

CSI BATTLE BOOK

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**MOSELLE RIVER CROSSING
5TH INFANTRY DIVISION**

**Combat Studies Institute
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) ① The US 5th Infantry Division's deliberate river crossings at Dornot and Arnaville over the Moselle River during September 1944 demonstrated the advantages of combined arms operations. Lessons learned included the use of antitank weapons in overwatch positions, the effective utilization of close air support, the employment of armor, the importance of initiative and company grade leadership to small unit infantry tactics, the effective use of smoke, and problems of command and control in river crossings. (auth)		

MOSELLE RIVER CROSSING

5TH INFANTRY DIVISION

SEPTEMBER 1944

Prepared by:

MAJ Argersinger

MAJ Johnston

MAJ Mettala

CPT Murphy

MAJ Rossi

MAJ Taddonio

20 May 1983

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Battle Information Sheet

Common Reference: The 5th Infantry Division conducts a deliberate crossing of the Moselle River.

Type Operation: Offensive, Deliberate River Crossing, Combined Arms.

Opposing Forces: US 5th Infantry Division with attachments: CCB 7th Armored Division, 1103d Engineer Combat Group, 84th Chemical (Smoke Generator) Company, 818th Tank Destroyer Bn (SP), 735th Tank Bn (Medium), Troop C, 3d Cav Recon Sq, 284th FA Bn (105mm), 449th AAA Automatic Weapons Bn.

German 47 Panzer Corps and 13 SS Corps.

Synopsis: The 5th Infantry Division's deliberate river crossings at Dornot and Arnaville over the Moselle River during September 1944 portrays the advantages of combined arms operations.

With a compare/contrast of the relative success/failure of the Dornot and Arnaville crossings respectively, we can learn many valuable lessons. Some of the more important lessons learned are as follows:

(1) The effective use of tank destroyers in overwatch positions at Arnaville were instrumental in stopping German armor counterattacks.

(2) Close Air Support was not employed at Dornot but was very effective at Arnaville.

(3) No armor crossed at Dornot while large numbers crossed at Arnaville.

(4) Small unit infantry tactics were executed in a better manner than the enemy. This was primarily due to individual initiative of the individual soldier and the effectiveness of company grade leadership.

(5) The success of bridging efforts can probably be traced completely to the successful employment of smoke.

(6) Lack of command and control was a significant factor for the failure of the Dornot crossing.

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I. THE STRATEGIC SETTING

The crossing of the Moselle River by the Fifth Infantry Division is a small piece in the massive jigsaw puzzle of World War II. The purpose of this chapter is to provide a glimpse at the overall picture before narrowing our scope to study the crossing in detail. The general strategic concepts for World War II will be discussed, a general synopsis of the previous three years of the war will be presented, and the events leading up to the crossing of the Moselle River summarized in this chapter.

World War II began in Europe at dawn on 1 September 1939 as units of the German Wehrmacht rolled across the Polish border. Two days later, Great Britain and France declared war on Germany. The initial attack into Poland was extremely successful and within thirty-one days, the Poles were forced to surrender. The war was to last almost six years and more than thirty million people would die.

Having quickly conquered Poland, Hitler used the winter months to plan the campaign against the Allies, and on 10 May 1940, the Germans again attacked. Initially rolling forward against Belgium and Holland, the Germans deceived the Allies into believing that their strategy was the same as that used during World War I, and the Allies overreacted to this attack.

The main German attack in reality was through the Grand Duchy of Luxembourg and the Ardennes. Virtually unopposed, the Germans moved through the Ardennes and were on the main French defense positions on the 12th of May before the French could react. By this time, it was too late for the French to shift their reserves and on 14 May, there was a fifty-mile hole in the French line as the French marching infantry attempted to maneuver against the German tanks and Stukas. Two days later, the German armor was on the Aisne and rolling into open country.

The Germans reached the sea at Abbeville on 21 May, and now the northern Allied armies were cut off. The eventual defeat or evacuation of the Allies' armies was well underway, and by 26 May, the British were for all practical purposes out of the continental war. The campaign of France lasted another three weeks, and on 22 June, a cease-fire was signed. By the 25th, the armistice negotiations were being conducted at Rethondes, in the railway carriage where the Germans had surrendered to Marshall Foch in 1918. In less than six weeks, the Germans had defeated France, Belgium, and Holland.

The asymmetry in the casualty figures highlights the one-sidedness of this campaign. The Germans had suffered about 27,000 killed, 18,000 missing, and just over 100,000 wounded. On the other hand, the Dutch and Belgian armies were completely destroyed while the British lost over 68,000 men and all their heavy equipment, to include tanks, trucks, and guns. Adolf Hitler was to control the continent of Europe for the next four years.

Approximately one year later on the 22nd of June 1941, the Germans invaded Russia under the guidelines of operation BARBAROSSA. While initially successful, military and political errors in late July and early August doomed the campaign. Indecision by Hitler and the mistreatment of the Ukrainian people, who initially welcomed the Germans as liberators, aggravated the military situation. However, the one factor that sealed the Germans' fate was the early arrival of the hardest winter in half a century. For all intents and purposes, the German drive died on 5 December 1941, twenty-five miles from Moscow.

Two days later on 7 December, the Japanese attacked the United States at Pearl Harbor, and the United States was in the war. At the Arcadia Conference in Washington two weeks later, the British and Americans reaffirmed the decision to defeat Germany first. They decided on an air bombardment of Germany through 1942, and the clearing of the North African coast if possible. Furthermore, they tentatively agreed to invade continental Europe in 1943, though even now the British balked at this early date for a frontal assault on the Continent.

French North Africa was invaded in the fall of 1942 and by January 1943, it was all but liberated. Churchill and Eisenhower then agreed on the invasion of Sicily as a continuation of the operations in the Mediterranean. It was at this conference in Casablanca that Churchill agreed with Roosevelt's desire to force the Axis Powers into an "unconditional surrender."

The consensus on this issue had a major impact on the conduct of the war. Under the concept of an "unconditional surrender," the enemy powers were not to be allowed to surrender on terms, but must, to end the war, throw themselves completely on the mercy of the Allies. Undoubtedly, this changed the complexion of the war and lengthened it. If it was ever needed, this provided the motivation for the Axis Powers to fight to the bitter end.

May of 1943 saw the British and American planners meeting in Washington for the Trident Conference. Two key agreements were made here. First, at the urging of the British, the Allies agreed to go from Sicily to Italy. Second, at the Americans' urging, a firm date of 1 May 1944 was set for the cross-channel invasion. To get the Americans to agree to the Italy decision, the British conceded that future buildup would be in England instead of in the Mediterranean.

In August at the Quadrant Conference in Quebec, the Allies reaffirmed the decision to cross the Channel, and the British agreed to an upgrading of offensives in the Pacific against Japan. The tide of the war in the Pacific had turned in 1942 and the pressure against the Japanese would continue to mount for the next eighteen months.

On 3 September 1943, British and Canadian troops of the 8th Army made an assault crossing of the Straits of Messina and landed on the European continent for the first time since 1940. Simultaneously, the Italian government signed an armistice with the Allies while the Germans started to pull out from southern Italy. Six days later, the US 5th Army, under General Mark Clark, landed at Salerno. Thus began the long bitter fight up the Italian boot. Rome was destined to fall ten months later on 4 June 1944, but the German forces in northern Italy would hold out to the end of the war.

On 6 June 1944, the Allied Forces crossed the English Channel operating under the guidelines of Operation OVERLORD. The Supreme Headquarters Allied Expeditionary Force's (SHAEF) objective was to seize and secure a lodgement area on the Continent from which further offensive operations could be developed. The operation was to be executed in two phases:

(1) Phase I - The assault and capture of an initial beachhead including the development of airfield sites in the Caen area and the capture of Cherbourg.

(2) Phase II - The enlargement of the area captured in Phase I to include the Brittany Peninsula, all ports south to the Loire, and the area between the Loire and Seine.

The combined operation command structure had General Dwight David Eisenhower as the Supreme Commander, Sir Bernard Law Field Marshall, Montgomery as the Ground Force Commander, Admiral Sir Betrand Ramsay as the naval commander, and Air Vice-Marshal Sir Trafford Leigh-Mallory commanding the combined air forces. A total of 2,876,000 soldiers, sailors, and airmen were mustered for the operation.

The Supreme Headquarters Allied Expeditionary Force had developed a timetable for the operation based on the expected German reaction and the availability of men and supplies. By 23 June 1944 (D+17), they planned to have the Normandy Peninsula cleared. By D+35 (10 July), they were to be at the mouth of the Seine in the east and to have cut off the Brittany Peninsula to the south and west.

However, in the initial phases, they were immediately thrown off schedule by much stronger German resistance than they had anticipated. Fortunately for the Allies, Hitler's intransigent nature backfired as numerous forces became trapped and besieged in coastal ports. By refusing to release the reserve forces or to allow any German forces to retreat without his permission, Hitler placed his military commander in an untenable position.

Seven weeks after the crossing of the Channel, the Allied Forces, despite intensive fighting, had established a salient that at its deepest penetrations was only twenty-five to thirty miles deep along an eighty mile front. The combined British, Canadian, and United States forces had suffered over 122,000 casualties. However, during this period, these losses were quickly replaced and on 23 July 1944, the Allied Forces were virtually up to strength.

The German losses during this period were approximately the same, but their replacements numbered only 10,000 men--less than twelfth of the Allied number. Despite this asymmetry, the German forces had been able to contain the Allies in the hedgerows of Normandy.

For the Allies, this period of containment would have some future adverse implications. The maneuver space for the Allied Forces was extremely constricted, and this limited area prevented the Allies from establishing their logistics bases. Subsequently, this restricted their ability to build up stockpiles of supplies for future operations. In the dash across France, this would prove to be critical in the effort to sustain the offensive.

Once established on the continent, the Allies had two objectives in mind while developing their strategy. One objective was the capture of the political heart of Germany - the city of Berlin - while the second objective was the capture of the economic soul of Germany - the Ruhr industrial area. This latter objective was considered the logistics lifeline of the Germans, and for this reason, the Allies assumed that Hitler would mass his forces in the north to protect the Ruhr area. One of Eisenhower's guiding principles was the destruction of as many German forces as possible. Therefore, this concentrating of troops in the north added to the significance of the area. For these reasons, the Ruhr industrial area became the primary objective for the Allied Forces in northern France.

Four avenues of approach existed from northern France into the Ruhr area. The four avenues were:

- (1) South of the Ardennes by way of Metz, Saarbrücken, and Frankfurt;
- (2) Straight through the Ardennes;
- (3) North of the Ardennes via Maubeuge and Liege; and
- (4) through the plains of Flanders.

General Eisenhower selected the avenue of approach north of the Ardennes as the primary avenue of advance. The freedom of maneuver and the availability of airfields were two of the reasons for this choice. The circuitous route along the Metz-Saarbrücken-Frankfurt axis was selected as

the secondary avenue of advance with the industrial complex just south in the Saar Valley as an intermediate objective. The main avenue north of the Ardennes was assigned to the 21st Army Group under the command of Field Marshall Montgomery (overall Ground Forces Commander) while the 12th Army Group, under General Omar Bradley, would move along the secondary axis.

The decision on whether to attack on a broad front or with a single thrust was (and continues to be) a hotly debated one. Initial plans had the 21st Army group attacking to capture the Ruhr industrial area from the north. The First Army of Bradley's 12th Army Group was to cross the Rhine and attack the southern Ruhr area along the northern avenue. Meanwhile, General George Patton's Third Army would move along the secondary avenue of approach. After crossing the Moselle, Patton was to advance through Alsace-Lorraine, and cross the Rhine River in the vicinity of Mannheim and Mainz, and attack the Saar industrial complex. (As a result, Bradley's command was divided on two different axis of advance.)

Montgomery and Bradley both disagreed with the concept. Montgomery argued to concentrate all the allied strength on a drive through the low countries by way of Amiens and Brussels. However, this was not the most direct route to the Ruhr area. Montgomery's main argument for a single thrust was that if the 21st Army Group could move fast enough, Antwerp, the channel ports, and the Belgian airfields could be quickly seized. Additionally, the launch sites from which the rockets that the Germans were firing at London were located in this zone and would be cleared away.

On the other hand, Bradley proposed a modified double thrust. Third Army was to advance past Metz and penetrate the West Wall (also known as the Siegfried Line). Bradley argued that this rapid thrust would seize the Saar industrial basin and prevent the Germans from concentrating their forces in the north.

On 23 August 1944, Eisenhower tentatively approved the single thrust concept. Montgomery would make the main effort while Bradley supported the attack with all nine divisions of his First Army. Patton's Third Army would advance along the southern axis, but would not have priority on supplies.

On 25 July 1944, the Allies attacked to break out of "hedgerow" country. First Army, under General Courtney Hodges, made the main attack operating under the guidelines of operation COBRA. In the north, operations GOODWOOD and SPRING were supporting attacks made by the British and Canadians, respectively. Due in large degree to the superb close air support provided by the IX Tactical Air Command, operation COBRA was a success as the Allies burst out of their salient and began racing across France.

At the end of August, the Allied Forces were firmly entrenched in northern France. The area between the Seine and Loire Rivers, originally designated as the "Initial Lodgement Area" in the OVERLORD plan, had been secured, and most of the German troops in this area were mopped up by 31 August 1944.

Meanwhile, the Allies had also landed in southern France on 15 August 1944. This operation was met by only occasional heavy resistance as General Alexander Patch's Seventh Army, consisting of General Lucian Truscott's VI Corps and two French Corps under General de Lattre de Tassigny, pushed forward. On the 28th, the French Corps captured the port of Marseilles while the Americans moved up the Rhone Valley. Opposed by mainly second-line troops, the Allies reached Grenoble by the end of August.

In northern France, Allied forces were already across the Seine River in pursuit of the fleeing German Armies on 1 September 1944. The Allied losses had been relatively moderate in relation to the territory won and casualties inflicted on the enemy since 6 June. Most of the Allied losses were quickly replaced while the Germans still could not match their losses with replacements.

General Dwight D. Eisenhower, the Supreme Allied Commander, assumed direct operational command of all Allied Forces in northern France on September 1, 1944 from Field Marshall Montgomery. He would continue to walk the thin red line of coalition warfare as he strove to keep the Allies a cohesive fighting force. His ability to manage diverse personalities was key to the Allied success.

On paper, the array of Allied Forces versus German forces on 1 September 1944 looked relatively equal. The Allies had twenty-three infantry divisions and the equivalent of fifteen armored divisions on the Continent. These thirty-eight divisions were opposed by forty-one German divisions.

However, this number of German divisions is exceedingly deceptive. Five of these divisions were in coastal fortresses or on Channel islands trapped by Hitler's fatal directives and the Allied Forces. The remaining divisions had suffered substantial personnel and equipment losses. The Allied superiority in guns was approximately 2 1/2 to 1, and in tanks, 20 to 1. SHAEF's three tactical air forces against the German's one weak tactical force gave the Allies a decisive advantage on the battlefield.

At the end of August, the Allied Forces were arrayed across France with the 21st Army Group under Montgomery in the north and the 12th Army Group in central France under Bradley. The 21st Army Group consisted of the 1st Canadian Army and the 2d British Army. The Canadian Army was driving towards the Belgian city of Bruges while the 2d British Army was moving towards Brussels and Antwerp.

The 12th Army Group consisted of the 1st Army under General Courtney Hodges and the 3d Army commanded by Patton. The Third Army had done extremely well under Patton. While the XII and XV Corps had participated in the dash across northern France, their victories had been speedy advances and quick success. Some divisions had suffered heavy casualties, but overall, relatively few officers and men of the Third Army had taken part in the tedious hedgerow battles in Normandy and morale was good.

The spirits of Third Army also received substantial bolstering by three events that occurred in late August. First, the Champagne caves at Reims and Epernay were captured. Second, they passed through the ominous Argonne Forest without a fight, and third, on August 31, they seized the city of Verdun without substantial losses. During World War I, literally tens of thousands of soldiers had died to seize this same city.

Patton's Third Army consisted of three corps - the VIII Corps, XII Corps, and the XX Corps. However, the VIII Corps was located at Brest containing the Germans located there, and in early September, would become part of the 9th Army. The two remaining corps, XX and XII, were operating on an eastern front ninety miles wide while at the same time the Third Army held the line of the Loire River which secured the southern flank of the Allied armies in northern France. This combination of the eastern front and southern flank made General Patton's Third Army responsible for over 450 miles of frontage.

On 31 August, the Third Army's tanks and cavalry crossed the Meuse River at Verdun and Comeray. One day later, small cavalry patrols were on the west bank of the Moselle River. One hundred and seventy-five miles south of the Third Army, advance detachments of the 7th Army were fighting in the vicinity of Lyon. In the north, Montgomery's forces were moving towards Brussels and Antwerp over the World War I battlefields of the Marne and Somme.

Meanwhile at Versailles on 2 September, General Eisenhower met with Bradley, Patton, Hodges, and MG Hoyt Vandenberg (commander 9th AF) while First Army was moving to the north to support the 21st Army Group. General Eisenhower outlined his plans for the near future, and directed that once the First Army completed its move to the north, both the First and Third Armies would remain "generally static" until sufficient supplies (particularly gasoline) could be accumulated to allow the Army Group to move to the Siegfried Line and seize that line with at least part of a Corps.

Following the meeting, Bradley briefly outlined a plan that gave Patton a future axis of advance calculated to cross the Rhine River in Mannheim-Frankfurt sector once permission was received to advance again. Patton immediately phoned his headquarters and directed that the Third Army should not advance beyond the Meuse bridgeline. However, he did authorize recon elements to probe forward.

The order to General Eddy's XII Corps and General Walker's XX Corps was not necessary. Both corps had ground to a halt shortly after crossing the Meuse because of the gasoline shortage. The logistics situation had done what the Germans could not--stop the incredible advance of the Allies.

This logistics picture was disheartening. The incredible success of the Allied Forces in northern France was primarily responsible for the problem. The initial constricted area of maneuver for the seven weeks following the landings at Normandy had prevented the Allies from building up their logistics base ashore. This limitation coupled with the unexpected speed of advance over the Seine and across France caused an extraordinary logistical lag. On 31 August, Third Army alone was 150 miles ahead of the OVERLORD timetable. With the bulk of the supplies still coming over the beaches at Normandy, Third Army had simply outrun its logistics.

Transportation shortages aggravated the supply problems. Before the invasion, the Allies had bombed and severely damaged the railroads and pipelines to delay German reinforcements. Now the effectiveness of this campaign hindered Allied logistical resupply efforts as they had to rebuild these same transportation networks to support the Allied Forces' rapid advance. With the Third Army halted at the Meuse River, this is a good time to look at the opposing forces in the Third Army (and more specifically, the XX Corps) sector.

The German Army was in a precarious position. The months of June, July, and August had seen one German defeat after another on both the Eastern and Western fronts. In five years of war since the invasion of Poland, the German losses were over 3.6 million men and 114,215 officers. These figures include only the dead, missing in action, and physically disabled.

At the beginning of September 1944, the Field Army (Feldheer) strength was estimated to be at 3,421,000 officers and men. The majority of these men (2,046,000) were concentrated on the Eastern front against the Russians. Fighting in two fronts, the German strength was quickly being attrited. The continuous pressure on both fronts prevented Hitler from shuttling divisions back and forth between the two fronts.

During 1944, Hitler began getting more and more involved in military decisions. For example, a commander of von Rundstedt's prestige could not move a corps more than a few miles without Hitler's approval. The attempt on Hitler's life in July 1944 further limited the influence of the field commanders and General Staff. In effect, the prewar system of Germans and organization had been abandoned.

In September 1942, Hitler had issued a directive on unyielding defense that stripped field commanders of initiative and authority. Hitler directed that no army commander or army group commander would undertake any "tactical

withdrawal" without his expressed permission. This order was apparently never rescinded and deprived the German field commanders of their chief operational concept--maneuver.

In early September, Hitler issued a directive stating his "intention." In it he ordered that the retreating German armies must stand and hold in front of the West Wall to gain time for the rearming of the West Wall defenses. Hitler designated a battle line running from the Dutch coast, through northern Belgium, along the forward positions of the West Wall segment between Aachen and the Moselle River, and thus along the western borders of Lorraine and Alsace. Hitler reasoned that a successful defensive battle along this line would have several important results:

(1) The Netherlands would be retained as an important center of German air and naval activity, while its industrial and agricultural production would continue to flow to the Third Reich.

(2) No German soil would be lost.

(3) The Allies would be unable to use the port of Antwerp, so long as the Schelde mouths were denied them.

(4) Allied air bases would be kept as far as possible from central Germany.

(5) The great industrial production of the Ruhr and the Saar would be protected.

The German Forces had some extremely serious problems. While the Allied problems were caused by overwhelming success, the German problems were caused by significant failures. Losses of personnel and equipment had been extremely high. For example, at the end of August 1944 when the German 1st Army had retreated across the Meuse River, it consisted of only nine battalions of infantry, two batteries of field guns, ten tanks, three flak batteries, and ten 7.5-mm guns--not a very formidable threat.

However, while the lack of Class III and V supplies halted the Third Army just beyond the Meuse River, the Germans worked feverishly to establish a credible defense along the West Wall. On 5 September 1944, Generalfieldmarschall Gerd von Rundstedt assumed command of the combined German Armies on the German western front. Von Rundstedt had served in this position in late 1940-early 1941 before being assigned to the eastern front. Considered a great strategist, von Rundstedt was well known to the German soldiers and his return was expected to bolster their morale.

On paper, the armies he assumed command of were impressive. They consisted of forty-eight infantry divisions, fourteen panzer divisions, and four panzer brigades. However, out of these forces, only thirteen infantry

divisions, three panzer divisions, and two panzer brigades were close to full strength. Even this status is deceptive as four of these infantry divisions were encircled in fortress positions behind Allied lines. Twelve infantry divisions, two panzer divisions, and two panzer brigades were greatly understrength, but still considered usable. Fourteen infantry divisions and seven panzer divisions were fought out and considered combat ineffective. The remaining nine infantry divisions and two panzer divisions were in the process of rehabilitation and refitting.

The bulk of the above divisions were grouped under Generalfeldmarschall Walter Model's Army Group B whose front extended from the North Sea to a point south of Nancy in Lorraine. Model had been the Commander in Chief West, and concurrently the Commander in Chief of Army Group B, from mid-August 1944 until von Runstedt's return in September. In Army Group B, Model commanded four armies--15th Army, 1st Parachute Army, Seventh Army, and First Army (arrayed north to south respectively).

In the south, the German left wing was formed by Army Group G under the command of Generaloberst Johannes Blaskowitz. Consisting of just seven divisions arrayed under LXVI Corps and 19th Army, Army Group G was tasked with establishing a cohesive defensive line west of the Vosges Mountains in the area between the Nancy sector and the Swiss border.

Patton's axis of advance towards the Moselle River would strike directly into the German's First Army front, brush against the northern flank of the 19th Army, and threaten to sever the weak connection between the two Army Groups.

On 6 September, Hitler appointed General der Panzertruppen Otto von Knobelsdorff as commander of the First Army. Knobelsdorff was recognized as a brave commander, but was conceded to be "no towering tactician." He had fought well on the eastern front, but at the time of this appointment, he was still weak from previously received wounds.

Two days later, the 1st Army and 19th Armies were grouped into Army Group G. Blaskowitz would be the chief ground commander opposing Patton's Third Army during September 1944. Despite his personal feud with Heinrich Himmler, Blaskowitz was recognized as a superior organizer and able commander.

The lull during early September allowed the German First Army to rebuild its strength substantially. However, it still remained markedly weak in antitank defense. Therefore, the main defense against mechanized attack would be the natural antitank barrier formed by the Moselle River. Artillery and communications support were also extremely limited. Thus, Army Group G tenuously held a line along the Moselle.

By 1 September, the German First Army had a combat equivalent of 3 1/2 divisions in the Thionville-Nancy sector. However, reinforcements were close behind the First Army lines, with the advance elements of two of the new Volks Grenadier Division and a panzer brigade arriving on 1 September. East of Metz, one regiment of the 559th VG (volks grenadier) Division had unloaded and the 553d VG Division was detraining at Saarbrücken, enroute to Nancy. In the Trier rail yards, the 106th Panzer Brigade began moving its new Panther tanks off flat cars. During the lull in early September, the 3d and 15th Panzer Grenadier Divisions arrived from northern Italy and assumed positions along the 1st Army front. These were veteran formations. The remainder of the 553d and 559th VG Divisions also arrived and assumed positions in the 1st Army front.

On 5 September, the German 1st Army held a loosely formed front stretching from Sedan in the northwest to an ill-defined boundary south of Nancy. The 1st Army was given the mission of defending the major and industrial area around Longwy and Briey, as well as that of the Saar, establishing secure bridgeheads west of the Moselle River at Metz and Nancy, and reestablishing contact with the 19th Army. The First Army's strength had quickly risen to 3 panzer grenadier divisions, 4 1/2 infantry divisions, and 1 panzer brigade. Quite a contrast to the remnants that had crossed the Moselle four days earlier.

The German First Army was arrayed with the LXXX Corps in the north, LXXXII Corps in the center, and the XLVII Panzer Corps in the south. The LXXXII Corps was commanded by General der Artillerie Johann Sinnhuber and had the mission of defending the Moselle River position from north of Thionville to south of Metz and maintaining the bridgehead west of Metz. This corps faced the American XX Corps. Within this sector, there were several Waffen-SS units and on 7 September, control of the sector was transferred to the XIII SS Corp. This newly formed corps (XIII) was commanded by Generalleutnant der Waffen-SS Herman Priess.

An organized defense now existed in the German First Army sector. Although it was dangerously thin and the only reserve for Knobelsdorff's First Army was the 106th Panzer Brigade, the Western Wall was growing stronger daily as reinforcements arrived.

In the United States XX Corps zone of advance, the 17th SS Panzer Grenadier Division was fighting the covering force battle. In Metz, the defense of the city was given to Division Number 462. This makeshift division consisted of candidates and instructors from the Officer Candidate School and the NCO school, fortress troops, and the physically unfit. They knew the terrain very well and most of the students were among the elite of the German Army.

The Third US Army at the beginning of September 1944 was an aggressive, confident unit that reflected the personality of its commander. General Patton had filled his immediate headquarters with men who had previously served with him. In fact, only the G-1 was newly assigned on his primary staff. Many of these officers had been in the cavalry branch earlier and were imbued with the traditions of speed and audacity.

General Patton had commanded the ground elements of the Western Task Force in the landing in North Africa in 1942. After numerous campaigns in Africa and Sicily, he was brought to England as commander of the Third US Army. Third Army became active on the Continent on 1 August 1944. Patton was reknown for his aggressiveness and drive. In contrast to the extremely centralized command and control of the German forces, Third Army command and control was very decentralized. Using mission type orders, Patton expected his commanders to exercise independent judgment and aggressiveness.

During the Lorraine campaign, an ULTRA recipient was present in the Third Army. ULTRA was strategic intelligence that was provided by a high level British-based organization. This organization got its information from intercepted radio transmissions, and having broken the German codes, relayed this information to the appropriate units.

Knowledge of ULTRA at Third Army was extremely restricted. Only the Commander, Chief of Staff, Deputy Chief of Staff, G-3, G-2, and the assistant G-2 knew of its existence. Intelligence gained had to be carefully used in order to not compromise ULTRA.

The operational value of ULTRA was tremendous. However, while Patton usually attended the briefings, he seemed to ignore the information and tended to go with his instincts. At the division level, there was no direct knowledge of ULTRA although the information received from Third Army was sometimes generated by it.

Third Army was composed of three corps. The VIII Corps was commanded by General Troy H. Middleton and was containing the isolated German forces at Brest. This corps was in actuality so far removed from the Third Army's area of operations that it in effect was an independent corps. On 5 September, the VIII Corps would be assigned to the Ninth US Army.

The XII Corps was commanded by General Manton S. Eddy. This corps was in the southern portion of Third Army's sector and would attempt to cross the Moselle at the same time that XX Corps was making its crossing. General Eddy's corps had the 35th Infantry Division, the 4th and 6th Armored Divisions, and the 2nd Cavalry Group assigned to it.

The remaining corps was the XX Corps that was commanded by General Walton H. Walker. Operating in the northern part of the Third Army's sector, the XX Corps consisted of the 5th and 90th Infantry Divisions, the

7th Armored Division, and the 3rd Cavalry Group. XX Corps would cross the Moselle River in the vicinity of Metz. Both the Third Army and XX Corps headquarters had assumed that the German forces at most would fight a delaying action at the line of the Moselle and that the main enemy stand would be made east of the Saar River behind the works of the West Wall.

Translated into raw numbers, Third Army consisted of 318,814 officers and men and 669 tanks at the beginning of September. The troop lists on 5 September reflected eight squadrons of mechanized cavalry, twenty-three anti-aircraft battalions, fifteen tank destroyer battalions, twenty engineer combat battalions, fifty-one artillery battalions, and three engineer general service regiments.

Since the Fifth Infantry Division's crossing of the Moselle River is the action that this paper will focus on, it is necessary to take a closer look at it. The division had been originally organized in September 1917 at Camp Logan, Texas, and in May 1918, the "Red Diamond" Division deployed overseas to France. During the fighting that followed, the Fifth Infantry Division operated in northern France in the vicinity of the Meuse River, Verdun, and through the Argonne forest. It performed admirably during the war and Division's colors were posted at Camp Gordon between the wars.

In 1939, the Division was reactivated at Fort McClellan, Alabama, and for two years participated in spring maneuvers there. In 1941, the division moved to Fort Custer, Michigan and received its first drafted soldiers.

In late summer of 1942 as the remainder of the division deployed for maneuvers in Louisiana, the 10th Combat Team, consisting of the 10th Infantry Regiment and the 46th Field Artillery Battalion, was dispatched to garrison Iceland. Nicknamed Task Force Indigo, the 10th Combat Team was joined by the remainder of the "Red Diamond" division in the early spring of 1942. Duty in Iceland was not pleasant as the soldiers had to work as laborers on the air base being constructed there during the day and man cold, lonely outposts at night. Furthermore, throughout its long eighteen months of occupation of Iceland, the division was scattered throughout the country.

In July 1943, Major General Stafford LeRoy Irwin became the division commander, and the Fifth Infantry Division moved to Tidsworth Garrison in England, where it began training for combat. Although the division had not participated in the D-Day landings on 6 June 1944, it did cross Utah beach on 14 July 1944, and from then on, the division was virtually in continuous combat until V-E Day. During the war, the division would receive over 30,000 replacements, and in effect, be reconstituted several times over.

The Fifth Infantry Division was initially under the tactical command of the First US Army. Its initial fighting shadowed the areas that it had bivouacked in during World War I. On 3 August, the "Red Diamond" division

was assigned to Patton's Third Army. The division continued its move over the same terrain it had fought over as part of the AEF. However, this time when the division passed through the Argonne forest, not a shot was fired at it. On 1 September when the logistics situation stopped the Third Army, the Fifth Infantry Division only had a total of 2,000 gallons of gasoline in the entire division.

The US TO&E infantry division in World War II was designed to be lean and streamlined. This structure was the result of General Lesley J. McNair's (Army Ground Forces Commander) personal philosophy on tactical organization. McNair's overriding guideline was to concentrate a maximum of men and equipment in offensive striking units capable of destroying the enemy's capacity for resistance. He attempted to do this by minimizing the number of noncombat soldiers, holding down nontactical overhead, and by making tactical staffs small and efficient. Headquarters companies, staffs, and administrative personnel were kept small by eliminating unnecessary links in the chain of command and by reducing paperwork. Combat units were streamlined for quick, decisive action. They consisted of only those personnel and equipment that they required at all times. Other assets were held in a reserve pool under higher headquarters. These pools were intended to maximize the use of these assets by preventing idleness and allow rapid massing for concentrated use. Transportation and special equipment of all kinds was usually pooled. As a result of McNair's ideas, the infantry divisions had been restructured in 1942 from the old square divisions of 22,000 men to a triangular division of about 15,000 men. By 1943, the strength of the infantry divisions had decreased to an authorized level of 14,253. The division had three infantry regiments, a field artillery brigade, and auxiliary units (reconnaissance troop, engineer battalion, etc.). The principle individual weapons were the 30 caliber rifle and the 30 caliber automatic machine gun. Mortars and 105-mm howitzers provided indirect fire while 57-mm antitank guns and antitank rocket launchers were designated to counter the armor threat. Tanks were attached as needed.

The Fifth Infantry Division for its mission to seize Metz was augmented by assets from the reserve pool. Attached to the division were the 818th Tank Destroyer Battalion (self-propelled), the 735th Tank Battalion (medium), the 449th Antiaircraft Artillery Automatic Weapons Battalion, Troop C of the 3d Cavalry Reconnaissance Squadron, and the 84th Chemical (smoke generator) Company.

The three infantry regiments in the Red Diamond Division were the 2d Infantry, the 11th Infantry, and the 10th Infantry. The division had established a reputation for river crossings. As it approached the Moselle, the division had already crossed the Maine, Essonne, Loing, Yonne, Marne, and the Meuse rivers.

The command structure of the XX Corps was a mixture of Regular Army and reservists. General Walton H. Walker was a West Point graduate who had commanded a machine gun battalion in World War I and had earned a reputation for his armored training in 1941. The 90th Infantry was commanded by BG McClain who was a National Guard officer. The 90th Infantry was a reserve division. The Fifth Infantry Division was commanded by Major General Stafford LeRoy Irwin, a West Point graduate. Before assuming command of the division, General Irwin had been an artillery commander. The Seventh Armored Division was commanded by Major General Lindsay McD. Silvester. General Silvester was not a graduate of West Point, but had been commissioned a Regular Army officer in 1911.

This, in essence, was the composition and personalities of the opposing forces in early September 1944. Soon the word would be passed from Third Army to the corps to resume the advance.

II. THE AREA OF OPERATIONS

The terrain west of the Moselle River south of Metz is open and rolling, dominated by thickly wooded bluffs that parallel the river on the west bank. Those bluffs range from 5 to 8 kilometers wide and control access to the river valley. On the river side, the bluffs are high, rugged and wooded. They are grooved by deeply incised ravines and innumerable shallow draws.

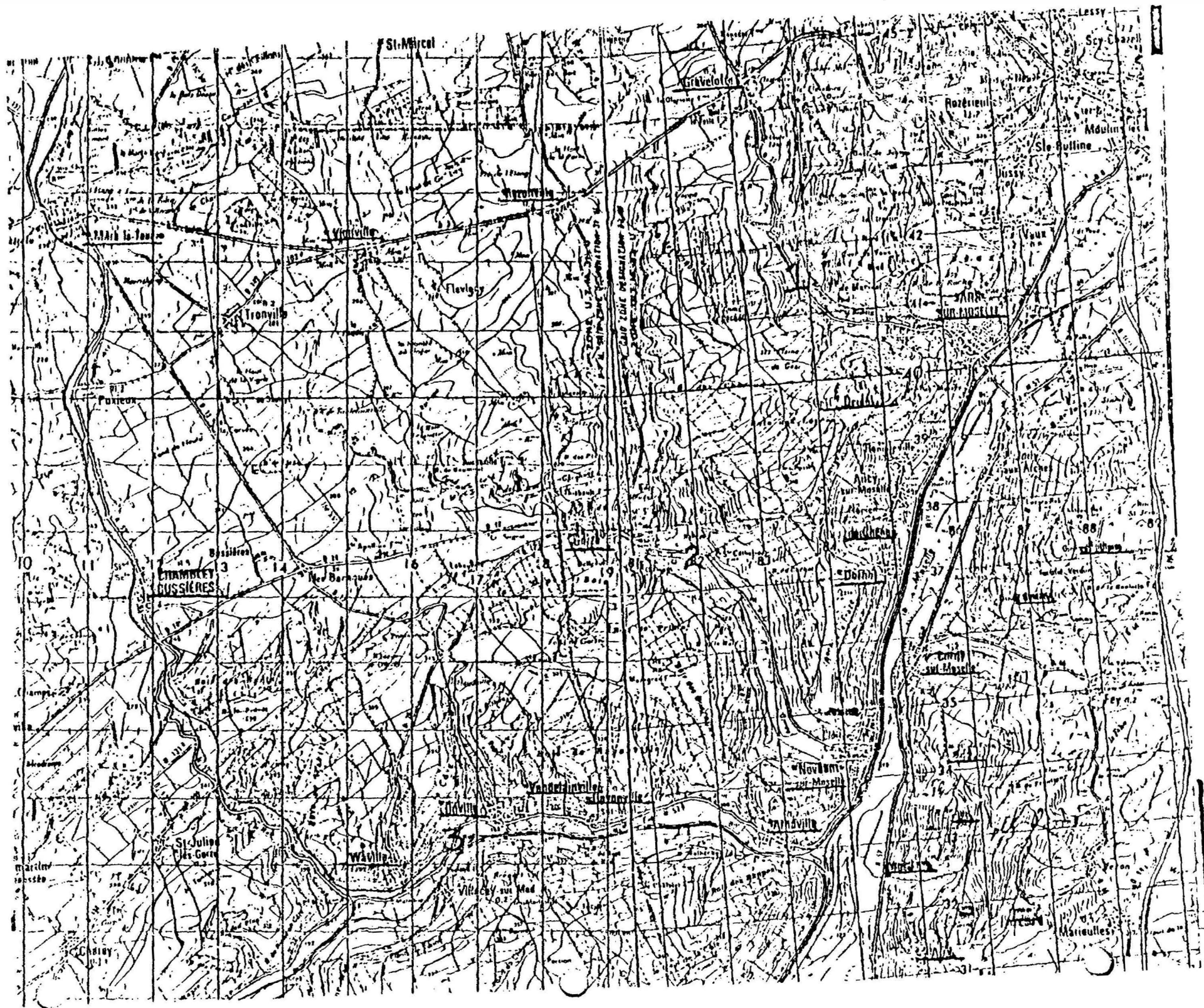
The cities of Metz in the north and Pont-A-Mousson (20 KM south of Metz on the river) are the largest in the area. Located on the rolling terrain west of the Moselle River are the towns of Mars-la-Tour and Chambley-Bussieres. Along the river on both banks are many small towns. Because of the ruggedness of the terrain these towns are obstacles to any movement, particularly heavy military movement.

In the area south of Metz there are three avenues of approach to the river. Each approach is via a narrow defile through thickly wooded terrain. The narrow roads in the defiles are dominated by the wooded heights on either side.

The northernmost access to the river originates from the city of Mars-la-Tour through the cities of Vionville, Rezonville and Gravelotte. From Gravelotte the access to the river at Ars-Sur-Moselle is through a deep, treacherous draw. The difficulty of the terrain to the south of Ars-Sur-Moselle isolates this crossing from others located farther to the south. This approach could not be used for any more than a supporting attack.

The center defile is accessed from the city of Mars-la-Tour to Chambley-Bussieres to Gorze. The town of Gorze constricts all movement toward the river and does not allow two-way movement of vehicles. This defile is more open than the defile to the north and allows access to the river at either Dornot or Noveant-Sur-Moselle. To reach Dornot the attacker must leave the main road (which leads to Noveant southeast of Dornot) and take a secondary road through a forested area and then down a relatively steep slope.

The southern defile parallels a tributary of the Moselle, the Rupt-de-Mad. Again the avenue of approach begins at Mars-la-Tour, Chambley-Bussieres and then southeast to the town of Waville. Following the Rupt-de-Mad east the river is reached at the town of Arnaville. The road to Arnaville is constricted between the stream and the forested area that rises sharply along the north side of the road.



In summary, then, the terrain west of the Moselle River gives considerable advantage to the defender. Long, open slopes provide a natural glacis in front of the defender. Wooded crests and ravines screen movement of troops and supplies from the eyes of the attacker. Broken terrain permits the use of small defending groups. Ravines, draws and thick wood lots offered ample opportunity for counterattack tactics both in force and in patrol strength. The approaches to the river are difficult and vehicular traffic is severely restricted.

On the west bank of the river the dominating feature is the defensive structure of Fort Driant. Located to the south of the northern defile west of Ars-Sur-Moselle, positions in Fort Driant are able to observe and bring fire on all of the potential crossing sites over the Moselle River as far south as Arnaville. Fort Driant was designed primarily to defend the southwest approaches to Metz. To that end the fort is sited on the highest west bank terrain feature in the vicinity and its batteries dominate the Moselle Valley.

The Moselle River, south of Metz, averages 100 yards in width with a depth of 6 to 8 feet. The river has a "relatively high" rate of flow, considerably higher than most other rivers in France. A railroad parallels the river on the west bank while the main highway to Metz runs parallel to the river on the east bank. Both are embanked.

At the village of Dornot the river is 90 yards wide with a 6 to 7 foot depth. To ease movement over the railroad paralleling the river on the west bank there is an underpass for one-way vehicular traffic as well as a crosswalk for foot movement. Between the village and the river there is a flood plain of about 200 yards that must be crossed before reaching the water. After crossing the river, there is a stretch of 400 yards of flatland almost devoid of any cover before ascending the hills on the east bank. The only cover available is a small patch of woods (approximately 300 meters by 1,000 meters) across the river and northeast of Dornot between the river and the highway.

The village of Dornot, the roads leading into and around Dornot, and all of the surrounding hills to the crest are visible from the high terrain on the east bank of the river. Fort St. Blaise and Fort Sommy are situated about 2,000 meters east of the river on the hills which begin to rise a few hundred yards beyond the river.

Fort St. Blaise and Fort Sommy are situated about 500 meters apart and were embedded and camouflaged positions. Fort St. Blaise sits atop a steep sloped hill covered with occasional patches of trees, vineyards and irregularly spaced fruit trees. The Fort itself is a huge domed structure consisting of three large concrete casements covered by grassy earth which provided excellent camouflage and additional protection. The structure was surrounded by five double-apron barbed wire obstacles and a dry moat 30 feet wide and 15 feet deep.

Farther south in the vicinity of Arnaville and Noveant the Moselle River is 80 yards wide with the same swift current. The two defiles that access the river at Noveant and Arnaville are extremely narrow at the river. There are three hills on the west bank that are very steep sloped and command the crossing sites below. They do not, however, allow the attacking force the opportunity to move freely on the west bank as traffic will be congested moving through the narrow ravines between them. Additionally, the hills on the west bank cannot dominate the east bank because of the superior height of the terrain on the east bank.

At Arnaville three different bodies of water are involved. There is the Moselle River, the Rupt-de-Mad tributary referred to earlier and the Moselle Canal. The canal is deep and about 80 feet wide. The canal can be crossed by infantry on foot on a lock in the canal. The tributary flows under the canal and then into the river. Additionally, 200 yards of open, marshy land extend between the canal and river and must be bridged as well. Complicating any bridging activity is the fact that the Moselle is too low during this time of year to float a heavy pontoon bridge and yet too deep to ford vehicular traffic. This problem was eventually solved with the destruction of a dam downstream that reduced the water level enough to cross tanks. There is a small island in the river opposite the town of Noveant but the far bank is too steep to make the island of any use.

Once across the river east of Arnaville, there is a stretch of some 500 yards of open, marsh flatland that has to be crossed before reaching the north-south highway. All of the trails through this flatland lead to the Voisage Farm. From the Voisage Farm the terrain rises abruptly to the dominating east bank hills. These hills are an extension of the ridgeline that includes Fort Blaise and Fort Sommy to the north. From north to south, Hills 325, 370 and 385 form an imposing wall to anyone attacking across the Moselle River at Arnaville. Hill 325 is a bare knob that is exposed to both observation and fire from Fort Blaise and Fort Sommy as well as Fort Driant, some 6,000 meters north. The crest of the ridgeline is approximately 1,000 meters from the river. Another 1,000 meters to the east is Hill 396 which dominates the entire ridgeline to its front.

The only towns of significance on the east bank in the vicinity of the Arnaville bridgehead are Corny-Sur-Moselle which is directly on the river and 1,000 meters northwest of Hill 325 and the town of Arry at the end of the ridgeline in the south.

The terrain on the east bank gives the defending force a decided advantage. From positions at Forts Driant, St. Blaise, Sommy and Hills 385 and 396, the defending force has almost unlimited observation of the attacker's positions and movements. From Fort Driant the defender has unlimited observation of the full length of the Moselle River Valley as far south as Arnaville. The only area not visible from Fort Driant are the two southern defiles: Gorze to Noveant and Waville to Arnaville. Forts Blaise

and Sommy provide an even better view of the Moselle River with the additional capability to observe all movement in and around Dornot and Noveant. Positions in the commanding heights on the east bank of the river, specifically Hills 385 and 396, provide the observer the opportunity to witness all movement east through the defiles leading to Arnaville and Noveant. In sum, control of the east bank or the capability to obscure movement along the river is critical to the success of any operation in the Moselle River Valley south of Metz.

The weather during September is generally overcast and uncomfortably cold, particularly for the soldiers confined to foxholes or waiting orders to move. The prevailing winds in the area south of Metz are from the west at a "low velocity." This favors the use of smoke by the 5th ID. Heavy rain on 8 September and again on the nights of 12-13 September turned the ground into a morass of mud. This was particularly true of the Gorze defile where the narrow and precipitous road became slippery and treacherous. The mud created was sufficient to mire the tanks east of Arnaville attempting to expand that tenuous bridgehead on 13 September. Although fog in the river valley must have been a typical early morning occurrence, the fog on 15 September was extremely dense and reduced visibility to 10 feet to 15 feet, making the attack that day very difficult. Visibility was clear enough, however, to allow air support on at least 10 and 11 September.

III. COMPARISON OF OPPOSING FORCES

A. Strength and Composition

The following are the order of battle of the relevant opposing forces involved in the MOSELLE river crossings:

1. United States:

5th Infantry Division:

- 2d Regimental Combat Team (att to 7th Armd Div)

 - 2d Infantry Regiment

 - 50th Field Artillery Battalion (105-mm How)

 - Company A, 7th Engineer Combat Battalion

 - Company A, 5th Medical Battalion

- 10th Regimental Combat Team

 - 10th Infantry Regiment

 - 46th Field Artillery Battalion (105-mm How)

 - Company B, 7th Engineer Combat Battalion

 - Company B, 5th Medical Battalion

- 11th Regimental Combat Team

 - 11th Infantry Regiment

 - 19th Field Artillery Battalion (105-mm How)

 - Company C, 7th Engineer Combat Battalion

 - Company C, 5th Medical Battalion

- CCB 7th Armored Division (att 091015 Sept 1944)

 - 31st Tank Battalion (Medium)

 - 23d Armored Infantry Battalion

 - 434th Armored Field Artillery Battalion (155-mm SP)

 - Company B, 814th Tank Destroyer Battalion (SP)

5th Division Artillery

 - 21st Field Artillery Battalion (105-mm)

- 3d Cavalry Squadron (att 12 Sept 1944) (det 14 Sept 1944)

 - Troop C 3d Cavalry Squadron (att 071030 Sept 1944) (det

 - Troop B 3d Cavalry Squadron (?????????? 1944)

1103d Engineer Combat Group

 - 150th Engineer Combat Battalion

 - 160th Engineer Combat Battalion

 - 204th Engineer Combat Battalion

 - 551st Engineer Heavy Pontoon Battalion

 - 989th Engineer Treadway Bridge Company

 - 537th Engineer Light Pontoon Company

 - 623d Engineer Light Equipment Company

 - 84th Chemical (Smoke Generator) Company

 - Troop C, 3d Cavalry Reconnaissance Squadron

284th Field Artillery Battalion (105-mm How)
449th Antiaircraft Artillery Automatic Weapons Battalion
818th Tank Destroyer Battalion (SP)
735th Tank Battalion (Medium)

In support of 5th Infantry Division:

Headquarters, XX Corps Artillery

5th Field Artillery Group
695th FA Bn (105-mm How, SP)
558th FA Bn (155 Gun, SP)
274th FA Bn (105-mm How, SP)

284th Field Artillery Group
177th FA Bn (155-mm How)
773 FA Bn (4.2 inch Gun)
943 FA Bn (155-mm How)

83d Field Artillery Brigade
203d Field Artillery Group
739th FA Bn (8 in How)
989th FA Bn (8 in How)
999th FA Bn (8 in How)
270th FA Bn (240-mm How)
277th FA Bn (240-mm How)

2. Germany:

a. 2-12 September:

47 Pz Corps consisting of:
559 Infantry Division (V.G.)
17th SS Pz Gren Division
Division No. 462
3d Oz Gren Division
553 Infantry Division (V.G.)
21 Pz Division
9 Pz Division
106 Pz Brigade

b. From 13 September:

13 SS Corps consisting of:
Division No. 462
17th SS Pz Gren Division
3d Pz Division
553 Infantry Division (V.G.)
559 Infantry Division (V.G.)
106 Pz Brigade

The question of strength with respect to the German forces is difficult to pin down. By late August 1944, the Germans had been pushed back from the English Channel with great losses. Not only were whole formations chewed up by the Allied advance, but massive quantities of tanks and artillery were lost. German policy (Hitler's directive) dictated that units destroyed in combat would not be removed from their order of battle. Rather, they would continue to be manned, albeit at a reduced level, and filled when (if) replacements were available. Consequently, any specific listing of German formations would include units from 10 percent to 80- 90 percent effective.

A review of the Supreme Headquarters Allied Powers Europe (SHAPE) weekly intelligence summaries for this period (Aug--Oct 1944) shows the skeptical attitude the Allies had toward German force projections. In fact, the SHAPE G-2 gave the Germans credit for less than 50 percent of the fighting strength the unit identifiers would convey. Therefore, although the order of battle would indicate that the German 13 SS Corps was twice the size of the U.S. XX Corps, it was, in fact, inferior in many respects. The detail of this will be explained when the unit compositions are reviewed.

Surprisingly little intelligence information regarding German strength and disposition was available to the XX Corps. American knowledge about the Germans disposed along the MOSELLE was based on sketchy cavalry reports describing the German defenses as scattered and confused. During the last days of August, the German 1st Army had pulled back behind the MEUSE with forces shattered and in disarray. Despite reinforcements in the form of elements of the 3d and 5th Panzer Grenadier divisions, withdrawn from Italy in time to be employed in the VERDUN-COMMERCEY area, the 1st Army suffered significant personnel and equipment losses as it retreated from the MEUSE to the MOSELLE.

The optimistic report of Germans retreating in disarray change complexion from late August to early September. Based on cavalry reports from late August, the XX Corps G-2 reported: "There is every indication of enemy withdrawal". As the days passed, enemy resistance began to stiffen around METZ, prisoners became fewer and more arrogant, and the cavalry patrols were less effective in gaining local penetrations for combat information. By 5 September, it became apparent that a strong, close-in defense system was being prepared west of METZ and German formations west of and along the MOSELLE appeared intent on making a stand.

In early September, as the Germans were preparing their defense of the MOSELLE and METZ, a highly fluid situation existed among their units. As withdrawing and retreating formations arrived at the MOSELLE, they were often absorbed into existing units for immediate control purposes, being later rejoined with their parent units. In addition, reinforcing units were arriving from the east and were being placed into the line as required by 1st Army headquarters. A review of the SHAPE weekly intel summaries for the period 26 August through 6 October reveals that the German 1st Army changed

composition by losing LXXXII Corps around 10 September, and gaining XIII Panzer Corps in its place. (LXXX Corps and XLVII Corps were the other assigned units of 1st Army). Within these two Corps many units remained unchanged, and therefore, XIII SS Panzer Corps was an SS Corps in name only. The precise reason for changing Corps headquarters was unknown. Nonetheless it was these two Corps which fought the U.S. XX Corps from 1 September through October 1944.

On 6 September 1944, the day the new U.S. offensive was to begin, the XX Corps G-2 prepared an intelligence estimate which enumerated the enemy forces he expected the Corps would encounter. It is interesting to note that after many days of relative inactivity caused by the fuel shortage, and fresh aerial photographs to analyze, he was unable to accurately portray the true enemy situation or intention.

In attempting to accurately describe the precise German situation, one is encumbered with the sketchy and often contradictory information retained by an army under pressure in a withdrawal situation. The following description of the disposition, composition and relative strength of the LXXXII Corps must be reviewed in that light.

Between LONGUYON and THIONVILLE (approximate location of XX Corps northern boundary), and west of the MOSELLE was the depleted 48th division consisting of three badly beaten infantry regiments, the 126th, 127th and 128th. This unit had suffered in the retreat from the CHARTRES area during the later part of August, losing much of its artillery and heavy weaponry. The LXXXII Corps expected to relieve this division as soon as fresh troops could be obtained. To the southwest of THIONVILLE was the 559th V.G. division. It consisted of the 1125th, 1126th and 1127th regiments. This unit was one of the new Volks Grenadier divisions created by Hitler to replace formations which had been destroyed during the early summer of 1944. By the night of 5 September, two of its regiments were in the line. Activated in late July, 1944, this unit was filled with young soldiers with little unit training, although it was officered by experienced young veterans from the Russian front. Farther south, to the left of the 559th V.G. division was division number 462. The "school division" was in reality a collection of various school and fortress troops under a division staff composed of the staff and faculty of the military schools in METZ. It lacked the service units and heavy weapons normally organic to a German infantry division. Division No. 462 consisted of the 1215th, 1216th and 1217th newly formed regiments. This division's unique composition and employment in the battle of METZ will be discussed at length in the analysis of German doctrine and training. To the left of Division No. 462 and west of METZ was the 17th SS Panzer Grenadier division. This unit occupied a security zone west of the city and consisted of the 37th and 38th regiments as well as elements of the 49th and 51st SS Panzer Grenadier Brigades which had been absorbed into the division in late August as reinforcements from Denmark. The 17th Division was to reorganize with these additional

brigades, move to the southeast of METZ and become part of OB West's reserve. However, this was not completed prior to the XX Corps offensive and some units became involved in the initial fight. To the south of METZ was the 3d Panzer Grenadier division. This unit was charged with protecting the southern flank of the city. Early in the battle for METZ, this division moved to engage the XII U.S. Corps.

The only armored reserve available to the 1st Army was the untried 106th Panzer brigade, which began assembling in the vicinity of Luxembourg in late August. These Panzer brigades were formed in various sectors in an effort to retain parts of formations which had been defeated in earlier fighting. They typically consisted of a motorized infantry battalion, and armored battalion with 33 Panthers and 11 assault guns, and an engineer company and headquarters and service company.

The German LXXXII Corps facing the U.S. XX Corps was an impressive listing of units at first glance. On closer inspection, this comparison revealed the shallowness of the German Corps. The 48th division had been defeated and demoralized by the American advance in August. The 559 U.S. division was incomplete and untried in serious combat. The 17th SS Pz division was battle weary, missing most of its tanks and artillery, and required refitting. The 462 division, although manned by professionals with spirit, was untried and seriously lacking equipment and support. The 106th Pz Bde, although manned by veterans, was a small force for a reserve. Finally, the Corps troops were a collection of various school and service units from METZ as well as various other heterogeneous units and individuals salvaged from the retreat from the MEUSE.

Although it appears that about four and one half divisions opposed the U.S. XX Corps, reality was something different. The German commanders had worked hard to regain control over stragglers and refugees, collect combat serviceable equipment and reinforce Festung METZ as per Hitler's order. Nonetheless, the forces arrayed oppositely the U.S. XX Corps were a conglomeration of various battalions, detached regiments and understrength divisions. Complicating this fact was the various level of training and experience and serious shortages of heavy weapons and combat vehicles.

The U.S. XX Corps G-2 estimate on 6 September also included the 9th and 21st Panzer divisions in the defense of METZ. In fact, these two formations had been committed in other sectors. In addition, he expected the 15th PzG division to be present since elements of that unit had participated in the delay west of the MEUSE. It had been dispatched from the LXXX Corps, and was not in the area. The G-2's final estimate of opposing forces included these formations, and therefore seems unusually large. He expected a maximum of 38,500 enemy troops, and about 160 tanks and assault guns. Although an accurate account is impossible because of the poor unit records, we can estimate the strength of the Germans at about 16,000 troops with approximately 80 tanks and field guns (exclusive of fortress artillery).

Refining our focus to the 5th Infantry Division which conducted the principal fight for the MOSELLE, we see a formation of three infantry regiments and various special support troops. The teeth of the 5th Infantry Division was provided by its three infantry regiments. Although one regiment was cross attached to the 7th Armored Division for one combat command, it was organized in a similar fashion to the two regiments directly involved in the river crossing operations. Each regiment was subdivided into three battalions, each with four rifle companies and one heavy weapons company. At regimental level, there were also attached special troops-artillery, engineers and tanks, making up a regimental combat team, an integrated combined arms organization.

The Armored Division organization provided for three combat commands, each commanded by a brigadier general or full colonel. Each combat command was a fully mobile combined arms organization, consisting of one medium tanks battalion, one armored infantry battalion, and armored field artillery battalion equipped with 105-mm howitzers, and one armored engineer company. Additional resources were task organized into the combat commands from either divisional, or corps level resources as the situation dictated.

In a direct strength comparison, the American force of the 5th ID and 7th Armored Division clearly outnumbered the German defender. The task organized 5th ID numbered near 12,000 men in three RCTs and supporting troops. The 7th AD numbered near 9,000 in its three combat commands and it too had supporting formations. In addition, elements of three engineer battalions supported the bridging operation and upwards of 13 field artillery battalions from Corps artillery provided fire support. The force with the greatest empirical combat strength was the American. As was stated earlier, an analysis of the German order of battle would give them the advantage, but their forces were understrength and poorly equipped. We must conclude that the Americans held a strength advantage.

The German infantry division of 1944, of which Division Number 462 was modeled, had a paper strength of 12,744 men, divided into three infantry regiments of 1,987 men each, an artillery regiment of 2,013 men servicing 33 105-mm howitzers, and 9 15-mm howitzers. Additionally, the division was authorized a reconnaissance battalion with 708 men, an antitank battalion of 494 men equipped with 22 75-mm antitank guns, an engineer battalion of 620 men, and signal battalion of 379 men, and a divisional trains with 2,390 men. The divisions full authorization of horses was 3,979. Division No. 462 did not have much of this organization available in the fighting at METZ.

The German Volks Grenadier type infantry divisions were made up of old men, local recruits and troops convalescing from wounds received on the eastern front. Consequently, their capabilities varied greatly. The paper strength of the V.G. divisions, of which the 559 V.G. and 559 V.G. divisions were organized included a total strength of 10,000 men and 3,002 horses and

426 motor transport vehicles. The divisional organization and subordination paralleled the standard infantry division, with significantly reduced manning in the combat support and combat service support units. The infantry strength of the V.G. division was 4,700 as compared to the 5,500 authorized in the standard infantry division.

The Panzer division, here describing the paper organizations of the 3Pz, 9Pz, and 21Pz division, consisted of a tank regiment authorized 2,006 men, an armored infantry regiment authorized 2,287 men, and an infantry regiment authorized 2,006 men. Supporting troops in this division consisted of 1,451 men organized into an artillery regiment equipped with 54 105-mm howitzers, a reconnaissance battalion of 945 men, an antitank battalion consisting of 475 men equipped with 13 75-mm antitank guns, a signal battalion of 463 men, a separate tank battalion of 875 men, a combination antitank air defense battalion authorized 635 men, and a divisional trains of 2,952 men. Total authorizations included 14,727 men and 2,427 trucks. Tanks shall be discussed under comparative technologies of the opposing forces.

The 17th Panzer Grenadier Division was organized with an authorization for a total of 14,738 men, equipped with 2,746 trucks. The division was organized into two infantry regiments of 3,107 men each, an armored artillery battalion of 602 men equipped with 20 105-mm howitzers, an artillery regiment of 1,580 men and 41 105-mm howitzers, a reconnaissance battalion of 1,005 men, an antitank battalion of 475 men servicing 19 75-mm antitank guns, a signal battalion of 427 troops, an engineer battalion of 835 men, and an antitank air defense battalion of 607 men equipped with 76 20-mm antiaircraft guns.

Certain advantages were with the Germans. First, the advantage of the defender, especially in a built-up, fortified area. Secondly, the American intelligence did not expect the Germans would make a stand on the MOSELLE, but rather would retire to the prepared positions along the west wall on the German frontier. Thirdly, the local German commanders were empowered to call up the civilian population for the construction of defensive works and reconditioning old fortifications. Therefore, a number of factors mitigated the obvious German weakness in numbers alone. The Americans were in for a fight.

B. Technology.

The technology issues of the MOSELLE river crossing is extremely interesting. The American forces were equipped with highly mobile tanks, self-propelled artillery weapons, extremely effective tactical air forces, and a reasonably effective bridging capability. The Germans, on the other hand, occupied the city of METZ, (later known to the Americans as fortress Metz). As in all aspects of German activity in METZ, the record of their use of the already existing fortification poses problems because of the lack of reliable sources. Between the wars, the forts had been allowed to

decay. Those on the east bank had been largely disarmed, while those on the west bank had been used as command posts, stores, and barracks. When the Germans took over in 1940, they made use of some of the works to house underground factories, as well as stripping much portable equipment for use in the Atlantic Wall. An American legend often repeated in postwar unit histories was that the Germans had worked feverishly on the forts between 1940 and 1944. This is simply not true. Germany was a conquering nation and was not interested in spending money on outdated defenses in the interior of its territory.

In September 1944, German views on the value of the fortifications differed. Prior to this, on 24 August, within the framework of the general orders concerning the building of defensive positions in the west, Hitler had ordered that "in the fortress Metz-Thionville. . . the existing defenses are to be reconditioned and those not used are to be demolished." However, there was neither time nor material and personnel available for anything to be done except on local initiative.

Standartenfuehrer Kemper states that it was possible to get one armored battery of four 100-mm turret guns into working order. Hermann Rochling, an industrialist based in Saarbrücken, came to METZ with a number of mechanics, who succeeded in repairing portions of the fortresses, including the ventilation systems, the ammunition hoists, and the lighting plants. The fortress telephone network was repaired and the ammunition, which was stored outside the forts in magazines, was brought in. It would seem that most of this was somewhat ancient, being either German or First World War Vintage, or French from about 1918.

General Krause says that the garrison engineer commander advised him that the METZ fortifications should "be dismantled, as military defense with these fortifications was impossible." However, he goes on to say that this information was partly unreliable, as a detachment from the Officer Candidate School found a battery at Fort Driant that could be made to fire. In addition, a few 150-mm howitzers were made usable at Fort Jean d'Arc. Sights for all the guns were missing, however, requiring that all fortress weapons be engaged by direct fire only.

Overall, then, during the crossing of the MOSELLE near METZ, there was a very significant difference in the technological level of the weaponry available to the combatants. The METZ fortresses were groups of fortifications grouped together into forts. This technique had been planned in 1897, and had been known as Feste Kaiser Wilhelm II, or 'Feste'. Fort Driant, which gave the 5th ID significant difficulty in the DORNOT bridgehead area was a 'Feste' type fortified group. These German designed fortifications were actually fortified areas of real estate, rather than fortresses of the middle-ages variety, and their design in the late 19th century was considered revolutionary, and considered to be a part of the doctrine of that era of preparing the battlefield for war during time of peace.

Close defense of a 'Feste' consisted of infantry trenches, shell-proof bunkers and guardrooms, and a number of observation posts. Long range defense was provided in the form of two types of armored artillery batteries. First, for attacking enemy infantry, and for distant bombardment, 100-mm guns were mounted individually in rotating turrets with all-around fire capability. Second, for conducting counterbattery operations, and dispersing attacking infantry, 150-mm howitzers were mounted in similar rotating turrets. The batteries were placed, where possible, in reverse slope areas, making their detection for counterbattery fire difficult. Each battery, whether 100 or 150 mm, had between two and four weapons, its own barracks, ammunition magazines, observation posts constructed of armored plate, and shaped like snails, positioned well forward for effective observation. All artillery batteries were connected to each other, as well as to the main fortifications by tunnels, which contained both telephone lines and speaking tubes for the communication of orders.

The turrets of the batteries were made in two parts, the turret itself, and the apron. The turrets were cast steel, sixteen cm thick, further lined with an additional four cm of mild steel. The aprons varied in thickness based on individual turrets, varying from twenty to thirty cm of steel.

The construction of the forts varied, based on the time in which each individual fort was actually built. The buildings were universally to take best advantage of natural camouflage, and are difficult to detect from the air. The pre-World War I building consist of interior vaults, with walls between four and six feet thick, supporting a roof of unreinforced concrete a minimum of ten feet thick. This concrete roof was then covered with a minimum of fifteen feet of earth fill. The post-World War I buildings consisted of reinforced, rather than unreinforced concrete.

The fortifications gave the German troops a significant morale boost considering the natural feeling of safety within a fortified area.

The 7th Armored Division was organized in a standard armored division TO&E, which was small in contrast to current standards. The division had three armored battalions, each battalion having one light tank company, equipped with sixteen ton Stuart tanks, and three medium tank companies, equipped with thirty-five ton Sherman tanks, giving the division an authorization of 263 tanks. The Stuart tanks were equipped with a 37-mm main gun, and two main tanks used by the Americans in this sector of operations, were equipped with a short tube 75-mm main gun, one .30 cal machine gun, and one .50 cal machine gun, served by a crew of five men. In addition to the three armored battalions, the 7th Armd Division had three armored infantry battalions, three armored artillery battalions equipped with 105-mm howitzers, and one tank destroyer battalion equipped with thirty-six 76-mm self-propelled guns capable of defeating German armor, but incapable of penetrating the METZ fortifications.

German produced equipment was technically superior to that of the Americans, but suffered from a lower rate of production and frequent changes in design. The Germans had the Mark IV and Mark V Panzer. These tanks were equipped with larger, higher velocity main guns, thicker armor, and better off-road trafficability in the mud than American tanks. The Mark IV weighed twenty-four tons, was equipped with a 75-mm long barreled main gun and two 7.92-mm machine guns. Frontal armor on this tank was 50-mm thick, protecting a crew of five men. The Mark V had the same crew size and weaponry, but the frontal armor of 120mm gave significant protection to a crew of five men.

The American tanks, equipped with rubber road blocks, allowed for a greater range of track life than the German tanks, which were equipped with plain steel track block. The American tanks also had the advantage of having power driven turrets as opposed to the hand cranks being used on the German tanks.

C. Logistical and Administrative Systems.

On 1 September 1944, U.S. Third Army ran out of fuel. Patton's staff had anticipated this problem, and in the final analysis, little could be done to rectify the situation. Decisions at SHAPE HQ governed the allocation of fuel, probably the most critical resource, between Bradley's 12th Army Group and Montgomery's 21st Army Group. Certainly a great dilemma for Eisenhower, the strategic controversy known as the "great argument" pitted Montgomery's continued advance in the north to seize ANTWERP and the V-weapon bases in Pas de Calais versus Patton's desire to race east to cross the Rhine and seize the industrial Saarland. These factors set the stage for our discussion of logistics, which definitely affected the events leading to the Moselle River crossing.

At this stage in the fighting in Europe, the supply and transportation officers determined the extent of operations to a greater degree than the commanding generals. The modern American army in World War II was equipped with a great variety of mechanized and motorized vehicles, and complex weapons. Besides repair parts, fuel and ammunition to support these, significantly more support troops were required. The bulk of these requirements had to be shipped across the Atlantic. By the end of August, most American supplies were still being landed on the "mulberry" floating docks at the Normandy beaches, and being trucked to the front lines. This was for some forty Allied divisions, and myriad headquarters, hospitals and other special units, a monumental task.

The reality of the supply situation was that there were ample supplies ashore, but woefully inadequate transportation to move them forward. The Allies had never expected to be as successful with the landings and the attack across France, and hence had only planned on reaching the SEINE by summer's end. The transportation problem was exacerbated by the fact that

the allied air forces had smashed most of the rail network during the summer months, and now the Allies needed these rail lines to support their continued advance. Without adequate railways, the only way to bring up supplies was by road. Given this constraint, we see the birth of the "Red Ball Express," a truck convoy system running day and night on roads that were closed to all other traffic. It managed to ferry 7,000 tons daily into the forward dumps. The key limiting factor for the Red Ball Express was trucks. With an average round trip of three days, three trucks were needed in the system to deliver one daily load. Trucks were appropriated from almost every division to keep the express moving, which further complicated distribution in the forward areas.

For a short time, in late August, the C-47s of Air Transport Command flew daily shuttles of supplies to the forward areas. This unfortunately, could only cope with half of the daily requirements. The air service was suspended by early September because of impending airborne operations to the north.

Fuel and ammunition were the key to the tonnage requirements. While the Germans were retreating during August, fuel was the bottom line. However, when their defense began to solidify, additional space was required for ammunition. In addition, with the onset of the cold weather, items such as blankets, warm clothing and boots had to be pushed forward. Another aspect of supply which has received little attention was the fact that the Third Army had been pushing men and equipment to the limit for the last sixty days, and repair parts were in high demand.

Overall command of the supply operation was charged to the Services of Supply (SOS) in the communications zone. It was commanded by General John Lee. There was no love lost between Patton and Lee. Despite the fact that Lee's command did what it could to keep everyone supplied, it was easy for Patton and his troops to castigate the rear area supply personnel when their tanks and trucks were out of gas.

The Third Army's G-4 was Colonel Walter Muller, who served in that capacity since 1941. He was well liked by Patton, who quietly condoned his superior abilities as a scrounger. Muller successfully juggled with captured stocks, which he "forgot" to report to higher headquarters, as well as issued supplies to keep the Third Army moving through August 1944. In that month, the average requirements for Third Army were 6,000 tons daily, of which approximately 1,500 tons were various forms of fuel and lubricants. Almost 400,000 gallons of fuel were required daily. As August waned, deliveries were routinely 100,000 gallons short daily, and on 30 August, deliveries dropped to 32,000 gallons. Without captured fuel stocks, the units of Third Army would never have crossed the MEUSE or reached the MOSELLE.

Although stalled by the fuel shortage, the XX(US) Corps was able to maintain some level of activity during the last days of August and early September. Active cavalry patrols probed the MOSELLE and METZ, and even captured an additional 4,000 gallons of fuel. Despite this effort, the bulk of the Corps was without gasoline for a continued advance and hence remained relatively immobile while stocking much needed supplies of other categories. Consequently, the supply situation in XX(US) Corps and its divisions was very good and getting better as the date for the offensive approached. The key was gasoline.

On 5 September, enough gasoline reached XX(US) Corps to permit General Walker to begin concentrating east of the MEUSE. The 5th, 7th AD and one RCTA from the 90th ID took up positions east of VERDUN. By the 6th of September, sufficient gasoline had been supplied to move the Corps Artillery and engineer bridge units east of the Meuse. That gasoline supply was at last available to support the advance.

D. Command, Control, and Communications Systems.

Differences in the command and control systems of the opposing forces must begin with a basic description of the systems from the highest levels. On the Allied front, General Dwight D. Eisenhower was the Supreme Allied Commander, with subordinate elements consisting of the 6th, 12th, and 21st Army Groups. Of interest here is the 12th Army Group, commanded by General Omar Bradley, whose responsibilities included First Army (Hodges) in the north, Third U.S. Army (Patton) in the south, and Ninth U.S. Army (Simpson), still conducting operations in Brittany. It has been said that allied command and control at the highest levels was not as responsive as it could have been. This could be attributable to two factors. First, Eisenhower's headquarters, which was located in Granville on the Normandy coast was too far from the front to be responsive. Second, Eisenhower believed in delegating as much responsibility as possible, and placed a great deal of trust in his subordinate commanders.

Command and control with Patton's Third Army was achieved along clear lines. Patton expected his subordinate Corps and division commanders to be aggressive, and to exercise independent judgement and tactical daring. He gave mission type orders, and held himself personally responsible for the acquisition of the necessary logistical resources for his subordinates to carry out those orders. As a result of these mission type orders, the fine detail necessary for execution of difficult operations, such as the MOSELLE crossing opposing the METZ fortifications, were often neglected.

Germany's centralization of all military control, to include direct placement decisions of division level formations in the hand of Hitler, was the antithesis of the Allied decentralization. Hitler used the facilities of his OKW (Oberkommando Wehrmacht), located in Berlin, to pass his decisions directly to divisional headquarters, or through the communications

facilities of Commander-in-Chief West von Rundstedt's and General Blaskowitz's Army Group G's headquarters. Hitler was in constant touch with the headquarters of his East and West commanders (Model and von Rundstedt, respectively) by teleprinter. However, because Hitler had to be personally involved in decisionmaking, and because he had to divide his efforts between two fronts, his responses to the maneuver commanders' requests were not timely. Hitler lacked the fundamental professional training and education of the military man and underestimated the enormous war potential of the western Allies.

Generally, German commanders lacked flexibility to make changes and were subject to court martial, relief and execution if they did so without first checking with Berlin. Orders were spelled out in great detail and subordinates had to follow them to the letter. They merely copied their operations orders from OKW orders without adding personal ideas, thereby displaying their lack of initiative. If they felt strongly enough about a decision, the commanders would leave their units and personally argue their case before Hitler in order to convince him their method was best.

Rapid changes of command of the German forces was also a detriment to the establishment of an effective fighting force. Rapid changes in the Commander-in-Chief West positions illustrates this. Von Rundstedt was succeeded by von Kluge on 2 July, replaced by Model on 17 August and again by von Rundstedt on 5 September. The XX Corps attacked on 6 September.

At the tactical level, each German divisional size organization was authorized a signal battalion, as opposed to the American signal company at division level. Not until the mid 1950s did the Americans place such emphasis on communications resulting in the authorization of a signal battalion within the division. The Germans had the capacity to execute more effective communication.

The study of the 5th Infantry Division's crossing of the MOSELLE provided lessons in how not to conduct a river crossing, as in the case of the DORNOT area, as well as a textbook how to conduct such an operation, as was demonstrated in ARNAVILLE. The failure and the success are directly attributable to the command, control, communications and intelligence methods used in the respective areas.

The original orders given to MG Leroy Irwin, the 5th ID commander verbally by GEN Walker, the XX Corps commander, was to "pin onto the tail of the 7th Armored division, and to cross the MOSELLE river." The original order to the 7th Armored Division was to cross the MOSELLE in advance of the infantry, in hopes of finding a bridge intact. MG Irwin did not fully understand as to whether his division was to establish its own bridgehead on the Corps right flank, or to pass through elements of the 7th Armd Div already engaged, but his two leading combat teams had already jumped off and made enemy contact on the 7th of September before he was able to get a definite decision from XX Corps.

The 7th Armd division troops were as surprised to see the 5th ID troops in DORNOT as the 5th ID troops were to see the 7th Armd. They neither had knowledge of where the other units were, or what their plans were. As a result of combined forces in the DORNOT area, significant confusion resulted due to the conflicting nature of the original orders given by GEN Walker to his division commanders, since the American force had come under significant enemy pressure, and no bridges were left intact across the MOSELLE. Control of the operation in the DORNOT area had to be worked out by way of agreement of the commanders on the ground. It appeared that the XX Corps staff felt that the MOSELLE was just simply one more river on the way to the RHINE, and that it should not pose a significant obstacle to the completion of the mission assigned under XX Corps OPORD 10, which was to get to the RHINE. As a result, planning for the river crossing of the MOSELLE did not effectively coordinate the required command and control, or the engineer resources to complete the crossing at DORNOT.

During the DORNOT operation, the 5th Infantry Division used radio, wire and messenger to communicate with the force in the bridgehead area. Communications were effective during the entire operation. At one time, up to eight wire lines were laid across the MOSELLE into the bridgehead area. These would be shelled frequently, and required aggressive policing of the lines to keep the lines in working condition. On several occasions, wiremen became casualties while performing their communications mission. On one occasion, all eight lines were broken due to artillery fire. Radios were used with great success as a primary means during the time no wire lines were intact across the river.

Through the first three days of the ARNAVILLE battle, the supporting field artillery and tank destroyers received firing data from the forward companies by both forward observer and infantry radios that were in direct communication with a radio set in position on top the 10th regimental command post in a schoolhouse in VANDELAINVILLE. An operator at the regimental radio set received a message, then relayed the firing data to the artillery command post of the 46th FA Bn (the direct support battalion for the regiment), which then forwarded firing data to all attached and supporting artillery as required.

E. Intelligence.

Both the Allies and the Axis had their strategic level intelligence networks and operatives. The most notorious of the period was the British ULTRA organization which used intercepted radio transmissions and the German secret code to provide detailed intelligence to Allied commanders. ULTRA information found its way down to the U.S. Third Army headquarters during this period but was available only to Patton and a select few senior aides. None of this information ever went directly to the corps or divisions. It is speculation whether ULTRA data was available for the Metz Assault.

At the operational level, corps and divisions, intelligence assets included higher level INTSUMS, POWs, captured documents, U.S. cavalry patrols and reports from the French freedom fighters and local population. Allied air reconnaissance also contributed.

American intelligence had estimated that the enemy would not stand on the Moselle, but instead withdraw to the defensive positions along the West Wall. In fact, the Americans believed these defenses to be much stronger than they actually were. The SHAEF INTSUM for 26 August 1944 paints a picture of very weak enemy capabilities. This attitude is typical of most intelligence estimates of that period. The cavalry had been probing a withdrawing, weakened enemy and through the last week in August as it reached toward the Moselle, had difficulty finding organized resistance. By 5 September 1944, the cavalry reports painted a picture of a more determined German defender apparently intent on defending the Moselle. Despite these changing indications the U.S. XX Corps' intelligence assessment did not assess the German's intention. The Corps G-2 had been able to identify most of the German LXXXII Corps order of battle prior to the U.S. offensive. This enumeration was inaccurate in that it overstated the true number of units defending the Metz area. Even less was known about the fortifications around Metz. Although abundant aerial photographs were available, they did little to help because of the masterful job of siting and camouflage the fort builders had done. The French intelligence and locals were of little help since they had not seen the fortifications since 1940 when they were captured by the Germans. Finally, by early September the German Security Forces were too strong for the U.S. cavalry to fight through. The Americans would learn about these defensive works under fire.

The Germans had no intention of permitting free passage across the Moselle. Hitler had ordered his western front commanders to stop Patton's Third Army and the Allied intelligence community was unaware of this edict.

Conversely, German intelligence expected the principle assault to be Patton's and their intention was to stop him with their First Army and counterattack his southern flank. The German intelligence depended on captured prisoners and documents which they skillfully used to ascertain American intentions. Because of the supremacy of the Allied air forces, the Germans had little or no aerial reconnaissance to assist them. Their ability to paint a detailed picture of the Allied formations was therefore limited, but their local, front line intelligence was adequate for defensive planning.

F. Doctrine and Training

The previous opposed river crossing operations conducted by the 5th and 7th divisions in the six weeks of combat in the pursuit across northern France followed a period of nearly two years of training. The divisions were capable, cohesive units, and had not suffered significant casualties in

their operations in France to date. The objective of the river crossing operation was to get across quickly and economically, then expand the bridgehead area to secure sufficient terrain to protect the rest of the command as it completed the crossing.

Usually, tank destroyers were employed on the near bank to provide direct long range fires in the bridgehead area to support the infantry on the far bank. Engineers would establish equipment parks well forward, and would directly regulate the transfer of all troops to the far bank, if the troops had to use boats, ferries or engineer supplied bridging equipment. When significant river crossing operations were contemplated, the engineer units would move well forward with the infantry to have the engineer equipment ready to conduct bridging operations.

The artillery was emplaced on the near bank, and all requests for fire and fire planning were processed by the direct support battalion of the regiment or combat command conducting the operation. This artillery battalion then had the responsibility to control all supporting fires in the bridgehead area. Although doctrinal communications were prescribed for processing artillery calls for fire, field expedients were often used utilizing any and all available communications means to great effect.

The 5th Infantry Division had been involved in essentially continuous combat since its participation in the hedgerow battles of the Normandy operation. In the subsequent drive across France as a part of Patton's 3d Army, the 5th ID became a very formidable fighting force, well versed in the use of combined arms to achieve division objectives. During the drive across France, the division had been noted in the American press as being a most capable force for conducting river crossing operations, having conducted contested crossing of the MAINE, ESSONE, LOING, SEINE, YONNE, MARNE AND MEUSE rivers prior to it's attempt to cross the MOSELLE.

The 7th Armored Division had been a companion Division of the 5th ID during the entire drive across France, and had conducted cross-attachment of a combat command with a 5th ID regimental combat team prior to the crossing of the MOSELLE. The 7th Armored had also conducted the same series of river crossings in conjunction with the 5th ID, resulting in a good level of training in operations with the 5th ID, and specifically, conduct of river crossing operations with the 5th ID.

The level of German training varied greatly. Replacement personnel were either injured veterans who were called back into service, young draftees with a minimal level of training, stragglers grouped into units after experiencing the defeat of their former units at the hands of the Allies, or student groups from the METZ military schools. In 1944, infantrymen received 12-14 weeks basic training, while armored personnel received 21 weeks. This contrasted with the regiment of lieutenants created from the

graduating class of the METZ officer candidate school. These lieutenants were primarily veterans of combat on the eastern front, having been recognized for valor prior to attending officers school.

The doctrine of the German forces stressed the Schwerpunkt, or point of main effort, as the main attack. This doctrine had one significant flaw in that it was useful for the control of troops in an offensive situation, but had significant limitations in controlling units on the defense. As a result, German tactics changed drastically during 1944, from offensive to defensive operations. Because of his comparatively weak forces and little equipment, Balck immediately opted for the mobile or the elastic defense concept. Imitating trench warfare of WWI, he kept his front almost entirely empty of troops. Thus, artillery attacks caused very little equipment and minimal personnel losses. If an armored or infantry assault followed, the forward German positions were overrun but the secondary line of defense would halt the enemy advance. The Germans would counterattack using a mobile force deployed just to the rear of the secondary line of defense.

The defense of the METZ area had been charged to Lieutenant General Walther Krause, with his command designated as Division No. 462. In early September, this unit was nothing more than a headquarters with a nominal staff, responsible for the various military schools and the training replacement units in the METZ area. They were engaged in such matters as the reorientation of convalescents and the care of wounded prior to discharge. The officers and NCOs of the division were either unfit or overage, and none of the units were in any way ready for combat.

By approximately 6 September, General Krause had managed to form a three regiment division, which consisted of the Officer Candidate Regiment, the 1010th Security Regiment, and the NCO School of Military District XII. The Officer Candidate Regiment (Fahnenjunker Regiment, sometimes referred to as the Kampfgruppe von Siegroth) was commanded by Colonel von Siegroth, and the unit was mainly composed of the cadets of an officer training school. Many of these cadets were veteran soldiers from the Russian front who had distinguished themselves, and been promoted from within the ranks. They numbered approximately 1,800, most of whom had been commissioned as lieutenants on passing their examination at the beginning of September. The regiment had been filled out with some 1,500 sundry troops who had been gathered from the retreating columns of broken units passing through METZ, giving the regiment a total combat strength of 3,300 experienced men. The 1010th Security Regiment, commanded by Lieutenant Colonel Richter, had retreated from France and consisted of two understrength battalions. The personnel were described as mostly overage and the combat efficiency was low, according to Gen Krause. The NCO School of Military District XII (Unterfuhrerschule) commanded by Colonel Wagner, was formed into a regiment of some 1,500 men who had been attending various courses. Krause rated their efficiency as high, although they had never before fought together as a combat unit.

G. Contitions and Morale.

In terms of condition and morale, everthing was in favor of the Allies, and in despair for the Germans. The Allies had conducted a very successful pursuit across northern France, inflicting significant casualties on the Germans. In the three months of combat on the western front prior to this operation, the Germans had suffered in excess of 500,000 casualties, and lost a great deal of equipment. The German forces weere demoralized, and felt they were fighting a lost cause. Many Germans surrendered to the Allies. The reverse was not true.

The previous six weeks of high speed pursuit had created infectious optimism in the American forces, which still existed after the halt in VERDUN when Patton's Third Army ran out of gas. This high state of morale, especially among the staffs caused a certain degree of carelessness, as evidenced by the complete lack of intelligence about the troop composition or fortifications in the METZ area.

Additional contributing factors to the advantage of morale possessed by the Americans was confidence in commanders, and small unit leaders down to noncommissioned officer level. NCOs kept tight, but effective control of their squad and sections, thereby minimizing problems, and contributing greatly to efficient operations. The NCOs also selflessly assumed command when their officers became disabled or killed, and often brought actions to successful conclusions by doing so.

H. Leadership.

Much has been written about the command and leadership characteristics and qualities of LTG George S. Patton, the commander of the U.S. Third Army. On the grand level his charisma was an important factor supporting the morale and drive of his front line soldiers. He was a difficult, often unreasonable task master to his subordinate commanders. A man of high standards, he focused on winning the war as rapidly as possible, preferably with the US. Third Army in the van.

By early September 1944, the XX(US) Corps, as part of the U.S. Third Army had pushed the Germans across northern France, conducting repeated river crossings and battles with a withdrawing force. None of the divisions of the corps had sustained inordinate casualties and hence, were manned by experienced troops. The corps, division, and regimental commanders had been able to develop an effective combat chain of command under good fighting conditions.

Their junior leaders and commanders had generally sufficient combat experience to compensate for inadequacies in their training. If it wasn't done "by the book," it still got done. The troops were high on success and

fully intended to follow Patton to Berlin and end the war. The U.S. XX Corps was a well-lead, experienced fighting organization, which by September 1944 was ready to continue pushing toward the Rhine.

The German circumstance was markedly different. Morale at the high levels in the German Army was suffering due to the attempted assassination of Hitler in July and the resultant tightening of his control. Many senior German commanders believed that Germany should sue for peace immediately. Complicating this state of affairs were the rapid fire changes in key command positions along the western front as well as the infusion of reserve formations from other theaters and newly formed, inexperienced formations from the homeland. The average German soldier who had lived through the fight through France was witnessing a young, inexperienced replacement coming up to reinforce him along the Moselle. It was clear to many that the tide had turned against the Fatherland.

Within the Metz area the leadership challenge was even more complicated. The city's defenses were manned by other than regular soldiers and led by officers who had been told to defend to the death. Most of the soldiers were either older men who had been taken from less tasking duties, or younger men who were students in the military schools. Some easily led, others not.

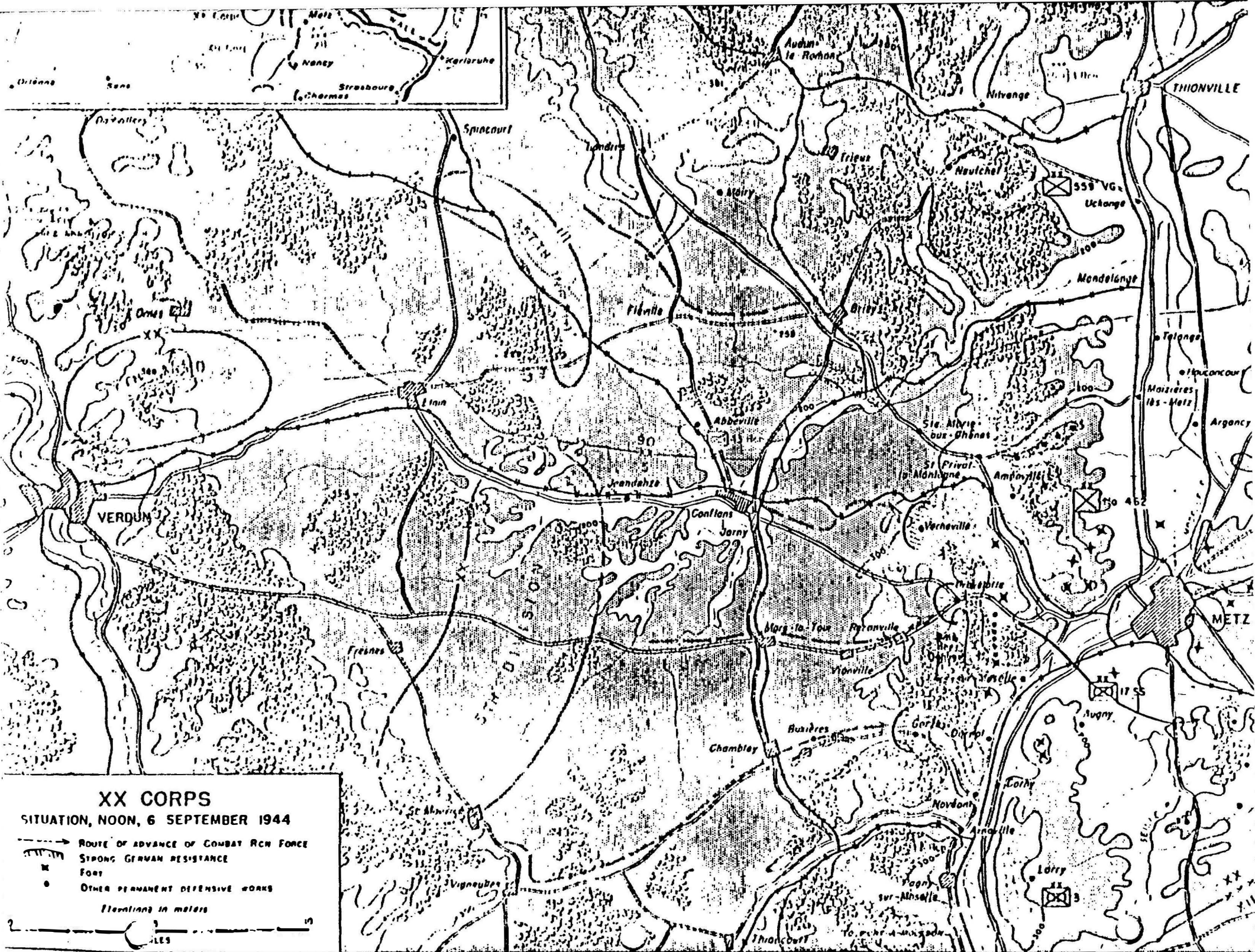
The nature of the battle fought along the Moselle reveals that the American units probably had a more flexible leadership structure which permitted and supported small unit leader initiative. From this perspective, it can be argued that the Americans possessed a leadership advantage. On the other hand, many of the Germans recognized that the fight would soon be for the homeland and that a good job at Metz might prevent that. Additionally, German tradition and example dictated that both soldiers and leaders do their jobs as directed.

IV. THE TACTICAL SITUATION

A. Advance to the Moselle

The crossing of the MOSELLE River by 10th and 11th Infantry Regiments, 5th Infantry Division, and Combat Command B, 7th Armored Division at DORNOT and ARNAVILLE, France began with the issuance of XX Corps Field Order #10. This plan directed seizure of crossings on the Somme River, about thirty miles east of the MOSELLE and, on order, continuation of the advance to MAINZ on the RHINE. Intermediate objectives of METZ and THIONVILLE were assigned to 5th Infantry Division and 90th Infantry Division, respectively. The mission of 7th Armored Division was to cross the MOSELLE River in advance of the infantry, possibly to find a bridge still intact. Maj. Gen. Walton H. Walker, XX Corps Commander, ordered that Field Order #10 was to be put into effect on 6 September at 1400. Seventh Armored Division planned to launch a strong combat reconnaissance force at 0300 followed by the Division's main effort pushing forward in two parallel columns. The combat recon force moved forward on time encountering little resistance until 1200 when it struck a strong outpost line along the FLEUVILLE-ABBEVILLE MARS-LA-TOUR road. Although this force was beaten back, some cavalry units had reached points along the MOSELLE to determine that no bridges existed.

7th Armored Division began moving at 1400 along the VERDUN-METZ highway with Combat Command A (in two parallel columns) on the left (north) and Combat Command B (same formation as CCA) on the right (south), and Combat Command R to the rear of CCB. CCA became involved in heavy action near STE. MARIE-AUX-CHENES which continued through the night and prevented CCA from reaching the MOSELLE until the next morning. CCA finally did reach the MOSELLE on the afternoon of 7 September in the vicinity of TALANGE, north of METZ, where it remained under intense shelling until relieved by elements of 90th Infantry Division on 15 September. To the south, CCB deployed forward with a two-column formation. Force I, in the north, consisted of Co A, 31st Tk Bn; 434th Armd FA Bn (less Btry C); 2d Plt, Co B, 814th TD Bn (SP); CCG HQs. attend Troops and trains. Initially, 23d Armd Inf Bn (less Co B) and Co B (less one plt), 33d Armd Eng Bn were supposed to be the main component of Force I but these units remained behind due to gasoline shortage. Force I ran into serious opposition between REZONVILLE and GRAVOLOTTE in late afternoon where it was halted. Force II, in the south, consisted of 31st Tk Bn (M) (less Cos A and D); Co B, 23d Armd Inf Bn; 1st Plt, Co B, 33d Armd Eng Bn; Btry C, 434th Armd FA Bn; 3d Plt, Co B, 814th TD Bn. The element passed through recon forces at BUXIERES, east of CHAMBLEY, and approached the village of GONZE in late afternoon where it was stopped by mines and antitank fire. Co B, 23d Armored Infantry Battalion was directed to bypass this town, drive to the river, and attempt a crossing by daylight. The company did reach a canal close to the river, but as day broke on the 7th, Germans at NOVEANT and ARNAVILLE saturated the area with fire until the company was forced to withdraw under supporting fires. Meanwhile in the north, 23d Armd Inf Bn (-) had joined the fire fight west



of GRAVELOTTE and was ordered to push ahead to reach the river. The battalion fought its way under the protection of darkness to reach the little village of DORNAT at 0400, some 300 yards from the river. At daylight, intense fire was placed on this unit from both sides of the river, including Fort Driant to the northwest. The battalion moved to clear a cluster of houses known as LE CHENE just north of DORNAT where the fire was particularly heavy. To assist this battalion, Co B, 23d Armd Inf Bn (from Force II) and the remainder of Force I were sent to exploit the situation.

The covering force which 7th Armored Division encountered was the 17th SS Panzer Grenadier Division. The German line in this area ran generally from NOVIANT to GONZE and north to REZONVILLE. The American success to this point caused the formation of a second line running from ANCY-SUR-MOSELLE, north of LE CHENE, to GRAVELOTTE.

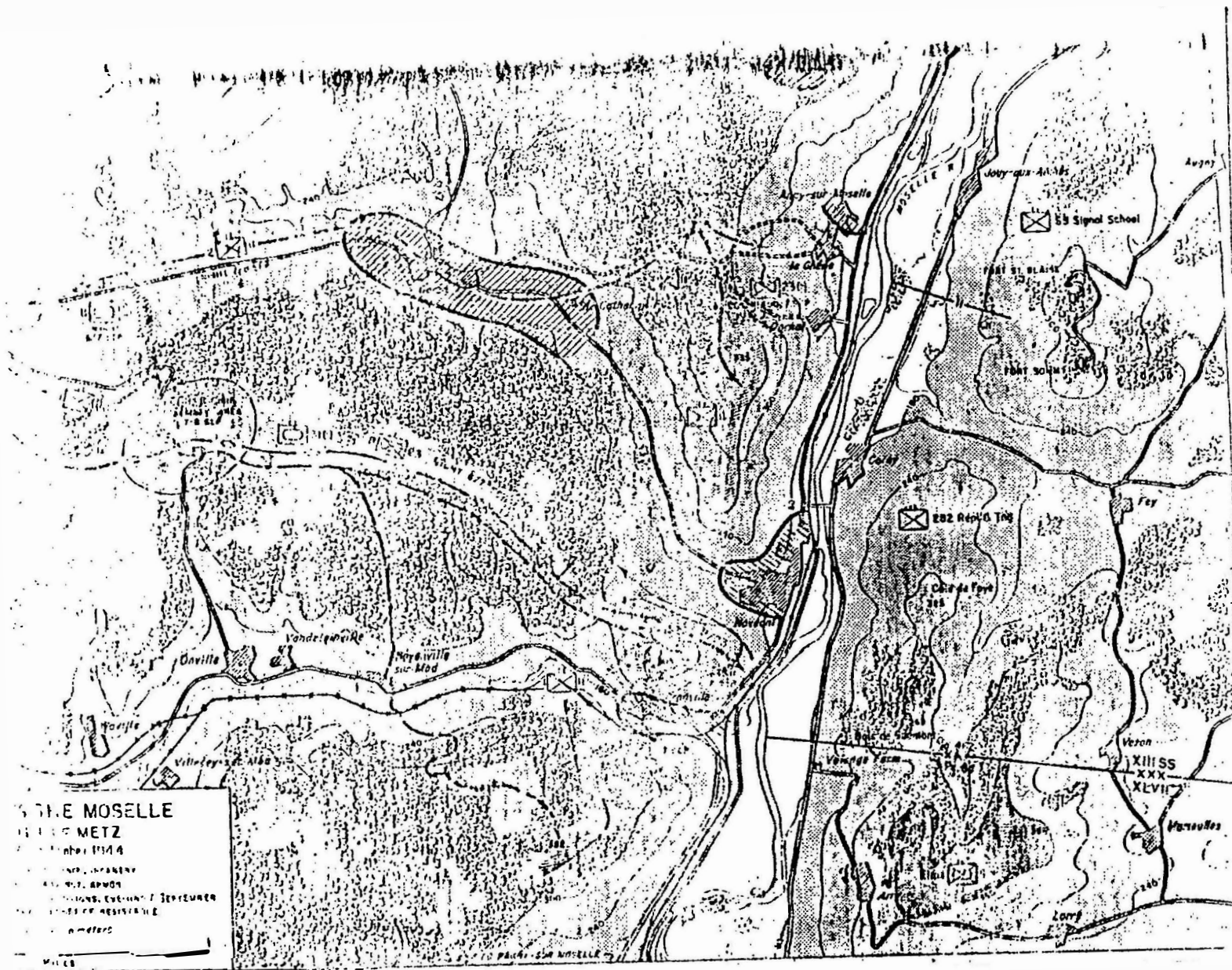
On the afternoon of 7 September, 23d Armd Inf Bn used three available assault boats to put a patrol across the river but direct machine gun fire from the east bank destroyed two boats, killed most of the men and drove the patrol back. Due to heavy counterattacks and concern over the north flank, CCR was committed to seize ANCY-SUR-MOSELLE. This force had scarcely gained enemy contact when corps had decided that CCR remain in corps reserve and 5th Infantry Division pass through CCR.

B. Commitment of the 5th Division

On 6 September, 5th Infantry Division had been ordered to "pin onto" the tail of the 7th Armored Division and be prepared to fight for a bridgehead if the armored attack should fail. The 5th Inf Div had already established a reputation for river crossings having already crossed the Maine, Essonne, Loing, Seine, Yonne, Marne, and Meuse. The organization of 5th Infantry Division is listed at Enclosure _____. Maj. Gen. S. Leroy Irwin, 5th Inf Div. commander, directed that 2d Infantry follow CCA, in the north, to attack Metz directly from the west, 11th Infantry follow CCB, in the south, to secure high ground west of the Moselle south of Metz and be prepared to establish a bridgehead and 10th Infantry remain in division reserve.

At 0830 on 7 September, 2d Infantry launched its frontal attack and three hours later hit a well organized German defense line between Amonvillers and Venneville. Here the 2d Inf suffered heavy losses and continued a series of fruitless assaults until 15 September when the regiment was relieved by elements of the 90th Division.

The 11th Regimental Combat Team, commanded by Col Yuill consisted of the following: 11th Infantry, 19th FA Bn (105-mm How), Co C, 818th TD Bn, Co C, 735th Tk Bn, Collecting Co C, 5th Med Bn, Co C, 7th Eng Cbt Eng Bn and a recon plt of 818th TD bn. At 0800, the 11th Infantry was to move by trucks to vicinity of Buxienes and then proceed on foot. After detrucking, the unit met only slight resistance when at about noon the 5th Division was



ordered to pass through the 7th Armd Div and establish a bridgehead. Col Yuill had directed the 3d Battalion, in the north, to reach the river in the vicinity of Dornot; 1st Battalion to capture Annoville, and 2d Battalion to cross the Moselle at Noveant or just north of Annoville.

During the afternoon of 7 September, XX Corps had a false belief that 23d Armd Inf Bn had pushed a patrol across the river. As a result, 5th Inf Div was ordered to cross the Moselle at Dornat using the 23d Armd Inf Bn as augmentation. By midnight, 1st and 3d Battalions had reached the high ground between Annoville and Dornot. Although 1st Battalion had been virtually ignored by the enemy at Annoville, higher headquarters decided to force a crossing at Dornot. Therefore, 2d Battalion was ordered to cross before daylight without daylight reconnaissance and no maps with a scale over 1:100,000.

On the morning of 8 September, CCA was digging alongside the Moselle near Talange and 2d Infantry was facing a strong defense west of Metz. The 10th Infantry was in 5th Infantry Division reserve and CCR in Corps reserve. To the south, Force II (less Co B, 23d Armd Inf Bn) was in an assembly area north of Anville and Force I (including 23d Armd Inf Bn, Co A, 31st Tk Bn, Co B, 33d Crmd Eng Bn and 434th FA Bn) was in the vicinity of le Chene and Dornot. Two companies of 1st Bn, 11th Inf were astride the high ground north and south of Annoville. 3d Bn, 11th Inf was astride the high ground west and south of Dornot, ready to assist the crossing by fire and 2d Bn, 11th Inf was in Dornot. The remainder of the 11th Combat Team was located to the rear (west) of Dornot.

The situation at Dornot became very confusing. Both CCB and 11th Infantry had received orders to cross the Moselle. XX Corps had given Gen Irwin, 5th Division commander, command of all troops in the Dornot area, but his directive had not reached Gen Thompson, CCB commander. The situation became more perplexing due to the congestion of units, rain, enemy fire and the lack of unity of command. Further complications resulted from the appearance of a XX Corps staff officer who ordered the 23d Armd Inf Bn to cross first. Later this staff officer was never identified and XX Corps denied the intervention. In an attempt to alleviate the confusion, LTC Kelley B. Lemmon, Jr., 2d Bn, 11th Inf Commander, finally established communications with Col Yuill, regimental commander, who told him to proceed with the crossing plans and that 23d Armd Inf Bn was attached for the crossing. Shortly after this, Gen Thompson, CCB Commander, used LTC Lemmon's communications to coordinate with Col Yuill and to inform him of his mission and the serious situation of the 23d Armd Inf Bn. He then requested permission to use a battalion of the 11th Infantry to support his crossing. A major step toward coordination was effected at this point and Col Yuill approved the request since Gen Thompson was the senior man on the scene and since both units had the same mission. Even at this point, planning continued in a separate fashion with most coordination being made between the battalion commanders of 23d Armd Inf and 2d Bn, 11th Infantry.

Both battalion commanders planned for the crossing of their battalions near a lagoon on the west bank. The 23d Armd Inf Bn would then swing forth, capture Luzerailles Farm, between Fort St. Blaise and Jouy-oux-Arches, and establish a defense to protect the north flank of the bridgehead. The 2d Bn, 11th Inf was to advance immediately to Fort St. Blaise and 3d Bn, 11th Inf would cross later to capture Fort Sommy and protect the south flank of the bridgehead. The assault was delayed due to the lack of assault boats and the failure of supporting artillery to be in position. As planning continued, it was recognized that 2d Bn, 11th Inf would provide the bulk of the troops for the crossing while 23d Armd Inf secured the near bank and 3d Bn, 11th Inf supported from its positions on the high south of Dornot. Some confusion dissipated on 9 September when CCB was officially attached to the 5th Infantry Division in exchange for attachment of 2d Infantry Regimental Combat Team to the 7th Armored Division.

C. The Assault Begins

The new hour for the assault crossing on 8 September was set for 1045. Supporting artillery fire was provided by the following units: 19th, 21st, 46th and attached 284th FA Bns of 5th Division and the 434th Armored and attached 558th FA Battalions of the 7th Armored Division. Heavy concentrations and smoke were placed on Forts St. Blaise and Sommy while Co C, 7th Eng and elements of Co B, 33d Eng moved assault craft to the water. At least one infantry squad carrying a boat to the water received a direct hit as enemy shelling and machine gun fire increased. Not until 1115 did Co F, led by 1LT Nathan D. Drake, in the lead boat, launch the assault in five assault boats. Several men were wounded by rifle and machine gun fire from the east bank as well as artillery and mortar fire. This continuing enemy fire caused one killed and five wounded as Co G crossed the river. By 1320, all of Companies F and G, plus a platoon of heavy machine guns and 81-mm mortars from Company H were across the river, and Company E had begun its crossing. With a combined strength of 48 men, companies B and C, 23d Armd Inf Bn went across intermingled with the lead companies of 2d Bn, 11th Inf. Valuable fire support was provided by 3d Bn, 11th Inf. The original engineer plan for the crossing called for the employment of the following units: 537th Light Pontoon Company, a platoon of Co C, 160th Eng Cbt Bn for construction and operation of rafts, Co C, 150th Eng Cbt Bn, Co B, 160th Eng and elements of 989th Treadway Bridge Company to construct a treadway bridge vicinity Dornot. This plan had to be abandoned due to heavy enemy machine gun, mortar, and artillery fire. Except for two platoons, the engineer units remained in their assembly areas or performed mine clearing in the rear area. The two committed platoons were 1st Plt, Co C, 150th Eng, which was employed in ferrying troops and supplies and evacuation of wounded, and a platoon of 7th Eng with elements of Co B, 33d Armd Eng which also performed ferrying operations.

Although 3d Bn, 11th Inf was to cross the river farther to the south pending the outcome of initial success by 2d Battalion, this plan was cancelled. At 1705 Co K was ordered to cross at Dornot to be followed as soon as possible by 3d Battalion. About one and a half platoons of Co K were across at 1745 and the east bank began to get confusing due to enemy mortar and machine gun fire and by Co E elements which were blocking the crossing site. This confined situation caused a cancellation of the 3d Battalion crossing.

Shortly after noon, General Thompson, CCB Commander, received a message to report to 7th Armd Div Headquarters. On arrival, he was relieved and reduced in rank based on the belief that he had established a bridgehead across the Moselle on 7 September and, without orders, withdrew it. The facts were later straightened out and General Thompson was exonerated and restored to his original rank. However, his departure placed full responsibility for the river crossing in the hands of the 11th Infantry. It was now very clearly an 11th Infantry bridgehead supported by the 23d Armd Inf Bn of CCB.

D. The German Reaction

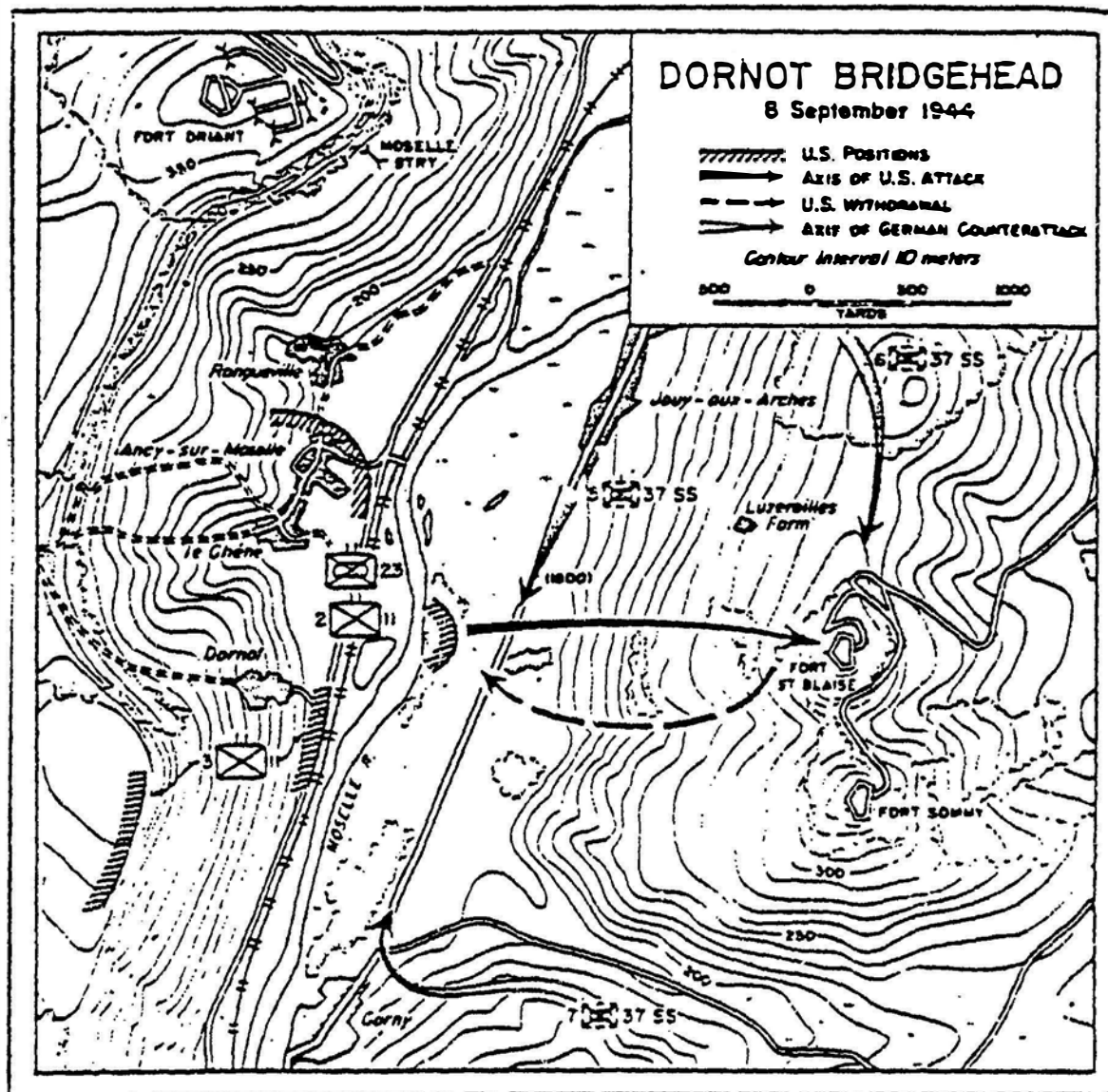
From the German perspective, this crossing of the Moselle was almost as confusing as the original American preparations. The Americans were opposed by the 282d Infantry Battalion with headquarters in Corny and SS Signal School Metz with its headquarters at Jouy-aux-Arches. Both these battalions were under command of Division Number 462, however, the Americans had crossed on the boundary between these two battalions. Another unit in the area was the 37th SS Panzer Grenadier Regiment which had arrived on 6 Sept after a fifty mile road march. With contradictory reports from the forward battalions, the commander of 2d Battalion, 37th SS Pzr Gdr Rgt decided to commit his 7th Company to Corny for an attack north and his 5th Company to Jouy-aux-Arches for an attack south, both supported by fires from 8th Company (heavy weapons). The companies moved out for the attack at 1515.

E. Advance to Fort St. Blaise

In late afternoon of 8 September, Companies F and G advanced toward Fort St. Blaise (Map 1), 2,000 yards beyond the river. There were no problems until reaching the outer defense of Fort St. Blaise where 1Lt Drake, Co F Cdr, leaned over a wounded German to ask him a question and three hidden Germans ten yards away shot him through the forehead. He died instantly and 1Lt Robert L. Robertson assumed command. The company advanced slowly as it cut through five separate double-apron barbed wire obstacles, then encountered an iron portcullis studded with curved iron hooks to prevent scaling. On the other side of this portcullis was a dry moat about thirty feet wide and fifteen feet deep which surrounded the fort. Although the fort was only lightly defended, Cpt Ferris Church, 2d Battalion S3, who accompanied the companies forward, talked to battalion headquarters and

decided to pull the two companies back to call in artillery fire. At about 1730, with the American artillery almost as a cue German artillery and mortar fire started also. German infantry counterattacks into both flanks and Cpt Church tried to get Co E to move up but it was too late as they would be in an enemy crossfire. The withdrawal turned to a rout as darkness approached and orders were issued to make it back to the woods. If a man dropped, the order was to leave him. The bulk of these companies took three hours to get to the woods with stragglers arriving at daylight on the 9th.

The German plan for counterattack, as described earlier, was launched by 5th Company (from Jouy-aux-Arches) at 1700 and 7th Company (from Corny) at 1715. The 5th Company reported 25 POWs in the vicinity of Horseshoe Woods and 7th Company suffered heavy losses by American artillery and machinegun fire. The German belief was that American artillery had caused Companies F and G to evacuate their forward positions. The 6th Co, 37th SS Pzr Gdr Rgt was employed to seize Fort St. Blaise which it did at 2200. Meanwhile, two companies of 208th Replacement and Training Battalion were sent to reinforce the battalion at Jouy-aux-Arches and 1st Battalion, 37th SS Pzr Gdr Rgt arrived in Augny at 2100 to be employed as reserves.



As stragglers poured into the perimeter of Horseshoe Woods, 2Lt John A. Diensing, Co E commander, used his First Sergeant Claud W. Hembree, and other officers and noncommissioned officers to fill in defensive positions. The entire day's gain was an area 200 yards wide and 200 yards deep. Only heavy artillery concentrations had prevented the Germans from retaking this small gain. Counterattacks continued almost hourly with both infantry and some armor. The night air filled with cries for medics; First Sergeant Hembree realized this would disclose positions so he sent the word around that no one was to cry out. The self-discipline which followed was only one of many heartening feats. During the first night's counterattack, two men, PFC George T. Dickey and PFC Frank Lalopa, had volunteered to man an outpost. Disregarding a warning order to withdraw, armed only with M-1s, they held off the enemy until they were surrounded and killed. The following morning, men of Co K crawled out to find the bodies of twenty-two Germans within three yards of the bodies of Dickey and Lalopa.

Soon after the defense was organized, Cpt Church returned to the command post in Dornot to report the situation. Based on his report, a request was forwarded through channels to XX Corps to withdraw the tiny bridgehead. The withdrawal was denied, although General Irwin knew the situation was far from satisfactory. The primary reasons for this decision were that 80th Division of XII Corps, in the south, had been beaten back and Dornot remained the only foothold plus General Irwin felt that he may cross the 10th Infantry further south and provide a chance for a link up later.

F. Support of the DORNOT Bridgehead

After its heavy preassault bombardment, 19th FA Bn fired heavily in support of the 2d Battalion bridgehead. During the twenty-four hour period, this unit fired 1,483 rounds. Most calls for fire came from within the bridgehead on SCR-300. One artillery liaison officer, Cpt Eldon B. Colegrove, drew praise as he stayed on duty the entire time 2d Battalion was in the bridgehead. Other forward observers in Dornot or on the bluffs overlooking the river called in observed fires. Initially, armor was employed but had to be pulled back due to the lack of cover. A platoon of Co C, 818th TD Bn engaged targets east of the river from high ground west of Dornot. Air support had been requested repeatedly but none was available due to priority given to the Brittany port of Brest and the 3d Army open southern flank. On the night of 8-9 September, LTC George H. Walker, 1103d Eng Cbt Grp commander, still intended to build a bridge but again enemy fire proved too intense. Additional assault boats were brought forward to replace those damaged or destroyed and the engineer platoons continued to support ferrying operations. During the initial crossing, each man took all the ammunition he could carry and a canteen of water but not rations. At 2200 on 8 September, two men of 2d Battalion reconnaissance platoon carried ammunition, three units of K rations per man within the bridgehead and 250 gallons of water to the crossing site. They completed several trips before a boat was hit killing five men. The battalion aid

station was set up in Dornot and combined with that of 3d Bn, 11th Inf. Evacuation was tenuous but litter bearers managed to get patients across to an underpass then on to a jeep which ran a gauntlet of fire to an ambulance behind the hills. This method was finally stopped until dark when it was further hampered by sleet.

At 2200 the night of 8 September the 10th Infantry received orders to cross the Moselle on 10 September in the vicinity of Annville, south of Noveant. While this allowed reasonable time for planning and coordination, the battle to hold opposite Dornot continued.

G. Holding the DORNOT Site

On the morning of the 9th, thoughts still existed above regiment level that the 11th Infantry's bridgehead could be expanded and pushed south. However, the men within the perimeter knew that they could not hold out much longer in the face of continued German pressure. Col Yuill, regimental commander, also knew this and decided that no reinforcements would be committed since he felt it would be suicidal. Through the 9th and, except for occasional lulls, on the 10th, enemy pressure continued. The battalion on the east bank sustained numerous counterattacks and enemy shelling rained on the battalion, as well as, Dornot, le Chene and all around Dornot. A captured POW reported about 1,000 Germans in one of the Verdun forts which set Col Yuill and Gen Irwin to urgent requests for air but none was forthcoming. Fires became so intense based on the good observation by the enemy at Forts St. Blaise and Sommy that all daylight activity ceased. Col Allison, the only field grade to cross into the bridgehead, was wounded and evacuated but died of wounds six days later.

After the first major counterattack on the 8th, another was launched at 2245 on 9 September by two companies of 37th SS Pzr Gde Regt plus a third in fire support. This attack bogged down due to heavy American resistance which was so tough that the Germans thought Americans were bringing in new units. In addition to the 37th SS Pzr Gdr Rgt, all three battalions (282d, 208th Tng (REPL), SS Signal School Metz) of Division Number 462 were actively involved in this operation. The Americans in the bridgehead could take few prisoners. As an example, on the afternoon of 9 Sept, a platoon of Germans attacked Co F and twenty were killed but about five others dropped behind the bodies feigning wounds but still holding their weapons. They would not respond to calls for surrender and the Americans feared what may happen at night causing them to shoot the Germans. On the west bank an enemy machine gun was so well camouflaged, that it was not neutralized until the 10th by Co I, 11th Infantry.

Incidents of individual heroism became commonplace within the bridgehead. In Co G, Pvt Dale B. Rex took over for a machine gunner who was killed and nearby riflemen estimated that he killed "wave after wave" or "hundreds" of Germans. In Company K, T/5 William G Rea, a medical aid man,

rendered continuous aid despite machine gun and rifle fire. Once he crawled under fire 300 yards to reach a wounded man, returning with the patient unaided walking erect through small arms fire. Almost all officers in the bridgehead were killed or wounded as they moved foxhole to foxhole encouraging their men only to apologize for being wounded.

Although it was obvious that the perimeter could not hold out much longer, the Americans had the temerity on the morning of 10 September to call for a German surrender. In the war diary of 37th SS Pzr Gdr Regt, the Americans promised to deliver concentrations of fires on the enemy they never had seen before. Not long after this, the commander of 2d Bn, 37th SS Pzr Gdr Regt was killed by mortar fire and commander of 6th Company was wounded. German units in the north and northeast of Horseshoe Woods made unauthorized withdrawal to Jouy-aux-Arches. Demonstrating preoccupation with the village although the Americans were more concerned about the Verdun Group.

On 8 September, 1st Bn, 11th Infantry, which had originally been along the Moselle to the south near Arnaville, was relieved by elements of the 10th Infantry. Once relieved, this unit moved to high ground northwest of Dornot in order to protect the left flank of the regiment. By early morning on the 9th, 1st Battalion had taken up positions extending generally from Dornot to the vicinity of Hill 366 to the northwest. The 3d Bn, 11th Infantry continued to support the bridgehead from defensive positions on the high ground south and west of Dornot. Co K of this battalion had crossed into the bridgehead on 8 September. The 11th Infantry knew nothing of the enemy to the north; not until late on the 9th did 1st Battalion provide concrete information that a German fortification existed on the regiment's north flank.

H. Withdrawal at DORNOT

With other elements of the 5th Infantry Division crossing the Moselle in vicinity of Arnaville, General Irwin decided early on 10 September that the Dornot bridgehead could be withdrawn without hazard to the new crossing. Because radio silence was imposed, two volunteers from Co I, 11th Infantry, SGTs Arch H. Crayton and Frank Noren, swam the river in late afternoon to take the withdrawal order to Cpt Gerrie, the bridgehead commander. The time for the withdrawal was set for 2115 on 10 September.

That same evening at 2000, the Germans issued an attack order, unaware of the Americans impending withdrawal, using all of 37th SS Pzr Gde Rgt (except 3d Bn). The attack was to jump off an hour and three-quarters after the Americans were scheduled to begin withdrawal.

The withdrawal plan called for engineer support by Co C, 204th Eng using all available boats and ropes were to be strung for the able bodied. Co C, 7th Eng provided one platoon to assist at the crossing site. The

3d platoon, Co I, 11th Inf was moved at midday to a position between Ancy-sun-Moselle and the crossing site facing generally northeast to reduce the cross fire. The 2d platoon was directed to take positions during the afternoon along the right of the lagoon to cover the right flank. 1st platoon was directed to move soon after dark to positions along the river bank near the northern edge of the lagoon.

The few officers and noncommissioned officers left in the bridgehead organized operations on the east bank. All weapons and equipment were to be thrown in the water. Guides were posted to direct everyone to an assembly area in the rear of Dornot. Col Lemmon planned to evacuate, not only the bridgehead, but also the area around the crossing site and Dornot. He knew the enemy would plaster the entire area with artillery once the withdrawal was discovered. He also planned fires, in addition to normal defensive fires, to increase upon a signal of a green flare signal by 1Lt Richard A. Marshall, Co I, to shift fires to concentrate on Horseshoe woods and the area between enemy forts and the woods to catch the advancing Germans.

The 2d and 3d platoons effectively neutralized enemy fires during the afternoon but sustained losses due to enemy artillery reaction. At 2100, 1st platoon, Co I, with LT Marshall and two platoons of engineers and a few men of 2d Bn Ammunition and Recon platoon reached the river at the crossing site. No shelling occurred at the site but along the road from Dornot to the river engineers were delayed due to enemy fire and didn't arrive until 2200. The crossing began using all available devices, leaking boats, ropes, swimming, water cans for floatation. The river was only ninety yards wide and six to seven feet deep but many men were drowned. Some men like Pvt Rex, Co G and T/5 Rea, Co K, made numerous trips to assist others. The crossing was agonizingly slow until Co C, 204th Eng put the rubber reconnaissance boats into operation at about 2230 when the evacuation speeded up. As the last boatloads were leaving the far bank, Lt Marshall and his communications sergeant remained on the east bank to insure everyone had been evacuated. At this point, one or two German tanks approached the river's edge and fired point blank across the river. One boat was hit adding to the number of missing personnel in Co H. As Lt Marshall and his Commo Sgt hugged the ground and last boatloads were unloaded an enemy flare went up, it was coincidentally green. Lt Marshall and his NCO hurriedly pushed out into the river as artillery began to fall. They crossed unharmed. A green flare in the German order had meant "shift fire forward" thus an all out attack was launched as planned only to find the little American bridgehead had been withdrawn.

Although all precautions had been taken to insure no one was left behind, Pvt Joseph I. Lewakowski, Co G, had either fallen asleep or lost consciousness in a foxhole about fifty yards from the river. He awoke the next morning, climbed from his foxhole, found himself alone and "walked across dead Germans from his foxhole to the river bank." He pulled across on ropes left just by chance that someone might be left behind. He continued to the rear and rejoined his company.

In the assembly area, an estimate of losses resulting from the three day battle were made. Co K emerged with no officers and only fifty men. The 2d Bn, 11th Infantry's three rifle companies had only two officers and casualties numbered over 300 men. The 23d Armd Inf Bn suffered 200 casualties. In the five days that followed the withdrawal combat exhaustion soared.

This was primarily an infantry-artillery battle with armored commitment limited to the Germans. Although, Co C, 818th TD Bn was in firing positions to support, only ten rounds were fired and Co B, 735th Tk Bn was never committed. Air support was repeatedly requested but never received except for four P-47 raids, 10 September, on Fort St. Blaise and Fort Sommy. They dropped twelve 250-pound and twenty-three 500-pound bombs causing no damage at all. On 11 September, 2d Battalion and Co K moved to assembly area in vicinity of Gorze, as division reserve, where they began to absorb replacement in men and equipment. 23d Armd Inf Bn reverted to parent control, CCB 7th Armd Div, moved for rest and reorganization to les Bonaques, just west of Gorze.

I. The Crossing at ARNAVILLE

Turning our attention to the crossing at Arnaville; as described earlier, that late on 8 Sept, Gen Irwin had ordered Col Bell, 10th Infantry commander, to force a second crossing of the Moselle two and one half miles south near Arnaville. During the afternoon, 3d Bn, 10th Infantry had relieved 1st Bn, 11th Infantry astride the high ground west of the river vicinity of Arnaville. The 10th Infantry was assigned the mission of crossing the river and securing the high ground north of Anry. Gen Irwin set the date for 10 Sept but left the exact hour and crossing site to the discretion of Col Bell.

Early on 9 September, Col Bell with a reconnaissance party went forward to Arnaville to recon for bridge sites and other crossing sites for infantry. During this reconnaissance he identified battalion objectives and suitable crossing sites and locations for position on the near bank for supporting tank units. Returning about 1400 to his command post in Chambley, Col Bell issued the attack order to his regiment. The 10th Regimental Combat Team consisted of 10th Inf Rgt, 46th FA Bn (105-mm howitzers), Co B, 7th Eng Cbt Bn, Co B, 5th MRD Bn, Co B, 818th TD Bn (plus 1 platoon, Recon Co, 8185h, attached), Co B, 735th Tk Bn and 1103d Eng Cbt Grp. The thirteen available artillery battalions providing fire support included 5th Div Arty (19th, 21st, 46th and 284th FA Bns); Corps Arty (695th and 558th FA Bns of 5th FA Grp, 270th, 277th, and 739th FA Bns of 203d FA Grp, 177th, 773d and 943d FA Bns of 204th FA Grp) and 434th Armd FA Bn of CCB, 7th Armd Div.

The hour for the attack was set at 0055 on 10 September which coincided with moonrise. The order directed 1st Battalion to lead the assault and capture Hill 386 in the Bois des Anneaux. The 2d Battalion was to follow at 0400 and capture the Cote de Faye (Hills 325, 370, and 369). The 3d Battalion was initially to hold its positions on the high ground in the vicinity of Arnaville, support the operation by fire and protect the crossing site. Assault boats were to be manned by Co B, 7th Eng and assisted later by the 204th Eng Cbt Bn in ferrying operations. The plan depended on surprise, therefore, no engineers were allowed forward until after dark except for sixty boats assembled in the vicinity of Arnaville. The artillery plan was prepared with the advise of LTC James R. Johnson, 46th FA Bn commander. No preparatory fires were planned unless the crossing was detected. The guns were prepared and layed to fire 1200 yards in depth beyond the river and one artillery liaison officer, Cpt George S. Ralich, could call for preparatory fires. One platoon of both Commo Company and Antitank Company was attached to each rifle battalion for crossing. Co B, 735th Tk Bn was to cross as soon as a bridge could be completed. Co B, 818th TD bn was to support by fire from hull down positions on the near bank. Also, A Third Army innovation was being employed in support of the crossing; 84th Chemical Smoke Generator Co. was ordered to initiate, at daylight, a front line large area smoke screen to protect the crossing site from German observation. The regimental command post was located at Vandelainville west of Bayonville.

J. Battalion Preparations

Just prior to issuance of the attack order, the commander of 1st Battalion was evacuated for yellow jaundice and Maj Wilfrid H Houghey, Jr., executive officer, assumed command. He issued a warning order moving companies to forward assembly areas near Waville. Maj Houghey, his S3, Company Cdrs, and Artillery LNO reconnoitered the crossing sites. The advance was to be made in a column of companies: A, C, D, HQ, B. Once across the river the same formation would be used following the power lines as a guide to Hill 386 then Co A was to swing left to tie in with the 2d Battalion; Co C was to swing right and pushing out on the southern nose of Hill 386 toward Arny; Co B was to dig in along the rear slope of the hill and mop up any bypassed resistance in addition to guarding the right flank and rear. Each of the two assault companies would have a platoon of heavy machine guns from Co D. Each man was directed to carry a canteen of water, all ammo possible and three units of K rations. The rear battalion command post was to be in Arnaville, initially. The officers returned at 1700 and brought platoon leaders forward to Bayonville and using remaining daylight got a brief view of the objectives.

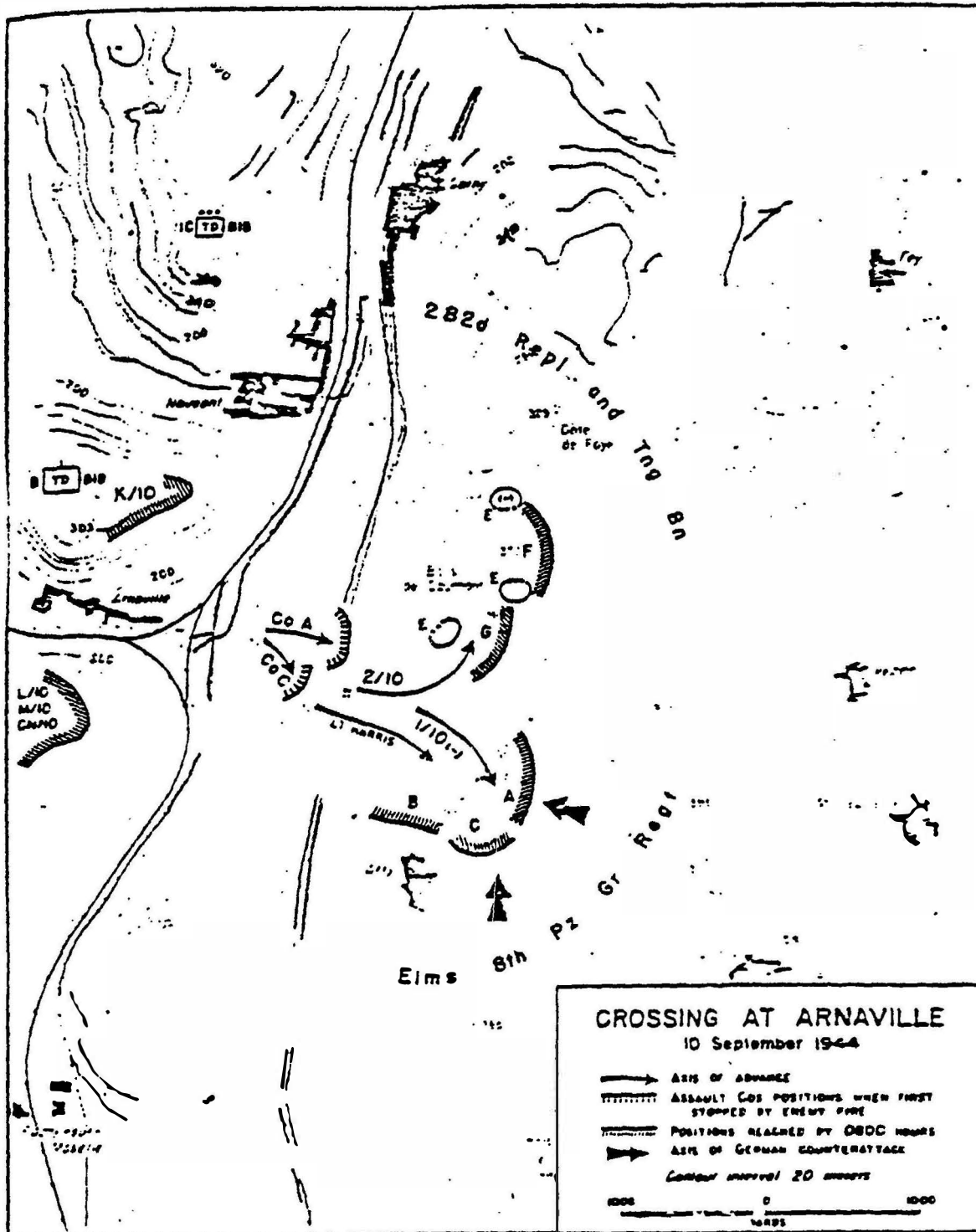
The 2d Battalion also began preparations as Maj William E. Simpson took his company commanders and staff to the hill south of Arnaville, overlooking the crossing sites. He also decided to launch the attack in a column of companies. After crossing at 0400, Co F, in the lead was directed to

advance past Voisage Farm then move up the draw between its objectives and Hill 386, turn left (north) and follow the ridge to seize, in turn, Hills 369, 370 and 325; Co G was to follow Co F to seize Hill 369 and dig in; Co E was to follow and mop up in the battalion rear and left flank. One machine gun platoon of Co H was attached to each of the forward companies with the 81-mm mortars following Co G. The map problem which had plagued commanders since the start of the Metz campaign was finally resolved when photomaps (1:25,000) were received at 2300 on 9 Sept.

K. The Assault Crossing

The leading squads of Co A reached the crossing site at 0035 after being divided into assault boat parties. The engineers were late, therefore, loading had not begun until 0115; a few shots were fired by no casualties or delays were caused. Co A commander, Capt Elias R. Vick, Jr., reorganized his unit and by 0200 was ready to move to the objective. The engineers continued transporting troops and by this time two platoons of Co C were also across the river. Co A's movement forward to the north-south road and Voisage Farm brought the enemy to life. Machine guns and mortars began to fire; an enemy red flare went up but artillery was slow in coming; in fact, the first artillery concentrations fell at daybreak. This was probably caused by poor communications between units in the Moselle valley and higher headquarters at Metz. The 2d and 3d platoons deployed and advanced until they were pinned down by enfilade fire from Voisage Farm. The 2d platoon leader tried to move forward to locate the enemy gun but was wounded. Cpt Vick tried to get the platoons in motion but was hit by machine gun fire and died of wounds before he could be evacuated. Meanwhile, back at the crossing site, Cpt William B. Davis, Co C commander, was ready to cross with two remaining platoons but couldn't find engineers (only six crews of twenty were around). Lt Francis L. Carr, Co D executive officer, took part of his men across, manning boats with infantry. So Cpt Davis followed his example, used infantrymen to man the boats and reached the far bank. Due to enemy fire causing the men to seek cover behind a six foot embankment, Cos C and D became intermingled in the dark. Before they could move, Co B was also landed. Reorganization was finally accomplished and Co C moved out toward Voisage Farm while Co D's 81-mm mortars set up along the river's edge.

The command group crossed with Co C and upon reaching the far bank Maj Houghey and his S2, LT Leo E. Harris, moved forward to Co A's location. Maj Houghey did not want to have his battalion caught on the exposed flatland at daylight. Therefore he sent his S2 to recon a favorable route to Hill 386 while he prepared Co A and C for a combined assault on the objective. Lt Harris found what he believed to be a good avenue of approach and decided not to delay, so he assembled two platoons, one from Co A and one from Co C and led a dash past Voisage Farm and up the Hill. They met with no resistance. Meanwhile, Co F, 2d Bn already delayed in crossing by



MAP 2

1st Bn, had crossed and came up behind Co A. Cpt Eugien M. Witt, Co F commander was impatient and did not want to get caught on the tableland so he wanted to push through Co A. Cos A and C had been stalled by enemy fire but used rifle grenades and 60-mm mortars to neutralize the enemy position. Since the remainder of Co A had not moved, Cpt Witt directed his company to pass through Co A. Immediately, the lead platoon was engaged by two enemy machine guns. Countering with a barrage of hand grenades, the advance continued. Co F followed the trail moving east of Voisage Farm then turned north upon reaching Hill 369, its first objective. The remainder of Co A finally began moving and followed Co F then turned south to the crest of Hill 386. To the southeast on the reverse slope, was Lt Harris and his newly formed ad hoc command of one platoon of Co A and two platoons of Co C (one other had followed them up the hill). Only meeting light resistance, 1st Bn began digging in and consolidating its positions on the objective with Co A and C plus heavy machine guns of Co D. At this point, Co A was unable to establish contact with 2d Bn defenses in the north.

Shortly before 0830, Co B was still moving up from the river when 3d platoon, in the rear, noticed a German tank approaching from the north along the Metz highway. Their bazooka team took cover and prepared to fire then the tank advanced to the crossroads and stopped. The team attempted to engage, however, the rocket failed to discharge. The tank commander stood up in the turret and was shot in the shoulder by a 3d platoon guide. The tank crew buttoned up and fired two rounds over the platoon's heads and simultaneously a German artillery concentration began to fall on the crossroads causing the tank to speed back to Arny. Co B's 1st platoon also spotted a Mark V tank in and around Arny. By 1000, Co B had taken up positions on the southern crest of Hill 386 tying in with Co C's right flank. A patrol had been dispatched to recon Arny and returned with a report that at least a platoon of German tanks and some infantry were in the town. Co C, on the exposed southern nose of Hill 386, was in the midst of digging in at about 0830 when a platoon of enemy infantry appeared to the right front, evidently emerging from Arny. As the enemy began to move in, PFC Wilbur H. Dodson, a light machine gunner with 1st platoon on the right flank accounted for most of the enemy before he was killed. This ended the first attempt by the Germans to recover the hilltop.

L. 2d Battalion Crossing

The 2d Battalion crossing was initiated when Co F began its move at 0430 in boats manned by Co B, 204th Eng. Upon reaching the far bank, it closed up behind Co A and, as outlined earlier, Cpt Witt decided to pass through and continue to move toward the objective. Other than the brief engagement by the lead platoon in the vicinity of Hill 369, the movement to and occupation of the battalion's objectives were uneventful. Co F found Hill 325 to be bare and exposed and the decision was made to dig in on the eastern and northeastern edges of the woods on Hill 370. Co G began to dig

in across the eastern and southeastern brow of Hill 370 in the woods. The company's front extended almost a thousand yards causing men to spread their foxholes so thin that the closest were more than ten yards apart.

Co E employed its 3d platoon in the gap between Cos F and G. Two squads of 2d platoon dug in to the left rear of Co F's left flank with the remainder of the company on the reverse slope of Hill 370 in reserve. One platoon of heavy machine guns of Co H was emplaced with Co F's left flank in the northwest and another was emplaced with Co G's left flank.

Throughout the day, enemy action against 2d Bn was confined to scattered and occasional mortar and artillery fire until just at dusk when a platoon of enemy tanks crossed Hill 325, apparently in a recon role. Men of 2d Bn held their fire and artillery concentrations were used to force the enemy tanks to withdraw.

M. Counterattack from ARRY

At approximately 1230, while men of 1st Bn were still preparing their defensive positions on Hill 386, a German counterattack from the direction of Arry began. Shells from German tanks began to burst over Co C's command post on the southern edge of the woods. The command group was badly hit: an RTO was killed and Cpt Davis, company commander, was wounded in both legs. Three tiger tanks appeared on the southern slope followed soon by two more and they began moving diagonally across the front of Co C's right platoon. Its bazooka team opened fire but its rockets seemed to bounce off the heavy armor. As the tanks closed within 100 yards of the foxhole line, 1st and 2d platoon leaders ordered their men to fall back to the tree line. Upon reaching the woods, tree bursts caused even heavier casualties and more confusion and the men continued down the rear slope. Cpt Davis attempted to remain in action by calling in artillery and mortar support to stop the tanks. He finally collapsed and was started back on a stretcher only to be hit a second time by shell fragments and killed.

Although no enemy infantry were observed, the lead tank commander opened his turret and waved, as if to signal the supporting infantry forward. As he did this, an automatic rifle team shot him. If enemy infantry were supposed to follow, they never did.

Meanwhile, two more German tanks departed Arry and advanced toward Co B positions along the Arry-Voisage Farm road. About seventy-five rounds caused heavy casualties in 3d platoon and command group, and a breakthrough threatened. T/SGT Walter E. Jensi, attempted to knock out one tank by following it alongside the road and firing rifle grenades at the turret. Despite his failure, 1st and 2d platoons' tenacity caused the two tanks to pull back into Arry and the breakthrough was averted.

Although Co C was disorganized, the German tanks did not advance forward, but moved on toward Co A's location where the men used good cover and concealment of the woods and the enemy tanks ceased firing. Meanwhile, Co C, under command of its executive officer, Lt Eugene N. Dille reorganized with one squad being outposted and another to link up with Co B. Lt Dille gathered up approximately eighty men and sent them back to their former positions. This action caused the German tanks to resume firing against the infantry who, once again, had little protection. However, this time American P-47's entered that battle bombing and strafing the tanks. The German tanks withdrew.

This intervention by the P-47s, a part of XIX Tactical Air Command, was the first positive response to numerous previous requests for air support. The planes that arrived at this opportune time at Army were from the 406th Fighter Bomber group and had been vectored from a ground support mission in the Nancy area. Besides bombing and strafing the tanks, these planes attacked the enemy assembly point at Army, leaving much of the town in flames. The only other air support of the day in the local bridgehead area was that of 23d Squadron, 36th Group, which bombed Forts Sommy and St. Blaise in the Dornot bridgehead area.

Based on the seriousness of the reports concerning the German counterattack against 1st Bn, Col Bell, at about 1355, ordered 3d Bn, still on the west bank hills, to leave Cos L and M in place and prepare to cross Co I and K in order to capture Army.

While 3d Bn prepared for the attack, 1st Bn reorganized its lines. The Co A executive officer, 1Lt William H. Halowell, went forward to assume command as Lt Shaw was in charge since the commander was killed just after the river crossing. As he moved forward, he collected over sixty Co A men from covered locations on the reverse slope. He then repositioned the company on the battalion's left with 2d platoon on the right, 1st platoon in the center, 3d platoon on left echeloned to the rear to protect the battalion's flank. The battalion commander, Maj Houghey, ordered Co B to take over Co C's positions and Co C was moved to a concealed position in the woods with the orders to follow 3d Bn into Army after its capture. Its mission was to establish road blocks with a platoon of antitank guns which were to be fired across after dark.

Despite havoc created by the enemy's noon counterattack, 1st Bn had lost the only untenable positions on the bare southern nose of Hill 386. The Germans launched no more counterattacks during the afternoon, however, shell fire and long range machine gun fire harassed the men for the rest of the day. A counterattack was attempted by German tanks and infantry from Corny, however, artillery observers and tank destroyers on the west bank hills caused them to fall back.

Use of field artillery and tank destroyers proved invaluable to sustaining the precarious bridgehead. During the first three days in the bridgehead battle, supporting units received firing data from forward companies through forward observers and infantry in direct communication with the regimental command post in a schoolhouse at Vandelainville. An operator here relayed the information by telephone to the command post where the commander of 46th FA Bn was constantly on duty.

Just as in Dornot, the crossing at Arnaville had the initial good fortune of attacking on the boundary between two German battalions; the boundary between the German XIII SS Corps on the north and the XLVII Panzer Corps on the south ran just north of Voisage Farm. This line was divided between the 282d Inf Bn, attached to Division Number 462, on the north, and 8th Pzr Gdr Regt, of 8th Pzr Gdr Div, on the south. The infantry battalion was charged with defense of Cote de Faye and the Pzr Gdrs with defense of Voisage Farm, Arry and Hill 386. It was elements of 8th Pzr Gdr Rgt, supported by attached tanks that counterattacked Hill 386.

N. 3d Battalion Attacks ARRY

At 1735, Cos I and K crossed the river with Co K on the right. The infantry took with them extra ammunition and bazookas to establish a bridgehead stockpile on the east bank. The two companies advanced past former Co B positions and held up outside the town while P-47s and artillery bombarded the objective. The rifle companies continued advancing against light resistance. The town was cleared by 2130 and the regimental commander, Col Bell, ordered the companies back to Voisage Farm because 10th Infantry's lines were too extended and the open flank in the north necessitated a bridgehead reserve.

The withdrawal order may have been premature as Co C was late in moving in because it was not until 0300 that Co C headed into Arry. As the company commander, Lt Dille, and 3d Platoon leader, 1LT Ralph R. Cuppelli, led the company into the town, they saw two German tanks approaching. There was an exchange of fire and Lt Cuppelli was wounded and Lt Dille was killed. The Germans had obviously reoccupied the town after 3d Bn's withdrawal. Lt Cuppelli ordered his platoon to withdraw and the entire company followed in a mad scramble until LT Storey, 2d platoon leader, regained control. He took command of the company and moved it back to the northern edge of the village and began to dig in.

At 0430, heavy shelling by both American and German artillery blanketed the area. Lt Storey wanted to withdraw his depleted company, when at 0800, on 11 September he was able to obtain the commander's approval. The company commander moved his unit to the vicinity of the 1st Bn command post on the reverse slope of Hill 386 when further casualties were suffered due to more intense enemy shelling. Now the company was moved to defensive positions on the left flank of Co A on Hill 386 with its strength down to only forty-three men.

The 1st Bn's 57-mm antitank guns and its attached platoon from the antitank company, scheduled to be part of the road blocks at Arry were ferried across the river but with the events described above, the guns were hand carried to the right flank of Co B on the southwest slope of Hill 386 where they could cover the town and Arry-Voisage Farm road. At approximately 1900, Cos L and M, and 3d Bn headquarters crossed the Moselle. The battalion headquarters and heavy weapons company moved to Voisage Farm and Co L went into a secondary defense covering the Voisage Farm draw between 1st and 2d Bns. Another platoon of 57-mm antitank guns went into position covering Corny and 3d Bn antitank guns, which were ferried across during darkness, 11 Sept, were dug in just southeast of Voisage Farm to cover the road south of Arry.

O. 11th Infantry Enters ARNAVILLE Fight

At about noon on 10 Sept, Gen Irwin, having already planned for the withdrawal of the Dornot bridgehead, ordered the 3d Bn, 11th Inf, under Maj. William H. Birdsong, to cross the Moselle, capture Corny, and protect the north flank of the Arnaville bridgehead. With Cos I and K having been depleted due to their involvement in the Dornot bridgehead, the battalion was strengthened by having Co B, 11th Inf attached to it. Due to the congestion in the original Arnaville crossing area, Maj Birdsong's battalion was ordered to cross at another site. He chose a site based on reconnaissance with his attached engineer officer. The crossing site was just southeast of Noveant in the vicinity of a wooded area where the debris of a demolished footbridge lay in the canal. Upon crossing, 3d Bn, 11th Inf (less Cos I and K, plus Co B) was to be attached to the 10th Inf. The crossing was scheduled for 0200 on 11 Sept. With ferrying operations to begin soon, arrangements were made with the 10th Inf Bn to transport the battalion's antitank platoon, attached 2d platoon from AT company, 11th Inf and radio and litter jeeps to the far shore. These elements would then join their parent unit in the vicinity of Voisage Farm.

Delay in construction of the footbridge caused the 3d Bn's leading company, Co L, to begin two hours late. Assault boats of the 160th Eng were used to get Co L across, but after landing, Cpt Williams, commander, telephoned back that they had been put on an island in the river. This island had not been revealed in previous reconnaissance or on maps and aerial photos were unavailable. The company was retrieved and with only a short period of darkness remaining, Maj Birdsong secured permission to cross his battalion at the original Arnaville crossing site.

While this mishap took place, the battalion's antitank platoon, radio and litter jeeps, and attached 2d platoon, AT Co, 11th Inf had ferried across as planned. While this group waited at the Voisage Farm, T/SGT Harry O. Chafin, platoon sergeant of the attached platoon, deduced that they had missed the infantry, thinking they were already moving to Corny. He moved his 57-mm guns toward Corny which was still in German hands. In the quick

violent fire fight that occurred the antitank guns and eight men were left behind as most of the platoon escaped including eighteen men who swam the river. Sgt Chafin led some survivors back toward the Arnaville crossing where he located his battalion.

Not until after daylight, about 0825 on 11 Sept, did the leading elements of 3d Bn, 11th Inf cross at the Arnaville site. They immediately reorganized and moved slowly toward Corny with Co L on the right, Co B on the left. Co L advanced up the bush-covered northwest slopes of Cote de Faye (Hill 325) and began digging in. Co B advanced through a thin German defense south of Corny, to the town's outer buildings. There it found one of the 57-mm guns damaged beyond use, and took up positions in and around an old brick factory on the edge of town. By 1700, forty Germans had been captured. The recon platoon and ammunition and pioneer platoon established outposts on the northwestern slope of Hill 325 between Co L and Co B. In late afternoon, Co C, 1th Inf was attached to the 3d Bn and went into a reserve position on the slope near the highway to the left rear of Co L. The battalion's organic antitank platoon with its 57-mm guns went to positions in depth astride the highway south of Corny.

By nightfall, the 3d Bn was well dug in but Corny was still not captured. A combination of mines and boobytraps in the town plus excellent observation possessed by the Germans discouraged Maj Birdsong from ordering his battalion to enter the town.

P. Counterattacks Against 10th Infantry

Having made probing attacks on 10 Sept which evidently determined locations of 1st and 2d Bns, 10th Inf, the Germans struck violently against both battalions just before daylight. The ensuing battles took on extreme importance with the withdrawal of the Dornot bridgehead and the fact that the Arnaville bridgehead was the only foothold XX Corps possessed on the Moselle's east bank. XII Corps, on the right, also only had a small foothold with an assault planned in vicinity of Nancy by elements of two divisions. The situation was made precarious by the failure of engineers to bridge the river.

At about 0500, first light, a platoon of German tanks, followed by approximately a company of infantry (elements of 115th Pzr Gdr Rgt) came from the direction of Vezon toward 2d Bn's positions vicinity Bois de Gaumont along Hill 370. Without artillery preparations but using their 88-mm tank guns as they approached, the tanks attempted to pulverize Co F's defensive positions. They then pulled off to the right front to provide supporting fires while the accompanying infantry closed in. While the defenders were pinned down by this supporting fire, the German infantry closed in and fighting raged at hand grenade range. With heavy pressure on its left flank, Co F's forward elements fell back about fifty yards. The



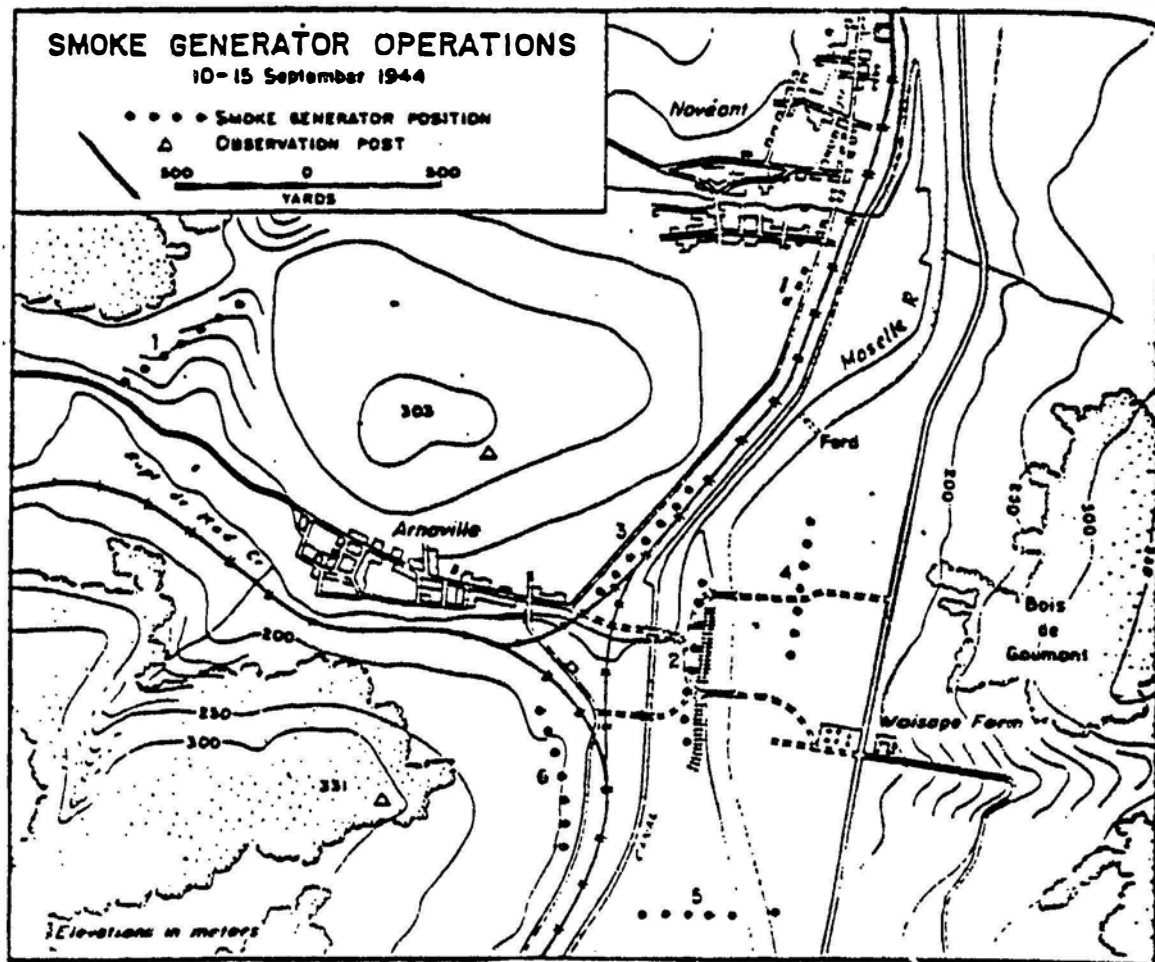
enemy was unaware of this success and moved their attack around to the front of Co G aimed at turning the corner of the woods. As the situation appeared hopeless, Cpt Lewis R. Anderson, company commander, reached the corner of the woods and coordinated fire of a nearby heavy machine gun section, some riflemen and the 81-mm mortars. This action broke the enemy attack. Communications with supporting artillery was finally established, and heavy concentrations fell on the German rear as they withdrew. Mopping up some enemy infiltrators and repositioning was then accomplished. Although the line had held, the enemy counterattack cost 2d Bn slightly over 100 casualties, further stretching the battalion's overextended manpower.

At approximately the same time as the counterattack against 2d Bn, elements of 3d Pze Gdr and 17th SS Pzr Gdr Divisions launched a two-pronged attack against 1st Bn, 10th Inf, on Hill 386. Although 240-mm howitzers and eight inch guns were used on a group of barrack-type buildings only 500 yds beyond Co A the previous day, an estimated company and a half of German infantry emerged from the ruins as daylight broke on 11 Sept. Co A held its fire until the enemy had advanced to within twenty-five yards, the supporting artillery and machine guns were coordinated to break this attack. Most of the Germans fell as casualties and fifteen were taken prisoner.

When the infantry attack was discovered, a platoon of German tanks emerged from an orchard just east of Arry and advanced north toward the Co B positions on the south portion of Hill 386. Although these tanks fired directly into the defender's foxholes; the combination of artillery and fires from tank destroyers on the west bank discouraged the tanks and caused them to withdraw to cover among houses in Arry. Later in the day, a squadron of the XIX TAC descended on Arry again to bomb and strafe their positions causing ten German tanks and assault guns to be knocked out. No further ground attacks were launched against 1st or 2d Bns during the remainder of 11 September.

Q. German Counterattacks

As engineer activity around the Arnaville crossing site came to a halt on 12 Sept, preparations begun by the enemy the night before for a continuation of his counterattacks against the bridgehead's infantry suddenly erupted in artillery, armor, and ground action all along the line. About 0300 on 12 Sept, a preparatory mortar and artillery barrage began in front of both 1st and 2d Bn lines. Moving forward in hundred-yard jumps, the barrage rolled across the crests to the reverse slopes, subjecting the defenders to the heaviest fire they had yet encountered in the bridgehead. The first counterattack, a well coordinated night attack by two enemy companies, hit Co A on Hill 386 at approximately 0330. After attempting to disrupt this attack through the use of artillery, Lt Hollowell, commander, directed his 1st platoon to withdraw about 150 yards. He had stationed SSG Carmine F. D'Anillo with an automatic rifle near 3d platoon as well as a



MAP J

bazooka team and machine gunner near 2d platoon to gain flanking fires on the enemy. Sgt D'Anillo continued firing even after the four men with him became casualties and he himself was hit in the stomach. Supported by this fire, 1st platoon aided by some men of the flank platoons, stormed back into its positions. The German attack was broken.

The attacking companies were newly equipped and well armed with automatic weapons. Co A found fourteen machine guns and other automatic weapons in the area. Most of the attackers were killed, few were taken and Co A suffered twenty-five casualties.

Another counterattack was a little later getting started against the left flank of the bridgehead and was primarily a tank attack. Two platoons of tanks and a company of infantry were detected at 0400 moving in from Vezon against 2d Bn elements on the left portion of Hill 370. Heavy protective fires from west of the river from artillery, tank destroyers and Cannon Company, 10th Inf, was laid on the Germans before they could get close to the lines, and the attack was stopped.

About an hour later, four enemy tanks moved in against Co L, 11th Inf but were driven back by a bazooka team. On the extreme left flank of the bridgehead, the positions of Co B, 11th Inf in the southern edge of Corny, were also hit just before daylight. After intense fighting by Maj. Birdsong's battalion, the Germans had been beaten back but not without cost; in its right flank platoon of Co B a platoon leader and eighteen men were missing in action. Although heavy enemy shelling continued for almost an hour, by 0800 on 12 Sept the third major counterattack against the Moselle bridgehead had been defeated.

R. Plans to Expand the Bridgehead

With his division short approximately sixty officers and 1,600 rifle men, Gen Irwin asked for additional reinforcements as he began to consider plans for expanding the bridgehead. XX Corps had begun planning for a reshuffling of units all along the Corps front. Meanwhile, Gen Irwin tried to make arrangements with the 4th Armd Div, which had moved up to the river at Pagny-sur-Moselle, south of Arnaville, for mutual support that would include a crossing by the 4th Armd Div at Lagny. Late of 11 Sept, the 4th Armd agreed to cross in conjunction with an attack by 5th Div elements to breakthrough Arry and take Hill 385 to the southeast opposite the proposed Pagny crossing. Gen Irwin accordingly laid plans for his attack, but at 0400 on 12 September the 4th Armd sent word that it had to delay its crossing for twenty-four hours. Throughout the day, the shortage of infantry stymied any plans to breakout of the Arnaville bridgehead.

By 1:30 on 12 September, some fifty-eight hours after the infantry had begun their crossing, a treadway bridge at last spanned the Moselle. Concurrently the 537th Light Pontoon Company's Footbridge Section combined assault boats and support rafts into a footbridge to facilitate evacuation

of walking wounded. Ten minutes after the treadway bridge was completed at River site 2, tanks of Co C, 735th Tk Bn, began moving over it into the bridgehead. The remaining platoon of Co B and 3d Platoon, Co C, 818th TD Bn, followed, while the other two platoons of Co C, 818th maintained firing positions on the west bank hills flanking Arnaville. After the destroyers came Cos A, B and C of CCB's 31st Tk Bn. They moved into an assembly area behind wooded Hill 370 east of the Metz highway. CCB's tank destroy support, Co B, 814th TD Bn, followed soon after. Now the confined bridgehead held five medium tank companies and seven self-propelled tank destroyer platoons which were uncommitted, but infantry support to enlarge the maneuver area was not available.

S. Build-up and Expansion

A cold, driving rain began during the night of 12-13 Sept. By daylight the little bridgehead across the Moselle River was a morass of mud which burdened the assembled armor and added to the discomfort of the battle weary infantry. The infantrymen, who had seen little sleep for three days and four nights, were nonetheless grateful for a letup in the fierce enemy counterattacks.

Both 1st and 2d Bns, 10th Inf, atop Hills 370, 369 and 386 had been reduced to fifty percent of their original strength, and battle fatigue had become a serious problem. Elsewhere in the bridgehead the 3d Bn, 11th Inf (less Cos I and K plus Cos B and C) continued to hold on the north flank in the southern edge of Corny, while the 3d Bn, 10th Inf, remained in reserve around Voisage Farm. Also in assembled reserve were Cos B and C, 735th Tk Bn; Co B and one platoon of Co C, 818th TD Bn; Co B, 814th TD Bn (CCB); and Cos A, B, and C 31st Tk Bn (CCB).

Extensive patrolling began on the morning of 13 September which disclosed heavy resistance south along the east side of the river bank but also confirmed that the enemy had abandoned the rubble town of Arny. Thus, notwithstanding, signs of a possible enemy withdrawal on the southeast and south of the bridgehead, little tangible effort was made immediately to exploit it.

With elements of CCB bogged down in the mud within the bridgehead and remnants of 23d Armd Inf Bn at Orville prepared to move into the area, plans for expanding the bridgehead were being made on 13 Sept. The XX Corps commanders initiated a reshuffling of units by directing the 90th Inf Div to begin taking over part of the 7th Armd Div sector west of Metz in order to permit CCA to prepare for movement into the Arnaville fight. This was the first step in a move which was eventually to release all of the 7th Armd Division and the 2d Inf combat team far in the south. General Irwin, despite shortages of men and equipment in the 2d Bn, 11th Inf, alerted the 11th to be prepared to send another battalion into the bridgehead. Meanwhile, General Irwin's headquarters issued Operations Instructions 13, confirming previous verbal orders and calling, primarily, for movement of

the remainder of CCB into the bridgehead. The instructions also ordered a subsequent attack by the combat command to seize Mardegny, to the southeast of Arny, and by the 3d Bn, 10th Inf, to capture Hill 396. No other significant actions developed during 13 Sept.

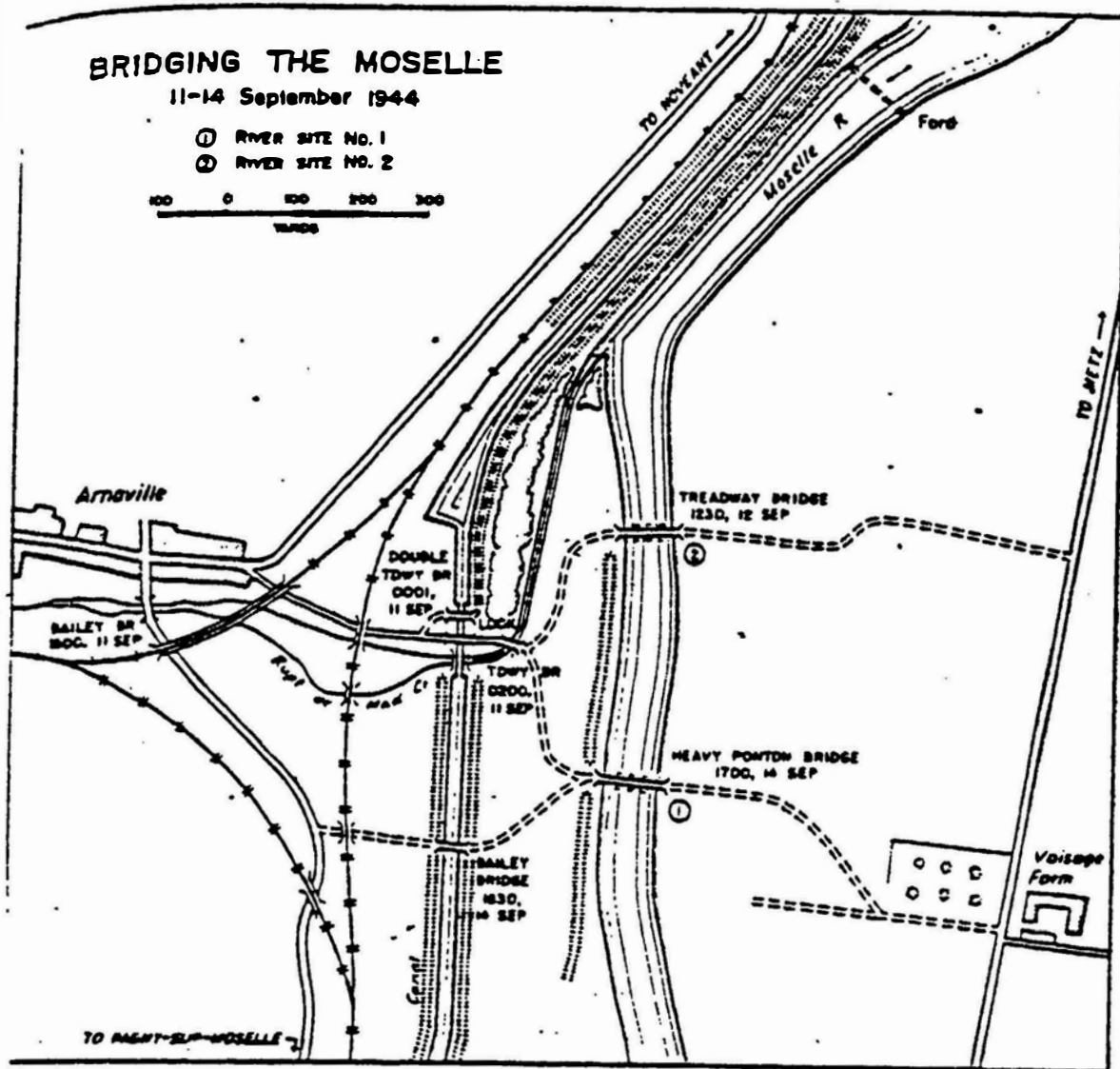
The morning of 14 Sept brought more rain, and attempted movement of armored vehicles produced only further churning of the muddy soil. The proposed attempt to expand the bridgehead to the south and southeast was again postponed. However, on this date XX Corps issued a new field order that instructed the 5th Division to expand its bridgehead and continue the attack to capture Metz, while the 7th Armd Div was to cross into the bridgehead and make a swinging movement around the right flank through Mardegny. The armor was to force a hook around Metz from the southeast while the 5th Inf Div attacked almost due north against the city.

A second delay in the attack was granted on the afternoon of 14 September due to the weather, however, regardless of weather, the attack was now set for the next morning, 15 September. The original 5th Div attack plan had to be altered due to pressure from XX Corps for the division to be more ambitious. As finally decided, CCB was to pass through Arny to capture Mandegny and subsequently move northeast to take the village of Marieulles; the 3d Bn, 10th Inf was to capture Hill 396; and the remainder of the division was to build up on a line of departure for continuation of the attack on Metz.

T. The Attack Begins

On the morning of 15 September, elements of CCB began moving from their assembly area at 0903 through heavy ground fog and the thrice-delayed attack to expand the bridgehead jumped off toward the south.

For the attack CCB had been divided into two forces. Force I, under Col Erlenbusch, consisted of the 31st Tk Bn (less Cos A and D); Co B, 23d Armd Inf Bn; and Battery B, 434th Armd FA Bn. It was to pass through Arny, capture Hill 385 to the south of Arny, then move on to take Hill 400 in the Bois le Conte, and be prepared to capture Loary and Mardegny on order. Force II, under LTC William H. G. Fuller, consisted of Co A, 31st Tk Bn; the 23d Armd Inf Bn (less Co B); and the 434th Armd FA Bn (less Btry B). Its mission was to attack south down the main Metz-Pont-a-Mousson highway to capture the village of Vittonville. The two forces were then to tie in at a trail junction of the southern nose of Hill 400 southwest of Mardegny. For thirty minutes before H-hour, all the medium and heavy artillery was to direct counterbattery fire against located and suspected enemy artillery positions. Thereafter counterbattery fire would be continued by the 203d FA Group. From H-hour to H plus fifteen minutes, concentrations were to be fired along Hill 385, and on other critical terrain features in the immediate area, including Hill 396, objective of 3d Bn, 10th Inf.



MAP 5

Concentrations were then to be shifted to Hill 400 and the Bois le Conte from H plus fifteen to H plus thirty. Harassing fire on Lorry, Mandegn, and Vittonville was to be continued at intervals from thirty minutes before H hour until H plus thirty. The line of departure for the attack was to be an east-west line from Arry to the river, and the hour of attack set for 0900.

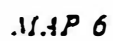
U. The Bridgehead is Secured

By 0915, Force I was past the town of Arry and encountered only light resistance. The main difficulty was still with fog and mud. At 1030, the column had reached Hill 400, the second objective and shortly before noon the positions were consolidated to prepare for the attack on Lorry, Mandegn and Marieulles. A confusion in orders delayed their attack until 1845 and not until 2045 was Mandegn captured and outposted. The following morning elements of the 5th Div relieved Force I in the Bois le Conte.

Meanwhile, Force II was hampered by fog and heavy resistance, including small arms and mortar fire, had only reached a point due east of Pagny by 1225. At 1600, the tanks and infantry had reached the northern edge of Vittonville and in one hour and a half the town was secured. The attack had cost Force II four men killed and five missing.

In conjunction with CCBs attack to the south, the 3d Bn, 10th Inf's attack to seize Hill 396 was scheduled to begin at 0900. At first, the two tank companies were to lead, Co B, 735th Tk Bn, on the left, and Co C, 735th, on the right. Close behind the left tank company was to be Co L, 10th Inf, and behind the right tank company, Co K. While the two left companies advanced through 1st Bn lines on Hill 386, the two right companies were to enter Arry and follow initially the Arry-Lorry road to a trail that branched to the northeast to Hill 396. Co I, 10th Inf, was to move northeast from Hill 386 and block to the north in a wooded draw which separated Hill 386 from Hill 396, a logical avenue for enemy counterattack. The attack proceeded slowly with some difficulty however, by 1330, both Co L's infantry and Co B's tanks were finally established on the objective. It was not until about 1500 that Co K was established on its portion of the Hill. Hill 396, the dominant terrain feature in the vicinity of the bridgehead, was at last in American hands.

With a firm northern anchor in Corny, southern anchor in Mandegn and Vittonville, possession of the vicinity's dominant terrain features, Hills 396 and 400 and two substantial bridges providing ready access, the Arnaville bridgehead could be considered secure.



V. CONCLUSIONS

A. General

This battle analysis is an excellent study in virtually every aspect since it portrays the desirable influences of operating as a combined arms team and also the undesirable result of the failure to do so. With a compare/contrast of the relative success/failure of the Dornot and Arnaville crossings respectively, we can learn many valuable lessons.

B. Fire Support

1. Artillery. An excellent utilization was made of FA by both forces at both crossings and was effective against both forces, particularly when such fire was observed.

2. Tank Destroyers. US TDs were not effectively utilized at Dornot. However, they were emplaced in effective overwatch positions at Arnaville and were instrumental in stopping German armor on several occasions at Arnaville.

3. CAS. Was not employed at Dornot, but was very effective at Arnaville, excepting attempts by Air to neutralize the "hardened" emplacements of the forts in the vicinity.

4. Armor. No armor ever crossed at Dornot; however, large numbers of tanks crossed early at Arnaville and were present in position to assist the Infantry in enlarging the bridgehead.

5. State the Outcome.

(1) Was there a clear tactical victory for one side or the other? Yes, even though the initial crossing at Dornot failed it required valuable combat power to be directed from the Arnaville crossing long enough for that operation to succeed. The victory however, was at the expense of a large number of US casualties and did not result from any decisive planning. Rather, it was a result of determination of the individual soldiers will, CS/ESS support and the failure of the enemy to adequately react with a proper force at critical times and places.

The US forces did not have superior forces, technological equipment, or weapons. They were not better trained nor did they have greater battlefield experience.

However, especially at Arnaville, small unit Infantry tactics were executed in a better manner than the enemy. Primarily, due to individual initiative of the individual soldier and the effectiveness of company grade leadership. An element of luck was also present at Arnaville.

Additionally, the tank destroyers on the west bank supporting the bridgehead held a commanding view of the east bank therefore, their fire was appreciably improved. The success of bridging efforts can probably be traced completely to the successful employment of smoke which denied observation to the enemy of his artillery fires on the crossing sites and approaches to them.

(2) The US forces were victorious because in the long run they utilized better small unit tactics than the German forces. Individual acts of heroism and leadership often meant the differences in annihilation and success. The edge for stronger unit cohesion and better morale must also be attributed to US forces, many Germans already able to project their loss of the war. Additionally, holding the crossing at Arnaville led to relative combat power being drawn away from Dornot which led to the overall success. More importantly the second crossing favored US force in terms of terrain and weather and allowed tanks to cross quickly and application of Air force close air support to the battle. Additionally, use of smoke, adequate FA support, and overwatching A/T fires added measurably to US success.

(3) The Germans did not accomplish their mission, in that ultimately crossings over the Moselle were achieved and expanded.

(4) The initial crossings also were not successful by US forces in part due to the inadequate command and control of the operation. Division and higher command and control were virtually non-existent during that initial crossing.

(5) Casualties (US) were evacuated by every means possible but often resulted in US medical personnel being exposed to great danger and fire of the enemy forces. Essentially, evacuation was carried out by innovation and initiative by individuals or small groups.

(6) Losses on both sides were extremely high. This is especially significant for engineer equipment which was already in short supply throughout the theatre.

(7) US forces prepared to continue future operations by expanding their bridging during the second crossing to provide two-way traffic over the Moselle. The rapid expansion and buildup of the bridgehead 11-15 Sept left no doubt that the operation was and would continue to be successful. Thusly, proven by the bridgehead breakout and continuation of the offensive thereafter.

C. Engineer Support. At Dornot was piecemeal and had no firm direction. However, at Arnaville a good plan for bridging existed and was followed through implementation. A large degree of bridging success was directly as a result of Smoke Generating Activities.

D. Smoke Generators. Were not used at Dornot and no effective bridging ever occurred. At Arnaville, virtually all successful bridging occurred under cover of smoke. Each lapse of which resulted in devastating artillery fire concentrated on the bridging efforts.

E. Command and Control.

1. Division Level. The crossings at Dornot were characterized by virtually no C2 at Division level. However, the Arnaville crossings though confused definitely were under a plan of operations overseen by the 5th Division. As a consequence all of the aspects of the preceeding paragraphs were more effectively utilized.

2. Small Unit Level. During both crossings excellent small unit leadership was demonstrated by individuals and leaders of the US forces and that aspect was consistently greater than the German forces, excepting the Infantry assault attempt on Fort St. Blaise, initially at Dornot.

F. Use of Deception.

While no planned deception occurred there is some credibility to its inadvertent use by maintaining the Donot crossing as a diversion for the Arnaville crossing. This action caused the Germans to divert needed reserves to Dornot and threrfore away from Arnaville.

Additionally, the employment of smoke at Arnaville was instrumental in deceiving the Germans as to the actual bridging attempts locations and denied them observed artillery fire.

BIBLIOGRAPHY

- Ambrose, Stephen E. The Supreme Commander. Garden City: Doubleday, 1969.
- Blumenson, Martin. The Patton Papers 1940-1945. Boston: Houghton Mifflin, 1957.
- Butcher, Harry C. My Three Years with Eisenhower. New York: Simon and Schuster, 1946.
- Cole, High M. The Lorraine Campaign. Washington, D.C.: Historical Division, US Army, 1950.
- Dickens, R. C. After Action Report Against the Enemy. Fifth Infantry Division, October 1944.
- Garlinski, Josef. The Enigma War. New York: Charles Scribner, 1980.
- Greenfield, Kent Roberts. The Historian and the Army. New York: Kennikat Press, 1970.
- Greenfield, Kent Roberts, and Robert R. Palmer. Origins of the Army Ground Forces, Headquarters US Army 1940-1942. Washington, D.C.: Historical Division, US Army, 1947.
- Jacobs, Bruce. Soldiers: The Fighting Divisions of the Regular Army. New York: W. W. Norton, 1958.
- Kemp, Anthony. The Unknown Battle: Metz 1944. New York: Stern and Day, 1981.
- Kravskopt, Robert W., and James E. O'Neill, ed. World War II: An Account of Its Documents. Washington, D.C.: Howard University Press, 1976.
- MacDonald, Charles B., and Sidney T. Mathews. US Army in World War II: Three Battles: Arnaville, Altuzzo, and Schmidt. Washington, D.C.: Historical Division, US Army, 1952.
- Maule, Henry. The Great Battles of World War II. Chicago: Henry Regenry, 1976.
- Millet, John D. The Organization and Role of the Army Service Forces. Washington, D. C.: Historical Division, US Army, 1954.
- Pogue, Forest C. US Army in World War II: The Supreme Command. Washington, D.C.: Historical Division, US Army, 1954.

- Public Relations Section, 10th Infantry Regiment. History of the Tenth Infantry Regiment, US Army. 1946.
- Seaton, Albert. The Fall of Fortress Europe 1943-1945. New York: Holmes and Meier, 1981.
- Stokesbury, James . A Short History of World War II. New York: William Morrow, 1980.
- Twentieth Corps Personnel. XX Corps, Its History and Service in World War II. Osaka: XX Corps Association, 1956.
- US Army Air Force. ULTRA. Frederick: University Publications, 1980.
- Williams, Mary H. US Army in World War II: Chronology 1941-1945. Washington, D.C.: Historical Division, US Army, 1960.
- Winterbotham, F. W. The ULTRA Secret. New York: Harper and Row, 1974.

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

