FIRST ON THE LINE: THE 35TH ENGINEER BATTALION IN WORLD WAR TWO AND THE EVOLUTION OF A HIGH-PERFORMANCE COMBAT UNIT

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This thesis examines the effects of functional discipline and unit cohesion on the combat performance of the 35th Engineer (Combat) Battalion during World War Two. The 35th Engineer Battalion was mobilized in the summer of 1941 as the 1st Battalion, 35th Engineer Regiment. The 35th participated in the Louisiana Maneuvers of 1941, the Alaskan-Canadian Highway construction, and three campaigns in the European Theater of Operations. The thesis text length is 153 pages and considers the importance of functional discipline and unit cohesion on a unit's performance in combat.

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

FIRST ON THE LINE: THE 35TH ENGINEER BATTALION IN WORLD WAR TWO AND THE EVOLUTION OF A HIGH PERFORMANCE COMBAT UNT, by Major Shawn M. Umbrell, 154 pages.

This thesis examines the effects of functional discipline and unit cohesion on the combat performance of the 35th Engineer (Combat) Battalion during World War Two. The 35th Engineer Battalion was mobilized in the summer of 1941 as the 1st Battalion, 35th Engineer Regiment. The 35th participated in the Louisiana Maneuvers of 1941, the Alaskan-Canadian Highway construction, and three campaigns in the European Theater of Operations. The thesis text length is 153 pages and considers the importance of functional discipline and unit cohesion on a unit's performance in combat.

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Completion of this thesis would not have been possible without the willing contributions of the veterans of the 35th Engineer Regiment and their families. The honest and candid information they provided serves as the backbone of this document. I am forever grateful for the contributions of these veterans and family members as well as for the friendships fostered through our communication. This thesis is dedicated to them.

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TABLE OF CONTENTS

Page

ACRONYMS

Col.	Colonel
Capt.	Captain
Lt.	Lieutenant
Lt. Col.	Lieutenant Colonel

CHAPTER 1

INTRODUCTION

The distant sounds of battle could be heard clearly in the crisp, cold morning air as the engineers of 1st Platoon, Company C, 35th Engineer Battalion prepared their fighting positions. Having arrived at the secluded crossroad village called Pironpre just after sunrise, the engineers wondered what might be the fate of the paratroopers who relieved them at Bastogne just the day before. Most of the men of Company C were convinced that the arrival of the 101st Airborne Division had prevented an inevitable German breakthrough of their thin defensive line east of Bastogne. The arrival of the paratroopers did, in fact, check the cautious approach of the enemy, but now, as the sounds of battle indicated, the Germans were determined to capture Bastogne and secure critical roads to support their advance toward Antwerp. So here, just two miles west of Bastogne near Sainte Hubert, the men of the 35th prepared once more to meet the enemy in battle.

Despite the cold, Private First Class Orie Combs removed his heavy over coat and started scratching out his fighting position. Nearby, Private First Class Robert Lemos listened to the distant fight and watched for signs of approaching enemy. Staff Sergeant Cannon had selected both, two of his best men, to man this forward position. Armed with one of the platoon's bazookas, the men expected German tanks much like those that threatened their loose grip at Bastogne. Cannon's instructions were clear, "Stop them here."

No sooner had he started digging when Combs heard low rumble and metal on metal screech of approaching tanks, seemingly from the west. “Good, tank support,” he thought to himself. Unfortunately, his ears had deceived him.

“German tanks,” exclaimed Lemos. Combs turned quickly. There, just one hundred yards away were two approaching German Panzer IV tanks. Combs went into action immediately securing the bazooka.

“Hit him between the bogey wheels,” said Lemos as he loaded a round into the back of the bazooka. Combs waited for a moment, patiently looking for the opportune shot, and then fired.

The ensuing battle temporarily halted the advance of the Panzer Lehr Division’s reconnaissance battalion and would ultimately delay the entire division’s advance for nearly 48 hours. Remarkably, the men of the 35th Engineer Battalion had dramatically altered the course of the Battle of the Bulge, but such was the story of their existence.

Activated on July 15, 1941, as the 1st Battalion, 35th Engineer Regiment, the 35th Engineer Battalion (Combat) would go on to display tremendous skills and prove to be a superb combat engineer battalion.[1] When tested in combat, the 35th Engineer Battalion’s performance was remarkable. The 35th was a unit that succeeded in every endeavor, often against incredible odds. Analysis of the battalion’s pre-combat activities uncovers three factors that contributed to its remarkable performance in combat. These factors were a uniquely demanding unit training program, a dynamic leader development program, and unique engineer missions in the months prior to the test of combat. The results of these three factors combined to create a functionally disciplined and cohesive organization capable of overcoming extreme adversity.

The purpose of activating the 35th Engineer Regiment was not unlike that of most units mobilized between 1939 and 1941. In the three years prior to the Japanese attack at Pearl Harbor, fear of becoming entangled in the wars that raged in Europe and Asia prompted the United States Government to initiate the Protective Mobilization Plan, a smaller program of emergency mobilization within the War Department's larger Mobilization Plan. This plan had been developed in the years following World War One when the United States military forces dwindled to a mere skeleton of the force that existed at the end of the war. The Protective Mobilization Plan Army grew from 286,000 men in June, 1940 to 1,470,000 just one year later.[2] Organizations that existed only on paper, such as the 35th Engineer Regiment, were activated and formed around a cadre of commissioned and non-commissioned officers. Draftees required to perform military duties for a period of twelve months filled the ranks.

Fortunately, Lieutenant Colonel (Lt. Col) Robert D. Ingalls was placed in command of the 35th Engineer Regiment. A veteran of World War One, Lt. Col. Ingalls was an expert trainer and leader of men. Even before the ranks of his regiment were filled, Ingalls initiated a focused training plan intended to develop a high level of functional discipline and unit cohesion within the organization. While many of his peers remained tied to the "old engineer" mindset of focusing their training on specific engineer tasks, Ingalls determined to develop an engineer organization capable of fighting a determined enemy while simultaneously performing combat engineer operations. While commanding the 35th Engineer Regiment, his methods would be tested early and refined during the famed Louisiana Maneuvers of 1941. They would be proven

again on the Alcan Highway, and then ultimately proven on the battlefields of Europe in 1944 and 1945.

Ingalls implemented specific programs designed to develop his subordinate leaders and soldiers by instilling discipline, developing decision making skills, and encouraging initiative. He knew that establishing functional discipline was a prerequisite to building the sort of unit cohesion required to sustain the organization when tested in combat. In his essay, "Discipline: Creating the Foundation for an Initiative-Based Organization," Chris Kolenda states that "the true test of discipline is functionality. Kolenda, a 1987 graduate of the United States Military Academy with extensive military leadership experience, explains that discipline is too often associated with sanction or punishment and is therefore misrepresented when considering discipline's true effect on an organization. "Discipline, for members of a mature organization," writes Kolenda, "means to understand the difference between right and wrong in terms of performance and behavior, and to do what is right in the absence of supervision." He contends that leaders who value versatility, independent thought, and initiative require this level of discipline. Ingalls sought and achieved this level of functional discipline in his organization.[3]

While Ingalls' programs had a profound impact on the engineers of the 35th, no other experience prepared the men for war than did the construction of the Alcan Military Highway. Completely prepared by Ingalls to accomplish this endeavor, the men of the 35th overcame extreme adversity (created by both man and nature) for eighteen months in the harsh environs of British Columbia and the Yukon Territory. Despite having virtually no external logistical support, an outbreak of jaundice, and no published

engineer solution to the problems created by such natural obstacles as muskeg and permafrost, the engineers of the 35th conquered "the road" and returned to the United States a cohesive and hardened engineer outfit. Working in a vast, empty land where the temperature could drop 80 degrees overnight and black flies and mosquitoes were almost as formidable as the Japanese, the men of the 35th formed the spearhead of an effort to start and finish what one engineer officer called "the biggest and hardest job since the Panama Canal."[4] The hardships endured by the men of the 35th formed the bond of unit cohesion that would later sustain them during fierce combat.

When considering the definition of unit cohesion Robert Madden, a 1978 graduate of the United States Military Academy with extensive leadership experience, summarized that "a unit becomes cohesive when its members feel a sense of belonging that is developed through shared unit values and relationships of mutual trust and confidence." Utilizing several resources of analysis and theory, Madden concluded that unit cohesion was, and will continue to be, the most important moral factor contributing to the success of units in combat. Months later, at places such as Bastogne, Belgium, and the Rhine River in Germany, the 35th would display a high level of unit cohesion while tested in combat.[5]

Familial ties to the 35th sparked an early interest in the unit for me. As a child, a love of everything "Army" bound me to admire my grandfather, a veteran of the 35th, but I didn't fully understand the extent of his service until several years after his death. In fact, for many years I simply settled for the knowledge that my grandfather served in the Army, that he had been involved in the construction of the Alcan Highway, and that he had served in the European Theater of Operations. Not until the summer of 2000, while

serving as a platoon leader in the 101st Airborne Division, did I seek to learn more about his service. Fortunately, small clues to locating other veterans of the 35th were located on the back my grandfather's unit photograph. I had admired this simple photo for years as it hung humbly and virtually unnoticed by others for years in my grandparents' formal dining room. In the months following my grandfather's death in late 1988, my grandmother gave me possession of his military articles, so down came the photo. Only then did I realize that each member of the unit was listed on the back by name and place of residence.

However, I gave no consideration at that time of locating any of the veterans. Soon after, I enlisted in the army and several years passed before I finally determined to locate somebody who served with my grandfather. Applying the information found on the back of the unit photo to a simple Internet search led me to the widow of one of my grandfather's fellow platoon members and within days I was in contact with his platoon leader. Imagine my surprise when I learned that my grandfather had defended the very same ground in the Ardennes that my own division had become famous on! As I gained further contact with other veterans of the 35th, I started to capture their stories and became overwhelmed with the desire to document their achievements. Since then I have travelled the country visiting veterans of the 35th, attended their unit reunions, been accepted as an honorary member of the unit, and created a website dedicated to their service. To this day I am amazed at the display of camaraderie and unit history. My incredible admiration for the men of the 35th provided the motivation needed to start this project, and I hope it will be beneficial to the study of military history.

When I first started documenting the history of the 35th, my desire was to create a narrative account of the unit's history. My first work focused on the unit's actions during the Battle of the Bulge. Since a wealth of material exists on that subject, I was able to compile a fairly detailed narrative. While writing that piece I used every available primary source document that I could find pertaining to the involvement of the 35th in the famous German offensive in the winter of 1944-1945. During my research I discovered details of many actions, some significant, that I had not seen published before. I was proud of my finished product and confident that it was an accurate account of the unit's history in that battle. However, I found myself asking, "So what?" After all, the 35th didn't win World War II singlehandedly. Certainly there were many units who had contributed significantly to the war effort without making national headlines. I grew curious as to what had contributed to the 35th's success in combat.

While attending the 35th's 2002 reunion in Branson, Missouri, I was offered the clue that would later result in this study of the 35th as it relates to the importance of functional discipline and unit cohesion. Charles Botdorf, once a platoon leader in the 35th Engineer Battalion, told me that what made the 35th so great was "camaraderie." But why had the men of the 35th grown so close and performed so well? Only after I began researching the activation and mobilization of the 35th did I answer the "so what" and the "why."

During my earliest conversations with some of the unit's veterans, I learned that the 35th Engineer Battalion was originally activated as the 1st Battalion, 35th Combat Engineer Regiment. The regiment was later reorganized as two separate engineer battalions (one designated the 35th, the other the 145th) shortly after completing the

Alcan Highway. However, since my grandfather remained in the 35th Battalion, I had been focusing my research only on the battalion. If I was going to truly tell the story of the 35th Engineer *Battalion* I'd have to also tell the story of the 35th Engineer *Regiment.* So I refocused my effort and started documenting the unit's history from the beginning; that's when I discovered the personality of Colonel (Col.) Robert D. Ingalls. In Col. Ingalls I found an example of a leader with a unique approach to training and team building. Ingalls' ability to build a high performance, functionally disciplined unit rapidly earned him and his regiment a strong reputation within the engineer branch. This reputation earned the 35th a key role in the construction of the Alcan Highway. The hardships endured and experience gained in the construction of that highway strengthened the bond of unit cohesion which later contributed directly to the unit's success in combat. Those facts warrant this study.

Many sources served a critical role in my research. Primary source documents, such as the 35th's after action reports and operations journal, maintained at the National Archives, served as the basis of my research. Other primary source documents, such as the records of units supported by the 35th, were equally important providing vital information pertaining to the performance of the 35th. Some of the most readily available sources, such as the Center of Military History's official history of World War II, were surprisingly instrumental in providing much needed information as well as in leading me to other sources. Other more difficult to access documents, such as the personnel records of a German paratrooper, provided equally important and revealing information.

I also compiled a long list of secondary sources during my research. Some of the most important of these, such as the Engineer branch's *Military Engineer* and other

period professional military journals, played no small role in providing much need information. Of course, many books helped fill the gaps in my research, but none were as influential as Heath Twichell's, *Northwest Epic*. Twichell's work not only serves as the definitive history of the construction of the Alcan Highway, but also serves as an example of solid research and writing. Last and undoubtedly most important, are the details provided by the incredible veterans of the 35th. Without their willingness to share personal stories with me, this document would have no life.

To complete this study I utilized such historic studies of soldiers in combat as *Men Against Fire,* by S. L. A. Marshall, and *The American Soldier,* by Simon Stouffer, et al. *Leadership: The Warrior's Art,* a compilation of excellent leadership essays, was also a very useful in this study. Finally, various US Army manuals helped me to apply theory with doctrine and offer a well rounded view of the subject. While my writing at many points will take the form of a narrative, these narratives support the main point of the thesis; the impact of functional discipline and unit cohesion on an organization's ability to succeed in combat.

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[1]General Order #15, Headquarters Fort Snelling, Minnesota, 15 July 1941.

[2]V. R. Cardozier, *The Mobilization of the United States in World War II: How the Government, Military and Industry Prepared for War* (Jefferson, NC: McFarland and Company, Inc., 1995), 73-79.

[3]Christopher D. Kolenda, "Discipline: Creating the Foundation for an Initiative-Based Organizatio" in *Leadership: The Warrior's Art* (Carlisle, PA: Army War College Foundation Press, 2001), 83.

[4]Heath Twichell, *Northwest Epic: The Building of the Alaska Highway* (New York, NY: St. Martin's Press, 1992), xiii.

[5]Robert W. Madden, "Living on the Edge: Building Unit Cohesion and the Will to Win," in *Leadership: The Warrior's Art* (Carlisle, PA: Army War College Foundation Press, 2001), 59.

CHAPTER 2

THIS TIME TO MAKE HISTORY

Calvin Campbell peered out the window of the train at the camp as it came into view. “Not much like Ft. Leonard Wood,” he thought to himself. At least Leonard Wood had barracks. All he could see here were tents, tents all over the place. “So this is Camp Robinson,” he thought. “Great.”

As the train slowed, steam hissing from the engine, Campbell could see a group of officers and noncommissioned officers waiting to receive him and the others on the train. A small corporal on board began milling about, preparing the men to unload the train. “Put those cards away,” he barked. “Pick up your duffle bags and get ready to unload.”

Soon after, the men poured from the train, some carrying their bags on their shoulders, others dragging them in an effort to avoid being trampled. A young captain, with the assistance of some of the noncoms began forming the men into ranks. “C’mon men, this ain’t hard, I want three ranks,” he said. “Three ranks.” “If you’re taller than the man in front of you, move forward!” The young captain moved along the long column of soldiers, prodding them as they shuffled about. A low murmur continued as the new recruits shuffled their way forward and back.

“Pardon me,” said Campbell, looking up at a man trying to make his way to the front of the column. Just barely five feet, seven inches tall, Campbell found no need to move forward. He continued to look over his shoulder as he was bumped further to the rear.

“That’s it,” the captain continued. “Keep moving. No need to talk. If you’re taller than the man in front of you, move forward.” Why the colonel wanted it this way, he

couldn't understand. He just wanted to get it done, and from the looks of it, getting these four hundred new soldiers in order by size was going to take a while.[1]

The 35th Engineer Regiment was activated on July 15, 1941 at Fort Snelling, Minnesota, to serve as the United States Army VII Corps engineer regiment. Lt. Col. Robert D. Ingalls assumed command of the 35th and its meager cadre just four days later. Over the course of the next six months, Ingalls would implement training programs and foster a command climate that ultimately produced one of the most functionally disciplined engineer regiments in the United States Army. Ingalls' programs would have a lasting effect on the men of the 35th and would serve as the foundation for unit cohesion that would later sustain the organization during combat.

A graduate of Cornel University and veteran of World War One, Ingalls was an experienced professional officer. At age 47, he was a slender man of average height, but was easily recognized by his thin grey mustache, a feature which produced a dignified look. His recent conduct as the executive officer of the 41st Engineer Regiment, the first Negro engineer tactical unit in the United States Army, had earned him command of the 35th. Now Ingalls was intent on building his own unit from the ground up and making it the best engineer regiment in the army. He was determined that the soldiers of his regiment would be the best at everything they did.[2]

Ingalls brought with him to command a training philosophy that was shaped by his vast experience as an engineer officer, not the least of which he gained during the earliest part of his career on the Western Front during World War One. During "The Great War," Ingalls commanded Company D, 5th Engineer Regiment, 7th Infantry

Division. As a young officer, Ingalls learned many lessons as he helped to mobilize and train the regiment for war; lessons that would serve him well as commander of the 35th.

Though the 7th Infantry Division arrived on the battlefield of France late in the war, Ingalls still saw enough combat to know just how terrible armed conflict could be. The following is an excerpt from his company's history:

> At midnight (October 9th-10th) we witnessed our first bombardment, heard the scream of shells, the tear of our own artillery fire, and spent our first night in a dugout. No wonder the Huns wanted to remain under ground, for these were works of art. . . . The first wiring detail, the beginning of the best time we spent in France, went forward to make entanglements on the night of the 11th, and on the 13th we did our first work under machine gun fire in the daytime. On the 17th, we learned what Jerry could do with large shells . . . for two hours the shells tore up trees and soil in our area in such a manner that no man could go outside. . . . Coming up the approach from work a platoon was fired upon by a machine gun from an enemy airplane. Shells fell thickly too, and airplanes often harassed the men. Such was our baptism of fire.[3]

For the following month, Ingalls and his company supported the operations of the 7th Infantry Division in the Puvenelle Sector and Woevre Plain Operation. The armistice, declared on November 11, halted further combat operations and Ingalls returned to the United States in February 1919 where he spent the interwar years on troop duty with engineer units almost continually until the outbreak of World War Two.[4]

World War One had been marked by large scale defensive operations in which engineer units were primarily engaged in maintaining roads and constructing defensive fortifications. These defensive works, typically a grandiose series of trenches and obstacles, were virtually impregnable. Even the never-before-seen calibers and masses of artillery failed to break the stalemate which developed on the European battlefield. As a result of this experience, some military authorities concluded that the defense definitely had triumphed over the offense. This school of thought was reinforced in the Engineer

Field Manual of 1932. Most of its attention to field fortifications was devoted to trench construction. There were few pages on antitank obstacles or the value of antitank mines. Construction of airfields was given but limited coverage.[5]

By the mid-1930s, however, great improvements in motor vehicles, tanks, and airplanes, made the adoption of new tactics imperative. Senior Army leaders ordered a reexamination of the organization and tactics of the army. The aim was an increase in mobility, utilizing mechanical power to the utmost, and a reduction in the size of troop units. The trend toward mobility expanded rapidly in the weeks and months following Germany's successful attacks in Western Europe during 1939 and 1940. While Ingalls may have feared that his continued assignment to tactical level units meant that he stood little chance for promotion to the senior ranks, he soon found himself testing and implementing the Army's new mobile doctrine; one which he embraced whole-heartedly.[6]

The effect that Germany's military actions had on the US military's move toward mobility was profound. In an address to The Society of American Military Engineers in May 1941, Major General Julian L. Schley, Chief of Engineers, stated, "As the recent campaigns [in Europe] have shown, the offense again is dominant on the battlefield. The gasoline motor in its multitude of uses has conferred on armies an unprecedented mobility. Distances are measure in miles, where formerly they were expressed in feet or yards. Extensive areas are covered in a single operation; now we have a Battle of France rather than a Battle of Soisssons."[7]

Schley, having assumed his role as Chief of Engineers in 1937, recognized the impact that greater mobile operations had on the mission of the Engineers and went on to say that:

> We generalize many of the prime functions of Engineers by saying that it is their mission to make the going easy for our own forces. The new mobility of armies has sky-rocketed the importance of this part of our work. Whenever an obstacle is encountered, it must be quickly removed, or overcome, or passed around. If the obstacle is formidable, it is certain to call for the employment of engineers. . . . If the obstacle consists of a major fortification–the greatest of all obstacles--it will still be the job of the Engineers to assist in its reduction . . . If the obstacle consists of a waterway, it is, of course, the job of the Engineers to get the attacking forces across . . . from manning the first assault boats in the face of enemy fire to the construction of the ponton and fixed bridges after the bridgehead has been established . . . Present day Engineers also play a most important part in impeding the advance of the enemy. In this connection, our ability to create obstacles is especially noteworthy.[8]

Further study of Germany's military operations highlighted the fact that engineers should also be prepared to fight as infantry. In a series of articles published in the Engineers' professional journal, *The Military Engineer*, Captain Paul W. Thompson described in detail German engineer feats in the advance toward Warsaw, bridging operations over the Loire River, assault crossings of rivers during the Battle of France, breaking the Maginot Line, and several other events. These vivid accounts of "Engineers in Battle" (as the article series was known) reinforced the fact that engineer troops must be experts in every aspect of their trade.[9]

Immersed in the army's transformation and change in engineer tactics, Ingalls soon became an expert trainer. His past experiences and awareness of changing tactics deeply impacted his training philosophy. This philosophy was further shaped while serving as the executive officer of the 41st Engineer Regiment. Stationed at Fort Belvoir, Virginia, the home of the Engineer School, the 41st was in the middle of the army's great

expansion and worked tirelessly to expand the post's facilities to meet the influx of engineer trainees. Fortunately, the 41st was commanded by a diehard trainer, Lt. Col. John E. Wood. One of Wood's lieutenants, Edward L. Rowny, recalled, "Wood hated the idea of "fatigue details." "Soldiers should "train, train, train. Things like peeling potatoes, cooking, washing dishes, picking up trash, and other menial tasks should be left to handicapped civilians who can't fight. Soldiers should train and fight."[10]

Both Wood and Ingalls agreed that America's entrance into the wars in Asia and Europe was inevitable. So when the 41st received labor or "fatigue" details, they approached each as a tactical assignment. For example, during construction of a post road, the 41st worked in two shifts to meet their commander's self-imposed ten-day completion date. This approach to facilities construction inspired the men greatly. The 41st's performance led Wood to state, "We have made it clear that we are soldiers for either construction or combat; that we are not to be confused with labor troops. We can handle any expansion the War Department prescribes on us."[11] Ingalls would bring this same approach to training with him to the 35th.

Though Ingalls was certainly the right man to lead the newly formed 35th, he would face many challenges in raising the regiment. Like all units activated in the late 1930s and early 1940s, the 35th was the product of a broad military expansion intended to answer growing concern over the wars raging in Europe and Asia. Following World War One, the U.S. Government cut back on military spending, reduced the size of the standing force considerably, and adopted an attitude of isolationism. By May 1940, when the Germans invaded Belgium, the Netherlands, and France, the American Army was nineteenth in size in the world.[12]

Beginning in the 1930s, however, senior military leaders had identified that the American military had become insufficient in terms of its ability to defend the nation. Finally, in response to German military aggressions in 1939, President Franklin D. Roosevelt proclaimed a "limited national emergency . . . for the purpose of strengthening our national defense within the limits of peacetime authorizations."[13]

Given the president's proclamation, General [George C.] Marshall, the Army Chief of Staff, moved quickly to expand the army by initiating the Protective Mobilization Plan.[14] The objective of the plan was to raise a small but combat effective Army as quickly as possible in time of emergency. This was to be accomplished by fleshing out existing Regular and National Guard units, concentrating first on the most nearly combat-ready units. Only after a battle-worthy PMP Army of 1, 224,357 officers and men was trained and equipped (within eight months of mobilization day) would new units be activated.[15]

By the summer of 1940 the expansion of the army had made great progress and new tactical units were being formed. Caught up in the momentum of a nationwide mobilization, the government authorized further expansion and the effort turned from that of protection to that of projection. The army activated the 35th Regiment in the summer of 1941. "This time," stated Ingalls, "to make history."[16]

Reflecting new changes to the organization of engineer regiments, the 35th was organized with a regimental headquarters consisting of the regimental commander, regimental executive officer, and three captains; one to serve as the regimental adjutant (S-1), one to serve a dual function as intelligence and operations officer (S-2/S-3), and one to serve as the supply and logistics officer (S-4). The regiment consisted of two like

structured battalions, each containing three engineer companies and a headquarters company. Each engineer company had one headquarters platoon and three engineer platoons of three 12-man squads. In total, the 35th was authorized 39 officers, 1 warrant officer, and 1228 enlisted men. However, when Ingalls took command, only a small cadre was present to represent the regiment. On July 28, Ingalls reported a total regimental strength of seventeen officers and nine enlisted men.[17]

The men needed to fill the ranks of the 35th were new draftees still conducting their basic training. Ingalls knew that when these soldiers arrived they would still require a great deal of training to become fully proficient combat engineers. However, few of the 35th's existing officers had any experience beyond what they received as cadets. This meant that in addition to mobilizing his regiment, Ingalls had to train nearly all of the officers who led it. Unlike most of the other army branches, the engineers considered all new officers, whatever their background, only partly trained. According to professional development of the time, the basic education of an engineer officer became complete only after two years with troops, a year of graduate work at a civilian engineering school, nine months at the Engineer School, and two years on rivers and harbors duty. Few, if any, of Ingalls' officers had any such experience. In fact, most were recently activated reserve officers.[18]

Recalling the formation of the regiment, Second Lieutenant Mont Johnston stated, "All officers and NCOs were given company and staff assignments. I was assigned to 'C' Company along with Vern Whitehouse and Bob Otto. We were all second lieutenants, but I had the earliest date of rank so I was the company commander. We were assigned a

mess sergeant, a supply sergeant and two or three line NCOs. We had a few days to get acquainted and find out who knew how to do what."[19]

Another charter member of the 35th, Lieutenant (Lt.) Robert Greenwalt, recalled, "There were five Regular Army Engineer Officers in the original group, three of whom were United States Military Academy graduates. They were Captain (Capt.) Alvin C. Welling, Second Lieutenant John A. Graf, Second Lieutenant Jess P. Unger, First Lieutenant John C. Pappas, and Second Lieutenant Paul H. Symbol. The rest of the officers were reserve officers called to active duty and were mostly engineering graduates commissioned through the Reserve Officers Training Corps."[20]

Mobilization in the fall of 1940 moved along faster than would have typically been possible because of the availability of army reserve officers who could be called to active duty and were utilized to staff training units, new divisions, and to fill vacancies in regular army and National Guard units. The National Guard was mobilized as complete units--battalions, regiments and division--although all of them had vacancies which were later filled by draftees and reserve officers. There were then 100,000 army reserve officers available, most of them products of college Reserve Officer Training Corps Programs.[21]

In mid-1940 there were 104,228 members of the Reserve Officers Corps eligible for active duty, but many of them were overage for their rank, had not trained regularly, and were therefore unfit for active duty command though technically eligible. Since National Guardsmen were mobilized as units, the army could not choose which guard officer to activate, but reserve officers were called as individuals. This gave the army the opportunity to be selective and avoid some of the problems experienced with National

Guard Officers. By July 1, 1941, only 56,700 army reserve officers had been called to active duty. However, that summer, reserve officers accounted for 75 to 90 percent of officers in regular army divisions.[22]

A very similar situation existed with the condition of the regiment's noncommissioned officer corps. The 5,790 enlisted men in the engineers in June 1939 were volunteers, many of whom, especially among the noncommissioned officers in the top grades, had been in the Army for many years. Except for some three hundred on duty at the Engineer School or scattered among corps area and department headquarters they were members of troop units. During the 1930s most of the enlisted men were jacks-of-all-trades admirably equipped for the varied duties performed by the divisional units which made up the bulk of the engineer component of the Army. By 1939 the background of a good many recruits had changed. They were younger, had more formal education, but, as a result of the unemployment of the thirties, had acquired fewer skills.[23]

Despite the multitude of challenges facing the Army's personnel system, Ingalls understood his regiment would soon receive soldiers, and when these soldiers arrived he wanted his cadre to be ready to train them. Therefore, it was imperative that his leaders be experts in their trade and capable of acting decisively with little or no guidance from superiors. To develop the type of leaders that he required, Ingalls determined to focus on the basics of soldiering and leading. He believed that mastering the basics of soldiering was paramount to further development and that soldierly appearance and performance on the parade field were indicative of the discipline within an organization. As such, Ingalls implemented a training plan consisting of an intensive marksmanship program, military drill and ceremonies training, and classes on unit supply and administrative operations.

The training program started on July 25. If anyone wondered what the commander's training priorities were, the answer was soon established in the unit's motto, "Shoot and Salute." Marksmanship training, above all else, received Ingalls' personal attention. He believed that the fighting ability of his men was of the utmost importance. Ingalls' demanded that his leaders be experts in every aspect of their weapons which included the new M1 Garand and the .45 caliber pistol. To reinforce the training, competitions were held to see who could disassemble and reassemble their weapons in the shortest amount of time. Emphasis was rightly placed on marksmanship and a man's ability to score an expert rating on the qualification range. Lt. Orval Hovey recalled, "Our rifle training was different from most units. We spent very little time in doing preliminary training and a lot of time on the rifle range. In most of the training the coach loaded the rifle with about four blanks to one live round of ammunition. The purpose was to teach the student to [squeeze the trigger] and to teach him not to flinch. As a result we had an exceptionally large percentage of people qualify in rifle marksmanship."[24]

While Ingalls' marksmanship program was designed to raise the fighting spirit of his leaders, close order drill was intended to build discipline that would ultimately set the conditions for unit cohesion. Applied together on the battlefield, fierce combat skills, discipline, and strong unit cohesion result in a force few competitors wish to face. The cadre spent several hours learning not only to march, but to give commands as well. To be sure, each of Ingalls' officers and noncommissioned officers had received prior training on close order drill. But the commander was not one to settle for anything mediocre and he demanded that his leaders be capable of instilling confidence in their

soldiers through a display of competence. No easier means existed to display this confidence than through giving commands while marching.

To reinforce the importance he placed on close order drill, Lt. Col. Ingalls introduced two songs to his cadre as well as accompanying foot drills. The first song, already familiar to most, was "Hail to the Engineers." However, the second song, "The 35th Engineers," was new to all and rumored to have been written by the colonel's wife. Ingalls was certain that this song, set to the same tune as "Hail to the Engineers," would build pride within the regiment and set it apart from all others. He proudly introduced it to his men singing:

We are the Thirty Fifth U.S. En - gin - eers
Sol - diers true are we
In com - bat trench or field we have no peers
We meet the foe where he may be
From north to south, from east to west
You'll hear them say we are the best
So let us shout and sing and give three cheers
For the Thirty Fifth Engineers

Though few could have believed it at that time, this small touch would help earn the regiment a strong reputation and place it among the best engineer regiments in the army.[25]

The cadre taught other crucial subjects as well. Hours not on the range or spent practicing close order drill were occupied with leadership classes, courses on proper supply and accountability, and lessons in unit administration. All the while, Ingalls imposed strict regulations on his officers, requiring them to purchase and wear long overcoats in garrison. The $40 purchase was no small expenditure for a lieutenant only earning $125 per month! To ensure his officers did not walk with their hands in their

pockets, Ingalls also required them to carry "swagger" sticks; short ornate sticks carried under arm and to be used during drill.[26]

Lt. Hovey recalled, "Officers . . . were given demerits when they goofed up and commendations when they performed assignments well. I picked up two demerits in one day when I lost my swagger stick in the morning and received a demerit for being out of uniform. I carried a sawed off broom handle in the afternoon and received a demerit for carrying a non-regulation swagger stick!"[27]

Ingalls' insistence on military courtesy and bearing may have seemed trivial and needless to some, but Ingalls understood the value of establishing discipline within his men. Despite the grumblings of his cadre, Ingalls' measures inevitably began to have the desired effect. Ingalls observed that his men were beginning to work as a team and were showing pride in their organization; be it only a few weeks old. His leaders were becoming skilled and disciplined warriors. For Ingalls, discipline meant more than sanctions or punishment. Discipline, Ingalls believed, was the solid foundation from which his subordinate leaders would be able to make decisions in harmony with his own desires. This form of functional discipline, established through clear standards and intent, would make his men capable of surviving the trials of combat.

Ingalls insistence on military courtesy as well as drill and ceremony then was his means by which his men could display their inner discipline outwardly. His philosophy was best captured by famed historian S. L. A. Marshall who wrote extensively after World War Two about soldiers in combat. Marshall wrote, "It is not mere coincidence that in those line companies which achieved phenomenal success in combat during the late war, one found always the closest of working relationships between officer and men,

and one found also that the salute was given with a proprietary air, as if all ranks were glad to own it."[28]

Convinced of the importance and value of his programs, Ingalls persisted in developing his cadre. Only a short break in which the men packed up operations and conducted a permanent move to Camp Joseph T. Robinson, Arkansas interrupted the colonel's program. The move to Camp Robinson began on August 6 and ended four days later.

Like many other army facilities, the population of the new camp grew faster than facilities could be constructed to house everybody. Therefore, the regimental area was literally a tent city consisting of olive drab canvas tents constructed in neat rows along company streets. These tents with their plywood floors would serve as barracks and company headquarters. With the exception of the regimental headquarters and mess hall, which were wood framed buildings, every soldier in the regiment had to live in these tents.

On August 18, a new face arrived in the regimental area. A handsome, middle-aged man, Major Heath Twichell made his way through the tent city, finally finding his destination, the headquarters of the 35th. A West Point graduate of the class of 1918, Twichell was a seasoned officer. His experiences over the past several years had been in Corps of Engineers civil works projects and training assignments, preparing him nicely for the arduous task of helping to build a new regiment, which he knew would be no small undertaking.[29]

Twichell had barely settled in, when on August 25, he was informed that the regiment was to take part in a large training exercise in Louisiana. The maneuvers were

to begin on September 10, but the regiment had yet to receive a single soldier! However, that was about to change.

On August 28, the first of the Ingalls' recruits arrived as expected; 175 of them. The newly arrived recruits were fresh out of basic engineer training conducted at one of the Army's newest facilities, Fort Leonard Wood, Missouri. Shortly after approving President Roosevelt's request to mobilize the National Guard and Reserves in 1939, Congress had approved $128 million for the construction of military bases. The new facilities would be required quickly to meet the rapid influx of soldiers to active duty. During fiscal year 1940-1941 the army constructed 45 military camps, half of which were on entirely new sites, including 21 replacement training centers.[30]

Fort Leonard Wood fell into this latter category of camps and was designated as the Army's second Engineer Replacement Training Center (ERTC). Like Fort Belvoir, where Ingalls and the 41st Engineer Regiment had skillfully constructed the first ERTC, Fort Leonard Wood produced thousands of engineers for newly activated units. Located within the Mark Twain National Forest, in the rocky foothills of the Ozarks, Fort Leonard Wood extended over 113 square miles of rugged cavernous limestone and sandstone hills, heavily covered with pine and hardwood forest and interlaced with numerous clear spring-fed streams. Here, miles away from any sizeable town, the engineers needed to fill Lt. Col. Ingalls' ranks would be introduced to their trade of arms.[31]

Unlike the National Guardsmen and Reserve Officers who were mobilized under the Protective Mobilization Plan, the 35th's recruits were some of the first citizens-turned-soldier under the Selective Service Act authorized by congress in September 1940. These men, though from all walks of life, had been ushered into the service as engineers

after it was determined that each had performed some sort of engineer activity as a civilian or had scored adequately on the Army General Classification Test. Robert Taylor, a veteran of the 35th, recalled, "I got a good break because I was put in the engineers." Taylor continued, "I remember one question [on the classification test] was about cogs. If it was going one way, and it alternated, what was it doing five lengths down? I made about 147 on the test and qualified for the engineers."[32] This process of classification was intended to place the recruit in a position he was most qualified to fill while providing the various branches with soldiers who would require little additional skill training.[33]

The recently drafted engineer replacements began arriving at Leonard Wood even before facilities for housing were completed. Then Private Calvin Campbell recalled being "thrown together in army barracks on which carpenters were still applying the roofs." "Giant piles of stumps lay between the barracks and streets, and walkways were dirt. Piles of packaging, boxes and paper surrounded mess halls and orderly rooms as the regular army cadre tried to get established. Training wise [the center] was in much better shape and the day after we arrived, calisthenics and close order drill commenced."[34]

The replacement training received by Campbell and the other recruits at Fort Leonard Wood was just another result of the army's rapid expansion. Until the spring of 1941 newly inducted men went directly to units for a full year of service. During the rest of 1941, however, recruits reported to replacement training centers established under the direction of the various arms and services. At these centers, individual instruction in simple military procedures could be standardized. The men would then by ready for

group training immediately upon reaching their units. Relieved of the task of basic training, units were expected to attain a higher level of preparation in much less time.[35]

Under this system all engineer troops went to ERTCs for twelve weeks of intensive basic military and engineer training. After a few hectic days at a reception center, where one old doctor is recalled to have sung, "Stand back, milk it down, piss in a bottle and three doors down,"[36] the prospective engineer soldier was rushed to the replacement center. There he was given inoculations and a GI haircut, issued a gas mask, rifle, bayonet, and an assortment of clothes, assigned to strange barracks and informed that he was quarantined for two weeks of basic training. During those two weeks of semi-confinement he drilled and marched, pitched tents, watched training films, saluted, and finally did not much care whether he was quarantined or not. Then he graduated to the obstacle course for advanced training in agility and endurance. This daunting course was constructed on the most difficult terrain available and was usually an irregular horseshoe about 500 yards long and wide enough to accommodate several men at once. Barriers placed at intervals along this course required the men to climb cargo nets, jump hurdles, crawl through pipes, hop along a pattern of auto tires, and swing across a ditch of muddy water. In addition to testing a man's physical strength, the course helped build his confidence. In total, the men received nearly 130 hours of basic training.[37]

Technical training provided to the recruits consisted of combat and engineer skills training. During combat training, the trainees spent more than 50 hours learning to fire the rifle, a recognition by the engineers that the "one thing that is more important to the soldier than anything else is to be able to shoot straight and fast." The men spent another

37 hours of combat training in instruction on the use of the hand grenade, bayonet, and the .30 caliber machine gun.[38]

The majority of technical training, a total of 230 hours, focused on engineer specific skills training and consisted of the construction of field fortifications, obstacles, bridges, and roads. The men learned how to employ mines and demolitions, conduct engineer reconnaissance, rig loads, and operate engineer tools and equipment. The men also received some specialist training by which they learned subjects such as demolitions, bridging, road construction, and obstacles.

No training would have been complete without lessons in tactics. For this purpose, the trainees received 38 hours of training. Tactical training consisted of scouting and patrolling, infantry tactics, night operations, and defensive operations. From this intensive, yet efficient, system of initial entry training, Lt. Col. Ingalls expected to receive the engineer soldiers he needed to fill his ranks. At the end of their twelve weeks of training, and following a "prolonged beer bust" (at least in the case of those men being furnished to the 35th),[39] the trainees were ready to be furnished to fill the 35th's ranks. Departing Fort Leonard Wood by train on the morning of August 27, 1941, the men arrived at Camp Robinson the following day.[40]

A proper welcome awaited the men as they stepped from their train. Waiting anxiously were the cadre who went to work "sizing" the men. "Col. Ingalls desired a parade ground unit by sizing the Regiment from the tallest men in 'A' Company down to the shortest in 'F' Company," said Lt. Greenwalt. "Thus, each train was met by officers who lined the troops up on the siding and "sized up" the various companies."[41]

"I was assigned to H&S Company at the time [the troops arrived]," continued Greenwalt. "Prior to the arrival of the troops, one of the senior Non Coms and I laid out in "formation" the equipment to be issued to each man. When we received the company's allotment of men they were positioned by the pile in front of them and signed for it on the spot. This was faster than going through a line and worked well."[42] After receiving their equipment, the soldiers were marched to their company areas, briefed by their chain-of-command, and prepared for training which would begin the following day. Much had to be accomplished if the regiment were to perform well during maneuvers.

Training was intense, even more so than the training received at Fort Leonard Wood. For example, a surprise alert early on the morning of August 30, was followed by a foot march to "Ponton Park" where the men conducted pontoon bridge construction and assault boat training. The men then worked past midnight unloading regimental equipment from trains and assembling trailers to haul materiel during the upcoming maneuvers. Other training consisted of marksmanship, close order drill, construction of a foot bridge across the Arkansas River, and lengthy motor and foot marches, one of which ended in true Ingalls fashion with a bivouac within view of the post headquarters.[43]

Meanwhile, new soldiers continued to arrive and by September 4, the regimental strength stood at 33 officers and 974 enlisted men. Five days later, the regiment departed Camp Robinson for a maneuver area in Louisiana to take part in what was to become one of the most famous training exercises in American military history.[44]

Preliminary planning for an army-versus-army exercise, to be held in 1941, began as early as December 1939. By November 1940 Gen. McNair and his deputy, Lt. Col. Mark W. Clark, had begun formulating concrete plans for the next year's training

activities, which they hoped would transform a heterogeneous assemblage of military manpower into a battle-worthy Protective Mobilization Plan Army. By July 1941 the Army would consist of 1.4 million men organized into four field armies, 9 traditional corps and 1 armored corps, 27 infantry divisions, 4 armored divisions, 2.5 cavalry divisions, 54 authorized combat aircraft groups, and 6 groups of transport aircraft. The Army had to complete its training without fail in the summer of 1941 because demobilizations of the National Guard was due to begin on September 15, and the first draftees would go home in November as their year of federal service expired. The Army would not be able to replace the 250,000 Guardsmen and their 18 divisions; instead, the recently created corps and army troops would be skeletonized to help provide manpower for a 21-division Army.[45]

The "Great Maneuvers" began with a series of corps exercises in June 1941. The VII Corps of the Second Army operated in Tennessee, the V and VIII Corps of the Third Army in Texas and Louisiana, and the IX Corps of the Fourth Army in California. Maneuvers on a greater scale for the three armies followed in Arkansas, Louisiana, and Washington. The climax came in Louisiana in September when the Third Army was pitted against the Second Army (to which the 35th was assigned) in a simulated battle in which from 350,000 to 400,000 men participated. The exercises then drew to a close with the First Army operating in the Carolinas during October and November.[46]

Participation in the Louisiana Maneuvers provided the 35th Engineers with the opportunity to put much of their training to the test. More importantly, the maneuvers would place the 35th in a scenario as near to that of real combat as the Army was capable of creating. Every man in the regiment would be required to perform combat engineer

tasks under the watchful eye of "umpires:" those officials designated to adjudicate the battle. Though little time had been afforded to Ingalls and his cadre (now turned command team) in the days following the arrival of the troops, the commander still had high expectations of his organization and he would seek every opportunity to get his men into the "fight." Few knew the nature of the training they were about to take part in or the impact that this training would have on the unit's future in combat. After all, the nation wasn't at war.

To reach the maneuver area, Ingalls led his regiment in a motor march of 300 miles. Like he did with the 41st Engineers at Fort Belvoir, Ingalls determined to treat the motor march as a tactical exercise rather than an administrative move. For example, any aircraft spotted flying above the regimental convoy were treated as enemy air planes and the men were ushered out of their trucks to avoid being "killed" by the "attacking" aircraft. At the end of a day's march, the men were required to erect and camouflage their pup tents. Medics even checked to see that latrines and mess hall sumps were properly dug and screened. Since most of the regiment's trucks were loaded with equipment and supplies, only a portion of the men could ride at any one time. Therefore, noncoms checked their men's feet for blisters before nightfall. After that, blackout and noise discipline was strictly enforced.[47]

However, Ingalls did not pass up the opportunity to display his new regiment for the public to see. While passing through Arkansas and Louisiana, people turned out to see and applaud the product of President Roosevelt's mobilization effort. Before passing through the small town of Lake Village, Arkansas with the 73 trucks transporting his regiment, Ingalls met with the town mayor. The two men decided that it would be proper

to march the men through the town for the all the people to see. The mayor even agreed to have the town's high school marching band lead the parade.[48] Calvin Campbell, having been promoted to a platoon sergeant in Company B, recalls:

> We formed up, marched into town and started our parade around the town square. Then disaster struck. Lt. Col. Ingalls, his staff, and the mayor with his staff were on a hotel balcony overlooking the square to review the parade from on high . . . We approached the square with platoons end on end; this made for a very long but thin formation. As I marched proudly by the side of my platoon, counting cadence and snapping at anyone out of step, we slowed to a halt and began marching in place . . . We couldn't see it, but the battalion commander had marched us all the way around the square at the head of the column and had collided with those of us who were still coming in on the tail end. Confusion reigned. However, Lt. Col. Ingalls saved the day. He came off the balcony and ordered company commanders to go into "company formation" (platoons side-by-side rather than in a line) . . . The colonel remounted the balcony, barked some commands, and we marched around the square; twice! We left to the loud cheers of the citizens of Lake Village.[49]

The 35th arrived in the maneuver area on September 12 and went into bivouac near Coldwater, Louisiana. The Louisiana maneuver area extended approximately from Shreveport in the north, Lake Charles in the south, Alexandria in the east, and Nacogdoches, Texas, in the west. This area, dominated by three large rivers, offered a great many opportunities for the Engineers to test their capabilities. The rice country east of the Calcasieu River was low and swampy, cut through with canals and bayous. The Calcasieu River valley, like that of the Sabine, was wooded but swampy. By contrast the valley of the Red River was well drained and covered with scrubby pine so that foot soldiers could move cross-country. The road system was excellent.[50]

The first phase of the exercise was initiated on September 14 when the "Red" Second Army received orders to attack the "Blue" Third Army on the 15th. Since the 35th was the VII Corps engineer regiment, the companies were distributed throughout the corps' sector to assist in a variety of missions supporting the Red army's attack. The main

activities during this phase, however, took place at Campti, Irma, and Montgomery where the largest pontoon bridge operation ever undertaken took place. At these locations, the 35th assisted in the construction of two heavy pontoon bridges and one reinforced pontoon bridge. Rapid construction of these bridges was required in order facilitate the red army's attack into the blue army's territory.[51]

To conceal the Red army's intentions, bridging equipment was moved from concealed storage sites to positions near the rivers during the hours of darkness September 13-14. Despite the fact that no troop movements were authorized for the exercise until 5:00 a.m. on September 15, construction of the bridges started at 7:00 p.m., September 14, and proceeded all night under blackout conditions. The engineers began ferrying, under the cover of a smoke screen, their covering force by assault boat at 5:01 a.m. and continued during the construction period for the bridges. The covering force established bridgeheads on the west bank of the Red River unopposed until Blue fighters were spotted high overhead in the afternoon. By that time, construction was well under way, despite the fact that the work was far from perfect.[52]

Many challenges confronted the engineers, not the least of which was the fact that construction had begun during darkness. Few engineer soldiers had ever participated in bridge construction of this magnitude. Additionally, the men were working with other units to complete the task. For example, at Campti, where the men were constructing an 872 foot heavy pontoon bridge, the two companies of the 35th worked with the 108th Engineer Regiment (Combat) and the 85th Engineer Battalion (Heavy Pontoon). At Irma, the 952 foot heavy pontoon bridge was constructed by two companies of the 35th, the 102nd Engineer Regiment (Combat), and the 86th Engineer Battalion (Heavy Pontoon).

At Montgomery, the remaining two companies of the 35th worked alongside one battalion of the 110th Engineer Regiment (Combat) to complete a 487 foot reinforced pontoon bridge. Since the men of the 35th were still getting acquainted, one might imagine the dynamics that existed once the companies began working hand-in-hand with other engineer outfits.[53]

The terrain at the bridge sites also presented some unique challenges. The Campti site required a great deal of work on the approaches to the river. Dirt approach roads totaling thee miles in length and restricted space for unloading pontoon boats made the Irma site the most difficult. Existing approach roads made Montgomery the most favorable site and the crossing of Red attack forces was complete 14 hours and 45 minutes after construction began. However, the challenges faced at Campti and Irma resulted in a delay of the Red attack. The crossing at Campti required 25 hours to complete while that at Irma was not complete until 48 hours after construction began.[54] Regardless, the construction of the pontoon bridges gave the Red forces a mobility and freedom of action that allowed them to move the 2d Cavalry Division and the VII Army Corps across the river and to penetrate deep into Blue territory.[55]

Unfortunately, the superior strength of the ten Blue army divisions finally asserted itself, and the advance of the Reds was stopped. The pontoon bridge at Montgomery was attacked by Blue troops, and an attempt was made by Reds to remove it. The umpires ruled that a simulated attempt to cut the bridge at the south abutment and swing it against the east bank of the river was successful, but that attempts to dismantle the bridge against the east bank were prevented by heavy machine-gun and artillery fire of the Blues.[56]

In the second and final phase of the maneuvers, the mission of the Red Army was to defend Shreveport. To do this, the Red army planned an active demolition defense to be conducted by its engineers who were to "utilize, to the maximum, demolitions, antitank mines, smoke, and road blocks to stop or seriously delay the enemy." The Red army's three divisional engineer regiment commanders along with Lt. Col. Ingalls received oral orders and overlays showing each regiment's tasks on the afternoon of Sunday, September 21. Written orders completing the detailed demolition plan were received the following day.[57]

On the night of September 24-25 between 12:01 p.m. (H-hour) and daylight, many engineer demolition parties penetrated deep into the enemy territory to meet the Blue force and delay its advance by quick demolitions. Calvin Campbell recounts his experience with a new lieutenant in support of the demolition plan:

> At about [this] time it started to rain heavily . . . [The other platoon sergeants and] I went to the orderly tent to get our orders, maps, "TNT" (blocks of wood), etc. When we got inside the CO introduced us to three newly minted second lieutenants from the regimental staff who would be our platoon commanders for this exercise. I was secretly relieved, as finding all those bridges in the dead of night in places we had never been was a daunting task . . . The lieutenant's orders to me were simple. When he banged on the truck cab's back window I was to place two soldiers by a bridge with instructions to place the explosives and guard it . . . I told my troops to get up their tents first, plant the TNT, and stand guard in two hour shifts. If they were overrun by the [Blues] shout, "BOOM," simulating blowing up the bridge, and run like hell to escape . . . At the first stop, I dutifully unloaded two men, gave them two days' rations, the TNT blocks, cautioned vigilance and wished them well. They looked at me as if I had kicked them in the crotch. We continued through the night, placing guards at about 20 locations for a total of 48 men. . . . We had expected to go out and pick up our men at the end of the second day, but that afternoon we were told the exercise had been extended another 24 hours. On the morning of the fourth day we went out to pick up our men. . . . It took us all day to find 38 of my men. . . . Of the ten missing, six had hitch-hiked back to camp and two were hospitalized for exposure. Two we never saw again and I was never able to learn their fate.

> Perhaps they just went home. I felt sorry about this mess and resolved in the future be a little more forceful in the face of bad direction from above.[58]

Despite Campbell's experience, the engineers executed their tasks flawlessly and the Blue army advance was slowed drastically. For every bridge demolished, the Blue army had to repair it or find another route. Frequently meeting engagements occurred, and the Blue forces, overestimating the strength of the small engineer parties encountered along the entire front, deployed, thus further delaying their advance toward Shreveport. The frustration of the Blue forces was accounted for in a Red intelligence which read, "civilians state that road south of Mansfield is cluttered with [enemy], dirty, unshaven, tired, discouraged, need food, say they haven't eaten since they left Benson and are tired of chasing the Reds and never catching them. Say all they have done is repair bridges." Only by utilizing routes outside the official maneuver area was the Blue army able to reach the outskirts of Shreveport. But before fighting began in the streets of the city, the exercise ended on the afternoon of September 28.[59]

In total, the 35th reported destruction of 108 bridges in support of the defense. Other missions were also accomplished such as building road blocks, creating abatis, and serving as infantry. Though not perfect, the 35th had performed well. Ingalls got to see his men in action and identify the areas in which he needed to focus the unit's training. Battalion and company commanders did the same and were able to identify men capable of taking over leadership positions in the platoons and squads. Even more importantly, the men of the organization had faced some significant challenges and overcame them as a team. No better experience could have been expected.

The fact that the 35th had performed well was not missed by senior leaders within the Army. After returning to Camp Robinson on October 6, Lt. Col. Ingalls received a

memo from the Second Army headquarters which stated, "The Army Engineer wishes to express his appreciation for the services and the assistance your organization rendered the Second Army during the recent maneuvers in Louisiana. The organization performed the missions assigned it in a very credible manner. At the construction of the pontoon crossing at Campti, Louisiana, the enthusiasm and success of the 35th was noted with great pleasure."[60]

During routine peace-time training, such recognition was not particularly uncommon. However, the fact that it came at a time when the Army's senior leaders were reevaluating the way the Army should fight and win the nation's wars was significant. Although the maneuvers had been extremely successful in testing new concepts of unit organization, tactics, and technology, many deficiencies in unit readiness and leadership were identified. In the weeks following the famous maneuvers, senior leaders within many of the participating units were removed from their positions. Gen. McNair stated, "A commander who cannot develop proper discipline must be replaced." "I feel emphatically that leadership and command can and must be improved–and I refer to no particular echelon." The first commander removed was Major General Ralph E. Truman who commanded the 35th Infantry Division at Camp Robinson.[61]

While reasons for removal varied, most were the result of poor performance and, as the senior leaders intended, extended to officers of all ranks. News of the removals received a great deal of attention in the press who referred to the event as a "purge," since most of the officers effected were Guardsmen.

The "purge," whether real or perceived, had no impact on the 35th. In fact, within just days of the regiment's return to Camp Robinson, training resumed at an intense pace

of 16 hours per day, 6 days per week. Ingalls fully appreciated the potential for America's armed involvement in the wars spreading around the globe and understood his responsibility to further prepare his regiment for war.

In addition to the mandatory training prescribed by the War Department, Ingalls engaged his regiment in a wide variety of challenging engineer tasks. During the months of October and November, the 35th conducted emergency repairs to levees on the Arkansas River, improved the camp's roads, renovated artillery and rifle ranges, upgraded the camp welcome center and 35th Infantry Division Headquarters, and constructed a regimental parade field. Performing these additional tasks enhanced the engineers' proficiency in those skills that would be necessary to support combat operations if the need should arise.

Maintaining a rigorous training schedule while simultaneously tackling additional construction projects proved exhausting for the engineers. However, Ingalls had learned during World War One and his years of service in tactical units the positive impact of rigorous training on team development. Having studied the importance of rigorous and realistic training, S. L. A. Marshall later wrote that "when troops lack the coordinated response which comes only through long and rigorous training, their combat losses will be excessive, they will lack cohesion in their action against the enemy, and they will uselessly expend much of their initial velocity."[62]

As demanding as the 35th's schedule was, morale remained high. Ingalls knew that as long as the men were proud of what they were doing they would continue to perform to a high standard. Already, his insistence on "sizing" the regiment had produced positive results both on and off the parade field. For example, the "Mighty Midgets" of F

Company set out to prove that they could do everything as well or better than, the "flankers" of A Company. This same thought process existed within A Company where the regiment's tallest men found it a matter of pride and honor to outperform the rest of the regiment's "runts." Whether the issue was which company had the most expert riflemen, the most solidly constructed timber trestle bridge, best sport teams, or the fewest deficiencies during inspection, this friendly intercompany rivalry was always a factor.[63]

Another program initiated by Ingalls that had a positive impact on the regiment was that of assigning areas of special expertise for each company. For example, the men of F Company were responsible for becoming the regiment's experts on preparing and loading heavy equipment for movement by rail. They were also responsible for training the rest of the companies to perform the same tasks. The men of F Company became so good at these tasks, "swarming like worker bees under, over, and around each dump truck and bulldozer as they chained it securely to a flatcar," that Corps Headquarters was soon directing other units in the command to emulate the 35th's example.[64]

This technique employed by Ingalls was just one his many programs designed to enhance teamwork in the regiment. The successful performance of each company depended on the actions of each individual soldier. S. L. A. Marshall concluded that "the act of teaching one man to participate with other men in any training endeavor is frequently the first step in the development of new traits of receptiveness and outward giving in his character." Ingalls had demonstrated a deep of understanding of what was required to build efficient teams. He knew that, as Marshall later wrote, by acquiring the

habit of working with the group and of feeling responsible to the group, soldiers will consider the group's welfare when tested in battle.[65]

The ability of Ingalls' men to work together toward successful completion of a common task was also indicative of the fact that their commander was instilling functional discipline within the regiment. In his essay "Discipline: Creating the Foundation for an Initiative-Based Organization," Christopher Kolenda states, "The true test of discipline is functionality." Kolenda contends that discipline must directly contribute to the accomplishment of the organization's goals and objectives or else it is meaningless. As demonstrated by the men of Company F, Ingalls methods of instilling discipline had proven appropriate and more than adequate in creating an organization that was capable of working together to achieve success.

While his men were impressing senior leaders their high level of discipline, Ingalls' determination to have the regiment stand out went even further. Although some engineer units were authorized to have their own band, the 35th was not. This fact did not stop Ingalls from creating his own band from within the regiment. A call for volunteers surprisingly turned up a handful men who had their own instruments and soon they were proficient in "The 35th Engineers" and various other marching tunes. The band played for the men as they departed for training each morning and when they returned each night.

On November 18, at Ingalls' request, the new commanding general of the 35th Infantry Division, Major General William H. Simpson, visited the 35th Engineers. Simpson proved impressed with the 35th's regimental area, highlighted by a newly created parade field where the men stood proudly in formation to pass-in-review. Ingalls

stood proudly next to the general on the reviewing platform as the band played and his men, sized from front to rear by height, marched smartly by. Thoroughly impressed at the display, Simpson congratulated Ingalls on raising such a fine regiment.

Ingalls replied, "Just wait a minute, general; they're coming around again."

And so they did, this time marching at double time and singing "The 35th Engineers."[66]

Simpson publicly praised the 35th for its outstanding performance. Before long, several high profile officers were visiting the 35th to see what all the talk was about. On November 28, the 35th passed in review for the visiting Gen. Fairbanks, Chief of the Dental Corps. A week later, Gen. Richardson, VII Corps Commander, visited the regiment and later the same day publicly praised it during a speech at the Camp Robinson Theater. Richardson reported his satisfaction to his superiors and sent a telegram to Gen. Simpson reaffirming his public statements.

The attention received by Ingalls and the men of the 35th was scorned by other units on the camp. While his peers may have believed that the 35th was just a "dog-and-pony show" outfit, the fact was Ingalls had created a truly high performance unit. This fact was supported in December when Lieutenant General Lear, commanding general of Second Army, declared that the 35th was exempt from mandatory Mobilization Training Program Tests. At a time when the senior military and government leaders recognized the need for a highly trained and capable defense force, receiving this exemption was no small accomplishment.

The 35th had indeed become a well-trained and disciplined unit. The men of the 35th readily took notice of the recognition their unit was getting from senior leaders

outside of the organization and soon developed a great sense of esprit de corps. Peter Kindsvatter, who studied the combat performance of soldiers in the World Wars, Korea, and Vietnam, determined that soldiers who felt a high sense of esprit de corps typically performed well in combat. He defines esprit de corps as "the soldier's identification with organizational levels above his primary group." Kindsvatter found that soldiers who were proud of their outfit fought not only for their comrades and their own self-respect but also because they had a standard of fighting excellence to uphold. He also found that the soldier drew a significant measure of self-esteem in return–he belonged to a crack outfit, thus by association, he too was an accomplished fighter.[67]

The combined effects of Ingalls programs resulted in a foundation of functional discipline within the 35th that few units ever achieve. Having initiated leader development programs founded on the establishment of discipline at Fort Snelling, Ingalls continued the same at Camp Robinson as the regiment grew. However, it was the adherence to established standards by his leaders while training their men that allowed this discipline to take root within the ranks. While he had personally poured himself into readying the 35th for war, Ingalls was keen to the fact that his leaders and soldiers had displayed an incredible ability to adapt to challenging situations and overcome them without his direct supervision.

With this in mind, it's important to highlight the fact that Ingalls had demonstrated the keen ability to move from a detailed method of control, one he had demonstrated early in the regiment's formation, to a directive method of control. He was no longer personally leading the training. His subordinate leaders understood the clear standards established by their commander and displayed the capability to make decisions

for the good of the organization without his supervision. Kolenda states that "once the members of an organization have demonstrated mastery and internalization of the fundamentals, once they perform routine skills to standard and behave within the framework of organizational values without supervision, the leaders can move from a detailed method of control to a directive one."[68]

This type of functional discipline, that which allows subordinate leaders to make decisions on behalf of their commander, was what Ingalls had intended to establish. Had he not taken the time to develop his leaders from the very formation of the regiment, Ingalls could not have hoped to achieve such a high level of performance in such a short period of time. Amazingly, Ingalls had taken a group of inexperienced officers and fresh recruits and fostered the versatility, independence, and initiative that gave his regiment the ability to maintain effectiveness in a changing environment. Whether on the rain-soaked "battlefields" of The Great Maneuvers, the raging flood waters of the Arkansas River, or at the double-time on the regimental parade field, the 35th had performed beyond measure. His leaders and soldiers had taken ownership of the organization and ensured their own successes. He was sure that his organization would be capable of answering the nation's call-to-arms if need be. What he didn't know was that the call-to-arms would soon be a reality.[69]

On December 7, 1941, while the 35th worked to improve Camp Robinson's road network, Japanese forces attacked Pearl Harbor. Soon after, the regiment departed Camp Robinson for Fort Ord, California, where it worked to emplace defensive positions along America's western coast.

Meanwhile, strategic planners within the War Department considered what might possibly be the nation's Achilles' heel; the vast and isolated Alaska Territory. The result of these considerations would soon require the 35th to lead one of the most significant feats in military engineering history.

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CHAPTER 3

WITHIN THE PHYSICAL CAPACITY OF THE TROOPS

Not only did the Japanese attack at Pearl Harbor legitimize America's mobilization efforts, it also set into motion one of the most arduous military engineer projects in history. This project, construction of the Alaskan-Canadian Highway, would prove to be a defining moment for the men of the 35th Engineers. Few could have imagined the trials and obstacles they would face over the course of eighteen months in the daunting terrain of Northern Canada while establishing the first all-weather route from the continental United States to Alaska. But there in the face of great adversity, the men of the 35th would learn that success often meant persevering when failure seemed imminent. In the end, the hardships endured on the Alcan Highway would test the functional discipline of the 35th and solidify a growing bond of unit cohesion that would determine the success of the 35th Engineers on the battlefields of Europe.

After Pearl Harbor, the defense of America's most western territories received renewed attention. Most remote and undefended was Alaska. However, this had been the case since Alaska was purchased from Russia in 1867. In accordance with the terms of the Naval Disarmament Treaty of 1922, no military installations of any kind were in existence in the Aleutian Islands. In fact, the only permanent military presence in Alaska was an infantry battalion stationed at Chilkoot Barracks near Haines. This post was established in 1903 in response to the Klondike gold-rush of the late 1800s. All but inaccessible, the post could be reached only from Skagway irregularly by sea.[1]

Despite the growing danger of war with Japan, it was not until the spring of 1939 that the first appropriations were made for northern defenses. At this time Congress

granted $4,000,000 for an Army cold weather experiment station at Fairbanks, but increasing fears of a conflict with Japan made it necessary to address the defense of Alaska. In 1940 construction work was commenced on a naval base at Dutch Harbor in the Aleutians, on airbases at Fairbanks and Anchorage, and intermediate landing fields on the way to the United States. Additional naval and air bases were designated for Sitka and Kodiak.[2]

These measures, while a step in the right direction, did little to adequately address the need to defend Alaska. By the beginning of 1941 only 3,000 troops were stationed in all Alaska. Such a small force would have little hope of defending the vast territory against a large and efficient enemy force.[3]

That same year, the United States joined with Canada in establishing the Northwest Staging Route across the interior of Canada to Alaska. This route was intended to serve as a means to move supplies and equipment to America's remote positions in Alaska. To support the staging route, airports were built at Edmonton, Alberta, at Fort Saint John and Fort Nelson, British Columbia, at Watson Lake and Whitehorse, Yukon, and at Tanacross and Big Delta, Alaska. However, no road existed linking these airfields and many of them could only be resupplied by aircraft.[4]

After America's entrance into the war in December 1941, perceptions of national defenses changed rapidly. There was no longer any question that Alaska, in the front line of North America's defense, was inadequately defended. With some doubt now shed on the Navy's ability to protect America's far territories, the need for an overland route to move troops and equipment to America's bases in Alaska received one of the War Department's highest priorities.

Fortunately for the War Department's planners, much work had already been done in regards to researching possible routes from the continental United States, through Canada, to Alaska. As early as 1864, the Western Union Company had made plans to explore and survey a telegraph line which was to extend from the Amur River in Siberia, through Alaska and on to the United States through the Rocky Mountain Trench which lies between the Pacific Coast Range and Rocky Mountains. A survey of the trail and actual construction of the telegraph line was started in 1865, but it was abandoned after the successful laying of the transatlantic cable in 1869.[5]

Renewed interest in an overland route to from the continental United States, through Canada, to Alaska began in the 1920s and proceeded into 1941 when an array of land speculators, Alaskan, Washington state, and Canadian political figures pressured both the Canadian and American governments to construct just such a route. Most vocal among these advocates was Delegate Anthony J. Dimond of Alaska. In an address to Congress in 1937, Dimond prophetically stated, "Alaska is today without any form of defense. . . . It could be taken almost overnight by a hostile force, for there is nothing to prevent; and once in, the hostile power would have a perfect line of support from the Asian continent through the Aleutians, and the task of recapturing the Territory would be tremendous, involving millions of dollars and probably the loss of thousands of lives."[6] Arguments such as those of Dimond's were convincing and Congress authorized in 1938 the formation of the Alaskan International Highway Commission to give further consideration to the construction of an overland route to Alaska.

The commission met with Canada's British Columbia-Yukon-Alaska Highway Commission in July 1939 and again in January 1940. Together, the two commissions

determined four potential routes which were simply titled Routes A through D. However, before either commission could render final decisions to their respective government, the Japanese attacked Pearl Harbor. This attack necessitated a rapid solution to America's need for an overland route to Alaska and responsibility for further planning was tasked to the War Department.

Studying the reports of the appointed government commissions, the War Department's planners soon realized that there existed no simple solution to building the much needed highway. Each of the four proposed routes was sure to encounter hazardous terrain, such as the daunted Rocky Mountains, of which no valuable surveys existed. Additionally, it was a well known fact that weather in the proposed construction areas would severely limit the ability of engineers to complete the highway in a timely manner.

Despite the advantages and disadvantages of the four proposed routes, the Army planners were most concerned with gaining the ability to link the chain of airports along the Northwest Staging Route. The War Department was already aware of the formidable task of keeping these isolated airports stocked with gasoline, oil, spare parts, and the hundreds of items essential to airbase operation. River routes and pack trails were the only overland means of supplying these airfields. Therefore, the primary means of supply was by aircraft which were susceptible to poor weather. If the airfields were to be effective in the overall defense of the United States, a more dependable means of supply had to be established.[7]

Planning such a route as would make the airfields accessible by ground required the planners to combine aspects of all four previously proposed routes. However, no one knew for certain whether the road could be built, much less what specific route it might

follow. Of greatest concern was a proposed stretch of territory between Fort Nelson, British Columbia, and Watson Lake, Yukon Territory, since little or no survey data existed for that area. Though two potential routes looked viable on a map, neither was extremely desirable; one starting northwest through a considerable stretch of swampy country, and another starting westward, through mountainous terrain. Despite this lack of information, the planners submitted their plan and received approval of it on February 2, 1942.[8]

Clearly a task for the Army Engineers, Assistant Chief of Engineers, Gen. Clarence L. Sturdevant, was immediately informed of the War Department's decision. Given responsibility for the construction of the highway, Sturdevant submitted a plan for surveys and construction just two days later. Shockingly, Sturdevant reported that he planned to complete the emergency supply route to Alaska before the end of 1942. To do this, he estimated that four engineer construction regiments were needed to build what he called an initial "pioneer" trail. These four regiments would each be responsible to construct a different section of the planned route. Two regiments would start work from two different points at the southern end of the route. In the middle, two regiments would start from Whitehorse and work in opposite directions. The plan also called for civilian contractors under the supervision of the Public Roads Administration (PRA) to begin at the Alaskan end and head southeast from Big Delta toward the Canadian border to affect a linkup with the Army's engineers. Ultimate completion of the route would be left to PRA contractors who would come along behind the Army Engineers and construct a two-lane gravel-surface highway with permanent bridges and culverts.[9]

Sturdevant received approval of his plan on February 14 and moved quickly to get the operation in motion. Immediately, logistics units and supply depots were instructed to begin consolidating cold weather gear for the engineers. Fielding of new heavy engineer construction machinery was also expedited. For those engineer regiments selected for the still secret project, commanders received vague telegrams alerting them to move to various places to receive further instructions. One such letter was received by Lt. Col. Ingalls while another was received by Major Welling. In a letter home to his wife, Lt. Col. Twichell wrote, "Well, day before yesterday, we got a wire ordering Bob off on a secret mission, and he left yesterday, for an indefinite stay, possibly not to return. The rumor is that he was recommended for promotion to rank of Colonel." Little did Twichell know that Ingalls was on his way to Canada to conduct a preliminary reconnaissance for the highway.[10]

Traveling north from Fort Ord, Ingalls rendezvoused with the man selected to lead the highway project, Col. William M. Hoge, in Edmonton. With Hoge were representatives of the Public Roads Administration and the Army's Quartermaster Corps. Hoge informed Ingalls that the 35th had been selected to take part in the highway construction, a project deemed secret due to its strategic nature. He also informed him that Major Welling's departure from the 35th was a permanent move. Major Welling would serve as Hoge's executive officer and was already meeting with the War Departments planners to receive details of the project. Hoge also shared with Ingalls special instructions received from Gen. Sturdevant who specified, "A pioneer road is to be pushed to completion with all speed within the physical capacity of the troops. The objective is to complete the entire route at the earliest practicable date to a standard

sufficient only for the supply of troops engaged on the work. Further refinements will be undertaken only if additional time is available."[11]

Most importantly, Ingalls learned that his regiment had been selected to accomplish what was arguably the most important part of the operation; completion of the road between Fort Nelson and Watson Lake. Reportedly, a winter trail existed between Fort St. John and Fort Nelson. The 35th would have to traverse this trail with all of its equipment and four months worth of supplies before the spring thaw began in April. Early reports suggested that once the ground thawed, the trail would become impassable. Therefore, the condition of this trail could determine whether or not the 35th would be able to move into Fort Nelson to begin construction on time. Of equal concern was the fact that until the 341st could turn this winter trail into an all weather route, the 35th would have to be self sustaining.[12]

The men traveled together from Edmonton by train to Dawson Creek, where the railroad ended. Upon reaching Dawson Creek, Ingalls, Hoge, and the PRA representative set out for Fort Nelson with H.P. Keith, a representative of Canada's Department of Transport, as their guide. The first leg of their journey took them over a 50-mile stretch of poorly maintained road and the 1,500-footwide Peace River which separated Dawson Creek from Fort St. John. What interested the men the most, however, was the crude winter trail believed to extend from Fort St. John to Fort Nelson.[13]

Arriving at the ice covered Peace River the men were alarmed to find that there was no bridge. Keith explained that crossing the Peace River along this route was either done while the ice was still thick or after a ferry could be put into operation after the spring thaw was complete in late April or early May.[14]

As Sturdevant and his planner's saw it, the 35th's ability to get established at Fort Nelson before warm weather made the winter trail impassible was the deciding factor in whether or not the highway to Alaska would be complete before the end of 1942. Now, Hoge and Ingalls realized that the strength of the ice on the Peace River was a factor to worry about as well. Once either the river or the trail became impassable, the only way to transport a fully equipped construction regiment to Fort Nelson was to shuttle it by barge and portage down 1,000 miles of the Mackenzie River and its tributaries – a roundabout and tortuous trip that would take all summer.[15]

With a renewed sense of urgency, the men continued past Fort St. John where the road north abruptly ended and further travel was conducted over a bulldozed trail cut through the thick pine and spruce forest that existed between Fort St. John and Fort Nelson. Beyond Fort St. John, what signs of civilization existed beyond Dawson Creek ended and a region of unremitting forest and muskeg began. Soon the men were bumping along at the tortuous pace of just ten miles per hour. The monotony of the forest was only occasionally interrupted by the smoother surface of a frozen marsh or stream. The men travelled along this crude path throughout the night, finally arriving at the Fort Nelson airfield on the morning of February 21. There the three Americans spent the next 24 hours, Ingalls scouting out a good site on high ground near the airfield for his future base camp, and Hoge and Capes making several unsuccessful attempts at an aerial reconnaissance westward toward the Rockies through the low overcast. [16]

On February 27, Ingalls returned to Fort Ord, where a warm reception (highlighted by the presence of the regimental band) awaited him. With a sound appreciation of the challenges confronting the regiment, Ingalls sent his men straight to

work. News of the regiment's mission was well received by the men. Writing home, Lt. Col. Twichell stated:

> It is going to be a huge job, with many hardships and adventures no doubt, but probably the chance of a lifetime. We are all pepped up about it, realizing fully the difficulties and perhaps dangers ahead of us. . . . We like to think they selected the regiment to do it because of its good record to date. . . . Considering the tremendous size of the job ahead of us, and the youth and inexperience of our officers, it fairly staggers us to think of what lies ahead. However, we are banking strongly on the indomitable spirit our outfit has always shown under difficulties, to carry us through.[17]

If anybody in the 35th doubted the urgency of their mission, that doubt was quickly erased by the rapid rate at which new equipment and supplies began to arrive. The day following Ingalls' return, eleven van loads of personal equipment arrived. Each man received one sheep lined coat, one reversible parka (white on one side), fur helmet, sweater, scarf, gloves, wool pants, two pairs of heavy shoes, numerous socks, wool underwear, goggles, and a sleeping bag. Said Twichell, "We certainly will be warm enough."[18]

In addition to personal equipment, the regiment received some of the newest and best heavy equipment available. Though the regiment was already equipped with some dump trucks and Caterpillar tractors capable of bulldozing and other construction tasks, more would be required to complete a project such as the highway to Alaska. For this reason, the 35th received the newest and largest Caterpillar tractor available, the diesel operated D-8. In addition to the giant D-8, the regiment also received a fleet of much smaller, but versatile tractors known as the D-4 and R-4. Once the regiment received all of its principal equipment it boasted a fleet of twenty D-8 tractors and bulldozers; twenty-four D-4 and R-4 tractors with bulldozers and trailers for their transportation; more than

fifty dump trucks; various cargo trucks; more than a dozen jeeps; twelve pick-up trucks; two ½-yard gas shovels; six 12-yard carry-alls; and six tractor drawn graders.[19]

While the unit was still receiving and issuing equipment, Ingalls looked to send an advance party to Dawson Creek to make preparations for the arrival of the regiment. To lead this advance party, Ingalls turned to a young, newly promoted first lieutenant, Robert Greenwalt. Greenwalt's performance during the regiment's mobilization and training had been impressive and Ingalls knew that he could depend on him to lead the regiment's advance party. "It was a bit of a surprise and also an honor when the colonel called me in and gave me the order to take my company to the end of the railroad in Canada and proceed to Fort Nelson to establish a base camp for the rest of the regiment," recalls Greenwalt. On March 5, just one short week after Ingalls' return, Company B, 1st Battalion, 35th Engineer Regiment, departed Fort Ord en route to Fort Nelson.[20]

In addition to his 173 enlisted men, two lieutenants, and 21 vehicles, Greenwalt had the regimental surgeon, Capt. Stotts, and a few other medics with him. The company reached Dawson Creek on March 9, where they were met by the familiar face of Major Welling who had preceded them by just a few days to make all the necessary preparations for the arrival of the 35th and initiation of the highway's construction. Welling immediately put one platoon to work building unloading platforms at the railhead and establishing a camp to house the logistical units who were soon to arrive. Meanwhile, Welling, Greenwalt, and the remainder of B Company (the men of second platoon and the headquarters platoon), left promptly for Fort St. John where the men began preparing a crossing site at the Peace River and clearing a bivouac site for the regiment. Early on, Welling had determined to ensure that the 35th would be capable of crossing the river

when they arrived. “I arranged to have the ice of that mighty stream decked over with 3-inch wooden planks,” he recalled years later.[21]

Greenwalt’s men went to work gathering the required materials from local saw mills. In no time, they had gathered enough planks and saw dust to span the river; the saw dust to serve as an insulator between the planks and the ice, the planks to help distribute the weight of the engineers’ heavy equipment. Hopefully, if warm weather arrived sooner than expected, this measure would ensure that the crossing site remained intact.

On March 13, with construction of the unloading docks complete, first platoon departed Dawson Creek. With the headquarters and second platoon making good progress at the bivouac site near Fort St. John, first platoon raced forward to Fort Nelson, making the 300-mile trip from Dawson Creek in less than 24 hours; Greenwalt and another soldier having preceded them by a day. The following day, with a bulldozer loaned to them by the folks at the Fort Nelson Airport, first platoon began construction of what would soon serve as the 35th Engineer Regiment’s main camp. Lt. Greenwalt and the men of B Company had served their regiment well.[22]

Meanwhile at Fort Ord, the remainder of the 35th made final preparations for their journey north. The first troop train departed California for Dawson Creek on March 10 and the last departed the following day. In a letter home, Twichell wrote:

> In addition to the four trains in which our regiment travelled, each of about 35 Pullman and flat cars, there were two other engineer companies that are attached to us, a survey company and a pontoon company, each of which has a good deal of equipment. Then several hundred freight cars loaded with gasoline, oil, rations, motor parts, tentage, and all the thousand and one things needed to supply a force for six months . . . When we arrived in Dawson Creek we at once unloaded and started north by truck, so as to get the regiment and its heavy equipment across the Peace River, a large and treacherous stream, before the spring thaw should come. There had been several unseasonable warm days and considerable concern

> lest the river should go out. The road, ordinarily a good one for these parts, was badly rutted, and we had quite a struggle getting the regiment across the river, particularly the heavy road machinery, some of which weighed as much as twenty tons. We all had anxious moments in crossing some doubtful bridges, and the ice of the Peace River.[23]

Welling's ingenious plan had paid off. Not a single piece of equipment was lost during the river crossing despite the fact that the ice had started to melt. Exercising caution, the men waited until nightfall, after which time the temperatures reached freezing again, to cross the heaviest equipment. By doing so, the regiment was able to move into the temporary camp prepared by Greenwalt's men. However, there were not enough trucks to move all of the regiment's material and men in one fluid convoy to Fort Nelson. Therefore, trucks and drivers would haul supplies from Dawson Creek to the camp at Fort St. John, unload it in preparation for the move to Fort Nelson, then return to Dawson Creek for another load; the goal being to get the regiment and all of its equipment across the Peace River as rapidly as possible.

While crossing the Peace River was certainly an accomplishment to be proud of, Ingalls worried that further travel to Fort Nelson would not be possible. The winter trail to Fort Nelson had already deteriorated as the result of the unexpected warm spell. Ingalls could only cringe at the thought of getting his regiment started on the 300 mile trip then getting it hopelessly stuck with no chance of recovery. He could only hope that colder temperatures would soon arrive to freeze the ground again and make the trail to Fort Nelson passable.

Unfortunately, none could be certain that the cold weather was sure to return and in a meeting with Col. Hoge at Fort St. John the decision was made to split the regiment in two. One balanced half of the regiment would start out for Fort Nelson while the other

remained near Fort St. John. Ingalls and Hoge agreed that at least half of the regiment had to get to Fort Nelson to begin construction despite the condition of the winter trail. Otherwise, all hope of beginning the road on time was lost. If the first half was capable of reaching Fort Nelson, the second half would follow.

Ingalls charged Twichell with planning the details of the operation. Twichell acted fast and had the first elements moving toward Fort Nelson on March 19. Twichell recalled, "We organized the thing just like a railroad, with an officer in charge of about an 80 mile section. Within this section, he was responsible for establishing kitchens to feed truck drivers and passengers, servicing and repairing vehicles, pulling out stalled vehicles, repairing roads, and doing anything else necessary to keep things moving."[24]

Struggling against muddy roads brought on by the warm weather, the engineers forged ahead. Then suddenly the temperature dropped again and remained bitterly cold for nearly a week. However, the trail had been severely rutted during the warm spell, making for hazardous driving conditions. Still, the men persevered with the understanding that as long as the weather remained cold they could make it to Fort Nelson. To capitalize on this opportunity, the men picked up their pace, driving for nearly 24 hours in a shift with little or no rest in temperatures reaching 35 degrees below zero. "For what seemed an interminable procession of nights and days," said Twichell, "we struggled against extreme cold, icy roads, snow, frozen up engines, wrecks, traffic jams, fatigue, frozen feet, and difficulties of communication to see an ever growing pile of rations, supplies and fuel safely stored at Fort Nelson."[25]

Col. Hoge and his superiors waited anxiously for reports on the progress of the 35th. Early completion of the road still depended on the regiment's ability to reach Fort

Nelson. Welling, now serving as his executive officer, remained with Ingalls to facilitate communication between the headquarters. On March 27, while the 35th continued its march, Welling sent the following note to Hoge:

> You may report that activities to date have been pushed 'to the limit of the troops' physical endurance' (if that was the expression used in the directive to you for the job) . . . The bitter cold and bitter wind combined with the difficult nature of the "road" to work painful hardships on many men . . . Tractor operators have been found along the "road," sitting beside their parked equipment and crying violently, so great was the cold . . . Trucks and drivers were at a premium. The former were loaded beyond the limit and the latter were pushed beyond the limit. As long as the truck had one good light and the driver had on open eye, they were driven on into the night and over the "road" . . . Many of us imagine how much worse it would have been had the enemy been dropping bombs on us at the same time.[26]

The "railroad plan," as it came to be known, worked well and enough supplies reached Fort Nelson soon enough to justify sending the remainder of the regiment forward. Unfortunately, warm temperatures returned and the trail soon returned to a sea of mud. "This was really the most trying part of the expedition," said Twichell. "It would be impossible to describe the ocean of mud, the steep hills, the swearing and sweating that we went through to move all this stuff up. During the preceding cold spell, the road had been fairly lined with stalled vehicles, with broken springs, bashed in front ends, frozen radiators, and others. And now to patch up or tow these vehicles up, while moving north over a failing road, was a real struggle."[27]

On April 2, Ingalls was proud to report that his entire regiment had reached Fort Nelson. The men had moved all of their dump trucks, power shovels, bulldozers, kitchen equipment, cargo trucks, air compressors, road graders, and the hundreds of smaller items needed to keep the road construction going. Thousands of gallons of gasoline and fuel oil, countless barrels of lubricants, great stores of food, tentage, heavy clothing, and

supplementary equipment were laboriously dragged over the frozen ground as the temperature remained more than 30 degrees below zero. All this without losing a single man. Twichell wrote home saying, "Our boys did marvels in keeping the trucks rolling, making repairs in bitter cold weather, [and] untangling traffic jams. Now we are safely encamped on top of a hill at Fort Nelson, overlooking the river, in a clearing carved out of the woods."[28]

Defying the odds stacked against them the 35th had succeeded. The long days of training and drilling at Camp Robinson proved beneficial. Displaying the functional discipline instilled through long hours of work and training, the engineers learned to depend and trust each other. Such trust and confidence ensured mission accomplishment. Working as a cohesive and efficient team, the regiment had defied the odds and persevered in the face of extreme adversity. Ingalls, having been the last man to depart Fort St. John at the wheel of his own jeep, stood in awe of the accomplishment of his men. Along the trail he witnessed signs of struggle: deep ruts, washouts, swift flowing streams, and broken equipment. But nowhere did he find failure. His officers, commissioned and noncommissioned, had led the regiment forward with great efficiency and determination. The men had committed to nothing less than complete success and achieved it. They now felt as if there was nothing that could stop them from building the road. Months of training and team building had paid off.

Over the next several days, Twichell and Welling, using an aircraft sent by Hoge for their use, flew continuously in an effort to find the most practicable route to Watson Lake. They had been told by locals that the only reasonably direct and practical way to travel from Fort Nelson to Watson Lake in summer was over a course known as

McCusker Trail, pioneered back in 1898. An alternative, less preferable route branched off from the McCusker Trail after 40 miles, crossed fifty miles of marshy territory, then followed the Liard River for 150 between two mountain ranges before reaching Watson Lake. But much like the War Department's planners had found, neither trailed showed any real promise for road building. Twichell stated, "The route lay over a flat plain featureless except for numerous lakes and swamps. The country was covered with small spruce, the unfailing sign of muskeg [unstable, marshy ground] underneath. Larger trees, the usual sign of good ground, were noticeably lacking in this section, and no continuous route through it could be [seen anywhere]."

Since Ingalls and his staff agreed that construction had to begin as soon as possible, he decided to initiate work along the first 40 miles of the McCusker Trail. He would leave it to Twichell, Welling, and the regiment's reconnaissance parties to determine the final course of the route.

Work began on April 5, Easter Sunday, when a bulldozer party under the command of Lt. Mike Miletich departed the regiment's camp at Fort Nelson. Miletich later recalled, "Col. Ingalls and Lt. Col. Twichell called me into the tent and said, 'This morning we are going to start the Alcan Highway.' They said to take a starting point . . . just west of the Fort Nelson air strip and . . . start in anywhere." Following an azimuth specified by Ingalls, the men tore into the forest before them and cleared five miles by the end of the day. Another three miles was completed the following day.[29]

While Miletich and his men worked, Twichell and Welling continued their route planning. To their dismay, they discovered that the terrain which Militech would soon encounter would not support further construction. Therefore, Miletich ceased work to

allow for further consideration of the route. Within a few days, Twichell and Welling settled on the proper start point and azimuth for the road.

During the pause in action, unwelcome rain began to fall. Spring and all of its feared weather had arrived. Previously frozen ground soon thawed and turned to thick mud as rain fell upon it. Despite this, Miletich began work once more on April 11, but he and his men were soon floundering hopelessly in a sea of mud. At the end of the day, Miletich reported only a few hundred yards of progress. "Press on tomorrow," said Ingalls. He was sure that once the trees were cleared, the sun would dry the ground and permit further construction.[30]

Unfortunately, this was not the case. Rain continued to fall creating very unfavorable working conditions. For several days, the engineers struggled in the mud to clear the trail, but the terrain and mud began to take a toll on both men and equipment. Soon, the majority of the regiment's vehicles were out of commission and the men doubted that building the road was possible. By the end of April, only eight miles of the trail had been cleared of trees and no improvements to the trail could be made because of the persistent mud.[31]

Bad weather and ground conditions prevented further construction for the next several weeks. While an attempt was made to utilize small opportunities for construction, the regiment had only been able to complete 25 miles of road by the end of the first week in June. It was then that Mother Nature seemingly set out to defeat the 35th. On June 9, a heavy downpour of rain flooded the Kledo River, over which Miletich and his men had already crossed. The ensuing flood washed away a temporary bridge over the Kledo erected by the attached 74th Engineer Company (Ponton) and turned three miles of the

trail into impassable swamp land. Having already advanced far beyond the Kledo, Miletich and his men found themselves hopelessly stuck and without a line of supply. Recorded in the regimental journal is the following account of activities from June 10 through 17:

> Twenty four hours after an intensive down pour had begun, the Kledo River rose six feet. Growing swifter by the hour it literally bombarded the pontoon bridge with heavy driftwood and debris until the pontoon section tore loose at the trestle section and began to head downstream. The immediate action of officers and men resulted in its being secured to one bank where it was subsequently dismantled. Despite the danger of the raging current, Corporals Parton and Curtis ferried Colonels Ingalls and Twichell across the river in an assault boat . . . The excessive rainfall together with other unforeseen difficulties had for a long time impeded the progress of the road. A great deal of time and energy had been directed to drain and otherwise maintain the road. Demolition was employed to rid the road of a swamp-like sand formation extending from mile 36.5 to mile 37.5. Later, dirt was hauled from the opposite side of the Kledo River to fill the demolished areas. Men from all echelons and the complete available manpower of the 648th topo unit participated in corduroying the road from mile 36 to 38. H and S Company had a particularly tough go of it, especially those doing office work and other sedentary occupations. In addition to the work, they had the longest distance to walk in the mud to and from the job; 14 miles in all.[32]

One week, and thousands of trees later, the physically exhausted men finished the job. After receiving their much needed supplies, Miletich's crew resumed work. Shortly after the incident at the Kledo River, summer weather began to arrive. With the reduction in rain and increase in sunshine, the ground became more manageable and the pace of construction quickened.

Having watched the work parties struggle through April and May, Twichell worked with his commanders and staff to determine ways to better their efficiency. Much like he had planned the regiment's drive to Fort Nelson, Twichell put together a program for further construction of the road. Twichell's plan required that the regiment be

restructured into three separate elements, as opposed to the regular two battalion structure.

In the lead of the three-echelon construction effort was the regiment's "advance guard." These men from A Company, 648th Topographical Battalion, stayed several miles in front of the lead construction crews. Their job was to send back to the headquarters notes as to soil conditions, the location of swamps and other bad spots, and other critical information so that final route selection could be made. Using pack horses, dog teams, and shanks' mare the "advance guard" moved ahead at a rapid pace to locate the road in advance of the construction crews. These men carried their own supplies and were away from the main body of the regiment for days or weeks at a time.[33]

Trailing the "advance guard," a survey team marked a path 60 feet wide for the coming construction crews. The route marked by the survey team represented final decisions for route selection based on information received from the "advance guard." The chosen course often followed long straight lines often difficult to maintain by the construction crews because of poor terrain. However, this trail served to keep the coming construction crews on the right course. Like the "advance guard," the survey team was also far enough in advance of the regiment that its members had to carry their own supplies.[34]

Following behind the survey team was the first construction echelon under the command of Capt. John McGaughey. Leading his effort was newly promoted Capt. Miletich and what was called the "Advance Clearing Detachment." This detachment consisted of two waves of large D-8 bulldozers, more commonly referred to as "cats," which were kept running twenty hours a day by two shifts of operators and mechanics

from Companies A and B. The first wave, comprised of the men from B Company, was responsible for knocking down the trees that lie within the route. As Twichell recalled, "[Using the] blade, any ordinary tree can be knoced down at a single blow. Larger ones will take several tries, while for the largest timbers, measuring up to 30 inches in diameter, the cat may have to lower its blade so as to build up a mound of earth, so as to push a bit higher up. These cats can, and do, climb trees, walking slowly up, until it seems they will topple over backwards, until all at once the tree and roots give way, and cat and tress come to earth together."[35]

Following B Company were A Company's "cat skinners" (as the dozer operators were affectionately known) whose task it was to clear the trail of the newly felled trees, piling them high on both sides of the road. The expeditious clearing of trees and debris from the trail was important to allow the summer sun to begin drying the soft ground before the road grading equipment arrived, typically a few days later.[36]

Some of the most dangerous work on the "road" was experienced by the "cat-skinners" and other men in the "Advanced Clearing Detachment." The "cats" were not equipped with a protective cab or cage for the operator. Often times, limbs or tree tops fell on the men due the force with which the dozer struck the tree. Because of this, the men on the ground and those operating equipment had to be very watchful. On one occasion, Private Moore of A Company was struck and rendered unconscious by a falling limb. Moore's fellow engineers tried to revive him, but to avail. They immediately sent a messenger to find the regimental surgeon, Capt. Stotts. Stotts happened to be nearby and hastened to the site. Private Chester L. Russell, a "cat-skinner" in A Company, recalls what happened next:

> [Doctor Stotts said,]"I am going to need a 3/8 inch brace and bit, a hack saw blade, a pair of pliers, and an eye dropper." I don't remember if he had his own knives or if he used a razor blade . . . He drilled three holes into the skull in a triangle pattern, then taking a piece of hack saw blade with the pliers, he cut out the bone between the holes. It wasn't long after that when he told us that the pressure was released, and of course, that made us feel good. Then we got busy and cleared the brush and logs from around Moore, got him on a cot, and put a tent over him.[37]

Moore began to slowly recover and was moved back to Fort Nelson. There he was put on a plane and transferred to a hospital at Fort Snelling, Minnesota. Unfortunately, Moore died en route on August 25.[38]

Immediately following the second wave of "cats" was a "hand party," preparing temporary bridges over streams and placing corduroy mats (trees laid side-by-side to create stable surface over soft ground) in soft or swampy areas. As streams were reached, the attached ponton bridge company would drag its equipment over the half-finished road to the near bank. Ferries were then rapidly established to transport men and equipment to the far bank where abutments for ponton and permanent bridges began to take shape. When regular ponton equipment was not available improvised rafts were used. This crew also had a team of "cat-skinners" bulldozing dirt into the trail and over the corduroy to create a rough road so that fuel, rations, and other supplies could be delivered to the "Advance Clearing Party." Twichell referred to this area as "a zone of constant strife; the crash of trees, the roar of "cats" and trucks, the song of axes and of men at work, of mired and disabled vehicles, of sudden bog holes, as we slowly but surely carve our way forward."[39]

Mixed in with this party, or immediately following, another crew of surveyors staked out the road for the second construction echelon under the command of Capt. Paul H. Symbol. Symbol's men, from Companies C and D, were equipped with the large D-8

tractors like McGaughey's men, and a compliment of Le Tourneau carryalls. The job of this "Rough Grading Detachment," as it was known, was to improve initial side hill cuts, form the road, create ditches to the left and right, and to replace the temporary bridges and culverts with more permanent structures capable of supporting the regiment's heaviest loads. The regiment possessed a mobile air-compressor unit and used it with their saws and other power equipment to establish a mobile sawmill. Though most of the work was still done by hand using axes and saws, the sawmill allowed a rapid means of converting the wealth of timber into bridge timbers, piles, and corduroy material. During the course of construction, Symbol's men built a total of 23 principal bridges with an approximate combined length of 5,230 feet. The longest of these structures spanned the Liard River, was 1,270 feet in length, and was completed in just nine days.[40]

Finally, equipped with the regiment's much smaller and versatile R-4 tractor, came Capt. James A. McCarty's "Final Grading Detachment," the third construction echelon. In addition to leading this detachment, McCarty was also the commander of 2nd Battalion. Comprised of men from Companies E and F, the "Final Grading Detachment" was responsible for making the final shaping and grading adjustments on the road. This work required patience and attention to detail since some portions of the road required a greater amount of time for drying and patching. Patience paid off and traffic was capable of moving at 30 miles per hour over the 35th's completed sections of road. Speaking of completed sections of the road, Twichell stated, "To our eyes it is a very good road, although the critical might find fault with it. It is narrow and winding and has piles of trash . . . along the way . . . [and other] minor irregularities that our rough and ready

methods result in. We will have to leave the correction of these defects to those who follow us, content to have opened the way."[41]

As efficient and organized as this system was, many challenges and obstacles presented themselves to the men of the 35th. For example, shortly after work began, hundreds of the regiment's men were struck with yellow jaundice. Later determined to be the result of bad batches of serum used for yellow fever shots, the illness incapacitated many of the men (Capt. McGaughey and Lt. Greenwalt among them) for weeks. However, some men, like Chester Russell, simply went back to work lacking anything better to do.[42]

The most daunting challenges, however, were those presented by the vast and varying terrain of northern Canada. In addition to the many streams and rivers encountered during construction, the engineers had to overcome two very unfamiliar foes; muskeg and permafrost.

Muskegs are pits or bogs of rotten organic matter and muck, usually overgrown with bushy ground cover and reindeer moss and scattered with small spruce and tamarack trees. These bogs are solid enough when frozen, but bottomless in water under the spring rain and the summer sun. The engineers had but two choices in overcoming muskeg once it was encountered; either bypass it or corduroy it with logs cut in nearby thickets. Corduroying, however, was slow work and created only a temporary road surface. The engineers soon determined that best way to deal with muskeg was to avoid it wherever possible.[43]

Permafrost, permanently frozen ground, was found to underlie much of the muskeg. No one at the time knew very much about what permafrost would do except that

it would be very tricky. Once muskeg was stripped from atop permafrost, the sun would to thaw the ground. The thaw would then spread as warmth and water melted still more frosted subsoil. To the engineers' dismay, there was no quick natural end to this process. Drainage was determined to be nearly impossible because the water continued to thaw more of the frozen ground. Soon, where permafrost was prevalent, nothing remained but an endless mess where "cat skinners" had scraped away the cover of muskeg. The engineers soon found that the only solution was to either relocate the road or bring in thousands of tons of rock and gravel fill to make the base suitable for a road. Later, they learned not to scrape off the muskeg, but to dump fill over the top of the natural cover so as not to disturb the insulating layers of plant life and rotten organic matter.[44]

Mountains, lakes and rivers also presented significant challenges. Among the most significant of these confronting the 35th was that of Muncho Lake. During the weeks of bad weather, Ingalls and Twichell continued aerial reconnaissance flights in hopes of finally settling on the final course of their route. With the help of a native of Watson Lake, the men discovered a viable route that extended from Muncho Lake, down the Trout River, and then up the Liard River. Unfortunately, further aerial reconnaissance showed that the preferable path around the lake was obstructed by a sheer limestone cliff. Reconnaissance of other potential routes around the lake found extensive muskeg and permafrost and would require several more months of work to construct. As they surveyed the cliff, Ingalls and Twichell debated the possibilities for overcoming the obstacle. They soon agreed that by demolishing the cliff, the road could be built skirting the shore of the lake. What follows is Col. Ingalls' account, as recalled by Twichell, of how the obstacle was finally reduced.

> The cliff ran sheer down to the water line, but below this the action of the waves and ice had cut holes, some of a size to hold a box of TNT . . . .Miletich sent a man up the cliff to fasten a long rope to a projecting rock . . . .After taking off his clothes, Miletich tied a noose in the other end of the rope, and slipped it under his arms. Then he dived into . . . the icy lake, using the rope for support while he explored the face of the cliff to locate a hole of the right size below the water. When he [found a hole, he then] removed the wooden cover from a box of TNT . . . took out one block and laid it aside. Placing the box under shi arm, he swam with it back to . . . the hole, into which he place the box . . . .opened side out. [Then] he took the spare stick of explosive and placed a blasting cap in it, to which a [waterproof] fuse . . . had been attached. Placing the device in his teeth, he lighted it, and with the fuse spluttering and set to go off at the proper time, he swam back to the box. Into this he placed the charge and then swam out of danger.[45]

Miletich's ingenuity worked and the cliff was soon reduced to a point that the "cat skinners" could push enough fill into the lake to create a stable road surface. Word of Miletich's actions soon spread throughout the regiment, earning him an impressive reputation. Yet, for Miletich, having already become accustomed to spearheading the 35th's advance, the achievement seemed minor in comparison to what the regiment had already accomplished.

Added to the problems of rugged and unpredictable terrain, the troops had experienced almost every type of weather imaginable. Throughout March and April, work was carried on in sub-zero temperatures, driving winds, and heavy snowfall. When warmer weather arrived in the spring, torrents of rain added to melting snow and made the entire project a vast sea of mud for almost 60 days. The arrival of summer brought with it swarms of vicious mosquitoes, flies, and temperatures that topped 90 degrees. Despite persistent dust and the handicap of wearing mosquito nets and gloves, the men managed to pushed ahead at almost unbelievable speed.

The harsh terrain, extreme weather, demanding labor, and other hardships encountered by the men soon hardened them against adversity. As such, the men learned

to become self sustaining and they developed a strong culture of ingenuity and adaptation to the environment. For example, food rations, while sufficient in supply, were soon replaced with fish caught in the plentiful rivers, streams and lakes, or with wild game brought in by hunting parties. Cooks, desiring to provide good meals to their comrades, moved their roadside kitchens from job site to job site, cooking whatever fresh game or rations were available. Shower and bath sites were created by simply suspending barrels filled with hot water above log framed shower stalls. In one impressive case of ingenuity, Robert Taylor of B Company even built his own laundry machine out of a fifty-five gallon steel drum and various other parts. He was soon running a full-fledged laundry service for the regiment.[46]

Stories of the engineers' hardships and accomplishments were soon trickling back to the United States. Even before the regiment crossed the Peace River in April, reporters were waiting at Dawson Creek and Fort St. John. These reporters, initially writing that the engineers were sure to fail in their endeavors, soon praised the regiment for its accomplishments. Soon, more reporters, government officials and even celebrities visited work sites hoping to see the impressive work of the engineers. The 35th even earned a spot in *The Saturday Evening Post* after comedic author, William Hazlett Upson, visited the unit and was intrigued by the performance of the men. His story, "Give Us More Rope," captured the rustic conditions in which the engineers operated and was read by thousands of people across America.

Of course, senior leaders within the Alcan project maintained a close eye on the 35th as well. By now, the reputation of the 35th was well known, and both Ingalls and Twichell became the subjects of promotion. Twichell, having masterminded the 35th's

impressive march to Fort Nelson and subsequent construction efforts was selected to take command of the 95th Engineer Regiment and departed the 35th in July. The 95th, an all black regiment, was engaged in construction of the highway near Fort St. John.[47]

Ingalls move came a few months later when he was selected to command the Southern Sector Headquarters of the Alcan project. Early in the project, Hoge had served as the single commander, but command and control soon became difficult. Senior leaders decided to split the project in half and created a Northern Sector and Southern Sector. Hoge remained in charge of the Northern Sector at Whitehorse while Col. James A. O'Connor, having recently commanded the Army's Western Defense Command, assumed command of the Southern Sector at Fort St. John. Further changes to the command structure were made in September. Hoge left the Alcan project for other duties in the United States and O'Connor (promoted to brigadier general) took command of the newly created Northwest Service Command. O'Connor's first choice to command the Southern Sector was Ingalls. Ingalls departed the 35th on September 6, leaving behind what was arguably the best engineer regiment in the United States Army. Taking his place in command of the regiment was newly promoted (and now most senior officer in the regiment) Major James McCarty.[48]

Despite the personnel changes occurring within the regiment, the men of the 35th continued to push the road toward Watson Lake. In September, the men learned that the 340th Engineer Regiment, having started their stretch of road at Whitehorse and headed east toward Watson Lake, was not too far away. The gap between the two regiments finally closed on September 24 in a small tributary of the Liard River now known as

Contact Creek. In his book, *Northwest Epic*, Heath Twichell Jr. writes a vivid description of the event.

> A few minutes before five, the advance clearing crew of the 340th Engineers reached the west bank and stopped. Only the lead bulldozer kept its engine running. Above its low, rumbling idle the tired and dirty men could hear the approaching machines of the 35th Engineers, crashing through the last quarter mile of dense thicket on the opposite bank. As that noise grew louder, more members of the 340th straggled up from the rear. An equally grubby group from the 35th began assembling expectantly on their side of the creek. There was much yelling back and forth; a raucous mix of humorous profanity and boasting about which regiment had won the race to Watson Lake and which outfit had built the most miles of road to get where they were now. The banter faded as the 35th's first bulldozer suddenly burst from the thicket. Trailing broken vines and mangled branches, it lumbered down the bank and into the shallow stream. In the cab beside the operator was the regiment's new commanding officer, Major McCarty. Col. Lyons, [commanding the 340th], jumped aboard the 340th's lead machine as it lurched forward to meet them. The 'dozers touched blades, the two commanders shook hands, the 340th's band played, most of the onlookers got wet in the ensuing horseplay, and–when the hoopla subsided–the pioneer trail between Dawson Creek and Whitehorse was finally open.[49]

Completion of the road, however, did not signal the 35th's departure from Canada. In fact, the regiment remained there for another year improving the "pioneer trail" and constructing additional roads and trails to connect key facilities, such as airfields and oil production facilities, with the main highway. The engineers were also actively engaged in winterizing a number of camps along the highway. This active building program required the construction of large and small repair shops, mess halls, barracks and other buildings at various regimental camps.

During this time, the 35th worked in a decentralized fashion with multiple construction projects progressing simultaneously. The first new road project began on October 15, when a detachment from the regiment of two officers and twenty enlisted men began the construction of a pioneer road known as the Smith Valley Trail. This 25

mile road was completed the following month and included the construction of an emergency landing strip to support flights along the Northwest Staging Route.[50]

A second road project, known as the Fort Simpson Road, began later in October. Under the direction of three officers, 43 of the regiment's engineers constructed this 250 mile road from Fort Nelson to Fort Simpson in just three months.[51]

The most publicized project of this time was started by the 35th in December and known as the Norman Wells or CANOL (Canadian Oil) Road. This road extended for 200 miles from Teslin Lake toward Fort Norman. The engineers worked tirelessly to complete the project intended to allow overland access to the oil fields located near Norman Wells as Vilhjalmur Stefansson had earlier suggested years prior. The project also involved the cutting and erection of telephone poles and the construction of four camps along the route.[52]

However, the project was soon embroiled in deep controversy as many in the American government argued the strategic value, legitimacy and cost of the project. This same scrutiny surrounded several other projects being completed in Alaska by American soldiers. While the construction of the main highway certainly served America's strategic interests, further projects in Canada did not, and by mid-summer 1943 the 35th was back in the United States at Camp White, Oregon.

Little fanfare awaited the regiment upon its return. In the 18 months since the 35th had left Fort Ord in response to the nation's need for an all weather military supply route to Alaska, U.S. forces had gone into battle against the Japanese, Germans, and their allies. Battles at places such as Midway and Kasserine Pass captured the nation's attention while the engineers were toiling against mud, muskeg and mosquitoes. The

Japanese threat against America's homeland never fully materialized although Dutch Harbor was attacked in June 1942 and Japanese forces seized the islands of Kiska and Attu in the Aleutians. American soldiers, sailors, and airmen eventually forced the Japanese out of the Aleutians in 1943. Ultimately, the highway the engineers fought so hard to construct served little purpose in the war effort. Having once believed they had achieved something of great significance, the men soon questioned this as they read news articles decrying the expense of the road and its perceived lack of strategic value.

Despite all this, the simple fact that the engineers were capable of accomplishing such a feat of engineering was extraordinary. While it did not act alone in constructing the highway, without the early efforts of the 35th, such an accomplishment could not have been achieved. Recalling the 35th's dash to Fort Nelson, Gen. Sturdevant later stated, "For men inexperienced in such winter operations, this 325-mile march was a remarkable performance. Accomplishment of its mission by the 35th Engineers furnished the key to the early opening of the road to traffic."[53]

Sturdevant's comments further supported the fact that the 35th was indeed comprised of leaders and men who possessed a high level of functional discipline. Yet, this fact was already established by the selection of the 35th to lead the Alcan effort. What must have most impressed men like Sturdevant was the strong unit cohesion displayed by the men of the 35th. Months of training and team building under the command of Col. Ingalls had established the foundation of functional discipline and earned the 35th a strong reputation in its infancy. That foundation was built upon on the Alcan where the men learned to adapt and overcome a multitude of challenges ranging from harsh climates and terrain to sickness and fatigue. Against these challenges, the men

of the 35th worked together to form a cohesive team in which each man learned to trust and depend on his fellow engineer. Unit cohesion founded on functional discipline, above all else, would later serve as the most important factor in determining the success of the 35th during combat.

"Cohesion" is defined in current Army doctrine as "the existence of strong bonds of mutual trust, confidence, and understanding among members of a unit." It further defines "unit cohesion" as "the feeling of belonging to a team of soldiers who accept a unit's mission as their mission." When considering the importance of unit cohesion, Richard Madden, in his essay, "Living on the Edge: Building Cohesion and the Will to Win," combined these two definitions and determined "a unit becomes cohesive when its members feel a sense of belonging that is developed through shared unit values and relationships of mutual trust and confidence."[54]

Famed French military theorist of the 19th century, Col. Ardant du Picq, offered this analogy when considering unit cohesion: "Four brave men who do not know each other will not dare to attack a lion. Four less brave men, but knowing each other well, sure of their reliability and consequently of mutual aid, will attack resolutely." Du Picq believed that unit cohesion sprang from mutual trust which is fostered by discipline to orders, living together, obeying the same leaders, and shared experiences of fatigue and hardship. Mutual trust, he said, also develops from the cooperation among men who quickly understand one another in stressful situations. "It is that intimate confidence, firm and conscious, which does not forget itself in the heat of action and which alone makes true combatants."[55]

Most importantly, Du Picq recognized that unit effectiveness is enhanced within "an organization which will establish cohesion by the mutual acquaintanceship of all," that is knowledge of comrades, a trust in officers providing visible leadership, a sense of duty, discipline, and pride. This sustains the soldier in combat and prevents fear from becoming terror. While the engineers of the 35th had not yet been tested in combat, their leaders had displayed a high level of visible leadership. Officers like McGaughey, Miletich, Symbol, and Greenwalt were daily present with their men on the job. In many cases, these officers accepted the toughest tasks as their own and set the example for their men to follow. The men learned to trust their leaders, knowing that they were willing to share in hardships. Such would be the case when tested in combat.[56]

The unit cohesion developed within the 35th was not only a product of endured hardships; it was also the end result of Col. Ingalls' determination to build the best regiment possible. Madden states that unit cohesion is not established by chance. He says that leaders must develop cohesion deliberately within their organizations in order to foster the will to win in their soldiers. Fortunately, Ingalls understood this. He saw how it affected the 41st Engineers where he served as the Regimental Executive Officer and had applied its principles to his regimental training plan while raising the 35th. His rigorous training program had required the men to work and train together for long hours every day in order to achieve clearly established standards of performance. He insisted in precision during drill and ceremony, thus requiring the men to work in unison even on the parade field. The constant marching, training, and work endured by the men at Camp Robinson resulted in a well-trained and disciplined unit. The discipline and performance of the unit at Camp Robinson and during the Louisiana Maneuvers earned the unit praise

from senior leaders outside the organization and instilled a sense of unit pride and affiliation in the men. Feeling a sense of ownership in the organization, the men determined to do their part in ensuring the unit succeeded in every endeavor. This set the foundation for unit cohesion which was ultimately solidified on the Alcan.[57]

On the Alcan, the engineers learned valuable lessons of team work and leadership and of the importance of acting decisively during struggles that would later prove invaluable. Leaders at every level matured and became experienced decision makers and team builders. They saw the value in Ingalls' strict system of training and mastering the basics of their trade. However, they also learned that their success did not rely upon Ingalls alone; theirs was team whose success depended on the actions of each man. This became clear while the 35th continued to succeed even after Ingalls' departure. But few could deny the impact that Ingalls' methods had on the organization. Many found that the roots of the organization's strength lie in philosophies he had impressed on each of them; philosophies they embraced and made their own. On the highway, the 35th had come of age. It had proven to be a well-trained, highly disciplined, and cohesive unit. Soon, men of this regiment would test the value of their experiences against the daunted German Army.

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[1]Clarence C. Hulley, *Alaska: 1741-1953* (Portland, OR: Binfords and Mort Publishers, 1953), 335.

[2]Hulley, *Alaska,* 335.

[3]Ibid., 336.

[4]Waldo G. Bowman, et al., *Bulldozers Come First* (New York, NY: McGraw-Hill Book Company, 1944), 112.

[5]Shelby A. McMillion, "The Strategic Route to Alaska," *The Military Engineer* 34, no. 205, (November 1942): 547.

[6]Jean Potter, *Alaska Under Arms* (New York, NY: The MacMillan Company, 1942), 33.

[7]McMillion, "The Strategic Route to Alaska," 549.

[8]Twichell, *Northwest Epic*, 56.

[9]Clarence L. Sturdevant, "The Military Road to Alaska: Organization and Administrative Problems," *The Military Engineer* 35, no. 10 (April 1943): 173; Twichell, *Northwest Epic*, 56.

[10]Twichell, *Northwest Epic*, 61; Heath Twichell correspondence to his wife, February 1942 (copy in possession of author).

[11]Sturdevant, "The Military Road to Alaska," 173; Twichell, *Northwest Epic*, 61.

[12]Twichell, *Northwest Epic*, 56; Sturdevant, "The Military Road to Alaska," 175.

[13]Twichell, *Northwest Epic*, 63.

[14]Ibid.

[15]Ibid.

[16]Ibid., 63-64.

[17]Heath Twichell correspondence to his wife, March 4, 1942 (copies of all referenced Twichell correspondence in possession of author).

[18]Ibid.

[19]Sturdevant, "The Military Road to Alaska," 179.

[20]Robert Greenwalt, email correspondence to author, August 2001 (in possession of author).

[21]Ibid.; Alvin C. Welling correspondence to Heath Twichell, Jr., August 15, 1967 (copy in possession of author).

[22]*Regimental History*, 42.

[23]Heath Twichell, correspondence to his wife, March 4, 1942.

[24]Ibid.

[25]Ibid.

[26]Memorandum from Major Alvin C. Welling to Col. William Hoge, March 27, 1942 (copy in possession of author).

[27]Heath Twichell, correspondence to his wife, March 4, 1942.

[28]Ibid; McMillon, "The Strategic Route to Alaska," 552.

[29]Mike Miletich, interviewed by Mary Twichell Cochrane, Fort Belvoir, VA, August 1967 (transcripts in author's possession); *Regimental History*, 48.

[30]Twichell, *Northwest Epic*, 109.

[31]*Regimental History*, 49.

[32]Ibid., 55.

[33]Heath Twichell correspondence to family, May 19, 1942.

[34]Ibid.; Twichell, *Northwest Epic*, 169.

[35]Ibid.

[36]Ibid.

[37]Chester L. Russell, *Tales of a Catskinner: A Personal Account of Building the Alcan Highway, the Winter Trail, and Canol Pipeline Road in 1942-1943* (North Bend, OR: Wegferd's Printing and Publications, 1999), 41.

[38]*Regimental History*, 62.

[39]Heath Twichell, correspondence, May 19, 1942; Twichell, *Northwest Epic*, 170.

[40]Ibid.; *Regimental History*, 67-68.

[41]Ibid.; Ibid., 171.

[42]Russell, *Tales of a Catskinner*, 35.

[43]David A. Remley, *Crooked Road, The Story of the Alaska Highway* (New York, NY: McGraw-Hill Book Company, 1976), 32.

[44]Remley, *Crooked Road*, 65-66.

[45]Twichell, *Northwest Epic*, 113, 186; Mike Miletich, interview by Mary Twichell Cochrane, Fort Belvoir, VA, August 1967.

[46]Taylor, *Salt Peter Cake*, 47.

[47]*Regimental History,* 59; Twichell, *Northwest Epic*, 179.

[48]Twichell, *Northwest Epic*, 203, 206.

[49]Ibid., 208.

[50]*Regimental History*, 69.

[51]Ibid.

[52]Ibid., 70.

[53]Sturdevant, "The Military Road to Alaska," 174.

[54]Madden, "Living on the Edge," 59.

[55]Ibid.

[56]Ibid.

[57]Ibid.

CHAPTER 4

HOLD FOR AS LONG AS FEASIBLE

Since its activation in July 1941, the 35th Engineer Regiment had established a solid reputation as one of the best engineer outfits in the United States Army. Under the command of Col. Robert D. Ingalls, the regiment completed a rigorous training program at Camp Robinson, demonstrated great potential during the Louisiana Maneuvers, and accomplished one of the greatest military engineering feats in history. The training and unique engineer missions conducted by the 35th, combined with a dynamic leader development program initiated by Ingalls, laid the foundations of functional discipline and unit cohesion needed for success on the battlefield. The strength of these foundations would be tested against all odds in combat in the face of a determined enemy. The first test of the battalion would come near a small Belgian city called Bastogne.

For the men of the 35th Engineer Regiment, much seemed to have changed in the months since they last partook of garrison life. Gone was the spit and polish appearance that once existed within the regiment; seemingly left somewhere along the winter trail to Fort Nelson. Months of exhausting labor had required the men to adapt to their environment, one that required them to exert every ounce of energy on completing the impossible. However, what remained of the old regiment was the unmistakable desire to be the best.

In fact, the 35th had become something of a legend within the Corps of Engineers. This fact was supported by the great number of newly minted lieutenants who actively sought assignment to the 35th. These young lieutenants began arriving to the regiment shortly after its arrival at Camp White. They took over positions once held by the likes of

Greenwalt and Miletich, now promoted to captain and major respectively. Hardened noncommissioned officers, like Harrell Wyatt and Charles Cannon received the new lieutenants with skepticism, wondering if they had what it took to lead their men. Men like Wyatt and Cannon had gained a great deal of experience and confidence on the Alcan, their men had as well. Now they would be led by officers whose experience was limited to that training received during their time as a cadet in the Reserve Officers Training Corps or Officer Candidate School.

In addition to the newly arrived lieutenants, the regiment received many new recruits to fill vacancies created when privates were promoted to sergeant or after certain noncommissioned officers departed to serve as cadre in newly activated units. Fortunately for both the new lieutenants and enlisted men, the experienced officers and noncommissioned officers of the regiment reestablished the rigorous training program once conducted at Camp Robinson. Soon, these newcomers integrated into the unit with the advantage of great leaders with a wealth of experience.

While training progressed and adjustments were made within the regiment's command structure, a significant organizational change took place. On September 25, 1943, the 35th Engineer Regiment was reorganized into three separate units. The regimental headquarters was redesignated as the 1122 Engineer Group Headquarters. 1st Battalion, 35th Engineer Regiment was redesignated the 35th Engineer Combat Battalion; and 2nd Battalion, 35th Engineer Regiment was redesignated the 145th Engineer Combat Battalion. This reorganization reflected changes to engineer regiment tables of organization and equipment implemented army-wide beginning in the summer of 1943.

Newly promoted Lt. Col. Paul H. Symbol was selected to command the 35th Engineer Battalion. Symbol, one of the founding members of the regiment, had risen through the ranks rapidly. He first served as Ingalls' adjutant, but was later selected to serve as assistant executive officer to Twichell. Reorganization of the regiment for work on the Alcan resulted in Symbol's selection to lead the "Rough Grading Detachment." He performed extremely well in this capacity and was earmarked for future command.

Commanding the companies of the newly structured battalion were four veterans of the Alcan construction; Capt. Robert H. Ammon commanded Headquarters and Service Company; Lt. Warren B. Day commanded Company A; Capt. Wayne E. Wells commanded Company B; and Capt. Phillip M. Stark commanded Company C. Other founding officers of the regiment and veterans of the Alcan served as primary staff officers. For example, Major Mike Miletich became the battalion executive officer.

The battalion trained at Camp White until April 1944 at which time it moved by train to Camp Shanks, New York. At Camp Shanks, the battalion conducted preparations for movement to England where it was expected to take part in the war against Germany.

The 35th departed Camp Shanks in early July and entered France in August 1944. Symbol's men first saw action near Brest serving as a corps-level engineer asset for Gen. Troy H. Middleton's VIII Corps. The 35th fought primarily on the Crozon Peninsula, south of Brest, and was frequently used to fight as infantrymen. On September 3, Capt. Stark was killed in the small village of Telgruc when American fighter planes mistakenly strafed and bombed the village believing it to be occupied by Germans. After Stark's death, Capt. Christopher Rickertsen assumed command of Company C.

After Brest was liberated in September, VIII Corps traveled east and the 35th entered Belgium on September 28, 1944. With winter rapidly approaching, the engineers found themselves hard at work improving main supply routes, operating sawmills and rock quarries, and building winter shelters for the troops on the front line. Due to the nature of their work, the companies of the 35th were decentralized and operating in various parts of Luxembourg and Belgium. The engineers were well-suited for the job having done the same work on the Alcan.

Known as the Ardennes Forest, the area in which the 35th operated was a beautiful combination of thick forests, deep river valleys, and small towns and villages. Prior to the outbreak of World War II, the region had been very popular among tourists traveling in Europe. Militarily, however, the terrain posed a great obstacle. Traffic was restricted to the roads, which twisted and turned along rivers, through the forests, around steep hills and ridges, and through the villages. Where road conditions became poor as a result of the heavy military traffic and rain, vehicular movement of troops and supplies had to stop. Therefore, it was extremely important for the engineers to constantly maintain the roads in the Ardennes.

Historically, few battles had ever been fought in the Ardennes, though the Germans had successfully used the region on two occasions to launch major offensives. Both offensives were directed against the French, one in World War I, and the other in 1940, shortly after the beginning of World War II. During both operations the Germans had been able to move large forces virtually undetected and against little resistance from their enemies who chose to establish defenses elsewhere, believing the Ardennes to be impassable.

But now, as strong Allied forces occupied the Ardennes, few believed that the Germans would try such an operation again. This belief was supported by the fact that little contact with the enemy in the VIII Corps sector had been experienced since Middleton's forces had arrived in late summer. Though heavy fighting was experienced in other sectors, the VIII Corps sector was quiet. So quiet, in fact, that it had become the place to introduce "green" units onto the front lines or to send weary units for rest and refit.

By mid December, to defend the corps' sector, Middleton had the 106th, 4th, and 28th Infantry Divisions. Recovering from heavy fighting in the Huertgen Forest, the 4th and 28th divisions' ranks were extremely thin. The 106th, on the contrary, had arrived on the line just two weeks earlier and had not been tested in combat. The 35th ECB, along with three other combat engineer battalions (159th, 44th, and 168th) and the 9th Armor Division's Combat Command Reserve (CCR), made up Middleton's formal reserve.[1] With winter in full swing and no major offensive plans, the VIII Corps troops conducted little more than local patrolling.

On December 15, Gen. Middleton's intelligence officer reported,

> For a two months period the enemy has been content to hold the present front line without engaging in activities of a greater scope than patrols and harassing artillery
> fire. . . . There has been no indication of a change in this policy. No airborne or parachute troops have been reported in line or in assembly areas to the rear, nor have any armor concentrations been reported ready for employment in this area.[6]

So on the cold, cloud covered night of December 15, 1944, few could have imagined that on the east bank of the Our River, the largest counterattack force that the German Army would ever assemble was preparing to strike a crushing blow against the Allied forces in Europe. In the dark of night, German panzer crews made final

preparations on their tanks, panzer grenadiers readied their weapons, and commanders reviewed their maps.

The German build up had begun weeks earlier under strict secrecy, successfully avoiding the attention of Allied intelligence. Code named "Wacht am Rhein" (Watch on the Rhine), the German plan was to drive a wedge between the American and British armies in Europe and capture the strategic port city of Antwerp. The Reich's Fuhrer, Adolf Hitler, believed that if successful, the offensive would revitalize the German war effort and turn the tide of war back in Germany's favor.

At precisely 0530 hrs on December 16, 1944, the German Army initiated Operation "Wacht am Rhein," its great counteroffensive in the Ardennes. Preceded by a terrific artillery barrage, the waiting German tanks and infantry poured across the Our River, into the Ardennes. Immediately, the allied troops were stunned. Attacking on a broad front, the Germans had achieved total surprise. German commanders reported successes along the entire line as Allied units either broke or were overrun.

The Allied reaction was slow as commanders tried to gain control of the deteriorating situation. At VIII Corps headquarters, Middleton became increasingly concerned as reports from the 106th and 28th Divisions were relayed to his command post. German forces under the command of Gen. Heinrich Freiherr von Luettwitz were hammering into Middleton's sector. Luettwitz' *XLVII Corps* (*26th Volksgrenadier Division*, *2nd Panzer Division*, and *Panzer Lehr Division*) had crossed the Our River at Dasburg and Gemund and planned to push west to seize the vital road center at Bastogne. After securing Bastogne, von Luettwitz planned to continue west toward the Meuse River, seizing crossing sites at Dinant, Anseremme, and Givet.

After learning of the attack, Symbol alerted his company commanders and warned them to closely guard bridge sites in their respective sectors. Already, as a result of the heavy German artillery fire, the men of B Co were not able to continue work at the Bettendorf quarry, one of their primary work sites. Throughout the morning Capt. Hritzko's men tried to recover their engineer equipment at the quarry, but continued artillery barrages, coupled with the deterioration of the front lines, caused the men to abandon the quarry and return to their bivouac site in the small village of Goebelsmuhle.[2] Approximately 20 miles northeast of Bastogne, Goebelsmuhle was set in a deep valley on the north side of the Sure River, barely a mile north of Bourscheid. Only one road ran through the village along with a railroad, both paralleling the north bank of the Sure. On the western edge of the village, a bridge provided access to the south side of the river. Positioned further east than the other companies in the 35th, Hritzko's men stood the greatest chance of being cut off should the enemy achieve a breakthrough. Therefore, Hritzko wasted no time in sending out patrols and placing his men in positions to guard the approaches into Goebelsmuhle.

On the morning of December 17th only one of Middleton's reserve battalions remained uncommitted; the 35th. The three other engineer battalions along with his armored unit were engaged in heavy fighting several miles east of Bastogne. Though Middleton did not have a clear picture of the enemy situation in his sector, he was certain that the enemy would need good roads to keep up its momentum. Therefore, he determined to deny the Germans the critical city of Bastogne. It was there that several roads intersected and offered good avenues westward. Adhering to the advice of his corps engineer, Col. William R. Winslow, Middleton chose to send the 35th to establish a

defensive line east of the city. Middleton and Winslow figured that the line, extending from Foy, in the north, to Marvie, in the south, could be held if the engineers were able to hold key terrain and villages.

With the plan in hand, Winslow entered Symbol's command post and issued him orders for the defense of Bastogne. Winslow explained that reinforcements were on their way, but Symbol's men would have to hold the line until they arrived. Bastogne had to be held at all costs.

Meanwhile in Goebelsmuhle, the engineers of B Company remained on high alert. Hritzko's men had been up all night listening to the sounds of battle as they drew nearer. However, little information existed about the nature of the battle. Communications with the battalion headquarters no longer existed, presumably due to severed phone lines caused by the German artillery fire. Finally, a patrol led by Lt. Charles Nettle, one of Hritzko's platoon leaders, returned late in the morning with news that they had encountered a couple of reporters in a Jeep headed for the rear. Nettle explained to Hritzko that the two men were visibly shaken and reported that German soldiers were nearby.[3]

At about the same time that Hritzko received Nettle's report, the sounds of a fierce battle emanated from nearby Hoscheid. Unbeknownst to Hritzko, troops of the 28th ID were under attack there by German paratroopers of *Generalmajor* Ludwig S. Heilmann's *5th Fallschirm-Jaeger Division.*

Hritzko headed to nearby Lipperscheid where the headquarters of the 687th Field Artillery Battalion was located. He hoped that the artillerymen would be able to provide much needed information about the nature of the German attack. When he arrived in

Lipperscheid, the artillerymen explained that the enemy had broken through the American lines. In fact, they had been ordered to move their batteries to Wiltz in order to avoid being cutoff and to take part in further defense against the German attack.

Armed with this information, Hritzko set off toward Goebelsmuhle. To his amazement, the road that had once been clear was now occupied by German paratroopers who attempted to stop him. "Run it," shouted Hritzko to his driver. The Germans fired wildly at the speeding jeep, narrowly missing both GI's.[4] These German paratroopers, part of Oberst Kurt Groeschke's *15th Fallschirm-Jaeger Regiment* had passed just south of Lipperscheid, purposely avoiding the American outfit stationed there. Groeschke's men were headed straight toward Goebelsmuhle. There, Groeschke hoped to secure the bridge in order to support the division's advance west.

Speeding into Goebelsmuhle, Hritzko was met by Lt. Arnold Dillard, the 35th's assistant intelligence officer. Arnold explained that the battalion had received orders to defend Bastogne. Company B, he said, was to immediately depart for Wardin where a battalion assembly area was being formed.

Hritzko responded with the fact that his company may have to fight its way out. He explained that the enemy was just outside of the village and then ordered Lt. Charles Botdorf, one of the company's platoon leaders, to set up an ambush to check the enemy's advance.[5]

While the rest of the company loaded onto trucks, Botdorf's men hurried to get into position. But before they could set the ambush, German paratroopers were spotted advancing along the railroad tracks leading into town. Immediately, a firefight erupted.

The heavy fire dealt by the engineers surprised the enemy and sent the Germans looking for cover. After adding their own fire to the mix, Groeschke's men began trying to move to the north side of the engineers along a footpath that led above and around the village. Fearing the enemy might get behind the company and cut the one road out of town, Botdorf sent Private Lee Regenauer, manning a .30 caliber machinegun, and his assistant gunner, Private Ray Steele, to defend the company's left flank. Regenauer recalls, "I was on the opposite end of town from where the Germans came in. Lt. Botdorf ordered me to get up on the hill with my machine gun and stop the encirclement. When I got up on the hill with my gun there was no time to dig in. I set the gun as low as I could. I set the sights at 150 yards where I believed the Germans would come out, and I sprayed the woods with about 100 rounds right away. Then I waited. All of a sudden from my right a German squad of about ten men appeared." Regenauer opened fire, cutting down six of the enemy soldiers. The others ran back, narrowly escaping Regenauer's withering fire.[6]

The firefight escalated quickly and the engineers' ammunition quickly began to run low. Outnumbered and outgunned, Botdorf began directing the withdrawal of his platoon. Once the company was clear, Botdorf's platoon began loading onto the remaining trucks. As they boarded, an enemy mortar crew moved into the village and hastily set up its weapon. Fortunately, Botdorf and his men made it out of the village before the mortar team could stop them. Botdorf's men had succeeded in slowing the German advance and Company B made it out of Goebelsmuhle without losing a single man.[7]

On reaching Wardin, Hritzko and the other company commanders met with Symbol who outlined the battalion's mission to defend Bastogne. Symbol explained that the battalion's mission was to defend a three-mile "barrier line" at key terrain and villages east of Bastogne. To accomplish his overwhelming task, Symbol split the sector, assigning the sector from Foy to Neffe to Company A, commanded by Capt. Warren Day, and the sector from Neffe to Marvie to Company C, commanded by Capt. Chris Rickertsen. Since Hritzko's men were low on ammo, Symbol decided that they would refit in Bastogne and remain in reserve while Headquarters and Service Company, commanded by Capt. Wayne Wells, would guard the corps headquarters. As the 35th moved out to defend the barrier line, it became the first unit to establish fighting positions along what would become the defensive perimeter of Bastogne. Over the next several days, that perimeter would be tested, but never broken.

Upon reaching their respective sectors the companies sent out reconnaissance parties and set up road blocks, using chains of mines, bazookas, .50-caliber machine guns, and rifle teams. When dawn broke on the morning of the 18th, the 35th received some relief in the form of Lt. Col. Sam Tabet's 158th Engineer Battalion. The 158th, though assigned to another corps, had been conducting work near the VIII Corps sector. Middleton's request for reinforcements prompted Tabet's arrival and the 158th assumed Company A's sector from Foy to Neffe. Capt. Day's men then moved south and established new positions near the village of Mont along what was believed to be the Germans' main avenue of advance.

The addition of the 158th could not have come at a better time. Seriously threatening the American hold on Bastogne was the advancing *Panzer Lehr Division*,

commanded by Gen. Fritz Bayerlein. Two days of fighting against surprisingly stiff resistance coupled with traffic jams on the narrow Ardennes roads had caused major delays in Bayerlein's timeline, but his division now stood poised to capture the city.

Meanwhile, Symbol's engineers continued constructing obstacles, defensive positions, and patrolling along the barrier line. The men established strong points defended by two or three men with bazookas and rifles to over watch the obstacles. When entrenching tools broke from digging in the frozen dirt, the men even used their bayonets to chip out fighting positions.[8]

As Symbols men worked, fighting raged to the east of Bastogne. Having arrived earlier on the 18th, Col. William L. Roberts, commanding Combat Command B (CCB), 10th Armored Division, sent three armored teams (Teams Desobry, O'Hara and Cherry) east of the barrier line to assist what remained of CCR in slowing the German advance. The fighting between the armored formations was horrific as day passed to night and the opposing forces struggled in the dark to determine friend and foe.

During the night, the Germans were successful in capturing Mageret. The Americans there fell back toward Neffe. The enemy continued to advance and was soon testing the strength of the engineers' barrier line. Recalling the events of that night, Norval Cummings, then a private in 3rd Platoon, Company A, stated:

> By evening we were in a single file line across a huge pasture or grain field with all the fire power [we had]. There were two .50 cal and three .30 cal machineguns. We also had three bazookas. I was carrying one of the bazookas and an M-1 rifle, along with ammo for both. I had three rounds for the bazooka, which made for quite a load. I was told to give up my rifle, but refused as I figured it was my primary means of protection. I had been told to only fire the bazooka at large targets such as tanks and trucks. At about midnight, we ran into some problems. German tanks and foot soldiers had advanced to within 150 yards so we began to fire. It was so dark and foggy that we could see very little, but we held them off.[9]

At daybreak on the 19th, fighting intensified at Neffe. Reluctantly, the mix of CCR, CCB and 158th defenders were forced to yield to the overwhelming force Bayerlein's attack. Three hundred yards south of Neffe, elements of Team Cherry, under the command of Lt. Col. Henry T. Cherry, established a command post in a chateau and were soon under heavy attack. Cummings and the men of 3rd platoon moved forward to assist in the fight. Cherry ordered the men to the south of the chateau where the enemy had occupied positions on high ground and were pouring in heavy fire against the defenders.

As 3rd Platoon moved into position it was met my heavy tank and small arms fires. Chet Russell, once a "cat skinner" on the Alcan, recalls, "I had my truck parked by a building and there was a German tank coming toward us. He wasn't on the road, and I don't think he was over two hundred yards from me and my buddy, Dennison. I told the first sergeant, who was trying to find a bazooka, that I was going to move the truck, and he said to leave it right there. He then went off into the fog. I moved the truck anyway. A few seconds later, the tank blew a hole in the building where we had been parked." [10]

Outgunned and in the open, the engineers were quickly forced to withdraw toward Mont where the rest of the company was defending. "While moving, we were having one hard time keeping the enemy in check," said Cummings. "They were wild and doing their best to force us out."[11]

Meanwhile, in response to the intense fighting in Neffe that had forced out the engineers of the 158th, a platoon from Company B, led by Lt. Charles Nettle, left its reserve position in Bastogne to strengthen the positions around Mont. Nettle sent one

squad to establish a road block on the main road leading from Neffe to Bastogne while the remainder of his platoon occupied positions along the road west of Mont.[12]

Soon after, the squad nearest Neffe was face-to-face with the advancing Germans. "It was very foggy," recalls James Thomas, then a private in Nettle's platoon. "The fog would lift for about twenty minutes then settle back down for about twenty minutes. When the fog would lift, here the Germans would come and all hell would break loose; everybody shooting and hollering and the smoke rolling. Many of the poor devils got killed or wounded." [13]

By midday, only the remnants of Team Cherry remained between Day's men and Bayerlein's advancing. Jack Dearinger, one of Day's platoon leaders, recalls, "We had daisy chains of mines across the little road that ran from Mont to Neffe and a couple of strong points." "Just when things looked the worst and we were strung out across a pasture in skirmish line," he continued, "the 101st Airborne Division came over the hill from Bastogne."

The 101st had been called out of reserve on the 18th and made its way to Bastogne in freezing weather from Mourmelon, France, by truck; a trip of more than 100 miles. This elite airborne division was still recovering from a long fight in Holland and many of its soldiers were short on equipment, including weapons. As the 101st moved toward Bastogne, they were met by thousands of retreating GI's cautioning them of the fierce German advance. Nevertheless, the 101st set out immediately to meet the enemy.

One of the first airborne units through Bastogne was 3rd Battalion, 501st Parachute Infantry Regiment commanded by Lt. Col. George M. Griswold. Griswold's orders were simply to move through Mont and make contact with the enemy. Arriving in

Mont, the men of the 501st were surprised to find Capt. Day and his men prepared to meet the advancing enemy.

Sergeant Donald Castona, a soldier in Griswold's battalion, recalling his impression of the engineers, stated, "We walked through Bastogne and passed an awful lot of GI's heading the other way. There were a few combat engineers set up with their .30 cal. machine guns on the slope before we got to Mont. These were good soldiers and they were prepared to hold their positions . . . We could hear tanks coming, but most of the guys were confident that we could handle things."[14]

Day met with Griswold and explained the situation to their east as best he could while the paratroopers began taking up positions with the engineers. Griswold and Day agreed that the engineers would move south of Mont and establish positions between Griswold's men and the 326th Airborne Engineer Battalion which had recently relieved Company C at Marvie.

Company A remained in this position until shortly after noon on the 20th when Lt. Col. Symbol received a new order from VIII Corps (now located in Neufchateau) to move the 35th west and establish defensive positions near St. Hubert. As Day's men prepared to move back to Bastogne along with a portion of the 326th, the enemy launched a vicious attack on Marvie. The westward movement conducted by the 326th and Day's engineers led some to believe that the enemy had forced a retreat from Marvie. Dearinger recalls, "There was mass confusion. It did sound pretty bad, and Marvie got tore up, but the troopers and tanks held on. Our medic, T-5 Solis, disappeared about the time the attack started. I found out later that he tended to the wounded until he too was hit."

Shortly after reaching St. Hubert late in the afternoon of the 20th, Symbol received orders to send one platoon back to Bastogne to assist the 101st with general engineering work. Lt. Frank Rush, the assistant battalion operations officer, was chosen to lead a detachment, comprised of Lt. Skinner's platoon from Company A, to help the paratroopers. Rush and Skinner collected as much equipment as they could, loaded the men on trucks, and headed back for Bastogne.

"It was after 2100 hrs when we left our area," said Rush. "It was dark and foggy, but we knew the roads, having done recon work in the area for the past several months. I was in the lead vehicle, a three-quarter ton weapons carrier, carrying about 600 pounds of TNT. Behind me was Skinner in his jeep, then three deuce-and-a half trucks with [Skinner's] platoon and several hundred land mines. At the end of the column was an air compressor mounted on a deuce-and-a half with all our pioneer tools, picks, shovels, air tools, chain saws, etc." As the engineers hurried toward the city they encountered enemy soldiers who opened fire on the tail of the convoy, damaging some of the equipment and nearly hitting the TNT. The engineers continued past the enemy, never stopping.[15]

Rush and Skinner made it to the 101st headquarters around midnight and were directed to link up with Col. Joseph Harper, commander of the 327th, near Marvie.[16] "It was probably 2 A.M. before we found him," said Rush. "He was so busy that he didn't know where to use us best. After a couple of hours, he said that things were moving too fast and that he couldn't use us." Leaving the load of mines to be used by the paratroopers, the engineers headed back toward Bastogne.[17]

Without any further tasking, Rush and Skinner decided that their best option was to return to St. Hubert to be with the rest of the battalion. As the sun began to rise on the

21st, the men headed into the early morning fog. Rush recalls, "Just to the west of the town, we came across a couple of GI vehicles that had collided in the fog. We stopped to help them out and drew fire from some Germans that were ahead of us."[18]

Under heavy fire, Skinner's men rushed to retrieve the wounded soldiers. To cover the platoon, Corporal Charles Flamboe set up his machine gun and raked the enemy position with suppressive fire. Spotting an armored vehicle advancing toward the men, Corporal Alvin Crump and Private Peter Lari grabbed a bazooka from their truck and ran out to destroy the enemy vehicle.[19] Spotting the two men advancing, the German crew stopped their advance for fear of being destroyed. Rush and Skinner's detachment returned once again to Bastogne and rushed the wounded paratroopers to an aid station in the city.[20]

With the roads leading west out of Bastogne now blocked by the enemy, Rush and Skinner were trapped. They would spend the next week guarding positions within the city and serving as part of the 101st's reserve force.

Meanwhile, near St. Hubert, Symbol's battalion stood ready to defend the approaches to St. Hubert. The engineers had worked all night preparing abatis (mined and booby trapped), destroying culverts, laying minefields, and placing bazooka teams in key locations covering the roads.[21] As they had done to overcome the Kledo River flood several months prior, all available men, including clerks, mechanics, and truck drivers, were put on the line guarding roadblocks, screening traffic, and patrolling.[22]

Even abandoned fuel and supply sites were sought out and destroyed to prevent their capture and use by the enemy. Lt. William Williams, the Company B administrative officer recalls, "During a recon run to the north we discovered an ammunition and fuel

dump that the quartermaster and ordinance people just walked off and left. We also found a 2 ½ ton truck with a disconnected clutch linkage that we were able to fix and load up with mines and TNT for our own use. We dumped as much of the fuel as we could and then left."[23]

Meanwhile, having arrived in his sector around midnight, Capt. Rickertsen established his command post in the small village of Jenneville, approximately five kilometers southeast of St. Hubert. Rickertsen's men worked throughout the night establishing roadblocks and setting up defensive positions. Just east of Jenneville, in the village of Pironpre, Lt. Norman Igo and the men of second platoon set up positions at a crossroad. Igo selected the position because he determined it to be a likely approach route since the east-west running road there led straight to St. Hubert. Second platoon guarded the Pironpre crossroads through the night until shortly before sunrise when the men of first platoon took over.

As the engineers worked, the *Panzer Lehr Division* was in the process of breaking away from Bastogne. The German high command was displeased with the loss of momentum around the city and wanted Bayerlein to leave the fighting there to other units and proceed west. So during the night of the 20th, Bayerlein dispatched Major Gerd von Fallois, commander of the *Panzer Lehr's 130th Reconnaissance Battalion*, to secure good roads and bridges that would support the division's heavy columns which were expected to bypass Bastogne to the south, attack to the west, and reach the Meuse River on the 21st. Strengthened by the attachment of the division engineer battalion, *Kampfgruppe von Fallois* started its march west and on the morning of the 21st was just east of the 35th's positions.[24]

Major von Fallois split his *kampfgruppe* into small reconnaissance teams with the purpose of determining the best route for the remainder of the division. One of these elements, under the command of *Hauptmann* Eric von Falkenhayn, was soon headed straight into Pironpre. While this column of four Mark IV tanks, a halftrack, and a truckload of soldiers crept slowly forward, the men of first platoon were preparing fighting positions in the frozen ground. Sergeant Charles Cannon, one of the squad leaders from first platoon, had already set out bazooka teams in various locations to cover the intersection.

Private First Class Orie Combs and Private First Class Robert Lemos made up one of the teams. At approximately 0730 hours, the two men spotted Hauptmann von Falkenhayn's column.

Combs recalls, "As we were preparing our position, we heard vehicles approaching. I looked up and saw German tanks coming toward us on the road." Combs picked up his bazooka and took careful aim at the lead tank while Lemos slid a round into the back of the tube.[25]

"Hit him between the bogie wheels and knock the hell out of it," said Lemos.

Combs fired, scoring a direct hit. Immediately, Lemos rushed to load another round while Combs prepared to fire at the second tank. Combs' second shot also found its mark, but only immobilized the vehicle. The trailing enemy armor then located the men's position and raked the area with machine gun fire, wounding both men.

Seeing the plight of his men, Sergeant Cannon grabbed a bazooka and, along with Private First Class John Kenney, braved the enemy fire and advanced to within firing range of the enemy tanks. Cannon fired and struck the second tank in the column, taking

it completely out of action. With two tanks lost at the hands of the engineers, the remaining enemy determined to dislodge the Americans from their positions.

Lemos recalls, “I told Combs we better get the hell out of here or we’re gonna get killed. Let’s make a dash for it.” With that, the two men began moving toward the woods behind them, but the explosion of a high explosive tank round sent them reeling.

“I was hit again and fell back,” said Combs. “I looked at my right hand and noticed that it had been shot off. I knew that I had to get out of there. I got myself up and looked down at Lemos. He was not moving and was covered in blood.”

Losing blood and nearly unconscious, Combs made his way toward the rest of the platoon. “When they got to me, we were still under fire,” he said. “I remember lying on the ground by the jeep while one of the men placed a bandage on my throat. Someone began yelling and I was thrown headfirst into the jeep, feet sticking out.”

Private First Class Mose Umbrell, first platoon’s jeep driver, and Staff Sergeant Harrell Wyatt, the platoon sergeant, rushed Combs toward the nearest aid station. When they arrived, they found that most of the medical personnel had evacuated the site; only a nurse and doctor remained. Combs recalls, “The last thing that I remember is that the doctor began putting some blood back into me. I went unconscious after that and woke up three days later at a hospital in the rear.”

Upon learning of the fight at Pironpre, Symbol assembled an ad hoc force of reinforcements from additional units located at St. Hubert and headed toward Jenneville. The assembled mix of quartermaster and anti-aircraft soldiers helped keep von Fallois’ soldiers at bay and the battle transitioned to a standoff; the engineers maintaining the road St. Hubert and the Germans attempting to recover their immobilized armor. Not until late

afternoon did the enemy attempt to dislodge the engineers using artillery, but that effort failed as well.

Meanwhile, the *2d Panzer Division* attacked and captured Ortheuville, approximately 12 kilometers to the north of Pironpre. The fall of Ortheuville offered the enemy a northern approach to St. Hubert and made the 35th's position untenable. Fearing that the 35th would be cut off, VIII Corps Headquarters sent orders to Symbol to hold for as long as feasible, then rejoin the corps at its new headquarters in Bouillon.[26]

Aware of the danger posed to his battalion, Symbol determined to begin his withdrawal under the cover of darkness. Until that time, he ordered his men to render the routes leading to St. Hubert impassable. To this end, the engineers continued creating obstacles along the routes and as night descended on the Ardennes, the companies began moving toward St. Hubert. From there, the battalion would move as a cohesive unit toward Buillon.

Night had fallen when the engineers began their withdrawal. Just to the south of Jenneville, in Moircy, the sound of German tanks could be heard. Bayerlein's forces had arrived and were ready to continue their drive toward St. Hubert. Symbol, now sure that the enemy was just minutes away from enveloping his battalion, boarded the last truck in the column and gave the order to move. The trucks rolled slowly into the dark forest, picking up the last of the men, one by one, as fuses were pulled on their demolitions creating additional abatis to further stall the enemy. By midnight, Symbol's men were in their new assembly area in Bouillon, close to the French frontier. [27]

Over the next several weeks, the Allies fought hard to decrease the bulge that was created in their line by the German army. During this renewed drive, the 35th moved east

in support of the 11th Armored Division and later the 17th Airborne Division. Symbol's executive officer, Major Mike Miletich, left the battalion to take command of the 44th ECB, which suffered heavy losses while fighting near Wiltz.

The subsequent defense of Bastogne by the 101st Airborne Division, CCB 10th Armored Division, and other smaller attached units received world-wide attention. This undisputedly heroic defense has received a vast wealth of attention and scores of books have been dedicated to its study. Unfortunately, little attention is given to the units, such as the 35th, which made the latter defense of Bastogne possible.

For the 35th's role at Bastogne, however, it's important to note the value of pre-combat training and engineering experience. The order Symbol received to establish the barrier line east of Bastogne was vague in nature. Additionally, the sector was nearly three miles long and covered challenging terrain. Despite this, Symbol displayed the same commitment to excellence and high level of initiative instilled in him by Col. Ingalls. Additionally, experience gained on the Alcan allowed Symbol to execute his given mission without relying on VIII Corps to tell him exactly how to do it. In fact, the VIII Corps staff was in the process of leaving Bastogne when Symbol received his orders from Col. Winslow. Symbol surely understood that mission accomplishment would rely on his unit's ability to fight as they had been trained to do.

The same can be said of Symbol's subordinate leaders at every level. Whether at Goebelsmuhle, Bastogne, or Pironpre, junior leaders within each company displayed a high level of initiative and competence. One example is Capt. Hritzko's actions to prevent the capture of his company by the 15th Fallshirmjaeger Regiment. Hritzko correctly assessed his exposed position and took the appropriate actions to slow the

enemy's advance. As a result, his company was made available to serve in the defense of Bastogne.

Another example is that of Capt. Day at Mont. Day effectively employed his company in a manner that prevented enemy freedom of maneuver along its axis of advance. The spirited defense near Mont and Neffe, combined with the actions of the 158th Engineer Battalion, CCR, and CCB impressed the enemy to believe that American strength at Bastogne was greater than it actually was. As result, Gen. Bayerlein missed an opportunity to use his superior combat power to capture the vital city of Bastogne. Later recalling his division's attack toward Bastogne, Bayerlein said, "Neffe [was] taken by 0900." "The attack got as far as two kilometers east of Bastogne, but then was held by strong enemy resistance."[28]

A third example is that of 1st Platoon, Company C, at Pironpre. The actions by Staff Sergeant Cannon, Private Combs and Private Lemos indicate a strong resolve to succeed in the face of great adversity. That resolve was instilled in them at Camp White and on the Alcan. Their actions, as well as those of the remainder of the battalion around St. Hubert, greatly affected Bayerlein's ability to accomplish his mission. It took Bayerlein two additional days to close on St. Hubert and his division was never able to cross the Meuse River. Years after the war, a former regimental commander from the *Panzer Lehr*, Helmut Ritgen, wrote:

> On 22 December the advance towards St. Hubert was continued, but delayed as the direct route via Pironpre was reportedly blocked by some cut down trees... The fuel situation was of greater cause for concern. The first Panzer ran out of fuel west of Moircy and had to be refueled from reserve jerry cans. Thus, St. Hubert was reached in the false hopes that gasoline would be found there. We found only empty jerry cans. It was established the following day that the

> Division's arrival in St. Hubert had taken so long due the unusual route we had to take to get there."[29]

With fuel stocks running low and powerful American forces moving into the area to stop the German advance, Bayerlein was unable to sustain his drive toward the Meuse. Instead, he was forced to assume the role of defender at St. Hubert. Later recalling his delay in capturing St. Hubert, Bayerlein said, "[My superiors] stated the advance of the Panzer Lehr was too slow."[30]

In recognition of the 35th's determined stance in the Ardennes, fifteen of the engineers received medals for valor. Cannon, Combs, Lemos, and Kenney each received the Silver Star for their actions at Pironpre. Robert Lemos was reported missing in action on the 21st of December, but was later found in a field hospital. Having been knocked unconscious by the exploding tank round, he did not regain consciousness until well after his platoon left the area. Wounded, tired and hungry, he hid from the Germans for three days until he was able to locate another American unit. Lt. Col. Symbol, Lt. Botdorf, Corporal Crump, Private First Class Regenauer, and Private Lari all received Bronze Stars for their actions in slowing the enemy's advance toward Bastogne.

The performance of the men of the 35th Engineer Battalion during the Battle of the Bulge served as a testament to the importance of discipline and unit cohesion in combat. Many examples exist of units which simply broke during the battle in the Ardennes when confronted with the prospect of being overrun by the Germans. Some even withdrew from their positions before offering battle to the enemy. This was not the case with the 35th though the engineers were absolutely outmatched by the Germans in terms of weaponry and numbers of soldiers.

Well established in the 35th was high level of functional discipline enhanced by a strong sense of esprit de corps. This functional discipline was formed early on at Camp Robinson and set the foundation for the strong unit cohesion developed on the Alcan. Combined, the attributes of functional disciplined and unit cohesion played a critical role in the 35th's success in the Ardennes. They were instrumental in allowing the engineers to stand in the face of overwhelming enemy combat power. In his well-known study of the World War Two combat soldier, Samuel Stouffer found that pride in a soldier's outfit included something over and above personal identification with the "other guys" and the leaders in the outfit. Stouffer also found that a preponderance of combat veterans stated that unit pride was a strong motivator and "kept them fighting when the going was tough."[31]

Writing after the war about soldiers in combat, S. L. A. Marshall stated, "There is no such unit as the company that stays good or the company that is shock-proof; there are only companies which are more resolute than others and less likely to break in the face of unexpected emergency or surprise." The companies within the 35th certainly proved to be resolute. When confronted near Mont and Neffe with the awesome power of the Bayerlein's armored forces, the men maintained their positions. The same occurred near St. Hubert where the men performed courageously despite the fact that they were nearly surrounded by two enemy armored divisions.

Much has been said about the effect of the Alcan construction on the 35th's unit cohesion. However, it's important to note that during the Alcan construction, skeptics openly doubted the engineers' ability to complete the road. Even the terrain and weather there seemed set against the engineers. So it is no wonder that the men of the 35th again

determined to prove wrong anyone who may have doubted their abilities. The men seemed to enjoy even the slightest prospect of completing the impossible. Like so many other factors, this new test in the Ardennes increased the cohesiveness of the battalion.

While unit cohesion and discipline were the foundations of success for the 35th during the Battle of the Bulge, engaged leadership was also a critical factor. From Lt. Col. Symbol down to Staff Sergeant Cannon, leaders at every level were present with their men. Most notable was Symbol's ability to bring his commanders together to offer them his assessment of the situation and put together a plan of action. Marshall considers the importance of "speech," verbalized orders and direction, in motivating men in combat. He stated that "the tactical effect of speech is not alone that it furthers cohesion, from which comes unity of action, but that it is the vital spark in all maneuver." Symbol set the example for his men by bringing them together at Wardin then later in Bastogne as they prepared for the defense of St. Hubert. His company commanders followed suit as did platoon leaders and squad leaders. Leaders ensured that there men understood the situation as best as possible.[32]

Marshall observed that this was not always the case. Referring to the failure of commanders to inform their men of the situations during the Battle of the Bulge, he wrote, "Therein, they were wrong. When all else was obscure, just a little knowledge in the ranks would have been priceless to the higher commands."[33]

Beginning with the regiment's inception at Fort Snelling, Col. Ingalls set out to train his men to be combat ready and disciplined engineers. When tested in combat, his training philosophy proved worthy and the men succeeded in overcoming seemingly impossible odds. Additionally, the Alcan experience had hardened the men to adversity,

making them a cohesive unit capable of withstanding superior enemy formations with little direction from higher headquarters. The results of the 35th's experiences would soon be proven again in fierce battle on the Rhine River.

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[1]Hugh M. Cole, *Ardennes: Battle of the Bulge* (Washington, DC: Office of the Chief of Military History, 1965), 55, 310-313.

[2]35th Engineer Battalion S-3 Journal, located at the National Archives (hereafter cited as "Journal").

[3]Charles Nettle, interviewed by author, Fort Benning, GA, September 22, 2002.

[4]Taylor, *Salt Peter Cake*, 79.

[5]Charles Nettle, interviewed by author, Fort Benning, GA, September 22, 2002; Charles Botdorf, interviewed by author, Branson, MO, October 2002.

[6]Lee Regenauer, email correspondence to author, January 2, 2002; *35th Engineer Combat Battalion History* (Marseilles, France: 1945), (hereafter cited as "*Battalion History*").

[7]Charles Botdorf, interviewed by author, Branson, MO, October, 2002.

[8]Bob Skinner, email correspondence to author, August 20, 2001.

[9]Norval Cummings, correspondence to author, undated.

[10]Chet Russell, correspondence to author, August 31, 2001.

[11]Norval Cummings, correspondence to author, undated.

[12]Charles Nettle, correspondence to author, November 25, 2002.

[13]James Thomas, correspondence to author, June 28, 2001.

[14]George Koskimaki, *The Battered Bastards of Bastogne* (Havertown, PA: Casemate, 2003), 65.

[15]Frank Rush, email correspondence to author, March 26, 2001.

[16]101st Airborne Division, G-3 Journal, December 1944, National Archives.

[17]Frank Rush, email correspondence to author, March 26, 2001.

[18]Ibid.

[19]*Battalion History*.

[20]Ibid.

[21]Cole, *Ardennes*, 325-326.

[22]Journal; *Battalion History*.

[23]William Williams, correspondence to author, October 6, 2001.

[24]Fritz Bayerlein, *Panzer Lehr Division: 1 DEC 44-26 JAN 45* (Foreign Military Studies MS A-941), (copy received from Military History Institute, Carlisle Barracks, PA). Cole, *Ardennes*, 325.

[25]Orie Combs, interviewed by author, Navarre, FL, August 6, 2003.

[26]Cole, *Ardennes*, 325.

[27]Cole, *Ardennes*, 326; Journal; *Battalion History*.

[28]Bayerlein, *Panzer Lehr: 1 Dec.-26 Jan.*, 23.

[29]Helmut Ritgen, *The Western Front 1944: Memoirs of a Panzer Lehr Officer* (Winnipeg, Manitoba: J. J. Fedorowicz Publishing, 1995), 271-274.

[30]Bayerlein, *Panzer Lehr: 1 Dec.-26 Jan.*, 10.

[31]Samuel A. Stouffer, et al., *The American Soldier: Combat and its Aftermath* (Princeton, NJ: Princeton University Press, 1949), 136.

[32]Marshall, *Men Against Fire*, 138.

[33]Ibid., 141.

CHAPTER 5

NO PLACE TO HIDE

The German offensive in the Ardennes culminated in the closing days of December. Though falling far short of their objectives, the Germans fought tenaciously to hold the terrain for which they paid such a high price to seize. However, a fierce Allied counterattack soon had the German army falling back into Germany. By March the German army was nearly broken. German soldiers began surrendering en masse and many units were surrounded and captured.

During the renewed Allied drive, the 35th worked vigorously to repair main supply routes and bridges; all in effort to keep up momentum against the faltering enemy. Experiences gained on the Alcan Highway proved invaluable in February when poor weather resulted in rapid deterioration of roads. Reminiscent of their march to Fort Nelson and early road building efforts, the engineers battled a vast sea of mud at St. Vith, Belgium, and in the Schnee Eifel area of the Ardennes. The situation there was so bad that supplies could not be delivered to front line troops and operations of the 4th Infantry Division, which the 35th was supporting at the time, stopped. Aerial resupply was insufficient to deliver all needed material so the engineers worked day and night to open the roads.

By mid-March, the 35th was near Koblenz, Germany. By then, Symbol's men had earned quite a reputation as combat troops. Even Gen. Middleton, the VIII Corps commander, recognized the engineers by name and trusted them to accomplish the most arduous tasks. So it was that the engineers found themselves at the front of VIII Corps, preparing to assault into the very heart of Germany. Like never before, the 35th would

soon face a level of adversity that would test the very foundation on which it was formed. The Rhine River, a symbol of strength for the German people, stood before VIII Corps. Here, the leaders and men of the 35th would display a level of functional discipline and unit cohesion not yet required of them. Additionally, leaders within the 35th would here display the battlefield presence and ability required to motivate their men to accomplish seemingly impossible goals. The men, too, would display a high level of initiative while persevering against fear and foe.

In his biography, "*Troy H. Middleton*," by James Price, Gen. Middleton recalls:

> When the VIII Corps reached the Rhine, [Gen. George Patton] came to me and told me he would have to take all of my divisions but one. He said he was starting an operation up the Rhine with the XII Corps, that it would require more troops, and that the ultimate objective would be crossing the river near Mainz. George left me with only my corps troops, consisting of considerable artillery, and the 87th Infantry Division. Taking a leaf from George's book, I asked him to let me capture Koblenz with the 87th. George laughed and said, "Only a fool would attempt such an operation with so few troops." I said, "Let me try; if I find it too well organized I can suspend the operation."[1]

Patton agreed with Middleton's plan and the 87th began preparing for an assault crossing of the Mosel River to capture the resort city of Koblenz. On March 13, the 35th was assigned to the 87th Infantry Division to take part in the operation.

Commanded by Brigadier General Culin, the 87th, nicknamed the "Golden Acorns," had been rushed into the Ardennes to Middleton's VIII Corps in late December. During heavy fighting against the Panzer Lehr at Jenneville, Pironpre, and St. Hubert, the 87th proved it was a worthy-fighting unit. The "Golden Acorns," composed of the 345th, 346th, and 347th Infantry Regiments remained with Middleton's corps, playing an instrumental role in pushing the Germans back into Germany.

By midnight on March 14, the 87th had advanced to a position on the west bank of the Mosel River extending from a few kilometers north of Koblenz, located at the junction of the Mosel and Rhine Rivers, south along the Mosel to the city of Kobern. Throughout the 14th, the 35th's reconnaissance section, led by Lt. Arnold Dillard, conducted detailed reconnaissance along the Mosel to locate the best area to launch the assault.[2]

For the operation, Symbol's men were assigned directly to the 347th Infantry Regiment. The 35th would be responsible for crossing the 347th Regiment in the vicinity of Kobern and Winningen and to subsequently put into operation a ferry for transporting supplies and evacuating wounded. Ferrying operation would continue until bridges were established. For bridging in their area, Symbol had the support of the 511th Light Pontoon Company.[3]

Working closely with the 347th, Symbol helped to fine tune the plans for the crossing. The assault would be made at 0300 on the night of 16 and 17 March, under the cover of darkness. Both Companies B and C, each with one platoon from Company A (now commanded by newly promoted Capt. Dearinger), would provide three engineers per assault raft to move the infantry to the west bank and return the rafts to the friendly side. Capt. Rickertsen's Company C would support 1st Battalion's crossing at Winningen. Capt. Hritzko's Company B would support 3rd Battalion's crossing at Kobern. Additionally, Company B would cross the regimental reserve, 2nd Battalion, once 3rd Battalion was across. Seventeen rafts per company would be on hand to do the job with several others in reserve. The remainder of Company A, with a group of specially trained motor boat operators from within the battalion, would be ready to go

into action once the element of surprise was lost and to later build and operate the ferries. Officers from the battalion would be at both crossing sites to assist in controlling the movement of the infantry to the river and to the far shore. Once on the east bank, the 347th would drive the enemy forces from the Mosel triangle while the 345th Regiment would capture Koblenz.[4]

While the engineers and the men of the 87th made their plans for the crossing, elements of the *6th SS Mountain Division*, commanded by *Generalleutnant* (Lieutenant General) Karl Brenner, and the *276th Volksgrenadier Division*, commanded by *Oberst* (Colonel) Werner Wagner, were hastily forming a defensive line on the river south of Koblenz. A true division only on paper, the *276th* had suffered heavy losses in hard fighting throughout the winter. The *6th* on the other hand was still a strong and capable fighting unit.

Late in the afternoon of March 15, realizing that the enemy had not yet completed their defenses, Gen. Culin decided to put his men across early. At nightfall, guides moved into position to lead the infantrymen and their rafts to the river. Trucks parked far from the crossing sites in order not to give away their intentions, and the soldiers began their silent walk to the river.

The first wave started across from Kobern at approximately 0500 hours. Only ten minutes later the men reached the far bank. It seemed that the element of surprise had been achieved because the enemy offered no resistance to the crossing. Only after the infantrymen began moving inland did firing begin. By 0700 hours the 3rd Battalion had secured the high ground in the vicinity of Kobern.[5]

The crossing at Winningen also began at 0500. As at Kobern, the trip lasted only ten minutes and encountered no resistance. However, while the engineers were returning to pick up the second wave the Germans discovered the operation. Rifle and machine gun fire causing one raft to sink, but the engineers were able to swim to shore. The infantrymen on the far bank quickly eliminated the enemy resistance at the river's edge and by 0545 hours the engineers had completed 1st Battalion's crossing.[6]

With the lead battalions across the river, Col. S. R. Tupper, commanding the 347th, released 2nd Battalion to cross in Dearinger's motor boats. By now it was daylight and the engineers hoped to make good use of their fast boats. Unfortunately, elements of the *276th*, located on the high ground opposite Kobern, met them with heavy machine gun fire. In the broad daylight, the GIs were easy targets.[7]

Simultaneously, accurate mortar fire fell directly on the crossing. Lt. Howard Goodchild, directing the motor boat operation there, moved quickly to get his men to cover. However, one man was killed a few others wounded. Three medics from 2nd Battalion were also killed in the barrage. One of Goodchild's men, Private First Class William Fink, braved the enemy fire and moved some of the wounded to safety. Despite all this, Goodchild was able to maintain control of site and continued moving men and supplies across the river.[8]

During 2nd Battalion's crossing the German fire continued and several men were wounded and a few of the engineers' rafts were sunk. When an infantryman in his boat fell overboard severely wounded, Private First Class William Shannon of Company A jumped into the water and pulled the man back to the boat.

Directing their rafts toward other GIs that had gone into the freezing water, Sergeant Elmer Christensen and Corporal Chris Biringer were able to rescue several men. Diving in for the men, Privates First Class Walter Bambrough, Walter Wilson, Paul Lagace, and Edward Smola all helped to pull the men to safety. Still, the engineers pushed the assault and had 2nd Battalion across before 0900.[9]

The operation of the ferries was crucial to keeping the infantrymen supplied on the east bank. These ferries, consisting of short spans of treadway bridge material rested on top of pontoons, were capable of hauling jeeps and tanks across the river. All that was needed was the pushing power of a couple motor boats. The first ferries went into operation around 1400 hours delivering much needed vehicles to the far bank.

On one such trip, Private First Class Joseph Giard was struck by rifle fire while directing the ferry to its landing site. Additional fire severely wounded the 347th's Regimental Supply Officer, Major Cornell, and knocked a motor out on one of the boats. Though wounded, Giard remained in position and guided the ferry to the far bank, being evacuated only after completing his mission.[10]

Private First Class Joseph Flinn, one of the assault boat operators, was busy speeding ammunition across the river when on his second trip the shear pin of his propeller broke, leaving him helpless in the middle of the river. Flinn's boat floated dangerously away from the crossing site into enemy territory. Spotting the inviting target, German soldiers fired into Flinn's boat. Flinn was able to replace the shear pin under fire and return upstream, unharmed, at the amazement of both the Americans and the Germans. Flinn's cargo was promptly delivered and he continued his task throughout the day.[11]

At day's end, the German defenders had little to show for their efforts against the 87th. The *276th* launched several counterattacks against the 87th's forces, but these attacks did little to stop the Americans. The bulk of Brenner's *6th SS* had still not arrived and what portion of his force was available was either killed, captured, or withdrawing. Facing the possibility of capture, Wagner and Brenner withdrew to the east bank of the Rhine River through the towns of Rhens, Brey and Boppard.

Brenner recalls, "On 17 March, in agreement with corps headquarters, I continued to hold our present line, employing [my] forces in order to prevent the enemy from reaching Boppard. . . . Boppard remained under heavy artillery fire, which fell with particular force on the ferrying site and on the road between Boppard and Brey. Still, despite these great difficulties, the troops were able to carry out the crossing."[12]

The 347th advanced rapidly in the afternoon of March 17 into Rhens, but its advance was once again slowed by the enemy's rear guard that stayed to buy time for the larger force to escape. Fierce fighting in the city continued well into the evening, but Rhens was secure at 2245.[13]

Hoping to deny the enemy the opportunity to establish new positions and to capture the German bridgehead, the 347th continued its assault throughout the night toward Brey. The assault was slowed by the enemy rear guard who blocked roads with felled trees and harassed the Americans with small arms fire. Ultimately, the assault was successful, but not before the enemy had completed his crossing under the cover of heavy fog and darkness.[14]

The escape of the 6th and 276th to the east bank of the Rhine meant that the 87th would have to conduct another river crossing operation. Unfortunately, such an operation

could not be launched immediately. Substantial time would be required to move the necessary assault boats and bridging material forward. Additionally, detailed reconnaissance of the area was required in order to find sites that would support a division-level assault.

Reconnaissance reports indicated that the terrain opposite the 87th's positions would pose a significant challenge. This particular sector of the Rhine River was known as the Rhine gorge. The river here sheared a deep canyon between the Hunsrueck Mountains on the west the Taunus on the east. Rising from between 300 to 400 feet, the sides of the canyon are cliff-like, sometimes with rock face exposed, other times with terraced vineyards clinging to the slopes. Between the river and the cliffs there is usually only room enough for a highway and railroad, though here and there industrious German hands through the years have foraged enough space to erect picturesque towns and villages. These usually stand at the mouths of deep cross-valleys where narrow, twisting roads provide the only way out of the gorge for vehicles.[15]

Sharply constricted, the Rhine is swift and treacherous through the gorge. In many places, steep stone walls were required to protect against erosion. Here, just upstream from the town of St. Goar, stands the big rock called the Lorelei. It was once believed that the beautiful siren sat atop the rock and lured river pilots to their deaths on outcroppings below. Also along the top of the steep slopes still sat many historic castles where river barons once required tolls from shippers forced to pass beneath.[16]

For these reasons, the Rhine gorge was not a particularly suitable place to conduct river crossing operations. Despite this, Middleton elected to go ahead with the operation. Years later he recalled,

> [Patton] came to my headquarters and asked, "Where are you going to cross?" "Between Boppard and Lorelei," I replied. Patton looked surprised. "Why, man, haven't you read your history," he asked. "Yes, I have," I answered. "Then you must know that no one has ever crossed the Rhine in that area." [I replied], "I know the Germans have read their history also. They know nobody has ever crossed there. Therefore, they don't expect me to cross there. Besides, I don't believe they're holding the line in any strength along there."[17]

Though he was somewhat correct in his assumption of the enemy's strength, Middleton had miscalculated the enemy's assessment of the situation. Wagner later wrote, "Reports from the [22nd and 23rd]of March about lively movements in the woods on the western shore, where we recognized engineer river crossing equipment (pontoons and such like), announced the imminence of an attack across the Rhine. This impression was strengthened when, in the night of the 23rd, a few Americans in boats attempted to cross the Rhine."[18]

Responsible for defending a line extending south from Erenbreitstein to Osterpai, Wagner's division dominated the heights overlooking the Rhine. However, Wagner determined that he would not be able to hold for more than a couple days. His fighting units were exhausted and severely under strength as a result of the recent fighting in the Mosel triangle. For this reason, Wagner received the attachment of three *Volkssturm* battalions, three engineer companies, two light anti-aircraft battalions (20 millimeter guns), and one battery of 37 millimeter anti-aircraft (12 guns). Unfortunately, they too were under strength and poorly trained. To make matters worse, Brenner's 6th SS was called away to conduct operations elsewhere; Wagner would face the 87th alone.[19]

While Wagner's men prepared their defenses, Symbol worked with the 347th to plan their assault. As at the Mosel River, the 35th would be responsible for moving the 347th Infantry Regiment to the east bank of the Rhine. Company C, with one platoon

from A Co and one platoon from Headquarters Company, would make its crossing with 1st Battalion just north of Rhens. On reaching the opposite side, 1st Battalion would assault up the banks to secure Oberlahnstein and the high ground east of the town to block the enemy's approaches into the 87th's zone from the north. Company B, with one platoon from both Company A and Headquarters Company, would make its crossing near Brey with 3rd Battalion. The 3rd Battalion would then move to secure Braubach and the high ground east of the town to block enemy approaches from the southeast. After securing Braubach, 3rd Battalion was to then move forces to seize Dachelm. As before, the remainder of Company A would put storm boats into operation once enemy resistance on the river was eliminated. The time for the crossing was set for 0001 on the 25th, hopefully taking the enemy by surprise.[20]

At approximately 1800 hours on March 24, the men boarded trucks and rode to release points near the river. To avoid detection, the engineers of Company C and the men of 1st Battalion then dismounted and moved along a covered route through a stream valley just to the west of Rhens. Their boats and paddles arrived on trucks in Rhens just after 2000 hours. The attached platoon from Headquarters Company unloaded the equipment and moved it into position behind a railroad embankment that paralleled the river just twenty-five yards from the water.[21]

By 2300, everything was set. All boats were in position, signs up, and guides on line along the tracks. The March night air was cold and a full moon hung high overhead. A light haze drifted over the swift flowing Rhine. Walking toward the river, the men were careful not to make a sound.[22]

"At about midnight," said then Private First Class Ray Sobieszczyk of Company C, "we left our safe haven behind the railroad embankment and were guided under a railroad bridge down to the river's edge where our boats had been placed. We very quietly slipped our boats into the water."[23]

As they were about to push off, a flare shot from the enemy shore burst high above the river. As the bright light fluttered in the air, the men waited tensely, but nothing happened. As the flare faded, the men relaxed a little and continued on, quietly paddling out into the river.

Upon reaching the center of the river, five more flares suddenly burst into the sky, seemingly turning night to day. Immediately, intense machine gun, rifle, and anti-aircraft fire erupted and raked across the water. Tracers dashed through the air and bullets snapped everywhere. Paddling frantically, the men pressed forward, but not before many were hit. Sobieszczyk recalled,

> As the flares died down new and brighter ones took their place. We were receiving all kinds of enemy fire from small arms to twenty millimeter canon. Tracer bullets were carving their way across the sky. Machine guns, machine pistols, everything. Bullets were cracking . . . as they zipped past our heads. There was no place to hide; we couldn't hit the deck or dig in. We just had to head straight ahead and pray. Instead of counting cadence or hollering "Row, Row, Row," I was saying, "Jesus, Mary, Joseph help us," over and over. When we had about forty yards to go, the infantryman to my immediate left and the man in front of him were hit. The man right next to me kept yelling, "I'm hit, I'm hit." The man in front of him just dropped his paddle and slumped over. Now we were in real trouble. The two men that were on the downstream side of the boat. Consequently, we began going almost straight down stream. No matter how hard I paddled to straighten the boat, I couldn't keep on course. Finally I yelled to the guys closest to me on the upstream side to stop paddling. We finally got headed in the right direction.[24]

Just upstream from Sobieszczyk, Staff Sergeant Charlie Cannon was steering his boat as best he could, encouraging the men to keep paddling. Privates Espinosa and

Richard Stobart, in the front of the boat, pulled hard on their paddles, as did the eight infantrymen on board. Suddenly the boat was hit with a barrage of bullets. With the exception of Stobart, everybody on board was killed.[25]

Floating aimlessly down river, the boat careened into Sobieszczyk's boat and knocked it off course again. Ray and the others paddled hard, straightening the boat and finally reaching the shore.

Nearby, in Sergeant Lester Floyd's boat, Private Webb was hit and slumped into the boat, bleeding severely. On reaching the far bank, the men jumped out. Floyd tended to Webb, trying to keep him conscious, but Webb died before the medics could get to him.

From the friendly shore, tanks and artillery positioned on the high ground responded to the enemy fire. 1st Battalion's artillery officer adjusted mortar, 105mm, and 155mm fire on the German positions, but still the enemy fire continued. Protected in deep draws and in well-concealed locations, the 37mm and 20mm guns were devastating the first wave. Amazingly, most of the boats made it to the far bank. Both the engineers and infantrymen scrambled for cover against the steep banks. Taking a moment to organize themselves, the GIs stormed up the banks, seeking out and destroying the enemy positions. Artillery and mortar fire combined with the GIs' aggressive assault, quickly brought a massive decrease in the enemy fire, but still some positions continued to fire on the attackers.[26]

As the infantrymen assaulted up the steep banks of the Rhiner, the engineers attempted to consolidate crews and rafts to return to the west bank where the remainder of the infantrymen were waiting. However, enemy fire was still heavy and dead and

dying soldiers were scattered amongst the rafts and on the riverbank. Braving the enemy fire, engineers such as Private Chris Beitia made several trips out into the open to pull the wounded men back to his boat. The medics explained that some of the men were going to die if they did get back to a field hospital. With that, Beitia and the others began the long trip back across the river in hopes of getting the wounded to an aid station.[27]

Meanwhile, near Brey, Hritzko's men were moving 3rd Battalion across the river. Unlike at Rhens, the crossing went off without a hitch until the boats began hitting the far bank. German flares then illuminated the night sky and fire erupted. Shells from 20mm, 37mm, and 88mm guns struck home throwing hot shrapnel everywhere. As the enemy fire zeroed in on the boats, several of the GIs were wounded.

In Private Nelson Cordry's boat, one of the engineers was killed and another wounded as bullets raked across the river. Reaching the far side, Cordry pulled the boat onto the bank as the infantrymen jumped out and headed for cover.

Nearby, Private Joseph Hansen jumped into the chilly water and pulled his boat onto the bank through a hail of bullets. Some of the men in the boat were hit, but Hansen and the others made it to cover. Identifying a nearby enemy position, the men opened fire and stormed forward. Hansen charged ahead with the infantrymen, firing into the enemy positions.[28]

As the men rushed up the steep slopes, the German fire continued. "We managed to get our boat across and then we were pinned down," said Lee Regenauer. "All of a sudden, I heard the command, 'Marching Fire!' from the infantry. They all stood up shoulder to shoulder and fired from the hip; one shot for each step. . . . I checked the boat

next to mine and found Sergeant Callahan dead. A bullet had come down the two lines of infantrymen, through his helmet, and into his head."[29]

Amid the roar of mortar blasts and tank fire, the men still waiting to cross watched in horror. Smoke and haze made it impossible to determine how many rafts had made it across. Only the distinctive sound of M-1 rifles attested to the fact that some had made it ashore.

Meanwhile, the engineers at both crossing sites struggled to return to the western shore. The swift current of the Rhine combined with intense enemy fire threatened to defeat any hopes of further crossings. Additionally, the engineers had suffered several casualties and fewer men were available to paddle. As a result, many of the boats landed far from their designated points.

Despite the intense fire directed at the river, Capt.s Hritzko and Rickertsen remained at the river bank to direct the crossing effort. This proved to be quite a challenge since many of the boats which had been hit were now washing down stream. Seeing their men struggle, both commanders guided their men to cover and began consolidating the rafts for further crossings. However, the German fire was well aimed and continued to rake across the banks and the railroad embankment, wounding several of the men. As he crested the embankment, Private John Standridge was hit and killed by a 20mm round.[30]

At Hritzko's location, not enough rafts or paddles made it back to support sending more infantrymen across. He requested that more rafts be brought forward from the reserve stock to the crossing site at Rhens.

Meanwhile, Rickertsen had organized his men and equipment for a second crossing. Waiting nearby was Sergeant Hank Mooseker, Company A, 347th Infantry Regiment. "I did not like what I saw," he said. "Too many of [the] boats were getting hit. [But] in the boats we went and, although it seemed hours to reach the far side, we made it all in one piece.[31]

Before long, Mooseker could hear other elements of his battalion moving into positions near his on the heights overlooking Oberlahnstein. Fighting all night, Col. Cobb's battalion had secured its first objective. Cobb now hoped to push his lead assault company into Oberlahnstein to secure the town, but at approximately 0630, the Germans launched a powerful counterattack. Advancing behind a barrage of mortar fire, the enemy pressed the attack along the battalion's front. The ensuing fight lasted for more than two hours before the GIs, with the aid of a great deal of artillery fire, were able send the enemy back toward Oberlahnstein.

Hoping to pursue the enemy and seize the town, Cobb gave the word for his lead assault company to advance. Unfortunately, the company commander informed the colonel that his company was down to just forty-two men and was seriously low on ammunition. The situation was the same throughout the battalion.

Answering the need for ammunition, Rickertsen's engineers rushed the supplies across the river in motor boats. There it was picked up by some of Cobb's men, but before they made it to the battalion, the Germans renewed their counterattack and managed to pin the ammunition toting crew down. Elements of the *276th* were also able to intercept 1st Battalion's heavy weapons company, nearly surrounding one of the platoons. This prevented, for the time being, any mortar support for Cobb's men, who

were now having to collect ammunition from the dead and wounded, and in some cases use discarded German weapons, in order to defend their positions.[32]

As the fight continued the GIs identified several enemy positions in and around Oberlahnstein. Receiving the locations of these positions over the radio, the tank destroyers on the east bank were able to put direct fire into the town. By 1055 hours, the tank destroyers were able to account for one anti-aircraft gun, one mortar position, and two machine gun positions. This terrific success, together with a constant barrage of well-coordinated artillery falling very near the American positions, helped Cobb's men to once again repel the Germans. Finally, the much needed ammunition arrived and was distributed among the companies.

Meanwhile, at the Brey site, Hritzko's engineers and the second wave of 3rd Battalion were still trying to cross. Casualties were mounting on the far side and ammunition was running low. Unfortunately, not enough boats or paddles could be gathered. To add to the misfortune, the enemy fire was sweeping the bank with deadly accuracy, preventing the men from loading what boats were on hand.

At that point, Major Chapman, the 3rd Battalion commander, decided to put the motor boats into operation. Only a few of the boats were available at the Brey site, but they were brought to the river and loaded with infantrymen and ammunition. Once the motors started, however, the enemy answered with a volley of fire that sent the men running for cover.

When dawn approached, smoke canisters and white phosphorous shells were fired to build a smoke screen. Cold air prevented the smoke from building up, however, and

the enemy was able to continue firing along the river's edge, halting any attempts at further crossings.[33]

While the second wave continued to wait, the lead assault companies pushed in a kilometer east of the river and were going ahead with efforts to seize Braubach. As they entered the town, the GIs were met with small arms fire, but were able to claim possession of half the town by daylight. Hoping to dislodge their attackers, the Germans launched a counterattack and a long fight ensued inside the town characterized by building to building and room to room fighting.

Major Chapman's coordinated assault began at 0750 with just nine boats; all that could be collected. Under the cover of an awesome display of the Americans' firepower, all nine were successful in crossing. However, when the engineers started their return trip they were taken under fire by the German guns. By 0830 only three boats had made it back.

Despite this, enemy resistance at the river was soon reduced to a level under which daytime river crossings could resume. The engineers worked tirelessly throughout the day and night to construct pontoon bridges and to ferry much needed supplies across the river. As a result, the *276th* was unable to offer further resistance. Wagner later claimed, "The strong frontal and flanking- on both sides- American attacks, taken in conjunction with our own high casualties, no longer allowed further delay on the [26th] in the line then occupied. [My] request to withdraw to the line Dausenau to west of Marienfels was authorized and duly ordered."[34]

Thus ended Middleton's hard-won contest for the Rhine River. In it, the engineers of the 35th fought and worked hard to help deliver the final crushing blow to the enemy.

The night of 24/25 March had been costly. During the crossing the 35th sustained 34 casualties: nine killed, 4 seriously wounded, 15 slightly wounded, and 6 missing in action.[35]

Casualties among the 347th during the crossing were considerably lower and the infantrymen were able to carry the fight up the slopes. This would not have been possible without the tireless efforts of the engineers who continued to brave withering enemy fire as they made multiple trips across the river. In doing so, the engineers ensured that the men and supplies needed to defeat the enemy reached the east bank of the Rhine. This was accomplished in the face of extreme adversity, against a determined enemy, and despite terrific losses. The men of the 35th once again proved the value of functional discipline and unit cohesion.

The topic of functional discipline has already been discussed, but it's important to recall Christopher Kolenda's assertion that individual solider initiative is one of discipline's positive byproducts. Many of the men of the 35th took the initiative to accomplish important tasks without orders for the good of the organization. Consider the fact that once enemy fire began hitting the rafts on the river, each crew became an independent unit. Without a strong sense of functional discipline, these crews may have made decisions for their own good versus that of the organization. This was not the case, however, and each crew took the initiative to work toward accomplishment of the organization's mission.

Other examples of initiative exist as well. For example, Carl Uminger, one of the 35th's medics, formed a team of medics to meet the wounded at the crossing sites and helped to save several lives. Elsewhere, Willis A. Van Ingen, one of the 35th's

communications specialists, repeatedly traversed the mile and a half between crossing sites to ensure that the communication wire remained intact. Van Ingen performed this task unsupervised and made several repairs to the wire. His actions ensured continued communications between commands and the contributed to the success of the operation.[36] These examples of initiative were replayed throughout the battle as the engineers determined to accomplish their mission.

Initiative was also displayed by officers who understood the importance of their presence during the fight. For example, both Hritzko and Rickertsen remained present at their respective crossing sites despite the heavy fire being dealt by the enemy. For their actions each was awarded a medal for valor. Hritzko's Silver Star citation reads, "From H-hour until the last boat-load of men and supplies reached the opposite shore, Capt. Hritzko was constantly in the open, exposed to the intense enemy fire, where he could apply his keen professional knowledge and superior leadership to the best advantage."[37]

Likewise, Capt. Rickertsen's Bronze Star citation reads, "With courageous disregard for the incessant hazards, Capt. Rickertsen continuously patrolled the beach, checking the departure and arrival of the boats, and seeing to the acquisition of the necessary equipment in order to complete the operation."[38]

Leader presence extended to the lower ranks as well. Lt. Bob Skinner, for example, was with his men as they crossed the Rhine. Skinner's presence was inspiring and earned him the Silver Star. His citation reads, "Lt. Skinner, by his exemplary determination, successfully led his platoon to the hostile shore. There he exposed himself to grave dangers by fearlessly walking the length of the beach, reorganizing his platoon

for the return trip and giving first aid to those of his men who had been wounded. Lt. Skinner refused to leave the beach until all of his men had been accounted for."[39]

Current Army doctrine emphasizes the absolute importance of a leader's presence during times of stress and uncertainty. The Army's current leadership manual, Field Manual 6-22: *Army Leadership*, states "The impression that a leader makes on others contributes to the success in leading them. . . . Leaders who are willing to go everywhere, including where the conditions are the most severe, illustrate through their presence that they care."[40] Troops expect to see their officers working and moving with them; morale is impaired when they see their leaders shirking danger. Such was the impact that Hritzko, Rickertsen, and Skinner had on their men and the outcome of their mission. In retrospect, few would argue that the enemy resistance was too stiff and that continued crossing attempts should be made elsewhere. A strong argument could be made for this logic, but the fact is that the 35th's leaders offered a commanding presence; one that inspired their men to continue on with the mission.

Resilience on the part of the 35th leadership also played a significant role during the Rhine crossing. Resilience, as defined by Army doctrine, is the "tendency to recover quickly from setbacks, shock, injuries, adversity, and stress while maintaining a mission and organizational focus."[41] FM 6-22 goes on to say that a leader's resilience "rests on will, the inner drive that compels them to keep going, even when exhausted, hungry, afraid, cold, and wet."[42] Certainly, few within the 35th could have imagined such a battle at the Rhine given the relative ease with which the Mosel River had been crossed. The men were shocked by the terrific fire they received and by the casualties they sustained.

However, leaders offered a level of resilience on the battlefield more than adequate to compel his men to press toward their objective.

As important the effects of engaged leadership may have been, little hope for success on the Rhine could have existed without strong unit cohesion. Most of the men who made the Rhine crossing had served together since the 35th's formation at Camp Robinson. They had endured Col. Ingalls' rigorous training programs and confusion of the Louisiana Maneuvers; together. They had endured extreme hardships and overcame all that Mother Nature could throw at them on the Alcan Highway; together. Those who were assigned to the 35th at Camp White were quickly integrated into the battalion by competent and experienced leaders and men. Through France and later at Bastogne and St. Hubert, these men overcame increased hardships; together. Such discipline and experiences, as stated in the Army's leadership manual, pull people together in powerful ways.[43]

However, until the fight on the night of March 26, 1945, few of the engineers had seen their comrades die. Few had been subjected to such withering fire. Fortunately, Ingalls had the foresight and presence of mind to prepare his men for just such a time. The training programs he initiated, as well as the experience of the Alcan Highway, created a level of cohesion within the 35th that ensured success at the Rhine.

In *Men Against Fire*, S. L. A. Marshall contends that unit cohesion is formed well before, and continues through, the trials of combat. He argues that combat alone does not build "battle-seasoned troops" who function as a team in combat. Instead, he suggests that cohesion, or substance, is formed by competent leaders and shared experiences. "One of the effects of the shock of engagement," he stated, "is that it shakes the weakest files

out of the organization."[44] Cohesive units, those which have trained, lived, and shared hardships together, are likely to stand together during the shock of combat, he said. And so it was on the Rhine River with the 35th.

This "shock of engagement" on the Rhine did not stop the 35th. A strong bond of unit cohesion was already present within the organization. The engineers worked together in small teams and conducted multiple crossings in order to get the infantrymen across and in a position to the defeat the enemy. Leaders stood before their men and offered examples of persistence while providing motivation and inspiration. Additionally, individual soldiers had demonstrated the ability to make on the spot decisions that impacted the successful execution of the 35th's mission. Once again the 35th had confirmed the validity of Ingalls' methods of team building and leader development as well as the impact of shared hardships on the overall performance of the organization.

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[1]Frank James Price, *Troy H. Middleton: A Biography* (Baton Rouge, LA: Louisiana State University Press, 1974), 278.

[2]*An Historical and Pictorial Review of the 87th Infantry Division in World War II, 1942-1945* (Baton Rouge, LA: Army Navy Publishing, 1946), (hereafter cited as *87th Division History*). 79.

[3]1102d Engineer Combat Group, Operations Journal, March 1945, National Archives.

[4]*87th Division History*, 79; *Battalion History*.

[5]*87th Division History*, 81.

[6]Ibid.

[7]Ibid.

[8]*Battalion History*.

[9]Ibid.

[10]Ibid.; *87th Division History*, 82.

[11]*Battalion History*.

[12]Karl Brenner, *6th SS Mountain Division (1-19 March 1945)*, German Military Studies, MS # B-693, Combined Arms Research Library, Fort Leavenworth, Kansas.

[13]*87th Division History*, 84.

[14]Ibid.

[15]Charles B. MacDonald, *The Last Offensive* (Washington, DC: U.S. Government Printing Office, 1973), 274.

[16]Ibid.

[17]Price, *Middleton*, 279.

[18]Werner Wagner, *Commitment of the 276 Volks Grenadier Division: 17 to 27 March 1945*, German Military Studies, MS # B-124, Combined Arms Research Library, Fort Leavenworth, Kansas.

[19]Wagner, *Commitment of the 276*.

[20]35th Engineer Battalion, Transmittal of Report on Rhine River Crossing, April 17, 1945, National Archives; *87th Division History*, 85-86.

[21]35th Engineer Report on Rhine Crossing.

[22]Ibid.

[23]Ray Sobieszczyk, "The Rhine Crossing" (unpublished, date unknown, in possession of author).

[24]Ibid.

[25]Ibid.

[26]*87th Division History*, 86.

[27]*Battalion History*.

[28]Ibid.

[29]Lee Regenauer, email correspondence to author, January 3, 2002.

[30]Taylor, *Salt Peter Cake*.

[31]Hank Mooseker, memoirs of crossing the Mosel and Rhine Rivers, in possession of author.

[32]*87th Division History*, 87.

[33]Ibid.

[34]Wagner, *Commitment of the 276*.

[35]35th Engineer Battalion After Action Report, April 4, 1945, National Archives.

[36]*Battalion History*.

[37]Ibid.

[38]Ibid.

[39]Bob Skinner's Silver Star citation was provided by his son, Mike Skinner, to the author.

[40]FM 6-22, *Army Leadership*, 5-1.

[41]Ibid., Glossary-4.

[42]Ibid., 5-3.

[43]Ibid., 8-16.

[44]Marshall, *Men Against Fire*, 123.

CHAPTER 6

CONCLUSION

World War Two in the European Theater of Operations ended on May 9, 1945. At that time the 35th Engineer Battalion was near Pasau, Germany, near the Czechoslovakian border. Like many other units, the 35th performed routine engineer tasks while those soldiers who had earned enough "points" were discharged from the Army. Soon, the remainder of the battalion was soon moving back toward France where its men and equipment loaded aboard ships bound for the United States. Reaching New York City in September 1945, the battalion was formally deactivated at Camp Kilmer, New Jersey, on September 17, 1945.

The 35th Engineer Battalion, once 1st Battalion, 35th Engineer Regiment, was only four years old at the time of its deactivation ceremony. During its short existence, the battalion had earned a strong reputation as a functionally disciplined and cohesive organization capable of achieving success in fierce combat. This was made possible through the competent leadership provided by Col. Ingalls who implemented a dynamic leader development program and rigorous training regimen. The programs instituted by Ingalls facilitated the establishment of functional discipline within the regiment which allowed for the development of strong unit cohesion for which construction of the Alcan Highway was the catalyst. Through the application of initiative-based leadership and functional discipline, the engineers overcame adversity and hardships to form an incredibly cohesive organization. When combined on the field of battle, the dynamic leaders and functionally disciplined soldiers of the 35th Engineer Battalion, bound by strong unit cohesion, achieved tactical victory each time they were tested.

The example of Ingalls' leadership and his unique approach to developing functional discipline within the 35th resonates within the Army institution today. Current Army doctrine reflects Ingalls' methodology by stating, "A good leader gradually instills discipline by training to standard, using rewards and punishment judiciously, instilling confidence, building trust among team members, and ensuring that soldiers . . . have necessary technical and tactical expertise." Ingalls embodied this ethos. He clearly defined his standards of performance while training his cadre at Fort Snelling and Camp Robinson. "Shoot and Salute," the men bellowed when rendering salutes to officers in the regiment, capturing their commander's emphasis on the basics of soldiering. Stars and demerits for those achievements and misdeeds of the officers helped to enforce these standards. Gradually, as the men arrived and trained together, trust and confidence among the members of each squad, platoon and company strengthened as Ingalls charged each to become experts in particular tasks.[1]

By continuing to enforce standards of performance during training, Ingalls successfully established the technical and tactical expertise within the 35th that Chris Kolenda refers to as functional discipline; that form of discipline that directly contributes to the accomplishment of the organization's goals and objectives. This form of discipline creates and environment in organizations that supports initiative-based leadership and sharpens the warrior's mindset. Field Manual 6-22, *Leadership*, expands on this by stating,

> Discipline holds a team together, while resilience, the Warrior Ethos, competence, and confidence motivate soldiers to continue the mission against all odds. Raw physical courage causes soldiers to charge a machine gun but resilience, discipline, and confidence backed by professional competence help them fight on when they are hopelessly outnumbered and living under appalling conditions.

Whether living off the land during the Alcan Highway construction, holding their ground against superior enemy combat power near Bastogne, or meeting ferocious enemy resistance on the Rhine River, the men of the 35th routinely displayed a high level of functional discipline. This discipline was always supported by competent and resilient leaders who maintained a vigilant presence in times of extreme adversity.

The foundation of functional discipline established by Ingalls created an organizational environment suitable for the attainment of strong unit cohesion. Of the importance of unit cohesion during combat, S. L. A. Marshall wrote,

> It is a matter commonly noted that they who write of war tend to use loosely the expression 'battle-seasoned troops' as if there were a kind of mental toughening which comes from experience under fire. The idea is wholly misleading; it mistakes the shadow for the substance . . . That what we call 'seasoning' in troops is largely a matter of learning to do [things] well instead of [badly]. [This] is simply the reflection of the growth of unit confidence which comes of increased awareness and utilization of one's own resources under conditions which at first seem extraordinary but gradually become familiar. Until that kind of confidence is born, there can be no effective action [in combat].[2]

That is to say that cohesion (or "unit confidence" as stated by Marshall) must be developed within an organization before it can be effective in combat. Such cohesion, Marshall suggests, is developed by those who overcome adversity together. For the 35th, the experience of the Alcan Highway construction offered the sort of adversity and hardship which required each man to exert his energy for the good of the group while trusting the others to do the same. For more than eighteen months, the men endured the harsh terrain and climate of northern Canada and succeeded in making the "extraordinary" become "familiar." The strong bond of unit cohesion formed on the Alcan sustained the 35th while faced with great adversity in combat, most notably during the crossing of the Rhine River. Despite the withering enemy fire and likelihood of death

or injury during the assault, the engineers persevered for the good of the organization. Time and again, the 35th displayed the discipline and cohesion that Ingalls sought to develop and knew would be required in combat.

Oddly enough, Ingalls' methods would later be strongly questioned, though they proved effective in preparing the men of the 35th for combat. After a short stint commanding the Southern Sector of the Alcan Highway project, Col. Ingalls was selected by the Chief of Engineers to run a new Engineer Unit Training Centered (EUTC) established at Camp Ellis, Illinois. Senior leaders within the Engineers had not forgotten how rapidly Ingalls raised the 35th, trained it, and then led it to accomplish seemingly impossible tasks on the Alcan.

While commanding this new EUTC, Ingalls initiated most of the same programs he used in raising the 35th. Determined to prepare these new engineer units for combat, Ingalls insisted on placing them in conditions as near to those of combat as possible. Not only did Ingalls feel this was appropriate, all Engineer training had moved toward realism and physical hardening by the spring of 1943 in response to reports from overseas. On July 31, 1943, even before the majority of his new draftees arrived, Ingalls delineated his training policy to the unit officers who would conduct the training:

> Time is short. Your unit will soon be in battle. Every hour is precious. Each one must be devoted to preparation. You cannot press too hard. Put the pressure on as hard as you may, yet you still will not approach the conditions of fatigue and hardship your units will soon face. An attitude of tolerance, pity or sympathy for your unit during the rigors of training will be reflected in poor preparation and consequent suffering or disaster when in an active theater. Every training task must be approached as though it were a battle mission. There must be no "breaks." No rest should be prescribed, except that due to physical exhaustion. There should be constant pressure through the chain of command to "get the job done."[3]

In the months to come, Ingalls' methods would be both praised and criticized. Critics claimed that the Engineer training conditions were too severe. Other branches of the Army also trained at Ellis and their soldiers slept peacefully in their barracks and ate hot meals in the "chow hall."

A brief inquiry was conducted to determine if Ingalls was being too harsh on the training units. In response to the inquiry, one regimental commander who trained under Ingalls stated,

> Most people with whom I discussed this training system were opposed to it, and . . . I was about the fifth commander of the [regiment] during its nine months of training. I accepted Col. Ingalls' system and tried to get the most out of it, but I believe that the method was extreme, and I would prefer to train engineer troops under more favorable conditions and with more attention to the development of techniques as opposed to combat type training.[4]

It is unfortunate that this commander, preparing to lead his men in combat, did not value the opportunity for realistic and demanding training. However, a more junior officer in the same regiment did find that Ingalls' methods contributed to the unit's success in combat. He stated, "We all thought we would never 'make the [port of embarkation],' but someone . . . thought differently and how right he was. We had no sooner reached England when the men (and Officers) settled down, went to work and developed into the best General Service Regiment in the Third Army."[5]

Despite comments like these and the support of his immediate chain-of-command, Ingalls was administratively moved to another position within the Engineers. He retired from the Army in 1945 and began a second career at the University of Alabama where he taught mathematics and mechanical engineering. The subject of Col. Ingalls as a pioneer in the US Army's evolution toward current "Battle Focus Training" doctrine is certainly a worthy topic for further study.[6]

Another consideration for further research relates to the comparison of combat performance by other like engineer units. Neither time nor space allowed me to examine other engineer units who participated in the Alcan Highway construction then later conducted combat operations. While the primary focus of this paper was on the impact of functional discipline and unit cohesion on the combat performance of the 35th Engineer Battalion, it's important to recognize the combat performance of the 35th's sister battalion, the 145th Engineers. After all, short of differences in geographical locations while in Europe, the 35th and 145th shared the same foundations as established by Ingalls and the experience of the Alcan Highway. A brief look at the 145th's history indicates that the battalion performed well in combat at places such as Carentan, Avranches, Rennes and Nancy, France. In March, 1945, the 145th received official commendation from the commander of the 1137th Engineer Group for playing "a vital part in giving direct support to an Infantry Division in the reduction of the so-called Bastogne Bulge." The commendation also cited the 145th's superior performance during February while supporting a Cavalry Group "engaged in assaulting and reducing the main German fortifications along the German border." During that operation, the 145th constructed a bridge across the Pruem River while under continuous mortar and artillery fire. Later in March, the battalion supported the 5th Infantry Division in its assault crossing of the Rhine River near Woorstadt, Germany. There is no indication that the unit ever failed when tested in combat.[7]

I was also unable to examine the combat performance of engineer units which did not enjoy the same level of preparation time as the 35th. The 35th had more than three years of experience, both in training and the conduct of real engineer operations, prior to

its combat experience. By the summer of 1943, much had changed in terms of how the Army raised units and trained new soldiers. Most significant was the fact that the Army moved to a system of individual replacements. No longer would new units be established, trained, then deployed. Existing units would instead receive individual replacements for soldiers lost in combat. This change had far reaching implications for unit performance in combat. Both subjects (that of the 145th and that of the individual replacement program) might yield further conclusions to support my proposition that the success of the 35th Engineer Battalion was determined well-before it appeared on the battlefields of Europe.

I would be remiss if I did not highlight the fact that many of the veterans of the 35th continued to serve in the Army long after the battalion's deactivation. Major Alvin Welling, for example, rose to the rank of Major General in the Corps of Engineers and retired in 1965. Paul Symbol, Frank Rush, Dan Hritzko, and Mike Miletich, to name a few, all continued to serve in various capacities; each retiring with the rank of Colonel.

Calvin Campbell, that young soldier who showed so much promise in the early days of the 35th, also achieved the rank of colonel. His leadership potential was well-recognized within the regiment and he was selected to attend Officer Candidate School. Preparing to embark on the Alcan Highway project, Campbell was pulled from the train as it began to roll north from Fort Ord. Recalling his emotions at that time, Campbell stated almost prophetically, "My feelings at leaving were of genuine regret. In my seven months with the 35th, despite the many mistakes and stumbles at the beginning, I could feel and see it becoming a cohesive, functioning organization. Things attempted got done right and on schedule. Paralleling this, or perhaps preceding it, was the development of essential skills of the officers, NCOs and soldiers."

Campbell would later begin attending 35th Engineer reunions where members of the regiment gathered to share memories and reacquaint. I too had the pleasure of attending the last of these where I was adopted as an honorable member of the 35th; an informal title that I hold dear and in honor of those of the 35th who did not make it home from combat.

In a quiet Luxembourg military cemetery for American soldiers who died in World War Two, the words "Men who sleep in unknown graves" are carved on a granite wall. Inscribed below this are names of soldiers who died in battle, but whose bodies were never found. Under "35th Engineers" is listed "Staff Sergeant Charles Cannon, New York." Today, the 35th Engineer Battalion honors his memory, as well as that of all previous members of the battalion, as it serves as a basic and advanced engineer training unit at Fort Leonard Wood, Missouri.

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[1]FM 6-22, *Leadership,* 7-10.

[2]Marshall, *Men Against Fire, 123-124.*

[3]Coll, *The Corps of Engineers: Troops and Equipment,* 299.

[4]Ibid., *302.*

[5]Ibid.

[6]Twichell, *Northwest Epic*, 319.

[7]*145th Engineer Combat Battalion,* unit history compiled from various unit journals and documents by the veterans of the 145th. Copy in possession of author.

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