in Korea, the Chinese Communists were able to provide increasing military assistance and hardware to their allies to the south. Given this new level of aid, Ho and Giap sought to go on the offensive against the French and drive them from Indochina.

In the summer of 1953, Navarre had 189,000 troops in Indochina: 54,000 French soldiers, 20,000 Legionnaires (many of whom were German or Eastern European), 30,000 North Africans (Algerians and Moroccans), 10,000 air force and 5,000 navy personnel, and 70,000 members of the Vietnamese National Army. Most of these were needed to man garrisons throughout Indochina, particularly along a chain of defensive positions in the Red River delta called the De Lattre Line. The Vietminh, with 6 divisions and 3 independent regiments, had at least 80,000 well-trained first-echelon soldiers, along with a large body of second-echelon militia available for regional conflicts and activity. These, in turn, were backed by large portions of the peasant population whose support the Vietminh had already won.

Navarre's long-term plan for defeating the Vietminh envisioned limited offensive operations by his regulars to keep Giap's forces occupied while the French rebuilt the Vietnamese National Army in 1954. Then, in 1955, he would mount a general offensive to destroy Ho Chi Minh's People's Army of Vietnam (PAVN). Prior to Navarre's arrival in country, the French had achieved some success against the Vietminh by creating forward operating bases behind enemy lines. An airhead, seized by an airborne insertion, would be rapidly expanded by airlifting in artillery, engineer, and support elements, as well as regular infantry units to replace the paratroopers. The French then would conduct limited local offensive actions disrupting the Vietminh rear and causing PAVN units to attack their positions in force. Next, the French would use the inherent strength of the defense and their superiority in firepower, both artillery and air support, to inflict heavy losses on their opponents. When this was accomplished, the operation would terminate, and the entire French contingent would be withdrawn by air.

The key to this kind of operation was to choose a provocative site, man it with sufficient forces to prompt the enemy to attack (and thus accept an attrition battle), and then retain the ability to withdraw the force when necessary. The French had employed these successful tactics before Navarre's appearance. Navarre now intended to intensify these tactics and expand their scope. In the autumn of 1953, Navarre selected

Dien Bien Phu as the centerpiece for his plan to engage the Vietminh in northern Vietnam.

On 20 November, elements of the 1st Airborne Battle Group jumped into Dien Bien Phu. Within two weeks, nearly 5,000 French troops were in the valley, improving two airstrips and building defensive positions. Navarre's trap was set. The bait was six battalions of airborne infantry, the cream of the French Army in Indochina.

Ho and Giap carefully analyzed the situation before accepting battle. They determined that the French strength was in fire support, both artillery and air power, and that the French weakness lay in their extended and vulnerable lines of communication (LOCs). The Vietminh leaders also considered their own position and identified their strengths as their skilled infantry and the support of the people. Their weaknesses were their lack of firepower and their inability to sustain large-scale conventional operations. Therefore, the Vietminh leaders decided that victory at Dien Bien Phu would depend on their ability to reduce the effectiveness of French fire support and to sever the enemy's lines of supply while, at the same time, reinforcing their own firepower and protecting their own LOCs. Less than a week after the first French paratroopers jumped into Dien Bien Phu, Giap ordered four divisions to converge on the valley, to arrive no later than the end of December: the Vietminh had accepted the challenge.

The French military's analysis of the centers of gravity for the Dien Bien Phu campaign was fatally flawed by its overestimation of French capabilities and its underestimation of the Vietminh's. Like Ho and Giap, the French realized that the keys to success or failure would be logistics and fire support. The French fully respected the prowess of the PAVN infantry but felt confident that superior French air and artillery support would more than offset any numerical advantage the Vietminh might muster. Furthermore, the French believed that the Vietminh could neither mass nor sustain the forces necessary to overcome the garrison at Dien Bien Phu, and if they attempted to, French air power would smash their LOCs and pound their assembly areas. A combination of offensive maneuver and artillery and air support would prevent the Vietminh from interdicting French aerial resupply operations at the two airfields in the valley.

Navarre and his operational commander in northern Vietnam, Major General René Cogny, felt that the French Air Force would be able to locate and cut any Vietminh supply routes into Dien Bien Phu. However, during the operation, the French flew hundreds of reconnaissance and battlefield air interdiction sorties against the enemy LOCs and were not effective. Expert use of camouflage, movement at night and during periods of limited visibility, use of redundant routes,

creation of extensive engineer repair systems to build and quickly repair the elaborate road network, the use of more than 500 2½-ton trucks given by the Chinese, and the mobilization of tens of thousands of peasants to provide manual labor and to carry thousands of tons of supplies all helped defeat French efforts to cut the supply lines sustaining the Vietminh army.

The French also grossly underestimated the fire support capabilities of their opponents. Colonel Charles Piroth, the commander of all French artillery at Dien Bien Phu, insisted that the Vietminh could bring neither large quantities of artillery nor the amount of ammunition necessary to sustain effective operations into the area over the extremely rugged terrain. He was wrong on both accounts. The French felt that Giap's forces could field only 40 to 60 artillery pieces with fewer than 25,000 rounds of ammunition. In fact, Giap brought well over 200 guns to bear during the battle and fired over 350,000 rounds. Because the French had dismissed the Vietminh artillery threat, they did not adequately prepare their positions to withstand the heavy artillery bombardments that characterized the battle. Accurate, concentrated Vietminh fires and the lack of French overhead cover and deep bunkers, especially over critical airfield installations and artillery gun pits, contributed to heavy French losses early in the campaign.

In addition to their other miscalculations, the French overestimated their ability to locate and destroy any artillery the Vietminh brought to bear. Piroth repeatedly boasted to high-ranking civilian and military officials who visited the valley in the months before Giap's attack that his counterbattery fires would destroy any Vietminh gun that fired three rounds. Furthermore, several times, he turned down offers to have more artillery sent to the valley, claiming that he already had more than he could use. He based his claims on the belief that the firing of enemy guns could easily be spotted—either directly from ground observation posts or from light observation aircraft that were permanently stationed at Dien Bien Phu—since the weapons would be emplaced on the forward slopes of the surrounding hills. In reality, the hills were too far away for direct observation. Moreover, the Vietminh had learned valuable lessons from their Chinese advisers on how to protect key installations and supply routes from air interdiction. Camouflage was used expertly to hide positions, while dummy positions drew French efforts away from actual locations. Also, some units were moved nightly to lessen the chance of detection. The PAVN forces emplaced their artillery pieces individually, often digging them deeply into hillsides so that they were impervious to all but direct hits.

In contrast to the French, the Vietminh realistically appraised centers of gravity for both sides. Three of the divisions Giap sent to

Dien Bien Phu were elite infantry units built on the Western model of three regiments of three battalions each. Although each PAVN battalion possessed more riflemen, machine guns, and heavy mortars than its French counterpart, French overall superiority in artillery and air support more than made up the difference in firepower. But by 1953, the Vietminh had created a unit designed to redress this inequity—the 351st Heavy Division. Modeled after the Soviet artillery division that had time and again provided massive firepower to smash through German defenses during World War II, the 351st consisted of engineer, mortar, rocket, antiaircraft, and field artillery battalions and was manned by the bulk of PAVN soldiers trained in these skills. The 351st's impact at Dien Bien Phu was enormous.

Giap deployed the assets of the 351st Division to protect his LOCs—his weakest link—and to counter the French superiority in fire support. His deployment of nearly 100,000 troops to this remote and inhospitable location and their sustainment during six months of intense siege warfare was a herculean task. To protect their LOCs, the Vietminh placed antiaircraft artillery (AAA) elements at every choke point the French could attack from the air. These "flak corridors" took such a toll on French fighter-bombers that the pilots were forced to change their tactics by flying faster and dropping their ordnance at higher altitudes, both of which significantly decreased the effectiveness of the French air campaign. Almost every airplane that flew against the Vietminh LOCs was damaged to some extent, and the French simply did not have the equipment, spare parts, and maintenance personnel to repair or replace them all. Consequently, as early as 26 December 1953, French air commanders diverted attack aircraft to fly flak-suppression missions. Yet despite the maximum efforts of the French air arms—both air force and navy—at interdiction, supplies continued to flow in sufficient quantities to sustain Vietminh combat operations.

The Vietminh did not employ their AAA in a defensive role only. They also used it offensively to attack the French center of gravity, the tenuous aerial resupply system at Dien Bien Phu. The Vietminh quickly surrounded the French with a ring of antiaircraft guns, mortars, and artillery, which they continued to strengthen as more weapons arrived in the battle zone. Consequently, it became increasingly difficult for the French to approach the valley by air due to the concentrated AAA fires. Once the Vietminh began their assaults and forced the French back, the PAVN leaders immediately ordered their 37-mm and .50-caliber AAA guns even closer to the airfield. This ring of AAA hindered French resupply efforts and helped protect the massed infantry divisions and support troops from the French Air Forces' napalm and bombing runs, thus further degrading French fire support effectiveness.

Giap and his planners did not forget the airfield itself and made denial of its use by the French a primary objective for both ground maneuver and indirect fires. PAVN mortars and artillery interdicted airfield operations early by targeting the control tower, radio beacon system, aircraft repair and refueling facilities, observation planes and fighter-bombers parked on the flight line, and the airstrip itself. From December 1953 through March 1954, fewer and fewer aircraft landed at Dien Bien Phu. When Giap at last attacked on 13 March 1954, the PAVN artillery effectively shut down the airfield. Resupply then had to be accomplished by parachute. Initially, the French C-47s dropped their cargo in daylight at 2,500 feet, but as Vietminh AAA gunnery improved and they brought their guns closer to the drop zones, the drop altitude rose first to 6,500 feet and then later to 8,500 feet. Naturally, the accuracy of the drops decreased precipitously, as did the percentage of tonnage actually recovered by the French. Distribution of those items the French did recover was made extremely difficult because the enemy could sweep the drop zones and French positions with fire at will.

Once the battle was joined, both sides used their fire support assets to great effect. The French had built their defense around a series of mutually supporting defensive positions with interlocking fields of fire designed to protect the main airfield in the center of the valley. Each of the artillery pieces had already fired at a number of critical targets, and the Vietminh suffered heavy casualties whenever they stormed a French position. The French gunners and mortarmen were highly trained professionals, possessed the finest equipment in the theater, and were as confident as their leaders that their fires would quickly smash the Vietminh artillery and infantry.

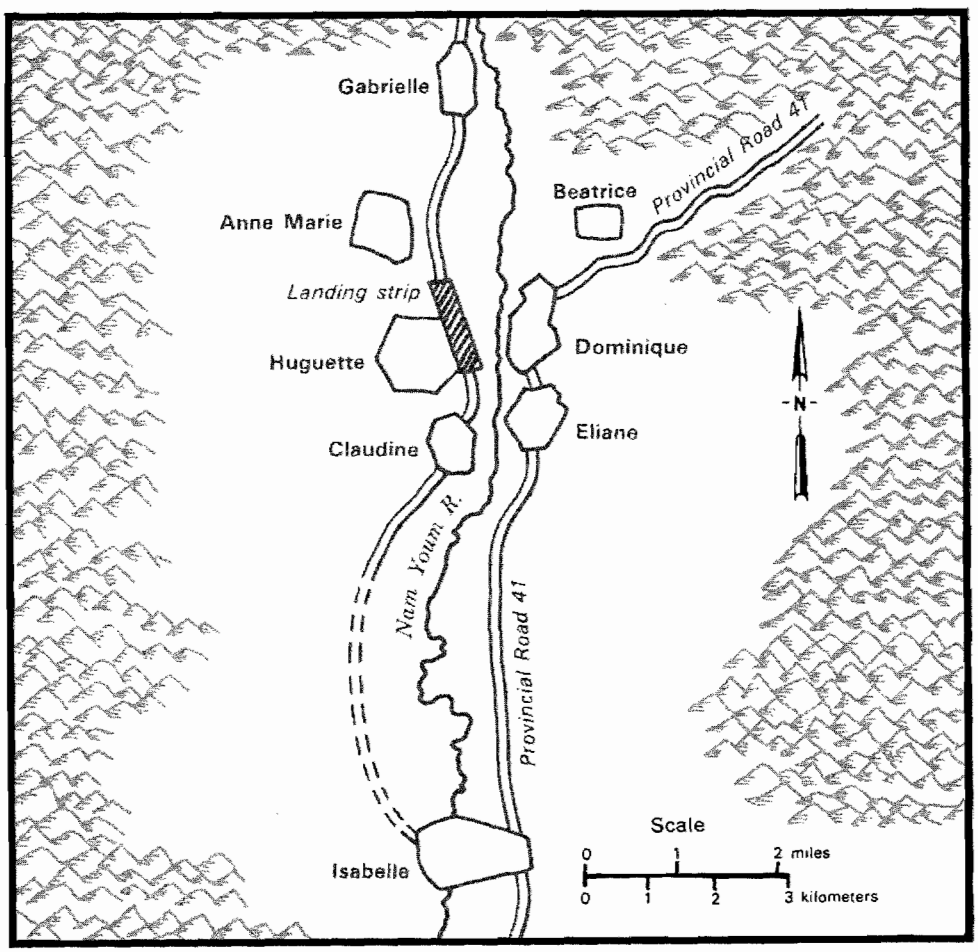
Yet the fire support advantage went to the Vietminh. Before the fighting began, Giap wrote in the PAVN training manual drafted specifically for Dien Bien Phu that the Vietminh needed a minimum 3-to-1 superiority in infantry and at least parity in artillery in order to defeat the French. He had surpassed these ratios when he initiated his offensive on the evening of 13 March 1954. Nearly three and one-half infantry divisions plus the 351st Heavy Division ringed the French garrison in the valley. A total of 49,000 combatants (and a further 10,000 added as replacements later in the siege) opposed the French colonial troops, which although reinforced to 12 battalions still numbered only 13,200, of which no more than 7,000 were first-line soldiers. Of particular importance was how Giap planned to employ his artillery. He knew that he lacked the trained observers, fire direction personnel, cannoneers, and sophisticated signal equipment necessary to operate in the traditional Western mode using indirect fires. However, he held dominant high ground only a few kilometers from his enemy's

front lines. Given these factors, Giap came up with an innovative solution to provide accurate and timely fire support. He positioned all his artillery pieces on the forward slopes of the hills so that they looked directly down on the French, and he instructed his artillerymen to fire every piece independently, if need be, by sighting down the tubes of howitzers or by using the direct-lay technique for mortars. This practice helped compensate for the inexperience of many of his men in the use of proper siting techniques. While Giap sacrificed the ability to lift, shift, and mass fires rapidly, he made the most of his assets. Each artillery piece was responsible for a limited sector and was prepared to fire on key targets within its zone. When incorporated into Giap's carefully planned and coordinated attacks, the effects of the Vietminh fires were devastating.

Giap delayed launching his assault on Dien Bien Phu until he had adequate stockpiles of ammunition of all types, his troops were sufficiently trained, and the monsoon season had arrived. The valley of Dien Bien Phu received more rain—almost five feet—than nearly any other valley in northern Indochina during the six-month monsoon season. Giap counted on the heavy rains and low cloud cover to hamper French air support and aerial resupply during this most critical phase of the operation.

At 1700 on 13 March 1954, the Vietminh struck (see map 13). Concentrated barrages laid down by 105-mm and 75-mm howitzers and 120-mm mortars crashed onto the airfield and strongpoint Beatrice with pinpoint accuracy. While some of the PAVN artillery fired on the French infantry positions in support of the assaulting Vietminh, entire batteries that had remained hidden from French detection rained destruction on the open gun pits of the French artillery. Within eight hours, the control tower and radio beacon were destroyed, and airfield operations were effectively shut down. Of the light observation aircraft and fighter-bombers assigned to the airfield for local air support and artillery spotting, only two managed to take off and fly to Hanoi. The rest were destroyed on the ground, thus eliminating much of the French counterbattery potential. By the evening of 15 March, two more French strongpoints, Anne Marie and Gabrielle, had been overrun.

The French were stunned. They had considered Gabrielle to be the strongest of all their fortifications at Dien Bien Phu. Colonel Piroth, the confident one-armed artillery commander, could not believe what had transpired in the previous forty-eight hours. His crews had taken terrible losses in their open gun pits. He had lost two of his 105-mm howitzers, a quarter of his 155-mm howitzers, and a third of his 120-mm mortars to PAVN artillery, and he had fired over 25 percent of his total 105-mm ammunition. As far as he could tell, his cannoneers



Map 13. Dien Bien Phu, 13 March—8 May 1954

had had only negligible effects on the Vietminh artillery. He fell into despair and went from one command post to another under heavy fire to apologize for the failure of his command. With tears in his eyes, he said: "I am completely dishonored. I have guaranteed . . . that the enemy artillery couldn't touch us—but now we are going to lose the battle. I'm leaving." Later, Piroth went into his dugout and laid down on his cot. Pulling the pin from a hand grenade with his teeth, he held the explosive charge to his chest and committed suicide.

The siege of Dien Bien Phu lasted another fifty-three days. The outcome, however, was clear once the Vietminh had closed the airfield and had revealed the amount and power of their fire support. The French appealed desperately to the United States for immediate massive air support, to include tactical nuclear weapons—but to no avail. On 7

May 1954, the exhausted French stopped fighting, and the victorious PAVN troops swarmed over the last French positions. On the next day in Geneva, France's foreign minister asked for a cessation of hostilities in Indochina, a prelude to coming to terms with the Vietminh. The victory at Dien Bien Phu belonged to Vo Nguyen Giap and was due, in no small part, to his keen analysis of the centers of gravity for both sides and to his brilliant employment of fire support assets to achieve military success.

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17

Flexibility

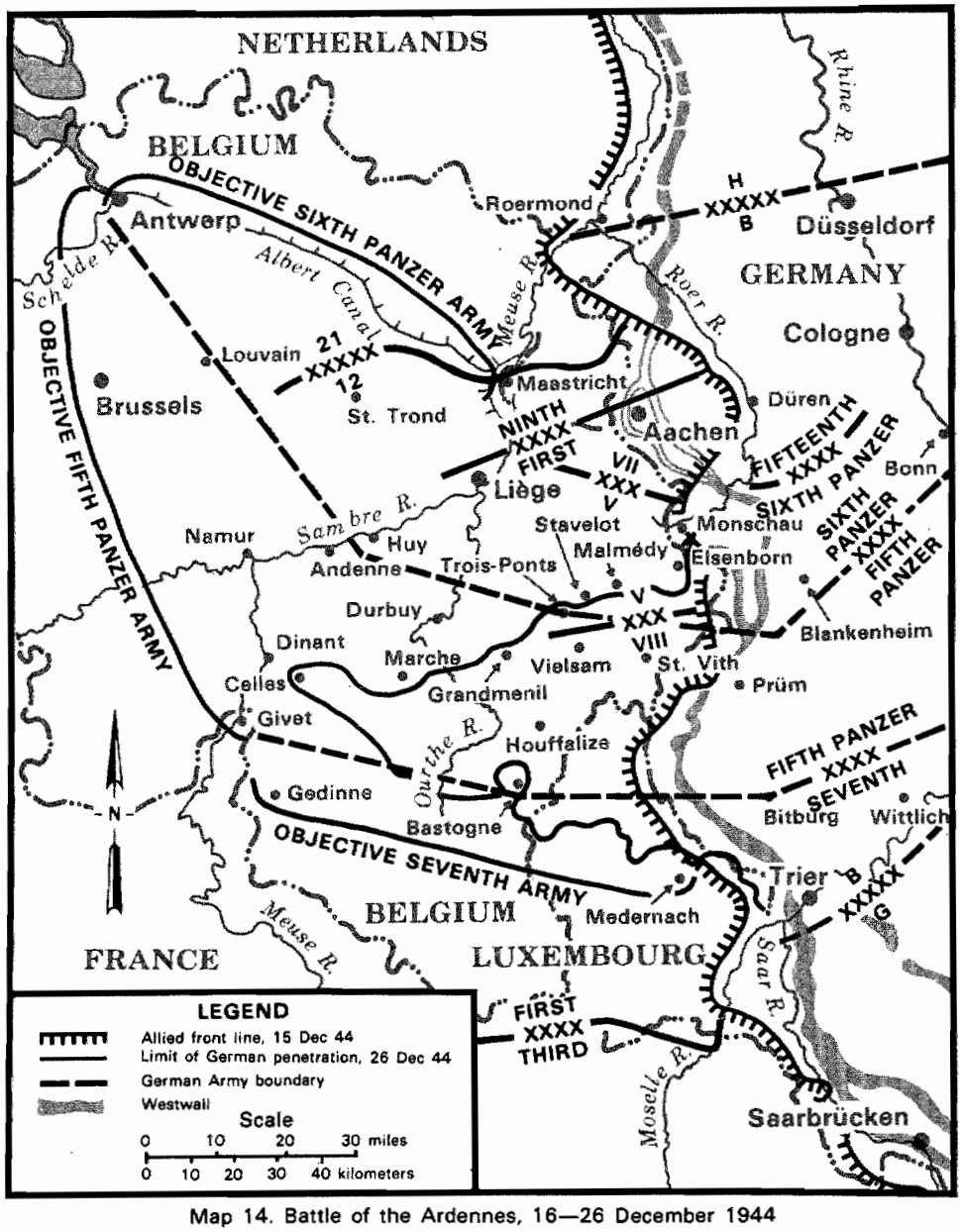
The U.S. Third Army at the Battle of the Bulge, 1944

Dr. Michael D. Pearlman

On 15 December 1944, General Dwight D. Eisenhower, Supreme Commander, Allied Expeditionary Force, gave Field Marshal Bernard L. Montgomery, commander in chief, British 21st Army Group, permission "to hop over to England" to spend Christmas with his son. Meanwhile, intelligence reports on the German Army were identifying more than normal amounts of railroad movement by the enemy, signs of engineers with bridging equipment, and requests for aerial reconnaissance around the Ardennes Forest. Nonetheless, the Allied high command remained confident that the Germans were doing nothing truly significant. On his part, Lieutenant General Omar N. Bradley, commander of the U.S. 12th Army Group, expected just a local "spoiling" or a "diversionary attack" by the Germans and went off to visit Eisenhower for a game of whist.

At dawn the next day, 16 December, two German panzer armies—almost 500,000 men, over 2,000 tanks, and almost 2,000 planes—launched an attack on the U.S. VIII Corps and the right wing of the V Corp at rest in front of the Ardennes Forest. This onslaught, according to Adolf Hitler's plan, would split the British and the American forces in the European Theater of Operations (ETO); isolate the British and Canadians in the north; and open a corridor to Antwerp, the principal Allied port in northwestern Europe (see map 14). Hitler told his subordinates that a great victory on the Western Front would "bring down this artificial coalition with a crash."

The Allies were shocked. "No Goddamned fool would do it," said Bradley's G2 (assistant chief of staff for military intelligence). Not everyone, however, was completely astonished. In August 1944, when Eisenhower's own G2 was writing that "the end of the war in Europe [is] within sight," the G2 of the U.S. Third Army, Colonel Oscar W. Koch, remained cautious and alert. According to Koch, the withdrawal of the Wehrmacht from Normandy "had not been a rout or [a] mass collapse." He warned that the Germans would "wage a last-ditch struggle in the field at all costs."



Map 14. Battle of the Ardennes, 16—26 December 1944

In the succeeding months from August to mid-December, Koch kept his eyes on quiet sectors adjacent to the U.S. Third Army. He and its commander, Lieutenant General George S. Patton Jr., recognized that inactivity can foreshadow an enemy assault. Because the Germans were not under attack in front of the Ardennes Forest, it was the very place

where they might choose to build up their strength. Koch, at a staff meeting on 9 December, specifically said that the Germans might be concentrating their combat power opposite the VIII Corps at the Ardennes.

Koch's boss, Patton, had no interest in heading north toward the VIII Corps, since Germany, his objective, was due east. For months, he had been planning "to go through the Siegfried Line [Germany's border fortifications] like shit through a goose." Nonetheless, after Koch's briefing on 9 December, he tasked his staff members to "be in a position to meet whatever happens." Thereafter, they began to survey the road net and bridges leading from Third Army's sector north to the Ardennes.

Patton, despite his own premonitions and plans, initially underestimated the strength of the German offensive launched on the 16th. He had been angry and embarrassed that elements of the First Army, to his north, and the 6th Army Group, to his south, had already reached Germany before his own troops. (They "made a monkey of me," he complained.) Now that he had finally battered his way through the defended towns of the province of Lorraine and the forts of the Maginot Line, he wished to move in only one direction, straight across the Saar River into enemy territory. Nonetheless, on 18 December, after Bradley showed him the extent and size of the German penetrations in the Ardennes, Patton responded that he would send one of his four army corps north within twenty-four hours. That contingent (III Corps) had been a planning cell removed from direct contact with the enemy. Now Patton would transfer three divisions to its command, approximately 50,000 men, to contain the German onslaught on the southern shoulder of the bulge. Meanwhile, Patton also planned to send another corps, an additional 50,000 men, northeast to cut the enemy salient at its base and trap the Germans, preventing their escape.

Not the least of Patton's many contributions during this operation (which Americans would call the Battle of the Bulge) was his style of leadership and his manner of command. Patton, according to Bradley, "naturally radiated unbound confidence and dogged determination." It was now his outspoken conviction that Germany's surprise attack was not a defeat for the Anglo-American coalition but, instead, a great opportunity for the Allied armies. In mid-August, the Allies had failed to destroy the entire German Seventh Army in France when they allowed as many as 240,000 enemy soldiers to escape through the Argentan-Falaise gap in Normandy. After that, supply shortages (especially gasoline fuel), constant rain, and stubborn German resistance on broken terrain dramatically limited mobility. It took Patton's Third Army sixteen miserable weeks to fight its way across Lorraine

(approximately seventy-five miles wide). Now, in December, as the Germans moved out from behind their fortifications, exposing their combat assets and logistical tail, a brand new chance at a decisive victory existed—if the Allies were fast, daring, and aggressive. (Bradley later called it "a 'Falaise Gap' on a far grander scale. But this time we would have to act with much greater speed and boldness" than the Allies had done in August.)

On 19 December, the Allied high command met to plan its response to the German attack. Eisenhower tried to dispel the sense of gloom by saying that "the present situation is to be regarded as one of opportunity for us and not of disaster." Patton did him one better. "Hell, let's have the guts to let the bastards go all the way to Paris, then we'll really cut them off and chew them up."

"When can you start?" Eisenhower asked, ignoring Patton's more ambitious plan.

"As soon as you're through with me," Patton responded.

When Eisenhower demanded a more specific time, Patton replied, "The morning of December 21st [thirty-six hours hence], with three divisions."

"Don't be fatuous, George. If you try to go that early, you'll go piecemeal. You will start on the twenty-second and I want your initial blow to be a strong one."

Between 19 and 23 December, in winter storms, the line and staff of the U.S. Third Army relocated 50 to 150 miles north. On unfamiliar roads and quagmires (after five weeks of steady rain from November to December), they deployed 133,178 motor vehicles; a new network of depots and dumps for 62,000 tons of supplies; 20,000 miles of field wire for a new communications network; numerous field and evacuation hospitals; and thousands of new terrain maps for troops entering a brand new sector. "It was," said a syndicated newspaper correspondent then serving on Patton's staff, "all wrought quietly and efficiently by a teamwork without parallel in the ETO, a teamwork rooted deeply in great know-how, in great confidence in itself and its Commander, and in great fighting spirit."

Patton, however, was not satisfied just moving his army north. His comment about letting the Germans go to Paris was only half in jest. If he had the authority, he would have let the Germans drive another fifty miles west and then cut the base of their salient. Eisenhower, having other responsibilities, could not be quite this daring. He already had committed the only strategic reserves he had, the U.S. 82d and 101st Airborne Divisions, to hold the transportation hubs and bottlenecks at the northern and southern shoulders of the German bulge.

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The 82d, at St. Vith, was in the First Army's area of operations. The 101st, at Bastogne, was Patton's responsibility. Meanwhile, Hitler declared that his panzer armies "would crush everything in their path."

Patton, always looking to strike a decisive blow that could end the war then and there, would have preferred to bypass Bastogne and head straight for St. Vith, where he could rope off and destroy the entire German salient. Eisenhower, however, insisted that the 101st be rescued, although many of those cocky paratroopers later claimed that they were doing quite well on their own. (One said, "So they got us surrounded again, the poor bastards!") Whether the airborne divisions needed help or not, Patton, under orders, dispatched the 4th Armored Division, his favorite division, to relieve Bastogne.

What Patton was to the operational art of war, the 4th Armored Division was to tactics: the U.S. Army's most skillful practitioner of flexibility, initiative, and agility. "Speed, speed. Obsessiveness with speed permeated our lives," recalled a division sergeant; "no one even had to tell us; there were no orders from Patton to move faster." The 4th was one of only two divisions in the ETO to win a Presidential Unit Citation, the other one being the 101st Airborne Division, largely for its own exploits at Bastogne.

Unfortunately, between September and December 1944, in the battles of attrition in Lorraine, the 4th Armored Division's dash and spirit had become its liability. Patton said of its commander, Major General John S. Wood, "Unquestionably, in a rapid moving advance, he is the greatest division commander I have ever seen, but when things get sticky he is inclined to worry too much, which keeps him from sleeping and runs him down, and makes it difficult to control his operations." Twenty days before sending the division toward Bastogne, Patton relieved Wood for general insubordination. ("I hate to do this as he is one of my best friends but war is war.") Admittedly, Wood was guilty of crossing unit boundaries and phase lines ("such lines meant little to me [he said], and I went where the going [was] good"). Wood bypassed objectives that he thought unimportant and vocally protested the way his corps commander used tanks—as if they were fire support for infantry rather than weapons for exploitation and maneuver. By late December, the slow and methodical Lorraine campaign was over. For Bastogne, Patton once again needed the 4th Division, whose military pride was "deep envelopment by armor."

Under Wood's tutelage, the division had developed an extremely flexible form of command and control that today is called "mission-type orders." "Due to the swift movement of events" between July and September, "it was necessary," according to 4th Armored Division personnel, to "permit a latitude of decision to staff officers and subor-

dinate commanders that at first appeared radical. On closer examination, however, the advantage of this system became apparent. It permitted the officer on the spot . . . to make a decision quickly and take action when it was most needed and when it would do the most good."

This flexibility was necessary during the 4th Division's passage to Bastogne, 150 miles north. The lead unit of its relief column was the 37th Tank Battalion, commanded by Lieutenant Colonel Creighton W. Abrams, a future Army chief of staff (1972—74). In World War II, Abrams won two Distinguished Service Crosses, two Silver Stars, a Bronze Star, and an accolade from Patton: "I'm supposed to be the best tank commander in the Army, but I have a peer—Abe Abrams."

Although *Time* magazine called the 37th Tank Battalion "a fearsome weapon of destruction," it was far from being at its best in late December 1944. When dispatched to Bastogne, it was short 230 men and 34 tanks—one-half of its organic firepower. It might never have arrived near Bastogne at all without close air support from the XIX Tactical Air Command and its P-47 Thunderbolt fighter-bombers, each plane armed with eight .50-caliber machine guns, rockets, and bombs to suppress German tanks and artillery.

The Army Air Forces (AAF) in World War II took great pride in flexibility, its capstone manual claiming that "the inherent flexibility of air power is its greatest asset. This flexibility," it continued, "makes it possible to employ the whole weight of the available air power against selected areas in turn." At the beginning of the war, the AAF had virtually no capability for accurate and effective close air support. By 1944, however, it had developed and fielded the best fighter-bombers (P-47s) in any arsenal. It had also perfected a surface-to-air communications system that enabled tanks and planes to maneuver together, identifying targets of opportunity for one another as they appeared without warning on the battlefield. This, by comparison, was a far more flexible system of close air support than any the Germans had ever fielded, the Luftwaffe being used in prearranged missions for prepared breakthroughs on static enemy positions.

The 4th Armored Division, despite close air support, was still outgunned on the ground by the time it arrived within striking distance of Bastogne, but the Americans maneuvered their weapons with greater rapidity. Therefore, Abrams' immediate superior decided to skirt heavily defended enemy positions by taking secondary roads—a more time-consuming but less-direct procedure. Abrams was about to proceed as directed when he observed C-47 aircraft dropping supplies on Bastogne. Convinced that American troops there were in desperate straits, he immediately changed his approach plan to the direct route (forgetting,

however, to inform his commanding officer). After the first tanks of the battalion fought their way into the outskirts of Bastogne on 25 December—the day after Patton said they would arrive—Abrams received a radio inquiry from his superior: the colonel asked him to consider a breakthrough attempt and linkup with the paratroopers that night.

One would have liked to end the story of the Battle of the Bulge with the linkup at Bastogne. The airborne troops' resistance and their relief by U.S. armor was surely one of the great exploits in the history of the U.S. Army. Unfortunately, as Patton recognized from the beginning of the entire operation, Bastogne was just a road junction at the waist of the bulge. As such, it should not have become the ultimate Allied objective. Instead, the decisive point of the campaign should have been a linkup from the north and the south somewhere at the base of the German salient. There, the Allied armies could trap all the Germans they had not killed or captured. However, the Allied high command, especially Montgomery, chose a more cautious but less-rewarding plan—pushing the Germans out of the bulge back into Germany.

Patton thought this plan made no sense: "If you get a monkey in the jungle hanging by his tail, it is easier to get him by cutting off his tail than kicking him in the face." Nonetheless, Patton did not get his way and was not allowed to begin his drive into the base of the bulge until 18 January. By that time, most of the Germans had escaped.

To be sure, the Bulge was a victory. The Allies killed or captured at least 100,000 Germans and destroyed 800 tanks and 1,000 planes. In the words of the German Army's official historian, the Ardennes offensive of 1944 "broke the backbone of the western front." Still, most of the German soldiers and approximately half their equipment slipped through the noose that Patton would have tied around their neck if the entire Allied force had been as flexible as his command.

The Army's capstone manual, FM 100-5, *Operations* (1986), says the following about flexibility:

> The commander must foresee developments as far as possible. However, he must also expect uncertainties and be ready to exploit opportunities. . . . The defender must be agile enough to counter or evade the attacker's blow, then strike back effectively. . . . Reserves prepare to move anywhere in sector and make counterattack plans to cover all likely contingencies. Once the attacker has been controlled, the defender can operate against his exposed flanks and his rear.

At the Battle of the Bulge in December 1944, the U.S. Army fought one of the greatest battles in its history. It did not, however, completely fulfill the high standards its doctrine now sets for itself. It blocked the enemy's main avenues of attack and rushed reserves into the critical

sector, but it did not act quickly against the enemy's exposed rear areas.

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18

Initiative

The Chance Seizure of the Remagen Bridge Over the Rhine

Major Bruce Alsup

In the Allied advance across Germany in March 1945, Brigadier General William M. Hoge was faced with a soul-searching decision. The 9th Armored Division headquarters, under Major General John W. Leonard, had directed him to push south rapidly and link up with the Third Army's 4th Armored Division. But as Hoge prepared to go south, he recognized an opportunity to seize a standing bridge over the Rhine River—an opening through the enemy's homeland defensive barrier. For Hoge to concentrate his forces on seizing and holding the bridge instead of driving south, however, would be a deliberate violation of orders. Furthermore, the Germans could be expected to blow up this bridge, as they had all the other bridges in the Allied armies' path of advance. While success could excuse Hoge's violation of orders, failure could result in his court-martial and disgrace. Demonstrating initiative, Hoge made his decision: he ordered his forces to seize the Ludendorff Bridge at Remagen.

The May 1986 edition of Field Manual 100-5, *Operations*, defines initiative as "setting or changing the terms of battle by action." The Army encourages commanders at all levels to use initiative. For a subordinate commander, employing initiative requires a willingness and ability to act independently within the framework of his senior commander's intent. Thus, a subordinate commander must be audacious and willing to take risks when exploiting battlefield opportunities. These risks, however, must be taken with a clear understanding of the senior commander's intent and the battlefield situation.

On the senior commander's part, he must establish a command atmosphere that allows subordinate commanders to take risks, that is, a climate in which the execution of plans is decentralized and where flexibility exists for subordinate commanders to exploit opportunities. Once enemy vulnerabilities have been discovered or created by subordinate commanders, however, a senior commander must be able to alter his operational plans to exploit the situation.

Opportunities to demonstrate these sorts of initiative were rife in 1944. The fortunes of the German and the Allied forces had shifted

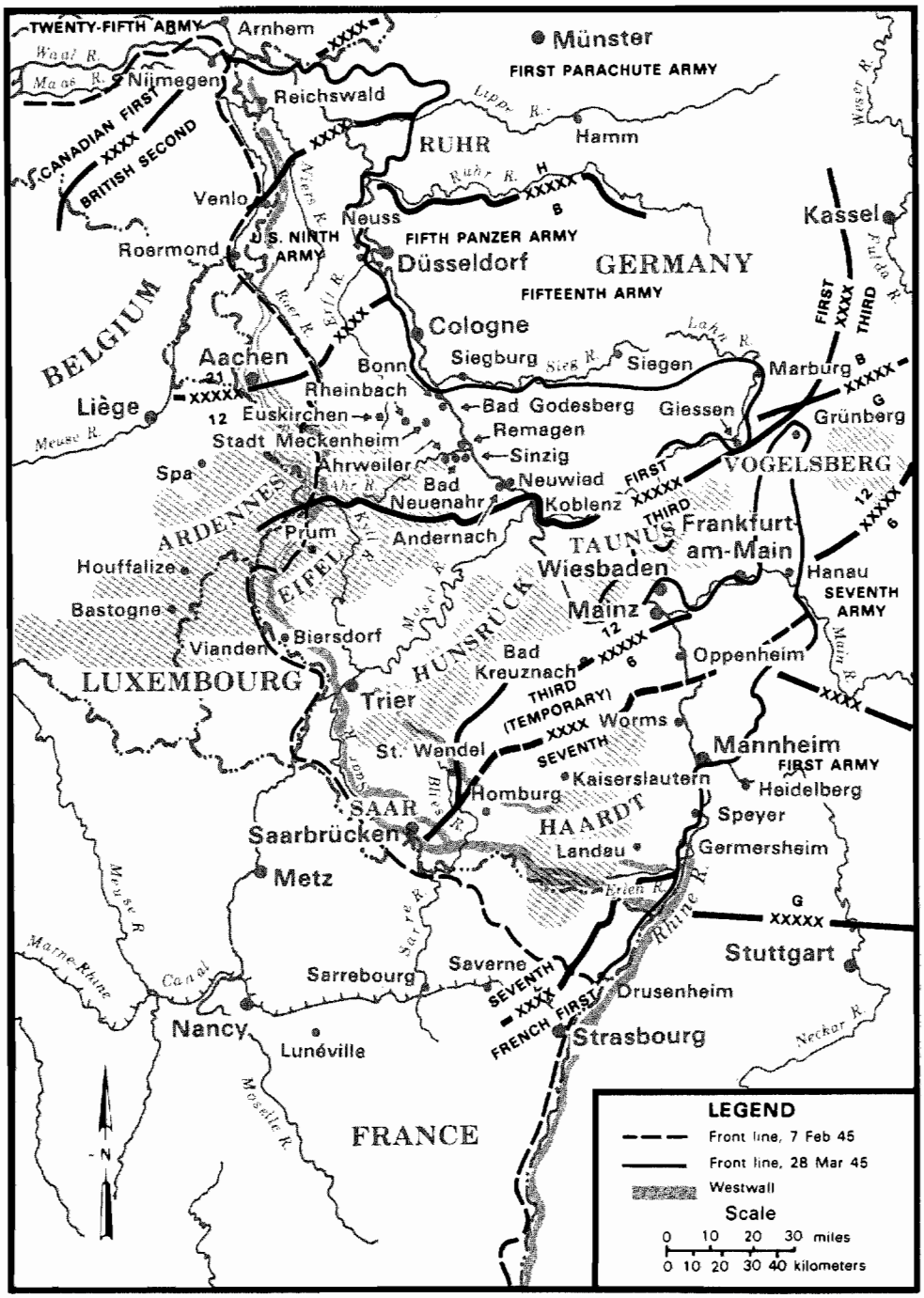
radically. After the successful invasion at Normandy and breakout from the beachhead, the Allies pushed the Germans back to the Westwall (Siegfried Line), the German border defensive fortifications. With the end of the war seemingly in sight, the Supreme Headquarters, Allied Expeditionary Force (SHAEF), continued planning for the final offensive to destroy Hitler's Third Reich, an attack that would punch through the Westwall and cross the Rhine into Germany's heartland.

General Dwight D. Eisenhower planned to assault Germany on a broad front, with multiple axes driving into the German homeland. The Allied forces would launch two major thrusts into Germany: one north of the Ardennes to seize the Ruhr industrial region and the other south of the Ardennes, a secondary effort, to assist the main drive and eliminate the lesser Saar industrial area. The earlier German counteroffensive through the lightly defended Ardennes Forest in December 1944—the Battle of the Bulge—momentarily had dominated the Allies' planning. Once this attack stalled, however, the final offensive resumed.

According to Eisenhower's plan, the Allies would advance to the Rhine in stages and then push the Germans west of the river, preventing them from making another surprise attack in a weak sector. With the river as a buffer, the Allies could safely conduct a strategic economy-of-force mission in the south while supporting a major effort by Field Marshal Bernard L. Montgomery's 21st Army Group in the north.

As part of this operation, on 3 March, the 12th Army Group commander, Lieutenant General Omar N. Bradley, ordered his subordinates, Lieutenant General Courtney H. Hodges, the First Army commander, and Lieutenant General George S. Patton Jr., the Third Army commander, to clear the Rhineland north of the Moselle River (see map 15). The enveloping thrusts of Operation Lumberjack would create a pocket of trapped Germans in the northern reaches of the Eifel. In this two-phase campaign, Hodges was to close on the Rhine between Düsseldorf and Cologne, with Major General J. Lawton Collins' VII Corps protecting the right flank of Lieutenant General William H. Simpson's Ninth Army as it advanced to the Rhine in the north. Meanwhile, Patton was to prepare bridgeheads across the Kyll River. Then, with Ninth Army safely at the Rhine, Hodges was to turn the VII Corps toward Cologne and strike swiftly with the whole army to the southeast. The First Army would join Patton's columns as they stabbed toward the Rhine in the vicinity of Koblenz.

As the attack progressed, Collins' VII Corps met heavy resistance, while Major General John Millikin's III Corps moved rapidly against light opposition. Between 2 to 5 March, the tactical situation resulted



Map 15. The Battle of the Rhineland and crossing of the Rhine River

in a series of boundary changes that oriented the III Corps farther southeast toward the Ahr River. In response, on 6 March, Millikin shifted all his divisions' objectives to the southeast—the 1st Division to Bonn; the 9th Division to Bad Godesberg; the 9th Armored Division's CCB (Combat Command B) to Remagen and CCA along the Ahr from Sinzig to Bad Neuenahr; and the 78th Division to Ahrweiler.

By the night of 6 March, the 9th Armored Division(-), led by CCA, reached a position less than two miles from the Ahr. Hoge's CCB, to the north, reached Stadt Meckenheim, located only eight miles from the Rhine River and the objective at Remagen. The next morning, CCA crossed the Ahr River at Bad Neuenahr against heavy German resistance. Closing the Ahr valley cut the withdrawal route for the Germans' LXVII Corps. By this time, Patton's forces were closing in the southern half of the pincer. The Eifel pocket was almost closed. As changes in the plans for the III Corps and First Army filtered down each echelon of command, Hoge reoriented the lead task forces toward CCB's new objectives.

On the morning of 7 March, while the 9th Armored Division(-) and CCA crossed the Ahr, Hoge's CCB pushed southeastward in two columns: one to cross the Ahr near its confluence with the Rhine and another column toward the small town of Remagen. Then, the force rapidly would push south along the west bank of the Rhine to link with the lead elements of Patton's army.

The task force leading the column headed for Remagen was commanded by Lieutenant Colonel Leonard Engeman and was built around the 27th Armored Infantry Battalion and the 14th Tank Battalion(-). A Company, 27th Battalion, reinforced by a platoon from A Company, 14th Tank Battalion, spearheaded Task Force Engeman's advance toward Remagen and met weak, sporadic German resistance. By noon, it entered the woods on the high ground just west of the town.

Just before 1300, First Lieutenant Karl H. Timmerman, the new commander of A Company, responded excitedly to a call from his company's lead platoon. As Timmerman's jeep rounded a sharp curve in the road, he looked through a clearing in the heavy woods. Below him, within a panoramic view of the Rhine, was the town of Remagen. Just beyond it, silhouetted against the sky, was the Ludendorff Bridge, still standing and spanning the Rhine.

From that moment on, the situation developed rapidly. Timmerman called for armor support and mortars to attack the retreating Germans on the bridge. This call attracted the attention of Engeman, who arrived at Timmerman's vantage point minutes later, along with Major Deevers, the commander of the infantry battalion. Engeman directed Deevers to begin planning the attack on the town. Soon afterward, Major Ben

Cothran, Hoge's operations officer, arrived. He assessed the situation and immediately called Hoge, who arrived a few minutes past 1300.

Hoge quickly grasped the situation, then raged at the delay in taking Remagen. His display of anger produced the desired results: Engeman issued a rapid directive to the assault company commander, who moved out to execute the orders quickly. Satisfied with the new sense of urgency, Hoge quietly remarked to Engeman, "It would be nice to get that bridge too while we're at it."

While Engeman directed his forces in seizing the town, Hoge carefully considered his response to the immediate situation. His orders were to orient his forces to cross the Ahr River and then to proceed south and link up with the 4th Division of Patton's Third Army. Since Hoge's force was the lead element of the First Army and III Corps, Bradley held him responsible for that linkup. Hoge understood Bradley's intent to complete the encirclement of German forces in the Eifel pocket. If Hoge's command failed to complete its part of that operation and the Germans found a way to escape, then Operation Lumberjack would fail.

However, Hoge did not intend to ignore an intact bridge over the Rhine River, Germany's historically impenetrable defensive barrier. Seizing such a bridge would be a windfall worth the gamble. A successful capture of the bridge might excuse a direct violation of his orders, but what was his likelihood of success?

Although the possibility of capturing a bridge had been discussed at every echelon of command, no one expected the methodical Germans to leave any intact. In the opening days of Operation Lumberjack, the Ninth Army had made two concerted attempts to seize bridges over the Rhine near Cologne. Both attempts were nearly successful, but the Germans finally managed to destroy the bridges—one in the face of U.S. forces, the other as American soldiers crossed it. In both instances, the responsible U.S. commanders had failed, which resulted in the loss of American lives and the deflection of resources from the main effort.

In Hoge's case, he reasoned that his losses would be limited if his gamble failed. He might lose a platoon if the Germans blew up the bridge and cut off the first men who crossed. But what would be his commanders' response if he failed to take the bridge? Would they find his gamble reasonable?

While the possibility of taking a Rhine bridge had been discussed within the III Corps and 9th Division, the corps' G3 had confirmed that the 9th Division's objective was still the Ahr River, not the Rhine. Neither the 9th Division's nor CCB's field orders had even mentioned taking the bridge at Remagen, although Leonard, the 9th Division

commander, had briefly hinted at that possibility to the CCB commander.

Weighing the potential outcomes, costs, and results of both success and failure, Hoge made his decision: he ordered Engeman to seize the bridge. Engeman's task force responded immediately. While Timmerman's company worked through the town and across the bridge, Hoge faced another dilemma: how much of his force could he push across the river to hold the bridge against German counterattacks?

As Hoge deliberated, he received two messages that placed him in a quandary. He received orders from the 9th Division's operations center to divert as much strength as possible from Remagen and reinforce the bridgehead over the Ahr River at Sinzig. Meanwhile, Engeman informed him that Timmerman's company had seized the bridge and had disabled the detonation system. The Germans' attempt to blow up the bridge had failed. Nonetheless, the hold on the east side of the river was tenuous; additional forces were needed immediately to safeguard the bridgehead.

While one message reinforced his earlier concerns about following orders, the other supported his earlier decision to take the bridge. But should he hold the bridge, disregarding his orders to drive south? For the second time, he decided that seizing and holding the bridge was critical. He ordered Engeman to use all the forces in the area to hold the bridgehead. Then, Hoge returned to his command post at Biersdorff to report his actions to Leonard, the 9th Armored Division commander.

The news that CCB had seized the Ludendorff Bridge moved rapidly up the echelons of command—with varied reactions. Leonard was pleased but waited for permission from III Corps before allocating forces to reinforce the Remagen bridgehead. At the III Corps' command post, Colonel James H. Phillips, the corps' chief of staff (in command in Millikin's absence), ordered Leonard to exploit the bridgehead as far as possible with his available forces. Even though Millikin was out with the 78th Division, Phillips was certain what his response would be. While Phillips called Millikin, the corps' operations officer called the First Army. Hodges, the First Army commander, and Brigadier General Truman C. Thorson, the First Army G3, pushed the decision one level higher to Bradley, the 12th Army Group commander.

Bradley's initial excitement was dulled by the SHAEF operations officer, Major General Harold R. Bull, who asserted that taking the bridge at Remagen did not "fit into the plan." Consequently, Bradley referred the decision to Eisenhower. Ike's response was: "To hell with the planners. Sure, go on, Brad, and I'll give you everything we've got to hold that bridgehead." That evening, the First Army relieved the

III Corps of the mission to push south and directed it to reinforce the bridgehead at Remagen.

During the next two weeks, the III Corps expanded the bridgehead at Remagen with five divisions. In reaction, the Germans conducted numerous piecemeal counterattacks but were unable to dislodge the U.S. forces. Earlier, German forces had massed in the north to thwart Montgomery's assault in the Ruhr area. While some of these forces were sent south to meet the Remagen threat, most remained in the north. With First Army's bridgehead at Remagen and another one established by Third Army at Oppenheim, Eisenhower decided to make the 12th Army Group's advance the main thrust into Germany.

Thus, Hoge's initiative had a significant impact on the war. He demonstrated exemplary willingness to act independently within the framework of his higher commanders' intent and took risks to exploit opportunities arising on the battlefield. While Hoge's commander, Leonard, appeared supportive—as did senior commanders up the chain of command—each echelon commander was cautious, seeking permission from the next higher headquarters. Hoge made his decision promptly, when it had to be made. The hesitation by commanders in the higher headquarters raises questions about the quality of their initiative.

An analysis of reliefs in command and the combat operations of 12th Army Group and First Army before they crossed into Germany indicates that the command climate discouraged initiative by subordinate commanders. Bradley explained his policy on command relief: "each commander must always assume total responsibility . . . if his commanders fail him in the attack, then he must relieve them or be relieved himself." In the indecisive grinding through the hedgerows of France, Bradley fired four division commanders, three brigadier generals, and many regimental and battalion commanders. When he left First Army to command the 12th Army Group, that attitude concerning dismissals remained in First Army and moved higher with him.

Hodges, on his part, "expected his officers to adhere strictly to orders and procedures and to carry out their missions. He had almost no tolerance for concerns, complaints, bad news, [or] extra questions." Hodges fired four division and two corps commanders, including Millikin, the III Corps commander at Remagen. In this command environment, First Army generals showed themselves competent but were overly cautious.

Thus, for Hoge, the decision at Remagen involved significant risk taking. Considering the command environment in First Army, if he had failed to seize the bridge before the Germans destroyed it, he risked being relieved of command. However, by succeeding, Hoge altered the

course of the war in western Europe and demonstrated the decisive importance of initiative on the battlefield.

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19

Innovation

Close Air Support in World War II: The Roots of the Tragedy in Operation Cobra

Dr. Michael D. Pearlman

Necessity is the mother of innovation, and there is no greater national necessity than war. Moreover, nothing is more unpredictable and confusing than combat. Consequently, the best one can hope from preparedness in peacetime is a doctrine and force structure that has to make only minor adjustments in war. The adjustment time—when innovations are desperately necessary—costs every nation casualties. In the Pacific in 1943, the U.S. Marine Corps, which had been preparing for amphibious invasions since the 1920s, had to make its fire support more precise and responsive after Tarawa. In Europe, in 1944, the U.S. Army Air Corps had to make far greater adjustments to execute close air support, a mission it never wanted.

Between World Wars I and II, the U.S. Army Air Service or Air Corps (as it became known in 1926) had one overwhelming ambition: to gain institutional autonomy as an independent service separate from the ground forces. The Air Service-Air Corps felt that it had been victimized more than most other branches of the Army during the long reign of retrenchment in military spending between 1920 and 1938. During this period, the War Department generally chose to preserve manpower rather than spend its meager resources on research, development, and fielding new equipment. This priority was good for the Infantry branch but bad for technology-intensive mechanized forces. It was downright dangerous for aviation. In the 1920s and 1930s, one airman died in a peacetime accident for every 12,800 miles flown.

U.S. Army flyers, consequently, believed that aviation's health and their own physical survival depended on the creation of a completely independent service in charge of its own budget and appropriations. But for that to happen, the Air Service would need independent missions under its own command and control, not that of ground commanders. The missions and responsibilities that met that criterion were, number one, that of obtaining air supremacy: the battle for control of the skies. Another mission that met the criterion was strategic bombing: "the progressive dislocation and destruction of the [enemy's] military, in-

and the nerve of numerous French soldiers at the front who had never seen anything like them and had no idea how to respond. However, the U.S. Army, which observed the battle for France, did have time to learn and adapt. A month after the Battle of France ended, Major General Henry ("Hap") Arnold, the commanding general of the U.S. Army Air Corps, reconsidered his responsibilities. He previously had praised Japan for "not assigning her air force to operate against front-line trenches." He now ordered the creation of two dive-bomber groups and accelerated research, development, and production of airplanes dedicated to that specific mission. By mid-1944, American airfields were receiving the most robust and well-armed fighter-bombers in the world: P-38 Lightnings and P-47 Thunderbolts. Too frequently, however, the Army and the U.S. Army Air Forces (AAF) still had to use what they had on hand: P-40s (modified fighters that had not been effective in air-to-air combat) and B-17s.

Arnold—a strategic bomber man first, last, and always—was wise enough to realize that if the AAF only fielded four-engine heavy bombers, then many of those planes would probably be diverted to close air support. That chain of events would not benefit the nation, the AAF, or the Infantry. At the least, it might be overkill: an instance where a very expensive asset was used where a less costly capability would suffice. At worst, heavy bombers, which would saturate a general area, could kill a lot of friendly troops by inaccurate bombing short of the enemy target. This is exactly what happened during Operation Cobra in Normandy on 25 July 1944.

Within two weeks of the Allied landing in France on 6 June 1944, progress toward Paris had virtually ground to a halt. Preinvasion planners had been so worried and concerned with the initial lodgment that they had not paid sufficient attention to exploitation after they got ashore. The Allies now were stuck in what they called "hedgerow territory." General Omar N. Bradley, commander of the U.S. First Army, described the terrain where he fought:

> The hedgerows formed a natural line of defense more formidable than any even Rommel could have contrived. For centuries the broad, rich flatlands had been divided and subdivided into tiny pastures whose earthen walls had grown into ramparts. Often the height and thickness of a tank, these hedgerows were crowned with a thorny growth of trees and brambles. Their roots had bound the packed earth as steel mesh reinforces concrete. . . . To advance from pasture to pasture it became necessary for us to break a path in the face of savage and well-concealed enemy fire. . . . [General J. Lawton] Collins called it no less formidable than the jungles of Guadalcanal.

The stalemate on this terrain reminded Allied officers of World War I trench warfare. Then, the Allies had hoped that massive artillery bombardments could restore maneuver by suppressing enemy fire. This

dustrial, and economic system" in the heartland of enemy territory. The Air Service also wanted the mission of battlefield air interdiction: hitting supply bases and transportation assets approximately seventy-five kilometers behind enemy lines. The Air Service's least-sought mission was close air support, in which aviation would act as flying artillery under the control of ground commanders.

In the 1930s, the theory of strategic bombing directly affected the Air Corps' capabilities. Since doctrine underscored the invincibility of the heavy bomber ("the bomber will always get through"), that is what was funded and what came out of the factories in 1937. At that time, the Air Corps fielded its first seven B-17s, which could fly at 232 miles per hour with a range of 2,100 miles. Meanwhile, the Air Corps meagerly funded tactical aircraft and consistently changed its requirements for tactical air power. Different people demanded different capabilities, depending on their priorities: local air defense, long-range bomber escort, or battlefield interdiction. In these confusing circumstances, the Air Corps did not develop the capabilities to perform close air support. And because they did not have the immediate capability for that mission, airmen said that the mission could not be done. They claimed that targets at the battle front were too widely dispersed and usually dug in to protect airmen from enemy artillery. Far behind the front, targets were larger, softer, and out in the open, which made them more vulnerable to the imprecise, high-altitude bombers whose main targets were large factories and cities. As late as mid-1943, the capstone manual of the U.S. Army Air Corps declared: "in the zones of contact, missions against hostile forces are most difficult to control, are most expensive, and are, in general, least effective. . . . Only at critical times are contact zone [battlefield] missions profitable."

Doctrine was one thing; necessity was another. Whatever American airmen may have wanted to do, war made unforeseen demands on their time and their resources, especially once Germany showed the importance of close air support to the ground battle. Because Germany was a land power in the midst of Central Europe, ground considerations predominated. Thus, the Luftwaffe did not have the same wide options as non-Continental air forces—the British Royal Air Force and the U.S. Army Air Corps. Although German flyers also considered close air support their last priority, Germany's wars against Poland, France, and Russia would be determined on the ground. Consequently, Germany had developed the Stuka dive-bomber in the late 1930s. By contrast, as late as April 1942, U.S. Army doctrine did not even mention dive-bombers. Furthermore, Army pilots (as opposed to their Navy counterparts) were not training for the mission as late as 1943.

In the German invasion of France (1940), Stukas shattered the will

was not successful in 1916, but what other options did the Allies have? Now in 1944, they again proposed bombardment, this time from airplanes, not just artillery tubes.

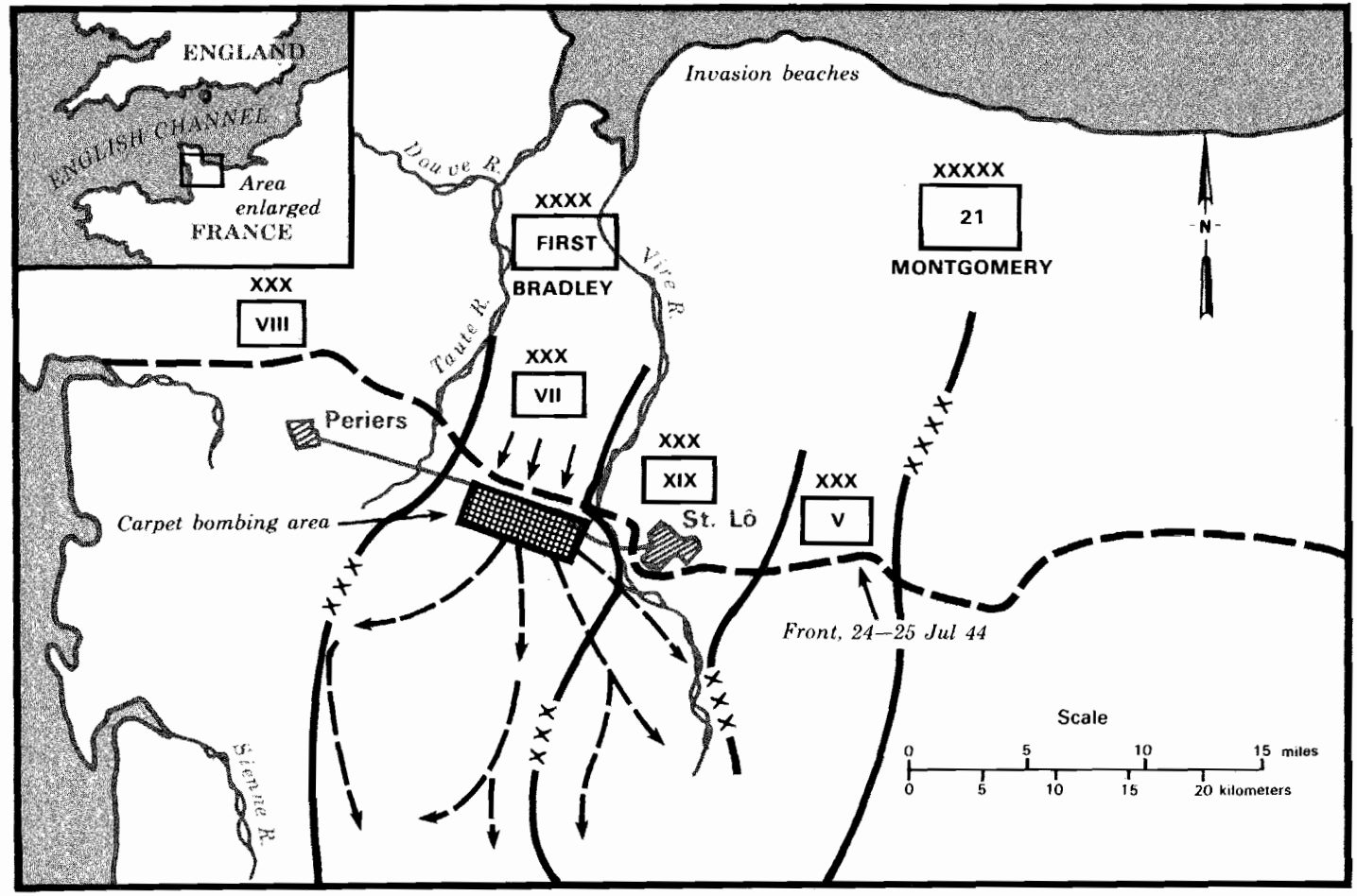
Air Chief Marshal Trafford Leigh-Mallory, commander of the Allied Expeditionary Air Forces, became the primary advocate of carpet bombing, a tactic rarely used before Operation Cobra. The principle was to cover selected terrain with bombs like one covers floors with carpets, saturating the entire area. The area selected in July 1944 was a plot of ground five miles wide and one mile deep (see map 16). Crawling with Germans, the area blocked the march route of the U.S. VII Corps. After the Allies saturated this rectangle with 50,000 bombs, the ground forces would spring through it and drive deep into the enemy rear. That, anyway, was the plan.

Once the plan was made, all that was needed was precise execution. Nothing, however, is less precise than war. This is particularly true of joint operations. Frequently, ground force and air force commanders know little about each other's capabilities and requirements, unless joint operations, like close air support, have a high priority in their institutions, doctrines, and training. This was not the case in Britain or the United States before the war. The results, unfortunately, were apparent in the execution of Operation Cobra.

Bradley, befitting a former commandant of the Infantry School at Fort Benning, wanted his assault troops in the operation ready to attack as soon as possible after the bombing. If they dispersed, dug in, and waited, they would be safe from friendly fire from the air. They would not, however, be safe from the Germans, who would crawl out of their holes and reestablish their positions before American soldiers got through their lines. Thus, maneuver should be simultaneous with fire: a basic principle at Fort Benning.

The U.S. Eighth Air Force commanders, whose primary experience had been bombing cities and industrial sites, understood much better the imprecision of their weapon, the heavy bomber, than their Army colleagues. Consequently, the air commanders wanted ground forces to withdraw at least 3,000 yards from their current positions, giving them some protection from bombs falling short of the targets. However, according to Bradley, that fallback might defeat the purpose of the bombing—which was to allow Bradley's troops to spring across enemy strongpoints. The result, finally, was a compromise that satisfied neither side. Troops withdrew 1,250 yards.

Another issue causing great disagreement was the direction of the air approach: should it be perpendicular or parallel to U.S. ground forces? Perpendicular meant that the bombers would fly from north to south, over their own troops. Parallel meant they would go west to



Map 16. The area of U.S. VII Corps' advance in Operation Cobra

east, thereby not flying over friendly forces and therefore avoiding a deadly bombing error.

Ironically, the Army and the Air Corps switched roles on the issue of caution. Bradley, though he wanted his soldiers out of their trenches and near the bombing site as quickly as possible, insisted that the AAF take the parallel approach to reduce deaths from bombing errors. Meanwhile, the AAF maintained that the parallel approach was technically impossible. All 1,500 bombers could not fly in 1 hour down a corridor 1 mile wide—the physical dimension of the area to be bombed. Unfortunately, the Army and the AAF did not communicate clearly with each other on this issue. Airmen apparently voiced their opinions to Bradley—but not as vigorously as when they spoke among themselves. On this occasion, their good manners and their deference to a senior officer led to more misunderstanding. On 24 July, to quote General Bradley, "the planes flew a course perpendicular to our lines rather than parallel to it as I had been assured they would. I have seldom been so angry. It was duplicity—a shocking breach of good faith."

To add to the confusion, AAF planners believed that they had clearly explained the problem to Bradley. Bradley, however, wanted maximum tonnage dropped in the minimum time to increase the shock that might benumb the Germans. Because this was impossible on the parallel approach, Bradley led the airmen to believe, in their own words, that "he had decided to accept the additional risk of perpendicular bombing."

One suspects that both sides were telling the truth, at least as they experienced it. They did not, however, understand each other, although they spoke the same native language and served the same cause, and many had graduated from the same institution—the U.S. Military Academy. Before the war, however, they had different doctrines and different priorities. War should be the last place where servicemen learn to communicate.

Another basic problem in Operation Cobra had to do with air-to-ground visibility. On 24 July, the scheduled day of the attack, heavy clouds covered the target. This made precision bombing virtually impossible. But before Leigh-Mallory decided to postpone the operation, 317 heavy bombers were in flight. The exact damage to the Germans on this day is not known. Twenty-five Americans, however, were killed and 131 wounded by the bombing.

The next day, after the cloud cover dissipated, the full Allied air armada went into action: almost 1,500 heavy bombers (B-17s and B-24s) dropping 4,400 tons of ordnance. When this much firepower is concentrated in a small space and one hour of time, an air force inevitably will create its own visibility problem in the dust clouds and smoke

emanated by its ordnance. In Operation Cobra, this haze obscured the road that was supposed to be the bomb line demarcating friendly forces from the foe. Consequently, some 75 planes dropped their bombs short of the target, causing 601 American casualties, 111 of them killed.

One of the dead was Lieutenant General Leslie J. McNair—the highest-ranking American casualty in the European theater. During maneuvers before the war, he had sharply criticized the quality of air support, and he had remained an outspoken opponent of an independent air corps, largely because it would deprive the Army of effective fire support from its own air assets. His own death helped prove his case that air-ground operations needed much improvement.

The Germans, who were subject to far greater ordnance, suffered only marginally more casualties than the Americans: 700 dead, wounded, or missing. They had anticipated the bombing and had dug in for protection. American troops, out in the open and ready to move, were far more exposed.

Cobra did, however, degrade important German units, especially the Panzer *Lehr* Division that stood directly in the path of the U.S. VII Corps. Before the bombing, the German division had been in continuous combat for forty-five days without resupply or refitting. Hence, it only had about 2,200 combat soldiers and 45 working armored vehicles when the bombing began. Cobra may have provided the blow that broke the proverbial camel's back. It did not kill many men and many tanks, but it did wreck numerous motor vehicles, including antitank assets. Even more important, it destroyed the communication wires that gave the Germans most of their command and control. This meant that the Germans could not react effectively to U.S. maneuver units (especially armor) that went back into action on 26 July. German artillery fire, for example, now had to be preplanned. Forward observers had lost their links to German firepower. By 27 July, two days after the bombing, General Bradley assessed the battlefield and concluded that the enemy's defenses had now been penetrated. The next day, he wrote to General Eisenhower: "This operation could not have been the success it has been without such close cooperation of the Air. . . . The bombardment which we gave them [on 25 July] was apparently highly successful even though we did suffer many casualties ourselves."

Although most of Cobra's air power consisted of heavy bombers, P-47 fighter-bombers, built for close air support and long-range bomber escorts, also saw action. Unlike the heavier bombers, they could and did safely attack enemy targets barely 100 meters in front of American troops. In the last week of July, the fighter-bombers in the U.S. VII Corps' area of operations destroyed or damaged over 500 enemy assault guns and tanks. Despite the deadly confusion of Operation Cobra, the

armed forces of the United States had still developed the most effective system of close air support seen in all of World War II.

The correct weapons—P-47s and P-51s—now entered the European theater in mass. Furthermore, soldiers and airmen in the field devised doctrine, techniques, and equipment for rapid and effective ground-to-air and air-to-ground communication. After the war and long after Cobra, one former tank commander recalled how "reconnaissance pickup of [enemy] resistance was immediately radioed to TAC [tactical air command]. Invariably [TAC] would wipe out the enemy for us; from Rennes to Vannes he never missed. The planes were mainly Thunderbolts and Mustangs, gorgeous things to look at in formation—all the more gorgeous in that they were seldom more than two hundred yards in front of us." The Army and the AAF had improved a great deal in the short time after Cobra.

The U.S. Army Air Corps entered World War II without doctrine, capabilities, and training for close air support. Consequently, the Air Corps' commanders and the Army's ground commanders had to innovate during wartime. Operation Cobra, where 136 soldiers were killed by friendly fire, demonstrated the danger of learning while fighting. While close air support was both effective and relatively safe by the end of World War II, tragedy occurred at Operation Cobra when innovation took place during the rapid tempo of combat.

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20

Logistics

British Logistics in the Falklands

Lieutenant Colonel Matthew S. Klimow

For much of the world, the Falkland Islands War appeared to be a folly unfolding in slow motion. A modern army struggled to move itself 8,000 miles aboard luxury cruise ships to engage a Third World enemy described as "disinterested, inept, and dozy." The improbable spark that inflamed hostilities was the arrival of an Argentine scrap metal salvage team at a long-deserted whaling station on a desolate island near Antarctica under British sovereignty. Yet when British and Argentine forces finally collided, the fighting was furious and the outcome often in doubt.

The battle for the Falklands in 1982 was a proving ground for advanced technology and a classic study in projecting power over extended lines of communication. The war in the Falklands provides commanders a number of insights into modern combined arms operations at the tactical and operational levels of war. Great Britain's tenuous logistical operations were particularly revealing in the context of a rapid deployment operation into an undeveloped area. In this setting, the link between logistics and operations was close and mortal. When commanders and planners ignored sound logistical concepts for operational expediency, the price was paid in lives and the margin of victory made all the more slim.

From the outset, political considerations influenced military planning. When the Argentine Army seized the Falkland Islands on 2 April 1982, British politicians demanded the immediate deployment of their forces and a conclusive victory. However, no contingency plans existed for such an action, and the Royal Navy and Air Force had virtually no strategic lift capability. Thus, military planners requisitioned over 50 merchant ships, pillaged 500,000 tons of NATO supplies, and developed a forward staging area—all within a week's span.

Decisions made in the first days of the Falkland crisis had repercussions on logistics that lasted throughout the war, beginning perhaps with British alert procedures. Shortly after Argentina's invasion, Brigadier Julian Thompson, commander of the 3 Commando Brigade, Royal Marines, was told that his unit would deploy. He was forbidden, how-

ever, to divulge that information or to make preparations. This bow to secrecy created a delay in moving critical supplies to the debarkation port and left the unit with only three days to move.

Further complicating matters, the British armed forces were so pressured to put to sea that they had no time to combat load ships. Ideally, a logistics plan is based on a mission analysis, the maneuver plan, and the organization for combat. Ships then can be loaded so fighting units and their equipment and supplies hit the beach together and in sequence. Sound combat loading also ensures that men and materiel are "cross-loaded" among the various convoy vessels to lessen the impact caused by the loss of a single ship. Logisticians and commanders embarking for the Falklands failed to provide for any of these requirements.

British planners were not ignorant of these principles. Political necessity simply overrode sound military procedures. Tons of stocks were loaded onto ships before the full scope of the mission was clear and the ground combat units selected. Unlabeled and unmanifested crates of spare parts and equipment were rushed aboard vessels. Moreover, critical items, even when properly marked, were often placed in the bottom of ships' holds, making it extremely difficult to find or recover them before marines and soldiers were to storm the beach.

While interservice cooperation generally went well, problems did arise. The navy loaded ships with required supplies without considering the ground forces' needs. In addition, some ship captains refused to let army officers inspect their cargo holds to learn the location of key pieces of equipment. The ground force logisticians gained a degree of authority over the placement of cargo much too late. Recognizing that the jumbled cargo had to be organized before battle, strategic planners selected Ascension Island (located half-way to the Falklands) as a restowing and staging area.

The 3 Commando Brigade was the logical choice for the ground force, since it was structured to move by sea at a moment's notice with all its classes of supply stored aboard ships. Additionally, its 3,500 commandos had trained extensively in Norway, an advantage since the harsh antarctic winter was approaching. However, since more infantry was needed to mount an offensive, two army parachute battalions were added to the marine brigade. Days later, planners also decided to send the British Army's 5th Infantry Brigade. Once ashore, overall command would be established under Major General Jeremy Moore of the Royal Marines.

The logistics regiment of the 3 Commando Brigade provided service support. The regiment's five squadrons—medical, transport, workshop,

ordnance, and headquarters—were a mix of marines, soldiers, and sailors, all skilled in their specialty and also commando qualified.

Unlike the relatively self-contained marines, the 5th Infantry Brigade had no organic support regiment. Consequently, the commando logistics regiment had to support 9,000 combat troops—three times its normal requirement. Planners further exacerbated the regiment's problem by ordering it to leave behind one-half of its men and one-third of its equipment to provide more room on the ships for combat and combat support units. Some additional logistics troops were eventually sent, but only after an ordnance officer bluffed a ship's loadmaster into believing that his ordnance unit was a provisional infantry company needed for beachhead defense.

As the odd armada of naval vessels, merchant ships, ferries, and luxury liners set sail, planning for the land war began in earnest. The politicians demanded a quick victory, and the Royal Navy believed one was necessary, for the vicious South Atlantic weather would so damage the ships that the navy would be unable to sustain operations for more than a few weeks. Furthermore, logisticians had brought enough supplies to keep the task force at sea for three months but had prepared for only thirty days of supplies to sustain troops in combat. With an 8,000-mile logistical pipeline and worsening weather, little could be done for the land forces if they became bogged down in prolonged fighting.

Since the 3 Commando Brigade departed several days before the 5th Infantry Brigade, initial ground operations were planned by Thompson and his staff aboard the H.M.S. *Fearless*. Only a handful of officers had the expertise to plan an amphibious operation, and few outside this circle of naval and marine officers understood the complexity of the task. Thus, lack of experience showed up in logistical preparation and execution. With the brigade scattered among eleven ships and radio silence in effect, parallel planning was almost impossible. The staff of the logistics regiment, aboard R.F.A. *Sir Lancelot*, wrote its service support plan without precise knowledge of the operational concept.

The logistics staff clearly realized that Stanley, the island's only port, would not be attacked immediately. Therefore, the sustainment effort for ground combat would be a logistics-over-the-shore (LOTS) operation: ships would have to anchor offshore and unload their cargo onto a limited number of small logistics landing ships and helicopters that would then ferry supplies to the beach. Once on land, the cargo would have to be off-loaded primarily by hand due to the limited number of forklifts and other heavy equipment. During LOTS opera-

tions, air superiority was crucial since both ships and supply dumps on the beach were extremely vulnerable to attack.

Land transport consisted of foot soldiers carrying back-breaking loads. Since trafficability on the Falklands was abysmal and there were only twelve miles of roads, military planners thought that wheeled and tracked vehicles would be useless. Accordingly, only a handful of vehicles were shipped from England, and few were capable of all-terrain movement. Most were brought not for mobility but because the vehicle-mounted communications systems and other specialized equipment could not be manpacked. Fortunately, the marines brought Volvo BV 202 tracked vehicles that they had used in Norway. Although designed for use in snow, these vehicles became the logistics workhorses that hauled supplies and artillery over Falkland peat bogs.

While the British relied heavily on ships for strategic transport, helicopters became the lifeblood of tactical logistics. But again, the merchant ships could carry only a limited number of helicopters. Weather, untrained crews, incompatible communications systems, and lack of experience in helicopter resupply made fighting, in the words of Brigadier Julian Thompson, "no picnic."

Ships stopping at Ascension Island (4,000 miles from Great Britain) provided logisticians a chance to rectify some of the mistakes made in the frenzied initial stowage of stores and equipment. After the armada set sail, logisticians inventoried each ship and devised a restowing plan to combat load each ship as much as possible. Even though maintaining unit integrity was important, some units became dispersed because all the men would not fit on the same ships from which they would launch their amphibious assault. Therefore, a separate plan for "cross-decking" was developed. This called for ferrying men and supplies to other ships to join their units just hours before the launch on D-day.

Complicated by the lack of a port facility, the restowing process took twelve days. Additionally, all work ceased each night as ships slipped out of Ascension's harbor to avoid being trapped by submarines or destroyed by Argentine frogmen. Other problems made the Ascension operation a logistician's nightmare. For instance, tons of supplies requested by the invasion forces piled up on the island. Royal Navy logisticians refused to allow army supply teams to assist them in marrying up men and materiel. As a result, when supplies arrived addressed to a unit, the naval logistics team had no idea which ship or ships the unit was on. In addition, many crates came to Ascension Island bearing only a stock number, making it impossible for the navy supply people to determine what type of marine or army outfit would need the materiel. In this way, key items were lost, including special ammunition and weapons sent for a special forces unit.

The use of helicopters and landing craft in the restowing process also severely restricted unit rehearsals for the amphibious assault. This was especially critical to the army units, for they lacked training in amphibious operations. In a few days, heavily laden soldiers would have to board their landing craft in darkness on the roughest seas in the world.

D-day was scheduled for 21 May with the 3 Commando Brigade, outnumbered by the Argentines 2 to 1, set to go ashore by helicopter and landing craft. British air superiority, once considered likely, became a false hope. Consequently, the cross-decking plan was changed to reflect the expected loss of at least one ship to the Argentine air attack. On 19 May, the transfer of men and equipment began amid twenty-foot seas. The cross-decking operations were not without cost: twenty-two troops died when a helicopter ditched into the South Atlantic.

Nonetheless, the landing went well as marines and soldiers quickly secured the beachhead. But Argentine fighters bombed and strafed ships and troops, necessitating a major change in plans. Because the ground logistical effort depended on helicopter resupply, a minimum of air parity was needed before the 3 Commando Brigade could advance. For five days, while British infantry dug in, Harriers whittled away at the Argentine Air Force.

Ground forces also needed the pause to build up the brigade support area, since it was impossible to move troops forward without a secure logistical base to sustain them. Original plans called for keeping most of the supplies afloat on ships anchored close to shore. The intensity of air attacks forced the navy to drop supplies and then seek the protection of the carrier battle group at sea. Many ships departed before vital personnel and supplies were off-loaded. For example, the *Canberra*, under intense air attack, was forced to sail off before the brigade's field hospital and surgical support team were unloaded. In many cases, ground forces were left in short supply of ammunition, batteries, and rations.

Supplies were moved at night in blackout conditions, with little but human muscle to move heavy cargo. Because the navy continued to cross-deck cargo at sea, incoming ships did not carry what the marines expected. To alleviate this problem, commando logistics officers examined the holds of the ships to determine what should be sent ashore.

Meanwhile, pressure mounted for the British to take offensive action. On 26 May, the 2 Para (2d Battalion, the Parachute Regiment) was ordered to take Goose Green. Soldiers carried more than 100 pounds during their advance. With each step, the crust of the bogs gave way, forcing them to trudge through a slurry of ice water and mud. Night

movement averaged one kilometer an hour, prompting troops to dub their torturous march "yomping." The chaotic supply system left paratroopers without tents, dry clothes, or sufficient rations in the freezing weather. But more important, ammunition would be in short supply.

As the 2 Para engaged Argentine soldiers in ferocious fighting, resupply grew tenuous. Helicopters supporting the fight were sometimes diverted to move critical supplies from ship to shore. Helicopter fuel ran short. Although bulk fuel was plentiful, it was difficult to get ashore for distribution because no one was trained in fuel management; the logistics regiment's petrol troop was a reserve unit and did not mobilize for the war.

The lack of dedicated helicopters also frustrated ground commanders. Throughout the war, helicopters remained under the control of the amphibious task group commander (a navy commodore) and were never transferred to the land force commander, Major General Jeremy Moore. Because of this situation, the navy often diverted helicopters from their ground mission. Also, ground troops could not communicate with the helicopter pilots without mobile air operations teams, which were in short supply. Getting the right helicopter with the proper cargo to the correct landing zone was often a matter of luck.

No single event hurt the logistics effort more than the loss of the *Atlantic Conveyor* to an Argentine Exocet missile. All the British heavy-lift assets (CH-47C Chinook helicopters) and several medium-lift helicopters were aboard that one ship. Fortunately, one of the Chinooks escaped and became the workhorse of the British logistical effort. Also lost on the ship was tentage for 4,500 men and a great number of cargo nets. Without cargo netting, cargo had to be stowed inside helicopters, which increased loading time and allowed less to be carried. Compounding that problem was the lack of soldiers trained in loading cargo and utility helicopters.

On 29 May, the 2 Para finally secured Goose Green—but not without significant casualties, including the death of its battalion commander. Again, the helicopter was the primary asset for evacuating the wounded. Despite snowy whiteouts and marauding Argentine attack planes, evacuation pilots courageously took to the air. The wounded, including numerous trench-foot cases, were initially sent to a field dressing station in the brigade support area and, within six hours, transferred aboard the *Uganda*, a makeshift hospital ship. The survival rate of the wounded was 90 percent. Marine bandsmen, trained as stretcher-bearers and in first aid, were crucial to the medical evacuation process.

During an after-action review, the acting commander of the 2 Para implemented immediate changes in combat service support procedures. First, he established a separate administrative-logistics net for radio transmissions. Second, at the expense of combat power, he created a 35-man platoon to be used exclusively for ammunition resupply and stretcher-bearing. Although the Goose Green attack had been Britain's primary effort, 2 Para's dwindling ammunition stocks had not been replenished. Also, the paratroopers lacked facilities for casualty evacuation. In addition, at the height of the fighting, mortarmen ran out of rounds, and artillery support had to be curtailed. Later analysis showed that the planning rates for ammunition expenditure were unrealistic. The 2 Para used four times its daily allotment of small-arms ammunition and five times its allocation for 105-mm howitzers and 81-mm mortars.

Part of the problem in supporting the Goose Green operation was a devastating Argentine air attack on the brigade support area, which destroyed 500 mortar and artillery shells. More than bad luck was involved. In the fight for limited shipboard space, key air defense artillery assets had been left behind. The British had not adequately protected a vulnerable area. As Thompson, commander of the 3 Commando Brigade noted after the war, the strike against the logistics base was far more damaging than any other enemy action.

The 5th Infantry Brigade's arrival in the Falklands further strained the British logistical effort. The soldiers who landed on 2 June could not locate equipment that was hastily stowed. Moreover, the 5th had only two ordnance companies to ease the distribution problem. Without forklifts, troops formed human chains to bring ashore supplies and establish a forward brigade maintenance area. Furthermore, fuel pods were left behind, and 5,000 jerricans were brought in empty, the result of peacetime shipping restrictions.

Further hampering British supply efforts was the inadequacy of their air defense. When the brigade's logistics ship, *Sir Galahad*, dropped anchor, it was in view of an Argentine outpost. As LOTS operations began, Argentine A4s flew in with devastating results. Troops on *Sir Galahad* had been ordered to remain on board until fuel, ammunition, and stores had been removed. This error in judgment led to the loss of 43 soldiers killed and 200 wounded.

The 5th Infantry Brigade learned from 2 Para's logistical experience. Thus, it delayed its attack on Stanley until sufficient stocks of ammunition were established. Moreover, after the 5th fought fiercely to gain its initial objectives, the commanding officer of its logistics regiment recommended that it pause to replenish ammunition before beginning the final assault. The brigade commander agreed, even

though it meant losing the unit's momentum. In the twenty-four hours that followed, artillery shells were rushed forward. When the fighting resumed, the British dropped 6,000 105-mm rounds on the Argentine defenders and secured the final British objectives. Balancing the speed of the operation with the resupply effort paid off.

The British experience in the Falkland Islands reveals the importance of the proper combat loading and cross-loading of ships, the need to identify parts and supplies accurately in the logistical pipeline, the desirability of cross-training personnel, the necessity for a dedicated logistics communications net, and the requirement for protecting logistics bases. On a more general level, the war teaches the importance of balancing the conduct of operations with a suitable level of logistical support. Units can only maximize their combat effectivenesss by maintaining an adequate resupply network. To feel the tempo of battle, it is sometimes necessary to take its pulse along the lines of supply. The trade-offs between logistics and operations often dictate the margin of victory.

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21

Military Operations on Urbanized Terrain

The 2d Battalion, 26th Infantry, at Aachen, October 1944

Dr. Christopher R. Gabel

Throughout history, terrain has shaped the conduct of military operations. Traditionally, generals have been concerned with watercourses, elevations, depressions, and vegetation in the planning and conduct of battle. With the coming of the industrial age, a new terrain feature—the modern city—became important in the waging of war.

In ancient times, a city's military significance resided in its fortifications and its garrison. If these could be overcome, a city ceased to be a military impediment. In modern times, however, an urban area can constitute a major military obstacle. A modern city might be large enough to block a strategic avenue of approach into an enemy's land. Also, its population poses major logistical, administrative, and security problems for the invader. Tactically, a city's closely packed buildings, basements, alleyways, and sewer systems offer cover, concealment, and ready-made defensive positions to the defenders. Masonry buildings tend to muffle the blast effect of the attacker's artillery, and when destroyed, these buildings choke the streets with rubble and broken glass. Offensive movement through urban terrain is further hindered by the canalizing effect of man-made terrain such as roadways, embankments, and cuts.

Generally, a modern city magnifies the power of the defender and robs the attacker of his advantages in firepower and mobility. A city can ingest an invading army, paralyze it for weeks on end, and grind it down to a state of ineffectiveness. The German city of Aachen, population 165,000, posed just such a threat to the U.S. First Army in the autumn of 1944.

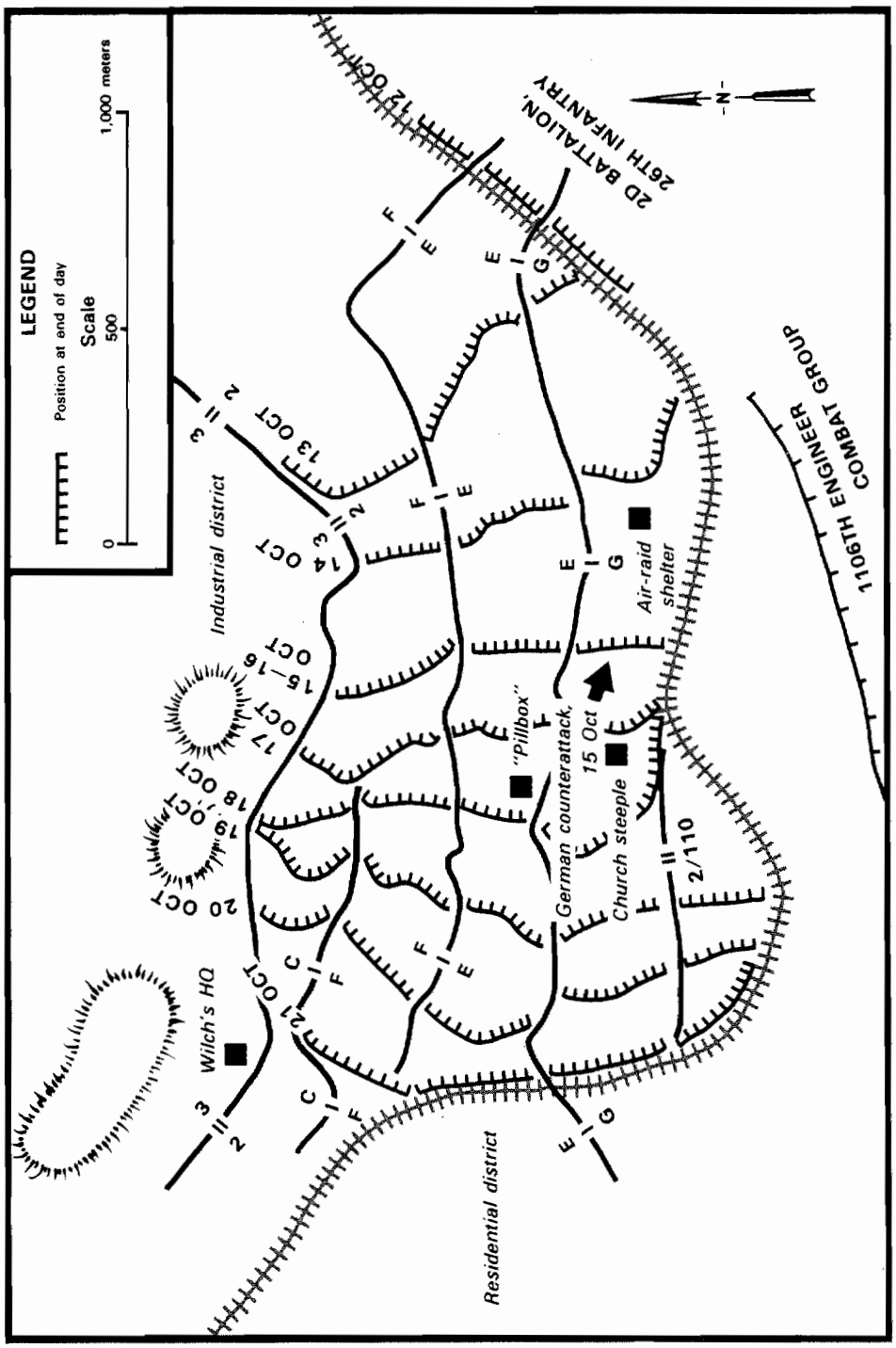
The First Army reached the German border near Aachen early in September after a rapid seven-week advance across France and Belgium. At this point in the war, the First Army was an experienced, highly respected fighting force, but it had overextended its lines of communication. Its transportation requirements had far exceeded pre-invasion planning and were being met only through the efforts of the improvised "Red Ball Express." Units were depleted through the exhaustion of men and materiel. Frontages had become overextended.

Moreover, when the First Army entered Germany, it immediately encountered the Westwall, known to the Allies as the Siegfried Line. The Westwall was essentially a giant antitank barrier consisting of obstacles and pillboxes covering Germany's entire western border. Two separate belts of the Westwall protected the Aachen gateway, testimony to the importance of the region. Fortunately for the First Army, many of the German troops that were to defend the Westwall around Aachen had been cut off and captured in Belgium before they could reach their new positions. Even so, the Westwall constituted a significant combat multiplier for the second-rate forces that were pressed into the defense of Aachen.

When the First Army arrived at the German border on 10 September, the Germans expected an immediate assault on Aachen and deployed their meager forces accordingly. Instead, Lieutenant General Courtney H. Hodges chose to attack the Westwall just south of the city, hoping to break through the border defenses before logistical shortfalls brought his operations to a halt. From 13 to 15 September, elements of the 3d Armored and 9th Infantry Divisions penetrated the Westwall and, in the process, outflanked Aachen to the south. But they were unable to press their advantage. The First Army then stood down for three weeks to reorganize and build up strength for a deliberate attack on Aachen itself.

On 8 October, Hodges undertook the encirclement of Aachen, with the 30th Infantry Division of XIX Corps attacking from the north and the 1st Infantry Division of VII Corps from the south. German resistance was stiff and progress slow, prompting Hodges to begin the reduction of Aachen before the encirclement was complete. A surrender ultimatum delivered to the German garrison in Aachen on 10 October brought no response: Hitler had designated Aachen as a "fortress," meaning it was to be held to the last man.

The task of reducing Aachen fell to Major General Clarence R. Huebner's 1st Infantry Division, a veteran of the Tunisia, Sicily, and Normandy campaigns. Since the 1st Division was also responsible for the southern jaw of the Aachen encirclement, only one regiment, the 26th Infantry, could be spared for the assault on the city (see map 17). The 26th, under Colonel John F. R. Seitz, had only two of its three battalions on hand. It would face a numerically superior foe: some 5,000 Germans, commanded by Colonel Gerhard Wilck, garrisoned the city. (The 1st Division's G2 estimated the defenders at only 3,500.) Adding to his complications, Seitz was ordered not to become inextricably involved inside Aachen while the encirclement battle raged. One circumstance working in the Americans' favor was the relatively low quality of German forces in the garrison, which included overage conscripts, converted navy and air force personnel, and city police.



Map 17. The advance of the 2d Battalion, 26th Infantry, into central Aachen, 12—21 October 1944

In an attempt to secure a degree of surprise, Huebner elected to attack Aachen from the east rather than from the south, where the 26th Infantry currently occupied lines. Major General J. Lawton Collins provided a corps asset, the 1106th Engineer Combat Group, to man the lines vacated by the 26th. The engineer force consisted of two engineer combat battalions and elements of two bridge companies and was reinforced by an antitank company and a mortar company. Its mission was defensive.

The 26th Infantry's plan of attack called for sending one battalion, the 3d, north of Aachen to capture the high ground commanding the area, while the 2d Battalion cleared the center of the city. Lieutenant Colonel Derrill M. Daniel, commander of the 2d, organized his battalion into three hard-hitting company task forces. Each rifle company was reinforced with three tanks or tank destroyers (tanklike weapons), which allowed company commanders to supply one to each platoon; two 57-mm antitank guns; two bazooka teams to augment the three bazookas organic to each company; a flamethrower; and two heavy machine guns. Daniel also obtained one self-propelled 155-mm gun to augment his firepower. Since his frontage would be two to three times that recommended by doctrine for urban fighting, all three companies would have to participate in the assault; there could be no battalion reserve. On the positive side, intelligence gatherers provided him with maps of Aachen. Furthermore, at least seventy-four batteries of corps and division artillery were in the Aachen sector, giving the Americans a significant edge in overall firepower.

For two days prior to the 26th Infantry's assault, artillery and air power pounded the defenders of Aachen with 160 tons of bombs and 10,000 rounds of artillery. The 1106th Engineers contributed to the preparation by packing a trolley car with explosives (dubbed the "V-13") and rolling it down railroad tracks into the city's center. Apparently, because of the stout masonry construction of the city's buildings, the preparatory fires had little impact on the Aachen garrison. Nonetheless, the infantry assault proceeded on 13 October as planned.

The 2d Battalion's line of departure lay along a railroad embankment fifteen to thirty feet high that bounded Aachen to the east. At H-hour (0930), all the infantrymen threw hand grenades over the embankment and scrambled across, firing all weapons. It took thirty minutes for the Germans to recover and begin returning fire. Meanwhile, two tanks succeeded in passing over the embankment, followed by the rest of the battalion's vehicles, which drove right through a railroad station that was located under the tracks within the embankment itself.

The 2d Battalion deployed with F Company on the right, where it tied in with 3d Battalion; E Company in the center; and G Company on the left, its flank resting on the railroad embankment south of town. Each company zone was roughly three blocks wide, meaning that each platoon within the company worked a separate street. As the battalion advanced, every building was assumed to be a German defensive position until proven otherwise. No German, whether soldier or civilian, was allowed to remain in the battalion's rear. Every room of every building was thoroughly searched before the attack continued to the next. Even the sewer manholes were blocked up to prevent enemy infiltration. To maintain positive control over his companies and prevent flanks from opening up, Daniel used a "measle system"—city maps on which every intersection and all key buildings were numbered. The companies operated within specified zones and halted periodically at checkpoints designated by battalion to establish positive liaison with flank units. In sum, speed counted for less than thoroughness; it took Daniel's battalion nine days to clear downtown Aachen.

Equally noteworthy was the battalion's effective use of firepower, which was in keeping with Daniel's slogan, "Knock 'em all down." His principle was to keep up a continuous stream of fire from every available weapon, ranging from rifle to medium artillery. The division and corps artillery had remained south of Aachen when the assault forces moved to their jump-off points east of the city, misleading the enemy as to the Americans' intended axis of advance and permitting the artillery to shoot parallel to the front of the assault troops. This eliminated the danger of "short" rounds falling on friendly troops and allowed the infantry units to call down fire very close to their own positions. By shelling German lines of communication, Daniel isolated objectives. He also used artillery to drive defenders out of the upper floors of specific buildings. Direct fire from tanks, tank destroyers, antitank guns, and machine guns also chased the enemy away from his firing positions. Machine guns commanded the streets along the axis of advance, ready to cut down any evacuating Germans. Daniel's infantry stayed out of the streets whenever possible, preferring to move from building to building by blowing holes in walls. Ideally, by the time the infantry closed in on a given strongpoint, the Germans would have been driven down into the cellars. Grenades and, if necessary, flamethrowers and demolition charges finished the job.

Knowing the effectiveness of German antitank weapons, the Americans were especially cautious in employing their valuable armor. Generally, tanks and tank destroyers stayed on the side streets (perpendicular to the axis of advance) and nosed cautiously around corners to fire. They would generally shoot one building ahead of the infantry

advance until an entire block was cleared, then advance to the next side street.

Obviously, this method of combat required high expenditures of ammunition. Daniel established a battalion ammunition dump to ensure the steady supply of munitions. Evacuating the wounded also posed special problems, because the rubble and glass in the streets quickly ruined the tires of wheeled vehicles. Therefore, tracked utility vehicles known an weasels were pressed into duty for casualty evacuation. Several incidents called for special ingenuity on the part of the 2d Battalion. Early on 15 October, G Company encountered fire coming from a massive three-story air-raid shelter constructed of concrete fifteen feet thick. Infantrymen quickly drove the German defenders inside and fired on the doors with machine guns. Through an interpreter, the G Company commander issued an ultimatum, which the defenders ignored. At that juncture, a flamethrower was brought forward. When the flamethrower failed to ignite, the company commander lighted it with a match. After one squirt of flame at a baffle-covered door, the defenders gave up. Two hundred soldiers and about 1,000 civilians emerged from the gigantic shelter.

Later that day, the Germans counterattacked G Company with a tank-infantry force and penetrated the U.S. line to a depth of several blocks. The penetration was quickly sealed off and eliminated. This counterattack was one of the few German offensive actions inside Aachen during the U.S. advance.

On 16 October, U.S. troops spotted what appeared to be a pillbox several blocks ahead of the battle line on the street that served as the boundary between E and G Companies. Since none of the company weapons could destroy it, Daniel decided to employ his precious 155-mm gun. To do so safely, he concocted a rather unique combined arms effort. While one tank destroyer knocked holes in a building at the foot of the street in question, creating a field of fire for the 155-mm gun, other tanks and tank destroyers fired into the cross streets to keep roving German armor at bay. Meanwhile, riflemen cleared the nearby houses of German infantry. When all was safe, the 155-mm gun fired some twelve rounds into the pillbox and into the intersections along the street. The "pillbox" proved to be a camouflaged tank, which was utterly destroyed. Another German tank was destroyed by one of the 155-mm gun's random shots into the cross streets. After his capture, the German commander of Aachen was said to have denounced such use of a large weapon as being "barbarous."

Two days later, G Company made further "barbarous" use of the 155-mm gun. Despite the Americans' care in clearing all buildings, on 18 October, they came under rifle fire from the rear. After two hours

of searching, they found that the shots were coming from a church steeple that had not been secured. Tank and tank destroyer fire had no effect on the steeple, which, it was later discovered, had been reinforced with concrete. One shot from the 155-mm gun brought down the entire structure.

As the 2d Battalion advanced through Aachen, its already wide frontages extended even farther. Fortunately, the encirclement battle east of Aachen was won on 16 October, freeing up forces to aid in the city's reduction. C Company from the 1st Battalion, 26th Infantry, joined the assault on 18 October, taking a sector on the battalion's right flank. A battalion from the 28th Division, the 2d Battalion, 110th Infantry, joined Daniel's force on 19 October, occupying a gap between G Company and the engineers south of the city. As welcome as these reinforcements were, the battle in Aachen was already winding down. German resistance became less determined as the defenders realized that they were encircled and had been abandoned by their high command.

On 21 October, Daniel's force reached the railroad embankment that marked the western edge of central Aachen. Daniel staged another embankment assault (like that employed on 13 October to enter the city) and secured the far side of the obstacle. Meanwhile, just to the north of the interbattalion boundary, elements of the 3d Battalion prepared to destroy a bunker with their attached 155-mm gun. Unknown to them, one of the inhabitants of the bunker was Colonel Wilck, the garrison commander. When Wilck recognized his predicament, he radioed a message to his high command and announced his determination to fight to the end; he then promptly surrendered.

For all practical purposes, this marked the end of the battle for Aachen. The operation netted a total of 5,600 German prisoners and cost the 26th Infantry 498 casualties from all causes. Daniel's 2d Battalion and attached units lost less than 100 casualties. By the end of the battle, U.S. forces had destroyed 80 percent of the buildings in Aachen.

Doubtless, the capture of Aachen would have been much more difficult had the defending German forces been of higher quality. Even so, the U.S. forces involved must be credited with fighting skillfully and intelligently. Through their masterful use of firepower, careful control measures, and sound tactics, the Americans defeated a numerically superior opponent who enjoyed all of the advantages of defending in urban terrain. As the first German city captured by the Allies in World War II, Aachen represented a milestone in the destruction of Hitler's Third Reich.

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22

Miracles

A Platoon's Heroic Stand at Lanzerath

*Lieutenant Colonel John R. Finch, U.S. Army, Retired**

A miracle by definition is "an accomplishment or occurrence so outstanding or unusual as to seem beyond human capability or endeavor." In military history, miracles are not common, but they do occur, and the events effecting a miracle are magnified by the life-and-death struggle surrounding the event. In the book *Infantry in Battle*, a chapter on miracles details episodes it claims meet that definition. In the process of effecting miracles, the author says, "resolute action by a few determined men is often decisive." This description aptly applies to the heroic defense conducted by the Intelligence and Reconnaissance (I&R) Platoon of the 394th Infantry, 99th Infantry Division, on 16 December 1944.

The 99th Infantry Division arrived in the European theater in early November 1944. Since it lacked combat experience, it was assigned to the Ardennes defensive sector on 9 November in an area that seemed unlikely to attract a major German attack. After a month of aggressive patrolling actions and significant improvement of its defensive positions, the division was committed to its first offensive action, a supporting attack. The 99th attacked while also defending approximately a twenty-mile front, which was nearly double the recommended distance for a division defense. Compounding its problems, the 99th was without adequate reserves, since the men who ordinarily would have composed its reserve were engaged as a task force in supporting the attack. From this vulnerable offensive-defensive posture, the division was struck by the lead elements of the German Sixth Panzer Army on 16 December 1944—at the beginning of the German Ardennes counteroffensive.

Outnumbered in men, artillery, and armored vehicles in some sectors by five to one, in others by as much as eighteen to one, the division's tenacious defense was instrumental in the successful delay and diversion of major elements of six German divisions: the 1st and

*This study was originally written under the general topic "Tenacity." Major George J. Mordica II contributed the introductory and concluding paragraphs and some other passages in the present essay.

12th *SS* Panzer Divisions; 3d Parachute Division; and 12th, 277th, and 326th *Volksgrenadier* Divisions. Over the first five days of the German attack, the 99th Division, in conjunction with the magnificent defensive accomplishments of the veteran 2d Infantry Division, were able to disrupt the synchronization of the Sixth Panzer Army. Initially, the 99th accomplished this disruption by denying the Germans access to key roads and then holding successfully the northern shoulder of the salient (an encounter that would be known as the Battle of the Bulge).

The Sixth Panzer Army, commanded by General Sepp Dietrich, had the primary effort, which was to drive 100 miles through the Ardennes to the objective at Antwerp. To accomplish this mission, Dietrich had a strict timetable: on the first day, penetrate and break out; the second day, get mobile units past the restricted terrain in the 99th Division's rear; the third day (by evening), reach the Meuse River; and the fourth day, secure a bridgehead and cross the river. Although Dietrich's schedule was ambitious, earlier in the summer of 1940, Erwin Rommel's 7th Panzer Division had attacked through the Ardennes and handily reached the Meuse by nightfall of the third day.

Dietrich described his mission in more simplistic and humorous terms:

> All Hitler wants me to do is to cross a river, capture Brussels, and then go on and take Antwerp! and all this in the worst time of the year through the Ardennes where the snow is waist deep and there isn't room to deploy four tanks abreast let alone armored divisions! Where it doesn't get light until eight and it's dark again at four and with reformed divisions made up chiefly of kids and sick old men—and at Christmas!

Dietrich's weakest units were the reorganized and still inexperienced 3d Parachute Division and the understrength *volksgrenadier* divisions. Moreover, these units would be forced to attack without supporting artillery battalions. In addition, many of Dietrich's other units lacked sufficient numbers of experienced officers and noncommissioned officers. As events showed, these weaknesses were to have serious ramifications for the Sixth Panzer Army's timetable.

Terrain and weather also affected the Germans' advance through the Ardennes. The broken and heavily forested terrain, in conjunction with the heavy fogs and precipitation, reduced ground visibility in many places to fifteen to twenty yards and provided excellent cover and concealment for American defenders and assembling assault formations. Furthermore, off-road movement was extremely difficult in the snow, which was up to one foot in depth. Because of the restrictive terrain, most traffic was channeled into the east-west roads.

By 14 November, the 99th Division had occupied its twenty-mile

sector of the line, with its 395th Infantry in the north, 393d Infantry in the center, and 394th Infantry in the south. All battalions and companies were on line except the 3d Battalion, 394th Infantry, which was held in division reserve (on the boundary with the VIII Corps in the vicinity of the Losheim gap).

All the 99th's battalions held defensive fronts of 2,500 to 3,000 yards—instead of the 800 yards prescribed by doctrine. Consequently, the many gaps in the front line could only be covered by patrols. The 99th's position, although heavily protected by log-covered entrenchments and foxholes, could best be described as a woefully weak outpost line—key terrain that featured many short, steep hills covered by dense forest and thick underbrush.

With only two battalions under his command, the U.S. 394th Infantry's commander, apprehensive about the route leading through the town of Lanzerath, positioned his understrength regimental I&R Platoon (eighteen men) just northwest of Lanzerath, mainly to give warning of enemy attacks from that area (which was the responsibility of VIII Corps and its 14th Cavalry Group).

It was fortunate for the 99th Division that the 394th's commander took this precaution, for in this small quadrangle, the critical battle on the northern shoulder of the bulge began on the morning of 16 December. The German Sixth Panzer Army, which was designated the main effort in the counteroffensive, attacked along the main roads through the 394th's sparsely defended sector.

In early December, the U.S. V Corps moved the veteran 2d Infantry Division into the rear area of the 99th Division at Camp Elsenborn. This was in preparation for an attack through a two-mile-wide sector in the center of the supporting 99th Division's line, with the objective of capturing the Roer River dams. The seizure of the dams was necessary to provide security for a planned U.S. crossing of the Roer River by units of the First Army. Because of the importance that the Germans placed on the dams, with their critical defensive ability to control the flow and depth of the Roer River, the First Army and V Corps anticipated that the Germans might launch a spoiling attack to disrupt the U.S. 2d and 99th Division's own drive.

As night fell on 15 December, U.S. situation maps showed Sixth Panzer Army units clustered around the city of Cologne and thus no immediate threat to the 2d and 99th's drive (over thirty miles to the southwest). The horrendous error of this assessment was made apparent at 0525 on Saturday, 16 December, when what is claimed to have been the heaviest two-hour barrage ever delivered in World War II fell on the American front lines. One assaulting German corps was supported with up to twenty-three battalions of artillery and rocket launchers.

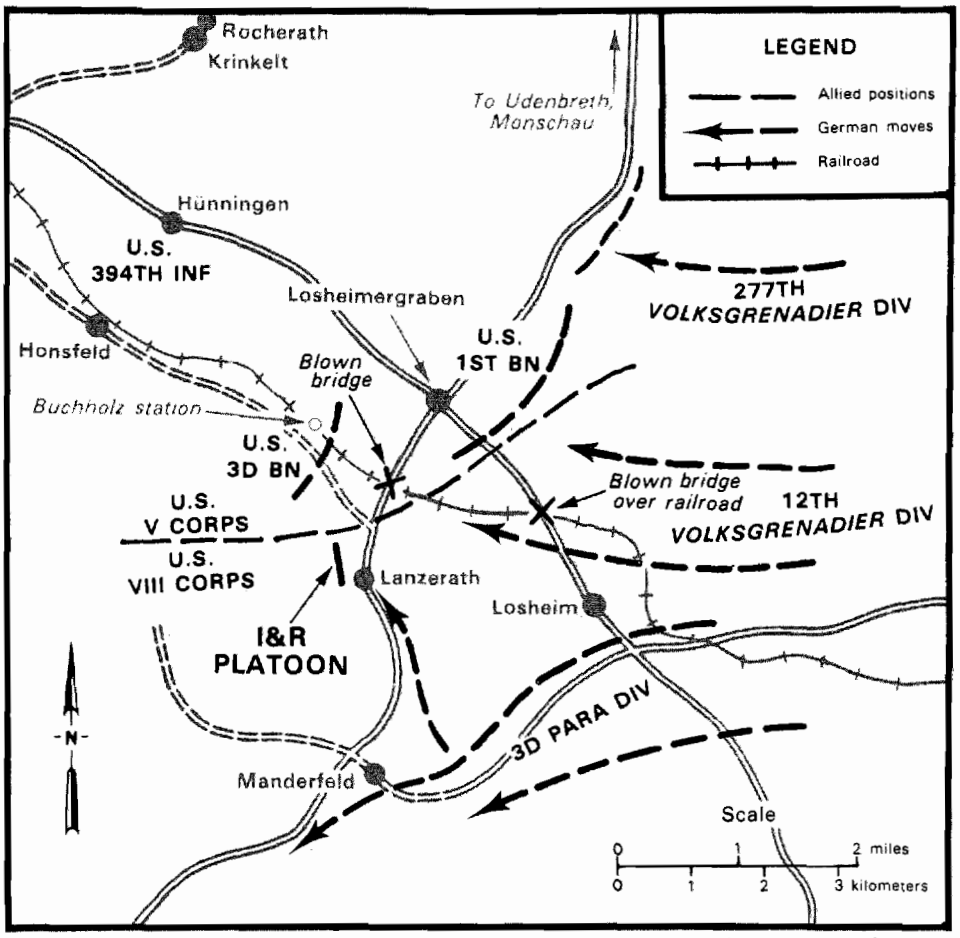
This unexpectedly heavy barrage, assumed by most in the 99th to be merely a diversion against the 2d Division's attack, was followed by German infantry attacks at 0800, approximately one hour after the barrage ceased. This appeared to be the spoiling attack that had been predicted. Considering that intelligence reports had located only two German horse-drawn artillery pieces opposite one of the U.S. battalions, one executive officer was certainly within his rights in saying, "they [the Germans] sure must be working those two horses to death!"

While uncertainty reigned in the 99th Division's command structure because of the severing of wire communications by this barrage, the initial fighting quickly turned into a series of small-unit actions. Significantly, one of these actions involved the I&R Platoon of the 394th Infantry. The tenacious defense by this platoon would have a major impact on the course of the German offensive on the northern part of the front. The following detailed account provides a view of the miracle performed by these few determined men against seemingly insurmountable odds.

The I&R Platoon was located at the edge of a heavily wooded area to the west and north of the village of Lanzerath. To the west of the platoon, approximately 800 to 1,000 yards, was the right flank of the 1st Battalion, 394th Infantry, at Losheimergraben (see map 18). Approximately 400 yards to the right of the platoon along the southern edge of Lanzerath were 4 towed guns of the 820th Tank Destroyer Battalion and reconnaissance troops of the 14th Cavalry Group, which guarded the VIII Corps' boundary.

The tiny village of Lanzerath (ten houses) was situated about 200 to 250 yards to the right front of the platoon. The village was on sloping terrain, with a draw to its east. The location of the I&R Platoon, on high ground, thus gave it a perfect view of the terrain to its left, right, and front. The mission of the platoon, commanded by First Lieutenant Lyle J. Bouck Jr., was to maintain contact with the 14th Cavalry elements and provide a warning to the 394th in case of any unusual activity. To accomplish this mission, Bouck, on 10 December, had chosen to occupy a position that had been previously constructed by a battalion of the 4th Infantry Division and that was approximately one-half mile outside the 99th Division's sector boundary. Although unorthodox, it was well that he dug in across the corps boundary.

Since entering the front line in November, the I&R Platoon had managed to acquire a surplus of unauthorized weapons and ammunition. Instead of just M1 rifles, platoon members had equipped themselves with Browning automatic rifles, large quantities of hand grenades and ammunition, and a light (.30-caliber) machine gun and a



Map 18. The southern flank of the U.S. 99th Infantry Division, 16 December 1944

heavy (.50-caliber) machine gun mounted on a jeep. These weapons gave the I&R Platoon a sustained firepower capability.

Under Bouck's guidance, the platoon's hilltop position was improved to withstand artillery, mortar, and small-arms fire. The foxholes were enlarged so that two men could stand on the ground and their line of vision would be level with the slit openings for their weapons. The sides and tops of the foxholes were covered with four- or five-inch logs, with mud and dirt wedged between the logs as a sealer against the cold. In addition, the two-man positions were sited to provide overlapping fire and were impervious to anything but a direct hit. The machine-gun jeep was placed in a defilade position, allowing it to sweep the field in front of the village. The snow on 13 and 15 December covered these defensive positions, camouflaging them so they blended with the terrain.

In the early morning of 16 December, the platoon's position came under heavy artillery fire as the German offensive's rolling barrage passed to the west. As a result, Bouck's telephone line to the regiment was severed, but by SCR-300 radio, he was ordered to hold his position. Within Lanzerath, the unsupported tank destroyers of the 14th Cavalry pulled out and moved to the rear. The single I&R Platoon, guarding a potentially vital road on a corps boundary, was alone. Soon afterward, Bouck spotted a long column approaching Lanzerath from the east. His calls for artillery fire on the exposed enemy column were not approved because of higher regimental priorities. Consequently, Bouck decided to wait in his undiscovered position until the main body of the German column was within range. Approximately 100 Germans passed the platoon ambush point and marched north toward the crossroads at Losheimergraben. By their uniforms, Bouck recognized the enemy as paratroopers, and as the seemingly endless column halted, he decided to open fire on what appeared to be a command group of officers. Just then, a blonde teenage girl ran out into the road, shouted something in German, and hurried off. As the Americans held their fire to avoid hitting the girl, the Germans dived into a roadside ditch, and a sharp skirmish ensued. Bouck had lost an excellent opportunity for an ambush at a range of 100 yards from covered and concealed positions—ruined by the "friction of war" in the form of an unexpected warning from a child.

When the initial shooting died down, at least a battalion of the German 3d Parachute Division's 9th Regiment regrouped to attack Bouck's position. The tactical inexperience of the German leaders (members of the Luftwaffe) caused them to order unsupported frontal attacks across open ground and up the hill. Their men charged, wave after wave, firing their weapons as they advanced. They made it as far as a barbed-wire fence strung across an open field directly in front of the American foxholes. Bouck's men had zeroed their automatic weapons on this fence and were able to stop the attack just by pulling their triggers.

The disorganized Germans regrouped and attacked again at midday and a third time later in the afternoon. Each time, the Americans' murderous interlocking fire halted them at the fence. The paratroopers did not maneuver or even call for support from mortars or artillery. By late afternoon, with the Americans running out of ammunition and their radio destroyed, a fourth attack, supported by two assault guns, finally overwhelmed the I&R Platoon. Of the eighteen Americans who participated in the defense, two were killed in action, and most of the rest were wounded. In return, they had inflicted an estimated 500 German casualties, many of them killed, and stalled the German attack for nearly a full day, aiding the U.S. 99th Division's defense of its

vulnerable right flank. Although Bouck and his men had no way of knowing it, their refusal to retreat or surrender blocked one of the roads earmarked for the main German drive. Although, for various reasons, it took nearly thirty-seven years for the I&R Platoon to be recognized, the miracle at Lanzerath would finally go down in history as one of the most valorous and pivotal actions of the Battle of the Bulge.

Because of a loss of radio communications, Major General Walter E. Lauer, the 99th Infantry Division's commander, had no way of knowing the fate of Bouck's unit. No one in the 99th knew that the I&R Platoon had protected the south flank of the 394th Infantry against a powerful initial attack that might well have destroyed the regimental position if it had been delivered in the early morning and that the platoon had helped delay the penetration by German tanks of the 1st *SS* Panzer Division for a crucial eighteen hours.

Yet, unfortunately for the 99th, at approximately 0100 on the 17th, one of the youngest regimental commanders in the German Army, a 29-year-old German *Waffen SS* lieutenant colonel, rudely awakened the Americans to the true nature of the enemy attack by leading his panzer regiment of 30 King Tigers and 72 medium tanks (some of which were equipped with the then-revolutionary infrared night-vision system), 80 half-tracks, and approximately 4,000 men in a daring penetration along the now-exposed boundary of the V and VIII Corps. This man, Lieutenant Colonel Joachim Peiper, commanded the 1st *SS* Panzer Regiment, the lead assault element of the 1st *SS* Panzer Division that spearheaded Dietrich's entire Sixth Panzer Army. But on 16 December, Peiper's timetable had been upset by the stiff American resistance along his main route through Losheimergraben and Hunningen and by the horrendous traffic jams of the 3d Parachute and 12th *Volksgrenadier* Divisions as they backed up before destroyed roads and bridges. Peiper finally reached Losheim at 1930, where he was blocked again by another destroyed bridge overpass. Peiper quickly diverted his units south toward Lanzerath in the 3d Parachute Division's sector. Arriving in Lanzerath shortly before midnight (after losing ten vehicles in an unavoidable crossing of an old German minefield), he discovered a much-battered 9th Parachute Regiment. The paratroopers were still recovering from their earlier encounter with and capture of the surviving members of the 394th's I&R Platoon.

Peiper briefly and bitterly reflected that if the 12th *Volksgrenadier* Division or the 3d Parachute Division had punched through the Americans at 0700, as expected, his tanks at that moment might have been astride the Meuse River. But the assault troops had failed, the roads had become clogged, and German engineers were slow in repair-

ing bridges. So, the spearhead of the Sixth Panzer Army was still at Lanzerath and falling dangerously behind its timetable.

Extremely heavy fighting would continue through 21 December, especially at Butgenbach and by the 2d Division in the area of the villages of Rocherath-Krinkelt—where at one point the units were so intermixed that one 2d Division battalion commander had men from sixteen different companies of both divisions fighting under him. Lauer's troops and the men of the 2d Division were so thoroughly entangled that the 99th temporarily ceased to exist as an integral force, and so, on the evening of 18 December, Major General Leonard T. Gerow (V Corps) appointed Major General Walter M. Robertson as temporary commander of the 99th Division with Lauer as his deputy. By the evening of 19 December, the 99th and 2d Divisions had successfully completed their multiple rearward passages through lines to Elsenborn. There, in conjunction with the 1st and 9th Infantry Divisions and massed corps artillery, they ensured the complete failure of the Sixth Panzer Army's mission.

By the end of December, the 99th had lost approximately 1,400 men killed and missing and another 1,600 wounded. Like the 2d Division, it could only defend a regimental frontage on Elsenborn ridge. Companies of 187 men had been reduced to 30 to 60 men, and battalions of 825 men came back to Elsenborn with strengths of only 160 to 200. Because of greatly overextended defensive positions, the 99th Division's center and right flank had received the full initial onslaught of the Sixth Panzer Army. The 99th slowed down the German onslaught on the first day and diverted it on the second day, allowing the 2d Division the time to reorient its defenses and the 1st Infantry Division the opportunity to provide vital reinforcements.

In a postbattle analysis of this brief but violent action, the 99th and its attached units were credited with over 4,000 enemy killed in action and 60 armored vehicles destroyed. They had assisted in the decimation of the 12th *SS* Panzer and 3d Parachute Divisions, as well as the 12th, 277th, and 326th *Volksgrenadier* Divisions. Following an attack by the reconstituted division on 30 January 1945, the 99th continued the war and became the first infantry division in the First Army to reach and cross the Rhine at Remagen. The 99th finished the war with Patton's Third Army on the Austrian border and was inactivated on 27 September 1945.

Thirty-six years later, on 25 October 1981—following a book by John Eisenhower mentioning the exploits of the I&R Platoon at Lanzerath and an expose by columnist Jack Anderson and subsequent congressional and presidential interest—the eighteen men of the I&R Platoon were awarded a Presidential Unit Citation, four Distinguished

Service Crosses, five Silver Stars, and ten Bronze Stars with V devices, thereby becoming the most heavily decorated platoon for a single action in World War II.

The I&R Platoon's action exemplifies the determination of the American soldier and what he can do when properly prepared, motivated, and led. The action at Lanzerath had a much greater impact on Peiper's command than Bouck could have ever imagined (only 800 of Peiper's 5,800 men returned to the German lines), but that in itself is what made the defense by the platoon in Lanzerath a miracle.

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23

Morale

The Destruction of the 28th Infantry Division in the Huertgen Forest, November 1944

Lieutenant Colonel Thomas E. Christianson

The Greek mercenary Xenophon noted the importance of morale in deciding battle when he wrote in the fourth century B.C.: "Neither numbers nor strength bring victory in war; but whichever army goes into battle stronger in soul. Their enemies generally cannot withstand them." Likewise, Napoleon's maxim, "morale makes up three quarters of the game; the balance of manpower accounts only for the remaining quarter," remains an axiom in military leadership training. Perceptive commanders throughout history have recognized that high morale is a prerequisite to victory.

Conversely, low morale contributes to the failure of military operations. Soldiers suffering from low morale lack motivation, are more susceptible to fear and panic, and can become psychiatric casualties. When low morale is widespread and severe within a military organization, defeat is likely. This was the case of the 28th Infantry Division when it faced determined German resistance in the Huertgen Forest in November 1944.

Earlier in 1944, morale among American soldiers had been high as they pushed German defenders from the hedgerows of Normandy to the German border. Sweeping ever eastward, the GIs advanced with confidence, limited only by U.S. logistical efforts. Rumor had it that, with luck, the war would end before Christmas. Men of the 28th Infantry Division were veterans of this success and, in recognition of their courage and combat effectiveness, proudly wore the blazing red keystone that the Germans respectfully called the Bloody Bucket. On 11 September, 28th Division patrols crossed the Our River, and on the 13th, the remainder of the division marched into Germany, the first U.S. unit to enter the German heartland in force. Here, they honed their skills in destroying pillboxes and fortifications along Hitler's famed Westwall. On 1 October, in need of supply and reinforcements, they moved to the rear for rest and recovery. Many of the soldiers went to Paris on leave, while others remained behind to train

replacements for the next breakthrough, which many thought would spell ultimate victory for the Allies.

On 26 October, the rested 28th Division moved forward and replaced the 9th Division in the Huertgen Forest. This dense area of firs and other evergreens has steep ridges with occasional open plateaus and farming hamlets that break up the vast tangle of thick green forest. Throughout this area, the German Todt organization had constructed a system of concrete pillboxes and log and earth bunkers. These positions, with interlocking fields of fire, were augmented with booby-trapped concertina wire and minefields designed to restrict all movement.

The U.S. First Army commander, Lieutenant General Courtney H. Hodges, wanted to eliminate the Huertgen Forest as a threat before resuming a general offensive. Both he and the VII Corps commander, Major General J. Lawton ("Lightning Joe") Collins, were World War I veterans of the Meuse-Argonne campaign. They believed that the Huertgen Forest posed a threat as a concealed assembly and counter-attack position, just as the Argonne had in October 1918. If U.S. forces could break through the forest to the crossroads in the hamlet of Schmidt, however, they would then control the highest ridge and thus facilitate the attack onto the Monschau plain, to the Ruhr, and beyond to the Rhine.

What appeared so simple, however, proved impossible for the soldiers of the 9th Infantry Division, who had been assigned the mission in late September. After a month of desperate fighting, they had gained only 3,000 yards and suffered 4,500 casualties. The Germans had fought with uncommon tenacity, and their morale rose as they frustrated the 9th Division's attacks. Wehrmacht soldiers were now on German soil, fighting for their homeland and families. Success reinforced the Germans' will to fight and hold. The frequently poor weather and the lush forest growth in the Huertgen also provided respite for the German defenders from the constant Allied air attacks that normally accompanied Allied ground action.

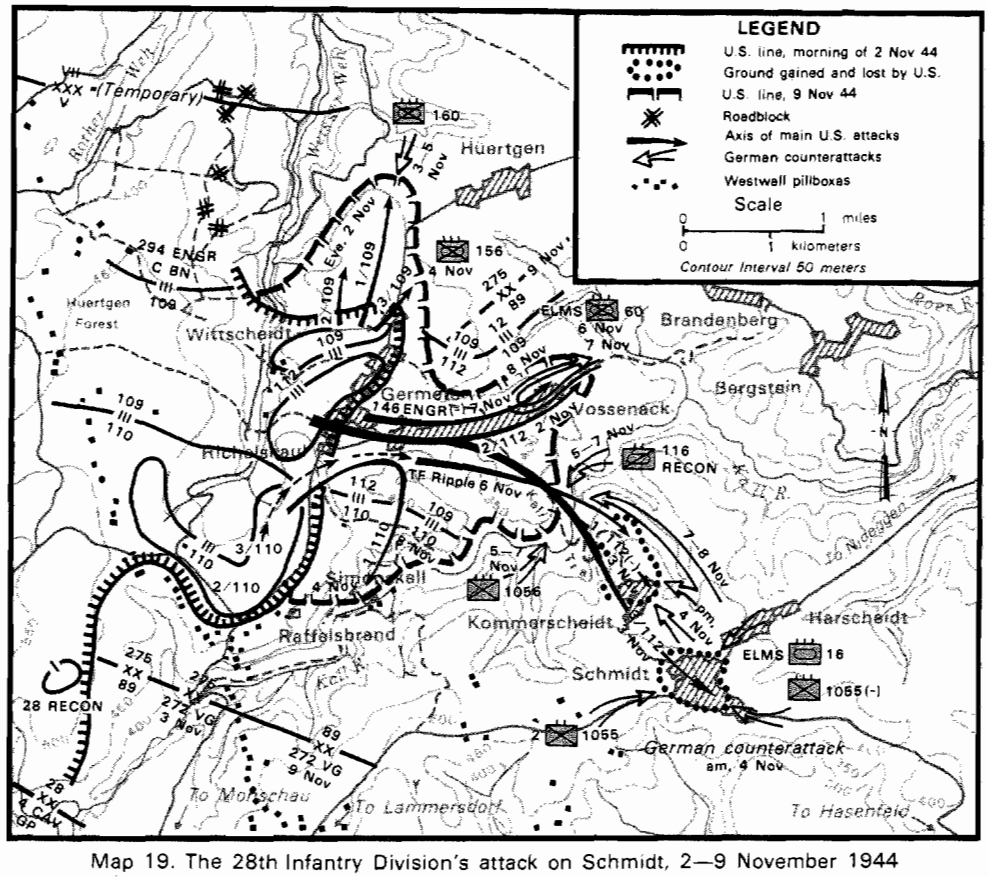
As the soldiers of the 28th prepared to relieve the 9th, they were encouraged by intelligence reports indicating a hard-pressed German defense. One report to the 109th Infantry suggested that "the West Wall was manned with battered remnants of German forces" and that "the Germeter-Huertgen area is thinly held and consists of a series of field fortifications rather than deliberate defenses."

But all the favorable intelligence reports in the world could not blot out the haggard faces of 9th Division soldiers as the GIs from the 28th moved forward in relief. Morale of the men of the 28th plummeted from the moment they entered the tangled fir forest. The forest

bore the scars of war: the record of the bitter contest waged by the 9th was all about in the form of abandoned helmets, gas masks, blood-soaked field jackets, and loose mines. Water-filled shell holes were everywhere. Even worse, the bodies of German and American soldiers, entangled in the sucking troughs of mud and unclaimed by graves registration units, punctuated this grotesque, gloomy landscape. The 28th's veterans knew that staff intelligence experts often underestimated the enemy in order to justify a proposed course of action. Soldiers who had expected an easy victory were shocked by the hard reality that severe fighting lay ahead.

Weather also contributed to unit demoralization. Within days, hundreds of soldiers suffered from the damp cold that matched so well the dark, gloomy forest. In their water-filled foxholes and tents, hundreds developed respiratory diseases—from colds to walking pneumonia. Immersion foot (trench foot) cases swelled the sick call roles. Moreover, the sick, shivering soldiers lacked adequate winter clothing. The division reported a shortage of 9,000 overshoes. (Ironically, the footwear arrived just as the 28th withdrew from the Huertgen fighting.) In this depressing atmosphere, soldiers prepared to attack what they now knew to be a resolute enemy. Weather forecasters offered little consolation. Along with the cold, damp weather, they promised occasional snow and freezing temperatures. The effect on morale was predictable.

While the soldiers in the 28th huddled in their foxholes battling the elements, plans for seizing Schmidt continued. Major General Leonard Gerow, the V Corps commander, whose penchant for micromanagement was well known, specified the missions for each of the three regiments of Major General Norman D. Cota's 28th Division. The 109th Infantry would attack north toward the village of Huertgen and block any counterattack along the division's left flank (see map 19). (In October, German counterattacks along this axis had been successful against the 9th Division.) Gerow directed the 110th Infantry to strike south from Germeter through the forest and pillbox defense line to form a corridor in the woods near Simonskall. This corridor would provide a more secure and trafficable main supply route into Schmidt. Only one regiment, the 112th, was to take Schmidt, the actual objective. The 112th would first assault Vossenack, then move down a dirt trail to the Kall River, cross it, proceed up the ridge to Kommerscheidt, and finally arrive at Schmidt. Gerow had told Cota that the main First Army drive would commence on 5 November. However, when the weather prompted cancellation of this main effort, Hodges, the First Army commander, saw no reason why the 28th Division should not attack as planned on 2 November. The perceived meddling by Gerow, and now the sure knowledge that no other attack would



Map 19. The 28th Infantry Division's attack on Schmidt, 2—9 November 1944

occur along the whole front, certainly affected Cota's morale and that of his staff. Confidence in the operation slipped.

Following an artillery barrage, soldiers of the 109th Infantry stumbled forward on the cold, misty morning of 2 November. Command and control in the dense forest became an immediate problem. To make matters worse, unit maps were inaccurate. Many infantrymen, unsure of their positions, ceased attacking and simply dug in. Portions of one battalion actually fought their way through to the objective overlooking Huertgen. But they had little time to savor their success, as repeated German counterattacks along their flanks hindered their efforts to consolidate gains. German patrols roamed freely in their rear, and continued enemy infiltration prompted the Americans to fall back to their original positions.

Another battalion moving across more open terrain struck an extensive minefield. Their attack ground to a quick halt as soldier after soldier exploded mines. German machine guns and mortars frustrated

the engineers' efforts to clear the minefield. Meanwhile, medics watched helplessly as dead and wounded soldiers lay stranded on the cold, wet field. Many of the wounded would freeze to death before morning.

The dark forest, cold weather, rain, and constant sniping by an unseen enemy caused a massive sense of isolation in the soldiers. Many no longer knew what their mission was. Huddled in wet foxholes that offered no protection from the tree bursts of German artillery, the men of the 109th fought to survive.

This pattern of battle for the 109th continued until 6 November, when members of the 4th Division's 12th Infantry relieved them. Repeated attacks and counterattacks, all at close quarters, exacted a U.S. casualty rate of more than 50 percent. Completely demoralized, the 109th moved back to its assembly area at Germeter through a driving rain that changed to sleet, then snow. The 109th's hopes for prolonged rest were shattered by new orders. The 109th was needed to assist its sister regiments, the 110th and 112th, both tottering perilously on the edge of total destruction.

Farther south, the 110th Infantry's initial attack against the pillbox defense belt near Raffelsbrand and its drive along the Kall River toward Simonskall stopped almost as soon as it started. German machine-gun fire from log bunkers and pillboxes, along with mines and booby-trapped concertina wire, combined to stop the 110th in its tracks. As with the 109th, units became disoriented. Communications in the dense forests and ridges was spotty at best. Soldiers, already weakened by the weather conditions, felt isolated and forgotten. Their sense of mission, other than to survive, evaporated. On 3 November, Cota ordered another assault by the 110th that proved even more costly. One company returned with less than forty-five soldiers, and in some battalions, all company-grade officers were killed or wounded. Cota, determined to succeed, ordered his division's reserve battalion to assist. Prompting Cota's decision was the supposed success of the 112th Infantry, which had taken Schmidt on 3 November. (Cota would later regret his decision.)

On the morning of 2 November, Colonel Carl L. Peterson's 112th Infantry struck east of Germeter. Two battalions were quickly stalled in the woods under circumstances similar to those experienced by the 109th and 110th. The 2d Battalion of the 112th, however, proceeded on schedule and, with the assistance of some attached tanks, controlled the important village of Vossenack by midafternoon. Grateful troops dug in along the northeastern ridge just beyond the village. Peterson decided to withdraw from the woods and then attack the next day southeast from Vossenack down the Kall gorge.

Peterson's attack on 3 November brought almost incredible success. The soldiers passed through Kommerscheidt and controlled the division objective by nightfall. Unbelievably, German soldiers were captured drunk, playing cards, and eating. At least for a short time, the credence of G2 staffers who talked about weak German Army, Navy, and Luftwaffe remnants increased. The cold, weary U.S. troops dug in only superficially and threw some antitank mines out along the enemy's major axis of approach without camouflaging or burying them. They were too tired, and after all, they had accomplished their mission. Cota received congratulations from his superiors and, despite the tremendous casualties suffered by the 109th and 110th, said he felt like "a little Napoleon."

Congratulations for Cota's victory, however, were premature. Coincidentally, at the time of the initial attack on 2 November, Field Marshal Walter Model and his major subordinate commanders were conducting a map exercise near Cologne. News of the U.S. attack brought quick action. Model ordered his generals at the map exercise to engage the Americans in a real operation. He issued orders for portions of the veteran 116th Panzer Division from Huertgen to attack the U.S. forces. When the German Seventh Army commander, General Erich Brandenberger, returned to his unit on 3 November, he learned of the U.S. capture of Schmidt. He decided to withdraw the tanks from Huertgen and reroute them to counterattack in the Schmidt-Kommerscheidt sector. Additionally, elements of the German 89th Division and the 1055th Regiment, scheduled to move out of the area, were told to remain and support the counterattack. Unknown to the unsuspecting Americans, major enemy forces were now poised and ready to attack.

Following a brief artillery barrage, the Germans launched a coordinated armor and infantry attack on the dazed U.S. 112th Infantry. The German tanks seemed impervious to bazooka fire and easily bypassed the shoddy minefield the U.S. troops had prepared the evening before. The Germans seemed to attack from all directions, and the confused GIs called for artillery and air support that always came too late or not at all. U.S. air support could not distinguish friend from foe and therefore was ineffective. The troops—cut off without communications and suffering mounting casualties—felt completely isolated. Rumors spread that orders to withdraw were imminent. Fear quickly led to panic. An infantryman in Kommerscheidt commented on the situation in Schmidt: "The next thing we knew, about four columns of ragged, scattered, disorganized infantrymen streamed back . . . in low morale. We managed to stop some but most streamed back to the rear." One company fled southwest into the woods even deeper into enemy territory. Most were killed, wounded, or captured. Soldiers in Kommerscheidt made frantic attempts to stop the demoralized mob,

and some 200 eventually joined the Kommerscheidt defense. Those who were not killed, wounded, or captured crossed the Kall River, not stopping until they reached Vossenack or Germeter.

Although Cota continued to order the 112th to retake Schmidt (including sending a task force to assist it), the 112th spent the next two days trying to hold Kommerscheidt. The American soldiers fought desperately, supported by a small force of tanks led by First Lieutenant Raymond E. Fleig. Casualties increased, and the weather got worse. Also, Cota had already committed his reserve to the 110th's sector of operations. Ammunition, food, and other provisions were in short supply. Furthermore, the only available main supply route, the Kall trail, was difficult to negotiate. Night after night, the Germans remined it. The trail was littered with broken-down tanks, jeeps, thrown treads, and other military equipment that never made it to Kommerscheidt where it was needed. Engineers sent to improve the trail suffered high casualties from tree-burst artillery and eventually acted more as a security force than an engineer unit. An aid station was set up along the trail where artillery bombardment and German patrols were frequent. Again, troops along the trail felt isolated, out of touch with their mission and chain of command. Foxholes provided no shelter from tree bursts, only a place for water to collect.

The soldiers of the 2d Battalion, 112th Infantry, on the Vossenack ridge were not immune to the looming catastrophe. Following their easy victory of 2 November, the Germans subjected them to three days of incessant artillery attack. Under direct German observation from the Brandenberg-Bergstein ridge, the troops suffered severe casualties. The Germans seemed intent on destroying the U.S. positions one by one. Their nerves shattered, U.S. soldiers cried that they could take it no longer. The battalion commander sat in the church at Vossenack crying pitifully, his adjutant forced to command.

Finally, on the morning of 6 November, the men panicked. The dawn was uncommonly peaceful, but then, as daylight increased, an artillery barrage thundered upon them. Small groups of men fled what they thought was a sure, meaningless death. Panic in the demoralized group was contagious. Abandoning their positions and equipment, others joined in the race to the rear, thinking that someone had ordered a retreat. Most fled all the way to Germeter. Those soldiers remaining finally formed a line at the Vossenack church. Subsequently, the Germans who occupied the former U.S. positions were driven out but only after a tough fight with an engineer task force Cota had formed that night to reestablish control of Vossenack.

Along with the precarious situation at Kommerscheidt and the wild rout of the men at Vossenack, the situation along the lifeline between

U.S. forces, the Kall trail, also deteriorated. Early on the morning of 6 November, the Germans cut the trail and effectively isolated the bedraggled troops at Kommerscheidt. The Germans placed a guard at the U.S. aid station (which held U.S. medical supplies and needed food) and patrolled and remined the trail. Firefights, measured in feet, between American and German soldiers were common. Although a task force led by Lieutenant Colonel Richard W. Ripple of the 707th Tank Battalion managed to punch through to Kommerscheidt on 6 November, the Americans only controlled the trail for hours. Ripple's force was not strong enough to make a difference. Still intent on retaking Schmidt, Cota ordered his assistant division commander, Brigadier General George A. Davis, to lead another task force toward the village. He ordered the 109th Infantry, already battered at Huertgen, to secure the Kall trail. The 109th entered the dark forest only to get lost and end up miles away from the trail, to the rear of the 110th Infantry.

The pocket of encircled Americans at Kommerscheidt continued to withstand repeated artillery fire and infantry probes. They were short of ammunition and food, and their foxholes were filled with water that froze each night. Completely demoralized, isolated, hungry, and wet, they finally broke before a combined armor and infantry assault on 7 November. Dazed men ran wildly to the rear, refusing to take orders. The Germans claimed 260 prisoners. Those weary American defenders who held on waited for inevitable death or capture.

Cota's relentless obsession with taking Schmidt persisted. Peterson, commander of the 112th Infantry, received a message (which Cota later denied sending) to report back to division headquarters. Accompanied by a two-man escort, he tried to circumvent German patrols to get there. Engineers later found him near the trail, wounded twice, his escort dead. When Peterson reported to headquarters, Cota accused him of deserting his men; then Cota fainted.

The Kall trail lost, Cota finally accepted this situation realistically. Perhaps Peterson's trip back to headquarters had not been in vain. On 8 November, the survivors at Kommerscheidt tried their best to organize a breakout. Their trip down the gorge, across the river, and to Vossenack or Germeter was a disaster. One company reported back to Germeter with only 81 men out of its original 193. Scattered groups were picked off or captured by the Germans. Fortunately, the Germans allowed the wounded and litter bearers to use the Kall trail. Cota's message "fight your way out" was late—too late for the men already poking through the forest trying to avoid the ever-present German patrols. For most of the 6,184 casualties (dead, wounded, or captured) of the 28th Division, the battle for Schmidt was over.

The 28th Infantry Division's experience in the Huertgen Forest was not unique. Five other divisions suffered a combined total of 23,000 casualties (killed, wounded, or missing) in the forest, with 8,000 battle exhaustion and disease cases added to that list. Major General James M. Gavin called the tragedy of the Huertgen Forest the "American Passchendaele"—a fitting epitaph for the 28th Division.

Certainly, one of the ingredients in the recipe for the 28th Division's disaster was low morale. The horrific weather conditions, fatigue, constant artillery bombardment, and the almost diabolical nature of the dark forest all contributed to the demoralization of the 28th's infantrymen. The isolation felt by the troops and junior leaders and their sure knowledge that their superiors were ignorant about the true battlefield conditions caused soldiers to experience low morale. Their isolation in the face of constant danger made them fearful and vulnerable to panic. Even battalion commanders became psychiatric casualties. Men believed rumors, gave up, or fled to the rear. Few, then, would disagree with Ardant du Picq's claim that, in the last analysis, success in battle is a matter of morale. The destruction of the 28th Infantry Division bears solemn testimony to du Picq's analysis.

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24

Night Operations

Claiming the Night: Operation Just Cause, 1989—1990

Dr. Thomas M. Huber

The last decade has witnessed more frequent employment of night operations by U.S. armed forces than in the past. With the introduction of sophisticated night-vision devices, fighting after dark has become a standard part of the American way of war. As senior U.S. officers proclaimed during Operation Just Cause, the U.S. invasion of Panama in December 1989, "We own the night."

It was not always this way. George Washington's crossing of the Delaware and raid on Trenton was one of the few night operations conducted by the Continental Army. During the Civil War, what night operations were undertaken by large units usually ended in confusion. In World War I, massed firepower achieved a new relative dominance over maneuver. This altered environment increased the importance of night movement, which helped neutralize the overwhelming effects of the new firepower. At the same time, however, new technology, such as searchlights and illumination shells, mitigated the advantages of darkness, and night operations by Western forces continued to have a limited role.

In World War II, both German and Japanese armed forces resorted to extensive night maneuvers and sometimes attacks (especially by the Japanese) as a means of overcoming superior Allied air power, which could observe and disrupt daylight troop movements deep in Axis rear areas. The Soviets, for their part, developed the most elaborate night operations. To frustrate superior German firepower, especially the superior German air power early in the war, the Soviets adhered to a philosophy of continuous operations. By early 1945, they were employing front-size forces continuously, day and night, to surprise, infiltrate, exploit, and envelop obstinate German positions.

U.S. forces, who usually enjoyed the advantages of superior air power and artillery, generally avoided night operations. Night was still a constraining element, and night operations were restricted to special circumstances and objectives. For example, during the night preceding the 6 June 1944 dawn landings at Normandy, paratroops secured key points in the interior, Navy underwater demolition teams cleared

beaches, Special Operations Executive resistance teams secured bridges and the like, and air and naval forces conducted preparatory bombardments. Still, all of this activity supported the main assault, which was by day.

In the 104th Infantry Division's "Directive for Night Attacks," prepared at the European Theater of Operations headquarters in 1944, night operations were deemed useful mainly for moving troops secretly, crossing open terrain with a minimum of exposure to enemy fire, and achieving surprise in the attack. According to the 104th's directive, night attacks were to be used only for special purposes, such as to surprise an unprepared enemy, exploit a successful daylight attack, gain terrain for further offensive operations, or avoid excessive losses from daylight attack "in seizing important limited objectives."

Communist expertise in night operations in Vietnam should have made a lasting impression on the U.S. military were it not for a concerted effort to purge that war from institutional memory while refocusing on the high-tech battlefield of Europe. Consequently, it was not until the 1980s that the U.S. infantry's nighttime practices were fundamentally transformed. This was, in part, a response to the technological breakthroughs in night-vision devices, especially light-gathering goggles and scopes and thermal-imaging equipment. U.S. superiority in firepower in past conflicts allowed U.S. forces "to own the day"; by the late 1970s and early 1980s, superior night-vision equipment made it possible for U.S. forces to dominate the night.

The new orientation toward the night is captured in Field Circular 90-1 (FC 90-1), *Night Operations*, issued in 1985 by the Combined Arms Combat Developments Activity at Fort Leavenworth. Although FC 90-1 is "aimed primarily at the . . . maneuver battalion task force," it also introduces the idea of continuous operations:

> Increasing mechanization of land combat forces and rapidly developing technology enable effective movement and engagement at night to unprecedented ranges. Since armies now have the potential to fight without let-up, combat operations can continue around the clock at daylight intensities.

FC 90-1 also indicates the likelihood that regional powers around the world, some possibly hostile toward the United States, are likely to emphasize night training and night operations to counter superior U.S. firepower. Therefore, U.S. forces must prepare to engage and operate at night in order to deprive adversaries of an easy advantage. At the same time, the field circular prescribes increased use of the full range of night-vision equipment, goggles, sights, and scopes.

The U.S. Army's acceptance of night action is apparent in its operations conducted in the late 1980s, including Operation Just Cause,

the invasion of Panama in December 1989 to depose the dictator General Manuel Antonio Noriega, restore democratic government, and protect American civilians in the country. The invasion was launched at 0045, in the depth of night. Traditionally, U.S. attacks have been launched at dawn, but U.S. planners, from the beginning of their planning efforts in February 1988, departed from tradition to claim the night.

The planners of Just Cause found the night advantageous for several reasons. For one thing, a dramatic new technology in night devices was available for combat troops and pilots. At the same time, the objectives of the mission indicated that a night operation would be appropriate. The target of the invasion was the Panamanian Defense Forces (PDF) and their leader, Noriega. The Panamanian people were not considered the enemy, so another aim of the operation was to avoid or minimize civilian casualties.

The mission of promptly defeating PDF units scattered in and around the Panama Canal put a premium on surprise. So, too, did the goal of capturing Noriega. A night assault would greatly enhance surprise. Moreover, in the urban areas that would become the battlefield for some of the assaults, fewer civilians would be on the streets in the deep night hours, thus reducing the risks of collateral damage. At Torrijos International Airport, a key D-day objective near Panama City, only one civilian flight was scheduled after midnight. Since there was no way to warn civilian airliners out of harm's way without revealing the intention to invade, choosing an hour when only one flight was scheduled to arrive was the only feasible way to lessen the risk of disaster.

Operation Just Cause called for many missions to be conducted simultaneously. Thus, many night-assault objectives (more than twenty major ones) were pursued at the same time. More than 26,000 U.S. military personnel, 13,000 already in Panama, the rest deployed from the United States, would participate in Just Cause under the operational control of Joint Task Force South, commanded by Lieutenant General Carl Stiner, also commander of the XVIII Airborne Corps. Most of these forces would be engaged in offensive operations at H-hour, originally scheduled for 0100. Given the scope of the plan and the number of units involved, coordination and command and control would have been difficult under daytime conditions. Since the operations would take place at night, airspace management and the delineation of clear boundaries between units had to be given special emphasis. Because several of the operations would involve fighting in built-up, urban areas at night, the specter of massive confusion and the greater possibility for friendly fire incidents existed.

Several maneuver task forces (TFs) were formed to implement these objectives. TF Bayonet, for example, was to secure the Comandancia (headquarters of the PDF), neighboring Fort Amador, the Pacific entrance to the Panama Canal, and various objectives in Panama City. TF Pacific was responsible for the suburban areas along the coast west of Panama City, including the Torrijos International Airport. TF Semper Fi's mission was to seize the Bridge of the Americas over the canal (to prevent PDF reinforcements from the south) and secure Howard Air Force Base, a U.S. facility. TF Atlantic operated in the interior and on the Atlantic side of the isthmus.

U.S. forces achieved virtually all of their daytime objectives by the end of the first day. These actions were not all trouble free, however. To prevent Noriega's escaping Panama City by plane, members of the Navy SEALs (sea-air-land teams) were dispatched by water before daybreak to secure the Paitilla airport where the general's Lear jet was kept. On reaching the airport, the twenty SEALs faced immediate sniper fire, losing four killed and eight wounded. Nonetheless, within hours, they secured the airport and destroyed Noriega's plane. An AC-130 Spectre was to have covered their operation with night sensors and could have either spotted and neutralized the enemy or alerted the SEALs to their location. The SEALs used several radio frequencies to contact the AC-130 but were unsuccessful. It is not clear whether the SEALs' radio had been water-damaged in transit or if the AC-130 could not receive the signal. In any case, the high-tech night-vision equipment on the AC-130 was useless because of a field communications failure.

The U.S. forces also conducted parachute assaults on both the Torrijos International Airport and the nearby Tocumen airport used by the PDF. TF Pacific subelements, TF Red-Tango, and TF Red-Romeo performed these operations expeditiously and were followed in by several battalions of the 82d Airborne Division. On the night of 19 December, an ice storm at Fort Bragg-Pope Air Force Base, North Carolina, delayed the departure of transports carrying the 82d, and since each plane took off only after the time-consuming process of having its wings deiced, the division did not arrive at Torrijos airport either together or on time. Strung out in the skies from the United States to Panama, the planes could not coordinate easily. Consequently, several craft strayed off course and failed to drop the troops and their equipment on the designated landing areas, not readily visible in the predawn hours. Some troops and armored equipment landed in marshes and fifteen-foot-high grass. These misfortunes greatly complicated nighttime command and control problems and the expeditious execution of the mission.

Whether U.S. units moved to their objectives by air or land, once they arrived, they frequently called in aviation assets for preparatory fires and close air support. Assets included AH-1 Cobras, AH-6s, AH-64 Apache attack helicopters, and AC-130 Spectre gunships, all of which could hit distant targets at night. Many of the flight crews and gunners had trained extensively at night, some half of their training flights being in darkness. The AC-130 Spectres, which were especially impressive, boasted 20-mm cannon, 7.62-mm Gatling guns, and 105-mm howitzers and could fire at 6 point or area targets independently with 17,000 rounds per minute. The Spectres had sophisticated thermal and television observation devices that allowed them to pick out individuals or formations of troops on the ground as well as friendly and enemy weapons systems. To assist AC-130 gunners with target identification, friendly troops wore glint tape clearly visible to the plane's sensitive night devices. Having Apaches, Cobras, and Spectres overhead, with their amazing capabilities for night operations, greatly increased the fire support available for surprise attacks at night.

To spot targets, pilots relied heavily on the Aviation Night-Vision Imaging System 6 (ANVIS-6), which was essential to target enemy troops, but not civilians, in the urban terrain where much of the fighting occurred. The night fire-support aspects of the operation would not have been possible without the new night-device technology. Moreover, the ANVIS-6s also aided aerial navigation in an important way. In the early hours of the assault, more than 100 aircraft were in the air at the same time within 20 miles of Howard Air Force Base and operated without incident.

Even the best of systems, however, cannot completely remove the fog of war from the battlefield. In the intense fighting around the Comandancia, an AC-130 was told to engage an enemy target. Unfortunately, in switching from one night-vision device to another, the gunner acquired the wrong target and proceeded to fire on a friendly M113 armored personnel carrier. A second M113 within the same platoon met a similar fate. Although no Americans were killed in this incident, the large number wounded by this friendly fire rendered the platoon virtually ineffective.

U.S. pilots were not the only American personnel to take advantage of night-vision devices. The PVS-7B and other less-advanced types of night-vision goggles (NVGs) were crucial for infantry troops in Just Cause. This was the first U.S. operation where such devices were widely distributed (each squad having several), which made it easier for the troops to move on course and with confidence at night. The NVGs, however, had some drawbacks in combat. One platoon leader in the battle for the Comandancia recalled that the NVGs limited depth per-

ception and blocked peripheral vision. Troops in a heated firefight with tracers, grenades, and hostile soldiers seemingly all around them often removed their NVGs to restore peripheral vision. In addition, the bulky goggles can also interfere with the conventional sighting of rifles, although according to some observers, rifle sights were often not used by troops in the operation anyway. Instead, to remain aware of the whole threat, the troops fired while looking over the sights. Muzzle flashes and tracers revealed the enemy without the goggles. Fires started by shells or carelessness, or any other light source, made the goggles inoperative. Though the goggles exhibited some limitations for use under fire, they remained, nonetheless, a critical element in night fighting.

Despite the normal problems encountered in combat, Just Cause was a successful campaign in which night operations were essential in achieving U.S. objectives with minimal casualties on both sides and within the civilian population. As part of the operation, the United States moved a corps-size force to Panama in the dead of night against more than twenty different targets. Almost all of these forces were inserted by helicopter or air-dropped into the combat zone, and aircraft provided both transport and immediate fire support. Careful planning and training were necessary to ensure success, as has always been true of night operations in the past. The new night-vision devices, employed in the air and on the ground, played a crucial role in this achievement. Operation Just Cause marked a major turning point in night doctrine, inaugurating a new era in which continuous day and night operations have become a reality for U.S. forces.

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25

Planning

Operation Just Cause, December 1989

Dr. Lawrence A. Yates

The defense of the Panama Canal has been a mission of the U.S. military since the waterway's completion in 1914. Under the Carter-Torrijos treaties of 1978, defense of the canal also became the legal rationale for the continued presence of U.S. forces in Panama under the commander in chief, U.S. Southern Command (CINCSO, SOUTHCOM), a unified command activated in 1963 and headquartered at Quarry Heights, Panama, overlooking Panama City. Every two years, SOUTHCOM updates its operations plan (OPLAN) for the defense of the canal. In mid-1987, the existing plan, CINCSO OPLAN 6000-86, postulated either combined operations with the friendly Panamanian Defense Forces (PDF) or, in the event the PDF remained neutral in the face of a threat to the canal, joint U.S. operations. What the plan did not anticipate was a threat to the canal from the Panamanian military itself. Yet from June 1987 on, the prospects of a hostile PDF move against strategic U.S. interests in Panama could not be disregarded.

That month, General Manuel Antonio Noriega, the commander of the PDF, cashiered one of his colonels, who retaliated by accusing the general of drug trafficking, electoral fraud, and murder. In the resulting furor, groups opposed to Noriega's role as the military strongman behind Panama's civilian government organized demonstrations in the streets of the capital. The internal crisis escalated into a Noriega-U.S. confrontation after two federal grand juries in Florida indicted the general on drug-related charges in early February 1988. By that time, relations between SOUTHCOM and the PDF had deteriorated dramatically, as the latter engaged in a campaign of harassing American servicemen and their dependents and intruding onto U.S. installations in Panama. As the crisis worsened, it became prudent for U.S. officials to reexamine OPLAN 6000-86 for the defense of the canal.

The plan was already the subject of the mandatory two-year review. Under regular planning procedures, however, SOUTHCOM would not publish a new OPLAN for several months. This timetable was hardly acceptable as mounting tensions between U.S. forces in Panama and

the PDF raised the possibility of imminent hostilities. After taking several initiatives on his own to modify the existing plan, General Frederick Woerner, CINCSO, received authorization from the chairman of the Joint Chiefs of Staff (JCS), Admiral William Crowe, on 28 February 1988 to undertake crisis action planning. Planners now had less than a week to create an entirely new plan, one that targeted the PDF as a hostile element and primary threat to the security of the canal. SOUTHCOM submitted a first draft of its effort to the JCS on 4 March 1988.

The new plan, code-named Elaborate Maze, was labeled an operations order (OPORD) because many planners believed it would be executed immediately. While drawing heavily from the key facilities list, force structure, and command measures contained in the existing plan, Elaborate Maze put forward a four-phased concept of operations against a hostile PDF. The first three phases involved the defense of American lives and property and the augmentation of U.S. forces stationed in Panama. The fourth phase envisaged offensive operations in which special operations and conventional forces would seize critical sites in the canal area and neutralize the PDF on the scene. The plan called for special operations forces to accomplish their D-day mission in a matter of hours, after which they would turn over their positions to conventional units. On order, conventional forces would also conduct a noncombatant evacuation operation. The JCS approved Elaborate Maze for further refinement and, with Woerner's endorsement, directed that a fifth phase addressing law and order and reconstitution issues be added to the plan. SOUTHCOM complied with a revised OPORD dated 18 March.

From its inception, Elaborate Maze drew upon the assets of each service. Special operations forces would include Navy SEALs (sea-air-land teams) and Army Rangers, Special Forces, and an element from Delta Force. U.S. Army South (USARSO) would provide the majority of the conventional forces from units stationed in Panama, including the 193d Infantry Brigade, an aviation battalion, a field artillery battery, and the Military Police Command. The Air Force would provide air support from its Panama-based inventory of A-7s, helicopters, and AC-130 gunships, while the Military Airlift Command would transport U.S.-based Army units, primarily a brigade from the 7th Infantry Division (Light), into Panama for augmentation or operations. The Navy had a few assets in Panama that could be used for special operations and coastal patrols. In addition, planners discussed the employment of a carrier battle group either for a show of force or to conduct sea interdiction and close air support. The Marine Corps had security forces stationed at the U.S. naval station in Panama, and a Marine rifle company had entered the country in early April as a part of Washing-

ton's security enhancement buildup. If needed, a Marine expeditionary brigade could deploy as well. Planners also raised the prospect of using the Marines for amphibious assaults on targets outside the canal area. Jurisdictional objections raised by the Navy eventually caused crisis planners to drop the carrier group from the emerging order of battle. As a result, any large-scale action against the PDF would still be a joint undertaking, but one dominated by Army forces.

CINCSO's Elaborate Maze provided theater-level guidance. Working out the details of supporting tactical plans fell initially to officers from the U.S. Special Operations Command South, augmented by a planning cell from the United States. On 23 March, Woerner activated the Joint Special Operations Task Force (JSOTF) at Hurlburt Field, Florida, for further special operations planning.

Taking another page from OPLAN 6000-86, Elaborate Maze called for a second joint task force, Joint Task Force (JTF)-Panama, to be responsible for conventional planning and operations. Woerner, however, was reluctant to activate the headquarters because the PDF, which had been read into parts of the old plan, might misread the move as a sign hostilities were imminent and react rashly, thus pushing the crisis closer to war. USARSO set up a small planning cell in which a handful of majors and captains labored throughout March to write a supporting conventional plan for Elaborate Maze. The need for additional planning assets and a headquarters to manage the crisis on a day-to-day basis, however, finally convinced Woerner to activate JTF-Panama on 9 April.

During March and April, as planners continued to refine Elaborate Maze, the National Command Authority deployed two groups of security enhancement troops to Panama to protect U.S. lives and property. While some of these forces appeared on the force structure list of Elaborate Maze, the JCS emphasized that their deployment did not constitute the execution of the plan. Addressing the plan itself, the JCS sought to simplify Elaborate Maze by directing Woerner to break it down into four separate plans: one plan, Elder Statesman (later renamed Post Time), would incorporate the first three phases of Elaborate Maze for troop augmentation and defensive operations; a second plan, Klondike Key, would address the noncombatant evacuation operation; a third plan, Blue Spoon, offensive operations; and the fourth plan, Krystal Ball (later renamed Blind Logic), the law-and-order phase. The new OPORDs would compose the Prayer Book plans; the code name Elaborate Maze would be dropped. On 9 May, the JCS approved the Prayer Book drafts "for further execution planning."

Of the Prayer Book series of plans, Blind Logic (for civil-military operations during and after hostilities with the PDF) was the most

sensitive. To minimize the possibility of leaks, Woerner, under orders from the JCS, did not inform the U.S. Embassy in Panama of the plan, nor did he pass it to any subordinate headquarters. In the short term, compartmentalization made good sense. Should Blue Spoon be executed, however, the lack of coordination between planners of civil-military and combat operations created the potential for enormous confusion.

The Prayer Book series of plans represented Woerner's reasoned approach to the crisis, an approach backed by Crowe in Washington. Working with minimal and, at times, conflicting political guidance from the White House, Woerner and Crowe hoped to avoid overt U.S. military intervention to topple Noriega. Woerner agreed with Washington that Noriega had to go, but he thought that end could be achieved without resorting to hostilities. Should the Prayer Book be executed, however, Woerner planned to use the gradual buildup of U.S. forces in Panama called for under the Post Time OPORD to exert psychological pressure on Noriega's subordinates, who conceivably would divest themselves of the dictator rather than place their institution and personal well-being at risk in a war with the United States. Woerner and Crowe dismissed contemptuously as "looney tunes" and the "Rambo option" the impetuous arguments emanating from the State Department in March and April 1988 to mount a surgical strike that would "snatch" Noriega or, alternatively, a U.S. invasion of the country. Americans in Panama were too vulnerable to PDF retaliation even if these operations succeeded, and U.S. interests in the region, Woerner believed, would not be served by the actual use of U.S. combat power. Also, as Crowe convinced President Ronald Reagan, American boys should not be sent to die for a cause over which few Panamanians were willing to sacrifice their lives.

The crisis eased somewhat in late spring, and talk of any kind of surgical strike or large-scale U.S. military action against Panama waned. The situation was still volatile, however, and staff officers in Panama worried that, should the plans be executed, SOUTHCOM and JTF-Panama would not have the physical, military, and manpower assets to manage a major contingency. Woerner came to share this concern and, in June, had Major General Marc Cisneros, his operations director, discuss with XVIII Airborne Corps representatives the possibility that, in the event of hostilities, the corps might have to assume the role of the joint task force in charge of operations. The issue hung in abeyance until November, when in response to a Woerner initiative, Lieutenant General Thomas Kelly, the J3, JCS, designated the XVIII Airborne Corps the executive agent for planning and, at some undetermined point in the execution of the Prayer Book series of plans, the

JTF to conduct operations against the PDF. Three months later at Fort Bragg, North Carolina, in a coordinating session with planners from JTF-Panama and other organizations, the corps reviewed the Prayer Book plans and assumed its role as executive agent for further planning.

The involvement of the corps created a potential conflict of interest, since the corps commander, Lieutenant General Carl Stiner, and several of his staff shared strong reservations concerning Woerner's concept of a gradual buildup. In keeping with the corps' modus operandi, they preferred a concept of operations that emphasized the rapid use of overwhelming force to achieve the stated objectives. At this point in the crisis, however, their job was to write a supporting plan for Woerner, not to change the existing concept. So as one planner at Fort Bragg later commented, "We saluted the flag" and got on with the work.

The lull in the crisis ended with the Panamanian presidential elections in May 1989 and Noriega's violent response to the defeat of his candidate. President George Bush responded by deploying 1,900 additional U.S. troops to Panama during Operation Nimrod Dancer. These troops would protect American lives and assert U.S. treaty rights in Panama. The president did not say what U.S. planners knew to be true: that the units deployed represented a partial execution of the buildup called for under the Post Time plan. It was also during the election crisis that the XVIII Airborne Corps began rotating planners in and out of Panama on a continuous basis and began to fashion a plan at Fort Bragg more in line with the corps' concept of a contingency operation. The chances that the new concept would win acceptance in Washington and Panama increased when it was announced in midsummer that Woerner would retire in September.

The corps' focus was on revising Blue Spoon, the OPORD for offensive operations. After extensive coordination with their appropriate counterparts in Panama and throughout the United States, corps planners, some of them graduates of the School for Advanced Military Studies at Fort Leavenworth, Kansas, produced JTF-South OPORD 90-1 by mid-September. The plan never received formal approval, as it was soon overtaken by events in Panama. On 30 September 1989, General Maxwell Thurman took command of SOUTHCOM. Three days later, dissident elements of the PDF tried to oust Noriega, but the coup failed. The new CINCSO came under fire for not doing more to assist the coup plotters. Critics also charged that the U.S. military in Panama had no plan for responding to a PDF coup attempt against Noriega, even though months earlier President Bush had publicly encouraged PDF officers to remove their boss. In reality, Blue Spoon fragmentary

orders for in-country U.S. forces to respond to a fast-breaking crisis could have been executed to ensure the coup's success. But the problem, Thurman argued against his critics, was that the coup was ill-led, ill-planned, and poorly executed and would not have improved the position of the United States or the prospects for democracy in Panama had it succeeded.

Two days after the 3 October debacle, Thurman met in Panama with key U.S. military personnel dealing with the crisis. He proclaimed Stiner, the XVIII Airborne Corps commander, his "warfighter" and called for a new plan. The principal planners left for Fort Bragg that night and, over the succeeding days, reworked the draft Blue Spoon OPORD once again. They made adjustments to reflect the new PDF order of battle as it emerged after the coup attempt and to give greater emphasis to such PDF facilities as Rio Hato and Fort Cimarron, from which units loyal to Noriega had come to his rescue. Within days of the meeting at SOUTHCOM, planners finished JTF-South OPORD 90-2. The plan was briefed to the JCS on 3 November and published the same day.

In some respects, the contents of 90-2 revealed the evolutionary course of the planning process. The original target list remained virtually intact, although other targets were added and the priority and means of engaging certain targets changed in the wake of the coup attempt. H-hour still stood as 0100 to take advantage of U.S. capabilities in night operations and to minimize collateral damage. The biggest change in the force structure was to reverse the roles of the 82d Airborne Division and the 7th Infantry Division (Light). The 82d, a corps asset, would become a part of the initial combat force, while elements of the 7th would serve as a follow-on force, instead of vice versa as called for in the original Blue Spoon plan. At Thurman's insistence, JSOTF would not operate independently under him but would come under the operational control of JTF-South (that is, the XVIII Airborne Corps together with JTF-Panama staff assets), a significant enhancement of unity of command.

The new plan, however, also represented a significant change in concept that reflected differences in personality between Woerner and Thurman and in the perspective of Panama-based and U.S.-based commanders and staffs. Instead of Woerner's plan for a gradual buildup of forces designed to compel a "Panamanian solution" to the crisis, the XVIII Airborne Corps and Thurman preferred to employ surprise and overwhelming force to strike critical points in Panama simultaneously in a full-scale U.S. invasion. Noriega and the entire PDF, not just PDF units in the canal area, were to be neutralized. Finally, Thurman indicated that military action in Panama would be conducted

as a campaign, since the government of Panama would have to be unseated and reconstituted. Backed by appendixes, fragmentary orders, and supporting plans, 90-2 called for what was then the biggest U.S. military operation since Vietnam, as 27,000 military personnel from all 4 services stood trained and ready to attack 24 targets simultaneously; provide reinforcements, combat support, and combat service support; and conduct stability operations designed to "restore" democracy to Panama.

Although planners had reviewed the entire Prayer Book series of plans, the emphasis of their labor was clearly on Blue Spoon and combat operations. Post Time, which called for the augmentation of U.S. forces in Panama, had been implemented in part during the 1988 and 1989 troop buildups. Also, Thurman had secretly inserted Sheridan armored vehicles and Apache helicopters into the country in November. Klondike Key, the evacuation plan, lay moribund. During the election crisis the previous May and June, SOUTHCOM had brought many U.S. dependents onto military installations and had returned others to the States. Thousands of American citizens, however, continued to live in Panama proper, especially in and around Panama City. But under the revised concept of operations, a noncombatant evacuation operation to extract them while trying to launch a surprise attack and sustain subsequent military operations seemed fanciful. Blind Logic, the plan to restore law and order in Panama and reconstitute its government, received little attention until early December when SOUTHCOM finally sent the document to JTF-Panama for review. By then, Blind Logic was outdated, especially in the way it complicated command and control relationships by giving a civil-military operations task force, not JFT-South (the XVIII Airborne Corps), the responsibility for executing the plan. Just Cause overtook last-minute efforts by SOUTHCOM and JTF-Panama to update Blind Logic.

Less than twenty-four hours after the PDF killed a U.S. Marine in Panama City, President Bush, on Sunday, 17 December 1989, ordered the execution of Blue Spoon, which was quickly renamed Just Cause. H-hour would be 0100 Wednesday, 20 December. During the interval, commanders and staffs concentrated on going over the plan's execution checklists and making last-minute adjustments. Tuesday night, as H-hour drew near, an ice storm at Pope Air Force Base, North Carolina, from which the 82d was scheduled to deploy, threatened to ground or delay the troop transports. To this and other unforeseen problems, the planners, now operators, adapted, as a steady stream of fragmentary orders emanated from JTF-South headquarters throughout the operation.

As a military operation, Just Cause was highly successful. U.S. combined arms generally worked together effectively to neutralize the

PDF with minimum force and with less collateral damage than anticipated. As U.S. troops began securing their targets on the first day, the JCS issued an order to commence Promote Liberty, the new name for the Blind Logic phase of the operation. Here, the planners' preoccupation with Blue Spoon resulted in serious lapses in command, control, and coordination. Almost to a man, the planners conceded that they could have devoted more time to Blind Logic and its integration into the planning for combat operations. Victory in combat was, to be sure, essential to the success of Promote Liberty. But if Promote Liberty failed to attain its goals, the combat operations and the American and Panamanian lives lost therein would be largely in vain.

The overall success of the U.S. intervention in Panama can be attributed in part to the fact that the United States had predeployed forces in the target country. Those troops stationed in Panama year-round had been augmented by U.S.-based forces well before hostilities began. Success also rested on the nearly two years planners had to develop and refine a concept of operations, force structure, target lists, rules of engagement, joint communications electronic operating instructions, and so forth. There was also time to accommodate major revisions to the plan, such as replacing Woerner's concept of operations with those of the XVIII Airborne Corps and Thurman. One can only speculate on what would have happened had U.S. military operations against Panama commenced in March 1988 after (as in the case of Grenada) only several days of frantic planning. These special conditions should not, however, detract from the primary reason for success: the efforts of those officers who brought their experience and talent to bear in crafting a plan of operations that brought a swift and commendable victory to U.S. combined arms.

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26

Political Factors

The U.S.-Panama Crisis, 1987—1990

Dr. Lawrence A. Yates

The 1990 edition of U.S. Army Field Manual 100-20, *Low Intensity Conflict*, states emphatically that in low-intensity conflict (LIC) operations, "political [considerations] drive military decisions at every level from the strategic to the tactical." Commanders and staff officers, the manual instructs, "must adopt courses of action which legally support those [considerations] even if the courses of action appear to be unorthodox or outside what traditional doctrine had contemplated."

While doctrine emphasizing the dominance of political considerations in low-intensity conflicts is relatively recent, the phenomenon itself has a long history. The U.S. experience in the twentieth century alone accounts for several examples: the Philippine-American War at the turn of the century; the landing of forces at Veracruz during the Mexican Revolution; the Sandino affair in Nicaragua in the 1920s; post-World War II counterinsurgency efforts in Greece, the Philippines, Vietnam, and El Salvador; and contingency operations in Lebanon, the Dominican Republic, Cambodia, Grenada, Libya, and Panama. In each example, political as much as, or more than, military necessity determined missions and objectives for the U.S. forces involved. The last case, Panama, is especially illuminating. Over a period of two years, a crisis in U.S.-Panamanian relations passed through several phases in which the actions of U.S. forces stationed in Panama were driven predominantly by political considerations that required commanders to adopt unorthodox courses of action. Commanders who were already acclimated to the LIC environment best understood the constraints political-military interactions placed on them. Commanders wedded to the tradition of military officers being left alone to make decisions once political leaders have decided to employ armed force to achieve political objectives experienced difficulty, even some mental agony, as they were forced to adapt to a very untraditional situation.

The first phase of the Panama crisis began in the summer of 1987. In June, General Manuel Antonio Noriega, commander of the Panamanian Defense Forces (PDF), fired his erstwhile heir apparent, Colonel Roberto Diaz Herrera, who retaliated by accusing the general of drug

trafficking, election fraud, and murder. The allegations led to a series of demonstrations against Panama's ostensibly democratic government (one run, in fact, by Noriega and his cohorts). The course of the demonstrations ebbed and flowed depending on the amount of violence Noriega sanctioned in controlling or suppressing them. Yet as the new year arrived, demonstrators were still taking to the streets.

Washington's response during this phase was hesitant. The Reagan administration, cognizant of U.S. interests in and around Panama, preferred retaining the status quo, but as the domestic crisis in Panama deepened, Reagan's advisers could not ignore the drug trafficking charges and the demonstrations against Noriega. Neither could Congress. And neither could Elliott Abrams, assistant secretary of state for inter-American affairs, who was looking for a fresh issue following the failure of his Contra policies in Nicaragua. The result of this attentiveness was a series of sanctions designed to show U.S. dissatisfaction with the situation, but not enough to precipitate a rupture in U.S.-Panamanian relations. The sanctions played into Noriega's hands as he tried to rally nationalist support by blaming Washington for his country's instability. By the end of January 1988, relations between Washington and Panama City were severely strained.

No one was more aware of the strain than General Frederick Woerner, the new commander in chief of the U.S. Southern Command (SOUTHCOM). As the crisis unfolded, Woerner asserted that U.S. interests in Panama and throughout Latin American could best be served by avoiding a confrontation with Noriega and the PDF. Woerner detested Noriega but maintained that through the exercise of normal relations with the PDF, U.S. armed forces could exert an exemplary influence, thus persuading their Panamanian counterparts to exert less leverage on the political life of the country. (A Panamanian government free of military influence was, in Woerner's opinion, an unrealistic wish, given the country's history and traditions.)

By early 1988, the politically motivated sanctions emanating from Washington and a Senate initiative to cancel combined U.S.-PDF maneuvers had all but dashed Woerner's hopes for normal relations between the two military organizations, the headquarters of which were located within sight of one another. The Reagan administration had curtailed most official contacts between U.S. officers and the PDF, and friction had replaced cooperation as U.S. servicemen in Panama and their dependents experienced increased harassment, especially from the PDF's police branch. The cordiality that had once characterized normal relations seemed irretrievable.

In February 1988, Noriega's indictment by two federal grand juries in Florida opened the second phase in the crisis. Noriega stepped up

his anti-American rhetoric, engineered the ouster of the Panamanian president (after the president had tried to fire him), and survived a coup attempt in mid-March. He continued to crack down on the opposition, while refusing to relinquish power. Noriega's intransigence and the threat he posed to U.S. interests in Panama compelled Abrams, among others, to recommend military intervention. Woerner and Admiral William Crowe, chairman of the Joint Chiefs of Staff, regarded this extreme proposal—dubbed the "Rambo option"—as unnecessary and unwise. Reagan did prohibit further meetings between Woerner and Noriega, but after Crowe argued that American boys should not be sent into combat for something for which few Panamanians were willing to die, the president rejected military intervention and sanctioned diplomacy in an effort to negotiate Noriega from office. After some promising signals, the negotiations faltered and collapsed in late May. At that point, the White House was on record as wanting Noriega ousted, but no one cared to push the issue. With the presidential campaign approaching, Woerner received word from Washington to avoid any provocations lest Vice President George Bush's chances for election to the presidency be jeopardized. Woerner later described his orders as "based blatantly on partisan politics and no other single consideration." After Bush's election in November, SOUTHCOM was told to contain the crisis prior to the president-elect's inauguration. Once Bush entered the White House, word reached Woerner that U.S. quiescence should be extended through Panama's elections, scheduled for May 1989.

The shifting political signals from Washington had their impact in Panama, as the U.S. military there entered what one colonel labeled "the Twilight Zone." U.S. forces found themselves legally stationed in a country with whose government and military establishment the United States was no longer on friendly terms but with whom a state of hostilities did not exist. On 28 February, Crowe authorized Woerner to draw up contingency plans for hostilities with the PDF, but few senior military leaders in Panama believed Noriega would be so foolish as to provoke full-scale U.S. intervention. The vague guidance Woerner received from Washington as to missions and timetables concerning the plans reinforced the perception that hostilities were not imminent. Crowe, however, did authorize the augmentation of U.S. troops in Panama in order to cope with the rising tide of crime against U.S. personnel and property and the increasing threat to vulnerable U.S. facilities. The units sent in March and April included a Marine rifle company and Marine expeditionary brigade headquarters, aviation assets from the 7th Infantry Division (Light), and several military police battalions with a brigade headquarters. However sanguine U.S. commanders were about the unlikelihood of hostilities, many of the American troops stationed in Panama and others entering the country to enhance security were convinced war was imminent.

But U.S. units in Panama were placed on anything but a war footing. In executing the security-enhancement mission, the U.S. military adopted peacetime rules of engagement (ROE) that placed tight constraints on the use of deadly force. The ROE were most restrictive for troops guarding those U.S. facilities that the PDF began probing in April on an almost nightly basis. When a guard spotted armed intruders on U.S. property, he had to issue a verbal warning before any other defensive action could be taken. Operational constraints prohibited the guard from putting a round of ammunition in the chamber of his weapon until he detected hostile intent on the part of the intruders. There were also strict rules for the employment of weapons systems. A vast combined arms arsenal existed in Panama, and a platoon leader or company commander engaged in a firefight in defense of U.S. property could expect support not just from weapons organic to his unit but from field artillery, combat helicopters, AC-130 gunships, Navy small boats, and a host of other systems. Whether he would get the support he requested depended more on politically motivated decisions than on military necessity.

On 12 April 1988, the Marines at the Arraijan Tank Farm, a fuel depot on the Pacific side of Panama, engaged in a serious firefight with unidentified armed intruders. The Marine company commander charged with securing the tank farm used illumination rounds, fired his company's mortars, and called for Cobra helicopters. Alarmed by the intensity of the fighting, senior U.S. commanders denied the latter request, moved to police the battlefield in such a way as to downplay the incident, and instituted even tighter controls over weapons systems whose employment might cause collateral damage and intensify the crisis. Determined to prevent another tragedy like Beirut, the Marines were furious, charging that the ROE and operational constraints seemed to place security forces at undue risk.

Indeed, for many officers and enlisted men in Panama, it seemed as though the command groups both at SOUTHCOM and at Joint Task Force-Panama, an organization Woerner had activated to manage the crisis on a day-to-day basis, were more concerned with avoiding an incident with the PDF than they were with safeguarding their own troops and their dependents from increasing PDF violence and harassment. It is true that Woerner and several of his subordinate commanders considered war inadvisable. But the Reagan and Bush administrations, for largely political reasons, regarded it as unacceptable. Even if Woerner had desired to retaliate for PDF provocations, he could not have done so, given his instructions to avoid provocations, and still remained in command. So Woerner relied on strict ROE, operational constraints, the discipline of U.S. troops, and Noriega's good sense to keep the situation under control and U.S. troops out of harm's way. In

part, then, political imperatives dictated the passive posture of U.S. troops in Panama into the spring of 1989.

The crisis entered a third phase following the Panamanian election in early May 1989. The violence in the wake of Noriega's annulment of the elections caused President Bush, under Operation Nimrod Dancer, to send 1,900 additional troops to Panama, including a Marine light armored infantry company with LAVs, a battalion with M113s from the 5th Infantry Division (Mechanized), and a brigade headquarters with a battalion from the 7th Infantry Division (Light). As the troops arrived in Panama, Bush declared that the United States would begin to assert its rights under the canal treaties, rights that Noriega and the PDF had been violating with near impunity since the onset of the crisis. Washington's guidance to Woerner was simple but tricky: be tough and assertive—but do not start a war.

Many soldiers who deployed during Nimrod Dancer thought they were getting into a war. Instead, they encountered a situation in which the ubiquitous civilian population was by and large friendly, the PDF began assuming a lower profile, and the assertion of treaty rights entailed not combat operations but shows of force and resolve undertaken in risky but hardly battle conditions. To commanders and units who had trained force on force without constraints in the controlled environment of the National Training Center or the Joint Readiness Training Center, the mission received from Washington via SOUTHCOM appeared unorthodox, bogus, vague, confusing, and, for those who could not readily adapt, frustrating. Compounding this feeling was the attitude of U.S. forces stationed in Panama who, having lived with the crisis for two years, went about their business without the visible sense of urgency the constantly vigilant newcomers brought with them. Commented one newcomer caustically, "It's difficult to lean forward in the foxhole when everybody around you is going to the golf course."

In its first concerted effort to assert its treaty rights, the United States moved armed convoys from one side of the isthmus to the other. But before the first convoys set forth in late May, commanders and staffs had to determine and master the appropriate ROE, rules of confrontation, and operational and legal constraints. Doing so required long hours of brainstorming seemingly countless scenarios, learning the letter of the law under the canal treaties, and then preparing the unit conducting the convoy (a squad or platoon) for all imaginable contingencies. One brigade commander concluded that he had to rely more on his staff judge advocate than his S3 (operations and training officer) in preparing for these movements. As for the squad or platoon leader at the head of the convoy, he had to memorize and be prepared to initiate a list of gradually escalating actions should the PDF interfere

with his convoy. He also had to be sure to document any confrontation and be able to provide visual proof to his superiors and ultimately to Washington that any firefight that occurred was the fault of the PDF and not U.S. troops. In many ways, from Operation Nimrod Dancer on, the crisis took on the aspects of a "camcord war," with each side using videotaping for propaganda and documentation.

The detailed and painstaking planning and consideration that went into the convoy movements also appeared in other military activities, from patrolling to joint training events designed to rehearse the contingency plans. Again, the goal was to be assertive but restrained, with the emphasis on restraint derived from Washington's desire to make its point without resorting to hostilities. After a short time in Panama, an infantry commander concluded to his surprise that he would be delighted to trade some of his riflemen for military police, for whom restraint was routine. The downside in employing restraint was that ROE and operational constraints almost guaranteed that if something did go wrong in a confrontation, an American soldier was almost certain to be the first casualty. Throughout the summer and fall of 1989, U.S. troops in Panama racheted up their activities against the PDF, but despite a series of unintentional close calls, neither side slipped over the line separating confrontation from actual hostilities.

In early October, a small group of PDF officers mounted an abortive coup against Noriega. In its aftermath, the White House, acting on the advice of General Colin Powell, the new chairman of the JCS, and General Maxwell Thurman, the new commander in chief of SOUTHCOM, decided that the political objectives of U.S. policy in Panama could not be achieved solely by ousting Noriega while leaving the PDF intact but required the restoration of a civilian democratic government in the country. After members of the PDF shot and killed a U.S. Marine lieutenant on 16 December, President Bush implemented this policy by force, ordering the invasion of Panama. Political guidance and military missions were now in sync: the United States aimed to neutralize the PDF, bring Noriega to justice, restore law and order to Panama, and help reconstitute the Panamanian government and economy. Still, political considerations influenced to some degree the conduct of combat operations. Because the Panamanian people were not the enemy, discriminate fire, constraints or prohibitions against the employment of certain weapons, and the use of proportional force were emphasized in order to minimize collateral damage and make the task of re-forming the government and economy less onerous. Because of a decision made early in the intervention to use the rank and file of the old PDF as a cadre for a new Panamanian security force, U.S. forces received orders to use deadly force only when necessary, a stricture hardly in keeping

with the U.S. military's traditional emphasis on overwhelming the enemy through firepower.

The day after Operation Just Cause began, Powell authorized the execution of stability operations in Panama. Code-named Promote Liberty, these politically oriented efforts to restore law and order and reconstitute the government of Panama did not take place in a military vacuum but occurred simultaneously with combat operations and became inextricably enmeshed with them. For many combat units, this meant being a warrior one day, operating under one set of ROE, and performing a constabulary function the next, under a radically different set of ROE. In an extreme example, units that had been fighting the PDF one day could find themselves walking combined patrols with their erstwhile enemy the next. Units assigned to Panama City could find themselves working off of different ROE as they moved from one part of the capital to another. For many combat troops, the rapid transformation from warriors to policemen and the need to work from a variety of ROE, depending on time and place, came as a difficult adjustment, necessitated by political considerations, for which few had been adequately trained or prepared.

The overall conduct of the U.S. military throughout all phases of the Panama crisis from 1987 to 1990 was remarkable for its restraint, flexibility, and adaptability. Troops not experienced or adequately trained in political-military operations, particularly at the lower end of the conflict spectrum, learned the lesson of political dominance as, willingly or begrudgingly, they molded their actions to the directives of their superiors, both military and civilian. Doctrine for low-intensity conflict now concedes the primacy of political considerations and the need, at times, to adopt unorthodox measures. A soldier's training and education must reflect these tenets. Military personnel must become proficient in political-military operations if they are to be prepared for real-world actualities where political considerations often determine military actions.

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27

Reconnaissance

Fighting on the Upper Seine River, August 1944

Dr. Samuel J. Lewis

Reconnaissance is an ambiguous word, one with several levels of meaning. It is one facet of intelligence gathering that can be performed, theoretically, without violence or, conversely, with considerable violence, as with a reconnaissance in force. English and several other languages did not have a suitable word for reconnaissance and hence adopted a foreign word. Other languages, such as German and Arabic, already had a suitable word, connoting securing information by force of arms, but as a rule, these words, too, remain ambiguous. The Russian language, on the other hand, fields a plethora of words for various forms of reconnaissance. The word remains firmly ensconced in the lexicon of Western military culture for a valid reason, because eventually, a commander will have to send an armed body to secure reliable information. An illuminating example of reconnaissance that reflects a number of its facets was the combat between the U.S. Third and German First Armies southeast of the upper Seine River in mid-August 1944.

On 13 August 1944, General Omar N. Bradley, commander of the 12th Army Group, directed his forces to halt their advance to close the Falaise pocket. The decision allowed many troops of the defeated German Army Group B to escape over the lower Seine River. That same day, Bradley's subordinate, Lieutenant General George S. Patton Jr., commander of the U.S. Third Army, turned his attention eastward. The following day, Bradley approved Patton's request to seize Dreux, Chartres, and Orléans to take advantage of German confusion and eventually to capture a bridgehead over the Seine at Mantes. The two American generals, at that point, still hoped to destroy the remainder of German Army Group B against the Seine. Patton directed the VIII Corps to continue clearing Brittany and the XII Corps to advance east to Châteaudun, seize and hold Orléans, protect the southern flank of the army, and prepare for further advances. He ordered the XV Corps to advance east to seize and hold a bridgehead over the Eure River at Dreux and dispatched the XX Corps to advance east to capture a bridgehead over the Eure River at Chartres and prepare to advance farther east.

These powerful Allied forces had complete command of the air, the active assistance of the French Resistance, and a wealth of intelligence sources on the enemy, including Ultra intercepts of top-secret German military radio messages. Ultra information was an awkward blessing, however, because commanders had to ensure that the Germans never discovered the security breach. In addition, only several senior officers at army and army group headquarters knew of the Ultra coup, which on occasion left corps commanders and staffs puzzled at the confidence of their superiors. To protect the Ultra source, Bradley and Patton, like their colleagues, used the full spectrum of their intelligence assets. Patton required his reconnaissance forces not only to secure information aggressively but also to protect the intelligence information secured by Ultra, the obtaining of which had to remain secret.

Oberbefehlshaber West (OB West), the German headquarters in France, realized the nature of the crisis following the debacles of Operation Cobra and at Falaise and struggled to cope with what was essentially a hopeless situation. On 8 August, the staff directed that the First Army turn over its sector along the Bay of Biscay coast to the LXIV Reserve Corps and transfer to Fontainebleau, near Paris, where, under Army Group B, it would defend the Paris-Orléans gap. *OB West* instructed the German First Army to construct a defensive front between Alençon and the Loire River to prevent any further U.S. advance toward the upper Seine River. German intelligence reported strong U.S. armored formations massing west of Le Mans, whose reconnaissance units were probing east toward the Paris-Orléans gap. *OB West* warned that the Americans could be expected to force a crossing of the lower Seine west of Paris in an attempt to complete the destruction of Army Group B. Another danger was a possible American advance through the Paris-Orléans gap to the Langres Plateau in an attempt to cut off and destroy the forces of Army Group G. The commander of *OB West* gave specific instructions that the First Army units were not to be deployed piecemeal but should be massed to form a defensive line through Gien-Nemours-Montargis to the Seine River. *OB West* planned to send the First Army two corps headquarters and five infantry and two panzer divisions, but other emergencies subsequently canceled most of these movements.

The commander of the First Army was General Kurt von der Chevallerie, a 52-year-old former branch chief of the German General Staff who had held successive division and corps commands on the Eastern Front. On his arrival in Fontainebleau on 11 August, he faced a formidable challenge: the defense of some sixty miles of flat terrain without any major formations. Two badly battered divisions from Normandy were still west of Paris and not yet in the area. Two weak *SS* replacement brigades were approaching Chalôns-sur-Marne, and the 48th Infantry Division was slowly moving south from the Belgian coast.

Von der Chevallerie had few options. To gain time for his major units to arrive and form a coherent defensive line, he spread his meager forces out across the main roads to hinder the U.S. advance. Although this violated *OB West's* instructions, it was his only chance to gain the time required to bring up other units to defend the upper Seine River. He placed the First Army's assault battalion in Étampes under the command of his adjutant. The 1010th Security Regiment established a security screen in the Malesherbes-Bellegarde area, and two security battalions occupied Chartres. The First Army's specialist staff officers served as garrison commanders in Pithiviers, Châteaudun, and Fontainebleau. Orléans had its own commandant.

Between 10—14 August, U.S. cavalry groups probed the Paris-Orléans gap in preparation for assaults on Orléans and Chartres. The German security screen repulsed these thrusts, but German reconnaissance and intelligence measures were by necessity passive as a result of insufficient combat units and reconnaissance assets. The First Army's reconnaissance company, consisting of twelve obsolete and road-bound French armored cars, patrolled the vicinity of Chartres. German staff officers fluent in French systematically used the French national telephone lines, asking the locals if they had been liberated yet and where the Americans were. Since the First Army was equipped and organized for a static coastal defense, it depended largely on the French telephone system for its own command and control.

The commander of the German 48th Infantry Division, General Karl Casper, arrived with the 48th Fusilier Battalion in Fontainebleau on 15 August. Von der Chevallerie told Casper that the First Army would deploy the 48th Division behind the Seine as it arrived. Meanwhile, he directed Casper to take his battalion with him to assume command in the Chartres sector.

On 15 and 16 August, Patton's forces seized their objectives, rolling forward against scant opposition. The garrison of Orléans retired across the Loire and that of Châteaudun withdrew to Malesherbes. On 18 August, von der Chevallerie directed Casper's provisional command to retire to defend Étampes and Dourdon. The only serious German losses occurred at Chartres, where the U.S. 5th Infantry Division surrounded the 800-man garrison. There was no American pursuit, because on the evening of 15 August, Bradley, fearing a German counterattack, directed Patton to halt.

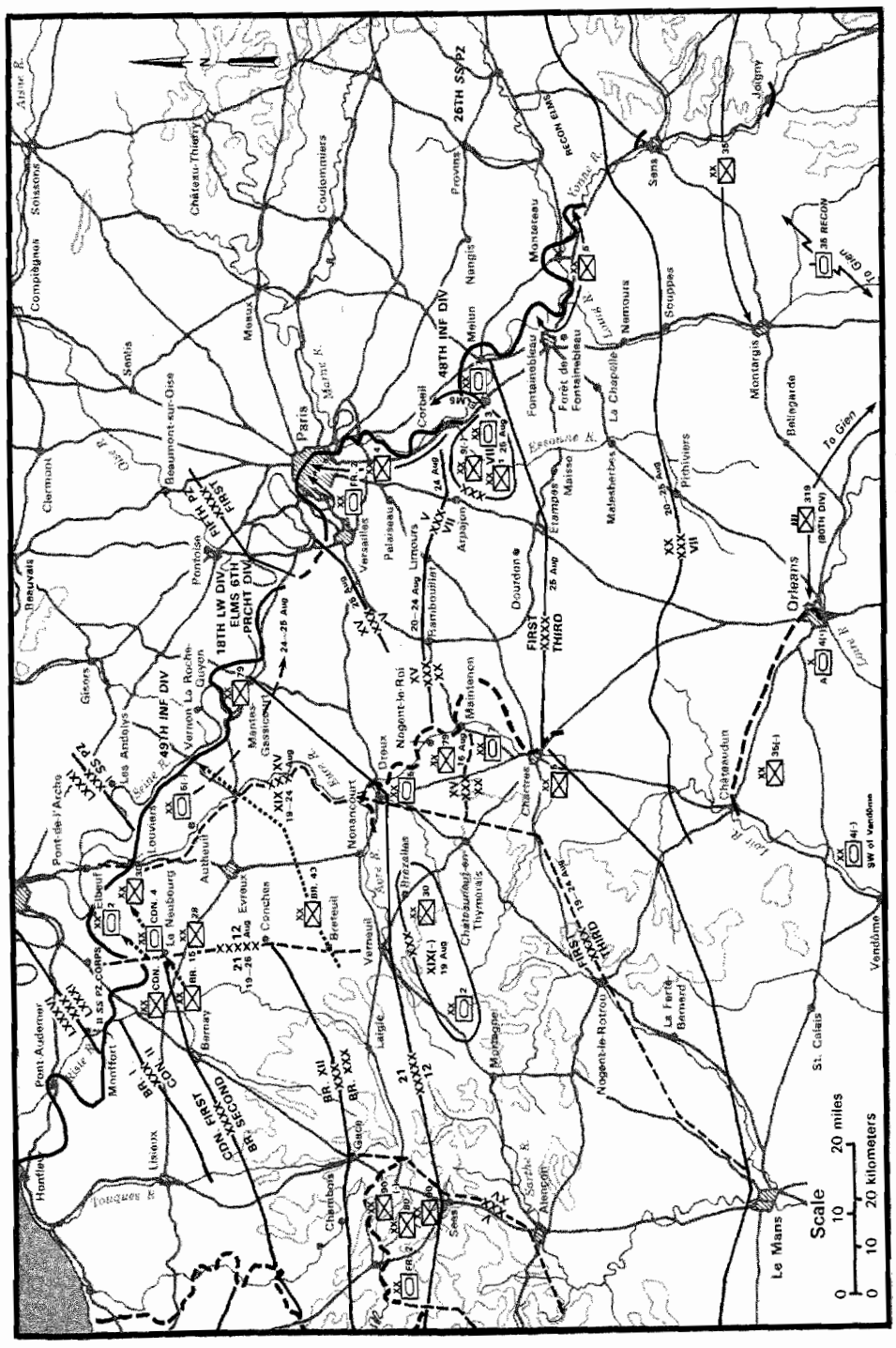
While Patton fumed and complained in his diary, the American inactivity allowed von der Chevallerie to piece together another security screen in front of the Seine and bring up additional forces to defend the river. The First Army's assault battalion held Dourdon, a Luftwaffe flak detachment defended Étampes, and a reinforced company of the

1010th Security Regiment held Malesherbes. Casper directed his own 48th Assault Gun Company to occupy Maisse and his 48th Fusilier Battalion to hold Arpajon. In front of Paris, the remnants of the 352d Infantry Division held Limours. East of Malesherbes, the Loing River bisected the First Army front between Montereau and Melun. Von der Chevallerie named General Edgar Arndt commander of this Loing sector. Arndt commanded only weak security forces to defend a very wide front. He therefore placed his entire force in Montargis behind the Loing River.

Patton was not particularly concerned with this front but, rather, with the remnants of German Army Group B, struggling to escape across the lower Seine. On 19 August, his XV Corps seized the first bridgehead across the Seine at Mantes (see map 20). Over the following days, Bradley and Patton unsuccessfully attempted to drive forces down the west bank of the Seine. The XIX Tactical Air Command, attached to Patton's Third Army, conducted reconnaissance along the Loire River and between Paris and Orléans. The Third Army's indigenous cavalry groups and squadrons (mechanized) scoured the front, identifying von der Chevallerie's second delaying position. The day before, on 18 August, the U.S. 43d Cavalry Squadron had penetrated the German security screen and from the wooded banks gazed down on the winding Seine.

This aggressive reconnaissance was in the finest traditions of the cavalry and air corps, but it was in this instance also grand theater. Generals Bradley and Patton knew from intercepted German radio messages not only the weakness of the German First Army but the impotence of the German forces south of the Loire River. Armed with such knowledge, it was doubly important to use aggressive reconnaissance to protect the Ultra secret.

The final act of the tragicomedy on the upper Seine began on Monday, 21 August, when Patton unleashed his full fury against the inconsequential German forces. On the 19th, Bradley gave Patton permission to breach the upper Seine, and Patton briefed his corps commanders the following day. The U.S. XX Corps advanced to seize bridgeheads over the Seine at Melun and Montereau. The U.S. XII Corps advanced to capture Sens on the Yonne River to protect Patton's flank. Von der Chevallerie's security screen based on strongpoints held up the U.S. Army for two days. On the afternoon of 22 August, von der Chevallerie instructed his garrisons to withdraw behind the Seine. The withdrawal proceeded as planned: after each German combat group crossed the river, German engineers blew up the bridges. The major German failure was allowing the U.S. XII Corps to surround the garrison at Montargis on the Loing River. Given the overall German weakness, however, and the flat terrain, one might ask what other possible



Map 20. The U.S. Third Army drive to the Seine River

course of action von der Chevallerie had. The isolated garrison held out until 23 August, when Arndt, its commander, died in combat and the survivors surrendered.

During the fighting for the Seine, reconnaissance took its more traditional form, with units and commanders moving forward to determine the strength and location of the enemy. On the morning of 23 August 1944, Major General Walton H. Walker, XX Corps commander, made a personal reconnaissance to observe the 7th Armored Division's attempt to cross the Seine at Melun. Unfortunately, his impatience and frustration led him to interfere with the work of his subordinates, directing a pointless and costly assault on a small island. That same day, the XX Corps' other division, the 5th Infantry, pushed through the Forêt de Fontainebleau on a two-regiment front, ably guided around the minefields by members of the French Resistance. As the 11th Infantry emerged from the forest, the soldiers saw that the Seine bridge was still standing. As an American patrol approached it, however, the Germans blew up the bridge, sprinkling the patrol with debris. The lead battalion commander, Lieutenant Colonel Kelly B. Lemmon Jr., remained undeterred and reconnoitered the river bank. He found five small boats and began to establish a bridgehead on the far side.

Patton's army had little difficulty crossing the Seine and breaking the German First Army's line. Instead of the scheduled two corps headquarters and five infantry divisions, von der Chevallerie received only the inexperienced 48th Infantry Division to defend a front of some fifty miles. The German infantry could not even observe much of the front, so German patrols had to reconnoiter the more inaccessible sectors. One such patrol discovered Lemmon's bridgehead near Fontainebleau.

At first appearance, Patton's overwhelming superiority on the ground, in the air, and in intelligence-gathering assets would suggest that such a campaign would merit perhaps only academic interest. The disparity in strength, however, makes the military work performed by the commanders and staffs all the more intriguing—particularly regarding their differing approaches to reconnaissance. We have already observed how the need to protect the Ultra source made it doubly important for the U.S. Army to pretend that it was not reading the German's radio messages by aggressively reconnoitering with its cavalry and air corps units. In hindsight, Patton could have carried out this deception even further by aggressively seizing bridgeheads across the Loire River.

Reconnaissance by the German First Army naturally differed in scope and purpose from that of the much more powerful U.S. Third Army. Von der Chevallerie lacked not only combat units but recon-

naissance assets, air support, and the help of the local population. He consequently decided to disobey orders and erect a security screen with the few units that were available. Von der Chevallerie saw this gamble as the only way to gain time for reinforcements to reach the upper Seine. In German doctrine, security and reconnaissance were interdependent and, true to form, von der Chevallerie's security screen also provided ports from which his own meager reconnaissance forces could sally forth.

The fighting along the upper Seine demonstrated the ambiguity inherent in reconnaissance. It can be performed by one man on foot or by highly organized special organizations. While it is normally conducted to secure information on the enemy's location and strength, it can also be used to mask information identified by other sources. In the instance of the U.S. Third Army's and German First Army's combat on the upper Seine in mid-August 1944, Patton, von der Chevallerie, and their respective staffs demonstrated the broad applications possible in effective reconnaissance.

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28

River Crossings

Crossing the Rapido

Dr. Roger J. Spiller

A deliberate assault across a defended river is an operation most soldiers would prefer not to hazard. Yet it is the most common of tactical operations and is dreaded all the more because river lines offer a capacity for defense that is perhaps equaled only by high ground. A river that in peacetime presents a simple problem for tactical exercises can in combat become a nightmare for those who must fight their way to the other side. Nature alone is often sufficient to foil a river crossing; if a crossing point is expertly defended, the slightest aggravation of terrain becomes a weapon in the enemy's hands. A marshy approach, a sloping bank at an awkward tilt, a turbulent surface or an uneven bottom, even the kinds of vegetation along the banks—all must figure into the calculations that must be made before launching such an operation. By their very nature, river crossings demand the coordinated action of several arms and branches whose roles are critical to tactical success. Yet even when fortune appears to favor one's own side, the potential for disaster in this, as in all other military operations, is never far away.

Italy's Rapido River is an inconsiderable stream that lies athwart the southeastern entrance to the Liri valley. In its widest places, the river is sixty feet in breadth and up to twelve feet deep. Sometimes, its steep banks are as much as ten feet high. About halfway across the valley floor, the Rapido curves to meet the Gari River, which continues the river line westward past the valley entrance and on to the sea. There are no easy fords along the Rapido here.

In January 1944, the Rapido achieved a good deal more importance than its size would suggest, for it formed part of a strong defensive belt called the Gustav Line that the German Army had thrown across the width of the Italian peninsula. After the Allies stormed ashore at Salerno in September 1943, they had pressed a fairly steady, but increasingly difficult, advance until they reached the Gustav Line. There, their advance halted.

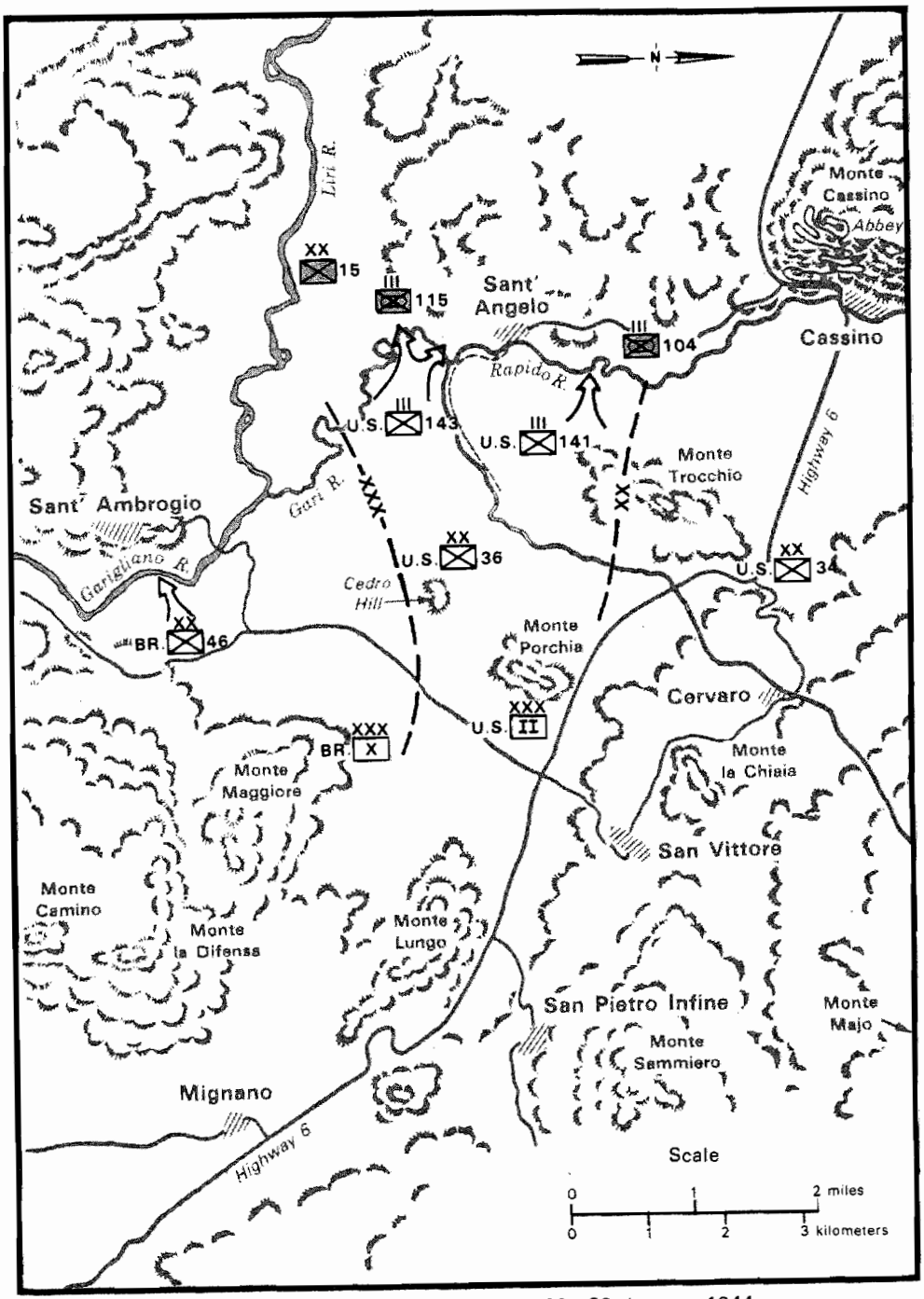
The Allied Combined Chiefs of Staff were anxious to take Rome before launching Operation Overlord, the cross-channel attack on France,

but the terrain, the awful winter weather, and the strong defenses at the Gustav Line had so far foiled their ambitions. The Allied high command was convinced that only another amphibious landing could deliver Rome in time, and the commander of the U.S. Fifth Army, Lieutenant General Mark W. Clark, selected Anzio as the target for his U.S. VI Corps. The hazards of such a landing were compounded by the presence of a strong German reserve in Rome, the I Parachute Corps of two reinforced divisions. Clark decided that the Anzio landings should be coordinated with an attack by Major General Geoffrey Keyes' II Corps against the Gustav Line at the entrance to the Liri valley.

Keyes' attack, Clark hoped, would support the Anzio landings in two ways: first, a substantial attack along the Gustav Line would force Field Marshal Albert Kesselring, the German commander in chief for Italy, to commit his reserve to protect the Liri valley and thereby expose Rome. Second, if Keyes' II Corps could breach the Gustav Line, an armored force could attempt a drive up the Liri valley and eventually join with the VI Corps to take Rome.

The defenses along the valley entrance reflected the Germans' appreciation of its importance. The defense of the valley was assigned to Major General Fridolin von Senger's XIV Panzer Corps, and to hold the river line, Senger had entrusted Brigadier General Eberhard Rodt's formidable 15th *Panzergrenadier* Division, at that moment perhaps the best of all the German divisions in Italy (see map 21). The 15th had made two villages along the river line its defensive anchors: Garigliano to the southwest, opposite the British X Corps, and Sant' Angelo (in Teodice) to the northeast. Sant' Angelo was to be the focal point of the American attack. North of Sant' Angelo stood the 104th *Panzergrenadier* Regiment, while on the opposite side of the village, the reconnaissance battalion of the 115th *Panzergrenadier* Regiment defended. The entire area was thick with concrete bunkers and other emplacements, all shielded by aprons of wire. From their slightly elevated bank, the Germans had devised an intense field of interlocking small-arms fire that covered the immediate riverside. Mining had been prolific on both sides of the river. Some German armor stood rearward in support of these positions. The whole area was subject to observed artillery fire. The commanding heights of Monte Cassino on the right flank towered over the scene. Thus, for the men who were to make the assault, the Germans had created the worst sort of tactical problem: an observed river crossing in the dead of winter against veteran troops who were well placed, well prepared, and well supported.

Major General Fred L. Walker's 36th Infantry Division was chosen to force the crossing. Formerly of the Texas National Guard, the 36th had been under Walker's command since before Pearl Harbor. The



Map 21. The Rapido River crossings, 20—22 January 1944

division had spearheaded the amphibious assault at Salerno and was well regarded by higher commanders, but it had suffered substantial casualties at Salerno and in the fighting that followed. By January 1944, 2 of the 36th's 3 regiments were some 500 men under normal strength, and a large portion of their strength was made up of new replacements. Clark rated the division as 75 percent effective.

When Walker considered the problem before his division, he was not confident the 36th could succeed. The German defenses were daunting, and every advantage of terrain, even on his own side of the river, seemed to lie with the enemy. Moreover, the approaches to the river were dominated by a series of mud flats traversed by primitive roads. Only at Monte Trocchio, about two miles to the rear, was there sufficient cover from artillery to establish the necessary depots and assembly areas.

Walker intended to use two battalions each from his 141st and 143d Infantry regiments for the attack and aimed to cross the river on both sides of the village of Sant' Angelo after a heavy artillery bombardment. Each battalion was to seize a bridgehead secure enough to enable the placement of Bailey bridges. Once the Baileys were laid, an armored force stood ready to pass through the 36th's lines into the valley and up Highway 6 toward Rome. In order to discourage enemy reinforcements, the British 46th Division on the left flank was to make an earlier cross-river assault against the village of Garigliano. Finally, because no one in the high command was under any illusions about the difficulty of this operation, it was decided that the 36th's river crossing would take place at night.

Early in January, II Corps engineer units began surveying and preparing the approaches to the river. They were to clear and mark safe lanes of passage through the marshes and minefields, improve the roads as much as possible, collect the boats and bridging equipment for the crossing, and move all the equipment as close to the crossing sites as possible. That done, the engineers were to guide the infantry through the minefields. At the river's edge, the first assault elements would cross on footbridges jury-rigged from catwalks and inflatable boats or in M-2 assault boats. Then, if all went well, the much heavier Bailey bridges could be put in place.

But throughout the month, there was heavy enemy patrolling on both sides of the river, and rumors flew about the division that the Germans were relaying mines in the cleared lanes. The roads seemed beyond improvement. There were shortages of the proper number and type of boats and bridging equipment. The engineers and infantrymen, who had never before worked together, had difficulty understanding each other's problems. And because of the lack of cover, the assault

over the Rapido would have to begin not at the river line but at Monte Trocchio. The infantrymen would have to manhandle their own boats (the M-2s were 13 feet long, 5 feet at the beam, and weighed over 400 pounds) nearly 2 miles over marshy, mined terrain under enemy observation at night.

Keyes and Walker had been counting on the British X Corps to divert the Germans' attention by attacking on 18 January, two days before the 36th's scheduled crossing. But Lieutenant General Sir Richard L. McCreery, X Corps' commander, had decided to postpone sending his 46th Division across the Gari River for twenty-four hours. This was not enough time, Keyes protested, for the British to secure a bridgehead and draw German defenders from the American sector. Keyes was right. Far from resorting to local reinforcements to repel the British attack, the Germans committed their reserve I Parachute Corps. The British attempt, though stalled for the moment, had at one stroke removed the threat to the Anzio landings and so also one of the reasons for the attack across the Rapido. But the British had not taken pressure off their American flank. When McCreery recommended that the Rapido attack be canceled, Clark disagreed. The 36th's attack, scheduled for the evening of 20 January, would proceed as planned.

At about 1900, the men of the 141st's assault battalion were carrying their boats into the mud flats in front of the river. Their artillery support began thirty minutes later, when more than sixteen battalions of artillery opened fire on enemy positions around Sant' Angelo. Immediate enemy counterfire fell on the assault troops, creating havoc and destroying the tapes laid down to guide them through the minefields. One German volley killed or wounded thirty men from one company alone. Looking for cover, some troops fled into minefields. By 2000, one-quarter of all the boats had been damaged. As the assault battalion neared the river, it suffered from extremely heavy small-arms fire from the opposite side. When the regimental commander, Lieutenant Colonel Aaron A. Wyatt Jr., saw that the crossing was in danger, he called for an extension of artillery cover. Meanwhile, under nearly impossible conditions, about 100 men from the battalion had crossed the river by 2100. There, throughout the night, they held a tenuous grip on a small bridgehead while the engineers and remaining infantrymen attempted to get footbridges across the river. After a night of extremely heavy fighting, still only half of the battalion had come across the Rapido, and most of the bridges that had been put up had already been destroyed by enemy fire. At dawn, Wyatt began to withdraw his men.

South of the village, Colonel William H. Martin's 143d Infantry had managed to put one platoon across the river before enemy artillery found his position. By 2300, one company, much reduced by casualties,

had made its way to the opposing bank, but the volume of enemy fire was so great that it was not until 0500 the next day that the survivors of the battalion had made good a crossing. Once there, the battalion found itself unable to advance and being steadily pushed back toward the river. With the pocket his troops occupied growing ever smaller, Major David M. Frazior, the battalion commander, asked for permission to withdraw but was refused. When later in the morning enemy armor joined the fight, Frazior began to get what men he could to the friendly side of the river.

Farther downstream, another battalion of the 143d attempted to cross. In the confusion of darkness and the chaos of enemy shellfire, the engineer guides became lost. More men strayed into the minefields. By 2300, all the battalion's rubber boats had been destroyed. By morning, still not one soldier from this battalion had crossed the river, and the battalion commander was relieved on the spot by a frustrated Martin. The new battalion commander arrived too late in the day to do much more than order a retirement to the assembly area.

At dawn, with men stranded and sounds of heavy fighting coming from the enemy side of the river, Walker and his regimental commanders were trying to salvage the wreckage of their attack when Keyes called to relay Clark's insistence that the crossing be attempted again, and soon. Walker wanted to resume the attack that evening, but Keyes pressed for an immediate attack that day. By midday on 21 January, regimental commanders Martin and Wyatt began preparing their men for their second cross-river assault in less than twenty-four hours. Few boats and little bridging equipment had survived the previous night's action, and now the resumption of fighting had to await new supplies. Martin moved the remnants of the 143d into action once more. Lack of equipment forced Wyatt to wait until dark to try again.

Martin's 143d launched its second attack at 1600 against the same crossing sites. Aided—and sometimes hindered—by smoke, the 143d got one battalion across in rubber boats by 1900. Meanwhile, the engineers worked for eight hours under fire to construct a footbridge. By 0200 the next morning, Martin had managed to get two additional rifle companies across the river. But after advancing 500 yards, the men of the 143d advanced no more. By dawn, the battalion commander and all his company commanders had been wounded. The intensity of enemy fire had prevented the new battalion commander from reaching the bridgehead for three and one-half hours. Shortly after dawn, he reported that there were only 250 effective soldiers in the bridgehead, that all the boats had been destroyed by shellfire, and that the only footbridge had also been wrecked. The engineers managed to put up two more footbridges during the day, but by midday on 22 January, these were

used to evacuate survivors. At noon, Martin ordered his men to withdraw.

North of Sant' Angelo, Wyatt's 141st delayed its attack until 2100. For five hours, Wyatt's riflemen worked to clear the opposing bank of enemy troops and then set the engineers to work on footbridges. By 0400 on 22 January, Wyatt had pushed one battalion across, and by dawn, a second battalion had joined the fight on the far bank. Wyatt's men advanced about 1,000 yards before being forced to dig in. As the fighting in Martin's sector downstream gradually dissipated, more enemy pressure began to build on Wyatt's position. By 1600, all the commanders in Wyatt's two battalions had been either killed or wounded. Communications with the far side of the river had long been severed. As the evening approached, forty men managed to escape the bridgehead. They thought there was no hope for those who remained behind. Sounds of American weapons could be heard from the far side of the river until 2000. Then they stopped.

Even as Martin was extricating the ruins of his battalions and while Wyatt's battalions were steadily losing their grip on the far bank, the corps commander, Keyes, was considering ordering Walker to commit his reserve regiment. Walker protested, and Keyes relented. It was time to cut the 36th's losses. And, anyway, that day, 22 January, Allied forces landed at Anzio against negligible resistance.

The following day, Walker wrote in his diary, "two regiments of this Division were wrecked on the west bank of the Rapido." The 141st and 143d suffered 1,681 casualties. Losses by supporting units attached for the attack, especially the engineers, drove casualty figures higher still.

Senger, the opposing commander of the XIV Panzer Corps, remembered the affair at the Rapido in quite a different way. "The German Command," he wrote, "paid little attention to this offensive for the simple reason that it caused no particular anxiety." Considering the sacrifices of the troops on the Rapido, Senger's recollection is the most damning "after action" imaginable. The report of Senger's 15th *Panzergrenadier* Division for the Rapido assault simply reads, "prevented enemy troops from crossing S. Angelo."

A cursory examination of the Rapido operation would imply that it is merely another case of how tactical judgment was sacrificed for the sake of strategic objectives. But the strategic objective that the attack at the Rapido was meant to serve had already been achieved by the British X Corps two days earlier when vital German reserves were drawn from their positions around Rome. That the Rapido operation was executed as originally scheduled suggests a certain preoccupation by the U.S. high command with Anzio and a certain indifference

to just how incidental the Rapido operation had become. Nor did the tactical situation demand an attack at the place that had been chosen for the division. Walker had argued that there were more suitable places to penetrate the Gustav Line, places that eventually were used after the failure at the Rapido.

Even under the best circumstances, river crossings are fraught with technical and tactical difficulties. If the crossing is substantial and operationally significant, as the Rapido was, supporting units will inevitably be thrown into cooperation with combat units with whom they have never worked, whose problems and immediate concerns are different, and with whom they are little inclined to be understanding. Too, surveys of frontline troops in World War II showed that, of all the tactical problems they faced, they most dreaded assaults across water obstacles and amphibious landings. Little wonder, then, that the prospect of crossing the Rapido filled the troops with foreboding and that, during the battle, commanders reported their troops less than enthusiastic for the fight.

And if to these difficulties are added the terrain and, indeed, the troops that effectively defended the Rapido, the result becomes understandable. Every irregularity of the terrain seemed to conspire against the efforts of the men of the 36th, who were all the more susceptible because their commanders' doubts about the feasibility of the operation appear to have been translated to the lowest tactical levels. In the histories and documents that tell the story of the Rapido, much has been made of the colliding temperaments of Clark, Keyes, and Walker. But while these men were important figures in this story, they were not the whole story, nor even a large part of it. That part belongs to the men of the 36th, who at the Rapido became hostages to the disastrous fortunes of war.

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29

Surprise

The XIX Panzer Corps' Lightning Advance into France, May 1940

Lieutenant Colonel Edward P. Shanahan

The desire to achieve surprise in military operations is timeless. Considered an essential element of victory from ancient times to the present, the concept of surprise is almost universally enshrined as a principle of war. Because surprise is vital to successful offensive and defensive operations, particularly at the operational and tactical levels of war, it can decisively shift the balance of combat power and affect the outcome of campaigns and battles.

Surprise influences the enemy's sense of self-confidence, mental stability, competence, and will and ability to fight. Surprise induces psychological shock in enemy leaders and soldiers when it targets their command, control, and communications systems—thus delaying their reactions and reducing the effectiveness of their combat and support systems. The enemy need not be taken totally unaware but only become aware too late to react effectively, thereby allowing the attackers to establish favorable battlefield conditions and set the terms of battle. Through the use of surprise, success out of proportion to the effort expended can be gained.

A classic example of surprise is the Germans' penetration of the Ardennes in May 1940. The German plan in 1940 was to win a quick, decisive victory against the French and their Allies by achieving strategic surprise. Beginning its operation at 0535 on Friday, 10 May 1940, the Wehrmacht launched its campaign in the west by invading the Netherlands, Belgium, and Luxembourg. In less than one week, the Wehrmacht had shattered the French Army and, within the next six weeks, had conquered France and its Continental Allies in the west, driving the British Army from the Continent. The key to the Wehrmacht's smashing victory was the successful attack of a major German force through the Ardennes, an operation that achieved almost complete surprise. General Heinz Guderian's XIX Panzer Corps, which spearheaded the advance, moved approximately 220 miles in 11 days, penetrating the "impassable" Ardennes Forest, breaching a fortified river line, and defeating a major slice of the French Army. The decisive

German victory reaffirmed the critical importance of surprise in warfare.

The original German plan to invade France and the Low Countries (*Fall Gelb* or Plan Yellow) was unimaginative and highly conservative. When *Fall Gelb* was compromised in January 1940, French forces were alerted and deployed to the frontiers. Nothing happened, however, and operations on the Western Front lapsed into the routine of the so-called "phoney war." Fortunately for the Germans, the Allies had revealed a preview of their wartime strategy and dispositions. As a result, two changes occurred: the Germans altered their plans, and Hitler tightened the security surrounding the forthcoming operations. The Allies also initiated their own changes, deciding to reinforce the Netherlands and Belgium. General Maurice Gamelin shifted the French Seventh Army from strategic reserve and committed it to the Allied left flank in the Netherlands. Under this revision, known as the Breda Variant to the Dyle Plan, thirty French divisions would wheel into Belgium and the Netherlands at the outset of the German attack. The hinge of this operation was the French Ninth Army, composed of ten weak, mostly reserve, divisions. The other unit facing the so-called impenetrable Ardennes was the French Second Army, deployed with its strongest division on its right, to protect any attempt to outflank the Maginot Line, and its weakest divisions on the left, behind Sedan and adjacent to the Ninth Army.

One of the alternative plans to *Fall Gelb* was drawn up by General Erich von Manstein, the chief of staff of General Gerd von Rundstedt's Army Group A. The Manstein variation shifted the main effort from the northern right wing to the center in the Ardennes region. Manstein's aim was to achieve a decisive victory through a two-phase campaign: phase I was to break through the enemy's front and cut off forces that had advanced into Belgium; phase II was to envelop the remaining enemy forces north of the Somme River. Manstein's plan was predicated on achieving strategic surprise. He believed the French High Command would anticipate a German repetition of the World War I Schlieffen Plan and would react to stop a German drive into Belgium as far to the east as possible. Manstein also argued that the bulk of the Allied forces would be committed prematurely. Therefore, the German main effort should be shifted from Army Group B in the north to Army Group A in the center, and the penetration should occur along the Meuse River between Namur and Sedan.

On 24 February, the *OKH* (Army High Command) issued a modified version of Manstein's plan. Army Group B, with thirty divisions, would strike the Allied left flank as a major supporting attack to confirm the Allies' preconceived belief that they were the main effort. This would draw the Allies into the Low Countries prematurely and divert their

attention from the critical area of the main attack executed by Army Group A. Army Group C, with nineteen divisions on the left wing, would hold the southern flank and demonstrate in front of the Maginot Line defenses to hold those forces, particularly the reserves, in place.

The main effort through the hilly and densely wooded Ardennes would be made between Liège and Luxembourg. This thrust through the "impassable" Ardennes would be entrusted to General Ewald von Kleist's panzer group, comprised of two spearheads—General Heinz Guderian's XIX Panzer Corps with three divisions aimed at Sedan and, on his right, General Georg-Hans Reinhardt's XLI Panzer Corps of two panzer divisions aimed at Montherme. Farther north was General Hermann Hoth's 5th and 7th Panzer Divisions to cover the northern flank of the main attack.

The plan could only work if German armored and motorized units successfully negotiated the difficult Ardennes, with its limited road network, before the Allies identified the main effort. Surprise, speed, and operational security would be critical, as would the success of the deception executed by the right wing. German intelligence on Allied troop dispositions confirmed Manstein's conviction that the Allies had discounted a blow in the Ardennes.

Army Group A's divisions were packed into the Ardennes from the Luxembourg border to the vicinity of Giessen-Marburg, some 200 kilometers. Despite the need for surprise, the assault tanks were moved as far forward as possible prior to the actual attack and put on designated priority roads. Guderian's formations were drawn up in the attack zone with three divisions abreast. The main effort of the XIX Panzer Corps was the 1st Panzer Division in the center, the 2d Panzer Division on the right, and the 10th Panzer Division and the *Grossdeutschland* Infantry Division on the left.

On 9 May 1940, Hitler authorized the initiation of operations. In turn, Kleist's panzer group issued its start order. While the bulk of the XIX Panzer Corps prepared for the assault, special operations troops infiltrated across the border to seize key targets, thus facilitating surprise and the swift movement of major units.

In conformity with their plans, the Allies turned their attention north to what appeared to be the main assault. The II and XI Corps, on the left of Ninth Army, moved from their frontier positions into Belgium between Namur and Givet. To their right, with orders to delay the enemy, two light cavalry divisions, a brigade of Spahis (African) Cavalry, plus a similar force (four and one-half cavalry divisions) from the Second Army, moved across the Meuse to meet Rundstedt's vanguard in the Ardennes. The Belgian forces in the Ardennes consisted

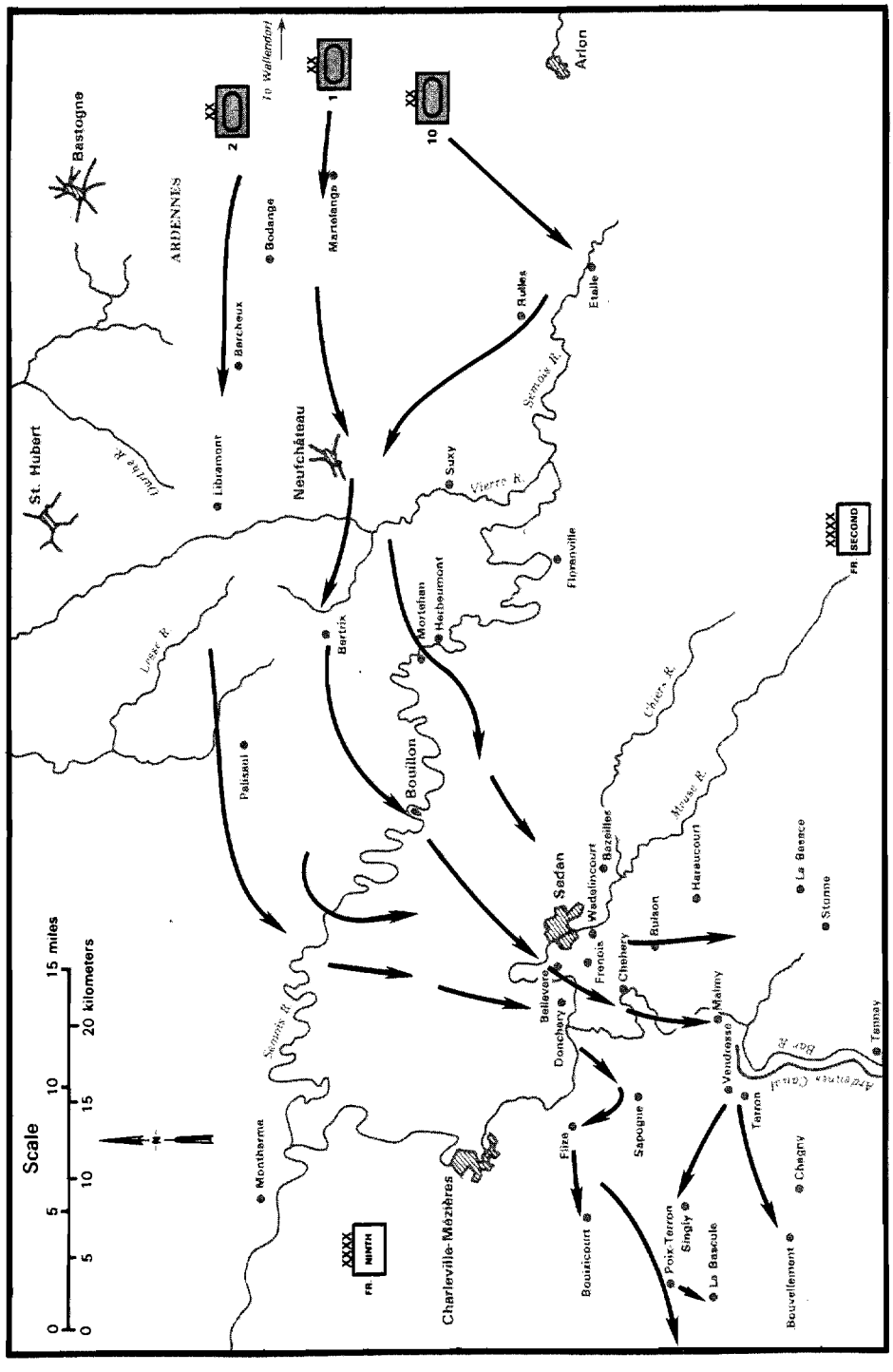
of two light infantry divisions, also with a mission to delay the Germans.

On the morning of 10 May, elements of the XIX Panzer Corps rushed across the Luxembourg border (see map 22). The 1st Panzer Division, in the center of the corps advance, crossed at Wallendorf and headed for Martelange (the Belgian's first line of resistance) and then to the first day's objective at Neufchâteau. The 2d Panzer Division on the northern (right) flank crossed at Vianden and headed for Tintage and then Libramont, while the 10th Panzer Division, on the southern (left) flank, crossed near Echternach and proceeded toward Rosignol. The entire corps advanced in a tight formation, presenting an excellent target, but the Allies had been unable to penetrate the Luftwaffe screen and were taken in by the deception in the north. Meanwhile, the Luftwaffe completely surprised the Allies by attacking 72 key airfields in France, Belgium, and the Netherlands—in some cases to a depth of 300 kilometers. In addition, the German use of special operations forces, unconventional tactics in Luxembourg, and airborne and air assault operations behind Belgian lines assisted the rapid movement of the XIX Corps by securing key facilities and critical passage points along the major routes of advance. By 1000, the 1st Panzer Division's forward detachment reached the Belgian frontier east of Martelange.

At Martelange, a company of Belgian chasseurs blocked the Wehrmacht's advance, the first of several short but costly battles that upset the Germans' timetable. By 1100, however, German lead elements had seized the high ground northeast of the town. By 1200, the advance guard had reached Bodange. Again encountering fierce resistance by Belgian defenders, the Germans attacked using concentrated artillery and four 88-mm antitank guns. By 1800, the defenders, unable to withdraw, surrendered. By evening, the Belgian frontier had been penetrated, but as a result of the battles along the frontier, Guderian's XIX Corps did not accomplish its first day's objectives—a credit to the valiant Belgian soldiers.

During the night of 10—11 May, the 10th Panzer Division, ordered to halt, prepared a hasty defense between Etalle and Arlon against an anticipated French counterattack on the left flank. Guderian vehemently argued against halting his advance, insisting that reaching the Meuse River should remain the XIX Corps' main focus to exploit the advantage of surprise. Guderian prevailed. The orders were canceled and the three panzer divisions continued their advance until around 0430 on 11 May.

The divisions' objective for the 11th was to reach the Meuse River. As the German panzer divisions proceeded, they struck the next defensive line about 1130. Then, the 10th Panzer Division bogged down in the forest around Arlies and Rulles, while the 2d faced stiff resistance at Libramont. Though slowed again by numerous road obstruc-



Map 22. The XIX Panzer Corps' advance, 10—15 May 1940

tions and artillery fire, the 2d penetrated the second Belgian defensive line, and by 2100, its advance guard had pushed out to Paliseul, fifteen kilometers west of Libramont.

Guderian intended for the 1st Panzer Division to break through the second defensive line in the vicinity of Neufchâteau (the first day's objective) and, if possible, advance to Sedan. The 1st, however, did not begin its advance until around noon and then ran into numerous road demolitions and mines. To add to the confusion, the Belgian chasseurs had changed many of the road and town signs. Neufchâteau was not secured until 1500.

At 1700, for the first time since the beginning of the operation, the Germans of 1st Panzer Regiment encountered French troops, the 5th Division *Légère Mécanique*. The French put up stiff resistance but, after an hour, withdrew to Bouillon, a key defile on the Semois River leading to the Meuse at Sedan. In two days, the 1st Panzer Division had advanced 100 kilometers, 5 kilometers short of the French border and 20 kilometers from Sedan.

Additionally, on the 11th, *OKH* intelligence positively identified the Allied main effort along the Dijle River. Orders for operations on 12 May reiterated the importance of reaching the Meuse River and establishing bridgeheads there. On the 12th, the XIX Panzer Corps resumed its attack, again successfully exploiting the element of surprise. By evening, the bulk of the XIX Corps (except for the 2d Panzer Division, which was delayed due to numerous detours) reached the northern bank of the Meuse River in the vicinity of Sedan. By 1900, the French withdrew to the left bank, destroying all bridges as the Germans concentrated their artillery to support the river crossing.

The *OKH*, apprehensive about the river crossing, threatened to slow down the advance, but Kleist objected, emphasizing the importance of speed, timing, and surprise. He ordered Guderian to cross the Meuse at 1600 on the 13th. In response, the XIX Panzer Corps' staff worked on the operations order throughout the night. The final order was issued at 0815 on 13 May, which gave the divisions little time to execute a difficult operation. Fortunately, the plan mirrored an operation they had war-gamed and rehearsed earlier along the Moselle River.

Guderian's attacking forces, the 1st and 10th Panzer Divisions, were to attack on line, with the main effort in the 1st Panzer Division's zone of action (the 2d Panzer Division was still delayed at the Semois River). The *Grossdeutschland* Infantry Regiment, corps artillery, and heavy artillery battalions were to follow the 1st Panzer Division. To encourage his men, Guderian personally visited each of his three divisions that morning prior to their assaults.

In the vicinity of Sedan, the Meuse was fifty-five meters wide and unfordable. Further enhancing the main line of resistance were concrete

bunkers and trenches hedged by belts of barbed wire. In addition, each defensive position had an antitank gun and machine guns spaced at 183-meter intervals. However, the defenses were incomplete and were manned by the French 55th and 71st Infantry Divisions, which were composed of elderly reservists. Nonetheless, Marfee heights, which overlooked Sedan, provided an excellent position for observation by French artillery observers, and the 55th had massed 140 guns in this sector.

By 0800, after working all night, all German elements were in their assault positions in the wood lines along the river. Forward of these positions, they faced several hundred meters of ground open to enemy observation and fire. At 1000, the Luftwaffe commenced a five-hour bombardment of enemy artillery, defensive positions, and assembly areas. At 1500, as the Luftwaffe bombing effort reached its culmination, the German artillery joined in for a massive combined, concentrated preparation. At the same time, infantry and engineers in the initial assault elements used this opportunity to cover their advance to the river's edge.

At 1600, the 1st Panzer Division advanced slowly but gradually increased its momentum. By dark, Lieutenant Colonel Hermann Balck's 1st Infantry Regiment had gained a foothold across the river. By 1730, the lead elements of the 2d and 3d Battalions had reached the Donchery-Sedan rail line one and one-half miles southwest of the crossing site. By 1800, Guderian crossed the river and joined the 1st Infantry Regiment in the advance. Meanwhile, Balck attacked the defensive line south of the Sedan-Bellevere road. By 2030, he had breached the line and opened a gap in the French line between Frenois and Wadelincourt. Balck realized the surprise he had achieved, understood his commander's intent, and kept pressing the attack in order to carry the bridgehead as far forward as possible. At this point, French resistance was still minimal. A bridgehead three miles wide and six miles deep was established by dawn, and the first tanks were ferried across.

The 2d and 10th Panzer Divisions of the XIX Corps fared worse than the 1st Panzer Division, even with their superior firepower. Due to extremely effective defensive fires, the 10th managed to establish only a small foothold by 1930—at a tremendous cost in lives and materiel. The 2d Panzer Division suffered an even worse fate than the 10th. The 2d assaulted across open terrain under devastatingly accurate artillery fires and faced tank-to-bunker firefights. At 2100, Guderian redirected its crossing efforts.

Guderian's XIX Panzer Corps managed to establish the critical bridgeheads south of Sedan and at Gaullier. Without these significant

bridgeheads across the Meuse, the corps would not have been able to maintain its center of gravity.

By midnight, the XIX Panzer Corps had established a salient six kilometers deep and five kilometers wide. Guderian, now concerned about a French counterattack, used the remainder of the night to strengthen his positions. He directed the infantry to dig in and all available panzer and antitank units to continue to move forward. On 14 May, he intended to widen and protect the bridgehead, exploit his success, secure crossing sites along the Ardennes Canal, and conduct a breakout toward Rethel.

The actions of 14 May proved to be highly significant in terms of the campaign, as the XIX Panzer Corps continued to enlarge its bridgehead south toward Stonne and the Ardennes Canal. Throughout the day, the French tried unsuccessfully to cut Guderian's lifeline by attacking the bridgehead, both sides attacking and counterattacking throughout the day. Guderian, staunchly sustained by his vision of how the attack should unfold and the campaign's objectives, continued to push armor and artillery over the Gaullier bridge site—some 300 armored vehicles and a 105-mm battalion. Also during the night, the 2d Panzer Division managed to advance a panzer regiment with infantry across. To keep the bridge operable, corps engineers endured continual air attacks.

The 1st Panzer Division absorbed the brunt of the French counterattacks. In these engagements, the tactical competence and leadership of the well-trained Germans proved to be critical. The Germans' capability to communicate and maneuver quicker than the slower-reacting French allowed them to engage French armor with flank shots—in microcosm, an analogy of the entire campaign in France. By 2400, the XIX Panzer Corps had fought off five and one-half French divisions and secured a great tactical victory—but at the operational level, it would be for naught if Guderian did not continue to exploit the advantage that surprise had given him and maintain the momentum and initiative he held.

Again, Guderian's superiors expressed concern for the security of his rapidly moving corps and feared that it was overextended. Guderian, however, opposed stopping and wanted the uncommitted divisions so he could continue the deep attack. By striking immediately and continuously, he could disrupt any Allied countermoves, and the speed of his advance would ensure XIX Corps' security. Late that night, Kleist withdrew the order to stop Guderian and allowed him to continue the advance. As it turned out, *OKH*'s intelligence assessment reported no significant repositioning by the French reserves that would indicate a counteroffensive.

On 15 May, the XIX Panzer Corps' breakthrough continued to develop successfully, literally splitting two French armies at their weakest points and setting the stage for the pursuit of forces to the English Channel. As a result of this success, the bridgehead was expanded to a depth of twenty-five kilometers by fifty kilometers, and French resistance in the sector dispersed. By nightfall, however, the operation was again halted because *OKH* feared that the XIX Panzer Corps' deep penetration would be cut off by a French counterattack. Once again, Guderian pleaded to continue so he could take advantage of the surprise he had gained. Guderian believed that he should advance as long as he had the freedom to maneuver. If the XIX Panzer Corps slowed down or halted operations, the French would have the critical time they needed to react effectively. With Kleist's support, the *OKH* rescinded the order, and Guderian spurred his weary troops on and effected a linkup between his 1st Panzer Division and the 6th Panzer Division from Reinhardt's XLI Panzer Corps at Montcornet. By establishing this two-corps front, Guderian set the stage for the pursuit phase of the operation.

As the XIX Panzer Corps' soldiers surveyed the open horizon on the morning of 16 May, they realized their achievement. The XIX Corps accomplished in six days what the German Army in World War I had only attempted. As Guderian wrote, "We are in the open now, the men are wide awake and aware that they have achieved a complete victory. . . ."

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30

Teamwork

Seizing the Critical Bridges at Benouville

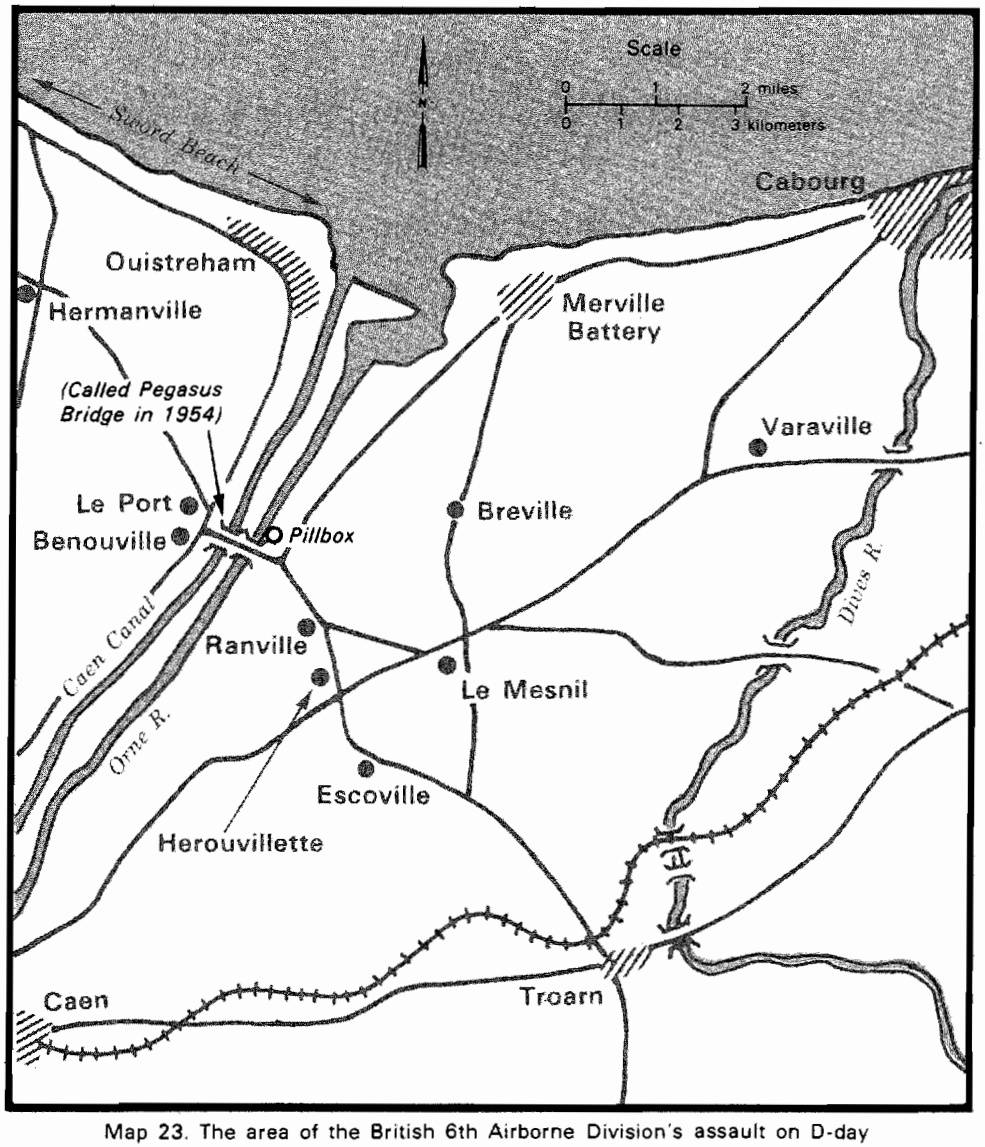
Major(P) Neil V. Lamont

On 6 June 1954, the tenth anniversary of D-day, the bridge over the Caen Canal between the villages of Benouville and Ranville in northwestern France was named Pegasus. This name was inspired by the British 6th Airborne Division's conduct of a critical operation at the bridge site and by the 6th's shoulder patch, which features Bellerophon riding winged Pegasus. This 1944 World War II operation provides an excellent example of teamwork in which British Army, Navy, and Air Force units cooperated to complete an almost impossible task.

By the spring of 1944, the Allies had marshaled 2.5 million men in preparation for an invasion of the Continent. When and where they would attack was uncertain. Since intelligence reports indicated that Hitler intended to push the Allies into the sea, Eisenhower was concerned about his troops' vulnerability once they hit the Normandy beaches: at the outset, they would be outnumbered as much as ten to one. To ensure the success of the invasion, Eisenhower—under strong protest from General George C. Marshall, U.S. Army chief of staff—proposed to drop airborne troops in front of and on the flanks of the invading forces to seize bridges and road junctions. As an integral part of the plan, the British 6th Airborne Division was to drop behind the lines at Sword Beach east of the British landing site. This blocking force was to prevent German panzers from attacking the left flank of the landing force.

The commander of the 6th Division, General Richard ("Windy") Gale, chose to drop his division east of the Orne River, five to seven miles inland (see map 23). His main body would seize and hold the bridges over the Caen Canal and Orne River so tanks, trucks, and other critical equipment could be moved forward. Gale's success in holding these vital bridges would be crucial to the success of Operation Overlord.

Since the Germans realized the importance of the bridges across the Orne, the garrison commander at the bridges had begun wiring them for demolition. But charges had not been placed. Because his



Map 23. The area of the British 6th Airborne Division's assault on D-day

units were twelve miles inland, he believed he would have plenty of time to place the charges after the initial invasion warning. Allied reconnaissance also revealed other preparations for countering an invasion. Among these was the placement of antiglider poles (called Rommel's Asparagus by the Allies) to discourage the Allies from inserting troops in gliders.

D Company, 5th Para Brigade, 6th Airborne Division, was to take the bridge over the canal. The commander of D Company, Major John

Howard, a 31-year-old former sergeant major, had been with this unit for two years and thought of it as his second family. Howard's operations orders, dated 2 May 1944 and signed by Brigadier Nigel Poett, the commander of the 5th Para Brigade read:

> . . . your task is to seize intact the bridges over the River Orne and canal at Benouville and Ranville, and to hold them until relief. . . . The capture of these bridges will be a *coup de main* operation depending largely on surprise, speed and dash for success. Provided the bulk of your force lands safely, you should have little difficulty in overcoming the known opposition on the bridges. Your difficulties will arise in holding off an enemy counterattack on the bridges, until you are relieved.

The remainder of the 6th Airborne Division, which landed between the Orne and the Dives Rivers, was to relieve Howard's company within two hours of his touchdown. Sometime around 0015 on 6 June 1944, the first of Howard's gliders landed on the target. Within twenty-four hours, Howard's operation was a success, due largely to the preparation and teamwork of the units involved.

D Company, like other British airborne units, was composed of highly motivated volunteers. Derived from a variety of backgrounds, they had one thing in common—a reputation for being committed to "duty first." The soldiers in D Company regarded Howard as a stern disciplinarian but a caring leader who trained them hard so they would be prepared for any challenge. Howard's superiors also showed great confidence in him and his ability to instill a sense of cohesion and teamwork in his men.

By July 1942, Howard, left on his own, developed training for his company that included basic light infantry training and marksmanship. He also required his airborne and gliderborne troops to be familiar with a variety of weapons, to include Enfield .303 rifles, Sten carbines, Bren light machine guns, 2- and 3-inch mortars, and Piat antitank guns. Additionally, the troops became proficient in using Gammon bombs—plastic explosives that disabled tanks. To provide realistic training, Howard used live ammunition.

Howard also taught his men first aid, cooking, sanitation, and how to use German weapons. In addition, he ensured that his men were proficient in gas warfare, camouflage (both natural and artificial), and map reading. Howard continuously stressed that D Company, an elite force, should react quickly. What set Howard's unit apart from other companies in the regiment was his demand for physical fitness. His men ran five miles cross-country before breakfast, conducted a full day of training exercises, and, in the evening, participated in sports. Additionally, twice a month, the company held two- or three-day field training exercises.

The officers of D Company trained with the soldiers, which strengthened the bonds of respect, camaraderie, and teamwork within the unit. But in spite of Howard's efforts and good training, boredom was a continuous challenge, as troops tired of the same routine. Because morale was getting low, Howard convinced his colonel to allow him to implement more flexibile, realistic training.

In the spring of 1943, about the same time that regimental commanders had increased emphasis on training, information was leaked that the 6th Airborne Division was to fight in France. Meanwhile, Gale's planners decided that it was imperative to protect the left flank of the seaborne invasion to be conducted by the British 3d Infantry Division at Sword Beach, a vulnerable piece of terrain since the bulk of the German armored forces in the west was in this area. The planners knew that if Rommel committed his armor against Allied forces here and was allowed to cross the Dives and Orne Rivers, he could defeat the entire invasion force.

Gale was convinced that he must protect the left flank at Sword Beach by sending his paratroopers in to blow up the bridges over the Dives River and seize the bridges around Ranville and Benouville intact. Without these bridges, his entire airborne division would be trapped in enemy territory with its back to the English Channel. Gale also knew that the Germans had prepared the bridges for demolition. He therefore decided to insert his paratroopers in gliders at night. Although landing the gliders at night would be difficult, holding the bridges against a German counterattack would pose the main problem.

To prepare for its upcoming mission, D Company began flight training in Waco gliders. Howard's men practiced exiting the gliders quickly so as not to be trapped in them on landing. The flight training was tough, and the men suffered continuously from air sickness. Howard kept his men from becoming bored by physically exhausting them. He convinced his men that this rigorous training would condition them to make quick combat decisions, even while exhausted. Because the paratroopers would usually be fighting in darkness, Howard emphasized night training.

In early April, Gale briefed the plan to all subordinate commanders, and a three-day exercise was planned to test it. D Company performed superbly, justifying its intense training. After D Company's creditable performance, the regimental commander shared the secret invasion plan with Howard. D Company would be the spearhead for the division in this operation, a reward for all its hard work and training. The regimental commander also informed the proud Howard that his unit would be involved in a further training exercise. At the same time, Howard was given two extra platoons to support his company and thirty addi-

tional sappers from the Royal Engineers (who were also paratroopers).

This new exercise, code-named Mush, was brilliantly planned and executed. Even though the units experienced problems, all commanders believed the coup de main would work, provided the new Horsa gliders landed in the right place. To prepare for the mission, the Glider Pilot Regiment worked day and night. During Operation Skylark, a demonstration conducted for Gale, pilots landed the Horsas on a small triangle from an altitude of 6,000 feet. To strengthen team spirit, the pilots whose airplanes would pull the Horsas were introduced to their glider crews—something that had never been done before. To further enhance camaraderie, the glider pilots were assigned the same tug crews for each training flight. In addition, the living quarters of glider and tug crews were placed near each other so the men would become better acquainted. Training flights were made intentionally difficult. Nonetheless, by early May, the crews were flying by moonlight and casting off seven miles from the target at 6,000 feet and landing their gliders close to their objectives. They landed in all types of weather, made difficult flying and landing maneuvers, and perfected their timing. By the end of their forty-third training flight (more than half of which had been conducted at night), all crews were well prepared.

On 2 May, Howard received excellent information on the operational area emanating from British intelligence, Royal Air Force reconnaissance, local resistance people, and French collaborators. He received the most up-to-date intelligence available, passed on to him in the most hospitable and professional manner. British intelligence personnel, for example, built him a twelve-foot-square model of the operations area that had every building, bush, tree, fence, or ditch represented, and they updated it daily to ensure accuracy. Gale, who probably sensed Howard's misgivings in seizing a bridge wired for demolition, reassured him that missions can succeed despite the overwhelming odds against them.

Howard was to seize the bridges quickly and then move swiftly to establish defensive positions while awaiting relief. To maintain the secrecy of the operation, Howard was to conduct his training without revealing the details of the operation. To do this, he laid out a simulation of the real battlefield on a large plain, depicting with tape a river and a canal with two bridges over them at the exact distances of the real targets. His platoons repeatedly practiced capturing the simulated bridges, sometimes only one platoon participating and at other times all six. By having the gliders land between the bridges, rather than outside them, Howard minimized the distance his troops would have to travel on foot to attack the target and maximized mutual support

between platoons. During this training, Howard's men practiced every possible scenario to better prepare them for the operation.

Poett, the 5th Para Brigade commander, told Howard in early May that anything he required to support his training was available. Howard took him at his word and requested a unit to act as "German opposition" as D Company simulated an attack on the bridges. This "German" unit would wear German uniforms, carry German weapons, use German tactics, and even speak German. But in spite of this intense, realistic training, the men still became bored. Finally, around the end of May, Howard called his men together and said:

> Look, we are training for a special purpose. . . . You'll find that a lot of the training we are doing, this capturing of things like bridges, is connected with that special purpose. If any of you mention the word "bridges" outside our training hours and I get to know about it, you'll be for the high jump and your feet won't touch before you land in the Glasshouse and get RTU [returned to unit].

After consulting with his other officers and drawing on lessons learned from the intense training, Howard finalized his operations plan. He decided that the key to the operation's success was the quick destruction of the German pillbox near the bridge. Howard wanted to destroy the pillbox, while at the same time getting a platoon across the bridge. The pillbox, in addition to being a center of firepower, also contained the detonator that would blow up the bridge. Howard ordered three men from the number one glider to take out the pillbox and the remainder of the platoon to cross the canal bridge to take possession of the far bank.

The men from the number two glider were to clear the inner defenses, trenches, machine-gun nests, and antitank gun pits along the eastern bank of the canal. Members from the number three glider were to reinforce the men from the number one glider on the far side of the bridge. Gliders four, five, and six had identical missions to the first three, but their objective was the river bridge. Each glider had five sappers, and they would move to the bridges immediately, then inch their way, hand over hand, across the beams underlying the bridge, cutting fuses and disposing of explosives as they went. As the operation proceeded, Howard intended to take two platoons from the river bridge and use them as fighting patrols or as a reserve force to protect against a German counterattack until the Allied reinforcements arrived.

Howard's superiors approved his plan, and his troops continued to practice their missions until D-day. To provide further realistic training, a British movie company and the Air Ministry produced a film from thousands of photographs that depicted what the pilots would actually see as they passed over the area of operations.

Finally, D-day arrived. The operation generally went just as planned. Air Vice Marshal Trafford Leigh-Mallory, commander of the Allied air forces on D-day, described the operation as the "greatest feat of flying of World War II." Surprise was achieved as the number one glider crash-landed precisely on target in the wire at the base of the canal bridge. Although the men were temporarily knocked out from the impact of the crash, they soon regained consciousness, exited the glider, and continued their missions. The second glider came in, also on target, just a few feet from the first glider. The platoon gathered at its preassigned assembly point and moved forward to complete its assigned tasks. Number three glider's landing was less smooth, with the crash trapping six men in the glider and throwing one man into a nearby pond, where he drowned. Nevertheless, the remaining troops carried on with their mission. At about 0020, the first of the paratroopers landed and, although disoriented, began to link up with Howard and his men. By 0026, both bridges had been captured, and the mission shifted from the offense to defense.

D Company's success in the operation was the result of teamwork instilled by rigorous and continuous training. The close cooperation of the men in Howard's company led to an outstanding operational achievement. The countless hours Howard's men spent in preparing for the operation culminated in a splendidly executed operation. While a number of factors contributed to D Company's success—surprise, a brilliant plan, and insightful leadership—in the end, the exemplary teamwork of a dedicated group of soldiers and airmen accomplished a mission many might have doubted was attainable.

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31

Tenacity

The 43d Infantry Division's Determined Attack on the Ipo Dam, 1945

Major George J. Mordica II

Dogged determination, courage, and persistence by men on the battlefield can create the tenacity that leads to victory. In the battle at Ipo Dam in the Luzon campaign in the Philippines during World War II, U.S. soldiers exhibited a tenaciousness that led to a crushing Japanese defeat. The adversity the 43d Infantry Division faced in carrying out its mission at the dam could have easily brought about failure. Yet due to decisive leadership and innovation at every level of command—and, yes, tenacity—the 43d succeeded. Its actions resulted in the destruction of a potent defensive force and the seizure and safeguard of a major water supply for metropolitan Manila.

The situation confronting the U.S. Sixth Army after its capture of Manila on 28 February 1945 was threatening. While the Sixth Army's mission after the fall of Manila was to clear southern Luzon of all Japanese forces, a more immediate menace faced it in the vicinity of Manila itself. The Japanese forces near the city, while small in comparison to the continuing buildup of U.S. forces, still threatened the city proper with possible attack. In addition, the Japanese were determined to hold the key terrain and supply routes in the Manila vicinity and to control the irrigation and water systems necessary to the city's survival.

In response to this threat, the U.S. XI Corps joined the XIV Corps in the Marikina valley area in an effort to destroy all enemy forces endangering the city. Unfortunately, poor intelligence led the Sixth Army headquarters to believe that the Wawa Dam on the Marikina River, fifteen miles northeast of Manila, was an integral part of the city's metropolitan water supply and thus in peril. In reality, the Wawa Dam had been abandoned as Manila's water source when the Ipo Dam and Novaliches Reservoir were completed in 1938. In 1945, water from the Wawa Dam was used only to irrigate the Marikina valley.

The Ipo Dam, located twenty-five miles northeast of Manila on the

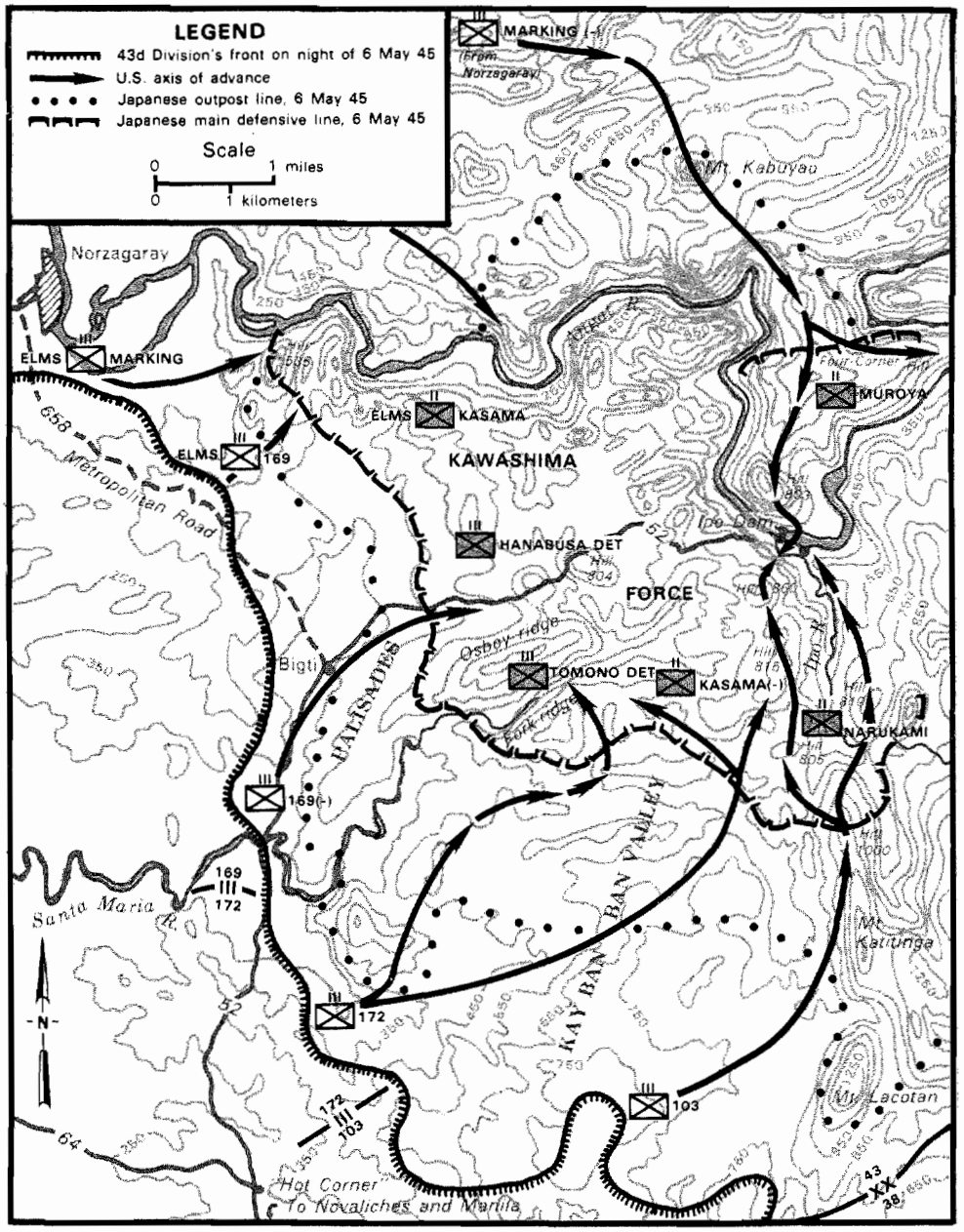
Angat River, was held by the Japanese. Unfortunately, it provided one-third of the capital city's water supply. The Japanese also controlled aqueducts that fed the Novaliches Reservoir ten miles northeast of Manila, the city's most immediate source of water and one which supplied half the city's needs.

U.S. forces would face a number of difficulties in their advance to seize the Ipo Dam. The area around the dam is extremely rugged and hard to traverse. Moreover, the dominant feature north of the dam is the Angat River gorge, a formidable barrier that is impassable to large numbers of troops and can only be crossed at certain fords. South of the dam, the area is also rough, blanketed by hills and deep valleys and covered with heavy undergrowth. Roads are nonexistent. West of the dam is the Palisades, a steep-sided plateau that dominates the only all-weather road in the area. Metropolitan Road runs north and south between Norzagaray and Novaliches, with a junction at Bigti, where Route 52 then proceeds east four miles to the dam (see map 24). The area on both sides of this route consists of gradually rising hills with little cover or concealment on top and heavy undergrowth and woods in the ravines. East of Metropolitan Road is the Santa Maria River, which issues from the Osboy and Fork ridges. The area is unsuitable for tanks, and the existing roads and trails require constant maintenance. All trails and roads are impassable during rainy periods, with the possible exception of some parts of Metropolitan Road.

General Walter Krueger, the Sixth Army commander, gave the XIV Corps the mission to take the Ipo and Wawa Dams. The corps commander, Lieutenant General Oscar W. Griswold, ordered the 6th Infantry Division (which was already badly depleted in strength from the Luzon campaign) and the understrength 1st Cavalry Division to secure the Wawa Dam on the Bihol peninsula. His plan called for the 6th Division, on 20 February, to lead the attack against the two dams, with the U.S. line of departure on the west bank of the Marikina River. Both understrength divisions would attack with practically no initial reserve (a small reserve would eventually be formed from units still landing in Luzon). The 43d Division, which just landed on 9 January 1945, would be the 1st Cavalry Division's reserve.

Supporting the XIV Corps was the XI Corps, which had initiated operations to destroy the Kobayashi Force. Meanwhile, XIV Corps' operations bogged down before stubborn Japanese resistance. The campaign to seize the Wawa Dam became a bitter two-month struggle and a sideshow to the battle for Ipo Dam. In the struggle for the Wawa Dam, operations in May alone cost the 38th Division, including an attached infantry regiment of the 37th Division, over 750 casualties.

In mid-April, Manila's acute water shortage changed the complexion of operations. To ensure adequate water supplies, General



Map 24. The attack on Ipo Dam

Douglas MacArthur ordered a drive on the Ipo Dam, deemphasizing the Wawa Dam operations. Krueger, on receipt of a radio message from MacArthur, ordered XI Corps to drive on the Ipo Dam as soon as

possible. In early May, Lieutenant General Charles P. Hall, the XI Corps commander, ordered the 43d to redeploy north to seize the Ipo Dam intact and destroy the Shimbu Group that was defending the dam.

Meanwhile, the 112th and 169th Infantry regiments, now part of the 6th Division, pushed to the foot of the Palisades and attempted to dislodge the enemy. Because of heavy American casualties in the operation, U.S. commanders determined a much larger force would be required to take the dam. U.S. intelligence had estimated the Shimbu Group at 20,000 troops, but the force proved to be much larger.

The key players in the 43d Division's attack on the dam were Major General Leonard F. Wing, the 43d's commander; Brigadier General Alexander N. Stark, the assistant deputy commander; and Colonel Marcus V. Augustin, commander of the Marking's Fil-American Yay Regiment (the Marking Regiment). The 38th Division would assist the 43d by attacking on the right. Participating in the attack were the 43d's organic infantry regiments, the 103d, 172d, and 169th, and the Marking Regiment. Additional support came from the 754th Tank Battalion (less two companies), a chemical mortar company, a large contingent of antiaircraft units, two additional 155-mm artillery battalions, and a battery of 8-inch howitzers. A reconnaissance in force south of Metropolitan Road indicated that the Kawashima Force's defenses were weaker here, so Wing chose this location for his main effort.

On 7 October 1944, General Tomoyuki Yamashita assumed responsibility for the Japanese defense of the Philippines. He had last commanded a replacement and training army with headquarters in Bo Tanke, Manchuria. On assuming command in the Philippines, he was given only two days with the outgoing commander and, in fact, was not aware of the reasons for General Shigenovi Kuroda's relief. The restrictions placed on Yamashita's command were discouraging. He was to command all ground forces, including air and naval service troops in Leyte and Luzon. But he was not given control of the naval fleets, which were to be directed by Tokyo, or the air forces, which were controlled by Field Marshal Count Hisaichi Terauchi, a superior, in Saigon. Unable to coordinate Japanese sea and air forces with his ground forces, Yamashita was hampered in options and resources to the very end.

Yamashita's other problems stemmed from his earlier attempts to defend against U.S. landings at Leyte. Since the Japanese had lost tremendous casualties at Leyte (where they had massed their forces), Yamashita lacked the fully manned defense he needed to hold out against renewed U.S. attacks elsewhere. As a result, he planned to

defend three key areas in Luzon until reinforcements could arrive from other parts of the Japanese Empire. He elected to defend west of Clark Field, which he hoped would prevent the use of the harbor; east of Manila, to cut off supplies; and in the north, where he hoped to block U.S. access through the mountain passes into Luzon's breadbasket, the Cagayan valley. Yamashita did not expect to hold out forever. He was fully aware of his limited air support and fuel supplies and the hostility of the Filipino people. He needed outside reinforcements.

The Shimbu Group defending the Ipo Dam was composed of 30,000 veterans situated in excellent defensive positions: elaborate caves, dug-in gun positions, and an extensive network of trenches. Lieutenant General Shizuo Yokoyama, the Shimbu Group commander, had organized his defenses well. He assigned 9,000 men of the Kawashima Force to defend the Ipo Dam along a main defensive line anchored in the center at Bigti. Here, a regiment manned a natural fortress created by the Palisades. South of Bigti, the 12,000-man Kobayashi Force defended the area midway between the Wawa Dam and Antipolo. Farther south was the 9,000-man Noguchi Force, defending the boundary of the Kobayashi Force to Luguna de Bay. Also in the south was the Kogure Detachment, a 2,250-man suicide boat detachment that was to prevent amphibious assaults on the Shimbu Group's rear through Luguna de Bay. The key to Yokoyama's planned defense was a 5,000-man reserve force that was to shore up defenses where needed.

Prior to XI Corps' advance on the Wawa Dam, Yokoyama had augmented his reserve force with three artillery battalions of 2,750 men, plus other service units, moving them into the Bosoboso valley behind the Kobayachi Force, where he anticipated the Americans would strike. While correct in his assumption, his guess may have led him to commit his reserves too early in the rugged and compartmented terrain.

The Japanese defensive scheme for the Ipo Dam called for the control of all approaches to the dam. The defense was well organized, with considerable depth west to east, but it lacked good north to south lines of communication, supply, and, more important, routes for reinforcements. The defense forces contained a mixture of combat service and combat service support troops built around a nucleus of the 8th and 105th Infantry Divisions. The logical approach to the dam was Route 52, a two-lane gravel road that ran the four miles from Metropolitan Road up to the dam. Because the terrain elsewhere was too rugged to sustain traffic, the Kawashima Force had thoroughly fortified the area around Route 52.

Wing's battle plan was simple in concept and provided for the fixing of the Japanese forces along their main defense line and the envelopment of that line from the south. Wing believed that the

Palisades would be difficult to take by direct assault. Thus, the scheme of maneuver called for the 169th Infantry, already in front of the Palisades, to continue pressure there. Meanwhile, the Marking Regiment and elements of the 169th were to feign an attack on the enemy's right. Then, under cover of darkness, the 103d Infantry would move into position and attack from the south as the main effort. The 172d Infantry would support the attack, which would be preceded by large artillery concentrations.

By 5 May 1945, all the 43d's combat elements had moved into their attack position undetected by the Japanese: the deception had worked. On 6 May 1945, at 2200 under a moonlit night, the attack began. The Japanese were taken by surprise, and the results by daybreak were promising. The 103d had swiftly gained 5,000 yards. Meanwhile, the 169th engaged the fortress at Bigti from the north and south in company-size patrols. But the 172d, in support of the 103d, struggled over rough ground to maintain contact, which tended to canalize that regiment along the Kay Ban Ban Valley. Thus, a decision was reached to spread out the battalions as the regiment continued.

By 7 May, the 103d had seized a dominant ridge in its zone of attack and was defending against piecemeal enemy counterattacks ordered by the local Japanese commander. At the same time, the 118th Engineer Battalion was breaking trails and bridging gorges behind the infantry in each attack zone and doggedly maintaining lines of communication—so desperately needed to resupply the attacking U.S. forces. The division artillery, strongly reinforced for this operation, continued to provide the advancing troops excellent fire support against the numerous enemy counterattacks. In the north, the Marking Regiment ran into heavy resistance but was able to seize a number of dominant hills.

From 8 to 10 May, the 103d and 172d continued to advance steadily on their objectives. The 172d captured strong enemy positions at Hill 805 and Tacbihan Mountain. The Japanese continued counterattacking against the 103d's hastily prepared positions, but they were stubbornly repulsed. The 169th aggressively continued its actions, and the Japanese began concentrating available reserves to the center at Bigti, as the U.S. commanders hoped they would.

While U.S. artillery was effective in concentrating its fire in front of the advancing troops, it was initially ineffective in its counterbattery role, due primarily to the Japanese trench and cave system. The Japanese had also concentrated antiaircraft fire on U.S. artillery spotter planes, preventing them from locating Japanese artillery positions. To stem the loss in spotter planes, U.S. dive-bombers shifted their priorities to Japanese antiaircraft positions. This increased

activity allowed U.S. spotter planes the freedom to pinpoint the Japanese artillery. Once this system was perfected, the division and corps artillery concentrations achieved great success. The Fifth Air Force flew over 100 close air support missions a day to support the 43d Division.

On 11 May, the enemy defense stiffened. The U.S. 3d Battalion, 172d Infantry, suffered heavy casualties attempting to seize hills on Fork ridge and was forced grudgingly to withdraw. In addition, the Japanese repulsed the Marking Regiment three times from Four-Corner Hill. In all other sectors, U.S. gains were limited to 200 yards, signaling that the 43d Division had hit the main Japanese line.

To attract more enemy attention and weaken Japanese defenses elsewhere, the 169th on 12 May was ordered to increase the tempo of its attacks on the Palisades. Heavy action intensified as the 169th attacked and seized San Mateo and temporarily penetrated the Osboy ridge. Throughout the fierce fighting, the Japanese continued to shore up their center. Meanwhile, the 1st Battalion, 103d Infantry, captured Hill 815. The division commander now felt his plan was beginning to crack the enemy defense and committed his reserve, sending the 2d Battalion, 103d, to sweep east across the Ipo River to cut Japanese communications and their troops' escape route to the south. After five hours of fighting, the Marking Regiment finally took Four-Corner Hill.

On 13 May, the rain fell in sheets, hampering all operations—but not before the 1st Battalion, 103d, gained a foothold on the southern shoulder of Hill 860 and the 2d Battalion took a vantage point 1,000 yards from the dam (where it reported the structure still intact). The Marking Regiment also seized the eastern part of Hill 803, which dominated the dam in the north.

Yamashita's communications with his Shimbu Group commander were completely cut off by 14 May. The bad terrain, poor weather, lack of fuel, and constant U.S. pressure from ground and air attacks had effectively sealed off Yokoyama. The Japanese communications network was completely disrupted at all levels, and only intermittent communications were possible. Local Japanese commanders, in desperation and without guidance, began to commit company-size banzai attacks in response to U.S. threats.

On 14 and 15 May, the Japanese artillery continuously pounded all U.S. forward positions and lifted the barrage only long enough for Japanese troops to mount banzai charges, usually at night. The 103d Infantry stubbornly held against three such attacks. The Marking Regiment resisted two banzai attacks but was dislodged by a third one.

Wing believed this increased enemy pressure to the north and south

indicated the Japanese were worried about their flanks and may have weakened their center to mount such attacks. Wing altered his original plan accordingly and directed all elements to attack the Japanese at 1030 on 17 May.

The new plan called for the double envelopment of the Ipo Dam by the 103d in the south (according to the original plan) and added a northern envelopment by the Marking Regiment. Wing planned for the 3d Battalion, 169th Infantry, to attack the Palisades and the 172d, with the 1st Battalion, 169th, to cut off and destroy the enemy forces on Osboy and Fork ridges. Intense close air support would aid the attacks at the Palisades and Osboy ridge.

The first air assault would begin on 16 May; the second, on the 17th, would screen U.S. attackers. On the 16th, 185 fighter-bombers struck the Palisades and the Osboy ridge with 50,470 gallons of napalm. The next day, 220 planes dropped 62,660 gallons. As planned, the attacks shocked the enemy, allowing tanks and engineers to clear Route 52. The 169th then stormed the Palisades using bamboo ladders. The accompanying close air support completely destroyed and demoralized the remaining Japanese defenders.

Simultaneously, all 43d Division units seized their objectives. The Marking Regiment captured the northern part of the dam first, while the 103d took the southern end. This capture happened so quickly that the Ipo Dam was taken intact. U.S. troops quickly isolated the detonation charges set to blow up the dam and stopped all attempts to damage the facility. While the Japanese had placed charges below the dam gates, they had underestimated the speed, ferocity, and direction of the U.S. attack.

The few Japanese that escaped the Ipo Dam scrambled into the thick undergrowth, escaping to the Dingalan Bay area. The battle had cost the Japanese 4,062 killed and 368 captured. U.S. losses included 172 killed, 708 wounded, with 4 missing in action. Mopping-up operations began on 18 May, and by 19 May, all resistance had ceased.

Even though the terrain on this battlefield was the worst in Luzon, U.S. forces had tailored their attack to exploit terrain, weather, and the array of forces available to them. While maintaining control of his forces, Wing had remained flexible enough in executing his plans to adapt to changing battlefield conditions.

The Japanese, on the other hand, became isolated in the defense and unable to react to new threats. The communications problems and the restrictive terrain prevented them from shifting their forces in the defense when necessary. In addition, because of their command structure, they were unable to coordinate their naval, air, and ground forces. When the Japanese commander lost control of his ground forces, the

battle was over. The piecemeal attacks ordered by Yamashita's isolated subordinate commanders against the U.S. forces were desperation measures and no substitute for coordinated counterattacks.

The 43d Infantry Division's actions at the Ipo Dam exemplify tactics applied and executed beyond what might be expected. In fourteen days, from 6 May to 19 May 1945, the 43d Division accomplished what the 38th Infantry Division and the better part of a U.S. corps could not do in two months against the Wawa Dam under similar circumstances. The persistence and perseverance of the 43d allowed it to take the Ipo Dam intact in the face of banzai attacks and withering fire. Coordinated attacks and tenacity led to an impressive U.S. victory.

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32

Terrain

Operation Spark: Breaking Through the Blockade at Leningrad

Dr. Robert F. Baumann

The Soviet-German struggle on the Eastern Front during World War II featured intense combat under the most varied conditions of any theater of the war. In the fighting, both armies adapted to the extremes of terrain and climate. Among the striking examples of such adaptation was the Soviet operation to break through the blockade of Leningrad. Conducted from 12 through 18 January 1943, Operation Spark (or *Iskra*, as the Russians called it) provides an instructive case of the influence of terrain and climate on the conduct of battle, as well as the power of well-coordinated combined arms attacks against prepared defensive positions.

In December 1942, the city of Leningrad had endured more than a year of encirclement by German and Finnish forces. Without a land link to the rest of the Soviet Union, the city had survived the winter by means of the "road of life" over icy Lake Ladoga. Still, the privations and loss of life suffered by the inhabitants had been staggering. On the eve of the Soviet breakout, the situation remained precarious. As long as German forces held the narrow band of terrain jutting east of the city and north to the southern shore of Lake Ladoga, the blockade remained effective. Earlier in the year, Soviet forces had failed to pinch off the salient and thus close the gap between Leningrad and the vital rail lines running to the south and east. The operations, however, significantly eroded German strength. Key factors in the Soviet failures had been their lack of skill in operating in forest-swamp terrain and inability to coordinate forces on both sides of the salient.

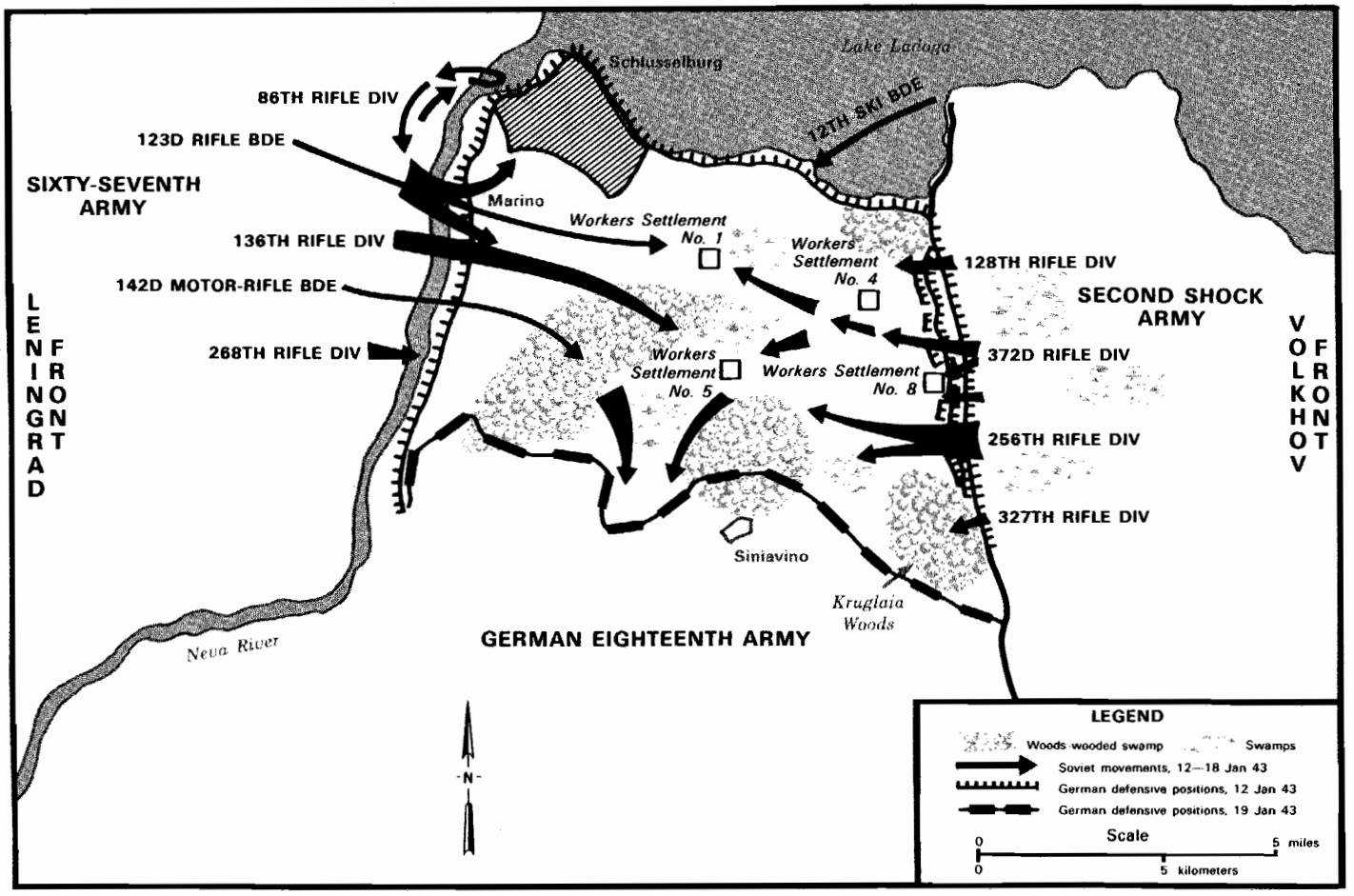
The distinctive wooded-swamp terrain characteristic of this region of northern Russia influenced not only the conduct but the timing of military operations. An impediment to year-round movement, the wooded-swamp areas posed an extraordinary difficulty to vehicular movement during the annual April-May wet season. In some areas, movement depended entirely on hastily constructed corduroy roads. Only in the dead of winter, when solid ice formed, did the terrain minimally accommodate normal traffic. The middle of winter was a fortuitous

time of attack for another reason as well. Only then was ice on the Neva River hard enough to sustain a rapid armor-supported crossing attack from the west. As evidence to this effect, the Germans decisively repelled a warm-weather crossing in force as recently as September 1942. Still, winter conditions were not entirely advantageous. Low, thick clouds could complicate orientation on the ground and hamper air support. In addition, bitter cold would take a cruel toll on men and machines.

In reality, Operation Spark was both a breakout and break-in. The plan prescribed synchronized converging thrusts by the Soviet Sixty-Seventh Army from the west and the Second Shock Army from the east (see map 25). The Sixty-Seventh had to force a crossing of the Neva River and advance to meet elements of the Second Shock Army, which would be fighting through tough defenses and difficult terrain. The Schlusselburg-Siniavino salient, occupied by the German Eighteenth Army, ran about fifteen kilometers from north to south and varied in width from twelve to seventeen kilometers. The German Eighteenth Army consisted of five divisions and three independent regiments but lacked adequate reserves. The Germans had been in place for sixteen months and had established a strong system of defenses, taking full advantage of terrain and built-up areas. In repelling an attempted breakthrough from the east by Soviet forces in the spring of 1942, the Germans, responding to local penetrations, had enveloped breakthrough units and restored the defensive front behind them. Rather than launching costly assaults on Soviet pockets in forested areas, the Germans pounded them into submission with artillery.

A crucial role in the eastern or Volkhov Front attack plan fell to the Soviet 372d Rifle Division, Second Shock Army. By participating in previous operations in the vicinity, the 372d had obtained invaluable fighting experience in the forest-swamp terrain (areas of trees, brush, and grass standing in water ranging seasonally from a few inches to several feet or more in depth). Under the command of Colonel P. I. Radygin, the division was to strike its main blow directly against Workers Settlement Number 8, the main strongpoint of German defenses facing eastward in the Schlusselburg-Siniavino salient.

The broader mission of the Second Shock Army against the salient included the penetration of forward defenses along the fifteen-kilometer front and the capture of Workers Settlements Numbers 1 and 5, as well as the village of Siniavino. The Second Shock Army deployed five divisions abreast in its first attack echelon, with one rifle division and two ski brigades in reserve. It also employed four tank brigades, one tank regiment, and four independent tank battalions to support the infantry in its attack. At the same time, elements of the Volkhov Front



Map 25. Breaking the blockade at Leningrad

positioned south of the salient created a deception by feigning preparations for an imminent offensive.

Forces of the Leningrad Front, in turn, were to force the Neva River from the west. The Soviet Sixty-Seventh Army formed two operational echelons, with four divisions in the first echelon. The Soviet 136th Rifle Division was to strike directly across the river on the Marino-Siniavino axis and clear the left-bank defenses held by the German 170th Infantry Division. The 136th would ultimately link up with elements of the 372d and 256th Rifle Divisions of the Second Shock Army near Workers Settlement Number 5. The Soviet 86th Rifle Division was to cross the river on the northern flank of the 136th and clear the town of Schlusselburg on the southwestern edge of Lake Ladoga.

In preparation for the assault, forces of the Leningrad Front built storm ladders and rehearsed attacks against ramparts formed of wood, peat, snow, and ice similar to those defended by the Germans on the steep left bank. The secret establishment of roads behind the lines and concealed departure points for assault groups on the right bank posed a crucial task. Engineers conducted all work on the expansion of trenches and lines of communications at night. To enable tanks, particularly medium T-34s and 30-ton KVs, to cross the Neva, they constructed portable tracks consisting of wooden rails reinforced with ice.

Equally intense preparation was under way on the Volkhov Front. On 2 January, Radygin; his chief of staff, Lieutenant Colonel M. K. Evdokimov; and his operations chief, Major P. V. Melnikov, visited the front where the Soviet 372d Rifle Division was to replace the 128th Rifle Division on the eve of the attack. The 128th would, in turn, stay in line but reduce its frontage by concentrating its forces on the northern flank of the 372d. Dressed as enlisted personnel, Radygin and his aides reviewed the terrain and received a briefing on German defensive positions. Throughout December, Soviet troops practiced assaults against obstacles, strongpoints, and ice-covered ramparts. Good aerial reconnaissance made possible a good approximation of the German defensive system. In accordance with the Second Shock Army's plan of operations, Workers Settlement Number 8, one of a group of scattered residential clusters in the lightly settled area, assumed central significance. The Soviet 256th Rifle Division was to attack on the southern flank of the 372d. Follow-on elements of the 18th Rifle Division would then exploit in the direction of Workers Settlement Number 5.

Workers Settlement Number 8 consisted of fifty-six separate buildings, making it an eminently defensible position. Two German regiments of the 227th Infantry Division held strongpoints along the front facing the Soviet 372d Rifle Division. Around and among the buildings,

they had established a network of gun and machine-gun strongpoints. Forward of the settlement were two trench lines and peat ramparts that would seriously hinder the movement of armor and heavy weapons. The Germans had doused them with water to coat them with a thick layer of ice. Lines of wire obstacles and firing points north and south of the settlement provided further defenses. Minefields obstructed all avenues of approach.

In addition, terrain figured importantly in the organization of German defenses and in the Soviet scheme of offensive maneuver. The area east of Leningrad is widely forested and further interrupted by scattered peat bogs and marshes. These had the effect of canalizing traffic and could substantially strengthen linear defenses. In fact, German defenses several kilometers north and south of Workers Settlement Number 8 were anchored by forests. In addition, several bogs immediately to the east determined lines of communications in the Soviet rear area. Roads were few and unimproved. The onset of freezing weather in late 1942 somewhat mitigated the effects of the bogs for the infantry but could still provide only limited trafficability for armor and heavy vehicles. Soviet engineers worked furiously behind the lines to construct roads and bridges through woods and swamps to sustain the attack once it began.

In general, both the Soviets and Germans found that forests and bogs obstructed not only movement but orientation and the control of artillery fire. Fighting within forests, in particular, placed a great burden on infantry units and engineers; delivery of effective fire support, whether by artillery or air, was difficult. Due to the increased ability of defenders to conceal their positions, vigilant security and reconnaissance were constantly necessary.

Throughout the war, the Soviets demonstrated great adaptability in winter combat. This was in part due to lessons they had painfully learned during the Soviet-Finnish winter war of 1939—40 and the crisis brought on by the German invasion in the winter of 1941—42. Horses were sometimes the most effective means of transport, and both the Soviets and the Germans often used sleds to move provisions over snow and ice. Some Soviet units received white uniforms for winter camouflage, and many moved on skis. The Soviets also extensively winterized their weapons and vehicles, thus reducing the breakdowns that plagued their German adversaries. In addition, the wider tracks on Soviet tanks provided a modest advantage in mobility over frozen ground.

On 6 January, the Soviet 372d Rifle Division organized assault detachments to lead the attack of each regiment. Training for this mission was critical. The organization of Detachment Number 3 of the lst Battalion, 1238th Rifle Regiment, was typical. It consisted of 127

men, subdivided into special subgroups for engineering and reconnaissance (19 men), obstacle clearance (28 men), and the attack (80 men). The attack subgroup included one sapper and one rifle platoon, supplemented by sections of antitank guns, machine guns, and automatic rifles, as well as a 45-mm gun detachment and a pair of artillery observers.

The attack of the 372d would depend above all on speed, shock, and secure flanks and communications. On breakthrough, elements of the 98th Tank Brigade would join the advance. Each regimental commander received a plan to ensure synchronized conduct of the operation, as well as detailed instructions for rear-area units and artillery and the relief of units on the march.

On the night of 10—11 January, the 372d Rifle Division assumed its starting position for the operation. The Soviet attack began at 0930 with a relatively brief but intense two-hour artillery preparation. The Leningrad and Volkhov Fronts exchanged artillery liaison officers to coordinate fires. These officers' roles would increase in importance as the forces converged. During the barrage, which tore up large portions of the German minefields and trenches, engineers and storm groups of the 372d advanced with armor support against surprised defenders to clear the way for the assault. The Fourteenth Air Army bombarded German command and control centers, artillery positions, airfields, railroad junctions, and other targets in the rear area of the German Eighteenth Army. The combined effect of the strikes significantly disorganized the German defensive system. During the first day's ground attack, launched at 1150, the Soviet 1238th Rifle Regiment advanced through German trench lines for two to three kilometers and captured several buildings on the southern periphery of Workers Settlement Number 8. However, a German counterattack with tanks halted the advance. Penetration of the German defenses even to this modest depth cost the regiment about 1,000 casualties.

The experience of the Soviet 372d Rifle Division contrasted with that of the 256th Rifle Division on its southern flank. The zone in front of the 256th was a level peat swamp that formed, when frozen, a natural corridor between Workers Settlement Number 8 and the Kruglaia Woods just to the south. Soviet artillery fire quickly smashed German ramparts of timber, peat, and ice, permitting the infantry to move forward at a brisk pace. Yet, in part, because the frozen ground was not sufficiently hardened to permit the tanks to keep up, the rate of advance diminished.

On the second day, 13 January, the 372d renewed its drive against the settlement, but the defenses still held. Heavy snowfall restricted air support. Now, elements of the second echelon joined in the attack.

Later in the day, the 372d received orders to begin bypassing Workers Settlement Number 8 and proceed northeast to Workers Settlement Number 1.

In the meantime, the Germans began regrouping their tactical reserves—including elements of the 96th and 61st Infantry Divisions and a regiment of the 69th Infantry—in the vicinity of the Siniavino heights in the southern extremity of the salient. This probably served two purposes. First, the heights lay within a forest and provided highly defensible ground. Second, the heights commanded the southern portion of the main road from Workers Settlement Number 1 to Workers Settlement Number 5 just to the north. This road offered the most direct route of escape for forces attempting to flee the salient in the event of a defensive collapse. The Soviets, in turn, responded by massing their artillery on the Siniavino heights.

From the Leningrad side, assault groups and sappers of the Soviet 268th and 136th Rifle Divisions were the first to complete the 600-meter dash across the frozen Neva. Air attacks and army and naval artillery paved the way by inflicting significant damage on the German defenders. Taking care not to drop shells on the Neva itself and risk breaking up the ice, Soviet gunners ignored the most forward defensive positions on the banks and concentrated on the first line of trenches. As soon as the assaulting troops advanced to within 150 to 200 meters of the left bank, fire refocused on deeper positions. By the second day, Soviet troops controlled a bridgehead along a five-kilometer front south of Schlusselburg. Soviet light tanks made the crossing on the first day, and the T-34s began crossing over corduroy roads with second-echelon elements on 14 January. However, the German defenders of Schlusselburg repelled the direct river-crossing assault of the 86th which then had to cross south of the city and attack by land from the south. At the end of the day, the gap between the two fronts had narrowed to four kilometers.

From this point, the forces of the Leningrad Front had two principal tasks. First, the 136th Rifle Division was to drive on to Workers Settlement Number 5, which it accomplished on 17 January. Second, the 86th Rifle Division was to isolate and then seize Schlusselburg. However, an attempt to storm the city from the south bogged down in front of the Preobrazhenskii hill on the town's fringes. Soviet forces subsequently managed to flow around this strongpoint. On 16 January, the 86th Rifle Division and the 34th Rifle Brigade, supported by heavy armor, broke into Schlusselburg. They successfully cleared the town after heavy street fighting on the 18th.

Meanwhile, on 14 January, elements of the 372d Rifle Division continued the assault on Workers Settlement Number 8 and weathered

ten counterattacks. The cold was so severe that flesh froze on contact with metal. Combat at the settlement continued into 15 January when Soviet forces defeated desperate German counterattacks and broke the remaining defenses. After the battle, the entire complex of residential buildings had been reduced to rubble, reflecting the intense pounding by mortars and artillery. Yet that same rubble doubtless afforded defensive positions and concealment to the German defenders through the several days of fierce fighting.

At the same time, Soviet forces in the salient concentrated their attacks on Workers Settlements Numbers 1 and 5 in an effort to block any escape by surviving German forces. Progress was slow, however, stirring General G. K. Zhukov to return to the scene and demand that the Second Shock Army completely eliminate the salient within twenty-four hours. In response, Radygin hastily formed a composite detachment from the remnants of the 1236th and 1238th Rifle Regiments. Under Major A. F. Gamarin's command, the composite force was to cut the escape route southward from Workers Settlement Number 1. The 12th Ski Brigade supported this effort from the north by stealing across the German rear over frozen Lake Ladoga to sever the German command and control of fleeing units.

Though cornered, the Germans defended desperately and inflicted heavy Soviet losses. Throwing in his last reserve, Gamarin deployed a reconnaissance company and a composite battalion formed from remnants of the 1240th Rifle Regiment. Moving under Melnikov's control, the unit crept southward along a ditch running parallel to the main road between Workers Settlements Numbers 1 and 5. Fields of burning peat lighted the route during darkness. Melnikov concentrated his forces on the edge of the forest just south of Workers Settlement Number 1. In combination with the composite force of the 1236th and 1238th Rifle Regiments, they pressed the settlement from the north, east, and south. Almost simultaneously, white-clad troops of the Soviet 123d Rifle Brigade of the Leningrad Front entered from the west. With the reduction of German defenses in the salient, linkup of the two fronts occurred at 0930 on 18 January. Soviet troops then swept the forest to the south to capture scattered German survivors.

The immediate effect of the Soviet attack was to create a corridor of some eight to eleven kilometers in width from north to south linking Leningrad once again with the rest of the country. Soviet success depended in large measure on successful adaptation to specific local conditions of climate and terrain. Logic and experience dictated a winter attack when the Neva's ice had hardened and the wooded swamp zones became traversable. The Germans were doubtless aware of this, but the Soviets disguised their preparations effectively and achieved tactical

surprise. Rehearsals of the attacks and extensive preparations by the engineers facilitated rapid success. Above all, the Soviets worked vigorously to maximize their mobility over difficult terrain. The construction of roads and bridges in their rear areas permitted the ready flow of reserve and second-echelon forces into battle. The construction of corduroy roads and the clearing of obstacles further facilitated movement into the salient. Supported by overwhelming fire, the Soviets fixed German defenders all along the front with their initial attack and responded quickly to enemy counterattacks. In addition, the Soviets exploited natural corridors in the terrain and successfully flowed around defensive strongpoints. Although it did not eliminate the threat to Leningrad, Operation Spark had tremendous psychological impact. Leningrad, symbol of the 1917 Russian Revolution and the former imperial capital, had been rescued. When considered in light of the even greater triumph over German forces occurring simultaneously at Stalingrad, it marked a dramatic turning point in the war on the Eastern Front.

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33

Time

Operation Market-Garden, September 1944

Dr. Gary J. Bjorge

Using time effectively is a challenge for everyone, but for a military commander, it is crucial. The changing battlefield, with its fleeting opportunities, often requires timely decisions. Failure to act at an opportune moment may cause the needless injury and death of many soldiers. Yet acting prematurely may also be a mistake that leads to disaster. Operation Market-Garden—the largest airborne operation of World War II (Operation Market) and a three-corps ground advance to link up with the airborne forces (Operation Garden)—illustrates the dilemma a commander can face when he seeks to exploit opportunities without acting rashly.

By the end of August 1944, the rapid Allied advance across France had created an air of optimism about an early end to the war. The disorganization in the German Army had become so great that even an effective defense of the Westwall was considered unlikely. For weeks, General Dwight D. Eisenhower had sought to employ his strategic reserve, the First Allied Airborne Army, to deliver a decisive blow against the Germans. Numerous airborne operations had been planned, but none had been executed because the rapidly advancing ground troops had repeatedly made them unnecessary.

By the end of August, both Eisenhower and Field Marshal Bernard L. Montgomery had begun thinking about using airborne forces to help the Allied armies cross the Rhine River. On 5 September, planning began on an operation to use one and one-half airborne divisions to seize river crossings in the Arnhem-Nijmegen area (Operation Comet). Then, on 10 September, this operation was canceled, to be superseded by Operation Market-Garden. The plan was to drop three and one-half airborne divisions along a fifty-mile corridor in southeast Holland to capture key bridges over several canals and large rivers and to open a route for the British Second Army to advance from the Belgian-Dutch border to the Zuider Zee, a distance of ninety-nine miles. The Allies sought to maintain the momentum they had built since crossing the Seine River on 25 August by cutting the land exit of the Germans remaining in western Holland, outflanking the German Westwall defense

line, and placing British ground forces in position for a subsequent drive into Germany across the north German plain. Eisenhower and Montgomery believed Market-Garden was feasible, and after questions regarding the amount of supplies to be sent to the 21st Army Group were resolved on 12 September, Montgomery set 17 September as D-day for the operation. Market-Garden would be the key that would unlock the gates to Germany for the Allied armies.

Market-Garden failed to achieve this objective because the Germans held the bridge over the Lower Rhine River at Arnhem. During the fighting there, they virtually destroyed the British 1st Airborne Division. The British XXX Corps, which was supposed to reinforce the airborne unit, could not advance quickly enough to make a timely linkup. When first briefed on the Market-Garden plan, Lieutenant General F. A. M. Browning, commander of the British Airborne Corps, suggested that, in light of the plan's timetable, the objectives of the operation might have stretched "a bridge too far." In retrospect, he was correct.

A number of circumstances undermined Market-Garden's timetable. Bad weather after the first day interfered with follow-on troop drops, aerial resupply, and tactical air support. Also, German resistance in the area was greater than predicted by Allied intelligence. In addition, Allied communications were inadequate, especially within the British 1st Airborne Division and between this division and other units. This led to Allied command and control problems and made it impossible to redirect supply drops to secure drop zones. Furthermore, the British XXX Corps advanced too slowly to link up with the British 1st Airborne Division. Another factor affecting Market-Garden's timetable was that only one main road existed for the Allied advance. This lack of alternate routes complicated troop and supply movement and simplified German defensive strategy. Furthermore, the Germans responded quickly and adeptly to developments. Finally, cases of simple misfortune helped throw the Allies off their schedule. The result, according to Major Brian Urquhart, the chief intelligence officer of the British Airborne Corps, was "an unmitigated disaster."

The difficulties in keeping Market-Garden on schedule stemmed from decisions made during its planning. One costly decision was to have only one lift on D-day. Since available aircraft and gliders could transport less than half of the 35,000 airborne soldiers at one time, the division commanders requested two lifts on D-day in order to have most of their men on the ground the first day. The troop carrier commanders, however, overruled this because they would not have enough time to check for aircraft battle damage, conduct spot maintenance, and rest the crews between lifts. The area of operations was located just within the maximum range of transports flying out of England,

and the troop carrier commanders feared that squeezing two lifts into one day would result in higher casualties.

Another significant decision was the one giving airlift priority to the divisions in a south to north order. This was to ensure that the road in front of the British XXX Corps was cleared. Because of this decision, the British 1st Airborne Division at Arnhem (including a Polish independent parachute brigade) would not be completely delivered until D+2. A third decision that caused problems was the selection of drop zones and landing zones, especially those for the British 1st Airborne Division. Because the Allies overestimated the flak threat around Arnhem, the division landed four to nine miles west of Arnhem's three bridges. These decisions reduced the airborne forces' ability to exploit their greatest combat multiplier—surprise. With limited numbers of men available on D-day and substantial ground to cover, the Allies found it impossible to capture and hold all their objectives immediately. Some would have to wait. When the Germans responded quickly in strength, difficulties arose.

While the Allies were making decisions that would later cost them precious time, the Germans were using time to improve their response to Allied efforts. At the beginning of September, the German Army was fleeing through Belgium. However, after Antwerp fell to the Allies on 4 September, a series of events gradually changed this situation. First, on this same day, Hitler ordered General Kurt Student to move his First Parachute Army's headquarters into the Netherlands to fill the gap in Army Group B between the Fifteenth Army in the Schelde estuary area northwest of Antwerp and the Seventh Army in the Maastricht-Aachen area. Student only had the LXXXVIII Corps, with just one division to cover a fifty-mile front. The division, however, was a full-strength "fortress" division that had been guarding the Dutch coast since 1940. Fortunately for Student, General Kurt Chill, who was retreating through Belgium with remnants of his infantry division and two others, decided to stop along the Albert Canal to organize a hasty defense. On 6 September, Chill contacted the LXXXVIII Corps' commander and turned over his battle group to Student. Even though these German units could not stop the Allied advance, they did delay it. Coupled with the Allies' logistical problems, Chill's actions gained time for some of Student's parachute troops and other units to arrive in the army sector.

During this period, other troop movements advantageous for the Germans were taking place. On 3 September, Field Marshal Walter Model, the commander of Army Group B, ordered the Fifth Panzer Army—which was retreating in disorder—to release the 9th and 10th *SS* Panzer Divisions so they could move to the Arnhem area for refitting

and reorganization. On 5 September, Model ordered the II *SS* Panzer Corps headquarters under General Willi Bittrich to move to Arnhem to rehabilitate the 9th *SS* Panzer Division and two other panzer divisions that would be moving into the Netherlands when conditions in the Seventh Army sector permitted. On 9 September, Model ordered the 10th *SS* Panzer Division to Germany for rehabilitation and directed the 9th *SS* Panzer Division to move south to help meet the growing U.S. First Army threat around Aachen. Unfortunately for the Allies, by D-day, these German divisions had barely begun to move. They gave Model a ready reserve only a half day's march from Arnhem.

These movements provided German commanders with forces to respond to Market-Garden. However, the promptness of the German response made these modest forces even more effective. This speed was due to a number of factors, one of which was the closeness of several major headquarters to each other: Model's Army Group B headquarters was in Oosterbeek just west of Arnhem; Student's First Parachute Army headquarters was in Vught, a small town thirty miles southwest of Arnhem; and Bittrich's II *SS* Panzer Corps headquarters was twenty-five miles east of Arnhem. These headquarters staffs had the manpower to implement commanders' intentions quickly and provide cohesiveness to improvised organizations. The proximity of these headquarters to the Operation Market area of operations also made a rapid response easier. Student and his commanders had a ringside view of the U.S. 101st Airborne Division's airdrop to the east of his headquarters. Model was forced to leave his headquarters hastily at Oosterbeek because the British were landing only two miles to the west. Model then moved quickly to Bittrich's headquarters and continued to command.

German competence also made the rapid response possible. No doubt, the Germans were surprised; Model's situation is evidence of that. In addition, reports of airdrops all over the Netherlands made confusion, indecision, and incorrect conclusions very possible. Bittrich, however, soon perceived from reports that the Arnhem-Nijmegen corridor was the key area. Immediately, he ordered the 9th and 10th Panzer Divisions to move in that direction. Lastly, chance played an important role in the quick German response. Someone shot down in a glider in the U.S. 101st Airborne Division area was carrying a copy of the Allied operational order. Two hours later, this order was on Student's desk. Once the Germans had this information, surprise at the operational command level was gone. The Germans now knew the Allied objectives and could organize their defenses and reinforce them.

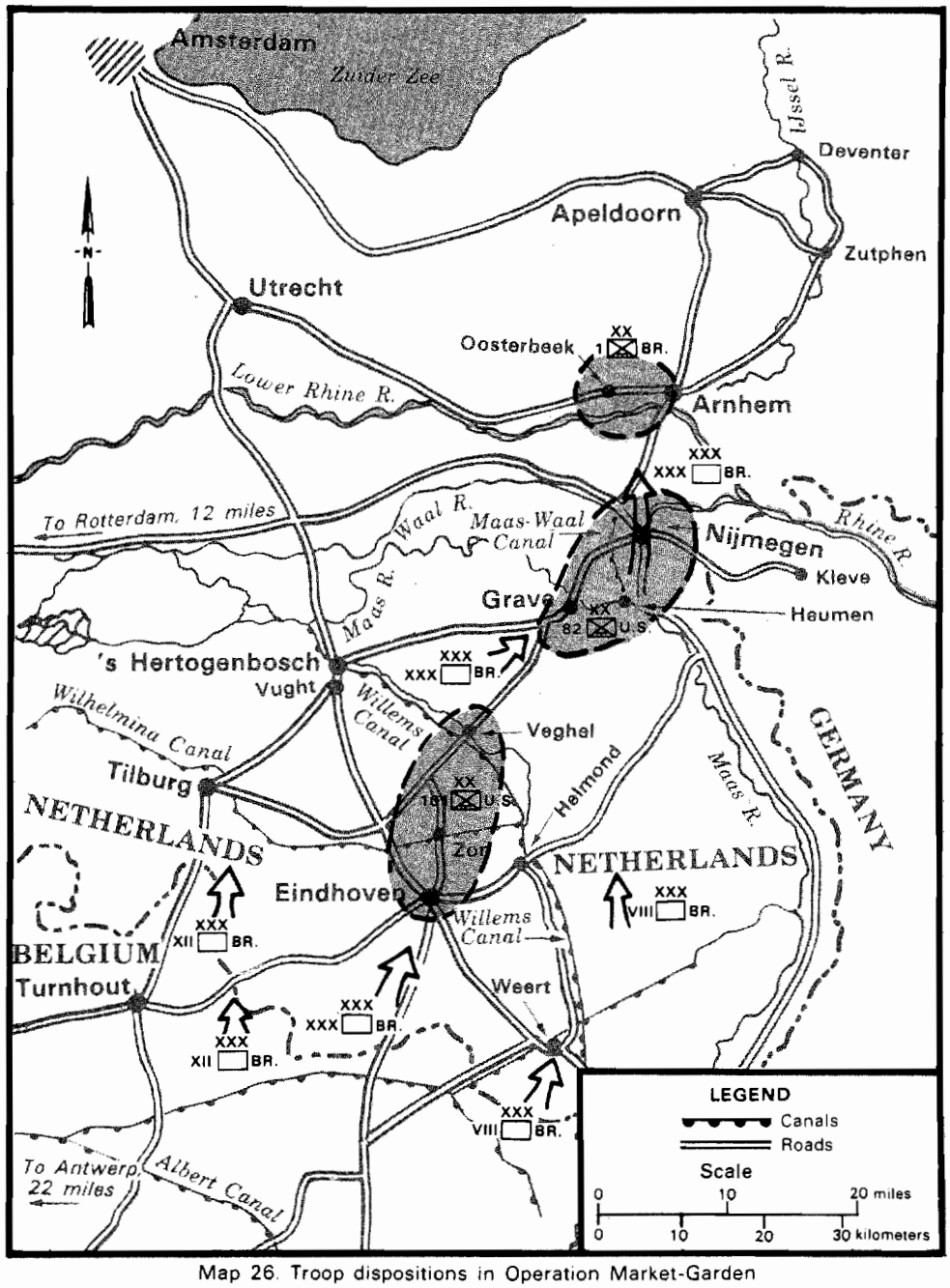
Another example of the Germans' rapid response to Allied operations occurred when remnants of the 59th Infantry Division (which were moving by train through the First Parachute Army sector) were ordered

to detrain at Tilburg and move east twenty miles to fight the U.S. 101st Airborne Division at Zon. The Germans also quickly formed rear-echelon and regional defense units into larger fighting units. One such grouping, the so-called Division von Tettau, joined with the 9th *SS* Panzer Division in launching a two-pronged attack against the British 1st Airborne Division drop zones and landing zones on 18 September. During the following days, other units straggling out of the Schelde estuary were brought into the fight. Also, reinforcements were transferred from Germany.

On D-day, while the Germans struggled to organize a defense against Market-Garden, the Allied airborne forces enjoyed considerable success. The airdrops and glider landings were accurate and sustained low casualties. U.S. 101st Airborne Division units gained control over most of the fifteen-mile stretch of highway between Eindhoven and Grave, their objective (see map 26). The 101st's biggest disappointment was the failure to capture the bridge over the Wilhelmina Canal at Zon before it was destroyed. North of the 101st Airborne Division, the U.S. 82d Airborne Division captured the 1,800-foot bridge across the Maas River at Grave, a bridge over the Maas-Waal Canal at Heumen, and the hill mass southeast of Nijmegen. However, by the time the division was prepared to assault the 1,960-foot-long highway bridge across the Waal River at Nijmegen on the evening of D-day, Bittrich's troops had already established a defensive perimeter south of the bridge. This force could not be dislodged. The British 1st Airborne Division at Arnhem experienced the greatest difficulty. German forces blocked the division's efforts to gain control of the highway bridge over the Lower Rhine and the high ground north of Arnhem. At 2030 on D-day, Lieutenant Colonel John D. Frost finally reached the northern end of the highway bridge with his battalion headquarters and one company. From this position, he interdicted bridge traffic but failed to control the bridge.

The Allied column, advancing from the Dutch-Belgian frontier, also ran into difficulties on D-day. German resistance was stronger than expected, allowing the British XXX Corps' Guards Armoured Division to advance only seven miles before stopping. The next day, it was 1900 before the main British armored column reached Eindhoven and linked up with the U.S. 101st Airborne Division. Pushing through the city without a pause, the column continued north to Zon where, during the night, British engineers installed a Bailey bridge across the Wilhelmina Canal. At 0645 on D+2 (19 September), the Guards Armoured Division began to cross the bridge on its way north. Already, it was more than thirty hours behind schedule.

According to Market-Garden's timetable, the Guards Armoured Division was expected to reach Nijmegen by 1800 on 18 September and



Map 26. Troop dispositions in Operation Market-Garden

be in Arnhem by 1500 on 19 September. The division did not reach Nijmegen until the afternoon of 19 September and was then stopped by the German positions at the Waal River bridge. On D-day, Bittrich had decided that the British 1st Airborne Division was vulnerable and could be destroyed if the Allied linkup forces were delayed. Bittrich's dispatch of blocking forces and Student's attacks on the flanks of the long Allied corridor were intended to achieve this objective. So far, the Germans had achieved surprising success: the linkup column was still far from Arnhem, and the British 1st Airborne Division's situation was becoming more critical by the day.

The British 1st Airborne Division was suffering because planned airdrops of reinforcements and supplies had not occurred. Inadequate radio equipment and bad weather were also plaguing its operations. Messages to redirect supply drops were not getting through. Thus, aircrews repeatedly risked their lives to drop supplies only to have them fall into German hands. The greatest problems facing the British 1st Airborne Division, however, were those caused by the unexpected German strength in the area. The airborne division had been unable to reinforce Frost's force at the northern end of the Arnhem bridge, and it was being steadily decimated (the last holdouts surrendered on the morning of 21 September). The remainder of the British 1st Airborne Division had been attacked by German armor and artillery on D-day, and these attacks continued. By 19 September, the division was reduced to holding a small defensive perimeter in Oosterbeek along the Lower Rhine.

At this critical point in the action, the Germans miscalculated the British 1st Airborne Division's strength and initiated operations that gave the Allies time to rescue the remnants of the division. By 21 September, General Roy E. Urquhart, the airborne division's commander, feared that a general, concentrated attack could overwhelm his force. Bittrich now believed, however, that small, scattered actions would destroy the British at less cost by taking advantage of the lack of initiative of British junior commanders and noncommissioned officers. The British contained these small-scale attacks and gained still more time when Model opted against a direct ground assault, believing that heavy artillery would eliminate the British force. While the German artillery bombardment was terrifying, the British survived by huddling in slit trenches, holding out as Allied ground forces advanced slowly from Nijmegen. Finally, on 23 September, the British 43d Infantry Division reached the bank of the Lower Rhine opposite the remainder of the 1st Airborne Division. Because the Germans did not expect a withdrawal, they were fooled by the deception measures that allowed 2,398 paratroopers to evacuate across the river. For the 1,400 men killed and the 6,000 captured at Arnhem, the evacuation came much too late.

Operation Market-Garden reminds us that action and movement take time. It illustrates the difference between time as plotted on the map table and time experienced on the battlefield, where each force works feverishly to upset the timetables of its enemy. Allied leaders devised Market-Garden as a means to take advantage of German weaknesses. The operation failed because it was impossible for Allied forces, which were too dispersed, to capture a number of vital points in a timely way. This inability to reach objectives promptly placed the British 1st Airborne Division in a difficult position and led to its tactical defeat. Ultimately, this failure in timing resulted in a significant strategic setback. Instead of opening the gates to Germany, Operation Market-Garden gave the Germans the opportunity to patch units together into an organized force capable of slowing and, for a time, stopping the Allied advance. Market-Garden exemplifies the crucial importance of time in war, where military actions must take place at the opportune moment to maximize their effects.

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34

Training

The "Truscott Trot": Training for Operation Husky, 1943

Major Stephen D. Coats

At approximately 2230 on 22 July 1943, Lieutenant General George S. Patton Jr., commander of the U.S. Seventh Army, entered the Sicilian port of Palermo. A mounted column from the 2d Armored Division followed Patton's command vehicle, guns silent. Soldiers of the 3d Infantry Division were already patrolling the streets as the armored procession snaked its way through the fallen town.

Conflicting emotions must have swept over Patton as he surveyed his prize. On the one hand, the conquest of Palermo served notice to British Field Marshal Bernard L. Montgomery that Patton's command could strike with virtual impunity in Sicily. On the other hand, the port had not fallen in a spectacular armored sweep as Patton originally envisioned. Before tanks could be unleashed, Patton's infantrymen from the Seventh Army's Provisional Corps, spearheaded by the 3d Division, had traversed nearly 100 miles of Sicily's most challenging terrain to take Palermo. When he finally linked up with the 3d Division commander, Major General Lucian K. Truscott Jr., Patton exclaimed, "Well, the Truscott Trot sure got us here in a damn hurry!"

In the euphoria of victory, Patton forgot to mention his Italian foes. Their unwillingness to offer stiff resistance accounted for some of the astounding speed enjoyed by the 3d Division. Yet in his remark to Truscott, Patton was on to something. The "Truscott Trot" was the manifestation of a rigorous, focused training program that had prepared the 3d Division for grueling combat in Sicily. The men of the 3d had Truscott to thank—and curse—for that training.

At the beginning of 1943, Truscott supervised the organization of Lieutenant General Dwight D. Eisenhower's advanced command post in Tunisia. While serving in that capacity, Truscott learned that the 3d Division would participate in the invasion of Sicily, Operation Husky, scheduled to commence after the Tunisian campaign ended. When he assumed command of the 3d in North Africa on 8 March 1943, Truscott calculated that he had approximately four months to prepare his division for battle.

Truscott believed that the available time could be put to good use. He concluded that the 3d had lost much of its combat-ready edge since he had tested and evaluated the division at Fort Lewis, Washington, in the summer of 1941. Truscott had departed Fort Lewis by May 1942, but the 3d Division remained stateside and intensified its training in amphibious warfare. On 8 November 1942, the division assaulted North African beaches near Fedala, Morocco, as a part of Operation Torch. The 3d seized Casablanca by 11 November. Between November and March 1943, however, the division had engaged in little combat or training. Given its relative inactivity in Morocco, Truscott believed a sort of "rear area" feeling had overcome the 3d's infantrymen. "In consequence," maintained Truscott, "disciplinary standards had suffered and the attitude toward training lacked the fire and intensity which I had hoped to find in a division which might be called upon to fight at any time."

To make matters worse, the division had lost some of its finest officers and men during the last week of February. Less than two weeks before Truscott assumed command, 3,500 soldiers, almost 25 percent of the division's strength, had departed to fill the ranks of the 1st and 34th Infantry Divisions after the battle at Kasserine. Some men within the division also had moved to new leadership positions vacated by departed comrades. Replacements had to be acquired quickly to fill remaining vacancies.

Truscott must have weighed the variables at hand—mission, enemy, terrain, troops, and time available—and then established two principal objectives for his command: first, to attain the highest possible marching and physical standards for an infantry division; and second, to develop initiative and leadership among officers and noncommissioned officers.

To realize the first of these objectives, Truscott drew from his personal theories on infantry training. For years, he had believed that standards for marching and fighting in the infantry were too low, "not up to those of the Roman legions nor countless examples from our own frontier history, nor even to those of Stonewall Jackson's 'Foot Cavalry' of Civil War fame." While serving with the Combined Operations Headquarters early in the war, Truscott had seen how rigorous training had prepared British Commandos and U.S. Rangers for combat. Now, he was anxious to determine the extent to which an entire infantry division could achieve similar training goals.

Truscott began with speed marching. As a career cavalry officer with nearly twenty-five years of experience by 1942, he had learned to value quickness in military operations. Contemporary doctrine called for infantry to march two and one-half miles an hour for twelve miles a day. Truscott believed the infantry capable of greater performance

levels. He tested his hypothesis after less than a week in command by ordering battalions of the 3d to march ten miles at four miles an hour.

The first battalion to execute lost nearly 10 percent of its personnel along the route. At the same time, it sustained a pace of less than three miles an hour. The next day, a second battalion moved the same distance. Of the 1,000 men who started, only 12 failed to complete the march at a rate of 4 miles an hour.

Truscott believed that physical conditioning accounted for the performance disparity between the two units. The battalion relieved had been in the field for two weeks and had conducted challenging training in a desert environment. Truscott decided this episode validated his theory that infantry could "traverse given distances at maximum rates and be fit for combat."

Thus, each infantry battalion would be expected to approximate Commando and Ranger standards for marching. However, Truscott was careful not to expect too much too soon from his infantrymen. Directing unrealistic rates of march over vast distances for short durations would be detrimental to the "psychological preparation" of his men. Truscott observed: "I realized that I would have to approach the objective gradually. To prescribe such standards for an entire infantry division and then fail to attain them would cause lack of confidence, affect command relations, and be generally harmful. Officers and men would have to be imbued with the importance of such preparation and with confidence in their ability to attain it."

Physical and leader development intensified for the 3d Division when it began to move to the Fifth Army's Invasion Training Center (ITC) at Arzew, Algeria, on 15 March 1943. Truscott preceded unit deployments with daily training inspections and officer conferences that included leaders from each infantry regiment and the division artillery. At training sites, he "saw much, but said little, and that little usually only to officers on the subject of standards." Truscott used the conferences to introduce himself to the division's leadership and to impart his "views on training for combat, on fighting, and on the responsibilities of leadership."

Truscott also conferred with the cadre at the ITC before the division reported. He wanted his views on training understood at the center and emphasized that the training his division received was of vital personal concern. To give greater focus to division training, Truscott's staff pored over the initial Husky plan that had arrived at Arzew on 5 April.

Physical conditioning dominated unit and individual training throughout the two-week course. Infantrymen spent many hours log rolling, bayonet training, hand-to-hand fighting, and rope climbing. Units used

speed marching, dubbed the "Truscott Trot" by soldiers, to move about training areas. Additionally, the 3d Division staff prescribed a minimum standard for marching: every officer and man would march five miles in one hour twice each week and eight miles in two hours once each week. Truscott later wrote, "Attaining these standards presented no difficulty and almost every battalion reported greater speeds during its first two weeks." Most eventually achieved five miles in one hour, four miles an hour for the next two hours, and three and one-half miles an hour for the remainder of a thirty-mile march. Those who could not meet minimum standards because of "physical weaknesses or defects were reassigned elsewhere." Truscott wrote that the action was necessary "so as not to jeopardize the combat efficiency of the units or the lives of fellow comrades."

Truscott and the ITC also incorporated lessons learned from the ongoing Tunisian campaign. Companies and battalions rehearsed joint amphibious landings during the day and night. They practiced combined arms team tactics and worked particularly close with supporting artillery. Units also trained in antiaircraft and antitank firing. In addition, soldiers learned how to remove mines and booby traps.

To pursue the second principal objective that he had established for his command, Truscott personally promoted initiative and leadership among his junior officers and men. He seized available opportunities to talk informally with groups of officers and noncommissioned officers, emphasizing that leaders must (1) approach fighting as a simple business in which problems could be solved by common sense, (2) know weapons and tools, (3) be physically conditioned, (4) be determined to achieve, (5) know how to live and work together in the field, and (6) take risks. Truscott declined to punish junior officers for mistakes arising from personal initiative; at the same time, he directed commanders to "deal harshly" with those who failed to act when a situation dictated boldness.

The division worked at the ITC to achieve Truscott's standards in leadership and physical training. While the 3d went through its paces, Truscott and his staff planned a two-week course in mountain warfare to prepare the men for Sicily's rugged, inland terrain. Physical fitness retained a priority in the training plan. Mountain techniques in marching, tactics, weapons firing, and day-night combat operations rounded out the core exercises.

Just as the division's first regiment completed its mountain training, Truscott and the 3d were ordered into Tunisia to participate in the final assault on Axis forces. At the end of April, Truscott quickly suspended training for his remaining regiments. (The 30th Infantry was still training at the ITC, and the 17th Infantry was just beginning its

two-week course in the mountains.) During the first half of May, the 3d Division stood ready to attack in Tunisia, but no orders materialized. Truscott urged his superiors to permit a resumption of division preparations for Operation Husky.

The 3d Division was released for training on 15 May and assigned to the Bône-Philippeville area. Unfortunately, Truscott found the environment unsuited for training in landing operations or mountain warfare. At first, requests for his unit's transfer elsewhere were rebuffed by Allied force headquarters. But as Truscott later remarked, "persistent protests, like drops of water falling upon hard stones, eventually wore down the staff resistance." On 1 June, the division was ordered to Bizerte, "an ideal spot for invasion training."

The division spent the first three weeks of June preparing for its assault mission in the upcoming invasion. Truscott assigned one battalion from each regiment to train for beach assaults. Other infantry battalions rehearsed passing through their respective assault battalions to seize specific objectives. Unit training culminated when the 3d Division, augmented by other units and redubbed the "Joss force," conducted a full-scale dress rehearsal. Most soldiers thought they were beginning the actual invasion.

Since that would not come for another two weeks, Truscott curtailed intensive unit training. More time was allowed for recreation, although the "Truscott Trot" and physical conditioning were continued to maintain performance levels. Truscott later wrote, "Never was any division more fit for combat and more in readiness to close with the enemy than the 3d Infantry Division when we embarked for the invasion of Sicily" on 6 July 1943.

The 3d Division achieved extraordinary results in Sicily. On D-day, 10 July, it seized the port and airfield at Licata. Within thirty hours, the 3d attained its D+3 objective. Truscott overheard subordinates saying, "Fighting the battle was a damn sight easier than training for it." Subsequently, the infantry negotiated difficult terrain to seize Agrigento by surprise on 16 July. Then, in four days, Truscott moved his division nearly 100 miles over mountain trails, principally by foot, to seize Palermo on 22 July 1943. Truscott wrote after the war, "Careful planning and preparation, rigorous and thorough training, determination and speed in execution, had paid dividends in success." There is little to dispute in that observation.

Truscott's rigorous training plan prepared the 3d Division for combat in Sicily. From years of personal experience, education, and observation, he was convinced that the Army's "tactical principles and training methods were sound." Most difficulties were due to "faulty execution and inadequate standards." Truscott set about to correct those short-

comings in the 3d Division in a manner compatible with the unit's upcoming Husky missions. He quickly assessed the division's combat readiness, established priorities in training, and communicated his goals through the chain of command. When reversals (personnel losses and changes in mission) threatened preparations for Husky, he carefully dealt with each situation, then worked with his higher headquarters to reorient on training for the invasion of Sicily.

Yet he endeavored to establish training standards and objectives in accordance with soldiers' capabilities. Truscott believed that unrealistic goals could be as detrimental as no goals at all. He also recognized the value of decelerating training when appropriate. Rather than drive the division through difficult exercises up to the eve of the invasion, he accorded his men several days to relax and reflect on their accomplishments before the commencement of Husky.

He never eased up in one area, however: physical conditioning. Speed marching was the heart and soul of his training program and philosophy. He firmly believed that the "Truscott Trot" had prepared the men for combat, "physically and psychologically," and would see them through campaign challenges in Sicily.

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35

Unity of Command

The Failure to Achieve Unity of Command in Vietnam

Lieutenant Colonel Arthur T. Frame, U.S. Army, Retired

Students of the art of war learn early that unity of command is a necessary principle of war ensuring success on the battlefield. The United States' participation in the Vietnam War with other Free World military forces presents a classic example of where an integrated, or combined, command should have been established. It never was, and the lack of unity of command was evident in Vietnam at all levels.

At the outset of U.S. involvement in Vietnam, the United States established a combined command with its ally France. From the arrival in Vietnam of the U.S. Military Assistance Advisory Group (MAAG), Indochina, in 1950 through the French defeat at Dien Bien Phu in May 1954, the United States, by attaching strings to American aid, tried to influence the strategic direction of the war and the development of an independent, indigenous Vietnamese army with a role in its own development and training. The French parried American pressure by developing indigenous Vietnamese units commanded and led by French officers and noncommissioned officers; they also accepted only minimal U.S. advice on the conduct of operations and steadfastly refused to allow the Americans a role in training the Vietnamese. As the fall of Dien Bien Phu appeared imminent, the French agreed to let the Americans participate in training the Vietnamese and to place U.S. advisers with Vietnamese units. At the beginning of June 1954, the French formally requested that the United States join France in organizing and training the Vietnamese National Army.

After the Geneva Accords of 1954, the situation in South Vietnam was anything but stable. While the state of Vietnam had gained independence, the French remained in the south without a timetable for withdrawal. Meanwhile, French and American objectives did not coincide. But despite mutual distrust, the two powers agreed on a binational training organization under the overall authority of the French commander in chief in Indochina and the direct command of the chief of the American MAAG. Established on 12 February 1955, this integrated command lasted less than six months. By June 1955, the French were

gone, and the experiment of creating and training the South Vietnamese Army had become entirely an American task.

While the South Vietnamese government tried to stabilize itself, southern Communists began to rebuild and consolidate their own political and military apparatus. Beginning in 1956, the Vietcong (VC), as the southern Communists became known, initiated political agitation and subversion consisting of a systematic program of assassination and other acts of terrorism against government officials. Through 1957 and into 1958, insurgent incidents increased. American officials, however, misread the nature and seriousness of the insurgency, believing it to be a diversion covering a conventional attack across the demilitarized zone. In 1959, scattered and sporadic terrorist acts evolved into a sustained campaign by the Vietcong. By 1960, the South Vietnamese and their U.S. advisers found themselves embroiled in an internal insurgency that was assisted by the northern Communists.

Prior to 1960, U.S. advisers were primarily involved in training and performing high-level staff work. In 1960, they began advising ground combat units at the regimental level in the field. In 1961, U.S. advisers operated at the battalion level, and by 1964, they were with Vietnamese paramilitary forces. Gradually, U.S. advisers became involved in combat. In late 1963, President Ngo Dinh Diem was executed by members of a coup, and the tumultuous coup-filled year that followed led to political destabilization and battlefield losses. In 1965, U.S. combat units were introduced into the Vietnamese struggle.

By 1964, the armed forces of South Vietnam grew to 250,000, and U.S. support grew apace, to 23,000 advisers. To coordinate all U.S. military support activities in South Vietnam, the United States established the Military Assistance Command, Vietnam (MACV), in 1962. By 1964, MACV had consolidated support and advisory activities and subsumed MAAG.

MACV was a joint command subordinate to the U.S. Pacific Command (PACOM). The MACV commander, General William C. Westmoreland, commanded all U.S. forces in South Vietnam and was senior adviser to the chief of the Joint General Staff (JGS), Armed Forces of the Republic of Vietnam (AFRVN). While Westmoreland was responsible for combat operations within the borders of South Vietnam, the commander in chief of PACOM controlled the air war over North Vietnam. But despite the formal command linkage, Westmoreland more often reported directly to the U.S. Joint Chiefs of Staff (JCS) and the president and bypassed the PACOM commander. Thus, no unity of command existed.

In 1965, the United States decided to seek the assistance of other Free World combat troops in support of South Vietnam. This brought

Australia, New Zealand, the Republic of Korea, Thailand, the Republic of China, and the Philippines into the struggle. The involvement of these forces inevitably raised the question of command arrangements. Since the United States viewed Vietnam, like Korea in 1950, as a test of the Free World against Communist aggression, an arrangement similar to the United Nations Command in Korea seemed appropriate (although the UN had no role in Vietnam).

On 18 March 1965, in a message to General Earle G. Wheeler, chairman of the JCS, Westmoreland stated that he felt it was time for a transition to a combined command-and-staff arrangement. He also stated that such an arrangement would be acceptable to the South Vietnamese. While Westmoreland believed that a small, combined, and coordinating operational staff should be superimposed on the current structure of individual commands—MACV and AFRVN—he also envisioned that as greater numbers of U.S. troops arrived, he would assume control of those operations where American troops were involved and shape the operations and functions of a transitional command. Westmoreland went so far as to request Army Brigadier General James L. Collins to organize and manage the combined staff. From this beginning, it appeared that the combined staff would evolve into a combined command, with MACV and the Joint General Staff of the AFRVN as components of it that dealt primarily with administrative and logistical matters.

When Westmoreland, on 28 April 1965, met with the chief of the Vietnamese JGS, General Tran Van Minh, and then-minister of defense, Lieutenant General Nguyen Van Thieu, he found them "politically sensitive" to the proposal of a combined staff. Since South Vietnam had so recently gained its independence, the AFRVN leaders were cautious of any arrangement that appeared to threaten their national sovereignty. Moreover, they did not believe that the South Vietnamese populace would accept an American general in command of the AFRVN and feared fueling Communist propaganda charges that they were U.S. puppets. Because of these sensitivities, Westmoreland dropped the concept of a combined command and told his subordinates to get used to an environment where responsibility was "shared and cooperatively discharged without . . . traditional command arrangements."

In all cases, military working arrangements were decided on and agreements signed between the commanders of the various Free World military forces and the commander, MACV, that placed those forces under MACV's operational control. For instance, the Korean working agreement stated that Korean forces would operate under parameters established by the Free World Military Assistance Council, composed of the chief of the Vietnamese JGS, the senior Korean officer in Viet-

nam, and the commander, MACV. This council provided operational guidance to, not control of, Free World forces through the annual Combined Campaign Plan. First published at the end of 1965, the Combined Campaign Plan was not a true operational plan. It only broke the operational effort down geographically and functionally but assigned no tasks or goals.

Without the benefit of an integrated command at the top, agreements between local Free World commanders and South Vietnamese ground commanders provided coordination of combat operations. While South Vietnamese corps commanders retained overall responsibility for military affairs in each corps tactical zone, U.S. and other Free World force commanders accepted responsibility for tactical areas of responsibility (TAORs)—arbitrary geographical areas in which U.S. and Free World units conducted combat operations. Westmoreland described these arrangements as an extension of the advice-and-support role Americans previously had performed. Though the subject of forming a combined command arose among leaders from time to time in the next several years, each time it met a negative response based on the belief that the concept of coordination and cooperation was functioning adequately and that a combined command would commit the United States more than it wanted to be.

While the concept of TAORs and joint agreements between allied commanders seemed cleanly structured, it was not necessarily so. On the Vietnamese side, each corps tactical zone was broken into division tactical areas that were the responsibility of an infantry division. The several provinces within each division tactical area were called sectors (in military parlance) and commanded by the province chief. These sectors were subdivided into subsectors in which the Regional Forces and Popular Forces operated. Superimposed on top of this structure was the American organization, with Field Force commanders at the top. The Field Force commander corresponded to the Army of the Republic of Vietnam (ARVN) corps tactical zone commander and was responsible to MACV for all U.S. operations within his TAOR. No U.S. division, however, was made permanently responsible for a specific tactical area. The Field Force commander was also designated the senior adviser to the Vietnamese corps tactical zone commander, making all U.S. advisers within the zone responsible to him as well.

Cooperation and coordination between the ARVN and U.S. forces were not well exercised because the two forces had different languages and customs, and their missions were different: the ARVN was primarily responsible for area security in support of pacification; U.S. forces were committed to search-and-destroy operations.

To coordinate the overall operations of combined U.S.-ARVN forces, a Combined Campaign Plan was developed. This concept would provide

ARVN forces the opportunity to observe and evaluate the standards displayed by U.S. combat units. Under this concept, for the entire year of 1967, Operation Fairfax integrated three U.S. battalions with those of the ARVN 5th Ranger Group (down to squad level). While touted as a success, however, the operation was planned and directed exclusively by U.S. forces and did nothing to enhance ARVN capabilities for planning and conducting operations.

The same can be said for ARVN participation in one of the largest combat operations of the entire war, Operation Junction City. Directed against a major enemy stronghold, War Zone C in Tay Ninh province (in early 1967), Junction City was initially to have included two ARVN regiments. However, according to General Bernard W. Rogers, this plan was determined to be too ambitious, and ARVN participation was reduced to only four battalions, which were integrated at the battalion level. The implied rationale for this reduction was to eliminate the repetition of information leaks that had previously allowed the VC to escape from U.S.-ARVN forces, as in Operation Cedar Falls in the adjacent Iron Triangle.

In Operation Junction City, elements of the U.S. 1st and 25th Infantry Divisions, 173d Airborne Brigade, 196th Light Infantry Brigade, and integrated ARVN battalions formed blocking positions in an inverted horseshoe around the operational area while the 11th Armored Cavalry Regiment and 2d Brigade of the 25th Infantry Division pushed into the open southern end of the horseshoe to search out and destroy elements of one VC division and one North Vietnamese Army (NVA) regiment (as well as the headquarters of the Communist Central Office of South Vietnam [COSVN]). In keeping with the ARVN's primary mission of area security in support of pacification, elements of other ARVN divisions maintained a security cordon near the populated areas close to the area of operations.

Junction City was considered a success and a turning point that vindicated large-scale, multiunit operations. Yet while inflicting considerable damage to the Communists, who lost nearly 2,800 confirmed dead, Junction City presented disturbing strategic consequences and demonstrated weaknesses in MACV-AFRVN cooperation and combined action. The COSVN headquarters and the VC-NVA units were not destroyed but simply withdrew into Cambodian sanctuaries. As for MACV-AFRVN cooperation and combined action, it was superficial at best. U.S. commanders did all the planning and relegated their Vietnamese counterparts to the role of blindfolded executioners of their part of the action. Operational plans on the Vietnamese side were merely translations of U.S. orders, and the tactical role of ARVN units was largely supportive. As for coordination at the top, the Vietnamese JGS operational staff knew nothing about Junction City until it was

launched, although the operation plan was published a month in advance. This failure to inform the JGS, it is claimed, was done primarily to prevent leaks in security. Unity of command at the operational level appeared to be a facade.

In his memoirs, Westmoreland claims that he "never encountered serious disagreement" with senior Vietnamese officials and never regretted the decision not to establish a combined command. While former senior South Vietnamese officers, writing in the Center of Military History's *Indochina Monographs*, thought "the concept of cooperation and coordination predicated on the principles of equal partnership and division of responsibilities according to capabilities was perhaps the wisest and most appropriate [course] in the Vietnam context," problems were caused, in their opinion, by a shortage of "comprehensive guidance" by MACV and the JGS in their implementation of annual Combined Campaign Plans. Since U.S.-Vietnamese operations were planned and directed by Americans—with only token Vietnamese participation or approval—ARVN capabilities for planning and conducting combat operations on their own were not at all enhanced. These same senior former South Vietnamese officers also cite the Field Forces commanders' focus on U.S. troop operations—to the exclusion of their advisory duties—as a limiting factor to U.S.-ARVN cooperation and coordination.

General Bruce Palmer, writing in *The 25-Year War*, contends that the lack of a combined command caused a reduction of the close coordination necessary to achieve unity of effort in operations in Vietnam. He further contends that the decentralized nature of Free World forces planning and operations, as well as the U.S. domination of the annual Combined Campaign Plan, allowed U.S. commanders to run "their own shows" according to their assigned missions and left the Vietnamese without a strategy of their own when the U.S. and other Free World forces withdrew.

The Vietnam experience is replete with examples of allied and AFRVN operations where lack of unity of command produced flawed results. While allied deference to Vietnamese sensibilities was probably necessary, the lack of a single commander at the highest level led to decentralized planning and execution that resulted in minimal comprehensive guidance, reduced coordination between the allies, and, ultimately, failure. We can only speculate at this point, but had the principle of unity of command been adhered to at all levels by allied forces, the outcome in the Vietnam War might have been different.

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36

Weather

The Influence of Weather on Combined Arms Operations in Korea, 1950

Dr. Jack J. Gifford

Weather and terrain, as they apply to military operations, often interact to create a synergistic effect. So it happened during the Korean War around the Chosin Reservoir in December 1950, when the extremely cold, damp climate combined with the rugged, mountainous terrain to produce severe conditions for combined arms operations between the Chinese and U.S. forces.

The previous month, U.S. ground forces had advanced to the Chosin Reservoir in hot pursuit of a badly battered North Korean Army. The Americans sought to close on the Yalu River, in the process destroying what remained of enemy forces and reunifying Korea under the control of the Republic of Korea (South Korea). Instead, they confronted the Chinese Communist Forces' (CCF's) Twentieth Army, which having slipped undetected into Korea, attempted to envelop and destroy the advancing UN troops.

The critical terrain features that affected the outcome of this battle were the roads linking the advanced UN positions with the supply base at the port of Hungnam. For over half their length, these narrow, unpaved roads ran over a high plateau and through tortuous passes. Because UN forces depended on motor transportation to haul the bulk of their supplies, the roads became crucial for the movement of tanks and artillery pieces. Cutting the roads, which would prevent the movement of American motor vehicles, was a primary Chinese goal and a key to victory.

In later assessments of the battle, both sides felt that their equipment and clothing were inappropriate for the bitter winter weather. Concerning the latter, the Chinese wore quilted-cotton pants and long shirts that usually hung over their pants. Underneath these clothes, they wore light, summer-weight cotton shirts and pants (their summer uniforms). On their feet, they wore tennis shoes and heavy cotton socks that they often tied as leggings around their lower legs. The quilted-cotton overgarments were warm, although the cotton underclothing did not really provide the warmth of normal layered clothing. Morever,

when wet, the cotton garments were very difficult to dry and lost most of their insulation value. If they became soaked, the clothing froze—and so did the wearer. In addition, the thin tennis shoes offered little protection from the cold, and the Chinese suffered thousands of cases of frostbite and frozen feet. Some Chinese reports say whole companies of men froze to death during the campaign.

The Americans' layered woolen clothing offered much better protection against the cold, but Army and Marine equipment for the extremities had a number of shortcomings. For example, the U.S. forces had no satisfactory cold-weather boots. The leather boots the troops wore did not keep out the cold or damp, while the waterproof boots caused sweating, with the sweat then freezing inside the boots. When conditions did not permit the regular changing of footwear—for instance, after troops climbed hills or conducted extended firefights—U.S. forces also suffered frostbite and frozen feet. While American gloves gave considerable protection from the cold, soldiers still needed to remove all or part of one of their gloves to fire their weapons. In these cases, bare flesh froze to any metal weapon parts.

The United States deliberately kept sleeping bags in short supply, as men sometimes froze to death in them. Other soldiers were killed attempting to get out of their bags when surprised by night attacks. During the day, the Marines used warming tents to alleviate the cold. Many Marines felt these tents were vital in allowing them to continue fighting in the bitter weather of Chosin.

Personal weapons wielded by the men of both armies usually functioned despite the cold weather. With reduced lubrication, U.S. M-1 Garand rifles worked satisfactorily. On the other hand, most carbines froze and became inoperable. Problems also existed with many crew-served weapons. A spring in the Browning automatic rifles sometimes failed to work in extreme cold. Morever, machine guns, particularly water-cooled ones, tended to freeze up, as the antifreeze added to their water was only effective to 20 degrees below zero, while the temperatures around Chosin fell to 30 and 40 degrees below zero. Sometimes, machine guns could fire only in the single-shot mode. To keep their weapons from freezing up, most men fired them hourly. Of more significance, the baseplates for mortars often froze, then broke under recoil pressures when fired. On an earthen surface, good mortarmen can fire without baseplates; on ice or frozen ground, they cannot. Furthermore, the Chinese reported that over half of their mortar rounds failed to function properly due to the cold. Also, chilled Chinese fingers often found it impossible to unscrew the wooden caps of their potato-masher grenades.

Most logistical support for the UN forces was airlifted. The airstrip

at Hagaru-ri, at the head of the Chosin Reservoir, was particularly important for both bringing in supplies and evacuating 4,312 casualties—over half of which were cold-weather injuries. While cargo planes loaded at warmer and better-equipped sites in Japan, they landed on a short, frozen landing strip between high mountain peaks that was under intermittent small-arms fire.

The weather also affected air support in several ways. For instance, airfields near Wonson did not have heated hangars for the land-based planes. Thus, mechanics worked on planes with bare hands, and contact with cold metal was painful. The mechanical-bomb and rocket-loading equipment often froze up, and all the munitions had to be loaded by human muscle power. On U.S. aircraft carriers supporting the war, ice often choked the decks and made refueling, loading, and above-deck servicing difficult. Furthermore, icy decks made takeoffs and landings hazardous. Snow flurries and low clouds also contributed to the difficulties facing pilots flying air-support missions. Still, despite these complications, air support proved a vital ingredient in U.S. operations at Chosin.

Signal equipment was another critical item for troops fighting in Korea, but the cold put much of the equipment out of operation. Only the tank radios functioned satisfactorily. Communications failures contributed heavily to the destruction of Army forces east of the Chosin Reservoir.

Medical support on the frigid battlefield was also difficult, as plasma and sedatives froze. Medics warmed sedative bottles in their mouths or against their bodies, but only a warming tent could thaw plasma and other medical supplies. Even in the warming tents, water froze when placed more than eight feet from the stoves. On the other hand, wounds quickly froze, preventing excessive loss of blood. Emergency rations also froze, and the troops had difficulty in thawing them enough to make them edible. The troops ate partly frozen rations that caused severe gastrointestinal problems that often resulted in uncontrollable diarrhea.

Despite the cold weather, the artillery at Chosin gave strong supporting fires, but the numerous defilades in the mountainous terrain reduced the guns' ability to strike many critical areas. Furthermore, some types of ammunition failed to detonate in the extreme cold, particularly illumination shells. Perhaps more telling was the effect the weather had on propelling charges. The cold distorted the burn rates of this ammunition and made it impossible to predict accurately the fall of rounds. Throughout the battle, short rounds fell on friendly forces. The cold so slowed the recoil mechanisms of the tubes that it took up to two minutes for the guns to relay themselves. This made

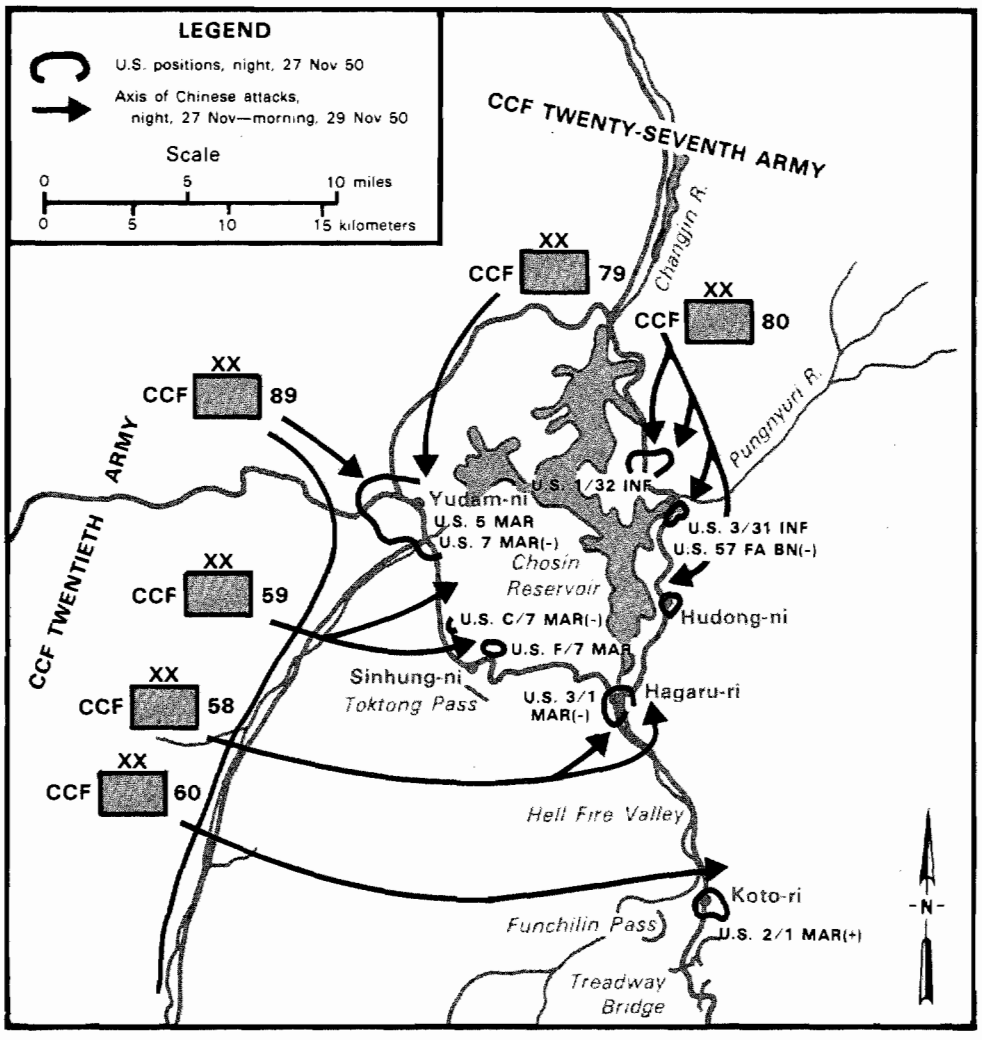
firing concentrated barrages difficult. In addition, prime movers for the artillery had to be started regularly, or they froze up and became unusable.

Tanks and trucks, if not run on a regular basis, froze up. Also, the frozen ground around the Chosin Reservoir restricted the ability of tanks to negotiate icy slopes and left them largely road bound. Indeed, more tanks were lost to weather and terrain than to enemy action in the Chosin campaign. In the restricted terrain and in subzero temperatures, normal armor tactics sometimes proved disastrous for accompanying infantry and support units. When engaged on the road, tanks usually stopped to fire. This forced all the thin-skinned vehicles in the column to stop, which made them very vulnerable to enemy small-arms fire. At one stage in the Chosin campaign, when a relief force, Task Force (TF) Drysdale, attempted to fight its way to Hagaru-ri, it was largely destroyed when the tanks in the column stopped to fire at the Chinese. This made the light vehicles, which depended on mobility for survival, easy targets for Chinese gunfire. Small-arms fire quickly knocked out several trucks, blocking the road and cutting the convoy into several segments, three of which were subsequently overrun.

Yet tanks, with their mobile artillery fire and protected machine guns, formed a vital part of the defensive perimeter at Hagaru-ri. Without this fire support and the tanks' ability to push aside most of the Chinese roadblocks, none of TF Drysdale (in the above instance) would have reached Hagaru-ri, where its firepower immensely strengthened the defense of the garrison.

A major U.S. attack planned for 0800 on 27 November aimed toward Mup'yong-ni, above the Chosin Reservoir, with the 7th Marines and the 2d Battalion, 5th Marines, in the lead. Meanwhile, the 1st Marines controlled key points along the road from Hamhung to the reservoir. On the east side of the reservoir, the 1st Battalion, 32d Infantry, commanded by Lieutenant Colonel Don C. Faith Jr., and the 31st Infantry, commanded by Colonel Allen D. MacLean, held firm positions. After the onset of the U.S. attack, however, the CCF's Twentieth and Twenty-Seventh Armies initiated their own massive attacks (see map 27).

On 26—27 November, TF MacLean, along the east side of the reservoir, established a perimeter at Pungnyuri inlet, about eight miles north of the 1st Marines' command post at Haguru-ri. The task force's infantry battalions were short of gloves, tire chains, and tarps for their trucks and had only kitchen tents for cover. The Chinese drove them from their forward positions north of the inlet on the second night of fighting. In this battle, the battalion's 75-mm recoilless rifle destroyed an enemy tank and self-propelled gun. In addition, the task force's



Map 27. Battle of the Chosin Reservoir, 27—29 November 1950

4.2-mm mortars gave fire support that broke up enemy assembly areas and blunted penetrations. A Marine tactical air control party provided air support for the task force and knocked out two Chinese self-propelled guns and a tank. However, the artillery battalion south of the inlet provided no fire support for the battalion north of the inlet. Moreover, the task force's tanks were six miles to the rear with the rear command post, completely out of touch with the forward elements.

TF MacLean's 2d Infantry Battalion set up a perimeter south of the inlet and was joined by several batteries of an artillery battalion with eight 105-mm tubes. A Chinese attack here on the first night of

the battle overran almost all the positions, and U.S. artillerymen fought mostly as infantrymen during the battle. On the second night of fighting, three M-16 quad 50s and four M-19s with dual 40-mm guns, plus the artillery headquarters and headquarters battery, joined the fight in the perimeter. This group had fought off an attack on its position about a mile south of the inlet during the first night. On the second night, the group lost an M-16 when its battery failed in the cold and the Chinese overran and destroyed it. The task force's tanks, six miles farther south, and the headquarters personnel with them were not attacked on the first night.

In the following nights of fighting along the perimeter, U.S. Army artillery and mortars furnished supporting fires, but the M-16s and M-19s of the antiaircraft unit provided the bulk of the fire support for the hard-pressed infantrymen. By the end of the hostilities at the inlet, all the mortars had broken baseplates as a result of the cold. During the short daylight hours, air cover kept the Chinese relatively inactive, which allowed the task force to collect its dead and wounded and reorganize for the next Chinese assaults.

The extreme cold constricted the capabilities of the task force. For example, the slower recoil of the guns hindered the artillery's ability to fire rapid barrages. In addition, illumination shells generally failed to ignite. The batteries of the tracked antiaircraft vehicles also sometimes failed to deliver enough power to rotate the turrets, and men became casualties when they used ungloved hands to feed ammunition and inadvertently touched metal. Medical problems were enormous, with hundreds of wounded needing plasma, all of which had frozen. Moreover, there were no warming tents, and some wounded men froze while at the aid station. Most of the medical facilities of the units were not at the battle perimeter, and the Chinese roadblock just north of the headquarters-tank position prevented the medics from reaching the forward elements of the task force.

For their part, the tanks moved out to clear the roadblock. However, they had no supporting infantry. At the roadblock, the tanks encountered a Chinese force armed with a captured American 3.5-mm bazooka that knocked out the lead tank, which then blocked the road. Another tank was lost when it slipped on the icy slopes while trying to pass the knocked-out tank. The tankers found that, without infantry support, they could not clear the roadblock with the supporting fire block, and they fell back to their assembly area. A second attempt to open the road the next day also failed, with the loss of two more tanks to the treacherous, icy terrain. This last attack was supported by a makeshift infantry team gathered from the personnel of the rear headquarters. This uncoordinated mob could not manuever as a fighting unit and contributed little to the tank assault. Before the task force attempted

to fight its way south, the tank unit retreated and joined the defenses of Hagaru-ri, ending any chance of a full combined arms operation by the badly chopped-up units. Had the scattered U.S. forces been able to form a regimental combat team, they possibly could have fought their way out.

On 1 December 1950, after losing Colonel MacLean to Chinese gunfire, the units east of the reservoir consolidated into TF Faith and began fighting their way back to Hagaru-ri. Because all the task force's artillery pieces and mortars were frozen, they had to be abandoned. For fire support during the retreat, the task force depended on close air support and its antiaircraft guns. Yet largely because of the freezing weather, only one of the antiaircraft vehicles could be started, an M-19 with dual 40-mm guns. Supported by this tracked vehicle and air cover, the unit moved some distance down the road, but the M-19 was used mostly for hauling trucks past roadblocks, and it ran out of ammunition before reaching the critical roadblock that the tank company had unsuccessfully attacked two days earlier. Although infantrymen cleared the roadblock, the trucks in the convoy, without supporting weapons of any kind, were later destroyed by the Chinese.

While TF Faith's experience serves as an example of the dangers inherent in failures to coordinate combined arms, the movement of the 5th and 7th Marines from Yudam-ni to Hagaru-ri is an excellent example of successful combined arms operations in cold weather. The Marines emplaced artillery at both Yudam-ni and Hagaru-ri, fourteen road miles apart. They also had an infantry company at the pass between these two points, just within range of the supporting artillery at Hagaru-ri. Furthermore, the Marines employed a number of tanks in their defense of the base at Hagaru-ri, while a single tank with a 90-mm gun led the road column in the breakout from Yudam-ni. The Marine artillery also displaced by batteries and stopped to set up firing positions several times during the move to continue its support of the infantry. In addition, the Marines had close air support and made effective use of their organic mortars and recoilless rifles. Infantry units attacking the Chinese along the hills flanking the road also remained within supporting distance of their artillery. The Marines made night attacks across the ridges in weather so bitter that two men died of cold shock while advancing.

The lone Marine tank led the column of lighter vehicles down the road to Hagaru-ri. As it came to roadblocks (there were thirty-seven the first six miles between Yudam-ni and Hagaru-ri), it provided fire support until the Marine engineers moved forward to clear the blocks. When a roadblock was a blown-out bridge, the engineers either put in a temporary replacement or built a bypass using bulldozers and other

equipment. The Marine infantry moving along the hillsides annihilated the Chinese covering the road, and the convoy moved on. Wounded men and drivers rode; all others walked. The Marines evacuated everything but their dead, whom they buried before departing. The artillery, which remained in position until almost all the troops left, answered calls for fire support from the troops on the ridgelines. Meanwhile, close air support kept the Chinese relatively inactive during the daytime. By this time, the Marine columns began to encounter a number of Chinese immobilized by the cold.

The company holding the summit above the critical pass between Yudam-ni and Hagaru-ri was just within reach of the fire base at Hagaru-ri, so as the column from Yudam-ni linked up with the force holding the pass, it came within range of artillery fire support. The head of the Marine column made it from Yudam-ni to Hagaru-ri in just fifty-nine hours; the tail of the column took seventy-nine hours. When the Marine column reached the top of the pass, its prime movers ran out of fuel, and it lost ten of its eighteen heavy 155-mm artillery pieces. The prime movers were diesel powered, and fuel could not be moved forward to reach them.

Meanwhile, the fire base at Hagaru-ri held out against heavy attacks. Combat engineers and service troops were pressed into service and established a defensive perimeter. The best infantry units, with preplanned mortar and artillery fires, defended a draw that offered the best approach for the Chinese into Hagaru-ri. Service and engineer troops held the key hills surrounding the town, and the tanks defended the open flatlands leading to the reservoir and gave fire support to the hill positions manned by the engineers. This defensive formation succeeded in holding the perimeter until additional combat troops (TF Drysdale) fought their way into Hagaru-ri. While the fighting raged, the engineers continued working on an airstrip using floodlights, even during the heaviest fighting. When completed, the airstrip allowed the wounded from the 5th and 7th Marines to be flown out, along with those TF Faith survivors who had worked their way back to Hagaru-ri across the frozen reservoir after the Chinese had destroyed their truck convoy.

Overall, the Marine withdrawal to Hagaru-ri was a masterpiece in combined arms operations undertaken in the most bitter weather. While most of TF Faith became casualties, the Marines withdrew in good condition and were ready to return to combat almost immediately. On the other hand, the CCF's Twentieth Army found the combination of Marine and Army combined arms operations and the frozen wastes of North Korea more than it could handle. The Twentieth Army was not fit for combat for nearly six months. Its total casualties can only be

guessed at, but some Chinese survivors reported nearly 100 percent losses in their divisions. Weather inflicted most of these casualties.

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Authors

Major Bruce Alsup graduated from Middle Tennessee State University in 1976 and is currently pursuing an M.A. in history at the University of Missouri. He is also a 1990 graduate of the U.S. Army Command and General Staff College.

Dr. Robert F. Baumann has a Ph.D. in history from Yale University and researched this article on location while in residence at Leningrad University during the summer of 1991.

Dr. Gary J. Bjorge received a B.A. from the University of Minnesota. After five years of service as an officer in the U.S. Navy, he received his master's and doctorate degrees from the University of Wisconsin—Madison. His area of specialization at the U.S. Army Command and General Staff College is East Asian and Chinese military history.

Dr. Jerold E. Brown received his Ph.D. in military history from Duke University in 1977. His published works include *Where Eagles Land: Planning and Development of U.S. Army Airfields, 1910—1941* and *Voluntarism, Planning, and the State: The American Planning Experience, 1914—1946.*

Lieutenant Colonel Thomas E. Christianson earned a B.A. and an M.A. in history from the University of Wisconsin. He served as an assistant professor of European history at the U.S. Military Academy from 1984 to 1987.

Major Stephen D. Coats earned a master's degree in American history from the University of Wisconsin—Madison and is a graduate of the U.S. Army Command and General Staff College. He has served with the 7th and 9th Infantry Divisions.

Major Robert E. Connor received an M.A. in history from Northeastern Illinois University. He is currently studying toward a Ph.D. in English history at the University of Kansas. As an Infantry officer, he has served in command and staff positions in the United States and Germany.

Lieutenant Colonel John R. Finch (U.S. Army, Retired) holds an M.A. in history from the University of Kansas and served twenty-two years as an intelligence officer, participating in the Vietnam War's Easter Offensive, Operation Just Cause in Panama, and the latter stages of Operation Desert Storm in the Persian Gulf.

Lieutenant Colonel Arthur T. Frame (U.S. Army, Retired) holds an M.M.A.S. from the U.S. Army Command and General Staff College and an M.Ph. in history from the University of Kansas, where he is currently a Ph.D. candidate in Russian history.

Dr. Christopher R. Gabel received his Ph.D. from the Ohio State University in 1981. His publications include *The U.S. Army GHQ Maneuvers of 1941* and *Seek, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War II.*

Dr. George W. Gawrych received a Ph.D. in Middle East history from the University of Michigan. His publications include *Key to the Sinia: The 1956 and 1967 Battles for Abu Ageila* and numerous articles in U.S. and international journals.

Dr. Jack J. Gifford, a veteran of the Korean War, received a Ph.D. from the University of California—Los Angeles, where he also served as a lecturer. He was also a professor at Westminster College.

Dr. Thomas M. Huber earned his doctorate from the University of Chicago and has taught at Stanford University. He is the author of *Japan's Battle of Okinawa, April—June 1945* and *The Revolutionary Origins of Modern Japan.*

Lieutenant Colonel Matthew S. Klimow earned a B.S. from the U.S. Military Academy, an M.A. from Webster University, and an M.M.A.S. from the U.S. Army Command and General Staff College. He is currently writing on his experiences in Operation Desert Storm.

Major George E. Knapp, an infantryman and Vietnam War veteran, received his bachelor's and master's degrees in history from Spring Hill College, Mobile, Alabama, and the University of Missouri—Kansas City, respectively. He conducted the interviews for *Buffalo Soldiers at Fort Leavenworth in the 1930s and Early 1940s.*

Major(P) Neil V. Lamont has an M.S. in national security affairs with a concentration in Soviet and East European area studies from the Naval Postgraduate School. He is also a graduate of the U.S. Army Russian Institute, the Defense Language Institute, and the U.S. Army Command and General Staff College.

Dr. Samuel J. Lewis received his Ph.D. in modern European history from the University of California—Santa Barbara in 1983. He is the author of *Forgotten Legions: German Army Infantry Policy, 1918—1941* and *Jedburgh Team Operations in Support of the 12th Army Group, August 1944.*

Lieutenant Colonel James R. McLean earned a B.S. from the U.S. Military Academy and a master's in history from the University of North Carolina at Chapel Hill. He is a graduate of the U.S. Army Command and General Staff College.

Major George J. Mordica II, an Armor officer, received a B.A. in history from the University of Southern Mississippi and an M.A. in international relations from Western Illinois University and is a graduate of the U.S. Army Command and General Staff College.

Dr. Michael D. Pearlman received a B.A. from Wichita State University, an M.A. from the University of Chicago, and a Ph.D. from the University of Illinois. He is the author of *To Make Democracy Safe for America* and has published articles on military issues in several journals.

Lieutenant Colonel Robert D. Ramsey III holds a master's degree in history and is a Ph.D. candidate at Rice University. He is currently working on a study of the Meuse-Argonne campaign in World War I.

Major Gary D. Rhay, a Vietnam War veteran, received a B.A. in political science from the University of Oregon and an M.M.A.S. from the U.S. Army Command and General Staff College. He has also taught at the U.S. Military Academy.

Dr. William G. Robertson has a Ph.D. in history from the University of Virginia and is the author of *Back Door to Richmond: The Bermuda Hundred Campaign, The Petersburg Campaign: The Battle of Old Men and Young Boys*, the Bull Run chapter in *America's First Battles*, and *Counterattack on the Naktong, 1950.*

Authors

Lieutenant Colonel Edward P. Shanahan earned a B.A. in political science from Eastern Kentucky University and an M.S. in geography from Pennsylvania State University. He served as an assistant professor of history at the U.S. Military Academy.

Major Terry L. Siems, an Armor officer, received an M.A. in history from Pittsburg State University in 1982 and has served as a company commander in Germany.

Dr. Roger J. Spiller, general editor, CGSC Press, and George C. Marshall Professor of Military History, U.S. Army Command and General Staff College, received a Ph.D. in history from Louisiana State University. He is the editor of the three-volume work, *Dictionary of American Military Biography.*

Dr. Lawrence A. Yates received his Ph.D. in history from the University of Kansas. He has written *Power Pack: U.S. Intervention in the Dominican Republic* and is currently writing the official histories of Operation Just Cause and the role of Joint Task Force-Panama in the Panama crisis.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1992 657-632