

American Eagles

The Illustrated History of American Aviation
in World War I

By
Narayan Sengupta

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Any errors or omissions are unintentional.

Igniting the War to End All Wars



Figure 1: Europe at the start of World War I
(Narayan Sengupta/Google)

The summer of 1914 was the height of a golden period – one that was full of exuberance and joy that was not to occur again for quite some time. The large countries of Europe had been at peace since the Franco-Prussian War of 1870-1871, when the Prussians had beaten France with stunning ease. On the strength of this great victory, Prussia and various small German-speaking states united to form Germany. The four-decade peace that followed was a record of sorts for modern Europe. Europe was at the height of her collective power and the Europeans controlled more of the world than any group of people ever had or ever would. However, not everything was perfect. Religious, linguistic and ethnic lines divided the southeastern part of Europe known as the Balkans. It was there that a pair of Balkan Wars that started in 1912 and finished the following year finally interrupted Europe's peace. Then peace and normalcy returned, and the Balkan Wars seemed like an aberration rather than a portent of unspeakable horrors to come. That would change soon enough...

On the morning of June 28, 1914, in Sarajevo, Austria-Hungary, seven would-be assassins awaited the motorcade of the Archduke Franz Ferdinand and his wife Sophie at different points along the route that had already been published in the newspapers. Ferdinand was the nephew of the Emperor Franz Joseph and the heir apparent to the throne of the Austro-Hungarian Empire. The Empire was, along with Russia, Germany, Great Britain and France, one of the great powers of Europe. The first six conspirators either missed their opportunities or lost their nerve. At 10:45 am, the motorcade stopped five feet away from the seventh man – a poor, frail looking and blue-eyed 19-year-old named Gavrilo Princip. Princip cocked his Browning revolver and fired two bullets at Ferdinand. The first hit the Archduke, cutting his jugular before lodging in his spine. The second one hit Sophie who had inadvertently gotten in the way. She collapsed immediately and equally quickly, Ferdinand implored her not to die. When Ferdinand was asked how he was doing, he replied “Es I nicht” (It is nothing) six or seven times through blood soaked lips. Those final words would be the greatest understatement of the war to come. The

two were dead by 11:30 am. A regal horse-drawn carriage funeral was held on July 4th. The matter should have ended there – a tragedy worth nation-wide mourning for a week or two perhaps, but hardly one worth setting the world on fire... However, Princip's two bullets had lit a short fuse that would proceed to burn extremely quickly.

Two official inquiries, one Austro-Hungarian and one German, both absolved the Serbian government of responsibility. Still, the Austro-Hungarians decided to wage political war against tiny Serbia in large part because Princip and his fellow conspirators were ethnically Serbian, but mainly because the Austro-Hungarians sought any pretext to wage war against Serbia. A successful war would allow Austria-Hungary to extend and consolidate its power in the Balkans, and there was no doubt in anyone's mind that Serbia would be easy to crush. The Austro-Hungarians demanded 10 concessions that were delivered to the Serbian government on July 23rd. The Serbs were both conciliatory and a bit scared which was only natural given Austria-Hungary's military might. The Serbs more than reasonably accepted nine of the demands and only rejected one of them outright. Equally surprising, they replied within the absurd 48-hour deadline demanded by the Austro-Hungarians. However, even this was not enough to stave off war and at 11:00 am on July 28th, just a month after the assassinations, Austria-Hungary declared war on Serbia.

In 1914, the map of Europe was vastly different from the way it is now. Modern nations such as Poland and various other Balkan and Baltic countries did not yet exist or had long been squeezed out of existence. Mutual frontiers were fewer and thus usually longer too. As a result Germany, Russia and Austria-Hungary all bordered each other. Furthermore, a series of entangling alliances meant that Russia was pledged to defend Serbia, Germany was pledged to defend Austria-Hungary, France to defend Russia and Great Britain to defend tiny, neutral Belgium. Great Britain also had an entente with France; it was completely non-binding, but it certainly did give it a great tendency to favor her former nemesis over the Germans. All these factors were designed to deter war, but in this case, they precipitated it. On the other hand, the rulers of Russia, Great Britain and Germany were all first cousins, grandchildren of British monarch Queen Victoria. Victoria was herself mostly of German origin and, without a doubt, the favorite of her many grandchildren was Kaiser Wilhelm II of Germany.¹ One would think that they could have found a way to use familial bonds and back door channels to de-escalate the tension easily. In fact, the Kaiser and the Czar did try – desperately cabling back and forth to each other to find a solution.

The problem was that Germany was caught between France and Russia. On land, they were two of the most powerful countries in the world, at least on paper, the way all power was measured until guns actually started shooting and conjecture gave way to reality. In truth, Germany was better at war than both France and Russia, though perhaps not overwhelmingly so. Consequently, the German military staff had spent decades working on the Schlieffen Plan. The plan was both strategic and continental in scale and designed to mobilize and move the most men as quickly as possible. The Germans would have to mobilize faster than both the French and the Russians. Figuring that France would complete her mobilization first, Germany had to knock her out preemptively. Russian's infrastructure was far less sophisticated, which meant that her mobilization should take longer. To win against both, the Germans would have to strike quickly to knock out France, use the superb German railway infrastructure to turn around 180 degrees and then knock out Russia.

It was a tough dilemma – an interesting game theory conundrum with the three following choices:

1. A partial mobilization that would require revealing Germany's plans giving her opponents time to prepare their defenses leading to a long, tough and bloody war.
2. No mobilization would allow everyone to pull back from the precipice. Germany could gamble not to mobilize but if France and Russia did, then Germany would find herself stuck in an immense pincer and would probably get crushed.
3. Germany could fully mobilize per the Schlieffen plan. This should give her the best chance of winning a quick victory.

It was a bit like watching a number of gunslingers confront each other suspiciously in the center of a Wild West town. If Germany was going to go to war, she could not just reach for the gun in the holster and telegraph her intentions, but had to draw and fire too. Otherwise, the French and Russians would start their respective mobilizations and the Germans would not be able to knock their enemies out as planned. Therefore, Germany mobilized and threatened war against Russia if she did not stop her own mobilization process. The Russians could not

On November 6, 1915, the US Navy scored another first when it *catapult* launched an airplane from the battleship USS *North Carolina* while it was under way near Pensacola. Throughout this time until the declaration of war in April 1917, the US Navy operated a series of Curtiss flying boats and floatplanes that looked remarkably sleek and modern in spite of their wood and canvas construction. Operating them gave the Navy the opportunity to practice skills that would come in handy soon enough.

Pre-War US Army Aviation 1913-1917

On March 5, 1913, the Army's 1st Aero Squadron was formed at Texas City, Texas, in response to turmoil in Mexico, south of the border. Just over nine years had passed since the Wright Brothers made their famous first powered flights at Kitty Hawk. The 1st Aero Squadron was created as the Aviation Section of the Signal Corps of the Army and thus was subservient to the Army and the Signal Corps as opposed to the fully independent branch it would become after World War II. The 1st Aero then accompanied General John J. Pershing on his punitive Pancho Villa Expedition in 1916.

The 1st Aero Squadron was initially comprised of eight Curtiss Jenny JN-3s, ten trucks and a single car marking the first time that the United States Army had operated either planes or trucks in war. The trucks and the car were used for supplies and transport. On March 16, 1916, airplane #44 made the first reconnaissance flight into Mexico with Captain T. F. Dodd in the front seat and Captain Benjamin Foulois in back as the observer. This flight set Foulois on a path that would lead him to make a great impact on the Air Service in the years to come. All eight airplanes were tasked with flying from Columbus, New Mexico due south to Casas Grandes, Mexico. It was only 100 miles by air, albeit over the Sierra Madres and painfully parched desert terrain, yet pitifully, not even one of them made it all the way. However, by March 20th, four of the airplanes finally made it.

During this time, someone decided to hand-carry a machine gun into the air to use for strafing. The idea had potential, though it was foiled by the fact that American aviators never even spotted any enemies during this expedition. No enemy combatants were strafed. Nevertheless, the planes transported mail and dispatches and took aerial photos. By the end of the expedition on August 15, 1916, the airplanes had flown 540 flights, logged 19,553 air miles and had been airborne for a total of 345 hours and 43 minutes.¹¹ This expedition also gave the fledgling air arm some operational experience in handling aircraft, logistics, flying, communications, etc. which would be put to great use starting the following year.

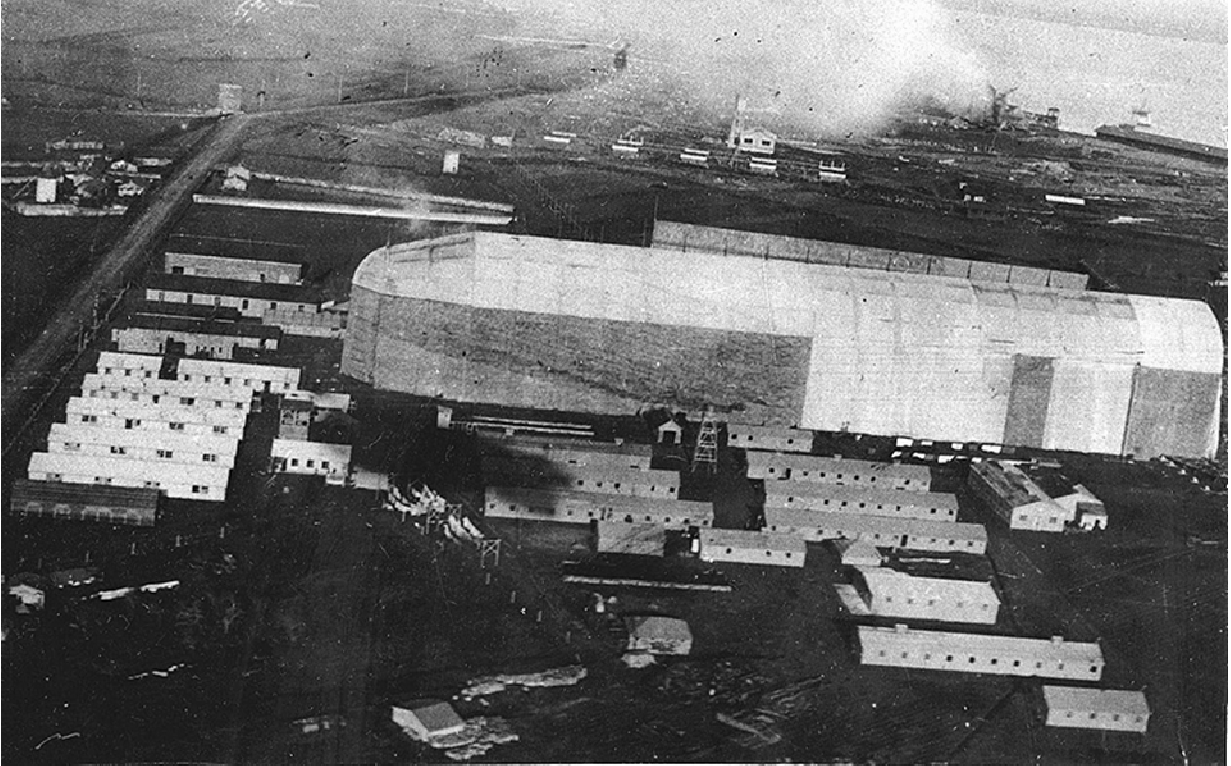
These proud achievements could not mask how primitive the JN-3s were compared to their European counterparts. Since no one in the United States had a proper fighter plane design, the Curtiss JN-3 was evolved into the improved Curtiss JN-4, and the military placed orders for these. For the time being, the JN-4s would have to do.

Several other squadrons were formed in these early days. The 2nd Aero Squadron was formed in December 1915 and sent to the Philippines, at that time an American possession, in January 1916. The 3rd Aero Squadron was set up on November 11, 1916, as a training squadron. The 4th and 5th Aero Squadrons were established for observation training. After being formed in February 1917, the 7th Aero Squadron was sent to the Panama Canal, which was also an American possession. The 6th Aero Squadron was formed slightly out of order in March 1917 and sent to Hawaii.¹²

America Declares War

World War I was already almost three years old when the United States finally joined on April 6, 1917. It is easy to speculate about whether or not the war could have been shortened and millions of lives saved had the United States joined the war in August 1914. How much would an earlier entrance in the war have changed history? Would Russia have fallen to Communism? Could World War II and the Cold War have been avoided? However, such questions overlook the fact that the United States really had no logical reason to join the war. Yes, in 1915, the Germans sank the *Lusitania* killing 1,198 including more than 100 Americans. As tragic as that was, there would have been no reason to transform the lives of millions to avenge the Americans killed on the *Lusitania*. Yes, there was the Zimmerman Telegram when the Germans tried to get Mexico to form an alliance and to attack the United States, but how realistic would a Mexican invasion of the United States have been? Mexico had

was increased by inserting a new six-foot long wing panel next to the fuselage on each side providing the needed additional lift. These aircraft were re-designated HS-2Ls as were subsequent aircraft which were built with the additional six feet panels right at the factory. In all, 182 HS-1L and HS-2Ls were received at the 16 Naval Air Stations in France and these became the Navy's workhorses.



*Figure 51: NAS Paimboeuf
(National Naval Aviation Museum)*



*Figure 52: Playing football at NAS Paimboeuf on Thanksgiving Day, 1918
(National Naval Aviation Museum)*

For quite some time the Germans stationed one submarine at a time near Penmarch on the western edge of Brittany. Penmarch was home to a tall Gothic stone lighthouse that the Germans had found was perfect for silhouetting ships. On April 28, 1918, just over six months after his near fatal accident, Kenneth Smith and his observer O. E.

Reed Chambers, who would go on to become one of America's greatest aces, spouted off about Issoudun's physical situation as well as about the German origins of those in charge:

*Issoudun was a mess. Construction wasn't finished. No duck boards. You waded in mud up over your ankles. It was probably the lowest morale of any point in my entire experience. We had, practically all the officers in command had German names. The officer in charge of flying was Major Carl Spaatz... You had Captain or Major Weidenbach as the adjutant. You had Lieutenant Rickenbacker [as] officer in charge of engineering. Lt. Herman Spiegel was officer in charge of transportation. And we had a sergeant major by the name of Tiddle: he was a typical German, he spoke with such a German accent that you could hardly understand him, and he was a martinet. Actually he had served in the German army, as had Weidenbach, but they had been American citizens for years, and it later developed that all these fellows were just about as fine patriots as any of the rest of us. But we didn't think so, with this mess.*¹⁶³

Later Chambers and Rickenbacker would fly together frequently and end up best of friends.

While the locals had been drinking the local well water for centuries, the USAS's doctors felt that the manure piles at the nearby farms had to go. So the Americans were now tasked with getting rid of the manure too.¹⁶⁴ It was very different from dog fighting the Germans as they had expected to be doing. Shoveling manure was bad for morale, but good for prolonging lives: given how quickly many of them got killed flying around, the extra months spent setting up Issoudun probably saved some lives or at least extended them.

Men like Quentin Roosevelt, whose title was Supply Officer, helped to organize the construction of the base and wore a second hat to take on logistical headaches involved in getting supplies. Roosevelt repeatedly found ways to cut through the red tape. He was so good at it that he jokingly wrote that he feared being imprisoned upon return to the United States. Officially, his job was to keep a fleet of 52 trucks running and moving fuel and tools back and forth from the ports to Issoudun. Later he would manage one of the training fields.



*Figure 59: Roland Richardson (left) and Quentin Roosevelt (center) with the Normant Family.
(Charlie Woolley)*

One day a car stopped in front of the base. A Frenchman got out and asked if anyone there spoke French. Roland Richardson's French was as good as his English. Replying to the Frenchman, he found himself being invited to the Frenchman's home. The man was the noted industrialist Monsieur Normant of Romorantin. Normant asked

if anyone else spoke French and Richardson let him know that Quentin Roosevelt did. Normant sent a car for the pair and treated them to dinner that night.¹⁶⁵

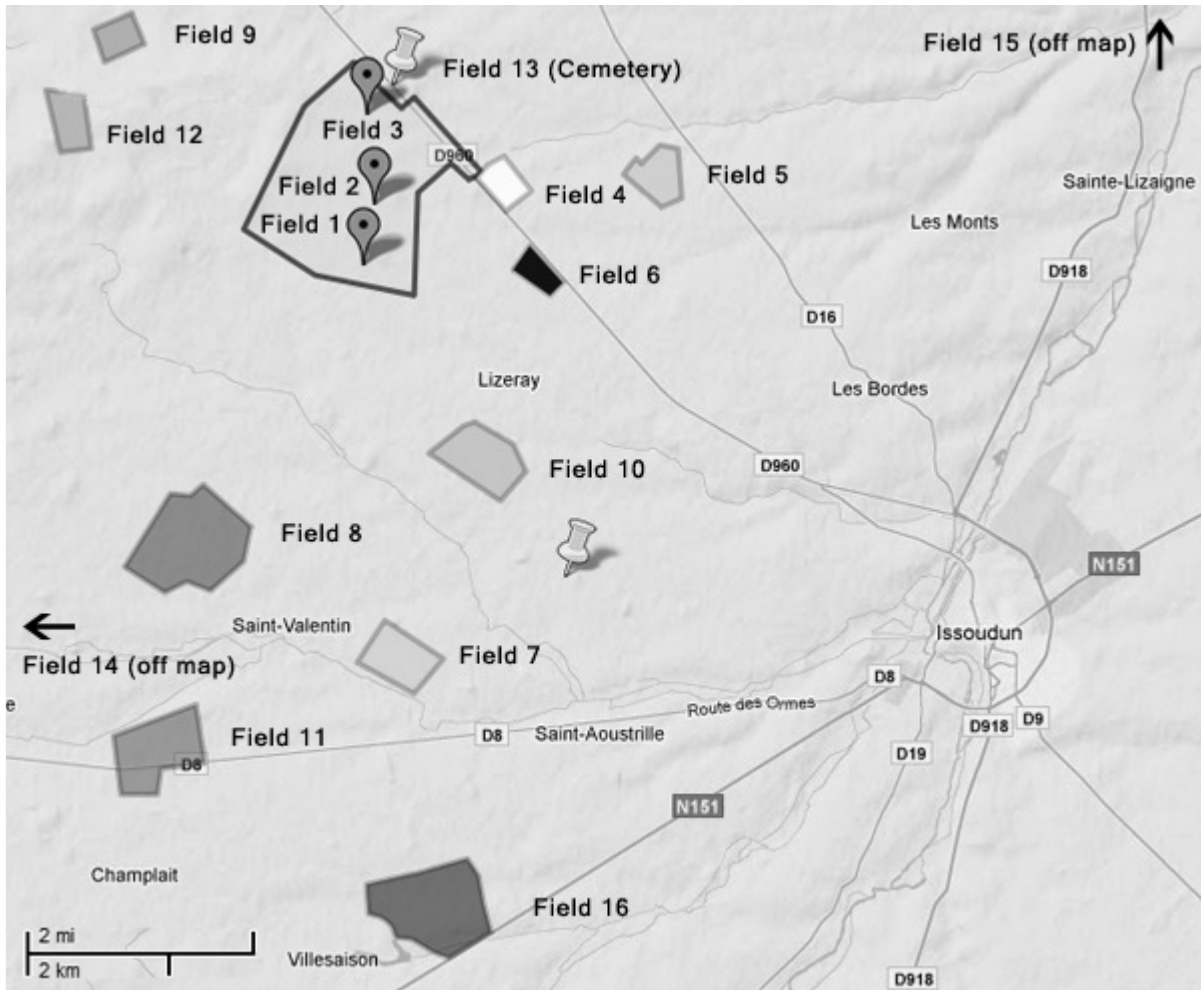


Figure 60: Issoudun's airfields in late 1918
(Narayan Sengupta/Google)



Figure 61: Norman Archibald
(Seattle Museum of Flight Collection)

By November 1917 the 3rd AIC was actually nine fields clustered northwest of Issoudun. Three would end up being used for basic training, five for more advanced levels and one the cemetery where pilots killed in training accidents were put to rest. The fields were spaced approximately 2 to 3 miles apart to avoid collisions and other problems of entanglement as much as possible. Other fields were added over time to the point that one map showed 15 airfields as part of the complex.

23-year-old pilot Norman Archibald was born on April 7, 1894, the only son of a prominent Seattle family of Canadian origin. He had one other sibling, a sister named Hazel who was three years and a week older than he was. There is little biographical information about his childhood, but he attended Seattle's Broadway High School, graduated from there and then went to the University of Washington. He spent two years there before going to Cornell, from which he graduated. He joined the USAS shortly after the start of the war and

On a previous flight, Robert Raymond had seen a plane fall before his guns, but he was not credited with a victory since no trace of the wreckage was ever found behind friendly lines. Most of the fighting happened behind enemy lines, so not to receive a confirmation was quite common. However, on June 24th, things turned out differently.

We went out for another photographic mission and for the first time I had trouble with my motor. I could not keep up with the formation nor gain the proper altitude, but hated to turn back, so tagged on hopelessly in the rear as we got further and further into Hun land.

Finally, after getting the pictures, the formation made a wide turn in the direction of home, leaving me further behind than ever, with my motor apparently about to quit. I was sick. While I was making all kinds of efforts to get the thing going and not paying any attention to the air around me, I suddenly made a slight turn to the left and saw a big German Rumpler sliding along underneath me, both pilot and observer apparently looking ahead at my formation rapidly disappearing in the distance... If they had ever seen me, I would have been an easy mark for the observer's rear guns. As fortune would have it, however, I was sitting right up there in the sun, in just the position one would maneuver to be in before an attack. That pilot and observer never did see me, for without a thought of my missing motor, or the technical manner in which a two-seater should be attacked, I dove directly on them and before I had fired twenty five shots... the Rumpler burst into flames and went spinning down into the woods below, breaking to pieces before it struck. The dive apparently encouraged my motor for after that it went as it had never gone before and I was each to reach the aerodrome, evidently before the rest.²⁰⁹

Raymond put in for a confirmation. It was verified almost immediately, which resulted in a champagne celebration that night. Raymond had scored one of only six confirmed victories for the group for the entire month. It was also the first victory for the 27th Aero Squadron credited to just one pilot.

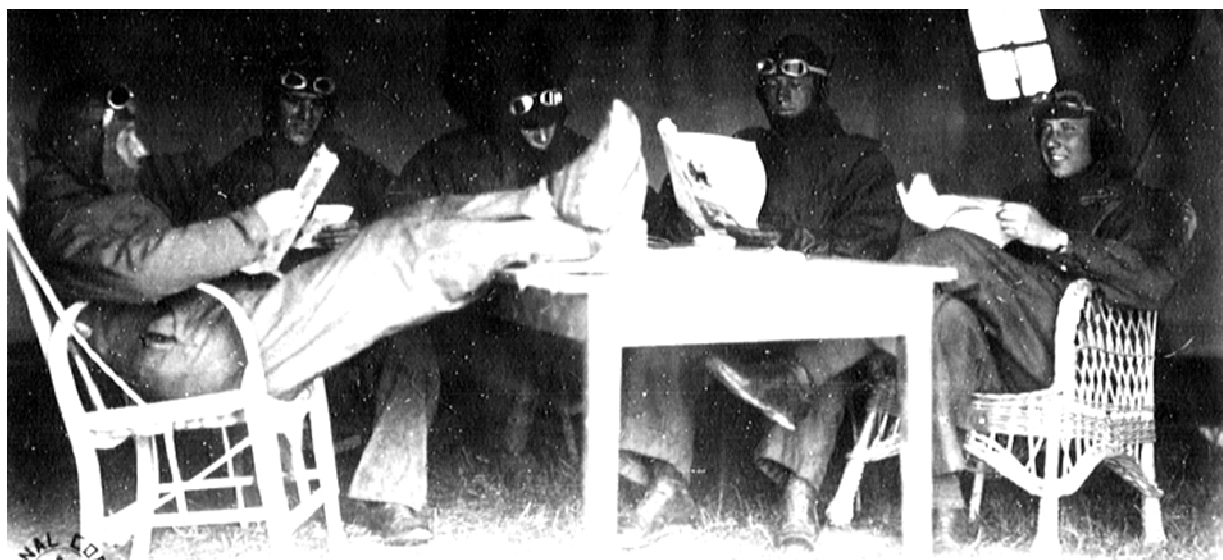


Figure 90: Pilots in a tent awaiting alert at Toul, June 22, 1918.
(Gorrell's)

The 1st Pursuit Group had been successful in Toul. By June 25th it had claimed 58 enemy airplanes, of which 27 were confirmed.²¹⁰ Confirmation was an art and many an aviator swore that he had brought down an enemy plane that was never confirmed. For a pilot to have a confirmed “kill,” it had to be witnessed by at least one other aviator. In addition, it had to be verified on the ground, either by finding the wreck, through a confirmation from friendly ground troops or even by confirmation from the Germans through one of their official reports or a newspaper article, etc. The real reason for such stringent requirements was simple: pilots tended to overstate their victories. This was not just an American or Allied phenomenon; the Germans did it as well.

On June 28th, the 1st Pursuit Group left Toul and rebased next to the village of Touquin in the Chateau-Thierry Sector. “We started at once for Chateau-Thierry along with the First Observation Group,” recalled Robert Raymond “and if work at Toul had been hard, it was merely play in comparison to what we encountered there...”²¹¹

¹⁸⁶ Today the town goes simply by the name of Vertus.

¹⁸⁷ *Cross and Cockade Journal*, Volume 6, Number 1, Spring 1965, p. 36.

¹⁸⁸ *The Encyclopedia of World War I*, p. 106.

¹⁸⁹ *Interview with Leroy Prinz*, p. 41.

¹⁹⁰ *Robert F. Raymond Memoirs*, p. 8.

¹⁹¹ *Robert F. Raymond Memoirs*, pp. 9-10.

¹⁹² *La Première Occupation de la Croix de Metz a Toul en 1912*, p. 6-8.

¹⁹³ *Letters of an American Airman*, pp. 141, 148.

¹⁹⁴ *Letter from Marguerite Moseley Williams to Chief Signal Officer, Aviation, AEF, April 11, 1918.*”

¹⁹⁵ *The Lafayette Flying Corps*, Volume II, p. 251.

¹⁹⁶ *Interview with Douglas Campbell*, p. 11-15

¹⁹⁷ *Interview with Leroy Prinz*, pp. 16-19. Prinz does not specify the date of this incident, but from other reports, it appears that the date was probably June 8, 1918.

¹⁹⁸ Mike O’Neal provides more technical detail writing “The underlying issue was a design/structural problem. The forward spar was too far ahead of the leading edge and the wooden cap that formed the leading edge only extended from the top of the spar to the leading edge. It did not continue around the leading edge under the wing and attach at the underside of the forward spar. This was the primary reason of the wing failures. The loss of fabric was secondary to the actual structural issue.” *Correspondence with Mike O’Neal*, March, 2009.

¹⁹⁹ *Up & At ‘Em*, p. 195.

²⁰⁰ *Up & At ‘Em*, pp. 111, 161.

²⁰¹ *Interview with Douglas Campbell*, p. 9.

²⁰² *Cross and Cockade Journal*, Volume 1, Number 1, Spring 1960, p. 11.

²⁰³ *Fighting the Flying Circus*, p. 228.

²⁰⁴ *Up & At ‘Em*, p. 200.

²⁰⁵ *The Canvas Falcons*, p.243.

²⁰⁶ *Up & At ‘Em*, p. 90.

²⁰⁷ *Cross and Cockade Journal*, Volume 6, Number 1, Spring 1965, pp. 34-35.

²⁰⁸ *Memories of Harold Tittmann*, Part Two, p. 23.

²⁰⁹ *Robert F. Raymond Memoirs*, pp. 15-17.

²¹⁰ *Gorell’s*, 7/53.

²¹¹ *Robert F. Raymond Memoirs*, p. 17.

The Chateau-Thierry Sector

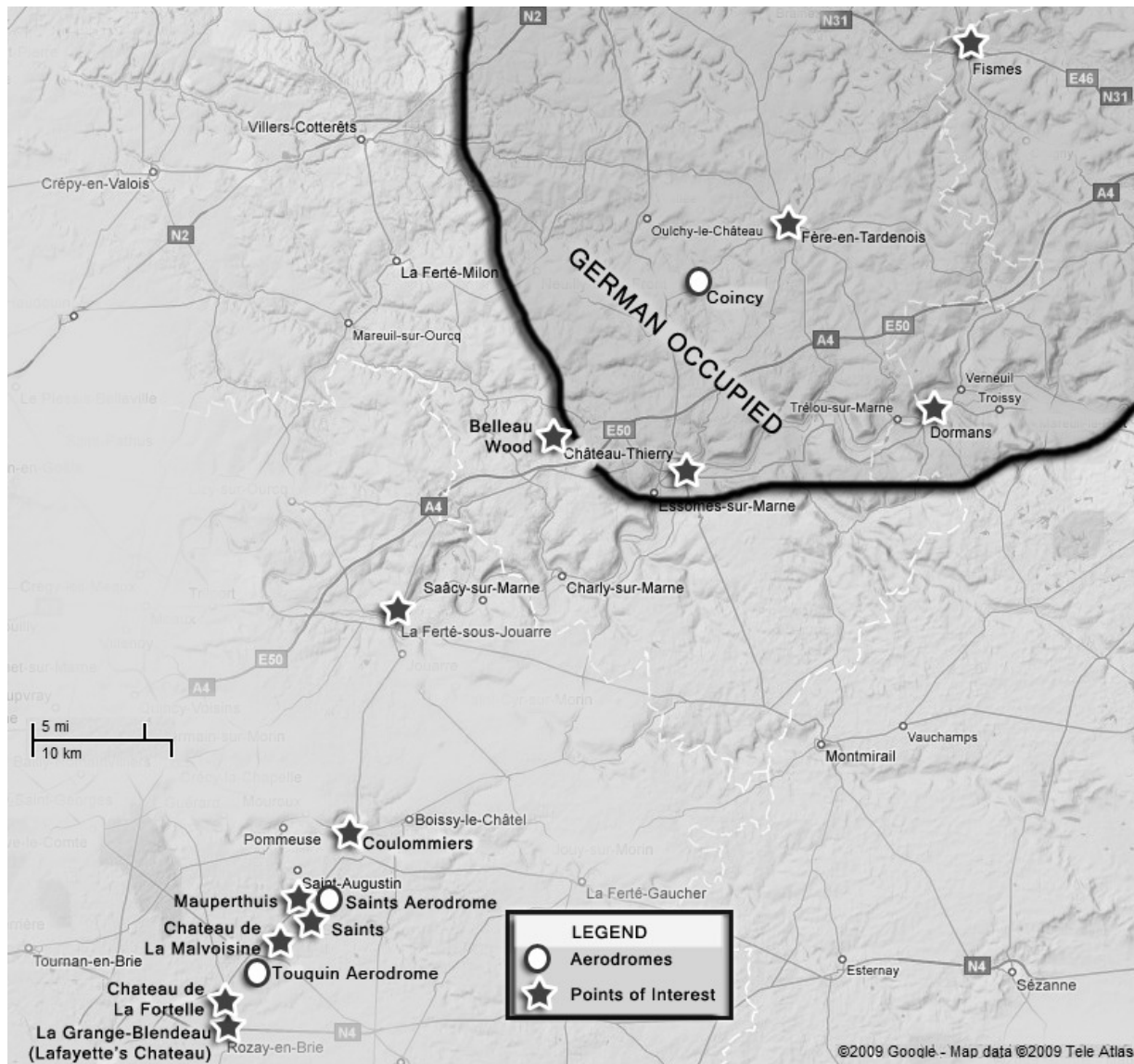


Figure 91: Key Points of Interest in Chateau-Thierry area.
(Narayan Sengupta/Google)

Note: This sector was located just east of Paris, located approximately 25 miles due west of Coulommiers.

1st Pursuit Group in Touquin

On June 28, 1918, the 1st Pursuit Group moved west of Toul, but east of Paris, next to a tiny village named Touquin. The group would fight for air superiority northeast of Paris toward the Chateau-Thierry salient. The Germans formed the salient with their Blucher-Yorck offensive of late May to early June 1918. The Allies eventually checked the offensive.

Part of that was due to the efforts of the valiant American Marines who fought the Germans to a standstill from June 3rd to July 10th at Belleau Wood, a tiny forested plateau about three miles northwest of Chateau-Thierry. Holding the land itself was pointless. The real reason the Germans made the effort to attack the Americans was

that they wanted to teach the untested Americans a good lesson and to show the world which side was better. Four German divisions stabbed at the Americans. In doing so, they ran into the US Marine Brigade of the US 2nd Division. The fight was vicious. Both sides gained ground and then lost it. Ultimately, the US Marines held the line, and they made history. Hiram Bingham later visited the battlefield and wrote the following:

The dead were still lying as they had fallen, and where one could not fail to be impressed with the enormous waste of men and material which spells the modern battlefield. It was amazing to see the thousands of hand grenades and hundreds of thousands of rounds of small arms ammunition that had been left on the field without being used.²¹²

The Marines shed considerable blood at Belleau Wood. In fact, they suffered more casualties on the first day of fighting at Belleau Wood than during their entire previous history. However, their victory instantly gave the Americans some real credibility on the battlefield. A few weeks later, to the east of Chateau-Thierry, elements of the US 3rd Division contained a tough German rapier thrust south across the Marne, and beat it back earning the sobriquet "Rock of the Marne." It is a nickname that the 3rd Division holds to this day. These two fights showed their Allies, the Germans and the rest of the world that the Americans were no longer simply fresh-faced, naively enthusiastic soldiers, but that they were tough, and that they could fight as well as anyone else.

Thanks to Blucher-Yorck, the front lines that ran previously from the champagne city of Rheims to the picturesque citadel town of Laon had now dropped south so that it ran from Rheims to Soissons. This created a big, menacing salient centered on the city of Chateau-Thierry and aimed at Paris. These same three key points, Rheims, Soissons and Chateau-Thierry now defined the new sector for the 1st Pursuit Group's combat patrols.

Prior to the war, Chateau-Thierry had been a beautiful town home of 15,000 people tucked in a gentle bend in the Marne River. However, by this point it had been reduced to a ravaged city with caved walls, blown off roofs, bridges dropped into the Marne and debris in every road. Debris was actually a good thing for a defending force, and the Germans had duly dug themselves in and around the city. They were going to be very difficult to dislodge. At the front of the salient just in front of Chateau-Thierry to its southwest lay Hill 204. That it took the French and the Americans five hellish weeks to squeeze the Germans off it was a bad sign.²¹³ The Germans were showing that they had plenty of fight left in them and that the war was not over by any means.

Organizationally, the United States Air Service was under the command of the I Army Corps, which was part of the US I Army. It, in turn, was a part of the French VI Army. Within this framework, the 1st Pursuit Group was tasked with three primary missions. It was to allow the Corps Observation Aviation to do its reconnaissance work to spot for artillery and provide intelligence for the infantry. It was to interfere with enemy reconnaissance balloon and airplanes so that they could not provide intelligence for their side. Finally, it was to damage the enemy as much as possible by strafing ground targets and shooting at air targets.

Logically, the best place to position the new American fighter squadrons was somewhere in between Chateau-Thierry and Paris. And thus planners searched for prepared fields, typically located on plateaus near roads good enough to provide supply and with villages nearby to house the pilots. It was important that the fields not be too close to the front lines in case the Germans somehow punched forward yet again with stunning speed. On previous occasions, they had overrun aerodromes and destroyed many planes in the process. At the same time, the fields could not be too far away from the front lines either due to the short ranges of the fighter planes of the time.

A field surrounded by the villages of Touquin, Pezarches, Rigny and Ormeaux was that ideal place. Therefore, the 1st Pursuit Group moved forward from the quiet zone around Toul to the new location which was south of the Marne River and about 30 air miles east of Paris.²¹⁴ The move was completed on Friday, June 28, 1918.

On September 5-6, 1914, it was this area that had seen the Germans advance as close to Paris as they ever would during World War I. Facing them in retreat was the British Expeditionary Force. When the Battle of the Marne started on September 5, the British Expeditionary Force advanced from this area pushing back against the Germans as hard as they could. The Germans would fall back until they reached the areas where the front lines more or less stabilized for the next three and a half years.



*Figure 92: Model of a World War I French Air Base.
(Narayan Sengupta)*

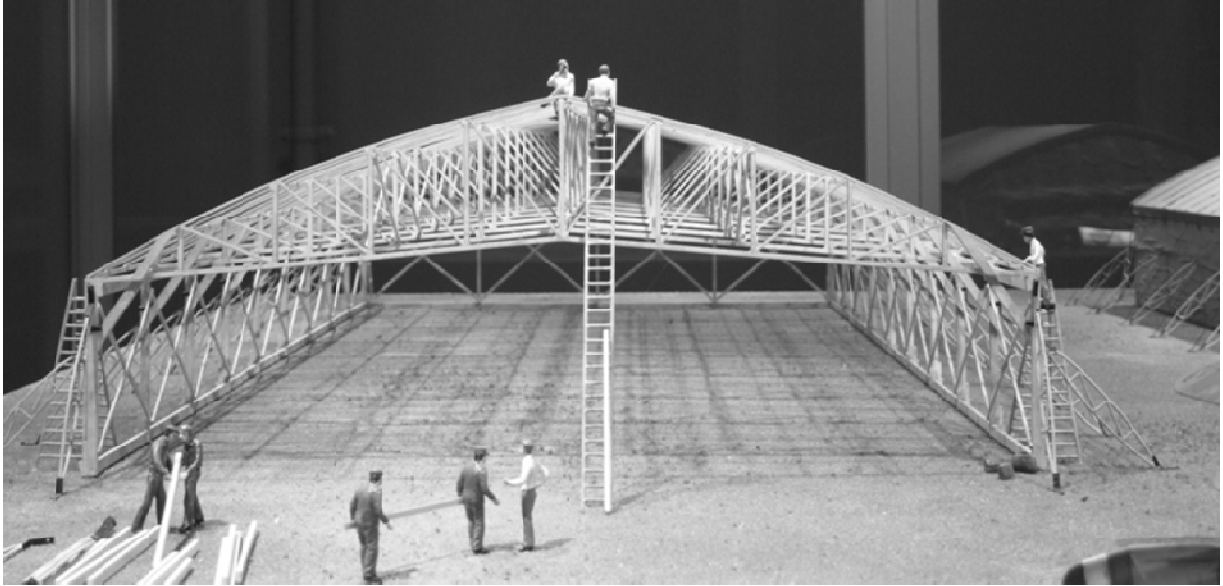
Note: The 1st Pursuit Group would have had Nieuport 28s (not depicted) and then later Spad XIIIIs like the two aircraft at bottom right. The larger aircraft on the ground are Breguet BXIVs. The smaller dark brown buildings are Adrian huts used for YMCAs, mess halls, barracks, bars, workshops and more. All the tents were collapsible to be transported relatively easily to the next aerodrome when needed. American bases were very similar, as they were equipped with French tents, barracks and mostly French equipment. This model is located at Le Bourget Air Museum.

Touquin was a relatively large field originally prepared for the Royal Flying Corps 2, 3, 4 and 5 squadrons who used it from September 3 to 8, 1914. Naturally, all four units were there in a reconnaissance capacity since air-to-air combat had yet to be invented. Next, RFC 43 Squadron moved to Touquin and stayed there from September 9, 1914, to July 1, 1918. It thus overlapped with the USAS for a few days in the summer of 1918.

Trucks were used to start moving the 1st Pursuit Group to Touquin on June 26th. The four squadrons, pilots and aircraft, actually ferried their own planes between Toul to Touquin on June 28th. The 27th Aero Squadron headed south instead of west, got lost along the way and landed in 200 miles off course in Lyon before refueling and setting off west to get to Touquin. The 27th made it to Touquin eventually, albeit a bit later than originally expected.

The field was partially covered in wheat, which damaged many propellers. Captain Philip J. Roosevelt was a cousin of Quentin Roosevelt and was responsible for filing reports about the operations of the 1st Pursuit Group. He reported that in spite of the damaged propellers that this field was the best the USAS operated from, and that 52 out of 54 Nieuports were operational the day after arrival from Toul. The new 40-kilometer distance from the front lines was twice as far Toul had been, meaning more time in transit to the patrol zone and resulting in shorter

patrol times once there. Telephone lines and a wireless telegraph station were also strung to the field and made operational by June 29th.²¹⁵



*Figure 93: Model of French-made Bessonneau hangar under construction.
(Narayan Sengupta)*

In general, the aerodromes were on plateaus for very practical reasons. The plateaus were flat, clear and relatively high meaning typically several hundred feet higher than surrounding terrain. The higher the plateau, the less time it took to climb to peak altitude. This was important since all else being equal superiority in height gave the side having the most of it the initiative. With the height advantage, pilots could decide whether to join in a battle.



*Figure 94: Model of French-made Bessonneau hangar after completion.
(Narayan Sengupta)*

Note: The hangar is housing Spad VII or XIII in background and a Nieuport 14 or 17 perhaps in the foreground. These models depict French colors.

In addition to being flat and high, the ideal USAS aerodrome was a square about ½ miles on each side. Large roads, meaning straight and relatively wide though still probably just one lane in each direction, served one or two sides of the square. Such road access was critical for transporting the men, fuel, and ammunition and anything else. Normally each corner had one squadron whose planes were sheltered in two large French-made Bessonneau hangars. The hangars were steel trussed, covered with a camouflaged canvas and staked to the ground with ropes strapped across the top of the hangars. The hangars were each capable of handling eight to ten pursuit aircraft packed together (or four of the larger types such as DH-4s or Breguet XIVs).²¹⁶ Thus, eight hangars could handle up to 80 fighter airplanes. Four squadrons had a theoretical full strength of 18 fighters per squadron, totaling 72 planes though this number would grow to 100 in the months to come. Moreover, the hangars were portable, so each time the squadrons moved, the hangars were dismantled, driven to the next location by truck and then speedily re-erected at the new site.



Figure 95: Unidentified Americans in Touquin's Chateau La Malvoisine. (Charlie Woolley Collection)

*been made at Touquin for the pilots and officers. All of our aeroplanes flew from Toul to Touquin, while the rest of the aerodrome impedimenta was carted rapidly away to the new quarters in lorries, trucks and trailers. The pilots of Squadrons 27 and 147 were rather new at that time; and it was thought wise to assign some of the older pilots of 94 and 95 Squadrons to the task of leading them through the air to the new field.*²¹⁸

Each squadron had approximately 200 ground personnel. These personnel were maintenance crews, truck drivers, cooks, orderlies, men who took care of supplies and so on. Between the pilots, ground personnel and other assorted people, the 1st Pursuit Group thus had a typical strength of 1,000 (according to Hartney) to 1,600 (according to Rickenbacker).²¹⁷ The officers, meaning all of the pilots, were billeted in private homes, a village hotel or, if they were lucky, a chateau. The enlisted men slept in barracks, farm buildings or tents next to the airfield, depending on what was available. It was a bit unfair, but then again, the aviators were putting their necks on the line every time they flew.

Rickenbacker was pleased with the new location:

We settled upon an old French aerodrome at Touquin, a small village some twenty-five miles south of Chateau-Thierry and the Marne River. The aerodrome was large and smooth and abundantly equipped with the famous French hangars which consist of steel girders with walls and roofs of canvas. They were very spacious, quite cool in summer and camouflaged admirably with the surrounding scenery. But no provision had

The pilots stayed in two beautiful chateaus: Chateau la Malvoisine in Touquin and Chateau de la Fortelle in Ormeaux, which was a few kilometers southwest of the Touquin airfield. The 95th and 147th Aero Squadron's officers were housed here and the officers of the 94th and 27th were housed at la Fortelle.

"Malvoisine" meant the bad (female) neighbor though what must certainly have been an interesting story behind the origins of the chateau's name have now been lost. The chateau was right in the middle of town next to the small village church instead of on the outskirts like most chateaus were.

One accessed the chateau on a gravel driveway going through a splendid large gate flanked by four large columns spaced apart by green wrought iron fences. The driveway entered from the front then curved around in front and back. The property was circumscribed by a thick stone wall varying from about seven feet to about 12 feet in height. In front and to either side of the main building were large grounds and lush green grass. In back was a large gentle garden framed by a generous collection of trees of varying types.

tured or destroyed 200 French aircraft. It was a tremendous victory, and it was equivalent to more than a month of losses in the air. Now depleted but still with 370 Spad fighters and 230 Breguet bombers the *Division Aérienne* was positioned well east of Touquin. The *Division Aérienne's* 1st Brigade with several pursuit groups and several bombardment groups was sent east deep into Champagne. Its 2nd Brigade with twelve squadrons of Spads and two groups of Breguets (*Groupe de Bombardement 3* and *Groupe de Bombardement 46*) was sent 30 miles east around the pretty little vineyard towns of Sezanne and Villers St. George.²⁴⁰ It was familiar ground for Foch as it was in this place that he had commanded the French IX Army during the Battle of the Marne in 1914 and tangling viciously with von Bulow's II Army. Touquin now prepared for large number of British aircraft using its aerodrome again almost four years later.

The British units were part of the V Royal Flying Corps and were under the command of a sharp-minded, sharp-nosed 45-year-old Major General named Hugh Trenchard. He was the prophet of strategic bombing who believed that bombers were best used striking well behind the front lines rather than on bombing enemy troops already at the front. Bombers were to be used strategically to strike at centers of communication, supply trains, supply depots, rail yards, weapons factories and so on. Trenchard's thinking was inspired and arguably completely obvious in hindsight. Yet no one else had either proposed or worked out the details as Trenchard did.

In truth, the strategic bombing was not very effective, but it was an impressive start in spite of the limitations in range and payload of the World War I bombers in existence at the time. The British managed to strike deep into Germany hitting targets across the Rhine River at Wiesbaden, Frankfurt, Worms, Mannheim, and Karlsruhe and so on. Trenchard and Billy Mitchell met and became friends while the Americans were in Touquin, and Trenchard's ideas would influence Mitchell's utilization of his own forces for the rest of the war. Trenchard's philosophy would also be a cornerstone of both the British and American strategic bombing campaigns of World War II. Mitchell's discipleship of Trenchard would become more apparent a few months down the road.

There was just a little more action to come while in Touquin. On July 7th, the 95th Aero Squadron sprinted north to make an attack on the German air base at Coincy. 12-victory German ace Otto Rosenfeld was one of the pilots who rose up to meet the Americans. Rosenfeld had already been captured previously at the end of 1917 and then was either released or escaped. After rejoining his old squadron, *Jasta 41*, he went on to shoot down four more aircraft. Now over Coincy, he added an American Nieuport 28 to his tally. Rosenfeld did not have long to celebrate for minutes later he was shot down and killed by the 95th's Sumner Sewall.²⁴¹

1st Observation Group in Saints

On June 28th the 1st Observation Group moved to Saints, just a few kilometers away from the 1st Pursuit Group which moved to nearby Touquin on the same day. Many villages hosted American air bases during World War I. Saints, 35 miles east of Paris, was typical of them and it would host not only the 1st Observation Group but later the 1st Pursuit Group as well. Saints Aerodrome sat atop a small field that had only recently held a full crop of thick golden wheat that had been harvested earlier than usual to make room for the aerodrome.



Figure 105: Saints: Place de L'Eglise at the center of town.
(Narayan Sengupta)

Officially, Saints had existed at least since the 1100s when it appeared on early maps as “Sanz,” but had traces of humanity such as arrowheads that indicated that primitive people lived here at least as far back as 20,000 years ago. A *menhir* (standing stone) a kilometer away in the village of Beauthuil²⁴² was all that is left of a far larger collection that at one time was possibly the largest in France. In any case, this area was also a gathering point for older Druidic rites and that may also have been a reason for the name “Saints” being specified for the village.

Saints was a beautiful, simple and mainly agricultural French village perched gently above the Petit Aubetin River. The Petit Aubetin was little more than a shallow 20-foot wide creek one could cross at practically any point in Saints without too much difficulty. All around were small green pastures complete with big white cows, chickens, and roosters who could sometimes be heard announcing daybreak. The plots of land were small, sometimes delineated by wood fences or centuries old stone walls.

Modest single family dwellings crowned with fired clay tile roofs and framed by off-white or pale beige stucco walls graced the village. In addition, there was the requisite village church and a few civic edifices like the mid-19th century *Mairie* (City Hall). The homes were all one or two stories high; only the Romanesque parish church built 500 to 800 years ago at the village center was higher than that. There was the usual commerce: a café, a bar, the post office, a bakery, a small abattoir and such. Other than farms and small shops, there was one industry, a five-man tile factory. The families of Saints had roots that in most cases were generations deep, old enough to blur the origins of many of them.

Saints’ first American occupant was the 1st Observation Group which consisted of the 1st and 12th Aero Squadrons, both of which were equipped with French made Salmson two seat airplanes. The 1st Observation Group moved to Saints from Ourches, near Toul, where it had been located since April 4, 1918. It arrived in Saints to find that the French had already set up well-camouflaged Bessonneau canvas hangars for the aircraft. The official history reported that “the enlisted personnel, for the most part, were billeted in a group of farm buildings bordering the airfield, the overflow being quartered in squadron tentage. The commissioned personnel were quartered in the nearby villages of Saints and Mauperthuis.”²⁴³

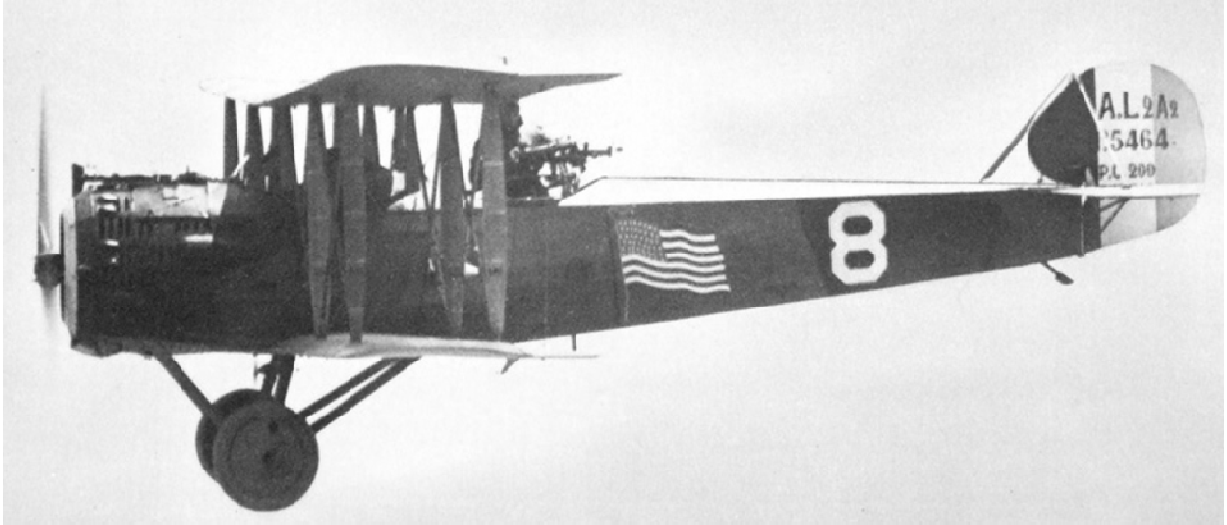


Figure 106: 1st Aero Squadron Salmson
(Walter S. Williams Collection)

The Salmson was a practical, efficient and attractive observation plane. Compared to the Spad fighters, the Salmsons's dimensions were approximately 30 percent greater in height, length and wingspan. However, the area covered by the wings was 401 square feet versus only 227 square feet for the Spads.

There were pluses and minuses to the type. On one hand, the Salmsons' engines were problematic and often had not been inspected prior to delivery. On the other, their gas tanks had an inner liner that would automatically seal holes, keeping out air and preventing fuel leaks when punctured.

Armament consisted of a Vickers machine gun firing through the propeller and two drum-fed Lewis machine guns on a Scarff ring for the back seat. The Scarff ring was a metal ring mounted around the observer's cockpit to which were attached the twin Lewis guns allowing the observer to swing them around like a turret. Author turned observer Harold E. Porter, who won both the DSC and the Croix de Guerre and usually wrote under the pen name "Holworthy Hall," wrote about the differences in the machine guns used:

Machine guns, especially the belt-fed type, are invariably eager to jam if they can, and a jam which happens during the course of a lively fight is a fairly serious matter, because the gunner is absolutely helpless until he has cleared it.

Up to the end of the war, the Hun had a marked advantage in aerial gunnery, due to the greater average number of shots he could fire without reloading. That is, he could fire so steadily that he was very effective even if he weren't a good shot. The German Parabellum, which was the most remarkable gun in this respect, could fire an even thousand rounds before it had to be re-loaded.

The two best Allied guns were the Lewis and the Vickers. The famous Lewis machine gun, which weighs less than twenty pounds without the water jacket (the Lewis was designed to be water-cooled, but high altitude experience proved that the difficulty is not in cooling the gun, but to keep it from freezing), is a magazine-fed gun, and after forty-seven or ninety-seven shots, depending on the size of the drum, the empty magazine has to be removed and a fresh one substituted. Still, this is a very light and hard-hitting weapon, and a good part of its efficiency is due to its very lightness. The Observer, swinging a machine gun around the compass, and having no very stable foundation of balance, is working against such a terrific pressure of wind that a few pounds more or less weight in the gun makes a vast difference to him. There are moments when centrifugal force gets hold of him, and he couldn't exert power enough to turn a door knob to save his life. The less weight to the gun the better.

The Vickers is fed from a belt of 500 cartridges, and is therefore much more liable to jam whenever it is used where the wind can get at the belt. Both France and Britain, however, mounted the Vickers up forward as a fixed gun, to be operated by the Pilot, and thereby got the advantage of a big cartridge capacity without the danger of excessive jamming. American ships had a fixed Marlin gun for the Pilot, and two flexible Lewis guns for the Observer.

Both the Lewis and Vickers had a slight margin of speed over other guns, and could fire at the rate of about nine shots per second. Their ammunition was practically the same—.30 and .303 caliber, respectively. This ammunition consisted partly of steel-nosed armor-piercing bullets, partly of tracer bullets whose phosphorescent cone of fire told the gunner whether his aim were good (and tracer bullets, spitting and crackling, could kill a man as expeditiously as any other kind), and partly of explosive bullets—in which last type the Hun was a distinguished specialist. Then sometimes they used just plain lead. Each Observer chose his ammunition to suit himself, and prescribed the proportions he wanted. And there were as many different prescriptions as there are for cocktails or salad dressing. The only general practice was to have about each fifth bullet a tracer bullet, for with that arrangement the gunner could always have a fiery pathway in the air to use in correcting his aim.²⁴⁴

The Salmson's 109 mile per hour top speed was consistent with aircraft of the same weight class, but more importantly, it was capable of maintaining the same speed as aircraft like the Fokker Dr.I while defending itself with decent firepower.

Later other squadrons like the 91st would get the Salmson too. In fact, the USAS acquired 705 of these two-seaters to equip 10 observation squadrons in all. That there were almost four times the 180 planes 10 observation squadrons would have needed is a testament to how many planes must have been put out of action not only in combat, but also in accidents or simply from wearing out over time. In all several thousand of the Salmsons were used by the French and the USAS, and it proved to be a fine all-around observation plane.

To the 1st and 12th Aero Squadrons was mated French Escadrille SAL.280 which had been flying Salmson 2A2s since June 5th, the day it arrived in Saints.²⁴⁵

While pursuit squadrons had 18 pilots, the observation squadrons had twice as many aviators: 18 pilots and 18 observers. Other equipment included a radio and camera for each plane as well as “twenty light and heavy trucks, five automobiles and ten motorcycles” for each squadron.²⁴⁶

Observation squadron work fell into four categories, all of which were reconnaissance in one form or other. They were as follows:

1. **Reconnaissance** missions executed at 1,500 to 4,500 meters as far away as 10 to 12 kilometers behind enemy lines before and during attacks. These were mostly daylight missions performed on days of good visibility.
2. **Artillery Surveillance** missions run at 1,000 to 2,000 meters to spot and report enemy artillery locations by wireless in order to bring in Allied counter-battery fire.
3. **Infantry Contact** to spot the locations of enemy and friendly infantry and then relay such information back to the division and corps commanders.
4. **Artillery Adjustments**, or “*réglage*” to use the French term, at 1,000 to 2,500 meters to spot for friendly artillery units. Observers would radio back to the battery in real time with messages such as “‘one hundred, over,’ ‘fifty, right’ and so on to indicate how shells were falling with reference to the objective.”²⁴⁷

The St. Mihiel Offensive

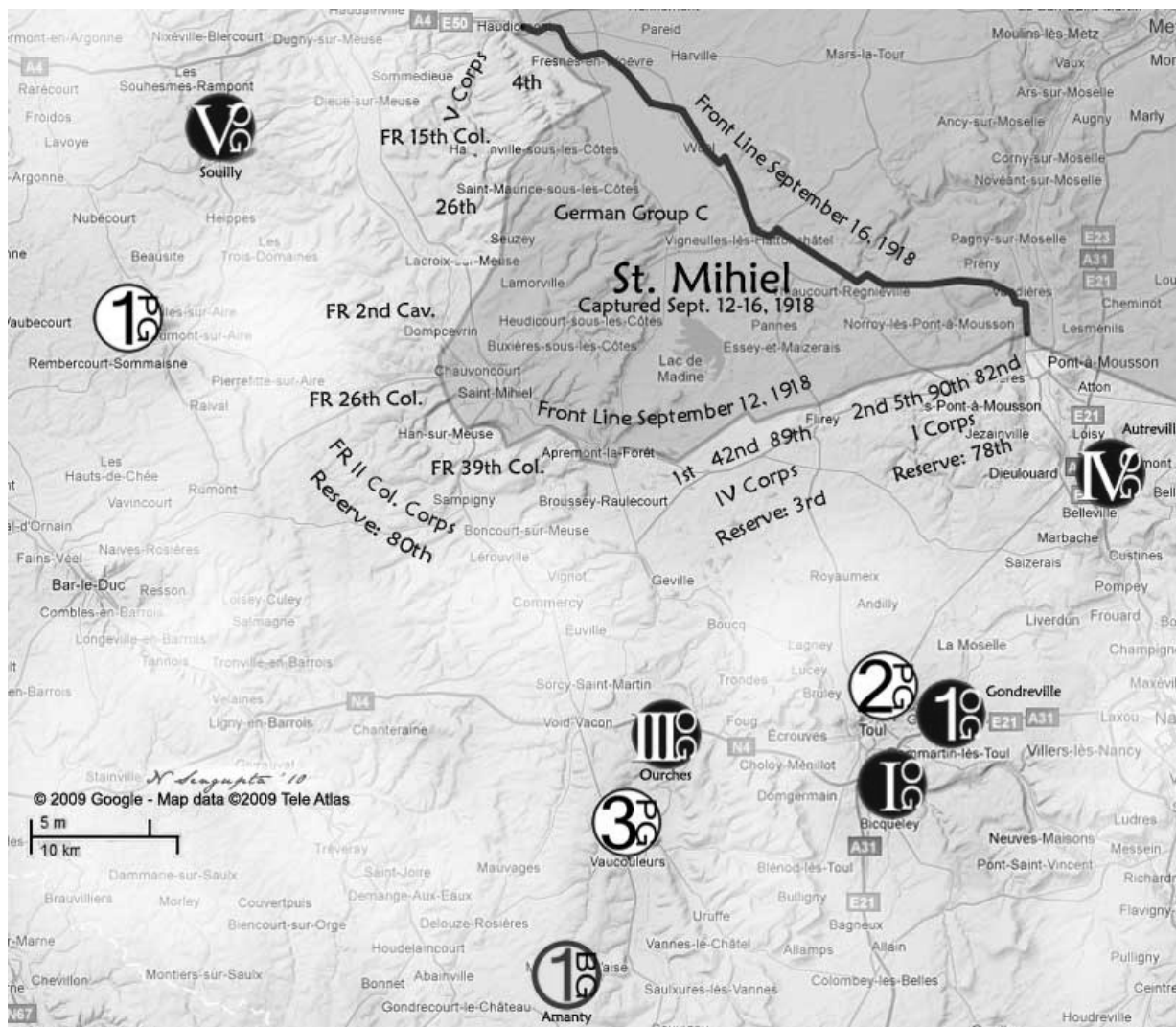


Figure 152: St. Mihiel Sector
(Narayan Sengupta/Google)

Note: This map of the St. Mihiel sector shows the US Infantry Divisions, French Cavalry and French Colonial Infantry Divisions as well as the supporting USAS air groups. The air groups are denoted by the large circles. IOG is 1 Corps Observation Group, 1OG is 1st Army Observation Group, 1PG is 1st Pursuit Group, 1BG is 1st Bomber Group, etc.

1st Pursuit Group to Rembercourt-aux-Pots

Sunday, September 1, 1918:

On the 1st, the four veteran squadrons of the 1st Pursuit Group departed their base in Saints and flew to Rembercourt in preparation for the upcoming attack on the St. Mihiel salient. As usual, the pilots flew their planes and the rest of the men, support staff, tents and other equipment made the voyage by truck. Not all of the pilots made the transfer on the 1st. The 27th Aero Squadron, for instance, reported seven of its pilots flying from Saints to Rembercourt on the afternoon of the 3rd.³⁴⁰

In relocating, the 1st Pursuit Group was severed from the French 6th Army and now became a part of the 1st American Army. More specifically, it would now support the US V Corps and the French II Colonial Corps for offensive operations scheduled to commence around St. Mihiel. Its new home was Rembercourt-aux-Pots, a farming village of 300 people centered on a 15th century church.³⁴¹ The village was located 25 kilometers west of St. Mihiel, 16 kilometers north of Bar-le-Duc and about 30 kilometers south of Verdun. It was near the *Voie Sacree* (Sacred Way), a famous thin twisty ribbon of road that had almost magically kept the French forces supplied and reinforced during the Battle of Verdun.

Rembercourt would have been bucolic in normal times, but it had been devastated by fighting that took place in the area from September 8-10, 1914. The church in the center of the village was in ruins, and the buildings around it were shattered. On the west side of town was a necropolis populated by many of the 750 or so dead of a French battalion that had defended it in 1914.

The Germans had initially punched the St. Mihiel salient on September 19-25, 1914. The furthest the Germans had reached was the town of St. Mihiel, hence the name. The salient was about 15 to 20 miles wide and 10 to 15 miles deep. Three main cities described the bulge: Verdun in the northwest, St. Mihiel in the southwest, and Pont-a-Mousson, astride the Moselle River to the southeast. Ironically there was another town named Rembercourt located inside the salient, five miles northwest of Pont-a-Mousson.

The new aerodrome was situated a little more than a mile east of town on “the only 30 [acres] left in France,” according to group commander Harold Hartney.³⁴² The aerodrome was approximately 300 meters above sea level on a flat patch of agricultural land. A dummy airfield was also built four kilometers away to throw off the Germans just in case they suspected that Americans had any aircraft based in the area. In theory, the dummy airfield was to draw bomber and strafing raids. In actuality, the plan worked. German bombers worked over the dummy field on more than one occasion, but never hit the real one.

Moving the planes to Rembercourt meant that the Spads could get to the combat area faster and then remain longer once they got there. Under optimal conditions, the fighter planes could stay aloft for two to two and a half hours, depending on aircraft type. Thus a flight requiring 45 minutes to get to the front lines might mean being able to loiter and fight for 10 to 15 minutes before needing to return to base while still retaining a small margin for errors. It was important to keep an eye out over where one was during combat since the prevailing winds were to the northeast in the direction of German lines. The pilots did get lost from time to time, so a margin of error was critical to turn around and still have enough fuel to land at their home field.

The move to Rembercourt was kept hush-hush to keep the Germans from knowing that there was a buildup underway and thus an offensive coming in the Toul sector. Hangars were camouflaged and tucked into the lip of the woods. Living quarters and the aircraft were concealed as well. At least one Spad was kept above the airfield at all times during the day to shoot down any German plane that might try to squeeze across the American lines and find the new field. In further hopes of ensuring secrecy, the pilots were given strict orders not to fly over German lines since a forced landing behind enemy lines would give away the 1st Pursuit Group's presence in the new sector.

Apparently, the Germans never suspected that 100 American fighters had moved into the area. Within 12 hours of relocating, the planes of the 1st Pursuit Group were back on patrol.

September 4, 1918:

The 218th Aero Squadron had been busy packing away anything left in Saints. On the 4th, they loaded up all that was left on their trucks, and they proceeded east to Rembercourt.

The Fokkers had been left behind in the Chateau-Thierry sector and here, around Rembercourt, the Americans would frequently find themselves unopposed. In spite of strict orders to stay away from the front lines, curiosity got the better of some of them, namely Lt. Norman Archibald. On September 8th, he defied orders, flew over German lines and was duly shot down by anti-aircraft guns. He crash-landed and was picked up by the Germans. He told them that he had gotten lost after leaving Saints, which was quite far away. After word of his crash and

capture reached Rembercourt, there was no more flying over German held territory. Archibald would remain as a POW until after the end of the war.



*Figure 153: The 94th Aero Squadron at Rembercourt
(Auburn University Libraries)*

Note: Rickenbacker is second from left. The location of this photo is at Rembercourt since it had a control tower and since the planes by the hangar at left are a Hannover (foreground) and a Fokker D.VII. The unit got both of these while at Rembercourt.

1st Air Depot at Colombey-les-Belles

The USAS 1st Air Depot at Colombey-les-Belles was always a whirlwind of activity. The 1st Air Depot was a large sprawling complex of fields flanking both sides of the Route de Moncel and a heavy rail line running due west out of town. Construction on the project had commenced November 1, 1917, and was already 75 percent complete by April 5, 1918. By the end of the war, it would have a very impressive 357,000 square feet of buildings used for accepting personnel, motors and aircraft from the United States and elsewhere. The buildings included not only the requisite hangars and barracks for both the officers and enlisted men, but also a bath house, mess halls, a hospital, shops, storehouses, gasoline tanks, a guard house, a handful of Swiss huts and the requisite YMCA.

The location was 11 miles south of Toul and Gondreville and similarly far away from seven other USAS locations including Epiez, Amanty, Delouze, Vaucouleurs and Ourches. This placement a bit back from the front lines coupled with gratuitous tree cover made the base “remarkably free from aerial attack and safe from any reasonable advance of the enemy forces.”³⁴³

The depot was so big that “hundreds of airplanes were stored here at a time.” Also impressive was that in the last seven months of the war, Colombey-les-Belles “dispatched 206,000 gallons of transportation gasoline, nearly 280,000 gallons of aviation gasoline, more than 167,000 gallons of special fighting gasoline, in excess of 47,000 gallons of castor oil, and 27,000 gallons of mineral oil.”³⁴⁴ In fact, by November 11th, Colombey was supplying all 45 front line aero squadrons, 12 park squadrons, 23 balloon companies and eight photographic sections. Furthermore, repair work that could not be performed at the aerodromes was normally done here. Among the accomplishments were 237 crashed airplanes rebuilt here and then returned to service.



*Figure 154: Camouflaged barracks in the forest at Colombey-les-Belles
(Gorrell's)*

Just about anything destined for the front lines arrived here first. It stayed at Colombey until needed. Had the planes and materials been overstocked at the front-line aerodromes instead of at Colombey, then they would have been vulnerable to enemy air attacks. Furthermore, they would have to be moved every time a squadron or group moved from one aerodrome to the next. Keeping them at the depot was safer and more efficient.

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