

Edition 10, November 2011
www.gbg-international.com



Introduction
to this special
edition



Sgt York's
Field of Glory



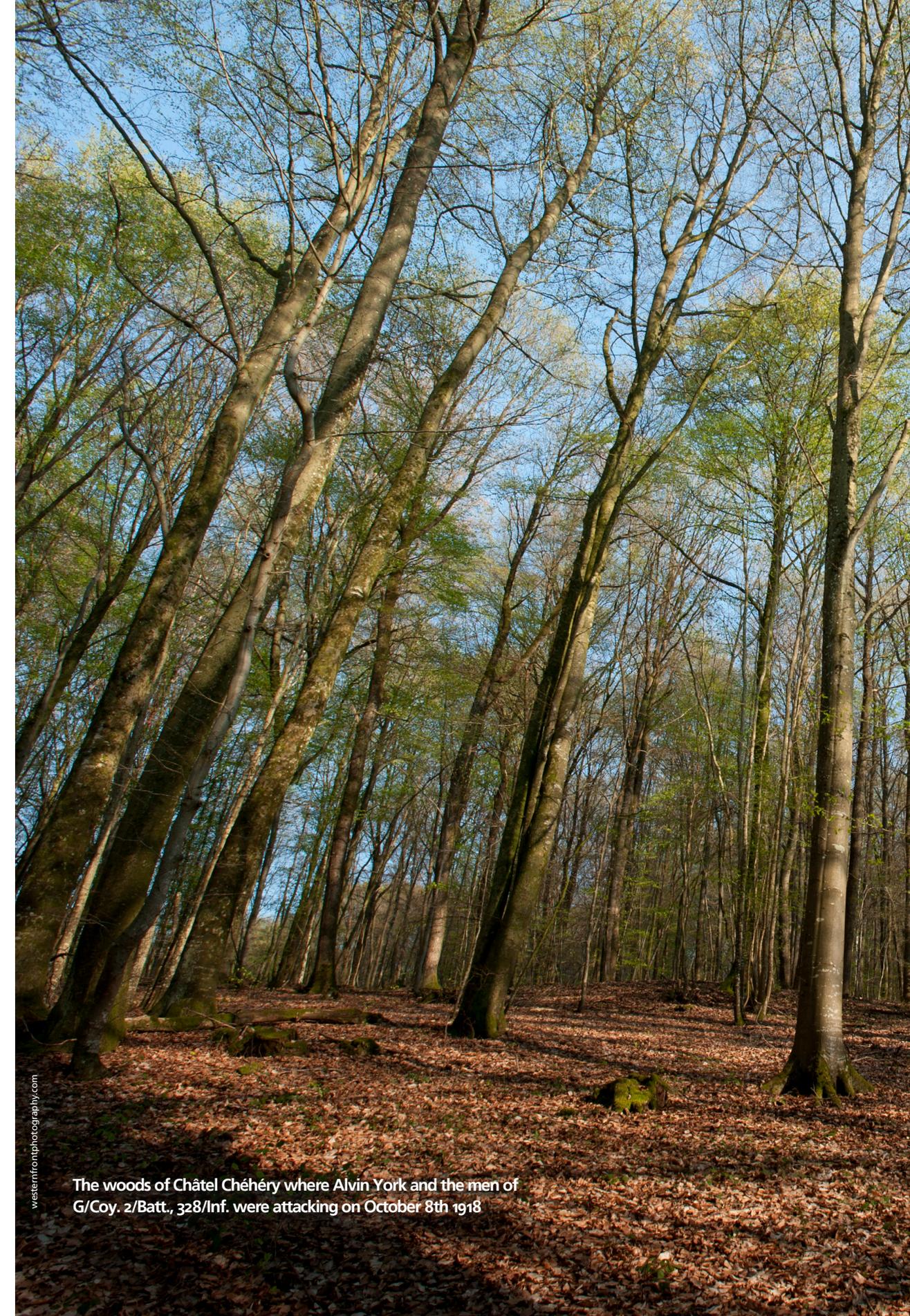
Where Sgt York
won his Medal
of Honor



BATTLEguide

The Journal of the International Guild of Battlefield Guides





The woods of Châtel Chéhéry where Alvin York and the men of G/Coy. 2/Batt., 328/Inf. were attacking on October 8th 1918

Looking northwards from Haute Folie across the valley where the 328/Inf. were attacking from right to left

westernfrontphotography.com

The offensive conducted by the American Army in the Meuse-Argonne in September and October of 1918 still stands as the largest ever engagement by American forces. Today it is largely forgotten in the U.S. except by film buffs who recall that in 1941 Gary Cooper won an Oscar for his starring role in a film entitled "Sergeant York", directed by Howard Hawkes, which dramatised the actions of the inexperienced Corporal Alvin C York in his first real engagement.

So extraordinary were his exploits that they were immediately documented by the American Army but although York was photographed in Feb 1919 at the location where he won his Medal of Honour, no record appears to have been made of the exact position. And this is the dilemma - one of the First World War's most iconic actions mentioned in all the history books but with no definite location.

And that is the problem which Col Mastriano and Dr Nolan have, in their differing ways, attempted to solve. But before we examine the debate about the location of this exploit I am indebted to Tom Nolan for permission to use his description of Alvin York's life together with a brief description of the action.

Alvin Cullom York was born on Dec 13th 1887 in the Valley of Three Forks of the Wolf River, a beautiful, isolated place on the Upper Cumberland Plateau in Fentress County, Tennessee. He attended school for about 3 weeks a year for 5 years and became literate but not well educated (Skeyhill 1928). York's father, a blacksmith, died as the result of a mule kick to the head in 1911 and Alvin, as the oldest son remaining at home, became the primary breadwinner for his mother, younger brothers, and sisters (Lee 1985).

York inherited a keen interest in hunting and firearms from his father and was an accomplished outdoorsman. Hunting provided an important addition to the York family diet and the opportunity for Alvin to profit at the Saturday shooting matches that were popular in Fentress County (Lee 1985). His prowess with rifle and pistol made him a frequent winner at these weekly contests. York's skills as a woodsman and hunter would serve him well in the coming war.

As a result of America's entry in the war York was drafted in November of 1917 at the age of 30. Up to this point he had never been more than 20 miles from his birthplace. After basic training at Camp Gordon, Georgia, he was assigned to Company G, Second Battalion, 328th Infantry, Eighty-Second Division. The Eighty-Second Division arrived in France the latter part of May, 1918 (Skeyhill 1928). After trench warfare training the division was placed on the line in the St. Mihiel sector in late June. The St. Mihiel Offensive began on September 12, 1918, and was the first completely American military operation in the war (American Battle Monuments Commission 1938). York emerged from the St. Mihiel Offensive in September promoted to corporal and squad leader. The St. Mihiel Offensive was followed by the

Meuse-Argonne Offensive on September 25.

The Eighty-Second division was initially kept in reserve and was not committed until October 6 (American Battle Monuments Commission 1938). It was ordered into action as part of an assault designed to rescue elements of the 308th infantry, the famous "Lost Battalion" that had been cut off and surrounded since October 2 (American Battle Monuments Commission 1938). The mission of the Second Battalion, 328th Infantry in this operation was to attack west from Hill 223 just outside the village of Châtel-Chéhéry and sever the narrow gauge railway that supplied German troops encircling the "Lost Battalion" (Lee 1985). Alvin York's Company G was assigned on the extreme left of the Second Battalion.

The Second Battalion attacked a little after 0600 am on October 8 and came under heavy rifle and machine gun fire from the front and both flanks that stopped the advance at the bottom of Hill 223. Platoon Sergeant Harry Parsons realized the attack had stalled and ordered Acting Sergeant Bernard Early to take three squads, including that commanded by Alvin York, and move to the left in an attempt to outflank and silence the machine guns.

Early's sixteen men made a wide circle to the south and west and had gone about a mile or so in the dense forest when they encountered two Germans wearing red cross armbands. The German medics fled down a path and Early deployed his men in a skirmish line and pursued them. The Americans broke into a clearing and surprised a group of Germans who soon surrendered. As the Americans were organizing the prisoners, a machine gun position on the hill above the clearing opened fire. The German prisoners dropped to the ground and in seconds Acting Sergeant Early was hit three times in the lower body, Corporal Cutting was hit several times in the arm, and Corporal Savage and five privates were instantly killed.

This left Alvin York as the senior non-commissioned officer in command of seven unwounded privates. York was so close to the German prisoners that the machine gunners had to expose their heads to aim the gun and avoid hitting their comrades. York engaged the German gunners with rapid, accurate rifle fire and shot any who exposed themselves to aim their weapons. A German Lieutenant tried to resolve the impasse by leading several enlisted men in a bayonet charge. York killed all the enlisted men and wounded the lieutenant in the stomach with his .45 cal. Colt Automatic Pistol.

At this point a German officer in the group of prisoners offered to surrender his remaining men. York and the surviving Americans lined the prisoners up and marched them toward the American lines. They encountered several groups of Germans on their way and captured them also. York conducted the prisoners to the Second Battalion command post where 132 were counted.

From there York took his prisoners to the Regimental HQ, just west of Châtel-Chéhéry. He added additional prisoners to his group and escorted over 200 Germans back to Brigade Headquarters in Varennes more than 10 kilometers south of Châtel-Chéhéry (Skeyhill 1928).

For his actions on October 8, Alvin C. York was promoted to sergeant [by which rank he was habitually called] and awarded the Medal of Honor. His citation reads:

Rank and organization: Corporal, U.S. Army, Company G, 328th Infantry, 82d Division. Place and date: Near Châtel-Chéhéry, France, 8 October 1918. Entered service at: Pall Mall, Tenn. Born: 13 December 1887, Fentress County, Tenn. G.O. No.: 59, W.D., 1919. Citation: After his platoon had suffered heavy casualties and 3 other noncommissioned officers had become casualties, Cpl. York assumed command. Fearlessly leading 7 men, he charged with great daring a machine gun nest which was pouring deadly and incessant fire upon his platoon. In this heroic feat the machine gun nest was taken, together with 4 officers and 128 men and several guns.

(www.army.mil/cmh/)

His return from France was honored throughout his native state of Tennessee and he went on to become an influential state and national figure for the remainder of his life. He never sought to exploit his fame other than to raise funds for local civic and charitable causes. In 1942 his attempt to re-enlist at the age of 54, was rejected and instead he was given the honorary rank of Colonel and became active in Army recruiting and raising funds for the American Red Cross.

His final years were dogged with ill-health and he died on Sept. 2nd 1964 in Nashville, Tennessee where his imposing statue in front of the State Capitol building attests to his enduring status in his home state. ■



SERGEANT
ALVIN YORK'S
FIELD OF
GLORY

By Colonel
Doug Mastriano
US Army

General Lindsey:

*"York, how did
you do it?"*

Alvin York:

*"Sir, it is not man
power. A higher
power than man
power guided and
watched over me
and told me what
to do."*

York talking to his
commander, during
the 1919 AEF battle
investigation



The track leading westward towards Châtel Chéhéry, along which York marched his 132 prisoners immediately after his action

Corporal Alvin York's remarkable actions on 8 October 1918 were to prove pivotal in the last battle for the Argonne Forest and he came to personify the ideals of the AEF Doughboy. However, the challenge was that for years the exact location of where York fought was seemingly "lost to history." Fortunately, it was possible to overcome this apparent gap. That is, to apply a well rounded historical approach that integrated data from both the German and American sources, in addition to applying military terrain analysis, geospatial technology, battlefield archeology and ballistic firearms forensics. This provided a process that both historically and scientifically enabled one to get to the bottom of the York story.

The overarching research methodology used to guide our approach to this study included the following disciplined process:

1. Primary source research in German and American archives
2. Military terrain analysis, and geospatial mapping
3. Doctrinal templating (using contemporary German 1917-1918 doctrine)
4. Battlefield artifact evidence
5. Ballistic forensic analysis.

Through this rigorous five step process, we were able to historically, analytically and scientifically locate the site of the York battle without relying upon subjective interpretations.

Of course, the research started in the archives both in North American and Europe where there was abundant information on this battle. On the American side, a central piece of history pertaining to this battle is found in the division investigation that looked into the York feat. This was led and organized by the 328th Infantry Regimental Commander, Brigadier-General Lindsey. In February 1919, less than four months after York's famous battle, the investigative team returned to the battlefield outside of Châtel Chéhéry. After walking the ground, reviewing the affidavits of the other squad members, and speaking with York, Lindsey was convinced of the exceptional nature of what was accomplished on 8 October 1918. He directed that York be recommended for the Medal of Honor.

Unfortunately, the maps and documents used by Lindsey's investigative team were lost to history although photos and the affidavits from this investigation did survive. A note on the back of one of the photos provides an important notation of where

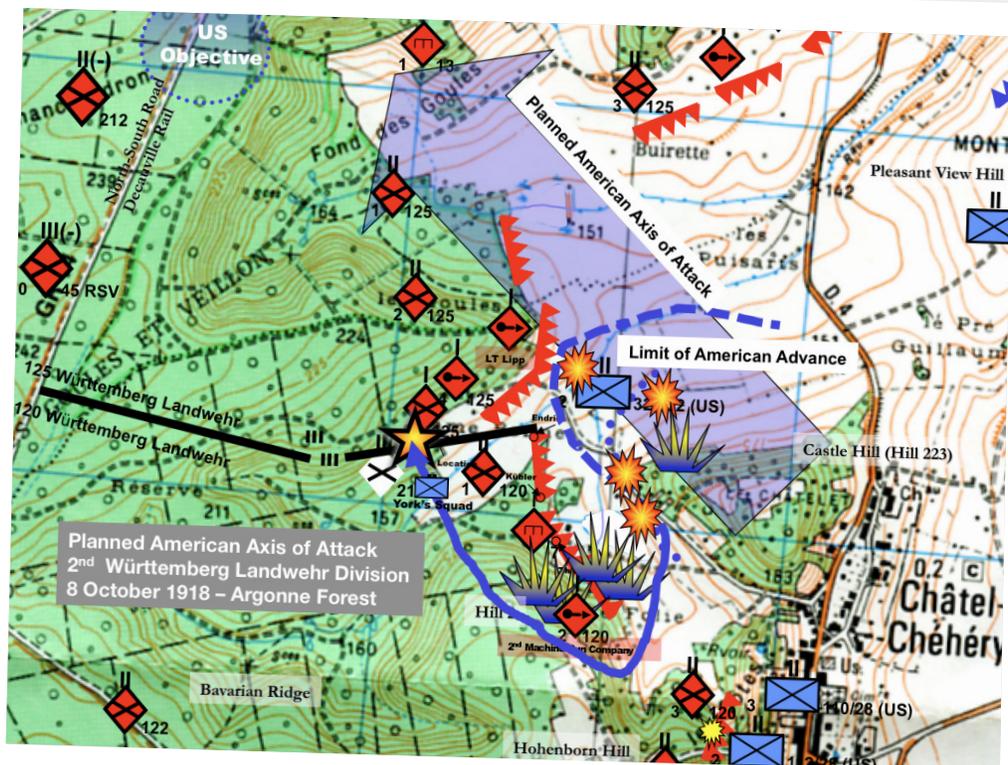
York's feat specifically occurred, declaring that it was "1 1/2 kilometers *northwest* of Châtel Chéhéry." This is an important and specific clue from the American records that requires no mental gymnastics to interpretively understand.

However, to garner a full understanding of where this battle transpired, it is of importance to reference both the American and German sources. Understandably, the focus of American endeavors to sort out the York event of 8 October 1918 have relied upon the American archives. The problem with this is that the American sources are often missing in precise locational details. We know that the American attack that transpired on the 8 October morning went horribly wrong, completely throwing off the 328th's scheme of maneuver in that the Germans not only stopped the Americans, but channelized them to the meadow on the south-side of "Humserberg" (the center hill northwest of Châtel Chéhéry) where the Americans had no intention of going.

Additionally, as the attacking force, the Americans were not fixed to a particular line as the Germans were. It is because of this that the American sources lack details as to where this battle transpired. However, the manner in which to overcome this deficiency was to scour the German archives. Here, there were two-hundred primary source archival documents and books not available in the United States that provided maps, overlays and accurate battle accounts. However, the key is not simply being able to read German, but also to understand these in a historic military context, which requires a great deal of specific military and historiographical training.

After studying the American and German archival data, it was apparent that there was only one possible area in the entire Argonne Forest of France where this event could have happened. The location needed to be along the boundaries of the three German regiments involved in the York action. Interestingly, in over four-years of war, there was no other location along the Western Front where the 120th Württembergische Landwehr Regiment, 125th Württembergische Landwehr Regiment, 210th Prussian Reserve Regiment, served together, except for the morning of 8 October 1918.¹ This narrowed down the search area significantly thanks in large part due to a German overlay discovered in the archives.² The star on the following map denotes the only area that fits this historical requirement.³

Before progressing further on this discourse, it is of some import to highlight interpretive challenges encountered in the archival data. As per any battlefield event, there are diverse points of view on what



transpired in October 1918. These differences exist not only between the German and American perspectives, which should be anticipated. But, there were also disagreements between individual accounts from the same respective side. Interestingly, these discrepancies tend to increase as time progressed in the relation to the event. From this, it is clear that the accuracy of the recorded battle related events faded as time and memory passed. For the sake of time and space, I shall address only the foremost discrepancy.

Eleven years after the battle, the United States Army attempted to do a reconstruction of the battle and sought help from York's former battalion commander (G. Edward Buxton) and former company commander (E.C.B. Danforth). Their collaborated sketches for this place the scene of action well outside of the 82nd's area of operations and far into the 28th Infantry Division's sector in a deep and narrow gorge that was of no military value. Danforth was honest about his and Buxton's lack of accuracy, by stating, "I am afraid that no one, not even York himself, can give you a very accurate lay-out of the fight."⁴ Danforth was correctly concerned that too much time had passed since 1918 to render an accurate recollection. Furthermore, Buxton was not

York's commander in this battle and was not involved in this fight, which therefore should have disqualified him from having an opinion on it. Additionally, Danforth was not directly in this action either as he was in the valley leading his company. The biggest issue related to the Danforth/Buxton sketches is that they depict York's action one kilometer away from the 125th Landwehr Regiment. This alone excludes their sketch as it was the 125th's machine gun that York fought against and from whence he collected prisoners, which included Lieutenant Paul Lipp, the machinegun element commander.

Additionally, the Danforth/Buxton location is impossible from a logical military terrain analysis perspective. It places the York action on the narrow southern chasm of a distant hill which was 600 hundred meters away from combat action at this point in the battle. This location makes no sense militarily. Analysis of the terrain reveals that the Danforth/Buxton location lacks line of sight, observation and is a military "dead zone," meaning that it is not key terrain, nor able to influence the outcome of any fight in the area and therefore could be easily blocked, contained, or bypassed.⁵ Moreover, the German accounts are clear that the area denoted by Danforth and Buxton was

2nd Bn., 328th Inf.,
82nd Div., American E.F.,
Frettes, France, Feb. 21, 1919.

AFFIDAVIT OF Captain Bertrand Cox, 328th Inf.

Personally appeared before me the undersigned, Capt. Bertrand Cox, who made the following affidavit:

"On the morning of October 8th, I commanded a support platoon of "F" Co., 2nd Bn. of the 328th Inf. Shortly after Corporal York and his detachment of seven men succeeded in capturing the greater part of a German battalion, I advanced with my platoon and passed the scene of the fight, which took place before this capture was accomplished. The ground was covered with German equipment and I should estimate that there were between 20 and 25 dead Germans on the scene of the fight."

Sworn affidavit of Captain Cox testifying that his platoon traversed the area where York fought below Humserberg and the corresponding official 328th Regimental unit map

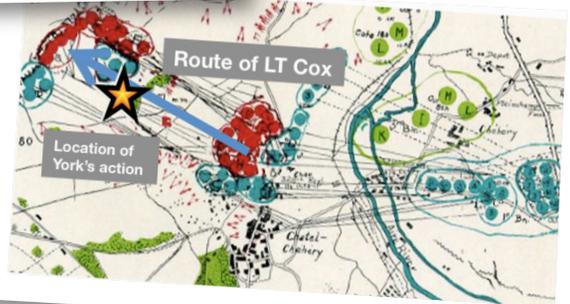
only used during the fighting withdrawal well after the York fight was over. It was here that the Germans used reverse slope defense to pull a battalion to safety after the line collapsed due to York's actions hours earlier.

A recently identified source actually has sufficient data to resolve the Danforth/Buxton conflict and thereby eliminates the need of subjective interpretation regarding the location of the York site. The officer, Captain (then a Lieutenant) Cox of Fox Company, was the only American officer to traverse the York site. He testified that during his unit's movement to the Decauville Railroad, they passed over the ground where York's fight occurred.⁶ His sworn affidavit was given on 21 February 1919 and states:

On the morning of October 8th, I commanded a support platoon of "F" Co., 2nd Bn of the 328th Inf. Shortly after Corporal York and his detachment of seven men succeeded in capturing the greater part of a German battalion, I advanced with my platoon and passed the scene of the fight which took place before this capture was accomplished. The ground was covered with German equipment and I should estimate that there were between 20 and 25 dead Germans on the scene of the fight.⁷

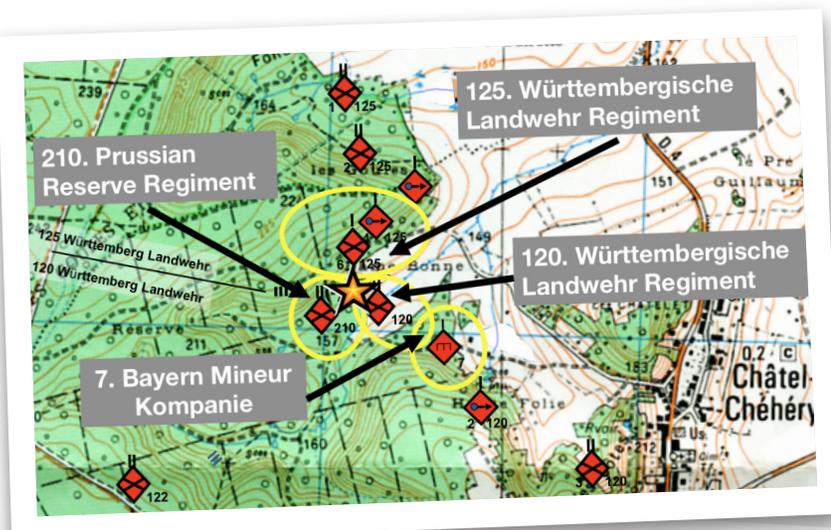
A further inquiry into the 328th Infantry Regiment official history illustrates the movements of all units during that battle. The red dots denote each platoon in York's battalion. The superimposed arrows follows the route Captain Cox's unit moved, which is precisely across the location that we have identified as the York site.⁸

Captain Cox's affidavit and the corresponding 328th Regimental unit map clearly illustrates that Cox led his men across the southern face of the middle hill.⁹ Incidentally, this is 1 1/2 kms northwest of Châtel



Chéhéry just as the York photo of 1919 states. This is the center hill often referred to in German sources as Humserberg. Not only is this logical from a military perspective, but is also confirmed by both American and German eye-witness reports.¹¹ Captain Cox's testimony is corroborated by several sources, including Lieutenant Colonel Buxton who said, "...Cox passed the scene of this fight during the forenoon with... F Company. He estimates that approximately twenty dead Germans lay on the hillside."¹²

Adding to the weight of evidence as to the location of the York site are the German sources. After the Great War, the Germans conducted an inquiry into what transpired on 8 October 1918. This included most of the key players who provided their view of the battle.¹³ A vital item for the search of the York site is the map that this report included from the eyewitness testimonies. The "X" is where these German officers agree where York's action occurred, which is congruent with Captain Cox's testimony of the site being on the center hill one and one-half kilometers northwest of Châtel Chéhéry.¹⁴ As affirmation of the accuracy of this German map is the fact that the only trench in this meadow is located near "X." The trench is essential in that it was from here that German Leutnant Fritz Endriss deployed his platoon and led his failed bayonet attack against York.



2nd Württemberg Landwehr Division disposition and locations 8 October 1918 - Argonne Forrest - 0600-1000. Your took prisoners from these four German units. There is only one in the Arginne Forrest possible where York fought - the confluence of the these units

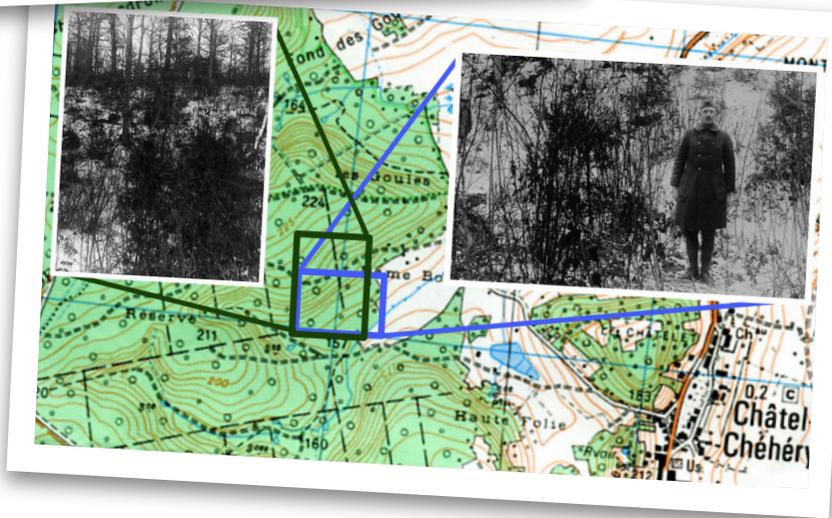
1919 Official US Army photographs

Additionally, the testimonials from the Germans and Americans say that the location of York's action was near two roads,²⁰ in a meadow,²¹ along the southern portion of Humserberg,²² and near a small stream.²³

Incidentally, the German machine guns that York engaged must be in a position where the German machine gunners were able to observe both the actions of the American 328th Infantry Regiment trapped in the valley and the meadow.²⁴ The only position possible is along the regimental borders of the 120th and 125th.²⁵

Another clue from the archival data related to the location of the York site is that it must agree with historical facts about German units involved and unit defense locations. Of this, the report of the 120th Regiment stated the following:

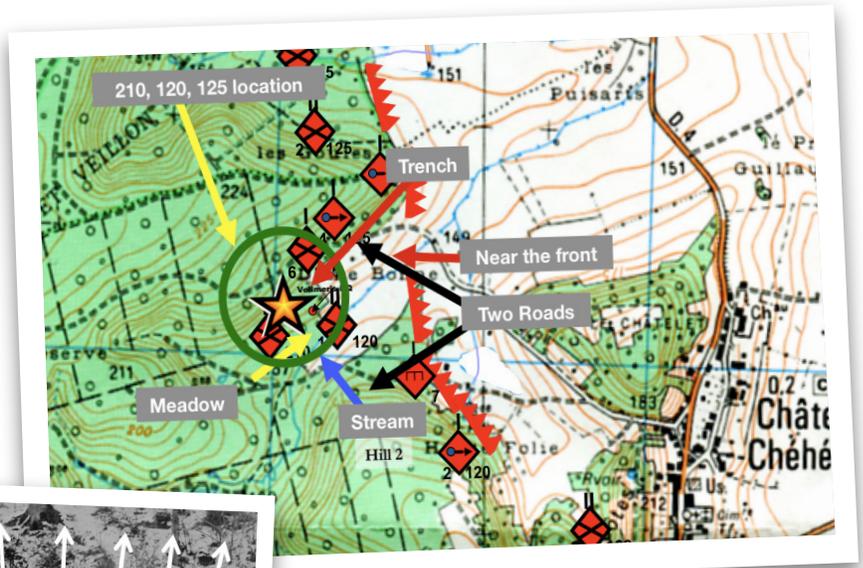
*The flank of 6th Company reported an enemy surprise attack. Next, the remnant of 4th Company and personnel from the 210th Regiment were caught by this surprise attack, where Lieutenant Endriss was killed. The company was shattered or was captured. Also Lieutenant Vollmer ended up in the enemy's hands...By this, we knew that the enemy was moving against the North-South Road.*²⁶



Having established that the designated York location is 1 1/2 kilometers northwest of Châtel Chéhéry, the next question is whether the terrain here matches photographs taken during the inquiry in reference to York's actions. The images taken of where York earned the Medal of Honor are superimposed on the following map and matches the ground 1 1/2 kilometers northwest of Châtel. In the photo on the right, note in the left background is an American officer. He is 30 meters behind York. The meadow where York is standing is relatively flat and wide (much wider than the deep gully south of here) until after the officer where it then rises sharply, corresponding to the photo depicted on the left.

Intelligence based shadow imaging of these photos also demonstrates that York was facing south (just below Humserberg) - confirming our location. Most importantly, the photo shows the cut line of the

Agrees with written German and American testimony: two roads (York), meadow (Vollmer), dominant hill (Vollmer), steam (York), at the front (Vollmer), 210, 120, 125th (Glass), colse to Endriss (Kubler) and near a trench (Torl/Vollmer)



The arrows point to the flat edge of the German supply road that goes up the southern slope of Humserberg

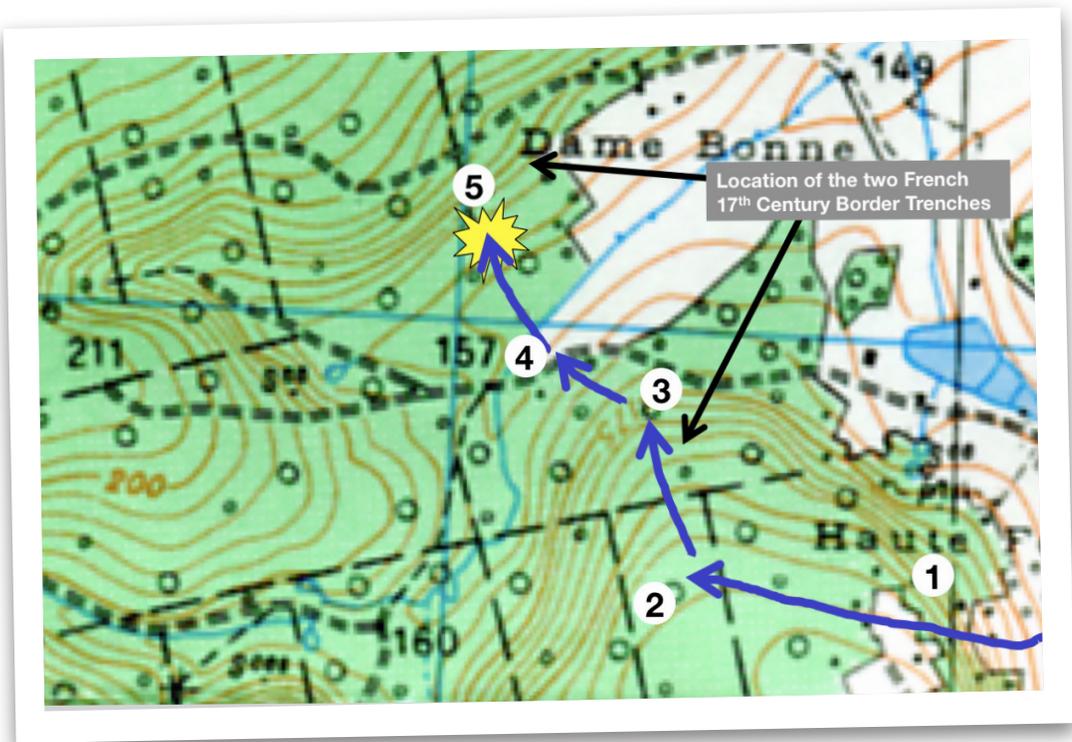
German road along the top of the image identified by military geospatial analysts. This astounding piece of evidence demonstrates that the site of York's action had to be along the southern edge of Humserberg - as the road is along the top of York's photo. This road remains to this day and is the access route to the York monument built under American and French authority at the battle site. Both the American and German accounts agree that there were two roads in the vicinity of the fight. The location of the York site is just 50 meters below the northern German supply road and 100 meters above a southern supply road. The location is adjacent to these two roads, with York crossing over both during the melee.²⁷

The York site as designated on the previous map is congruent with this terrain and is exactly where and how both the divisional and regimental records state as it is in the meadow and the edge of Humserberg.²⁸

Another feature described in York's remembrance of the battle is the presence of a stream.²⁹ Of this, York said in his diary, that... "We then jumped across a little stream..." This stream passes through the meadow where Vollmer's 1/120th was deployed and was crossed by York and the other 16 Americans to reach the German headquarters. The stream location, in addition to the other terrain features, are harmonious with the York site.³⁰

Finally, as alluded to before, the York site must be near the trench used by Endriss.³¹ This trench is just northeast of the York site by approximately twenty meters and is therefore correctly situated to be part of the fight.³² This trench is the most important aspects of the testimony provided by the Americans and Germans.³³ The only trenches that exist here were border trenches dug during King Louis XIV reign in the 1600s. These were constructed in straight lines as land boundaries. There are two French border trenches within a kilometer of this site. The first is on the north face of the ridgeline south of the York site, whilst the second is in the meadow.³⁴ Interestingly, both of these trenches were important to the York saga.

A key piece of history related to where the battle transpired is found in the testimony of Corporal William B. Cutting (also known as Otis Merrithew). Cutting was part of the seventeen Americans (which included York) to participate in this fight. Cutting says that the leader of the group, Sergeant Early, was focused on taking out the machineguns on the center hill, "Humserberg." After moving along the southern ridge line, Early led his men down "an unoccupied trench and then scattered into the woods."³⁵ In fact, it was Early's discovery of this old



Route of the 17 American based on testimony, terrain and trenches

French border trench that aided his decision to circle back at this point in the fight. Cutting's statement is bolstered by research into this battle conducted by a Saturday Evening Post reporter, George Pattullo in 1919. In his article, "The Second Elder Gives Battle," Pattullo says that the Americans "... came upon an old wide trench.... They entered this and followed it."³⁶

This trench is a straight, north-south line on the northern face of the southern ridgeline. After walking down this trench, the men came upon a German supply road overlooking the meadow between the ridge and Humserberg. Here, Early's men encountered two German sanitation soldiers, whom they chased to Vollmer's headquarters on the other side of the meadow.³⁷ It was here that the second trench is located and where Endriss led his failed bayonet attack against York. The following map depicts this descriptive narrative with key points designated numerically.

Point one is the route that the Americans followed to clear the battlefield in the valley. As they progressed in a westward direction, the group encountered the trench described by York and Cutting at point two. After speaking with the squad leaders, Sergeant Early led the men down this trench to outflank the Germans.³⁸ This was a sound decision from a tactical

point of view as they had circumvented the German front and were in position to strike at the rear of the machine gunners on Humserberg.

After using this trench to move down the north face of the ridge, the Americans arrived at point three and "scattered into the woods" according to Cutting and then followed a "winding dirt path."³⁹ This description is consistent with what one finds even today at point three. The border trench empties into the woods and just below it is a "windy dirt path." This dirt path was part of a German supply network.

As the men moved down the dirt road, they encountered the German sanitation soldiers, who were fetching water at point four.⁴⁰ Upon seeing the Americans, the two German soldiers fled directly to Vollmer's Headquarters across the meadow with the Americans following closely behind.⁴¹ This led to the ensuing firefight at point five, which is adjacent to the Endriss trench and where the French authorized the construction of monuments.⁴² The first hand sources concur with this site, particularly that of the testimony of Captain Cox as well as the maps provided by the Germans, which all collaborate this. Finally, this point is the convergence area of the 120th Württemberg, 125th Württemberg 210th Prussian regiments.

Application of military terrain analysis to find the York site.

Although it is apparent from the eyewitness accounts where the York site is located, it is useful to apply military terrain analysis to evaluate this. Terrain analysis is examining the ground with an eye on how to best use it to gain an advantage over an adversary. The best manner in which to look at this ground tactically is Intelligence Preparation of the Battlefield (IPB).⁴³ Although IPB has been formalized in recent years, it is a process that captures how commanders have used terrain for centuries. Such an approach was heavily utilized by the Germans throughout the Great War.⁴⁴

IPB is a four-step process that can be applied to determine when and where a force would be deployed from a logical military perspective.⁴⁵ The four steps in this process include;

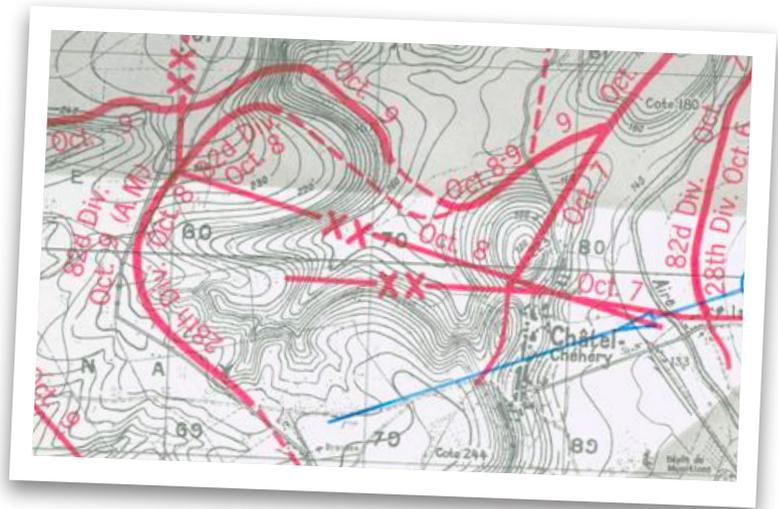
1. define the battlefield,
2. describe the battlefield's effects,
3. evaluate the threat,
4. determine enemy courses of action.⁴⁶

Step one - define the battlefield is to “identify characteristics of the battlefield which will influence [military] operations.”⁴⁷ There are several factors related to this, however, for the sake of brevity, we shall only discuss Area of Operations. The Area of Operations (AO) is basically where the fight occurred. This maneuver space is assigned by a higher headquarters and is defined by unit boundaries. It is where the commander has responsibility to conduct military operations. Both the German and American units in the 8 October 1918 battle received their respective AO from their higher HQs, which assigned “ownership” over a piece of land for each commander. A commander is forbidden from firing or moving into an adjacent commander’s AO without first coordinating such a move.⁴⁸

The AO for the 82nd American Infantry Division was a straight line that went northwest into the Argonne from the southern section of Châtel Chéhéry. South of the 82nd Division boundary was the 28th US Division, which was to make a complimentary advance to safeguard the 82nd’s left flank. In effect,

the 82nd owned the valley, with the 28th being responsible for the ridges to the south.

For the Germans, the German disposition overlay from 7 October 1918 illustrates that Humserberg (as the center hill northwest of Châtel Chéhéry) served as the regimental boundary⁴⁹ between the 120th and 125th Württemberg Landwehr Regiments.⁵⁰ To the south was the last regiment of the 2nd Landwehr



Division, the 122nd.⁵¹ This overlay shows that neither York or his mates would have made contact with the 122nd Landwehr in the ravine south of the York site as no prisoners from this unit were captured by the 82nd Division in this action.⁵²

During battle, soldiers use terrain in IPB to minimize vulnerability to enemy fire, canalize enemy movements, bring the greatest concentration of fire upon the adversary and to site weapons to their furthest possible range. The Germans in 1918 applied these considerations in deciding where to deploy their soldiers on 8 October 1918. In this regard, they focused on the following considerations to support the commander’s decision making process on force deployment;

Observation - Ability to acquire & engage targets.

Fields of Fire - The area that a weapon can cover with fire and is the Shoot vs. See for both direct (rifles / machine guns) and indirect fires (artillery)

Cover & Concealment - Cover is protection from direct and indirect fires, and concealment is protection from ground and aerial observation

Obstacles - A natural & man-made terrain feature that: stops, delays, impedes, diverts, restricts or canalizes movement

Key Terrain - An area or feature whose seizure or control affords a marked advantage. This is terrain upon which mission accomplishment is dependent

Avenues of Approach - An axis of advance to the objectives that has some cover and concealment, reasonable mobility and little canalization. Within avenues of approach are mobility corridors, which allow a unit to deploy & maneuver in doctrinal, tactical formation.⁵³

The Germans applied these considerations to their defensive lines of 8 October 1918 so adeptly that it cost York's battalion the highest casualties it encountered during the Great War.⁵⁴ The German plan was multi-faceted and in congruence with their approach to warfare.⁵⁵ First, they were to defend against the impending American attack.⁵⁶

the machineguns along the military crest of the center hill (Humserberg). This was the center of gravity of the entire German defensive plan. from a Clausewitzian point of view.⁶⁰ The position of the German units around the York site give them clear observation to Castle Hill (Hill 223), which means that the Germans could engage the Americans as soon as they departed Châtel Chéhéry.⁶¹ In fact, the lay of the valley favored the defense in that the Germans on Humserberg could engage the Americans at maximum range. This location of the machineguns, with extended line of sight is ideal for such a defensive action. The York site as discussed is harmonious with this consideration.⁶²



German machine gun line of sight. The machine gun attacked by York was on the center hill (Hamserberg) not only because this was the southern most location of the 125th Landwehr Regiment, but also, this position has a clear line of sight to Hill 223, and occupies key terrain. Contemporary German archival data from October 1918 confirms this location.

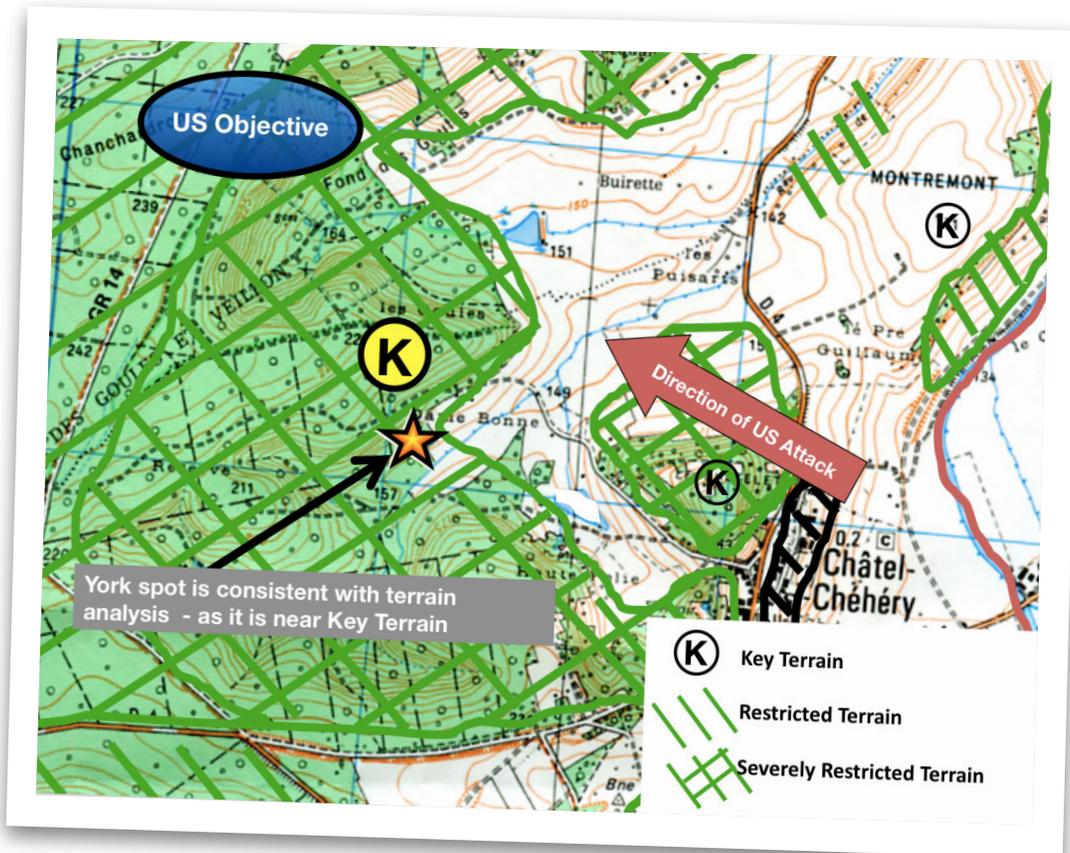
The star denotes where we recovered York's battlefield artifacts.

After thwarting this, they would transition to a four regiment strong counter attack.⁵⁷ The purpose of this operation was to sweep the two avenues of approach clear of Americans and then to retake the hills on the edge of the Meuse Valley to stabilize their position in the Argonne.⁵⁸

The first facet that the Germans considered in their tactical deployment was observation. The better the observation, the further out a belligerent can engage the enemy.⁵⁹ The key aspect of this consideration are

The next consideration is Fields of Fire which is the area that a weapon can cover; the shoot vs. see of both direct and indirect fires. The German positions surrounding the York site provide excellent Fields of Fire as there is little terrain masking.⁶³ Therefore, not only could the German defenders here observe the Americans in the valley, but they further had excellent fields of fire from which to engage them.⁶⁴

Cover & Concealment is the next aspect of terrain analysis to assess. Cover is the availability of having



Terrain Analysis on the 8 October 1918 battle

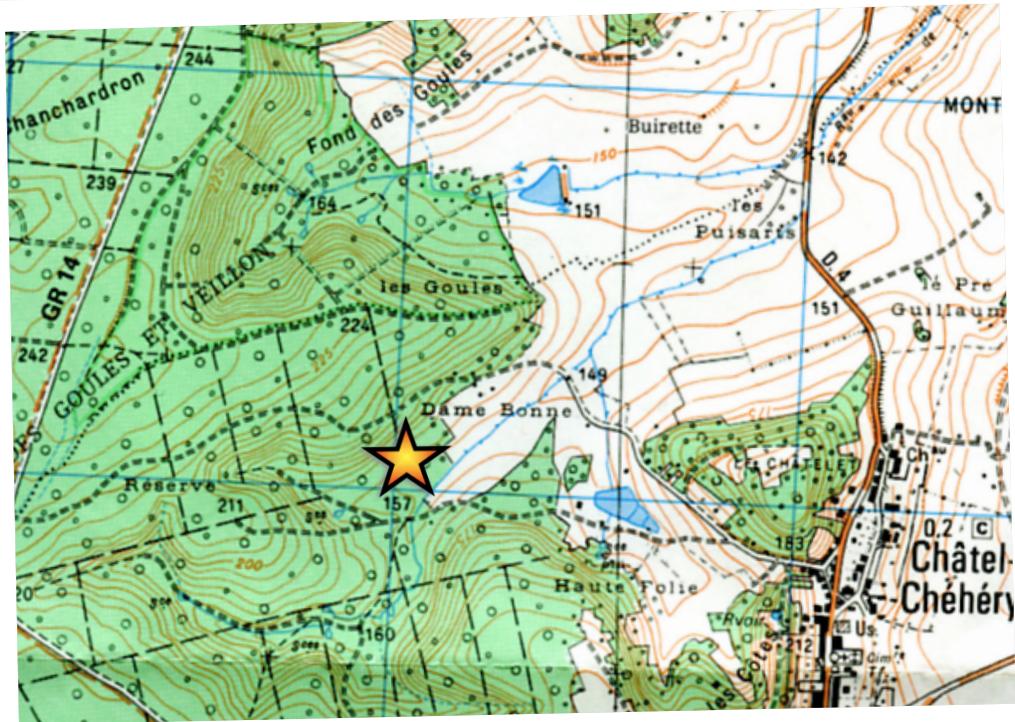
from direct and indirect fires, whilst concealment is being able to secure protection from observation.⁶⁵ The area surrounding the York site provides ample cover and concealment due to the nature of the forest. That is, the Germans, by using the lay of the land, sunken roads, and forest vegetation, established effective cover and concealment to support their defensive plan.⁶⁶

The next component encompasses obstacles, which includes both natural & man-made features that: stop, delay, impede, divert, restrict or canalize movement. Of this, the Army manual states, “Obstacles, whether artificial or natural, are very important considerations in the conduct of terrain analysis. Obstacles significantly impact on a force’s ability to maneuver or move rapidly through an area.”⁶⁷ The German utilization of terrain around the York site was an excellent use of obstacles to limit the American advance by using the hilly terrain and the steep ridges to channel the American attack into a kill zone.⁶⁸

Of all the considerations in the construct of

military terrain analysis, identifying key terrain is the most important. Key terrain is a feature whose control affords a marked advantage that directly influences the battle’s outcome.⁶⁹ During the battle of the Argonne west of Châtel Chéhéry, the decisive key terrain was the center hill that the Germans called Humserberg. Whomever held this hill at the end of the battle would prevail in that it controlled both valleys, and the only avenues of approach into the Argonne.⁷⁰ Additionally, this area was the marshalling area for follow-on attacks into the Meuse Valley.⁷¹ Indeed, Humserberg was the gateway, that controlled access into the Argonne Forest between the villages of Apremont, Châtel Chéhéry and Cornay. This critically important terrain feature could not be bypassed if one intended to win the battle.⁷²

This is why that the engagement between York and the 125th Landwehr machine guns occurred along Humserberg’s southern slope.⁷³ This is clearly stated in the German records and corresponds to the deployed location of Vollmer’s 1st Battalion, 120th Landwehr Regiment. Winning control of any other hill in this valley would have had no significant effect on this engagement.⁷⁴ Control of Humserberg was decisive to the outcome of the Battle of the Argonne, as the loss



Logical from a tactical military perspective. Using IPB (Intelligent Preparation of the Battlefield) as a measure of military logic: observation, cover and concealment, fields of fire, key terrain, axis of advance, engaged in the fight, supports German plans and obstacles

of it forced the Germans to retreat from this area the next day.⁷⁵ This is why the German high command was willing to deploy two additional regiments here (210th and 212th Prussian Reserve Regiments) to expel the Americans from here.⁷⁶ These reserves were committed when the Germans were woefully limited on forces.⁷⁷ Therefore, the York site here is consistent from both a military and geographic point of view.⁷⁸

The next consideration is avenues of approach, which is the route a force could use to seize its objective or key terrain. Ideally, this includes good lines of communications, some cover and concealment, reasonable mobility and little canalization.⁷⁹ The area of operations surrounding the German positions, on and around German-occupied Humserberg, provides two good axis of advance to counterattack for the Germans. The York site is fully supported by these precepts of terrain analysis and German tactical doctrine of this epoch.⁸⁰

Analysis of the terrain surrounding the York site using military terrain analysis demonstrates that this area is coherent from a military perspective. It

provides excellent observation, exploits the advantages offered by the Argonne Forest and rugged hills, has good fields of fire, makes use of key terrain, employs natural obstacles to defeat the American attack and has two axis of advance to support the planned German counterattack.⁸¹

Using the advantages of the hills as natural obstacles, plus employing good cover and concealment of its forces, the Germans had a concept of operations consistent with their doctrine. Once the tactical advantage was achieved, the Germans intended to transition to the offensive to retake the lost ground and to secure their position in the Argonne with a four-regiment counter attack to push the Americans out of the valley and off of the outward hills.⁸² This would safeguard their position in the Argonne.⁸³ Because of this, it is evident from the outcome of this battle that the center hill was decisive key terrain. Had York's feat occurred anywhere else along the line, the effects would have been minimal upon the Germans.⁸⁴ Therefore, what the sources say of the York site location stands up to military analysis and logic.

What does Battlefield Archeology say of this battle?

Having ascertained where the German and American sources say the York site is located geographically, and confirming this location by means of military terrain analysis, it was time to conduct battlefield archeology. This enabled us to measure the eye-witness accounts and the terrain analysis to see if the story surrounding the events was supported by the battlefield artifacts. Finding the location of the German machinegun involved in the action was perhaps the easiest endeavor due to its specific description in the German sources. The site had to be slightly above the German supply road on Humserberg based upon York's testimony, as well as what the German reports say of it.⁸⁵ The leveled ground to support the machinegun position stood out quite plainly as a location improved for such an end and was carved above the road overlooking both the meadow and the valley. Furthermore, just behind and above this location there were two sunken roads, which the infantry support platoon would have used as a fighting position.⁸⁶ As mentioned, the line of sight for the machinegun at this location was excellent, ranging out to maximum range to the hills astride Châtel Chéhéry where the American attack would come from.⁸⁷



7.9mm casings from German machine gun position eliminated by York on 8 October 1918

Once the field work began, the machinegun position immediately yielded literally hundreds of cartridges and shell casings. These were buried between five to ten centimeters beneath the Argonne soil and in considerably good condition. The discovery encompassed approximately 800 spent cartridges

and 150 live rounds.⁸⁸ The cartridges and live rounds recovered from this position had headstamp markings consistent with what the 2nd Landwehr Württemberg Division with the markings around the primer being S67 / P / 2 / 18.⁸⁹ This meant that these rounds were manufactured in 1918 at the *Polte Werke, Zentrale* in Magdeburg, Germany.⁹⁰ Due to the deteriorating war economy of Germany, the head stamps denotes that these cartridge cases were comprised of 67% copper and 33% zinc.⁹¹

As the German infantry rifle M 1898 rifle and the Maxim MG 08/15 machine gun fired the same caliber round, it was of great importance to find actual evidence of the cloth belt, or the metal brackets that the machinegun used to feed the rounds.⁹² Unfortunately, as the cloth material would have been exposed to the elements for some ninety years, the expectation to find pieces of it were unpromising. Nonetheless, this concern was abated when a series of the metal separators from the MG 08/15 *Patronengurt* were recovered. These separators were both loose in the ground and also fused to several of the live



Live rounds recovered from the machine gun York captured on Humserberg. The bullets were on a cloth belt, interspersed with metal links. Several of the rounds have pieces of the cloth belt still visible

rounds. Fragments of the cloth *Patronengurt* had also survived the effects of ninety years of exposure and were recovered with the rounds. These provided firm evidence that a MG 08 / 15 was indeed in action here during 08 October 1918. In addition, there were some 100 other artifacts collected from this location. This included German uniform buttons, metal equipment buttons as well as scores of eyelets from German shelter halves. An interesting find was at the far eastern side of

the machinegun position, where the rifle stripper clips were uncovered, was a M1898 rifle butt plate.⁹³

The American and German sources state that there was a group of riflemen firing in support of this machinegun.⁹⁴ This is where the two sunken roads above and behind this machine gun position play a part. The first was six feet above and behind (north) of the machinegun, and the second, rising slightly higher than the first, approximately 18 feet behind the machinegun. The depth of each was more than two meters. From a tactical perspective, these two sunken roads provided excellent observation, fields of fire, and both cover and concealment to anyone using them. As to its location geographically, these were perfect for infantrymen to utilize in providing supporting fires to their machinegun team, especially shooting into the meadow below, where York and the other sixteen Americans would have been positioned.⁹⁵

As a dozen soldiers were died in action here, these two sunken road trenches were literally filled with thousands of artifacts.⁹⁶ Of course, there was a vast assortment of expended 7.9mm cartridges, stripper clips, and live rounds, as one would expect from a location where soldiers were killed in action. Additionally, there were scores more buttons (uniform shirt and undergarment buttons), equipment latches, a German pocket watch, fragments of a Württembergische belt buckle as well as dozens of eye-lets from German shelter halves. Additionally, the bones of a horse, a bridle, horse brush and several horse shoes were recovered in this area. This was the remains of one of the nine horses that the 125th Württemberg Landwehr Infanterie Regiment reported being killed in action in a particularly lethal American artillery barrage literally swept across Humserberg in support of the attack of the 82nd American Division.⁹⁷

The depth of the artifacts ranged from 5-20 centimeters in depth. The deeper artifacts were found in the center of the sunken road, where erosion buried these more than those on the lip of the sunken road, or closer to the sides of it. The condition of the artifacts varied, with those being deeper suffering from more corrosion when compared to those recovered from a medium depth. However, the most corroded of the objects tended to be those near or literally sitting exposed on the surface, such as the belt buckle, which was in terrible shape from being the exposure to the elements.

Several spent American caliber .30 ball rounds (bullets) were found around and above this area, suggesting that a soldier was engaging targets in these positions. The next question, then, related to the German machinegun and its supporting sunken

road riflemen, just how did an Americans contend with these well emplaced soldiers? A clue to just how this occurred is found in Alvin York's Medal of Honor citation;

The Argonne Forest, France, 8 October 1918. After his platoon suffered heavy casualties, Alvin York assumed command. Fearlessly leading 7 men, he charged with great daring a machinegun nest which was pouring deadly and incessant fire upon his platoon. In this heroic feat the machinegun nest was taken, together with 4 German officers and 128 men and several guns.⁹⁸

We know that York crossed the German supply road along the southern perimeter of Humserberg during his "charge" up the hill against the machinegun position. However, any attack against the front, right flank, or the rear of the machine gun would expose him to the fires of the infantry men in the sunken roads. There is only one place where York could outflank both the German machine gunners as well as its infantry support platoon and York found it.



Horse-shoes, a brodge, horse brush, German entrenching tool, burrons and clasps found near the German machine gun position

As to a description of this area, the lowest of the two sunken roads run parallel with the supply road, which is just three meters south and lower than it. The other, and higher sunken road runs at an angle against the other sunken road, and converges with it some 15 meters east of the machinegun position, pointing towards Châtel Chéhéry. It is here, where the two sunken roads converge, form the base of a "V". From the tip of this "V", one has perfect line of site up both

sunken roads, as well into the flank of the MG 08 machinegun position.

The battlefield archeology at this flanking position yielded some of the most important finds of the York battle. Within an area of 1.5 meters diameter, we recovered forty-six American Remington Arms 30.06 caliber cartridges. Of these, all except one was fired. Additionally, the nine associated American .30-06 stripper clips were also recovered at this site amongst the .30 cartridges.



The forty-six American 30-06 cartridges believed to be York's.



30.06 caliber cartridge and stripper clip during excavation at the site where York outflanked the German machine gun and its infantry support

The discovery of forty-six cartridges is consistent with what York fired during this engagement. The eye witness accounts say that York fired all the ammo from the front of his belt pouches.⁹⁹ The basic combat load

of American soldiers, which they carried on cartridge belt, was 100 rounds in ten pouches.¹⁰⁰ Based upon this, York fired a maximum of fifty rounds from his rifle during this engagement.¹⁰¹

In addition to the location of this site, as a flanking position against the three "lines" of German defenders is consistent with the York narrative. Based upon these considerations, this marks the exact position where York used his Eddystone M1917 rifle against the 125th Württemberg Landwehr Infantry on 8 October 1918.¹⁰² The authenticity of this discovery will be bore forth with further supporting evidence via forensic analysis.¹⁰³

In addition to the significant recovery of York's 30.06 Model 1917 Eddystone rifle cartridges, another momentous find was to occur on Humserberg. On this hill, the personal effects of a missing German soldier were recovered. This included both of his shoes, his undergarment buttons, several military buttons, his gas mask, and numerous assorted accoutrements. However, the single most important artifact was the recovery of this soldier's complete identification tag. The tag provided the following information:

SCHÜTZE WILH HAERER

(Gunner/Private Wilhelm Härer)

STEINBACH O/A BACHKNANG

(Hometown of Steinbach am Backnang)

2. M.G.K L.125

(2nd Machinegun Company, Landwehr Regt.125)

GEB 1. 11. 1882

(Birth date 1 November 1882)

The soldier, Wilhelm Härer, was a machine gunner assigned to the 2nd Machinegun Company of the 125th Landwehr Württemberg Regiment, the same unit to fire upon York and the other Americans.¹⁰⁴

The recovery of Härer's military identification tag was a major coup in the research related to the York battle, in that this is a specific name directly linked to the 8 October 1918 fight. Härer was assigned to Leutnant Lipp's portion of Humserberg. Lipp commanded the machine gun which Alvin York assaulted. Lipp was captured by York. As a result of York's actions, Wilhelm Härer's gun crew fell back with his regiment under heavy American pressure with¹⁰⁵ Härer falling in battle.¹⁰⁶

This discovery is the strongest evidence directly linking a specific soldier with the York site. This is significant in that detractors can explain away buttons, and collar disks, which hundreds of soldiers carried. However, Wilhelm's ID tag is hard to ignore and adds

evidenced based credibility of Humserberg being where the German machine gunners fought York.



The identification tag of Wilhelm Härer - evidence that the 125th Landwehr defended Humserberg

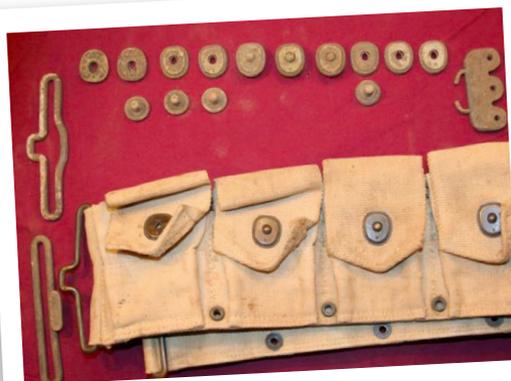
Other important discoveries from Humserberg encompassed a large collection of American related artifacts that tell the story of the intense struggle that transpired for this hill on 8 October 1918. These included American aluminum field grooming combs, field mirrors, a pocket frame, a pocket watch, several



Some of Wilhelm Härer's personal effects, which included buttons, his gas mask, a shoe, ammunition and other items

mess kits with eating utensils, buttons, rifle cleaning kits, several US Model Carlisle first aid kits (both used and unused), canteens, and coins. The location and condition of these signify that they were from York's unit, the 2nd Battalion, 328th Infantry Regiment, 82nd US Infantry Division.¹⁰⁷

The battlefield archeology in the meadow at the base of Humserberg provided even more clues to what transpired during this battle. Here, the history tells us that Vollmer and his staff was captured at a small wooden shack that served as his battalion headquarters.¹⁰⁸ It was here, that soldiers of the 120th Württemberg Landwehr Infantry and Prussian 210th Regiments, whom the 17 Americans surprised and captured without a fight.¹⁰⁹ The only recorded resistance offered by this group was led by Leutnant Fritz Endriss towards the end of the battle. However, what both German and American sources attest to is that the preponderance of the men here capitulated without firing a shot in anger. With this in mind, what



2nd Battalion, 328th US Infantry Regiment

was uncovered in the meadow and does it compliment or contradict the York story as we know it today?

One very important find was evidence of Vollmer's battalion headquarters building. Situated thirty meters below (south of) the Endriss trench, it was ideally suited to both monitor the battle and to centrally command his battalion. His battle area of operations stretched from the supply road on Humserberg (which was over watched by Paul Lipp's men), south to the next set of ridges where he deployed the 7th Bavarian Mineur Company. It was from here that Vollmer would command the valley in addition to being able to receive reinforcements and plug them into the line, much as he had done with the 7th Bavarian just before the American attack.¹¹⁰

There were numerous archeological finds associated with this headquarters used by Vollmer. The diverse artifacts were located in a fairly narrow space of some five meters in circumference. The artifacts included a door lock, numerous nails, hinges



Several American uniform buttons and a US National Army collar disk (worn by York's unit), recovered from Humserberg

for the door, a large water bucket, as well as pieces of a cast iron stove being the chief items. The condition and location of the stove, and the various metal pieces typically found in a wooden structure supports the German and American documented claims of Vollmer's headquarters being located in the meadow, near the base of Humserberg.

Near this headquarters was also the battalion garbage pit, which contained abundant, German wine and beer bottles. Also found in this were fragments of clay schnapps containers, which the soldiers would sip prior to battle. This would be a common find near any headquarters, as units in the field endeavored to maintain some sort of sanitation and field discipline.¹¹¹

The remainder of the meadow area along the southern base of Humserberg, where the 210th Prussians and the headquarters of the 1st Battalion,



Battles recovered from Vollmer's battalion trash-pit

120th Württemberg were deployed yielded literally thousands of other artifacts.¹¹² Of particular interest was the discovery of hundreds of German 7.9mm caliber rounds.¹¹³ These rounds were recovered from depths between five to twenty centimeters. The rule of thumb for this type of archeology is that the closer the artifacts are to a hill, or rise/land elevation, the shallower they are. Conversely, the further and lower they are in a meadow, or trench, the deeper they tend to be due to the effects of erosion, etc. The condition of the artifacts varied considerably. Those in the meadow tended to show more corrosion or wear than those closer to the hill.

Of these were two groupings of bullets and accoutrements, the first was a scattered and irregular smattering of them across a portion of the meadow. The other group was a literal line of ammunition recovered, at five meter intervals in good military fashion just east of Vollmer's headquarters. This arrangement, or lack thereof for the artifacts in the midst of the meadow along the southern face of Humserberg fits well with the description by both German and American sources regarding the condition of the 210th Prussian advance guard when they arrived early on 8 October 1918, literally dropping their gear to eat breakfast. While the organized cache of ammunition and equipment on the east side of this headquarters would have belonged to Vollmer's Württembergers, who were already in the fight.¹¹⁴

Of course, ammunition was not the only item found during the battlefield archeology portion of this research here. There were also hundreds of military accoutrements, latches, equipment brackets and clasps that were recovered as well. This encompassed the metal pieces one would find attached to German belts, web gear, cartridge belts, helmet chinstrap mounts, pouches and straps. What's more, a half-dozen harmonica reed plates were found as well amongst these items. During the Great War, harmonica playing was a particularly popular affair for German soldiers and this is a customary find with their personal effects.

In addition to the diverse accoutrement finds, several military uniforms buttons associated with both Württemberg and Prussian infantry regiments were recovered from the meadow. These included a wide assortment of Imperial German army tunic buttons, equipment buttons, rear of tunic belt hooks, undergarment buttons and jacket buttons. Of these, several buttons with the Prussian Eagle emblazoned on them were also recovered. Units such as the 210th Prussian Reserve Infantry Regiment would have had these on their uniforms. Additionally, a large Imperial Prussian Crown brass stickpin was also recovered from this area. It is of some importance to note that the Württemberger

regiments did not have these Prussian Eagle buttons, thus giving tangible evidence of the presence of the 210th Prussian Regiment being in this location, as all the German and American sources state.



Unfired rounds from the 210th Prussian Regiment in the meadow



Harmonica pieces, latches, clips and diverse accoutrements recovered from the meadow

In addition to these buttons, a trench art ring, sewing thimbles, German coins dating to this period and numerous other personal effects were recovered here. Amongst another interesting find was an Imperial Prussian brass crown accoutrement, again supporting the assessment that the 210 Prussian Regiment was deployed here. The wide array of these personal effects, combined with the abundance of live German ammunition, supports the supposition that the soldiers deployed to this area were captured, and therefore abandoned these items that otherwise would not have been left on the battlefield.

The final area related to this specific engagement where battlefield archeology was conducted is the southern face of Humserberg. This encompasses the domain roughly above the meadow, albeit between the base of the hill and the supply road. Once again, several key finds were recovered from this area to help us understand what transpired here on 8 October 1918. As in the meadow, several German uniform related accoutrements, pieces of equipment, latches, etc., were recovered as well as mess kit items in this zone. Additionally, a German M1916 Ersatz steel bayonet was found here. The evidence of such discoveries is congruent with members of the 125th Württemberg dropping their gear here as they made their way down the hill to surrender to the Americans after York had knocked out the machinegun and had induced Leutnant Vollmer to order them to drop their weapons.

As interesting as these finds were, however, perhaps some of the most noteworthy were near the Endriss trench. As previously described, the trench was a 17th Century border trench, carved into a portion of Humserberg facing due east. As such, it was used during the morning of 8 October by Leutnant Fritz Endriss' platoon during the American attack into the valley. It was also from this trench that history tells us Endriss led a forlorn bayonet attack against Alvin York.

The documentation tells us that this encounter between York and Endriss transpired after York had eliminated the 125th Württemberg machinegun and infantry support platoon higher up the hill. Endriss caught sight of York and ordered his men to follow him in a bayonet attack against him. During the subsequent melee, the Germans were gunned down, with Endriss being the last to fall in action.

At the lower end of the trench, was a treasure trove of artifacts, as this was the most likely location where the preponderance of the Germans would have fallen in action. The finds included an assortment of items, clasps, buttons and ammunition usually found where soldiers fell in action. Amongst these finds, the grouping lowest, and thereby closest to York and the meadow, included a portion of a German officer's whistle, complete with cork and reed. As Endriss was the only German officer recorded to fall in action along the southern half of Humserberg, it is with high probability that this whistle most likely was his.

However, it was a series of important artifacts just west (behind) the Endriss trench that would ultimately lead us to the position from which York fired his .45 Automatic Colt Pistol. Nearly in a line near the Endriss trench, we recovered four American .45 caliber shot rounds lodged into the earth. Having marked these

finds, we brought a small arms expert to the site. After he reviewed the location of these fired rounds, he pinpointed the specific location from where one would have to be to fire these four rounds in such a pattern. The location he suggested to scan was twenty meters southwest of the Endriss trench. This expert's precision proved incredible as twenty-four .45 caliber cartridges were recovered from this location.

The 1919 History of the 82nd Division A.E.F. is clear that York used a .45 Automatic Colt Pistol during this meleé.¹¹⁵ All twenty-four of the .45 ACP cartridges that we uncovered were in a narrow area and buried beneath five to ten centimeters in the Argonne earth. From a logical military, terrain analysis and sourced based perspective, this site corresponded to where the position from which York used his side arm to defeat the Endriss bayonet attack.

Using Firearm Identification to confirm or deny the York Story

Firearms ballistics identification is a scientific discipline to apply in the evaluation of the veracity of the York site. The fact of the matter is that each rifle and side-arm, has a distinct signature, or finger-print, that it leaves upon both bullets and cartridges fired from it.¹¹⁶ Although there is overwhelming historic archival evidence to support the supposition that the forty-six 30.06 cartridges, six .45-caliber bullets and twenty-four .45 cartridges are York's, forensic analysis can be applied to verify this.¹¹⁷ Forensic based firearms identification is a scientific approach and thereby removes subjectivity from the process, and thereby determine if they match the type and model of weapons used by Alvin York.



American .45 caliber bullets and cartridges recovered near the Endriss trench

The forensic ballistics was undertaken by Dr. Douglas D. Scott Ph.D., Adjunct Professor of Anthropology at the University of Colorado. [*Dr Scott is recognised world-wide as one of the pre-eminent experts on battlefield archaeology and firearms identification after his ground breaking work on the battlefield of Little Bighorn for which he received the U.S. Department of the Interior's Distinguished Service Award in 2002. In addition he has worked with the United Nations and various human rights organizations in El Salvador, Croatia, Rwanda, Cyprus, and Iraq. In 2006 & 2007 he was the President of the Society of Historical Archaeology and is the author of Fields of Conflict: Battlefield Archaeology from Imperial Rome to Korea. - Ed.]*

Dr. Scott was given the forty-six American 30.06 cartridges recovered from the position where York outflanked the 125th Württemberg machinegun position.¹¹⁸ Additionally, Dr. Scott was provided with the twenty-four .45 cartridges from the edge of the Humserberg meadow and two of the fired .45-caliber bullets that were recovered near the Endriss trench.¹¹⁹



Cleane .30-60 - caliber cartridge case heads and the Remington-UMC 1918 and 1917 dated headstamps. Note the similarity in the firing pin impressions btween the two cartridge cases

We know that Alvin York was armed with a M1917 Eddystone Rifle and Dr. Scott sought to ascertain if the cartridges came from the correct make and model of the rifle that matched York's. Dr. Scott used an "American Optical Universal Comparison Microscope," with magnifications ranging from 10x to 40x.¹²⁰ During this evaluation, he scrutinized each cartridge to check and assess the condition of ejector marks, chamber marks, extractor marks, breech face

marks, the firing pin impression and other features that would identify these with a specific weapon.¹²¹

Based upon this observable signature from the M1903 and M1917, Dr. Scott determined that the "...cases have strong extractor and ejector marks that are consistent with being fired and extracted from a Model 1917 Enfield rifle."¹²²



Arrow points to an extractor mark on head of a .30-06-caliber cartridge case that are consistent with the M1917 Enfield Rifle

Having determined that the 30.06 cartridges matched the M1917 Eddystone, Dr. Scott proceeded to further evaluate these artifacts. He next conducted microscopic analysis of the breech face marks. During firing, the individual tool marks of a specific weapon leave a metal fingerprint on the cartridges. This leaves clear marks on the rim of the cartridge, in addition to those specific ejector marks addressed above. These marks of the harder weapon tools, leave tell-tale chamber, firing pin, and breech marks striation on the softer cartridges and bullets that can be traced to not only the make and model of a weapon, but also a specific rifle. This works in much the same manner as a fingerprint can lead police to a specific individual.¹²³

Using microscopic pattern analysis on the fired cartridge cases, it was clear that "each primer exhibited a series of unique breech face marks imprinted on the case when it was fired as well as the hemispherical firing pin imprint. From this, he determined that the fired cartridge cases were consistent with being fired in the same M1917 Enfield Rifle."¹²⁴



Comparison photomicrograph of two .30-06-caliber cartridge cases. The firing pin and breech face marks on both cases match indicating they were fired in the same M1917 Enfield rifle

The next area of analysis was the .45-caliber bullets and .45-caliber cartridges. Before reciting the analytical findings, it is of some importance to discuss the types of side arms used by the American Expeditionary Force in World War One. Just as there was more than one type and model of rifle, so too there were multiple types of side arms issued to soldiers during World War One.

National Army units, such as York's 82nd Infantry Division, received the up to date M1911 Automatic Colt Pistol. Meanwhile, a preponderance of the revolvers were used by National Guard units that saw service as they already had these dated weapons in their inventory. This included units such as the Pennsylvania based 28th Infantry Division "Keystone," which fought in the ravine some 600 meters south of the York site late on 8 October 1918.¹²⁵ We know that York carried the .45 Automatic Colt Pistol from a 24 June 1919 letter from Army Major-General Henry Jerve, Assistant Chief of Staff to the Director of Operations.¹²⁶

Dr. Scott studied two of the .45 bullets recovered adjacent to the Endriss Trench. As with cartridges, firearm identification reveals quite a bit of information from a fired bullet. Of this, the Federal Bureau of

Investigation says; “Fired bullets can be examined to determine general rifling characteristics such as caliber, physical features of the rifling impressions, and the manufacturer of the bullets. The microscopic characteristics on evidence bullets can be compared with test-fired bullets from a suspect firearm to determine whether the evidence bullet was fired from that firearm.”¹²⁷

The artifacts included a fired .45-caliber bullet with little impact damage and a “cupro-metal [full-metal] jacket.” Dr. Scott conducted thorough analysis of the artifacts, measuring not only the pitch and twist of the grooves on the bullets, but also the depth, width and number of such on each bullet.¹²⁸ From this analysis, one can both determine the make and model of the firing weapon and the specific rifle or pistol that it was shot from. After conducting microscopic analysis on the two bullets, Dr. Scott identified “clear land and groove impressions” on the bullets. He determined that these bullets were both fired from a M1911 .45 ACP and that they were indeed fired from the same pistol.¹²⁹



Comparison microphotograph of a land impression on the bullet jackets of the two recovered bullets indicating that they were fired from the same M1911 Colt pistol

The final forensic ballistic analysis conducted by Dr. Scott encompassed the twenty-four .45-caliber cartridge cases recovered southwest of the Endriss Trench at the base of Humserberg, in the Argonne Forest, France. An evaluation of the headstamps on all of these cartridges revealed that they were marked with REM-UMC 17. This means that these were produced by Remington Arms and the Union Metallic Cartridge Company in 1917.¹³⁰ This is consistent with the type of ammunition issued to soldiers in



Top: Arrow points to ejector mark on the head of the .45-caliber cartridge case confirming that it was fired from the type of pistol fired by York. Middle: All twenty-four of the .45 cartridges. Bottom: Comparison microphotograph of two .45-caliber cartridge cases and primer indicating they were fired in the same weapon

the 82nd Infantry Division in 1918.¹³¹ Dr. Scott next conducted comparative micro-photographic analysis of the twenty-four .45 cartridges. He clearly identified both the extractor marks and ejector marks found on cartridges fired from a .45 Automatic Colt Pistol. This is consistent with the York history and is congruent with the German and American documentation on this battle¹³²

Speaking of the importance that forensic analysis can provide to battlefield archeology, Dr. Doug Scott said,

*The historical record is a truly astounding data set, but it is just one data set that should be used in studying the past. Oral tradition or historical documents are impressions of those who set them down. While they may be more or less accurate, I will reiterate that the archaeological record is often more precise about past events in space and time, as well as an independent line of evidence that can be compared and contrasted with the other lines of evidence to achieve a fuller picture and understanding of the past.*¹³³

This is exactly what his firearm identification analysis provided; a level of understanding and clarity of what actually transpired in this battle hitherto unknown since 1918. Additionally, Dr. Scott's analysis enables us to proceed with this

understanding without applying mental gymnastics, speculation, rationalization or explanatory remarks. Finally, this analysis proved complimentary to the thorough and well rounded approach taken to both investigate and to locate the York site. For instance, the evidence from the rifle position was particularly important in that not only did the firearm analysis prove that the cartridges were fired from the type of rifle used by York, but further confirmed that all of them were fired from the same specific rifle. These findings go a great way to bolster the holistic historical, and geospatial approach that was followed to locate the York site. Furthermore, the analysis of the .45-caliber cartridges and bullets proved vitally important as well. Such validation for this type of investigation into a battle is rare and has thereby greatly contributed to the historical record on what we know of the Battle of 8 October 1918 near Châtel Chéhéry in the French Argonne Forest.

Conclusion

With this array of evidence, it is evident that the York site is indeed where the French allowed the construction of monuments to forever mark this important location. The key is not to hinge such an assessment on a few artifacts, but, only by holistically reviewing what was recovered and overlaying it with the military terrain analysis, forensic study and history, can one make such a determination.



A fragment of one of two American Army tunics recovered near the York site. Note the buttons are intact

The important consideration is that these evidentially tells the York story in total. That is, it collaborates the events as it has been recorded in both the German and American archives.



American Carlisle Model first aid kit. The top left is from the 14-18 Museum, whilst the remaining five were discovered near the York site. All, but one, were used, suggesting that the owners were injured



American mess kit utensils recovered near the York site

It is of some importance to review the findings in the context of the battle. Starting in the meadow, the artifacts recovered here illustrates that the Germans here surrendered without resistance. In the midst of these various German items, there were American 30.06 shell casings found, showing that among the German prisoners, there were American soldiers firing in support of York's movements. Slightly further up the hill, and near the trench is where the Colt .45 shell casings

were discovered. Near these, was a number of buttons and miscellaneous pieces of German equipment that likely to have come off those York shot during the German bayonet attack. On the hill, the German machine gun and rifle positions contained not only firm evidence of a machinegun, but also numerous shell casings, some cartridges and buttons/equipment pieces. The Germans here fought and then surrendered. Finally, York's rifle position was discovered; the site from which he eliminated the 125th MG position in a location supported by both US and German history.



The gas mask belonging to Wilhelm Härer where it laid since 1918

Another vital link to the Sergeant York story was the complete recovery of the identification tag and personal effects from a German soldier from the unit fighting against Alvin York on 8 October 1918. The soldier, Wilhelm Härer, was a machine gunner assigned to the 125th Landwehr Württemberg Regiment. His effects were located on Humserberg and irrefutably confirm the location of the 125th's right flank and thereby supports these conclusions. This was a major coup in that we discovered a name and unit directly linked to the 8 October 1918 fight against York's unit. We know that on 8 October 1918, Wilhelm Härer was assigned to German Lieutenant Paul Lipp's portion of Humserberg. Lipp commanded the machine gun which Alvin York assaulted and destroyed. Lipp himself was captured by York. As a result of York's actions, Wilhelm Härer's gun crew fell back under heavy US pressure. As they withdrew, Wilhelm Härer fell in battle higher up on Humserberg.



With much fanfare, the York family dedicates the Sgt. York battlefield monument in October 2008. The York family (right - Deborah Your, great grand-daughter of Alvin York), centre - George York (son of Alvin York) and Col. Gerald York unveil the monument at the exact location where Alvin York earned the Medal of Honor, with the help of Sgm. Jose Salas of the 82nd Airborne Division. The Sergeant York historic Trail was also officially opened under the auspice of the Mayor of Châtel Chéhéry, Alain Rickal

Taken together, the events of the 8 October 1918 battle seem to come to life. Everything was exactly where it should have been based upon the numerous threads of information discernable from the German and American battle accounts.

The York site was located through the use of primary source research in German and American archives, military terrain analysis, geospatial mapping, doctrinal templating (using contemporary German 1917-1918 doctrine), battlefield artifact evidence, and ballistic forensic analysis. After an independent review of these findings was conducted, and having received the endorsement of numerous independent authorities in North America and Europe, the French government authorized the construction of the

Sergeant York Historic Trail (Circuit du Sergeant York) and the inauguration of two battlefield monuments to commemorate and preserve what occurred on 8 October 1918. The trail and monuments were officially dedicated under the full authority and endorsement of American and French government officials in October 2008 in honor of the 90th anniversary of the battle. Three generations of the York family were present, with military and civilian representatives from the Republic of France, the United States of American and NATO to dedicate the Circuit du Sergeant York and the monuments in one of the largest ceremonies held in the Meuse-Argonne Region in recent times. Now, at long last, visitors can walk with assurance where York walked. ■

Notes

¹ Viktor-Karl Lapple, *Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918*, (Belsler, Stuttgart; 1926); Gustav Strohm, *Die Württembergischen Regimenter im Weltkrieg 1914-1918*, Band 25, *Das Württembergische Landwehr Infanterie Regiment nr. 120*, (Stuttgart, Belsler Verlagsbuchhandlung; 1922); Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921).

² Gruppe Argonne unit deployment locations, 7 October 1918 (Nr. 47) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Attack plan/objectives between Fleville and Gesnes, Ia 6512, 7 October 1918 (Nr. 47a) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Unit Order of Battle, 7 October 1918, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); 2. Württemberg Landwehr Division Argonne Defensive Line, Ia 5608, 31 August 1918 (Nr. 28) (2nd Württemberg Landwehr Division); 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 4 October 1918, 1:25,000; 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 5 October 1918, 1:25,000; 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 6 October 1918, 1:25,000, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 7 October 1918, 1:25,000 Ia6503 (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army).

³ Gruppe Argonne Attack plan/objectives between Fleville and Gesnes, Ia 6512, 7 October 1918 (Nr. 47a) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army), Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army). "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College. *Das Württembergische Landwehr Infanterie Regiment nr. 120 im Weltkrieg 1914-1918*, Band 4. Stuttgart, Belsler: 1920.

Das Württembergische Landwehr Infanterie Regiment nr. 122 im Weltkrieg 1914-1918, Band 27 Stuttgart, Belsler: 1923.

Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918, Band 38 Stuttgart, Belsler: 1926.

Mitglieder Verzeichnis des Offiziervereins, Inf-Regt. Kaiser Wilhelm König von Preussen (2. Württ.) Nr. 120. (Stuttgart Augustenstr. 13, 1937).

Die Württembergischen Regimenter im Weltkrieg 1914-1918, Band 25, *Das Württembergische Landwehr Infanterie Regiment nr. 120* (Belsler Verlagsbuchhandlung, Stuttgart; 1922).

⁴ Major Danforth letter to Captain Swindler, 5 August 1929, and LTC Buxton letter to CPT Swindler, 23 July 1929, RG 165, US National Archives, College Park, MD.

⁵ See this source for a discussion on this: Captain H.O. Swindler, "Turkey Match," *Infantry Journal*, Col. XXXVII, No. 4 October 1930, 347.

⁶ Captain H.O. Swindler, "Turkey Match," *Infantry Journal*, Col. XXXVII, No. 4 October 1930, 349-350.

⁷ Captain Bertrand Cox, Affidavit given on 21 February 1919 in Frettes, France. Filed by the 328th Infantry Regiment Advocate General. Actual swearing of the affidavit was on 26 February 1919.

⁸ *History of the Three Hundred and Twenty-Eighth Regiment of Infantry, Eighty-Second Division, American Expeditionary Forces, United States Army*. Atlanta, GA: Foote & Davies, Co., n.d.

⁹ Letter from General Pershing on 22 March 1919 to the American Expeditionary Force Adjutant General. See also Affidavit of Captain Bertrand Cox, given on 21 February 1919 in Frettes, France. Filed by the 328th Infantry Regiment Advocate General. Actual swearing of the affidavit was on 26 February 1919.

¹⁰ Senator Bachman, Alvin C. York, US Congress. Senate Committee on Military Affairs, Report No. 120, 24 February 1937, 2.

¹¹ *History of the Three Hundred and Twenty-Eighth Regiment of Infantry, Eighty-Second Division, American Expeditionary Forces, United States Army*. Atlanta, GA: Foote & Davies, Co., n.d.

¹² Edward G. Buxton, Jr., *Official History of 82nd*

Division American Expeditionary Forces, 1917-1919, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63.

¹³ German Archives, Potsdam, "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936.

¹⁴ German Archives, Potsdam, "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936.

¹⁵ See the following reports and unit histories; 125 Landwehr Regiment Kriegstagebuch of the Regimental Staff, October 1918; 125 Landwehr Regiment Kriegstagebuch, July – November 1918, I Battalion, 125 Landwehr Regiment Kriegstagebuch; II Battalion, 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Leader Roster, 01 July – 04 December 1918; *History of the Three Hundred and Twenty-Eighth Regiment of Infantry*, a massive work of 454 pages containing 29 photos, 2 color maps, a divisional organization chart in color, reprints of commendations received by the division, and a complete regimental roster with brief service histories of all men serving in the regiment; Gruppe Argonne unit deployment locations/unit situations/front line trace of German forces, 6 October 1918 (Nr. 46) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne unit deployment locations, 7 October 1918 (Nr. 47) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Attack plan/objectives between Fleville and Gesnes, Ia 6512, 7 October 1918 (Nr. 47a) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Unit Order of Battle, 7 October 1918, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); 2. Württemberg Landwehr Division Argonne Defensive Line, Ia 5608, 31 August 1918 (Nr. 28) (2nd Württemberg Landwehr Division); 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 4 October 1918, 1:25,000; 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 5 October 1918, 1:25,000; 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 6 October 1918, 1:25,000, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); 2nd Württemberg Landwehr Division, Divisional Situation

Map/Overlay, 7 October 1918, 1:25,000 Ia6503 (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army).

¹⁶ Alvin York, *Sergeant York: His Own Life Story and War Diary*, Garden City, NY: Doubleday, Doran, 1928.

¹⁷ Official History of the 82nd Division A.E.F. 1917-1919. The Bobbs-Merrill Company; Brooklyn, NY, 1919. *Das Württembergische Landwehr Infanterie Regiment nr. 120 im Weltkrieg 1914-1918*, Band 4. Stuttgart, Belsler: 1920.

"Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt.

Die Württembergischen Regimenten im Weltkrieg 1914-1918, Band 25, Das Württembergische Landwehr Infanterie Regiment nr. 120 (Belsler Verlagsbuchhandlung, Stuttgart; 1922), 161-173.

¹⁸ Alvin York, *Sergeant York: His Own Life Story and War Diary*, (Garden City, NY: Doubleday, Doran, 1928).

¹⁹ Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63.

²⁰ *History of the Three Hundred and Twenty-Eighth Regiment of Infantry*, Eighty-Second Division, American Expeditionary Forces, United States Army. Atlanta, GA: Foote & Davies, Co., n.d.

Cooke, James J. *The All-Americans at War: The 82nd Division in the Great War, 1917-1918*. West Port, Connecticut: Praeger, 1999.

"Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt. 120 Landwehr Regiment Kriegstagebuch of the Regimental Staff, 01 July 1918 – 01 December 1918.

I Battalion, 120 Landwehr Regiment Kriegstagebuch, translated by Doug Mastriano.

Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63.

²¹ *Die Württembergischen Regimenten im Weltkrieg 1914-1918, Band 25, Das Württembergische Landwehr Infanterie Regiment nr. 120* (Belsler Verlagsbuchhandlung, Stuttgart; 1922).

Das Württembergische Reserve-Infanterie-Regiment

Nr. 120 im Weltkrieg 1914 - 1918, Stuttgart 1920, aus der Reihe: Hugo Flaischen (Herausgeber): Die Württembergischen Regimenter im Weltkrieg 1914 - 1918, Band 4, Belscher Verlagbuchhandlung Stuttgart; 87 pictures, 2 maps und 21 map drawings, *Das Württembergische Landwehr-Infanterie-Regiment Nr. 120 im Weltkrieg 1914 - 1918*, Stuttgart 1922, Christian Belscher AG, 89 pictures, 1 map, 25 map drawings, Verlagbuchhandlung Stuttgart; aus der Reihe: Hugo Flaischen (Herausgeber): Die Württembergischen Regimenter im Weltkrieg 1914 - 1918, Band 25; 2nd Landwehr Division, Divisional Situation Report, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army notebooks 4, 5), 6-9 October 1918; 2nd Machine Company, 2nd Landwehr Division, Kriegstagebuch, October 1918, Baden-Württemberg Hauptstaatsarchiv Stuttgart.

²² Gruppe Argonne unit deployment locations, 7 October 1918 (Nr. 47) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); *History of the Three Hundred and Twenty-Eighth Regiment of Infantry, Eighty-Second Division American Expeditionary Forces, United States Army*. Atlanta, GA: Foote & Davies, Co., n.d.; I Battalion, 120 Landwehr Regiment Battle Account/History 23 September 1918 – 18 October 1918; II Battalion, 120 Landwehr Regiment Kriegstagebuch; II Battalion, 120 Landwehr Regiment Battle Account/History, October 191; II Battalion, 120 Landwehr Regiment Kriegstagebuch 21 September 1918 through 21 October 1918; III Battalion, 120 Landwehr Regiment Kriegstagebuch; 125th Landwehr Regiment Kriegstagebuch; 125 Landwehr Regiment Kriegstagebuch of the Regimental Staff, October 1918; 125 Landwehr Regiment Kriegstagebuch, July – November 1918; I Battalion, 125 Landwehr Regiment Kriegstagebuch, II Battalion 125 Landwehr Regiment Kriegstagebuch, III Battalion, 125 Landwehr Regiment Kriegstagebuch.

²³ Alvin York, *Sergeant York: His Own Life Story and War Diary*, (Garden City, NY: Doubleday, Doran, 1928); *History of the Three Hundred and Twenty-Eighth Regiment of Infantry, Eighty-Second Division American Expeditionary Forces, United States Army*. Atlanta, GA: Foote & Davies, Co., n.d.;

²⁴ *Die Württembergischen Regimenter im Weltkrieg 1914-1918*, Band 25, *Das Württembergischen*

Landwehr Infanterie Regiment nr. 120 (Belscher Verlagbuchhandlung, Stuttgart; 1922); *Das Württembergische Reserve-Infanterie-Regiment Nr. 120 im Weltkrieg 1914 - 1918*, Stuttgart 1920, aus der Reihe: Hugo Flaischen (Herausgeber): Die Württembergischen Regimenter im Weltkrieg 1914 - 1918, Band 4, Belscher Verlagbuchhandlung Stuttgart; 87 pictures, 2 maps und 21 map drawings (Herausgeber): Die Württembergischen Regimenter im Weltkrieg 1914 - 1918, Band 25. 2nd Landwehr Division, Divisional Situation Report, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army notebooks 4, 5), 6-9 October 1918; 2nd Machine Company, 2nd Landwehr Division, Kriegstagebuch, October 1918, Baden-Württemberg Hauptstaatsarchiv Stuttgart.

²⁵ Alvin York, *Sergeant York: His Own Life Story and War Diary*, Garden City, NY: Doubleday, Doran, 1928.

²⁶ Gruppe Argonne unit deployment locations/unit situations/front line trace of German forces, 6 October 1918 (Nr. 46) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army). Also, see the following reports and unit histories; 125 Landwehr Regiment Kriegstagebuch of the Regimental Staff, October 1918; 125 Landwehr Regiment Kriegstagebuch, July – November 1918, I Battalion, 125 Landwehr Regiment Kriegstagebuch; II Battalion 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Leader Roster, 01 July – 04 December 1918; *History of the Three Hundred and Twenty-Eighth Regiment of Infantry*, a massive work of 454 pages containing 29 photos, 2 color maps, a divisional organization chart in color, reprints of commendations received by the division, and a complete regimental roster with brief service histories of all men serving in the regiment; Gruppe Argonne unit deployment locations/unit situations/front line trace of German forces, 6 October 1918 (Nr. 46) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne unit deployment locations, 7 October 1918 (Nr. 47)

²⁷ *History of the Three Hundred and Twenty-Eighth Regiment of Infantry, Eighty-Second Division, American Expeditionary Forces, United States Army*. Atlanta, GA: Foote & Davies, Co., n.d.; Cooke, James J. *The All-Americans at War: The 82nd Division in the Great War, 1917-1918*. West Port, Connecticut: Praeger, 1999; "Testimony of German Officers and Men about Sergeant York." Trans by US Army War

College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt; 120 Landwehr Regiment Kriegstagebuch of the Regimental Staff, 01 July 1918 – 01 December 1918; I Battalion, 120 Landwehr Regiment Kriegstagebuch.

²⁸ “Testimony of German Officers and Men about Sergeant York.” Trans by US Army War College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt; Viktor-Karl Lapple, *Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918*, (Belsler, Stuttgart; 1926), 167-173; Dr. Gustav Strohm, *Die Württembergischen Regimenter im Weltkrieg 1914-1918*, Band 25, *Das Württembergische Landwehr Infanterie Regiment nr. 120*, (Stuttgart, Belsler Verlagsbuchhandlung; 1922), 160-166; Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger’s Literarisches, Stuttgart, 1921), 52-60; Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Unit Order of Battle, 7 October 1918, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army).

²⁹ Captain H.O. Swindler, “Turkey Match,” *Infantry Journal*, Col. XXXVII, No. 4 October 1930, 348F.

³⁰ Alvin York, Sergeant York: His Own Life Story and War Diary, Garden City, NY: Doubleday, Doran, 1928; Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 59-62.

³¹ Alvin York, Sergeant York: His Own Life Story and War Diary, Garden City, NY: Doubleday, Doran, 1928).

³² Viktor-Karl Lapple, *Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918*, (Belsler, Stuttgart; 1926), 166-173. Also, see the following reports and unit histories; 125 Landwehr Regiment Kriegstagebuch of the Regimental Staff, October 1918; 125 Landwehr Regiment Kriegstagebuch, July – November 1918, I Battalion, 125 Landwehr Regiment Kriegstagebuch; II Battalion 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Leader Roster, 01 July – 04 December 1918; *History of the Three Hundred and Twenty-Eighth Regiment of Infantry*, a

massive work of 454 pages containing 29 photos, 2 color maps, a divisional organization chart in color, reprints of commendations received by the division, and a complete regimental roster with brief service histories of all men serving in the regiment; Gruppe Argonne unit deployment locations/unit situations/front line trace of German forces, 6 October 1918 (Nr. 46) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne unit deployment locations, 7 October 1918 (Nr. 47) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Attack plan/objectives between Fleville and Gesnes, Ia 6512, 7 October 1918 (Nr. 47a) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Unit Order of Battle, 7 October 1918, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army).

³³ Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 59-62; Viktor-Karl Lapple, *Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918*, (Belsler, Stuttgart; 1926), 166-173; Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger’s Literarisches, Stuttgart, 1921), 57-58.

³⁴ Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 59-62; Viktor-Karl Lapple, *Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918*, (Belsler, Stuttgart; 1926), 166-173; Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger’s Literarisches, Stuttgart, 1921), 55-56.

³⁵ Robert Ellis Cahill, “American Needed a Hero,” in *War Wonders*, Peabody, Massachusetts; 1984), 31.

³⁶ George Pattullo, “The Second Elder Gives Battle,” *The Saturday Evening Post*, number 43, (26 April 1919), 1-3.

³⁷ Robert Ellis Cahill, “American Needed a Hero,” in *War Wonders*, Peabody, Massachusetts; 1984), 30-33.

³⁸ Robert Ellis Cahill, “American Needed a Hero,” in

War Wonders, Peabody, Massachusetts; 1984), 31.

³⁹ Robert Ellis Cahill, "American Needed a Hero," in *War Wonders*, Peabody, Massachusetts; 1984), 31.

⁴⁰ York, Alvin, *Sergeant York: His Own Life Story and War Diary*, Garden City, NY: Doubleday, Doran, 1928; James A. Hoobler, "Sergeant York Historic Area," *Tennessee Historical Quarterly*, Vol. XXXVIII, Number 1, Spring 1979, 4.

⁴¹ Robert Ellis Cahill, "American Needed a Hero," in *War Wonders*, Peabody, Massachusetts; 1984), 31.

⁴² York, Alvin, *Sergeant York: His Own Life Story and War Diary*, Garden City, NY: Doubleday, Doran, 1928.

⁴³ United States Army, *Intelligence, Field Manual 2*, (Fort Huachuca, Arizona, US Army Intelligence Center and School; 2010), 1-10.

⁴⁴ Department of the Army, *Field Manual 34-130: Intelligence Preparation of the Battlefield*, (Washington, DC, US Army; July 1994), 1-1.

⁴⁵ Taylor Beattie conducted a similar terrain analysis and came with similar conclusion. Taylor's work can be read in Taylor Beattie and Ronald Bowman, "In Search of York," *Army History*, number 50, summer-fall 2000, 2-14. His analysis and this analysis are independent of each-other but are congruent.

⁴⁶ Department of the Army, *Field Manual 34-130: Intelligence Preparation of the Battlefield*, (Washington, DC, US Army; July 1994), 1-1 through 1-13.

⁴⁷ Department of the Army, *Field Manual 34-130: Intelligence Preparation of the Battlefield*, (Washington, DC, US Army; July 1994), 1-1.

⁴⁸ Department of the Army, *Intelligence Analysis Field Manual 34-3*, (Washington, DC, Headquarters, Department of the Army; 1990), 1-4.

⁴⁹ Gruppe Argonne Attack plan/objectives between Fleville and Gesnes, Ia 6512, 7 October 1918 (Nr. 47a) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army)

⁵⁰ Viktor-Karl Lapple, *Das Württembergische*

Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918, (Belsler, Stuttgart; 1926), 167-173; Dr. Gustav Strohm, *Die Württembergischen Regimenter im Weltkrieg 1914-1918*, Band 25, *Das Württembergische Landwehr Infanterie Regiment nr. 120*, (Stuttgart, Belsler Verlagsbuchhandlung; 1922), 160-166; Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

⁵¹ Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60; *Das Württembergische Landwehr Infanterie Regiment nr. 122 im Weltkrieg 1914-1918*, Band 27 Stuttgart, Belsler: 1923.

⁵² Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

⁵³ Department of the Army, *Field Manual 34-130: Intelligence Preparation of the Battlefield*, (Washington, DC, US Army; July 1994), 2-1 to 2-9.

⁵⁴ See the following for an excellent discourse on Pershing's AEF tactics; B.H. Liddell Hart, *Reputations Ten Years After*, (Boston, Little, Brown and Company; 1928), 145, 270-275, 278-284, 306-313.

⁵⁵ Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 59-62.

⁵⁶ 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 7 October 1918, 1:25,000 Ia6503 (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army).

⁵⁷ Gruppe Argonne Attack plan/objectives between Fleville and Gesnes, Ia 6512, 7 October 1918 (Nr. 47a) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army)

⁵⁸ Viktor-Karl Lapple, *Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918*, (Belsler, Stuttgart; 1926), 166-173; Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

⁵⁹ Department of the Army, *Intelligence Analysis Field Manual 34-3*, (Washington, DC, Headquarters, Department of the Army; 1990), 1-4 through 4-8 to 4-9.

⁶⁰ Carl von Clausewitz, *On War*. (Princeton, New Jersey, Princeton University Press; 1984), 595-596. Peter Paret, *Makers of Modern Strategy*, (Princeton, New Jersey, Princeton University Press; 1986), 170-190.

⁶¹ Friedrich von Merkatz, *Unterrichtsbuch für die Maschinengewehr=Koampagnien*, (Berlin, Eisenschmidt; 1917), 153-187.

⁶² Department of the Army, *Intelligence Analysis Field Manual 34-3*, (Washington, DC, Headquarters, Department of the Army; 1990), 4-7 to 4-8.

⁶³ Friedrich von Merkatz, *Unterrichtsbuch für die Maschinengewehr=Koampagnien*, (Berlin, Eisenschmidt; 1917), 153-187.

⁶⁴ Department of the Army, *Intelligence Analysis Field Manual 34-3*, (Washington, DC, Headquarters, Department of the Army; 1990), 4-8.

⁶⁵ Department of the Army, *Field Manual 34-130: Intelligence Preparation of the Battlefield*, (Washington, DC, US Army; July 1994), 2-11.

⁶⁶ Department of the Army, *Intelligence Analysis Field Manual 34-3*, (Washington, DC, Headquarters, Department of the Army; 1990), 1-4 through 4-8 to 4-9.

⁶⁷ Department of the Army, *Intelligence Analysis Field Manual 34-3*, (Washington, DC, Headquarters, Department of the Army; 1990), 4-10.

⁶⁸ Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

⁶⁹ Department of the Army, *Intelligence Analysis Field Manual 34-3*, (Washington, DC, Headquarters, Department of the Army; 1990), 4-10.

⁷⁰ Department of the Army, *Field Manual 34-130: Intelligence Preparation of the Battlefield*, (Washington, DC, US Army; July 1994), 2-14.

⁷¹ Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag

Berger's Literarisches, Stuttgart, 1921), 52-60.

⁷² J.M. Tillman, 82nd Division Field Orders, History of Operations, Great War, 82nd Division Archives and Museum, (Fort Bragg, NC) 1929.

⁷³ Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

⁷⁴ Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

⁷⁵ Department of the Army, *Intelligence Analysis Field Manual 34-3*, (Washington, DC, Headquarters, Department of the Army; 1990), 4-10. American Battle Monuments Commission, *American Armies and Battlefields in Europe*, Washington, DC., United States Printing Office; 1938), 227-232.

⁷⁶ Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

⁷⁷ "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt, Potsdam, Germany (1929); 2nd Landwehr Division, Divisional Situation Report, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army notebooks 4, 5), 6-9 October 1918; 2nd Machine Company, 2nd Landwehr Division, Kriegstagebuch, October 1918, Baden-Württemberg Hauptstaatsarchiv Stuttgart.

⁷⁸ Department of the Army, *Field Manual 34-130: Intelligence Preparation of the Battlefield*, (Washington, DC, US Army; July 1994), 2-14.

⁷⁹ Department of the Army, *Field Manual 34-130: Intelligence Preparation of the Battlefield*, (Washington, DC, US Army; July 1994), 2-18.

⁸⁰ Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

⁸¹ Friedrich von Merkatz, *Unterrichtsbuch für die Maschinengewehr=Koampagnien*, (Berlin, Eisenschmidt; 1917), 153-187.

⁸² Anton Franke, General der Artillerie. *Die 2.*

Württemberg im Weltkrieg 1914-1918, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

⁸³ Dr. Gustav Strohm, *Die Württembergischen Regimenter im Weltkrieg 1914-1918*, Band 25, *Das Württembergische Landwehr Infanterie Regiment nr. 120*, (Stuttgart, Belsers Verlagsbuchhandlung; 1922), 160-166.

⁸⁴ Dr. Gustav Strohm, *Die Württembergischen Regimenter im Weltkrieg 1914-1918*, Band 25, *Das Württembergische Landwehr Infanterie Regiment nr. 120*, (Stuttgart, Belsers Verlagsbuchhandlung; 1922), 160-166.

⁸⁵ Captain H.O. Swindler, "Turkey Match," *Infantry Journal*, Col. XXXVII, No. 4 October 1930, 349-350; *History of the Three Hundred and Twenty-Eighth Regiment of Infantry, Eighty-Second Division, American Expeditionary Forces, United States Army*. Atlanta, GA: Foote & Davies, Co., n.d.: Captain Bertrand Cox, Affidavit given on 21 February 1919 in Frettes, France. Filed by the 328th Infantry Regiment Advocate General. Actual swearing of the affidavit was on 26 February 1919; Official History of the 82nd Division A.E.F. 1917-1919. The Bobbs-Merrill Company; Brooklyn, NY, 1919. *Das Württembergische Landwehr Infanterie Regiment nr. 120 im Weltkrieg 1914-1918*, Band 4. Stuttgart, Belsers: 1920; "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt.

⁸⁶ German Archives, Potsdam, "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936.

⁸⁷ German Archives, Potsdam, "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936.

⁸⁸ Freidrich von Merkatz, *Unterrichtsbuch für die Maschinengewehr-Koampagnien*, (Berlin, Eisenschmidt; 1917), 153-187.

⁸⁹ A. Eisnecker, "Kammer Diener: Vor 120 Jahren begann die Karriere der Patrone 8 x 57," *Visier*, (December 12, 2008), 6-18.

⁹⁰ Martin Nathusius, "Vor 50 Jahren wurde Polte gegründet. Jubiläum der angesehenen Magdeburger Maschinenfabrik," *Magdeburgische Zeitung*, 6-7 April

1925, 7 and *Polte Armaturen- und Maschinenfabrik (Hrsg.), 1885-1935, 50 Jahre Armaturen*, (Magdeburg, Germany, Polte; 1935).

⁹¹ See the following source as the single most informative discourse on the 7,9 mm cartridge: Brant Hamann und Dr. Windisch, *Die Militärpatronen Kaliber 7,9 mm: ihre Vorläufer und Abarten*, (Schwabish Hall, Germany, Journal-Verlag Schwend; 1981).

⁹² Robert W. Ball, *Mausers Military Rifles of the World*, (Wisconsin: Krause Publications; 2006), 160-167; Freidrich von Merkatz, *Unterrichtsbuch für die Maschinengewehr-Koampagnien*, (Berlin, Eisenschmidt; 1917), 153-187.

⁹³ Robert W. Ball, *Mausers Military Rifles of the World*, (Wisconsin: Krause Publications; 2006), 160-167. Also see, Daniel W. Kent, *German 7.9 mm Military Ammunition; 1888-1945*, (Ann Arbor, Michigan, Edwards Brothers, Incorporated; 1973).

⁹⁴ Captain H.O. Swindler, "Turkey Match," *Infantry Journal*, Col. XXXVII, No. 4 October 1930, 349-350, *History of the Three Hundred and Twenty-Eighth Regiment of Infantry, Eighty-Second Division, American Expeditionary Forces, United States Army*. Atlanta, GA: Foote & Davies, Co., n.d.; Alvin York, *Sergeant York: His Own Life Story and War Diary*, Garden City, NY: Doubleday, Doran, 1928; First Battalion, 125 Landwehr Regiment Kriegstagebuch; Second Battalion 125 Landwehr Regiment Kriegstagebuch; Third Battalion, 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Leader Roster, 01 July – 04 December 1918.

⁹⁵ Kriegsministerium, *Schiessvorschrift für die Infanterie*, (Berlin, Ernst Siegfried Mittler und Sohn; 1909), 2-11.

⁹⁶ Captain Bertrand Cox, Affidavit given on 21 February 1919 in Frettes, France. Filed by the 328th Infantry Regiment Advocate General. Actual swearing of the affidavit was on 26 February 1919.

⁹⁷ Viktor-Karl Lapple, *Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918*, (Belsers, Stuttgart; 1926). Also see the following unit reports; First Battalion, 125 Landwehr Regiment Kriegstagebuch; Second Battalion 125 Landwehr Regiment Kriegstagebuch; Third Battalion, 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Leader Roster, 01 July – 04 December 1918.

⁹⁸ Extract from York's Medal of Honor Citation.

⁹⁹ Captain H.O. Swindler, "Turkey Match," *Infantry Journal*, Col. XXXVII, No. 4 October 1930, 349; Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63.

¹⁰⁰ John Biddle, *Soldier's Handbook of the Rifle; United States Rifle Model of 1917*, (Washington, DC., Government Printing Office; November 1917), 13; H.L. Scott, *Manual for Noncommissioned Officers and Privates of Infantry of the Army of the United States 1917*, (Menasha, Wisconsin, George Banta Publishing Company; 1917), 148-161; Bret Werner, *Uniforms, Equipment and Weapons of the American Expeditionary Forces in World War I*, (Atglen, Pennsylvania, Schiefer Military History Book; 2006), 68-75.

¹⁰¹ Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63.

¹⁰² Cooke, James J. *The All-Americans at War: The 82nd Division in the Great War, 1917-1918*. West Port, Connecticut: Praeger, 1999.

¹⁰³ Roy Marcot and Joe Poyer, "The Story of Eddystone," available online at hetfollowing website; <http://www.remingtonsociety.com/rsa/journals/Eddystone>, (accessed 30 July 2011).

¹⁰⁴ Roland Idler, "Heimkehr nach 90 Jahren – Das Schicksal des im Ersten Weltkrieg vermissten Steinbachers Wilhelm Härer (1882 bis 1918)," *Backnanger Jahressbuch*, (Backnang, Germany; 2009), 182-199.

¹⁰⁵ Viktor-Karl Lapple, *Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918*, (Belser, Stuttgart; 1926). Also see the following unit reports; First Battalion, 125 Landwehr Regiment Kriegstagebuch; Second Battalion 125 Landwehr Regiment Kriegstagebuch; Third Battalion, 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Leader Roster, 01 July – 04 December 1918.

¹⁰⁶ Matthias Nothstein, "Ein einzigartiger Akt der Versöhnung," *Backnang Kreiszeitung*, 30 April 2009, 19.

¹⁰⁷ J.M. Tillman, 82nd Division Field Orders, History of Operations, Great War, 82nd Division Archives

and Museum, (Fort Bragg, NC) 1929; Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 59-62; "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt

¹⁰⁸ Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 59-62; "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt

¹⁰⁹ Gruppe Argonne unit deployment locations/unit situations/front line trace of German forces, 6 October 1918 (Nr. 46) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne unit deployment locations, 7 October 1918 (Nr. 47) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); *History of the Three Hundred and Twenty-Eighth Regiment of Infantry*; Gruppe Argonne Unit Order of Battle, 7 October 1918, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); 2. Württemberg Landwehr Division Argonne Defensive Line, Ia 5608, 31 August 1918 (Nr. 28) (2nd Württemberg Landwehr Division); 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 7 October 1918, 1:25,000 Ia6503 (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Viktor-Karl Lapple, *Das Württembergische Landwehr Infanterie Regiment nr. 125 im Weltkrieg 1914-1918*, (Belser, Stuttgart; 1926), 167-173; Dr. Gustav Strohm, *Die Württembergischen Regimenter im Weltkrieg 1914-1918*, Band 25, *Das Württembergische Landwehr Infanterie Regiment nr. 120*, (Stuttgart, Belser Verlagsbuchhandlung; 1922), 160-166; Anton Franke, General der Artillerie. *Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

¹¹⁰ Gruppe Argonne unit deployment locations/unit situations/front line trace of German forces, 6 October 1918 (Nr. 46) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army). Also, see the following reports and unit histories; 125 Landwehr Regiment Kriegstagebuch of the Regimental Staff, October 1918; 125 Landwehr Regiment Kriegstagebuch, July – November 1918, I Battalion, 125 Landwehr Regiment Kriegstagebuch; II

Battalion 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Leader Roster, 01 July – 04 December 1918; *History of the Three Hundred and Twenty-Eighth Regiment* of Infantry, a massive work of 454 pages containing 29 photos, 2 color maps, a divisional organization chart in color, reprints of commendations received by the division, and a complete regimental roster with brief service histories of all men serving in the regiment; Gruppe Argonne unit deployment locations/unit situations/front line trace of German forces, 6 October 1918 (Nr. 46) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne unit deployment locations, 7 October 1918 (Nr. 47) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Attack plan/objectives between Fleville and Gesnes, Ia 6512, 7 October 1918 (Nr. 47a) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Unit Order of Battle, 7 October 1918, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army);

¹¹¹ Brigit and Jean-Paul Devries and their 14-18 museum in the village. Information on this and other research related to German life behind the lines in the Meuse-Argonne Region can be found at the following website: <http://www.romagne14-18.com> (accessed 28 July 2011).

¹¹² *History of the Three Hundred and Twenty-Eighth Regiment* of Infantry, Eighty-Second Division, American Expeditionary Forces, United States Army. Atlanta, GA: Foote & Davies, Co., n.d. Cooke, James J. *The All-Americans at War: The 82nd Division in the Great War, 1917–1918*. West Port, Connecticut: Praeger, 1999; “Testimony of German Officers and Men about Sergeant York.” Trans by US Army War College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt; Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63. Gruppe Argonne unit deployment locations/unit situations/front line trace of German forces, 6 October 1918 (Nr. 46) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army). Also, see the following reports and unit histories; 125 Landwehr Regiment Kriegstagebuch of the Regimental Staff, October

1918; 125 Landwehr Regiment Kriegstagebuch, July – November 1918, I Battalion, 125 Landwehr Regiment Kriegstagebuch; II Battalion 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Kriegstagebuch; III Battalion, 125 Landwehr Regiment Leader Roster, 01 July – 04 December 1918; *History of the Three Hundred and Twenty-Eighth Regiment* of Infantry, a massive work of 454 pages containing 29 photos, 2 color maps, a divisional organization chart in color, reprints of commendations received by the division, and a complete regimental roster with brief service histories of all men serving in the regiment; Gruppe Argonne unit deployment locations/unit situations/front line trace of German forces, 6 October 1918 (Nr. 46) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne unit deployment locations, 7 October 1918 (Nr. 47) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Attack plan/objectives between Fleville and Gesnes, Ia 6512, 7 October 1918 (Nr. 47a) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne and Gruppe Aisne unit deployment locations, 8 October 1918, 1:25,000 (Nr. 50, Nr. 51) (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); Gruppe Argonne Unit Order of Battle, 7 October 1918, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); 2. Württemberg Landwehr Division Argonne Defensive Line, Ia 5608, 31 August 1918 (Nr. 28) (2nd Württemberg Landwehr Division); 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 4 October 1918, 1:25,000; 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 5 October 1918, 1:25,000; 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 6 October 1918, 1:25,000, (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army); 2nd Württemberg Landwehr Division, Divisional Situation Map/Overlay, 7 October 1918, 1:25,000 Ia6503 (Generalkommando z.b.v. 58, Fifth German Army, German Imperial Army).

¹¹³ John Walter, *Military Rifles of Two World Wars*, (Mechanicsburg, Pennsylvania, Stackpole Books; 2003), 64-67; David Nash (Introduction), *German Army Handbook*; April 1918, (London, Arms and Armour Press; 1977), 54-61.

¹¹⁴ J.M. Tillman, 82nd Division Field Orders, History of Operations, Great War, 82nd Division Archives and Museum, (Fort Bragg, NC) 1929; Edward G. Buxton, Jr., *Official History of 82nd Division American*

Expeditionary Forces, 1917-1919, (Indianapolis, BobbsMerrill Publishing; 1920), 59-62; "Testimony of German Officers and Men about Sergeant York." Trans by US Army War College, Carlisle, PA, June 1936, Militärgeschichtliches Forschungsamt

¹¹⁵ Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63.

¹¹⁶ Physical Evidence Program Manager, *Firearm/ Toolmark Procedures Manual DFS Document 240-D100*, (Richmond, Virginia, Department of Forensic Science; 2007), 42-117.

¹¹⁷ Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63.

¹¹⁸ Captain H.O. Swindler, "Turkey Match," *Infantry Journal*, Col. XXXVII, No. 4 October 1930, 349; Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63.

¹¹⁹ Edward G. Buxton, Jr., *Official History of 82nd Division American Expeditionary Forces, 1917-1919*, (Indianapolis, BobbsMerrill Publishing; 1920), 58-63; Dr. Gustav Strohm, *Die Württembergischen Regimenter im Weltkrieg 1914-1918*, Band 25, *Das Württembergische Landwehr Infanterie Regiment nr. 120*, (Stuttgart, Belser Verlagsbuchhandlung; 1922), 160-166; Anton Franke, *General der Artillerie. Die 2. Württemberger im Weltkrieg 1914-1918*, (Berlag Berger's Literarisches, Stuttgart, 1921), 52-60.

¹²⁰ Dr. Douglas Scott, "An Examination of Cartridges Cases and Bullets from the World War I Chatel Chehery Area, Argonne Forest, France," Department of Anthropology, University of Nebraska-Lincoln, Lincoln, Nebraska, May 10, 2010, 5-11.

¹²¹ Brian J. Heard, *Handbook of Firearms and Ballistics: Examining and Interpreting Forensic Evidence*, (The Atrium, Southern Gate, Chichester, West Sussex Wiley-Blackwell; 2008), 164-178.

¹²² Dr. Douglas Scott, "An Examination of Cartridges Cases and Bullets from the World War I Chatel Chehery Area, Argonne Forest, France," Department of Anthropology, University of Nebraska-Lincoln, Lincoln, Nebraska, May 10, 2010, 7-9.

¹²³ Brian J. Heard, *Handbook of Firearms and Ballistics: Examining and Interpreting Forensic Evidence*, (The Atrium, Southern Gate, Chichester, West Sussex Wiley-Blackwell; 2008), 174-179.

¹²⁴ Dr. Douglas Scott, "An Examination of Cartridges Cases and Bullets from the World War I Chatel Chehery Area, Argonne Forest, France," Department of Anthropology, University of Nebraska-Lincoln, Lincoln, Nebraska, May 10, 2010, 10.

¹²⁵ Bruce N. Canfield, *U.S. Infantry Weapons of the First World War*, (Lincoln, Rhode Island, Andrew Mowbray Publishers; 2000), 52-54.

¹²⁶ Letter from Major-General Henry Jervy, to the Adjutant General of the United States Army, 24 June 1919, United States War Department, Office of the Chief of Staff.

¹²⁷ Kim Waggoner (editor), *Handbook of Forensic Services*, (Quantico, Virginia, US Department of Justice, FBI Laboratory Publication Federal Bureau of Investigation; 2007), 64.

¹²⁸ Dr. Douglas Scott, "An Examination of Cartridges Cases and Bullets from the World War I Chatel Chehery Area, Argonne Forest, France," Department of Anthropology, University of Nebraska-Lincoln, Lincoln, Nebraska, May 10, 2010, 11-13.

¹²⁹ Dr. Douglas Scott, "An Examination of Cartridges Cases and Bullets from the World War I Chatel Chehery Area, Argonne Forest, France," Department of Anthropology, University of Nebraska-Lincoln, Lincoln, Nebraska, May 10, 2010, 11-12.

¹³⁰ Dr. Douglas Scott, "An Examination of Cartridges Cases and Bullets from the World War I Chatel Chehery Area, Argonne Forest, France," Department of Anthropology, University of Nebraska-Lincoln, Lincoln, Nebraska, May 10, 2010, 13-14.

¹³¹ Bruce N. Canfield, *U.S. Infantry Weapons of the First World War*, (Lincoln, Rhode Island, Andrew Mowbray Publishers; 2000), 46-52.

¹³² Dr. Douglas Scott, "An Examination of Cartridges Cases and Bullets from the World War I Chatel Chehery Area, Argonne Forest, France," Department of Anthropology, University of Nebraska-Lincoln, Lincoln, Nebraska, May 10, 2010, 13-17.

¹³³ Dr. Douglas Scott, “The Archeology of Battlefields,” Interview conducted by the Archeology Institute of America, 11 October 2005. Available online at the following website: <http://www.archaeology.org/online/interviews/scott.html> (accessed 8 August 2011).

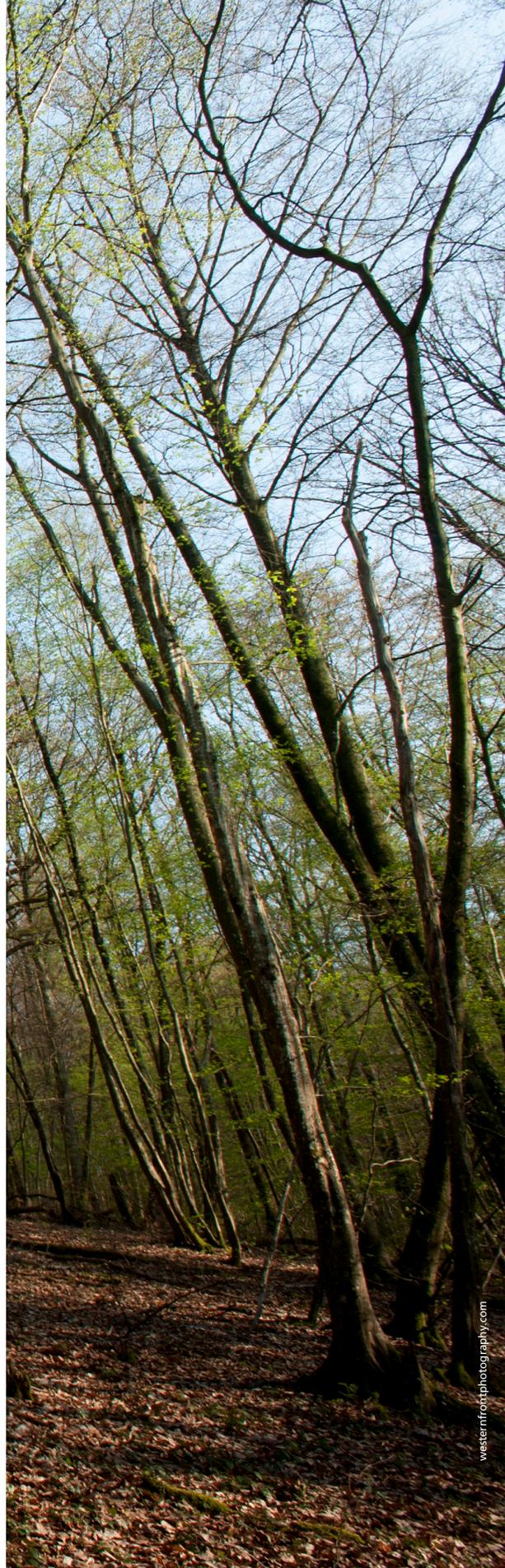
Photography

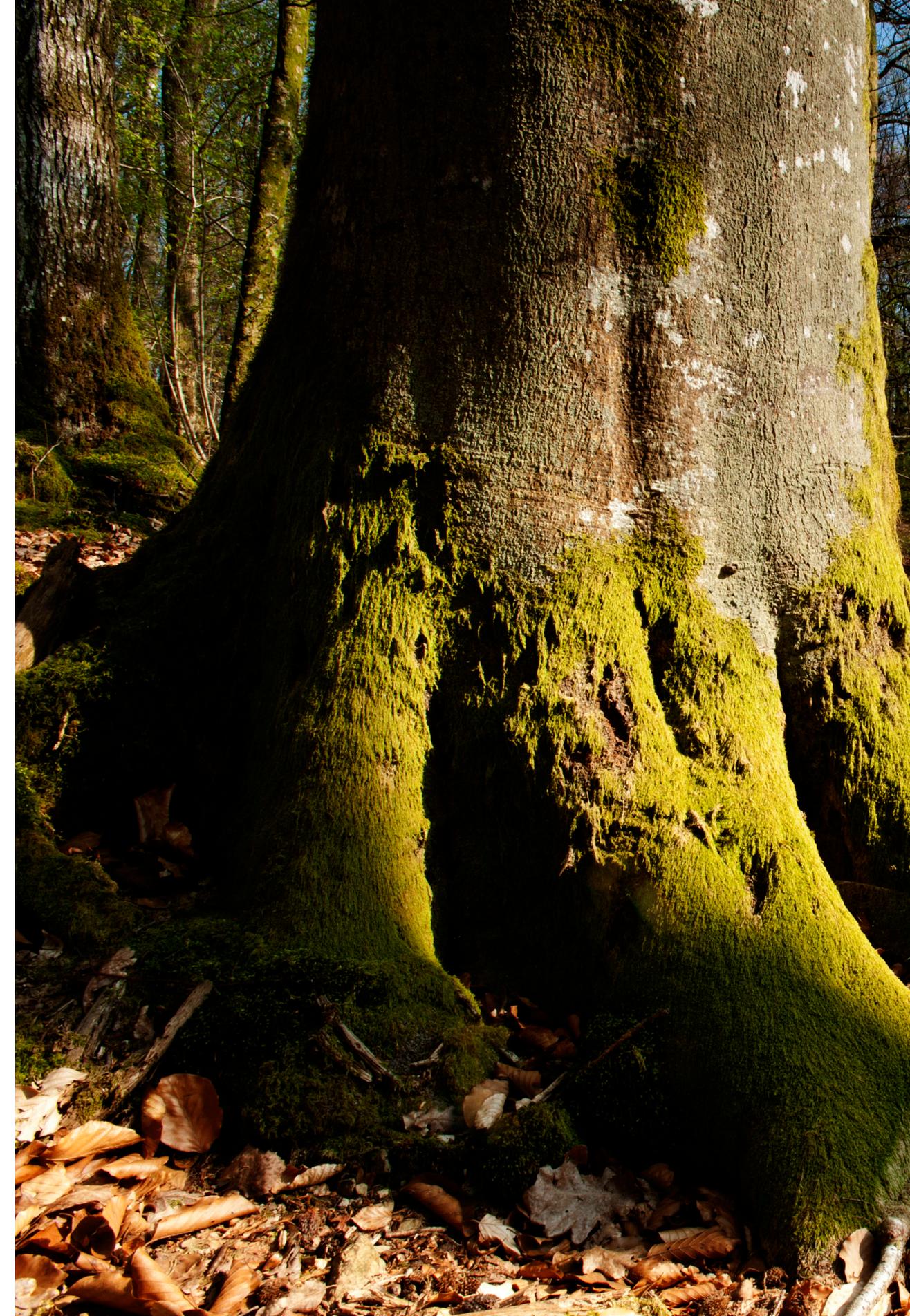
Introduction photograph (page 6-7) by Western Front Photography. All other images are from the author’s collection with the exception of those within the section entitled ‘Using Firearm Identification to confirm or deny the York Story’, which are courtesy (including accompanying captions) of Kory O’Keefe and Dr. Doug Scott.

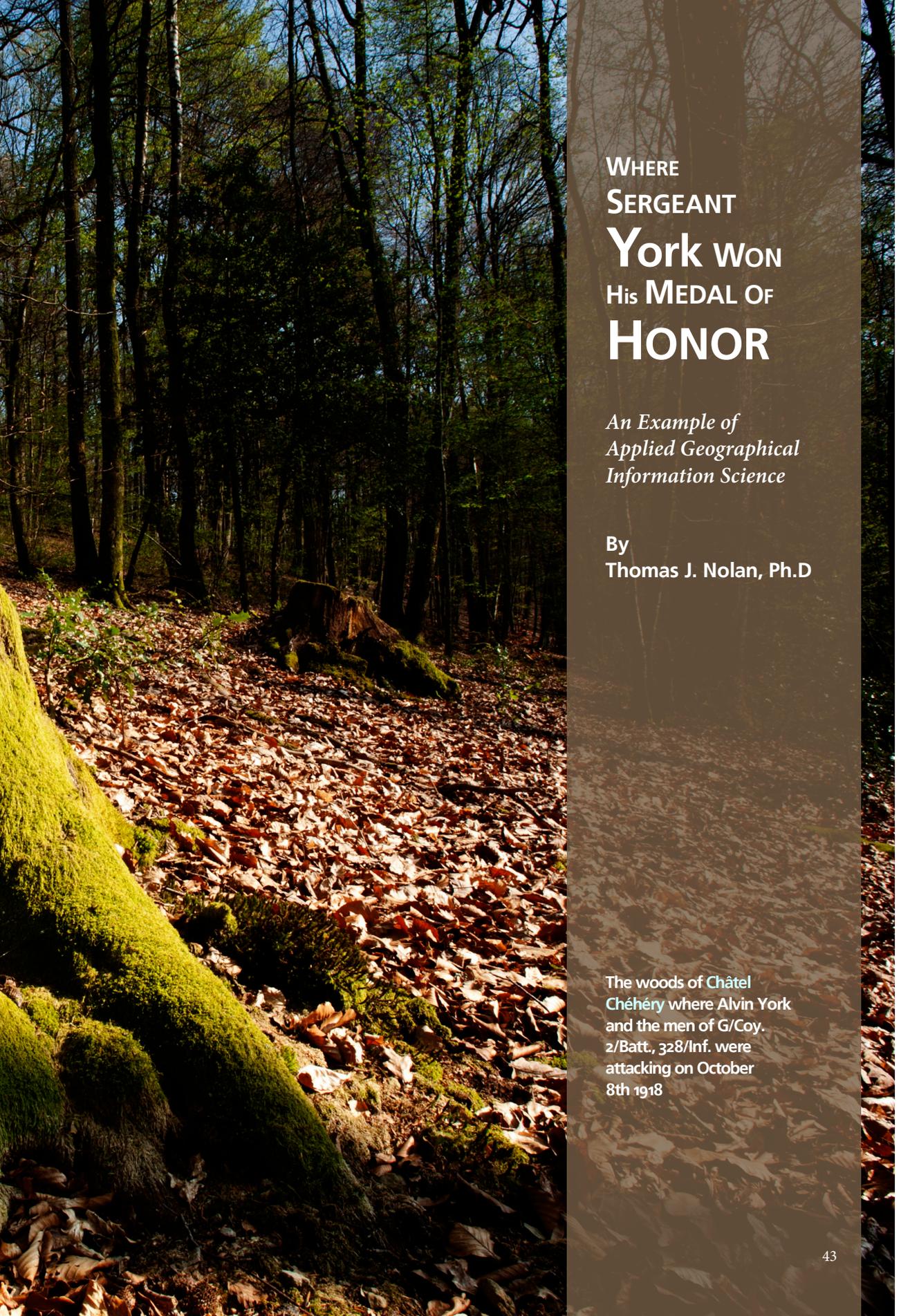
Author - Col. Douglas Mastriano

Commissioned into the United States Army in 1986, served with 2/ Armored Cavalry Regiment in Nurnberg, Germany and in Iraq in Desert Storm. Various assignments in the Pentagon, the 3rd Infantry Division “Rock of the Marne,” US Army Europe Operations and NATO Land Headquarters in Germany, from where he deployed three times to Afghanistan finally serving as the leader of the ISAF Joint Intelligence Center encompassing soldiers from 18 different nations.

In addition to being a designated US Army Military Historian who has led numerous tours on American First World War battlefields, he is a graduate of the Advanced Military Studies Jedi Course and holds a Master of Science of Strategic Intelligence (MSSI) from the National Intelligence University, Master of Military Operational Art and Science, Master of Airpower Art and Science from the USAF Air University, a Master of Strategic Studies from the US Army War College and is studying for military history PhD. He has been married to Rebecca, for 24 years with whom he has one son, Josiah who recently received the Canadian Chief Scout’s Award. ■







WHERE
SERGEANT
York WON
His MEDAL OF
HONOR

*An Example of
Applied Geographical
Information Science*

By
Thomas J. Nolan, Ph.D

The woods of Châtel
Chéhéry where Alvin York
and the men of G/Coy.
2/Batt., 328/Inf. were
attacking on October
8th 1918

Introduction

Battlefields exert a powerful attraction for serious scholars and casual tourists alike. A battlefield tour allows the visitor to integrate the physical geography with the historic record. Battlefield interpretation requires the visitor to build a mental spatial model of the terrain to visualize the movement of military units and interpret tactical and strategic landscape influences. This paper will demonstrate the efficacy of geography, specifically Geographic Information Science (GIS), for building an accurate, virtual spatial model integrating history and geography for battlefield interpretation.

Geography has been described as a science of synthesis “linking humanity and environment and creating a bridge between the social and natural sciences (Holt-Jensen 1999).” Geography differs from other disciplines by looking at people and their environment from a spatial perspective. Within the discipline of Geography, GIS examines research issues related to the characteristics of geographic data, geographic problem solving, and the resulting influences on society. GIS provides tools for applying spatial analysis to documentary and material evidence for reconstructing the sequence of battlefield events, creating a permanent spatial record, and producing interpretive materials for site preservation and heritage tourism development. GIS can integrate knowledge from history and archaeology and analyze that knowledge from a spatial perspective. The resulting analysis paints a clearer picture of historic events than either history or archaeology individually.

Many battlefield sites have been preserved as parks to commemorate the people and events they represent. Others await study and preservation. One such site is an area west of the French village of Châtel-Chéhéry where Alvin C. York was transformed from an obscure, poorly educated, Tennessee mountaineer to an international hero. This study demonstrates the utility of GIS to integrate and synthesize historical and spatial information from multiple sources relating to Alvin York's exploits for analysis and interpretation.

The exact events and locations regarding York's exploits at Châtel-Chéhéry have long been the subject of controversy. Recollections of the German and American participants in the fight conflict on several key points and change over time. Maps compiled for the official history of the 82nd Division history do not agree in some respects with modern topographic maps. In July, 2005, the author was unsuccessful in an attempt to follow the movements of Alvin York at Châtel-Chéhéry based

on documentary accounts and concluded that the true locations of those events were unknown.

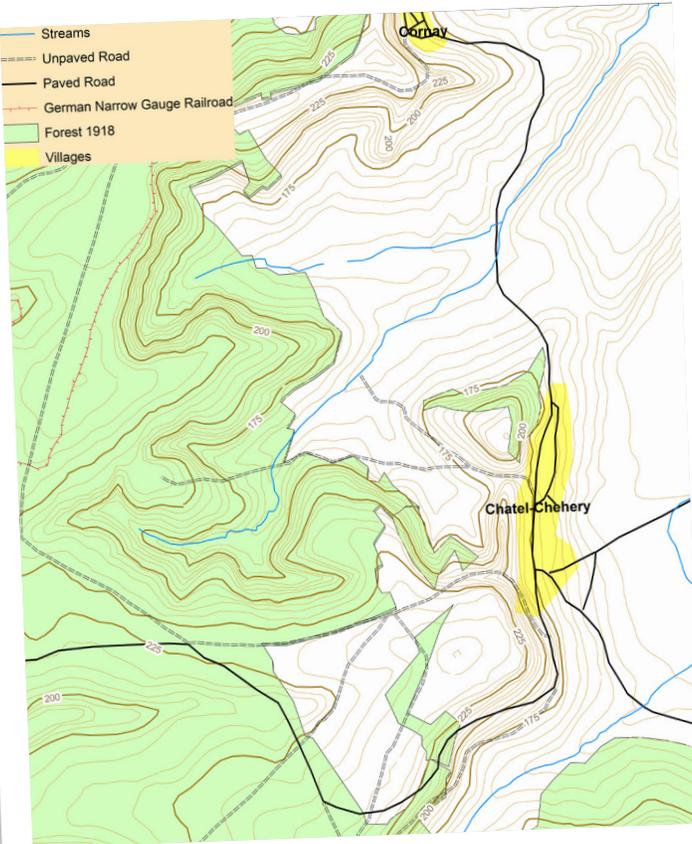
Various attempts have been made to follow the steps of Alvin York at Châtel-Chéhéry, the most thorough one by Lt. Col. Taylor Beattie (Beattie and Bowman 2000). Beattie approached the problem by evaluating the terrain and documentary evidence from a tactical standpoint. His methodology allowed the identification of the general area of engagement but failed to pinpoint York's firing position or the location of the German participants. This study furthers Beattie's investigation by using Geographic Information Systems (GIS) in conjunction with surface archaeology and historical documentary evidence to create an accurate, permanent spatial record of this engagement.

Research methodology

The purpose of this study was to reconstruct the engagement that resulted in the award of the Medal of Honor to Alvin C. York of Pall Mall, Tennessee. It seemed reasonable to expect that a physical record of events at the Alvin York site still existed. The study area was forested during WWI and remains in that state today. There is evidence of timber harvesting but no large scale mechanical or environmental modification of the site. Deep ravines, steep slopes and shallow, stony soils have all contributed to a lack of development and population in the region (Johnson 1921). The absence of row crop agriculture, sparse population, and limited tourism have combined to preserve the physical remains of the battle. Spent cartridge cases and fragments of equipment are of little value to military collectors and are likely to remain undisturbed.

GIS technology was used to integrate historic maps, reports and other documents in a spatial database that recreated the landscape as it was in October, 1918. Global Positioning Systems (GPS) technology was used to accurately map recovered artifacts for comparison to spatial information from documentary sources. Mapping grade GPS receivers were used to collect multiple points for each artifact location. The points collected at each location were differentially corrected and averaged to provide the maximum accuracy. This produced an average horizontal precision for all points of 1.23 meters.

A surface metal detector survey was conducted to locate artifacts related to the fight. When an artifact was located, it was marked by flagging tape or a metal flag. The artifact was mapped as a point feature and given an identification number based on the date and



Project base map

a sequential number for that date. The identification number was entered as an attribute of the GPS point feature and the artifact was put in a bag with the identification number on the outside and a label with the identification number inside the bag. Artifacts too large to put in bags had a tag with the identification number tied to them. At the end of each work day the artifacts were identified, photographed and cataloged.

Information concerning the modern landscape was obtained from the French Institute Geographique National 1:25 000 paper topographic quadrangle sheet titled Varennes-En-Argonne. The paper map was scanned in 24 bit color at 600dpi and saved as a TIF image. The TIF image was imported into ArcGIS and georeferenced to UTM Zone 31 North WGS 84 datum, using control points from the UTM grid printed on the map. Four control points were used and the total Root Mean Square (RMS) error for the georeferenced map was 4.84 meters. The RMS error measures the errors between the control points with known coordinate

values and the transformed locations of those same points on the un-georeferenced map. RMS error provides a quantitative measure of the accuracy of the georeferencing process. The image was rectified and saved in the tif format. The rectified image was used to digitize contour lines, roads, streams and general outlines of villages in the UTM Zone 31 North coordinate system.

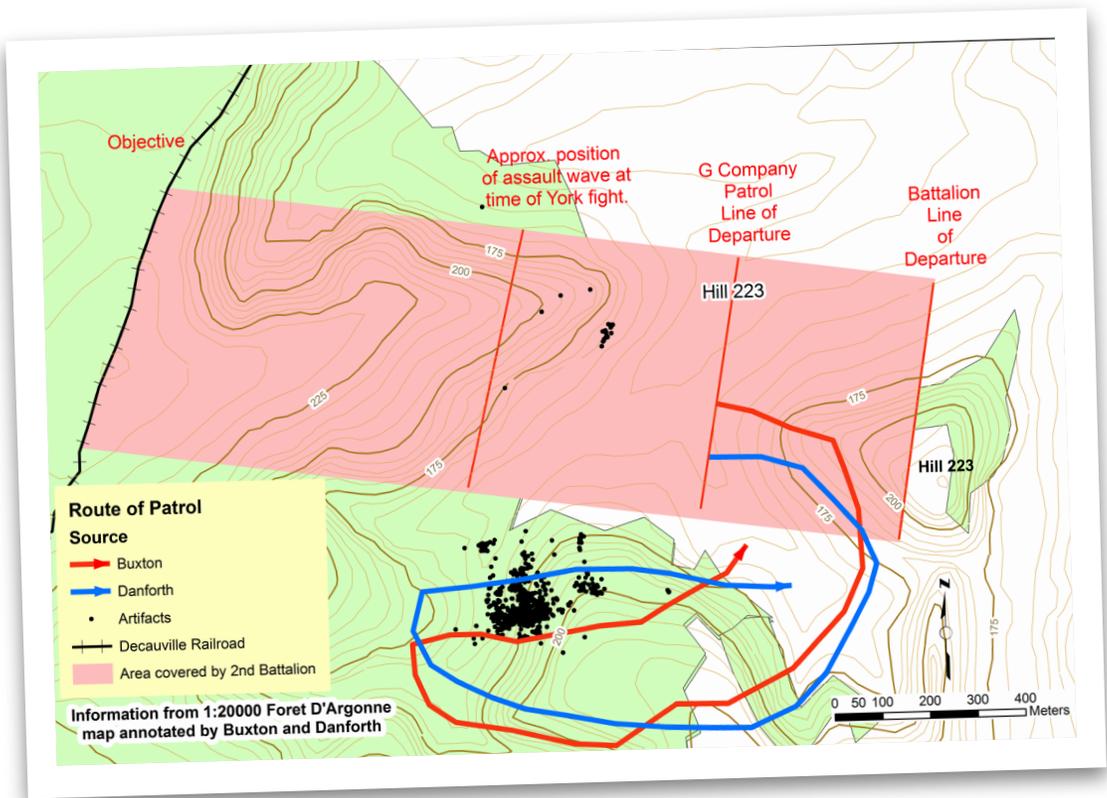
The spatial extent of forest cover in 1918 was obtained by synthesizing information from aerial photos, German maps and the modern forest cover represented on the IGN map. The 12th Squadron serving with the 1st Corps flew a photo mission over Châtel Chéhéry on October 1, 1918 (1st Army Corps 1918). The photos have some cloud cover but the edge of the wood line can be seen in the study area. The German trench map symbolizes the wood line for most of the area (Vermessungs-Abteilung 1918). The IGN map also indicates open and wooded areas. By comparing all of these sources, a composite was created showing the wood

line in the area of interest. This is significant since the German accounts repeatedly refer to the boundary of the woods in spatial descriptions.

The location of the German narrow-gauge field railways were obtained from the German 1:25000 trench map (Vermessungs-Abteilung 1918). These maps were georeferenced using control points derived from road intersections, church steeples, etc. that could be located on the German map and the modern French IGN map. The RMS error for the German map was 10.64 meters. The French Forêt d'Argonne 1:20000 trench map was georeferenced using similar control points (Groupe-de-Canvas-de-Tir 1918). The RMS error for the French map was 7.01 meters.

Documentary spatial information

Eyewitness testimony was recorded by American officials to document and justify the award of the Medal of Honor to Alvin York. The German government collected eyewitness accounts from the German participants in an effort to dispel the impression of poor performance by German troops



Attack of 2nd Battalion 328th Infantry, Oct 8, 1918

Field work at Châtel-Chéhéry

on that day. These personal accounts were examined for spatial references and those references tested against the artifactual evidence for accuracy.

There was also extensive correspondence between the American Battle Monuments Commission, Captain Swindler of the Army War College, Captain Danforth and Major Buxton related to the details of the York fight (Danforth 1926, Duncan 1927, Buxton 1930, Swindler 1929). Buxton and Danforth described the events in separate letters to Swindler and also sketched the engagement on a copy of the Forêt d' Argonne trench map (Danforth 1929, Buxton 1929). Burial records of the 6 men killed in the fight contain Forêt d' Argonne map coordinates describing the location of their original burial near where they fell (Office of the Quartermaster General 1915-1939).

A German investigation into the York fight was triggered by an article in a Swedish journal in November 1928. A German citizen living in Stockholm was offended by the article describing York's exploits and requested that the German Minister of War investigate. The results of that investigation were later translated by the Army War College (Merten 1936).

A permit is required to conduct an archaeological survey in France. The author met with Yves DesFosses, the Champagne-Ardenne regional archaeologist, at the study site in July, 2005, to discuss the permit process. Monsieur DesFosses expressed his willingness to issue the required permit upon receipt of information regarding the scope of the project, the research team, methodology, and affected landowners. A draft copy of the permit application was sent to Monsieur DesFosses in September, 2005, and the final draft in December, 2005. The required written landowner permissions were obtained by Michael Kelly with Bartlett's Battlefield Journeys and Frederic Castier, the Operations Officer for the European Mission of the McCormick Tribune Foundation.

The first trip to the field took place from March 3 to March 9, 2006. I, Michael Birdwell and David Currey traveled from Nashville to Charles DeGaulle Airport outside Paris. We met Michael Kelly and Fred Castier in Paris and drove to Hôtel d' Argonne in Vouziers about two and one half hour drive. The hotel served as our base of operations. One of the problems in this region is the lack of accommodation

and it took about 45 minutes to travel to and from Vouziers to Châtel-Chéhéry each day. Our first day in the field was Sunday, March 5 and we were met on site by Champagne-Ardenne Regional Archaeologist Yves Desfosses who spoke excellent English. We had been granted a permit by the Champagne-Ardenne Service Régional de l'Archéologie giving us permission to do a surface metal detector study. The weather was cold and daytime temperatures hovered around the freezing mark. The ground was covered with about four inches of snow. It rained or snowed every day we were in the field.

We started our search in the flat area along the stream running north-south that matched Alvin York's description of the point of initial contact. Very little in the way of artifacts was recovered the first day. It required practice to accurately interpret the metal detector readings and we dug in several spots that yielded nothing. The snow also prevented the sensing loop from being in close proximity to the ground surface. We were joined that day by Damien Georges, the regional forester and Mayor of Fleville, and Roland Destenay, the Mayor of Châtel-Chéhéry. Fred Castier served as our interpreter as no other member of the team spoke French. Damien pointed out some of the local landmarks, one of which was a ditch running up the side of the hill. We had mistaken this for the remains of a trench but Damien explained it was an ancient ditch constructed to mark the boundary between communal forest land and private property. This was roughly in the area indicated by Danforth as the location of several German machine guns so we metal detected along the edge of the ditch facing Hill 223 the next day and began to uncover some artifacts.. Here we recovered several 7.92mm expended cartridge cases, a muzzle protector for a Gewehr. 93 rifle, a German mess tin, and a pile of 161 7.92 cases and several live rounds. The concentration of so many cartridge cases in a small area indicated the firing position of a German machine gun.

These artifacts were mapped using a Trimble Pathfinder Pro XRS GPS receiver with a TD-2 data collector. On Tuesday, our third day in the field, we searched along the boundary ditch and recovered several more 7.92mm cases and a concentration of French rifle grenades behind the German machine gun position. Late in the afternoon we moved down the slope toward the creek where we recovered the first American artifacts. These consisted of 2 full clips of 30-06, some 30-06 fired cases and an empty American brass stripper clip. This was the first indication of an American soldier in action, firing and reloading his weapon. Wednesday morning dawned cold and

dreary and we began work in light rain that created an eerie fog as it fell on the snow. We found a few more 30-06 cases and a French tear gas grenade but no .45 cartridge cases that would indicate that Alvin York had fired his pistol. We left early the next morning to return home with the feeling we had made progress but needed more conclusive evidence. We immediately began planning a return visit.

The next trip was made in November 2006. Yves Desfosses renewed our archaeology permit. This time the team was composed of the author, Michael Birdwell, Michael Kelly, and Jim Deppen, a historian from Nashville. Our accommodation was a furnished gîte in the village of Fleville owned by the village and run by the mayor, Damien Georges, and his wife Dominique. This put us only a couple of miles from the search site west of Châtel-Chéhéry and greatly reduced our travel time. We were joined in Fleville by Eddie Browne and Ian Cobb of Dorset, England. Eddie is a professional military collector and proprietor of Boscombe Militaries in Bournemouth, Dorset. Ian has been a military collector for 25 years, served in the Territorial Army with the 1st Battalion Wessex Regiment, and has made extensive study of the Dorset and Wessex Regiments in WWI and WWII. Eddie and Ian were both interested in the story of Alvin York and had made some finds in the Châtel area that were of potential relevance to our study. Eddie had also donated several items to the Alvin York Historic site in Pall Mall, Tennessee. Both Eddie and Ian brought their own metal detectors giving us three. We were also joined by Birger Stichelbaut, a Belgian archaeologist who had done extensive work with GIS and aerial photos for WWI battlefield interpretation and was working on his PhD. Berger also spoke excellent English and served as our interpreter since Fred Castier was unable to join us until the latter part of our trip. We arrived in Fleville on the afternoon of Tuesday, November 14, 2006 and began our field work the next day. In the morning we were once again joined by Yves Desfosses, the regional archaeologist, and we outlined our plans to him. The trip was planned for late fall when the leaves would be off the trees and not interfere with GPS satellite reception. However, this had been an unusually mild fall in the Ardenne and the leaves were still on the trees when we arrived on November 14. Most of them had fallen by the time we left on November 23. The temperature remained mild during our stay but frequent showers kept things wet and muddy.

We again used the Trimble Pathfinder Pro XRS unit for mapping artifacts in the field. Through the generosity of Bertrand Despaquis with D3E

Electronique-GPS Boutique we were able to access base station files that were used to post process the data to sub-meter accuracy.

Fieldwork got off to a good start. Eddie and Ian were experienced WWI relic hunters and we were able to cover the ground much more quickly and thoroughly than in March. A French television news crew had joined us for the first day and, to avoid publicizing our primary search area, we decided to look for the position of 4 German 77 mm field guns captured by the Second Battalion on 8 Oct. A document provided by Jimmie Hallis from the archives of the 82nd Airborne Division Museum at Fort Bragg, North Carolina contained a transcript of a question and answer held between Major G. Edward Buxton and the Second Battalion commander, Major Tillman concerning the battalion attack on October 8 1918. Tillman described the position of the guns as on the right flank of the battalion attack near a point on a hill labeled 167 (Tillman 1918). George Pattullo refers to this entire hill as "Hill 167" (Pattullo 1919)

The 1:20000 Forêt D'Argonne map in use by the American forces indicates a spot elevation with the figure "167" in the general area Tillman described. Finding the site of the gun position would help confirm the reliability of the 82nd Division records and locate the right flank of the Second Battalion attack.

We began searching in this area and immediately found three live 77mm shells with the copper driving bands chiseled off by post war salvagers. Further searching located 12 77mm shell cases and 7 protective shipping covers for 77mm shell fuses. This confirmed the location of one of the 77mm guns captured by the Second Battalion and fixed the right flank of the battalion attack. Our confidence in the documentary evidence was materially increased.

After the media departed we decided to search in the area of highest probability of the York fight based on the division history and information from Buxton and Danforth. This was the area where we had begun our search in March without result.

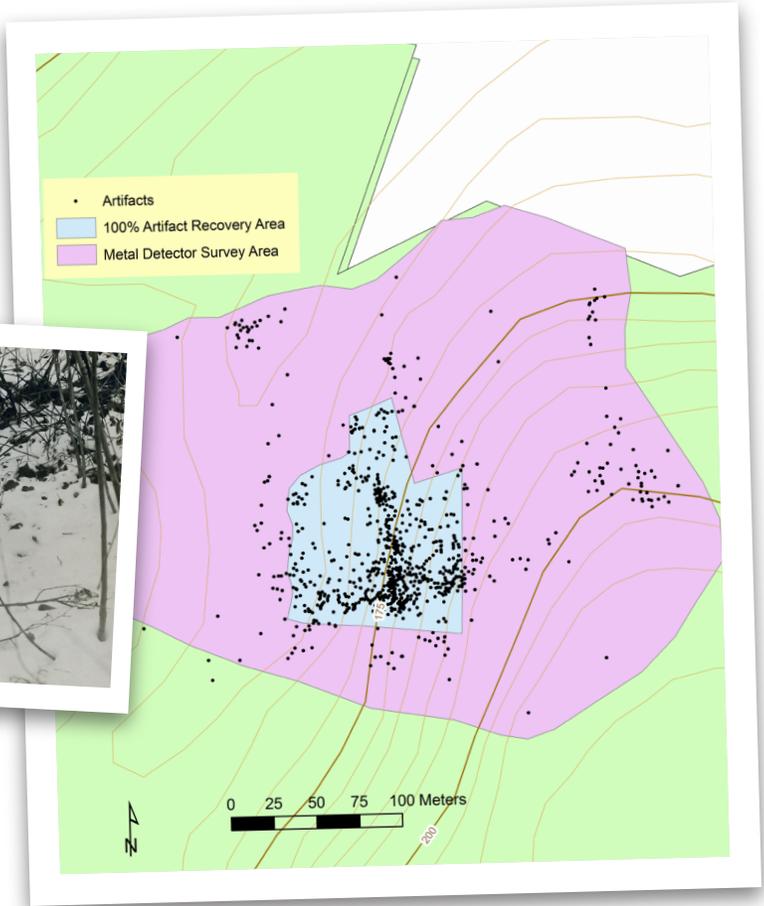
On Thursday, due to the skill and energy of Eddie and Ian, we began to locate artifacts. The first indication of success was finding the remains of an American cartridge belt along the creek. It consisted of 8 full clips of 30-06 ammunition, several loose live rounds and stripper clips, part of the brass cover for a field dressing container, and a pocket knife. A button to an American tunic and mess utensils were found nearby. This looked like an indication of an American casualty. Soon, artifacts were being recovered much faster than they could be mapped. It was sometimes necessary to occupy a point for 20 minutes or longer

until enough satellites were visible and unobstructed by trees to record a point. We evolved a procedure to map and record the artifacts. When an artifact was located, it was marked by flagging tape or a metal flag. When the artifact was mapped it was given an identification number based on the date and a sequential number for that date. The identification number was entered in the GPS rover file comment field and the artifact was put in a bag with the identification number on the outside and a label with the identification number inside the bag. Artifacts too large to put in bags had a tag tied to them. At the end of each work day the artifacts were identified, photographed and cataloged.

Yves Desfosses and Alain Jacques, the Regional Archaeologist from Arras, France stopped to check on our progress on Saturday and helped identify some of the artifacts that we could not. We were very fortunate to have their help since they are the only French archaeologists specializing in WWI. Eddie and Ian had to leave on Friday and Birger left on Saturday. Eddie and Ian had been very productive and hard working members of the team and we were sorry to see them go. Sunday was very rainy and was spent working on the spatial database and cataloging artifacts. We resumed field work on Monday but without Eddie and Ian our progress was a little slower. On Tuesday, Yves arranged for a back hoe to excavate trenches in the area where the American cartridge belts were found. We had burial information from the National Archives giving map coordinates from the Forêt D'Argonne map where the six Americans were originally buried. The backhoe trenching process involves removing one thin layer of soil at a time and examining the removed soil and trench bottom with a metal detector after each pass of the backhoe. The soil profile exposed in the trench was examined for color changes left by backfill from a burial. In this way, we hoped to pinpoint the location of the original graves. However, the large number of trees and the lack of open ground restricted the search area and we were unable to locate the grave sites. We did recover a bronze collar disk from a trench close to the site of the first cartridge belt inscribed with the number "328" crossed rifles and the letter "G" that confirmed the presence of members of York's company at the site and probably belonged to one of the American casualties.

Wednesday was occupied in metal detecting and mapping. We did find a pile of 7.92 cartridge cases on the upper slope of the hill indicating the position of one of the German machine guns. This find was critical in recreating the engagement. We also found a brass strip down the hill a few yards that was part of a canvas machine gun belt. The position of the gun

in a flat area near the top of the hill gave a clear field of fire for the entire lower slope and stream bottom. The machine gun location provided the last piece of the puzzle. Our field work completed, we left early Thursday morning, November 23, to return home.



U.S. Signal Corps photo of Murray Savage's grave

The final field session took place from April 6 to April 18, 2009. This trip was largely motivated by an interest taken in the project by Brad Posey. Brad retired from the U.S. Army and lives in Germany. He is an ardent historian and metal detector. His interest was sparked by a web site on the project and my Ph.D. Dissertation available online at Texas State University. In our discussions, it came to light that on the previous trip we had found most of the items pictured on Murray Savage's grave in a Signal Corps photo taken 7 February 1919.

Brad recruited Jim Legg, a battlefield archaeologist with the South Carolina Institute of Archaeology and Anthropology at the University of South Carolina. Jim had extensive experience with using metal detectors for battlefield research. We were also joined by Birgit and Jessica Anderson who had extensive metal detector experience. Eddie Browne and Ian Cobb rejoined us and rounded out the metal detector team. Michael Kelly provided logistics and Fred Castier was the local liaison. Yves Desfosses once again renewed our archaeology permit.

The two primary goals of this trip were to locate the original burials of the six Americans killed

Survey area and artifact distribution

and conduct a systematic metal detector survey of the engagement area to establish the engagement boundary. This had not been possible due to time limitations on the previous trips and was necessary



Using the backhoe

to insure that all artifacts related to the site were recovered. Jim Legg also excavated a one by two meter unit to a depth of 25 centimeters at the suspected site of Murray Savage's burial. This unit yielded further parts of the American cartridge belt found in 2006, the hob-nailed sole of an American boot, and rubber spacers from the sweatband of an American helmet. An American pocket watch was found nearby. Jim was "firmly convinced" that this was the site of the Savage burial (Legg 2010). Yves again rented a backhoe to help locate the other missing graves.

On this trip we used a Trimble GeoExplorer GeoXH GPS receiver and data collector. GPS satellite reception in the study area was obstructed by the steep hills and large trees. It was sometimes necessary to occupy a location for up to an hour to collect a sufficient number of points. It became clear that the mapping could not keep up with the number of artifacts being recovered. To solve the problem a series of survey stakes were installed across the study area and GPS positions recorded for each stake. Then azimuths and distances to artifacts in the vicinity of the stake were recorded for each artifact. GIS distance and direction tools were used to create point features representing the artifact locations.



Identifying and cataloging artifacts

Jim and Brad did a tremendous job cleaning, identifying and cataloging the artifacts which numbered over 1500.

Analysis and interpretation

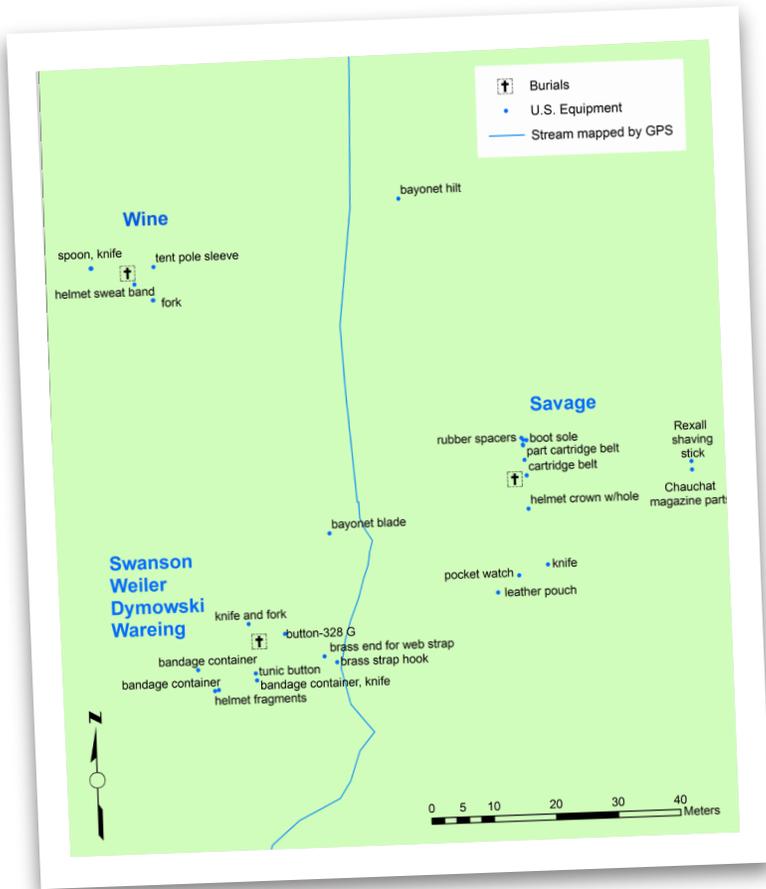
Before analysis can begin, it is important to consider what the recovered artifacts represent and what kind of spatial relationships their locations symbolize. The artifacts recovered are the material remains of

an engagement between a patrol from G Company, Second Battalion 328th Infantry and elements of several German units on the morning of October 8, 1918. Discarded equipment, broken weapons, and dead soldiers mapped the course of the events at the end of that day. Later, salvage teams and burial parties would tidy up the hillside and remove most of the traces of battle. Time and weather would conceal the rest. The artifacts that remained were objects rejected or overlooked by battlefield salvage teams, burial parties, curious residents, souvenir hunters and tourists for almost 90 years.

Over 2,600 artifacts were recovered from the study area. The artifacts were classified into major categories to facilitate analysis. The classification code and quantity for each artifact was entered in the spatial database attribute table. It was anticipated that several spatial patterns would be revealed by the arrangement, quantity, and class of artifacts. American uniform and equipment items would indicate the location of death or burial of Americans killed in action. A concentration of artifacts in the area described by the documentary evidence would confirm the site of the engagement. Individual firing positions, weapons, and the intensity of combat would be revealed by the quantity and location of expended ordinance. The location, quantity and type of German equipment and weapons would indicate the surrender of German personnel.

Location of American burials

One of the major objectives of this project was to locate the initial burials of the six Americans killed in the engagement. All six men were buried on 24 OCT 1918 by Chaplain John O'Farrelly of the 303d Engineers. O'Farrelly recorded the locations on the Grave Location Blank for five of the men as 297.4 East and 280.2 North on the Forêt D'Argonne map sheet. Murray Savage's file did not contain a Grave Location Blank. This location was due west of Hill 223 and contradicted much of the other spatial records. An examination of the burial records for other members of the battalion buried the same day showed the same coordinates listed for the six patrol members. O'Farrelly used the same map coordinates for all the men he buried that day and made no pretense of accuracy. The GRS recorded map locations for the burials when they surveyed all burials prior to disinterment. The GRS recorded that Wareing, Swanson, Dymowski, and Weiler were buried at 296.6 East and 279.8 North and described this point as being "20 yards west of creek and 50 yards east of path at foot



records for Savage beyond a report on his disinterment and reburial at the American cemetery at Romagne.

The American artifacts occurred in three groups. The first group on the west side of the stream consisted of 40 unexpended 30-06 rounds in stripper clips and two loose rounds, part of the brass cover for a first aid dressing, a pocket knife, fragments of a U.S. helmet, U.S. tunic button, U.S. knife and fork, and collar insignia inscribed with 328, crossed rifles and the letter G. A point plotted at the centroid of this artifact scatter measured 14.8 yards from the stream. This corresponds closely to the distance of 20 yards east of the creek recorded by the GRS for the burials of Wareing, Swanson, Dymowski, and Weiler. All these men were recorded as being buried in their uniforms. This group of burials was disinterred in September, 1919.

A second group of artifacts north and west of the first group consisted of the leather sweat band for a U.S. Model 1917 helmet, U.S. fork, U.S.

U.S. equipment artifacts and probable burial sites

of hill". GRS records showed Wine was buried at 296.7 East and 279.9 north and "30 yards west of creek and 20 yards east of path at foot of hill". There were no GRS

spoon marked 328 on the back, a U.S. knife marked 328G. The helmet sweat band, fork and spoon were



U.S. Signal Corps photo of graves for Swanson, Weiler, Dymowski, and Wareing



U.S. Tunic button

recovered during the backhoe trenching. A point plotted at the centroid of this artifact scatter measures 33.7 yards east of the stream and corresponds closely

to the distance of 30 yards recorded by the GRS for Wine's burial. Wine was recorded as being buried in his uniform and was disinterred in November, 1921.

The artifacts contained in both these groups are items that appeared on top of the graves or were easily detached from clothing during the disinterment.



Company G 328th Infantry collar insignia

The presence of unit marked items from G Company 328th Infantry and the correspondence of these locations to GRS records strongly indicates that these are the original burial sites for Wareing, Swanson, Dymowski, Weiler, and Wine.



Parts of U.S. cartridge belt

The third group of artifacts on the east side of the stream consisted of the remains of a 1910 model cartridge belt manufactured by the Mills Company, remains of a first aid pouch and dressing, remains of a



U.S. Helmet

canteen cover, and 88 30-06 unexpended rounds, many in stripper clips. A few meters away was the crown of an American helmet and an American pocket watch. In a subsequent excavation by Jim Legg, he found additional parts of the cartridge belt, part of an American boot sole with hobnails and rubber spacers for a U.S. helmet liner. The hilt of a U. S. Model 1917 Enfield bayonet was found nearby. These artifacts are consistent with the equipment shown on Savage's grave in a photo taken 7 February 1919. A cartridge belt with full pouches, canteen cover, helmet, and rifle with bayonet are clearly visible. This seems to confirm the location of Savage's initial burial.

One disappointment was the failure to locate the grave shafts during backhoe trench operation. Yves Desfosses and Jim Legg concluded that the failure of backhoe trenching to discover the grave shafts was attributable to the character of the soil and shallow burial depth (Legg 2010). Burial records indicate they were buried from one to two and one half feet deep.

Site of engagement

The 82nd Division history states that the attack on October 8 was stopped "...by machine gun fire from a hill directly south-west across the valley from Hill 223" (Buxton 1919). These machine guns were the objective of a patrol from G Company on the left flank of the 2nd Battalion attack. The metal detector search was focused on the hill south west of Hill 223. A large concentration of artifacts was found on the south slope of this hill. This is the area described by Buxton and Danforth in their written accounts and annotated maps. The artifact concentration is south of the wood line in the vicinity of hill "2" described

by Lieutenant Kuebler as the site of his surrender. Lieutenant Glass 1st Battalion, 120th Landwehr Infantry, described the location of Lieutenant Kubler's 4th Company, 120th Landwehr Infantry as at the exit of a wooded ravine at the edge of the woods. Glass states that to the rear of the 4th Company he saw several groups of soldiers eating breakfast with their equipment and weapons put aside. Glass states that when he returned to the rear from the 4th Company position at the edge of the woods he was captured as he reported to Lieutenant Vollmer. This is consistent with the pattern of expended cartridges at the wood line and the concentration of German equipment on the steep slope to the rear (Merten 1936).

Lieutenant Thoma of the Bavarian Sapper Company reported occupying a position on the firing line with one platoon of his command. He records passing through a group of soldiers eating breakfast while moving into position and leaving one platoon in reserve on the slope behind the firing line (Merten 1936). The position of the firing line described by Lieutenant Thoma agrees with the terrain at the crest of the slope above the artifact concentration. This position provides a clear field of fire toward the valley through which the Second Battalion, 328th Infantry attacked. The area of the highest concentration of artifacts is hidden from the firing line position by a slight depression on the west side of the crest of the hill. Thoma would have been able to hear but not see activity on the lower slope. Later, Thoma recorded he went to check on his men when he heard the sound of firing and "shouting in the woods." He was moving in that direction when he encountered American soldiers and surrendered. This is consistent with the spatial relationship of the firing line on the crest of the hill and the area on the west slope where a concentration of German equipment indicates the surrender of a number of German soldiers.

Lieutenant Vollmer's account of the fight clearly indicates a lack of familiarity with the terrain that was only natural considering he occupied the position after dark on October 7. He said he took command of the left half of the regimental sector at the request of Major v. Sick who occupied Hohenborn Hill (Hill 244) with the 3d Battalion of the regiment. Vollmer's description places his command on the hill north west of Hill 244 and southwest of Hill 223. The largest concentration of artifacts occurred on the western slope of this hill. Vollmer's account confuses Castle Hill (Hill 223) with Pleasant View Hill (Hill 180) which would have been hidden behind Hill 223 from his position. Vollmer's account is contradicted by the other German accounts on several points.

Vollmer says he was captured alone when the other accounts put him in the company of a large number of prisoners. He implies that he did not speak English although Lt. Glass says that Vollmer explained the American commands to them because none of the other Germans spoke English. Vollmer's account indicates he was confused about his location, the number of troops under his command, and their dispositions. Taken as a whole, Vollmer's report lacks credibility. All of the German accounts exaggerate the number of American soldiers involved and accuse their American captors of misconduct. These officers obviously felt disgraced by their capture and desired to place their actions in the most favorable light.

In summary, the area with the highest concentration of artifacts is consistent with the documentary evidence describing the location of the York fight and confirms the site of the engagement.

Individual firing positions

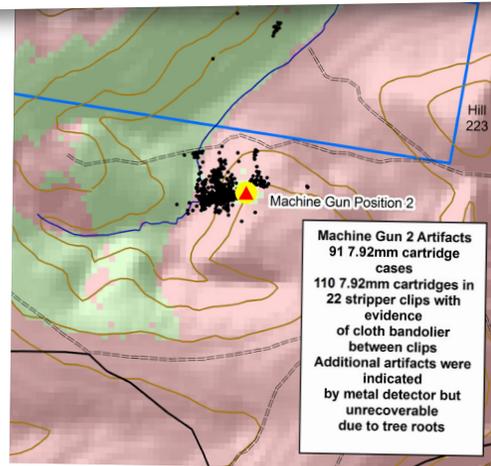
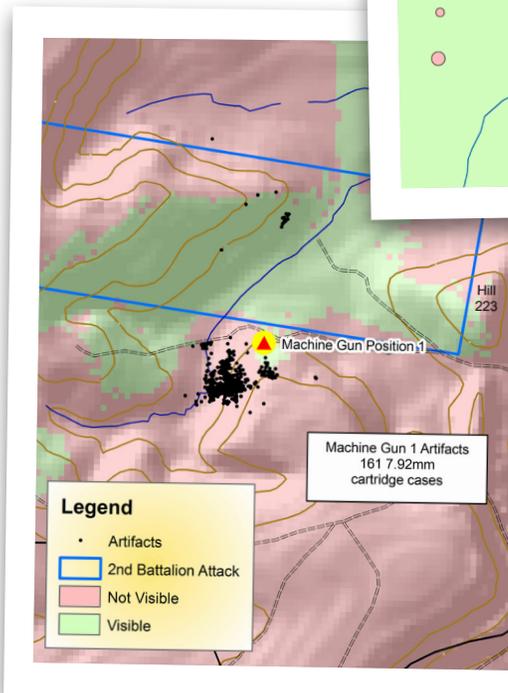
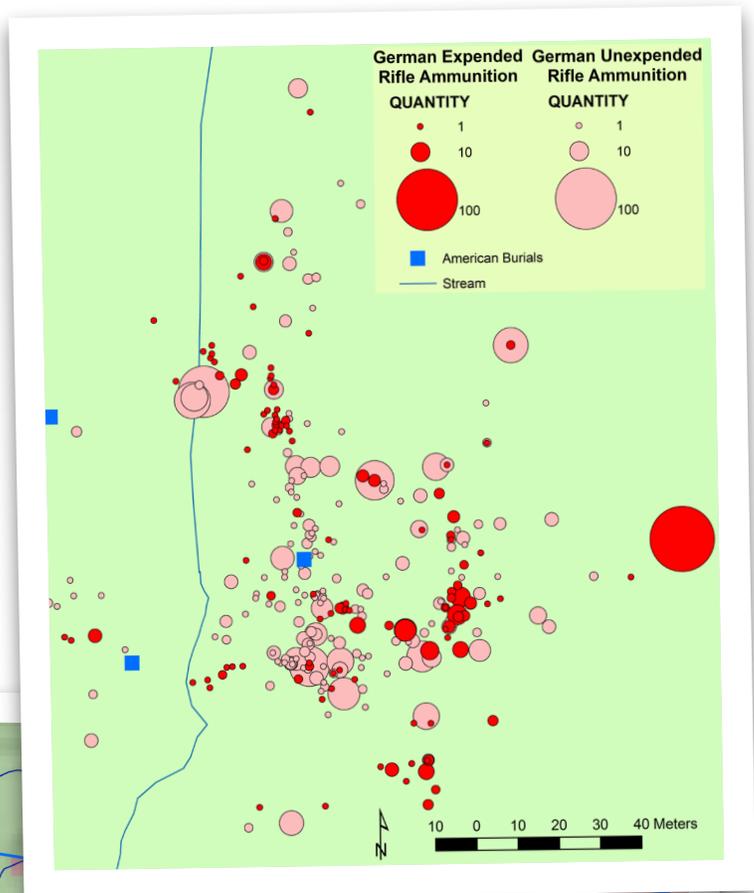
Individual firing positions are indicated by location and quantity of expended small arms ammunition shown on the diagram below. Expended cartridge cases from the bolt action rifles used by both sides are ejected to the right and rear of the shooter. The point of impact of each ejected case creates a pattern pointing to the shooter's position. In this case, the pattern of the ejected cases has been modified by the steep, 40 percent slopes at the engagement site. The ejected cases recovered in the metal detector survey have been displaced down slope from their point of initial impact by the momentum of their ejection from the weapon and subsequently by overland precipitation flow, freezing and thawing, and logging operations. Consequently, the patterns created by recovered expended small arms ammunition can only provide a general location of the firing position of individual combatants.

The pattern and quantity of expended and unexpended rifle ammunition in shown in the diagram overleaf clearly shows German infantrymen engaging targets to their rear and subsequently dropping their cartridge belts on the ground. Most of the unexpended ammunition was in stripper clips and very few cartridge belt parts were recovered, indicating salvage crews emptied the cartridge belts prior to removal. There are also indications of German rifle fire from the 4th Company along the road at the edge of the woods directed against the Second Battalion attack to their front. The distribution of expended German rifle ammunition on the middle and upper western slope of the hill is consistent with statements from American

German expended and unexpended rifle ammunition

survivors that they were fired on by Germans halfway up the hill when they crossed the stream from the west.

Two German machine gun positions were indicated by a large quantity of expended 7.92 mm cartridge cases concentrated in one spot. Viewshed analysis is a GIS tool that calculates what is visible from a point based on the elevation of the point in relation to the surrounding elevations. The results of viewshed analysis of the two machine gun positions is shown in below. Green indicates area visible from the point.



Machine gun position 1

Red indicates area invisible from the point. Machine gun position number 1 is located on the ridge facing Hill 223 and is sited to engage the American attack from Hill 223. Machine gun position number 2 is sited at the first point where the stream bottom is visible

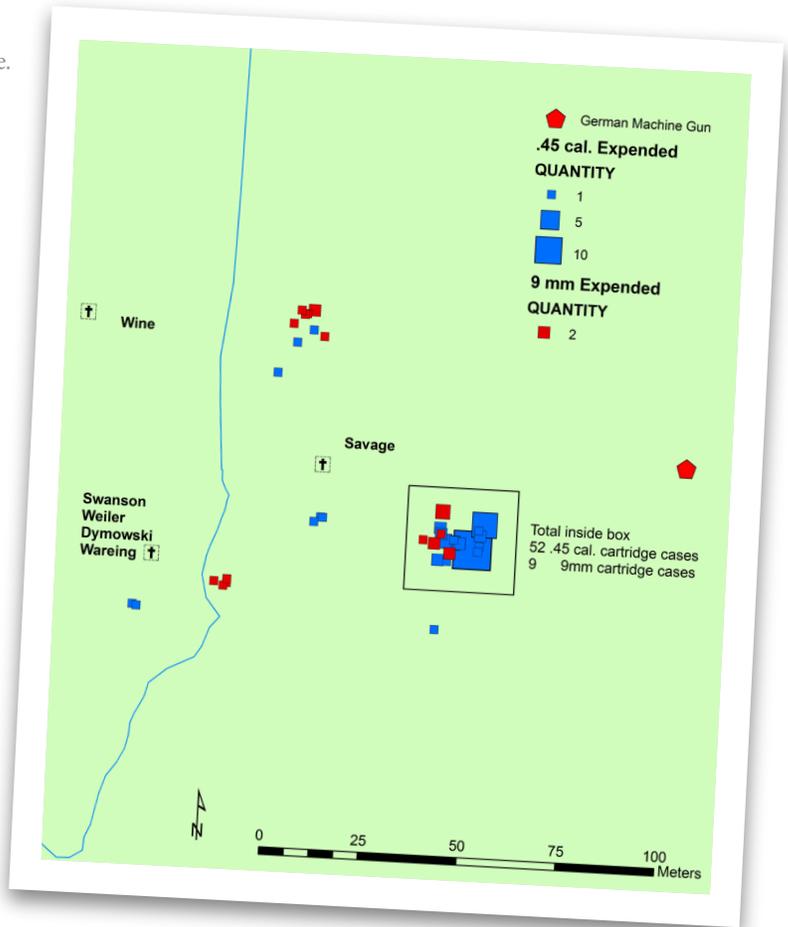
Machine gun position 2

when moving down from the firing line on the crest of the hill. This suggests that German machine gunners firing at the Second Battalion attacked from the top of the hill, heard firing to their rear and moved their gun to engage this new threat and confirms that this gun

was sited to engage targets in the rear of the German defensive line.

The distribution and quantity of 30-06 cartridge cases is consistent with American accounts that state all members of the patrol fired several rounds when they first encountered the Germans on the side of the hill before Sgt. Early issued the command to cease fire. It appears that York's squad moved part of the way up the hill to gather prisoners when the German machine guns opened fire. Private Beardsley of York's squad stated he took cover behind a tree about 15 paces to the rear of York with Private Dymowski on one side and Private Wareing on the other (Skeyhill 1928). Dymowski and Wareing were killed by German machine gun fire. Beardsley told George Pattullo that machine gun fire on both sides of the tree from ground level to 4 feet high prevented him from using his 8mm Chauchat Automatic Rifle (Pattullo 1919).

Buxton states York fired 21 rounds from his pistol and 15 rounds from his rifle (Buxton 1929). The distribution of pistol cartridge cases is shown in diagram above. It is difficult to identify York's firing position from the scattered pattern. However, when



Distribution and quality of .45 cal. and 9mm expended cartridges

the symbols representing cartridge cases are made proportional to the number of cartridge cases recovered at that location an entirely different picture emerges. The small area shown on the map by the enclosed box contains fifty two .45 cal. cases and nine 9 mm cases. The large number of .45 cal. cases may be explained by an occurrence referred to in George Pattullo's article. Pattullo describes a marksmanship contest between Major Tillman and York in which York hit a small matchbox with every shot at 40 yards (Pattullo 1919). A German entrenching tool with a large and small caliber bullet hole and numerous items of German equipment with multiple bullet holes provides further evidence of post engagement target practice. It seems that York demonstrated his marksmanship close to the place he engaged the German machine gun. The machine gun position is 65 yards from the largest concentration of .45 cal. cases. York estimated the



German canteen with multiple bullet holes



Bullet holes in German entrenching tool



German machine gun water can with multiple bullet holes

distance to the machine gun as 30 yards (Pattullo 1919). This large concentration of .45 cal. cases is York's probable firing position when he engaged the machine gun and the German bayonet charge.

A total of eight 9 mm cartridge cases were recovered about 15 yards from York's firing position. York stated that a German officer among the prisoners fired a pistol at him but missed (Skeyhill 1928). When Lt. Vollmer later surrendered his pistol to York, the ammunition clip was empty. The 9 mm cartridge cases provide confirmation that Vollmer fired his pistol at York before he surrendered and Vollmer's approximate position. It was also close enough that York could hear Vollmer's request to surrender.

Only four 30-06 cartridge cases were recovered in this area. A total of eight 30-06 cartridge cases and two empty 30-06 stripper clips were recovered from the flat

area beside the stream. This confirms the fact that few surviving members of the patrol besides York engaged the German machine gunners.

German equipment items

The transition of a soldier from combatant to prisoner is not without risk. During the critical moment when a soldier stops resisting it is imperative for him to clearly demonstrate his intention to surrender. During WWI a soldier demonstrated his intention to surrender by putting down his weapon and removing his belt and equipment. A soldier might also remove the bolt from his rifle to visibly render it inoperable. Several of the German and American accounts of the engagement refer to soldiers removing their belts to indicate surrender.

The field equipment of a German soldier consisted of 3 cartridge pouches worn on each side of the front of the belt containing a total of 90 cartridges (Lavis 1994). A bayonet and scabbard, entrenching or other tool, canteen, mess tin, and eating utensils were also suspended from the belt or carried in a knapsack worn on the back. Another item of equipment carried by German soldiers was a small can of weapon lubricating grease. In addition to his personal weapon, the German soldier was frequently equipped with several hand grenades. The surrender of 132 German soldiers would have left a large amount of weapons and equipment at the surrender site. In view of the amount of equipment and the distance to the nearest road it is not surprising that some items escaped salvage. Items of German equipment located during the metal detector survey provide tangible evidence of the surrender of a large number of German soldiers.

Figure 6 shows the distribution by type of the German artifacts. It is interesting to note that only the remains of one set of German cartridge pouches were recovered. This was the Model 87/88 pouch commonly issued to sappers. This pouch and the Gewehr 98 b rifle bolt referred to below could have been associated with the Bavarian Sappers among the German troops.

Very few weapons or weapon parts were recovered. Weapons related artifacts consisted of two rifle bolts, three ersatz bayonets, and the remains of several stick grenades, and a box of grenade detonators. One rifle bolt was from a Gewehr 98 and the other from the Gewehr 98 b carbine carried by machine gunners and sappers. A total of 7 empty bayonet scabbards or parts of scabbards and 3 bayonets were recovered. A total of 15 entrenching tools and one entrenching tool scabbard were recovered.

It was surprising to recover over 48 artifacts associated with German gas masks. Three complete gas masks and 20 filter canisters were recovered. Considering the high concentrations of gas referred to in official records it is possible these belonged to German dead. A total of 18 items associated with eating and drinking were recovered. This is confirmation that some of the Germans were eating when they were captured. A total of 19 small metal cans, most containing weapons grease were recovered.

Conclusion

It is impossible to confirm or refute every statement by every participant in the

documentary accounts based on the type and distribution of recovered artifacts. However, the preponderance of information derived from an analysis of the artifacts agrees with the bulk of the documentary evidence.

The burial sites of the six Americans killed in the engagement were located and agreed with the

descriptions in the burial records and were confirmed by archaeologist Jim Legg. The distribution of German ammunition and equipment indicates a large number of Germans engaging targets in their rear and then surrendering which is consistent with all accounts of the engagement. Information supplied by Buxton and Danforth on the location of the engagement is confirmed by the large artifact scatter in that location. The distribution of .45 cal. expended cartridges in relation to the German machine gun position and the scatter of 9mm expended case coincides with York's description of the spatial relationship between himself, Vollmer, and the machine gun. The marksmanship demonstration by York described by Pattullo explains the addition .45 cal. expended cartridges and the accounts for the bullet holes in the German entrenching tool found at the machine gun position and multiple bullet holes in other German equipment. It seems reasonable to conclude that the western side of the hill south west of Hill 223 is the site of the engagement that resulted in Alvin York being awarded the Medal of Honor. ■



Tom Nolan, Michael Kelly, Fred Castier, Yves Desfosses, Michael Birdwell, Mayor Roland Destenay. Roland is holding the 328 G collar insignia

Reference list

1st Army Corps. 1918. Aero Squadron 12 reconnaissance of 1-10-18. 12th SQ, B1364-1376, envelope 253, Record Group 120, National Archives and Records Administration, College Park, MD

American Battle Monuments Commission. 1938. *American Armies and Battlefields in Europe*. Washington, D.C.: U.S. Government Printing Office.

Beattie, T. & R. Bowman (2000) In Search of York: Man, Myth, & Legend. *Army History*, 50, 2-14.

Buxton, G. E. 1919. *Official History of 82nd Division American Expeditionary Forces*. Nashville: reprint, The Battery Press.

1929. Letter to Captain Henry Swindler July 23, 1929. Entry 310C "Thomas File", Record Group 165, National Archives and Records Administration, College Park, MD.

1930. Letter to Capt. Donovan Yeuell May 15, 1930. file 718.2 G/MA # 8, Record Group 120, National Archives and Records Administration, College Park, MD

Danforth, E. C. B. 1926. Letter to The American Monuments Commission, April 23, 1926. File 718.2 G/MA #8, Record Group 120, National Archives and Records Administration, College Park, MD

1929. Letter to Captain Henry Swindler on August 5, 1929. Entry 310C "Thomas File", Record Group 165, National Archives and Records Administration, College Park, MD

Duncan, G. B. 1927. Letter to American Battle Monuments Commission April 20, 1927. File 718.2 G/MA #8, Record Group 120, National Archives and Records Administration, College Park, MD

Groupe-de-Canvas-de-Tir. 1918. Forêt d'Argonne. Revised July 1918, 1:20000. Entry 43, Record Group 120, National Archives and Records Administration, College Park, MD

Holt-Jensen, A. 1999. *Geography: History & Concepts*. London: Sage Publications.

Johnson, D. W. 1921. *Battlefields of the World War*. New York: American Geographical Society of New York.

Lavisse, E. C. 1994. *Field Equipment of the European Foot Soldier 1900-1914*. Nashville Tennessee: Imperial War Museum and The Battery Press.

Lee, D. D. 1985. *Sergeant York: An American Hero*. Lexington: University of Kentucky Press.

Legg, J. B. (2010) Research: Finding Sergeant York. *Legacy*, 14, 18-22.

Merten, F. W. 1936. Testimony of German Officers and Men Anet Sergeant York. Entry 310 B, "Thomas File", Record Group 165, National Archives and Records Administration, College Park, MD.

Office of the Quartermaster General, G. R. S. 1915-1939. Dymowski, Maryan E. . Record Group 92, National Archives and Records Administration, College Park, MD

Pattullo, G. 1919. The Second Elder Gives Battle. In *Saturday Evening Post*, 3-4, 71-74. Philadelphia, PA: Curtis Publishing Company.

Skeyhill, T. 1928. *Sergeant York: His Own Life Story and War Diary*. Garden City, New York: Doubleday, Doran and Company, Inc.

Swindler, H. 1929. Letter to Colonel G. Edward Buxton on July 17. Entry 310C "Thomas File", Record Group 165,

Tillman, J. M. 1918. 82nd Division Field Orders and Memos, History of Operations. In *82nd Airborne Division War Memorial Museum Archives*. Fort Bragg, North Carolina.

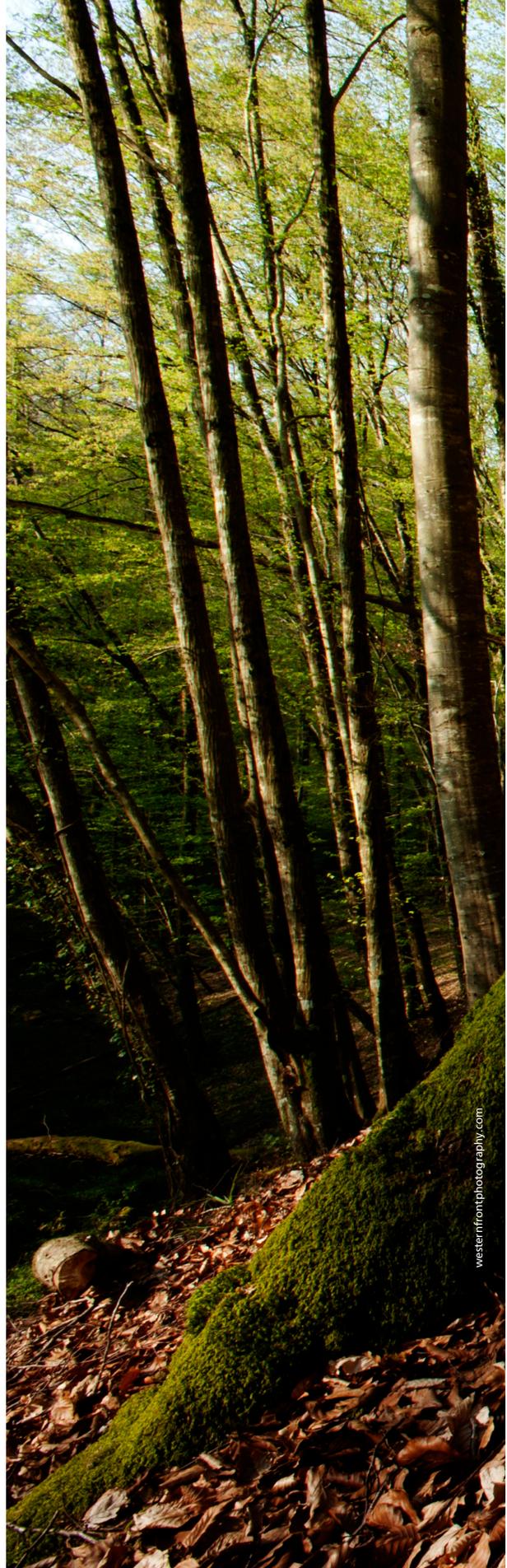
Vermessungs-Abteilung. 1918. Planmaterial der 3. Armee, B1.85 Autry. Revised October 1918, 1:25000. Entry 43, Record Group 120, National Archives and Records Administration, College Park, MD

Photography

Introduction photograph (page 42-43) by Western Front Photography. All other images are courtesy of either the National Archives and Records Administration, Jimm Legg, Michael Birdwell, Jim Deppen, Tom Nolan or Brad Posey

Author - Thomas J. Nolan, Ph.D

Tom Nolan spent 15 years as a professional forester in Arkansas and Mississippi before returning to school for a Masters and later a Ph.D. in Geographic Information Science (GIS). He specializes in the application of GIS to historic interpretation and analysis. He was Director, Laboratory for Spatial Analysis and taught Introductory GIS, Advanced GIS, and Computer Cartography in the Department of Geosciences at Middle Tennessee State University for 18 years. He retired in January, 2011. ■





THE YOUNGEST SOLDIER BY MIKE ST MAUR SHEIL

Two days after York fought his action, Ernest Wrentmore, serving as Pvt. Henry Monroe in the 60th Regiment, 5th Division AIF, earned his place in history as probably the youngest soldier to fight for the Allies in WWI. A doctor's son from Ohio, he had lied about his age and was just 13 years and 10 months, when on October 10th, he took part in an attack on the Bois de Rappes and was wounded here in the meadow between the Bois de Rappes on the left and the Bois de la Pultiere on the right.

I became deathly sick. I dropped to my knees, retching and gagging. I tried to regain my feet. I could'nt make it ... I tried to yell: no sound came forth. I sank to the ground, then "lights out".

Although he was then hit by a shrapnel shell, he survived and died in 1983 after a distinguished career as a Colonel in the USAF and having fought in both WWII and Korea. ■



VALETE

This is the sixth issue of *BATTLEguide* which has appeared in the past three years, all of them designed by Frank Toogood. When he first agreed to design the Journal, his brief was simply to create a publication which would serve to present the Guild to a wider public.

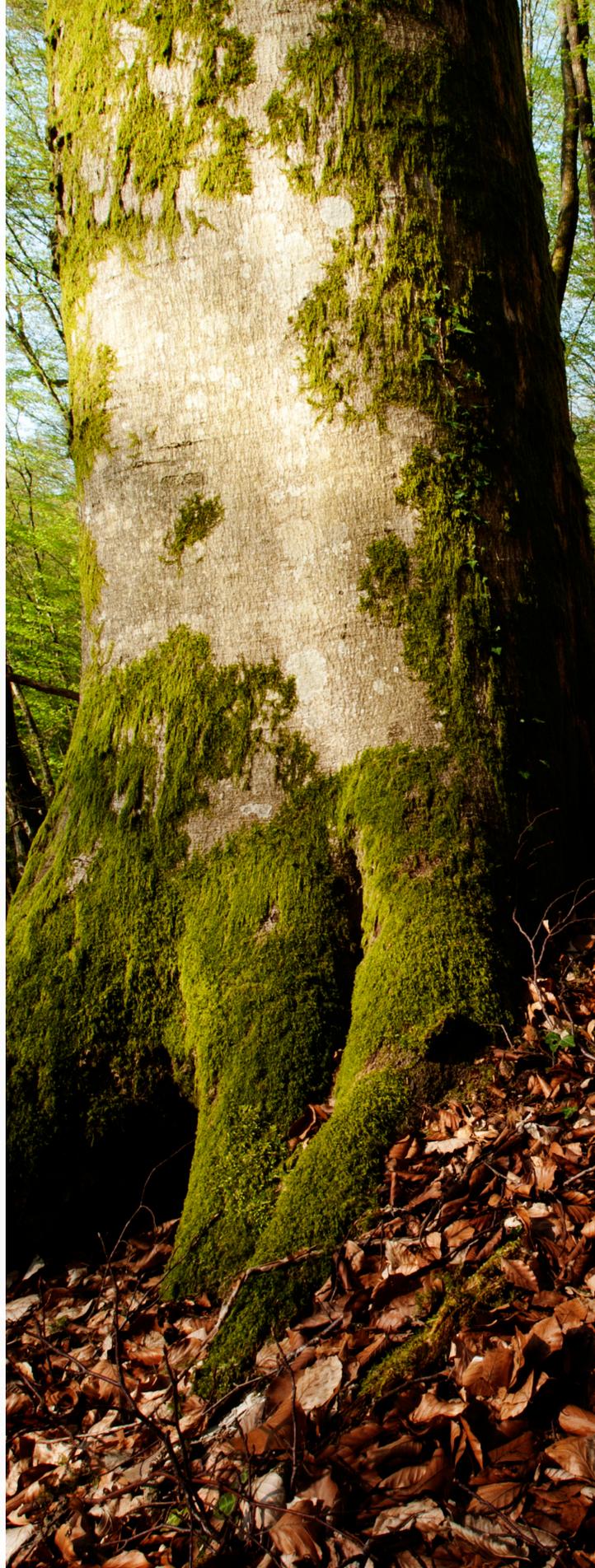
And that is exactly what he has done: nobody seeing the Journal in the past three years cannot fail but to have been impressed by the design and the seamless way in which Frank was able to transfer the design from print to e-magazine format. His skill as a graphic designer is evident in the way in which he is always able to combine text and illustrations to create spreads which are both highly informative as well as attractive.

As Editor I am only too well aware of the time and effort it has taken to produce the Journal to such a high standard and the Guild owes Frank a huge debt of gratitude for all his efforts, both for his design of the Journal and the creation of the website. The website has enabled the Guild to achieve a much higher profile and certainly the online edition of the Journal has had a far wider readership than is possible through just a printed edition.

An Editor can only fulfill that function when he has something to edit so I would also like to express my gratitude to all those who have contributed to the Journal: without their efforts no issue would ever appear and their wide range of interest and knowledge has never ceased to amaze me.

Sadly financial constraints mean that in future the Journal will only appear annually but hopefully this will mean that the editorial duties will be easier to accomplish so I would like to close by wishing my successor all good fortune and thank you all for reading, and hopefully enjoying our efforts over the past three years.

Mike St Maur Sheil
Journal Editor





The woods of Châtel Chéhéry in their glorious colours which would have seemed so familiar to Alvin York

Edition 10, November 2011
www.gbg-international.com



Founded in 2003, the International Guild of Battlefield Guides seeks to analyse, develop and raise the understanding and practice of battlefield guiding



BATTLEguide

The Journal of the International Guild of Battlefield Guides

Council and Trustees

President John Hughes-Wilson

Executive Council

Chairman	Tony Coutts-Britton
Secretary	Tony Smith
Treasurer	James Dinsdale
Director of Validation	Chris Scott
Education Co-ordinator	Frank Baldwin
Events	Jo Hook
Members' Representative	Frank Toogood
Trade Co-ordinator	Philip Pearce

The Journal

Editor Michael St Maur Sheil
Designer Frank Toogood

The Guild of Battlefield Guides Limited

Registered address
206a Lawn Lane
Hemel Hempstead
Hertfordshire
HP3 9JF
United Kingdom

Registered number
05462638 (England and Wales)

