

Lieutenant Kenneth P. Culbert: The First USMC Aviator in the Pantheon of US Army Air Heroes

by Terrence J. Finnegan

The US Army's 26th "Yankee" Division fought the German 78. Reserve Division in a vicious battle at Seicheprey in northeastern France on 20 April 1918. It was a soldier's battle of hand-to-hand fighting. Aerial support to the Americans was hampered by foul weather over the front line from Seicheprey south to Toul. Brigadier General Peter Traub, commanding the 51st Brigade, was desperate for timely intelligence on the battle. He received indications that in the afternoon German forces would begin a second attack against Seicheprey and surrounding sectors. Traub's information was mainly gleaned from ground observations of German forces in the Quart de Reserve north of Richecourt and Lahayville. Aerial confirmation was desperately required.

Despite poor visibility and bad weather, 1st Aero Squadron SPAD XI two-seaters flew three sorties that day. At 1450 hours, US Air

▼ **Below:** Lt Kenneth P. Culbert in his non-dress uniform. One of the first US Marine Corps aviators, he was assigned to the 1st Aero Squadron as an aerial observer. (via Harvard University Archives)



Service Lieutenant Walter V. (Barney) Barnaby and US Marine Corps Second-Lieutenant Kenneth Pickens Culbert flew north to the battle through miserable weather; hailstones battered their SPAD XI. They flew over the battle lines three times, looking for troop concentrations or signs of an advance towards Seicheprey, which was so critical for General Traub's understanding of German intentions. Their 40-minute sortie took them directly to Richecourt, just north of Seicheprey village, and then southeast to Flirey where they gave the Germans a dose of their own medicine. When 20 German trucks were observed heading east towards Thiaucourt, Barnaby flew the SPAD XI directly at the convoy. He and Culbert fired 150 rounds at the vehicles and then flew north towards Essey to report German battery 9867 firing at American positions. Between the 1st Aero Squadron and French *Escadrille Spa 122*, allied aviation conducted artillery adjustment [*avion réglage*] against seven batteries that afternoon.¹ It was a testament to their actions that the 78. *Res.Div* mentioned Barnaby's and Culbert's sortie in their official report describing the battle to *Gruppe Gorz*. The 78. *Res.Div* commander mentioned the enemy aviators flying over the trenches at a low altitude and firing machine guns: This "proved [to be] very annoying."² Their *avion réglage* completed, Barnaby and Culbert returned to Ourches. In response to Gen Traub's concern over another German attack, no 1st Aero Squadron aviators reported signs of infantry build-up or special activity of *Minenwerfer* [mine launchers / short-range mortars] or machine guns being set up.³

▼ **Below:** Lt Walter V. Barnaby, seen here with a Nieuport 27 training aircraft, was in the initial cadre of USAS pilots. (via James Streckfuss)





▲ **Above:** One of the first USAS-marked SPAD XI aircraft, seen as pilot Lt William G. Schauffler and aerial observer Lt Monty Harmon prepare to take off for the front lines. The US flag became the symbol of the 1st Aero Squadron. (via Aaron Weaver)

The telephoned report from the 1st Aero Squadron to the 51st Brigade Headquarters around 1815 hours was emphatic: “Visibility was excellent and [the observer] thinks he would certainly have seen the troops had any been there. There was no troop movement in rear of the German lines that he could see.”⁴

Aerial reconnaissance contradicted the previous reporting that governed General Traub’s knowledge of the battle. Lts Barnaby and Culbert were awarded the French *Croix de Guerre* for operating under heavy fire and under adverse weather conditions.⁵ The award was a historic “first,” as 2/Lt Culbert was the first US Marine Corps aviator to be awarded an honor in combat.

Allied Aerial Reconnaissance over the Woëvre

The Woëvre region was considered a quiet front where ground units recuperated from the ardors of combat on more aggressive battlefronts at Ypres, Somme and Verdun. This included aviation operations. It was an ideal location for American forces to better understand the third dimension’s role in warfare. French aerial reconnaissance *escadrilles* were subordinate to the 32^e Corps d’Armée, with *Escadrille Sal122* operating out of Belrain, 20 kilometers west of St. Mihiel. As the *escadrille* designation indicated, *Sal 122* flew Salmson 2 A2s, the most impressive Allied aerial reconnaissance airplane of the war. It was sturdy for the rigors of aerial reconnaissance, capable of carrying the entire range of French aerial cameras with focal lengths of 120, 50 and 26 centimeters, as well

as the semi-automatic DeRam camera; and was still very maneuverable in fighting enemy airplanes.⁶

Americans learned the value of aerial reconnaissance in wartime under the tutelage of the French 2^e [*Duixieme*] Bureaus. Airplanes extended the visual range for analysis by corps and army planners and operators. By virtue of their ability to cover a given area, the two had similar missions of artillery direction, information gathering on enemy organization and enemy works, monitoring front and rear echelons, and assisting long term analysis as it concerned combat sustainability through rail and road traffic.⁷

The 1st Aero Squadron became America’s first operational aerial reconnaissance squadron. After several months’ training at Amanty, the unit proceeded to the Toul sector, flying both SPAD XI and Avion Renault A.R. 1 two-seat aircraft on 26 March 1918. Their primary aerial cameras were 26-cm and 50-cm plate cameras. Two other US air units in training, the 12th and 88th Aero Squadrons, remained at Amanty and subsequently arrived at the front in May 1918.⁸ When the 1st Corps Observation Group and the subordinate 1st Aero Squadron arrived at Toul in late March 1918, their mission was primarily to keep Allied command informed of the general situation within enemy lines by means of visual and photographic reconnaissance.

Another important mission was adjustment of Allied artillery fire on German targets. The 1st Aero Squadron also maintained infantry contact patrols with Allied troops in case of enemy attack. Since American aviators were novices in the roles and responsi-

bilities supporting active divisions, the time spent at the southern Woëvre front basically broke ground in their gaining basic experience. Postwar assessments by the 1st Corps Observation Group confirmed that the period in a quiet sector of the front best served the schooling of pilots and observers and rendered them more competent to undertake intensive operations elsewhere on a larger and more complete scale.⁹

At US Aero Squadrons assigned to fly observation missions, intelligence was managed by the Branch Intelligence Officer, responsible for collecting, compiling and distributing all information of the enemy pertaining to aerial operations.¹⁰ An equally important person in the aerial reconnaissance unit was the Group Photographic Officer who commanded each squadron's photographic section, responsible for the photographic equipment and charged with the duty of supervising the installation of photographic apparatus aboard the aircraft, as well as supervising developing and printing all aerial photographs.¹¹

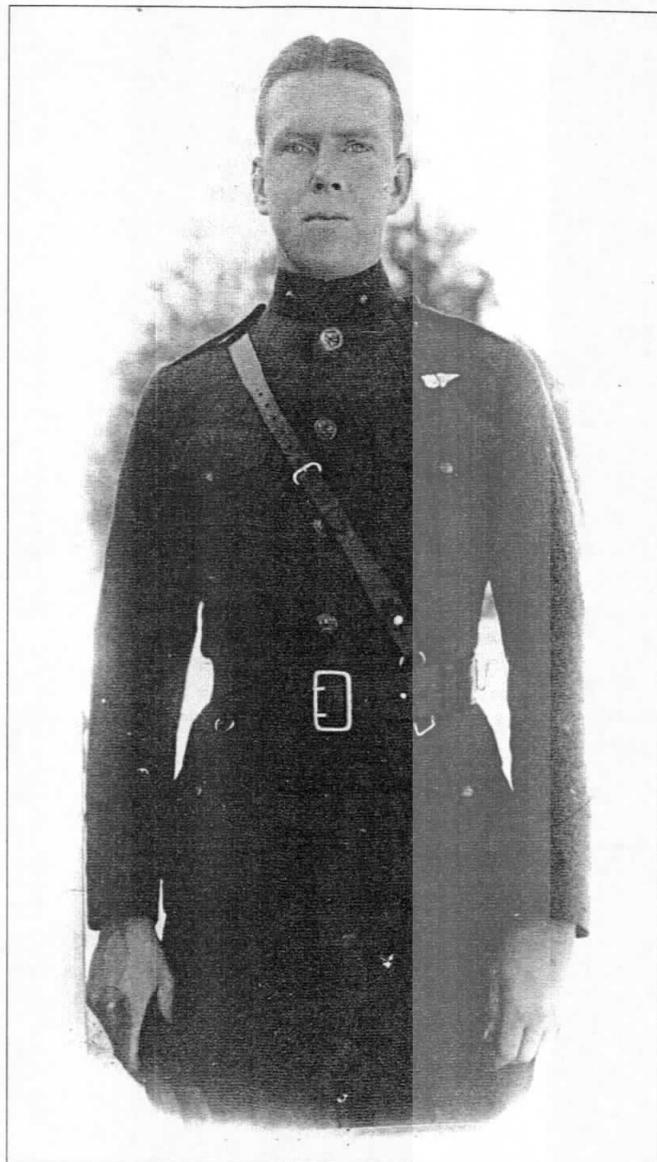
The 32^e *corps d'armée* took 1st Aero Squadron's evolving role very seriously, monitoring the squadron's ability to successfully perform the essential missions prior to their operational deployment to Toul. In February, 32^e *corps d'armée* commented that *Escadrille Americaine* (in this case referring to the 1st Aero Squadron, not the former Lafayette Escadrille, *Spa 124*) needed to become more professional regarding their performance in the *avion réglage* mission. "To date their work was mediocre."¹² This evolving concern prompted French and American staffs to provide American aerial observers with the best possible introduction to the realities of aviation in a combat environment. In February 1918, American aerial observers were sent to French *escadrilles* to learn first-hand what was essential in aerial reconnaissance.

Aerial Observer Training with the French

One of the first American aerial observers to head to French *escadrilles* was Kenneth Pickens Culbert, who was a born leader. Three lengthy letters from Culbert to Harvard Professor Charles Townsend ("Copey") Copeland show him in France at three stages of his experience: in the training school, with *Escadrille Sop 217* and with the 1st Aero Squadron. Writing to Professor Copeland, who was a welcome refuge for many Harvard graduates serving overseas, allowed them to express themselves on what they experienced. Lt Culbert's letters illustrated his passion for service to the nation as well as providing insight into his experience as an aviator and combatant. They were a testament to his commitment to the US Marines.

Culbert's Early Experiences

After graduating from high school as valedictorian in 1913, Lt Culbert spent four years at Harvard, where he excelled in sport and university activities such as being an active member of the "Crimson" staff. After graduating in the spring of 1917, he joined the US Marines. Culbert's direct connection with the war began



▲ Above: This portrait photograph of Lt Culbert, wearing a USAS observer's insignia, was found in his US Marine Corps personnel records. (via Annette D. Amerman)

with his enrollment in the Reserve Officers' Training Corps, in which, before the end of his senior year, he rose to the rank of cadet captain. He departed college to enter the US Marine Corps training school at Quantico, Virginia. He received his commission as second lieutenant (MC) on 27 August 1917, and was assigned to the 74th Company, 6th Regiment, Marines stationed at Quantico. 2/Lt Culbert recalled: "After a few months with the Sixth Regiment at Quantico, Va. – a place selected for a cantonment by a process that eliminated all logic, and brought politics to the fore – we got off in the early part of September."¹³

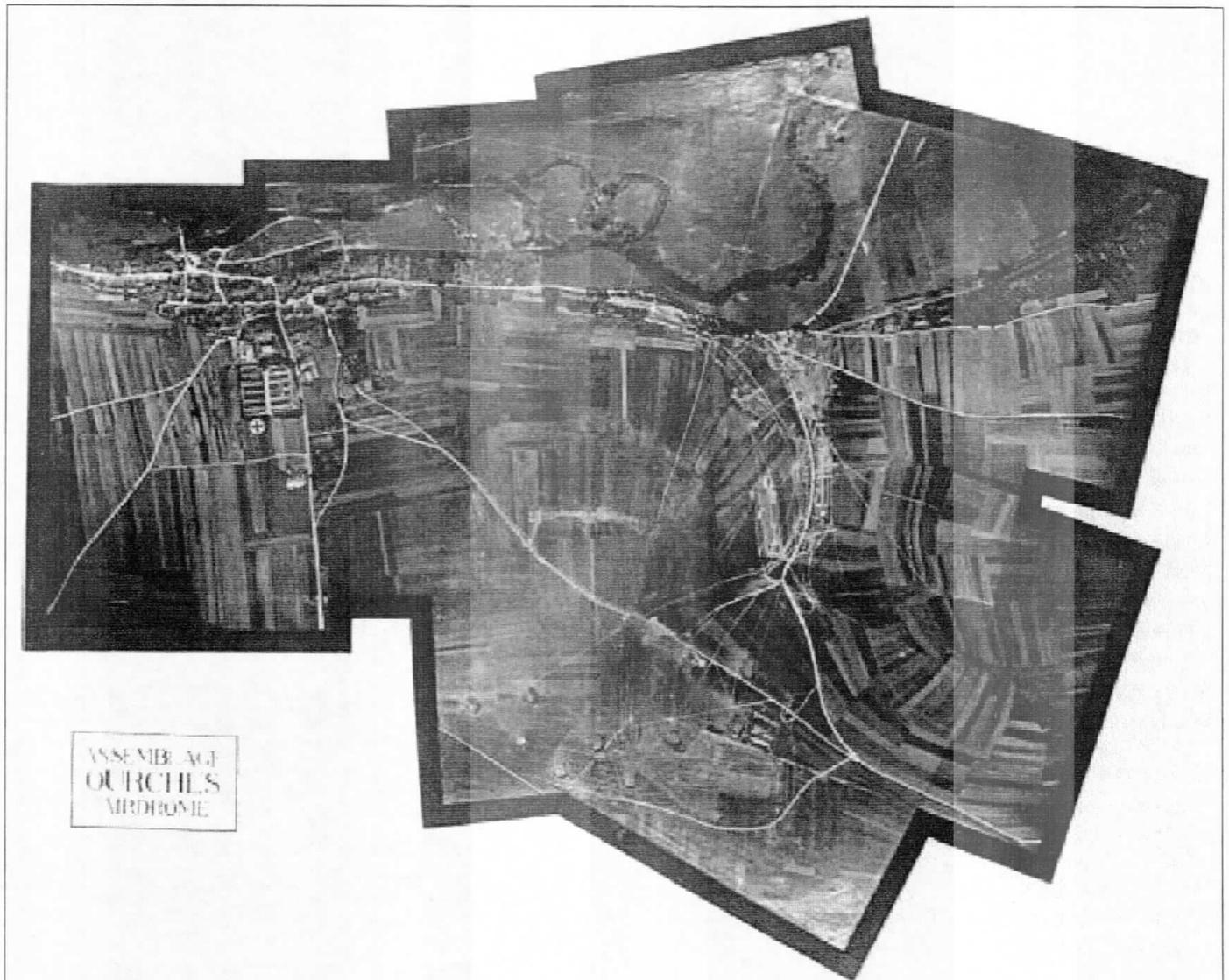
On 17 September, Culbert's regiment set sail from Philadelphia for France on a vessel that, once underway, put in at New York. On 19 September, Culbert married his fiancée, Miriam Edith Towle of Cranford, New Jersey (Wellesley, '18), to whom he had been engaged for nearly a year. Three days later his unit left New York for France.

Off to France

Culbert later wrote: "As I stood a regular turn in the submarine watch – two on and six off – I can assure you very sincerely that the transports take no end of precautions to evade the 'fish,' as commanders call them. In thirteen days we sighted France, going slowly up a tiny river into a small port, just as dusk settled. Some women were waving American flags on the porches, or rather the doorsteps, of their tiny white houses, and I felt thrills leaping from my heart to my head that I shall never forget. The spirit of France, her sacrifices and hardships, her maltreatment and loyal fight – a lot of boyish emotions made me stand up straight as an arrow. And I noticed the sternness of the expressions on the faces of the officers about me. We were beginning to realize why we were there. Once on land we hustled to a camp and got shook down. Then we began the work which a vanguard must always do in preparation for that which is to follow."¹⁴

Soon after reaching France, Lt Culbert became so interested in aviation that on 16 October 1917 he secured a transfer to the First Corps Aviation Schools at Gondrecourt, where he became Student Naval Aviator on 26 November. Culbert recalled the time: "So we're passing the time training and hardening up, occasionally getting actual experience where 'make-believe' no longer holds. I personally am to be the aerial observer of an infantry contact machine, a duty that to me is as interesting as it is important in battle. Before I came over I had never heard of such a man, indeed it's been a succession of hearing, learning, and putting into practice new things, new methods of killing the enemy. The old-fashioned all-round infantryman is but the shade of past glories; today everyone is a specialist in some one particular thing, and informed in all things generally. Gas, with its terrifying results, trench mortars, automatic rifles, grenades; bayonets, wire entanglements; trenches; communication systems; aeroplanes – [and] what not? All have men who speak of nothing save them. War is even more highly specialized than modern industry in the heads of efficiency experts."

▼ **Below:** The 1st Aero Squadron operated from Ourches, near Toul. This USAS photo mosaic provides a complete view of the landing ground and support facilities. Note, on the left side, the hospital with the Red Cross symbol. (via Gorrell Report)



Five days prior to successful completion of aerial observer training, Lt Culbert wrote: "My one constant hope is that the desire to enter the fight as soon as possible will not cause some of these preparations to be hustled or slighted. Everything up front depends on the efficiency of the forces in the rear. I, with many other officers, soon left the regiment for instruction in the ways and means of playing the game." Lt Culbert arrived at his first operational assignment with the US Army's 1st Aero Squadron at Amanty in the first days of December 1917.¹⁵

A Marine in the Army

Lt Culbert's arrival was unique for being the first US aviator at the front not to wear a US Army uniform. Subsequent reports were

conscious of his service and made the effort to apply USMC to his rank and title. The 1st Aero Squadron had a core of trained pilots and aerial observers that assembled in June 1917. One of the first pilots was Lt Walter V. (Barney) Barnaby from Oklahoma, who had flown with 1st Aero Squadron since 24 May 1917. His friend and fellow pilot, Lt William G. (Billy) Schauffler, remembered Barnaby fondly in letters home. "Daredevil" Barnaby arrived in France demonstrating his aerial abilities to French spectators by flying "five solid minutes upside down" and looping "so many times that they lost track of the number, but it was way up in the hundreds."¹⁶

At this early time, the 1st Aero Squadron was busy trying to become operational. While preparing to depart training at Amanty

▼ **Below:** 1st Aero Squadron officers and guests celebrate Christmas 1917 with a group photograph. Bottom row from left: Capt Burdette S. Wright (*Escadrille Spa 54*), Lt Henry W. Hume (49th Aero Squadron Administrative Officer), Lt William G. Schauffler, *Lieutenant* Leitienne (French Liaison), Lt Mahlon P. Bryan, Lt James C. Wooten and Lt Abraham Tabacknik; Second row: Capt John P. Richter (Medical Officer, 22nd Aero Squadron), Major Joseph McNarney, Major Ralph Royce (1st Aero Squadron CO), Major Harry B. Anderson (88th Aero Squadron CO), Capt William M. Jackson and Lt Stephen P. Joselyn; Third row: Lt Clearton H. Reynolds, Capt Thomas J. Griffin (Photographic Officer), Lt Harold M. Gallop, Lt Alonzo M. Seymour, Lt Philip A. Henderson, Capt Gardner P. Allen (8th Aero Squadron), Lt Paul D. Meyers, Lt "Doc" Gray, Lt John W. Cousins, Lt Walter V. Bender, Lt Roland H. Neel and Lt Haskill; Fourth row: Capt Dogen H. Arthur (12th Aero Squadron), Lt Henry H. Perry, Lt Cammy, Capt Herbert B. Lee, Capt William, B. Prickett, 2/Lt Kenneth P. Culbert (USMC), Lt William B. Cooley and Lt George L. Hammann; Fifth row: Lt Bradley J. Saunders, Lt Stephen W. Thompson, Lt William G. McNulty, Lt John H. Snyder, Lt Jones, Lt Richard L. Whitner, Lt Daniel P. Morse and Lt Cassius H. Styles. (*via Cross and Cockade*)



for operations at Ourches, the unit had personnel heading in several directions, with many off to a French *escadrille* to learn aerial observation and braving the hazards of flying over the front lines in the temperamental SPAD XI.¹⁷ The sole squadron photograph taken at Christmas reflects the rapid changes in personnel.

Mission over Saarburg

Tuesday, 5 February 1918, was a historic “first” for American military aviation as the aerial observers deployed to French *escadrilles* for enhanced training. Major Ralph Royce, 1st Aero Squadron commander, recalled the squadron receiving a call from *Escadrille Br 123*, a Breguet 14 A1 aerial bombardment unit having just received their first complement of Breguet 14 A1s.

Meanwhile, *Commandant* [Major] Leon Bonne, *Br 123* commander, stated that his *escadrille* was short of aerial observers that day. Coincidentally, USAS Lts Richard Whitner and Stephen Thompson were heading to the hospital at Bazoilles for dental treatment. When they arrived, French officers asked Thompson if he was a machine gunner. Thompson replied: “I allowed as how I was.” He was soon in one of the eight Breguet 14 A1’s flying to Saarburg, Germany. At 4,800 meters, aerial bombs were dropped. On the way back, three German airplanes fired at them. One attacked from below and Thompson fired back. “I then started to play both guns like a hose, watching carefully the tracer bullets. He got so near me that I pulled off my gloves in order to manipulate my guns better. I then opened fire with both guns and the *Boche* went into a tailspin and I watched him fall about four thousand feet ...” When they returned to Neufchateau, the French pilots confirmed Thompson’s account and gave him credit for the kill. Maj Royce’s report stated “[Thompson was] probably the first American officer in the uniform of the United States to bring one down.” The distinction came at a cost. Thompson’s bare left hand became frostbitten and was covered with blisters with the fingers twice their normal size.¹⁸

Culbert Gains Experience

Later the same day (5 February 1918), Lt Culbert departed the 1st Aero Squadron for training with *Escadrille Sop 217*, based at La Ferme d’ Alger, south of Reims, commanded by *Lieutenant* [First-Lieutenant] Gaston Laparmentier. *Escadrille Sop 217* flew Sopwith 1 A2s supporting the *IVe Armée*. For the next two months, Culbert flew with French airmen, further enhancing his skills and learning the requirements of modern warfare. “...I finished training in January [at Amanty], and since then have been with *Escadrille 217*, in the Champagne Sector. My work takes me over Rheims daily. You can imagine how beautiful the semi-ruined cathedral is as the oblique rays of the sun, striking it, make it loom up above the tiny houses cluttering about. It is a dream picture – one which I would like to look down upon for hours, but I am generally otherwise occupied. Aviation is a comfortable, interesting life. There’s none of the constant noise of shells, there’s none of the blood and gore of things once men, there’s none of

the stationary cave life of the trenches. We have good bunks, good food, comfortable quarters. In a way it’s a remarkable existence, mixing hours of idleness and moments of intense danger. Removed from war in its horror, it’s still an integral part of it.

“Frequently our machines don’t come back – but death has no disgusting nauseating effects, for the ‘plane falls far from here, and life goes on as before. I believe it’s the nicest part of the war, the life is very pleasant, and there’s an element of sport in it. It’s clean in life, and death. One could not ask for more than that in war times. When my duty here will be over I don’t know, however, as soon as the 1st, to which I am attached, has its machines, I reckon. Six months have gone by, with new experiences and varied life. My baptism of fire – in trench and in the air – is a thing of the past. First fears are gone, my real duty has gotten under way.”¹⁹

More Work at the Front

On many occasions, Culbert went to the front lines to fully understand what the French infantry and artillery required from aerial reconnaissance. He wrote: “When I’m not in the air (and a three-hour turn finishes the day’s flying) I often hop a truck to a spot a mile or so from the trenches (for we have a big mountain as part of the trench system, with our troops on the summit, which affords a fairly good approach) and wind my way through communication trenches to the front lines. It’s a useless sort of warfare, three or six months waiting in caves and mud for a few days of attack, an attack which regardless of its outcome means a resumption of the dugout life. The men are comfortable, as that goes, in their dugouts, huge holes which shoot twenty to thirty feet underground in this particular sector – and the shells which fall ordinarily do nothing save cut up the ground a bit more, if such a thing is possible. Those men are the real heroes of this war, though. Theirs is the hardest task, theirs the greatest sacrifices, the greatest personal hardships.”²⁰ His personal effort to head to the front lines gave him a deep appreciation of what combat meant for the French. “The slogan of the French *poilus* exemplifies that; nothing but supreme respect exists in men when I hear them say “*lis ne passeront pas*” [“They shall not pass”]. War for them is so vastly different than it is for us – as yet.”²¹

Culbert shared a glimpse of life with *Sop 217* in a letter to Professor Copeland at Harvard: “Tonight at dinner, for instance, we had a *poilu* as guest of honor. At the tables were the ten French officers of the *escadrille*, Saunders (a southern chap of the finest character), myself and the *poilu*. The latter was a man of forty-five; he has been in the war for two years and a half, serving at present with a battery of 155s in the woods north of here. The inspiring part of the incident was that he was the father of the first lieutenant commanding the *escadrille*.”²²

1st Aero Squadron Works the Toul Sector

Lt Culbert returned to the 1st Aero Squadron on 1 April 1918 and quickly earned the reputation as “one of our most skillful and

daring aerial observers.”²³ The unit moved to Ourches three days later and commenced operations in support of the US 26th Division. The early sorties were called “reconnaissance missions” with the one-word description “successful” if mission objectives were met.

First Aerial Combat

On 12 April, Lt Arthur J. Coyle reported the 1st Aero Squadron’s first aerial combat while supporting 26th Division operations. At that time, the 104th Infantry Division was engaged in battle with 5. *Landwehr Division’s* *Blinddarm* and *abgesprengten Wäldchen* (two attack thrusts codenamed “appendix” and “blown up woods”) combined operations near Apremont. Three German pursuit aircraft attacked Coyle’s SPAD XI. Fortunately, he escaped with only a few bullet holes in his wings.²⁴

The day after the historic sortie over the Seicheprey battleground, 21 April, the 1st Aero Squadron carried out an early morning sortie, despite poor weather. German anti-aircraft artillery was reported to be active. Artillery was heard but flashes could not be seen. That afternoon, another sortie took off at 1420 hours and flew at 800 meters’ altitude from Xivray in the western sector through Marvoisen and over Flirey. German artillery fire was observed “creeping” along the north-south road separating Seicheprey from Beaumont.²⁵

The following month was remembered by the veterans on the line as a time in “which nothing of cardinal importance occurred. Each week, however, the artillery activity in the sector grew more and more intense.”²⁶ The 26th Division’s 18-kilometer front required artillery to keep the pressure on while the infantry reconstituted from the Seicheprey attack. Barrages and counter preparation offensive fire against the German front lines suspected of forming for an attack were conducted with increasing frequency.

On 23 April, the 1st Aero Squadron carried out several sorties. An artillery adjustment in support of the 101st Field Artillery was accomplished but visibility was limited. Lts Barnaby and Snyder flew over Lahayville toward Mont Sec and Apremont at an altitude of 600 to 1,000 meters. They observed a German working party and fired on their dugouts.

Two days later, artillery adjustment missions were flown. This time wireless trouble between the airplane and the receiving station curtailed the mission. On 26 April, ten aerial photographs were taken of German trenches at Richecourt and opposite the 102nd Infantry’s positions at Bois de Remières. A second SPAD XI flew in tandem, providing protection against German fighter aircraft. Weather the next day did not help, despite eight sorties generated for aerial reconnaissance and artillery adjustment. The 1st Aero Squadron acquired six A.R. 1s in addition to the 16 SPAD XI’s for a total of 22 aircraft to support the 26th Division. April ended with just two sorties experiencing mixed results. One

was curtailed due to motor problems. A second sortie flown by Lt Schaufler and Capt Jocelyn at 2,000 meters did not reveal any activity on the German lines.²⁷

May Fight Operations

Aerial coverage the first week of May was mixed. On the 2nd, 12 sorties flew aerial reconnaissance and artillery adjustment missions. Lt Barnaby and Capt Griffin, photographic officer for 1st Aero Squadron, flew west from Bois de Mort Mare (east of Seicheprey) to Apremont. Despite weather that day not being an issue, the aerial camera magazines jammed resulting in no coverage. A subsequent sortie, flown by Lts Noyes and Wootan over Richecourt and the German sector facing the 101st Infantry, successfully took 12 aerial photographs. Lts Coyle and Snyder flew the same area and gathered an additional 12 aerial photos. The 1st Aero Squadron also undertook two additional sorties to provide protection for the aerial photographic reconnaissance ‘planes.’²⁸

On 3 May 1918, exceptional results were achieved. Lts Colgan and Culbert flew at 2,200 meters over the 101st Field Artillery, 102nd Field Artillery and 103rd Field Artillery positions acquiring aerial photographs that showed how well the batteries’ camouflage and deception worked against German aerial reconnaissance. One of 1st Aero Squadron’s best aerial observers, Lt John Snyder, working with his pilot, Lt Noyes, had an exceptional mission that morning, flying at 2,400 meters over Flirey to Maizerais to include the formidable observation butte of Mont Sec. Snyder took 36 aerial photographs. Lts Thaw and Saunders flew tandem to provide additional support. Two Albatros D.Vs suddenly attacked them. The combat was brief and the Albatroses flew north. Lt Thaw landed, refueled and returned north with Lt Wootan as aerial observer. Their mission now covered the eastern sector for the 26th Division at Bois Mort Mare. They flew west to Apremont without the drama of the previous sortie. Artillery adjustments were attempted, but the wireless apparatus at the battery was not working properly. That evening, Lts Winant and Phinizy flew near Essey, conducting artillery adjustments. Two German airplanes attacked and the SPAD XI flew back over American lines. They repeated efforts with the artillery adjustment but twilight came too fast so they returned to Ourches.²⁹

On 4 May, the 1st Aero Squadron took advantage of good weather and flew several sorties. A pair of SPAD XI’s flew north to Buxerulles, Woinville, Mont Sec and Maizerais. Lts Coyle and Meyers successfully gathered 36 views from the 26-cm aerial camera. While they were flying over the target area, Lts Barnaby and Culbert flew defensive cover. The two-aircraft flight returned safely to Ourches.

On the western sector, Lts Morse and McNulty flew artillery adjustment over Apremont with Battery F of the 103rd Field Artillery. Unfortunately, the battery’s wireless receiver was not working. To the east at Seicheprey, Lts Schaufler and Phinizy flew an artillery adjustment at an altitude of 1500 meters. They

observed the 103rd Field Artillery's 155-mm battery fire 20 salvoes successfully to the north against the German artillery battery 9867. Upon returning from his defensive sortie with Lt Barnaby, Lt Culbert changed pilots and flew with Lt John L. Winant to cover the 26th Division's artillery positions. However, the mission was cancelled due to engine trouble. Lt Barnaby then took off with Capt Jackson at 1410 hours and flew to the west sector near Bois Brûlé; they returned with 24 exposed photographic plates of the German front lines. A unique sortie concluded the day when a member of the 26th Division's G-2 staff, Lt Mayhew, was flown over the sector to gain a view of enemy lines. The sortie allowed Mahyew to better understand the extent of aerial reconnaissance potential and provided firsthand exposure to what information could be acquired on a timely basis.³⁰

The 1st Aero Squadron stood down on in the morning of 5 May due to weather conditions. The weather broke later in the day and sorties resumed. Lts Morse and Bird flew mid-day artillery adjustment sortie to support the 2nd Battalion. Their SPAD XI suffered engine problems, which caused them to make a forced landing. The next flight, carried out by Lts McDonald and Clark, was a weather report mission. Lts Schauffler and Cooley flew a low altitude mission at 200 meters and reported good visibility from St. Mihiel to Beaumont, but no enemy activity was noted. Another forced landing for the squadron occurred when Lts Richards and Saunders tried to take off, only to have their SPAD XI suffer a maintenance failure. Lt Saunders then took off with Lt Garside four hours later, but the mission was canceled due to rain.³¹ 5 May was noteworthy in USAS history when the second aerial reconnaissance unit, 12th Aero Squadron, commenced operations in support of the 26th Division. Lt Hughes and Capt Saunders undertook a mission in an A.R. 1 at 1431 hours along the entire 26th Division front line of Flirey to Apremont. No activity was noted.³²

The 1st Aero Squadron's first change of command took place on 8 May 1918, when Lt Coyle relieved Major Royce, who departed to command the First Operational Group. At this time, the 1st Aero Squadron history recorded bad weather and a great deal of engine trouble. No USAS squadron flew a sortie until the morning of 13 May, when Lt McCormick and Capt Jackson flew a low altitude aerial reconnaissance mission and reported very good visibility in the area. A few hours later, Lts Thaw and Culbert flew a low altitude aerial reconnaissance from the landing ground at Ourches to Apremont, but engine trouble curtailed their sortie. Upon landing, they climbed into another SPAD XI and took off but the weather turned poor and visibility became a problem.³³

Honors for the US Air Service

On 14 May 1918, an Allied command accorded honors to active USAS squadrons supporting the 26th Division. At 1500 hours, *Général Gérard, VIIIe Armée* commander, awarded the *Croix de Guerre* to Capt James Norman Hall (then listed as missing in action), Capt David Mack Peterson, Lt James A. Meissner and Lt

Edward V. Rickenbacker of the 94th Aero Squadron. 2/Lt Charles V. Chapman was recognized with a posthumous award, having been killed in combat over enemy territory. All of the USAS pilots were credited with shooting down enemy airplanes, as well as performing other gallant and meritorious acts. The ceremony was held at Toul Aviation Field before a guard of honor composed of a company of infantry from the 26th "Yankee" Division, with a band and a *compagnie* of French infantry. American representatives were Major General Liggett, commanding 1st Army Corps; Maj Gen Clarence Edwards, commanding 26th Division; and Colonel William Mitchell, C.A.S., 1st Army Corps and staff.³⁴

The 1st Aero Squadron was also honored with an award ceremony that day. *Col Mangin, Chef d'Etat, 32e corps d'armée*, on behalf his commander *Gen Passaga*, presented the *Croix de Guerre* to Maj Ralph Royce, commander of the 1st Corps Observation Group, and to Lts Richards H. Garside and Paul D. Meyers, and to Lts Bird and Coyle.³⁵

Despite the busy schedule with honors accorded on 14 May, the 1st Aero Squadron also flew several active sorties. Lts Schauffler and Culbert flew three separate sorties. The first failed due to low clouds and the second sortie was aborted due to aerial camera troubles. Finally, during an evening flight over the sector, Lt Culbert took 12 aerial photographs at 800 meters.

The day had tragic consequences for the 12th Aero Squadron when Lts Angell and Emerson flew their A.R. 1 over the 26th Division sector near Raulecourt and were shot down by German anti-aircraft fire. Two sorties were sent out to locate Angell and Emerson, but were unsuccessful.³⁶ Lt Culbert remembered Emerson in his 21 May letter: "Billy Emerson, '16, was the sixth – but I regret to tell you that last taps were sounded for him last week. We do not know whether the 'antis' got him, or whether it was a *Boche* plane. He went out on a *reglage* and was shot down in[side] our lines. He was an honor to Harvard, a gentleman and a soldier – the first of our little club to gain the one glorious epitaph."³⁷

The First Silver Star

Lt Culbert's valor continued. On 15 May 1918, while on a mission to photograph enemy *Gaswerfer* [large guns firing poison gas], Lts Winant and Culbert flew at 900 meters over Apremont and Bois Brûlé. When Lt Winant descended to 500 meters over the enemy second-line trenches, heavy anti-aircraft and machine gun fire struck his airframe. Despite the severe risk from enemy fire, Lt Culbert successfully took seven aerial photographs of the target area. After they returned and reported their mission, the squadron recommended them for a Silver Star citation, which was approved later that summer.³⁸

Other sorties flown that day included a morning reconnaissance mission made by Lt McCormick and Capt Jackson. Later in the afternoon, Lts Thaw and Culbert took off from Ourches but had to return due to engine trouble. An hour after landing, Thaw and



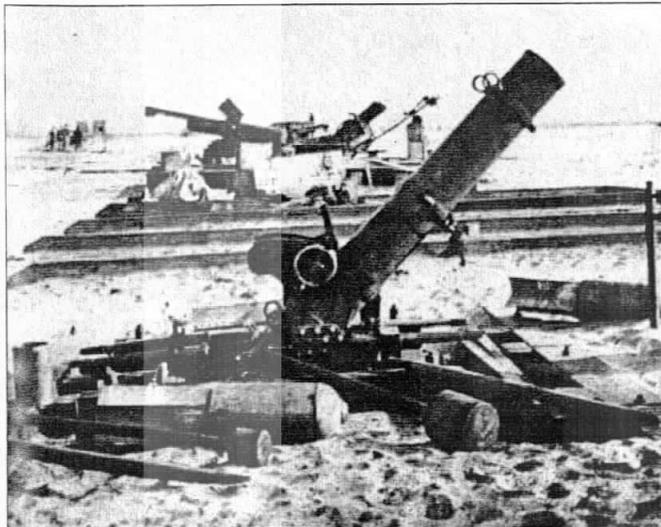
▲ **Above:** Model 1917 Schneider 155-mm howitzer of the 103rd Field Artillery fires at German positions from camouflaged locations south of Seicheprey. *Avion réglage* (artillery adjustment) was a major mission for the 1st Aero Squadron supporting the 26th Division. (via *History of the 103rd Field Artillery*)

Culbert took off in another SPAD XI and flew toward Apremont. Lts Schaffler and Winant flew support. However, visibility had become so poor that the two crews returned to Ourches. Lts Bryan and Haslett flew over the 26th Division sector from Apremont to Flirey. Maj Brereton and Capt Saunders flew an artillery adjustment sortie over the 102nd Field Artillery area of responsibility on the eastern half of 26th Division sector providing the 1st Battalion's 75-mm field guns with targeting information.³⁹

A Week of Aerial Operations in May

Planning between the 26th Division and 1st Corps Observation Group applied a new strategy of artillery adjustment. Target em-

▼ **Below:** Group McCain artillery support missions flown by 1st Aero Squadron both accomplished *avion réglage* (artillery adjustment) on German targets and monitored camouflage and deception of the newly deployed 240-mm mortar unit (seen here) supporting the 26th Division on the line.



phasis now covered large-caliber artillery targeting and deception monitoring under the heading of Group McCain (supporting American operated 240-mm Trench Mortar and Model 1917 Schneider 155-mm (8-inch) howitzer batteries) and the French Group Grace (French model 1885 270-mm mortar batteries). Large mortars were among the most feared weapons at the front, able to annihilate trench works with one round.

On 16 May, two sorties were launched by Group McCain, but both were unable to attain radio contact with American batteries. For the early afternoon sortie, the 94th Aero Squadron sent out two Nieuport 28s for protection.⁴⁰ That evening, members of the 1st Corps Observation Group conducted an early evening funeral for 12th Aero Squadron's Lts Angell and Emerson. The moment was made further memorable when a rocket was fired over the Vignot cemetery where the burial took place.⁴¹

On 17 May, visibility was good enough for aerial reconnaissance missions. Lts Noyes and Culbert flew a two-hour sortie at 3,000 meters over the front lines north of Seicheprey to the 78. *Reserve Division* headquarters at Thiaucourt. Two 95th Aero Squadron Nieuport 28s flew in formation with the SPAD XI. Lt Culbert's acumen in handling the aerial camera resulted in 36 aerial photos. Of that number, 31 exposed glass plates were considered good for intelligence analysis. At noon, Lts Barnaby and Clark flew a successful sortie at an altitude of 2,500 meters to the west at Bois les Moutots. Lt Clark produced ten usable aerial photographs from a total of 24 exposures. Two 94th Aero Squadron Nieuport 28s accompanied the sortie. After landing, Lts Barneby and Clark quickly followed up with a successful evening mission. The hour-long sortie covered Gerechamp-Loupmont-Varneville-Les Tombois-Cote 396 at an altitude of 2000 m with two Nieuport 28's from 95th Aero Squadron flying cover. Clarke acquired 36 aerial photographs good for intelligence analysis. An artillery adjustment sortie that evening was flown by Lts Morse and Wooten in support of the Group Grace artillery plan. Four aerial photographs provided a damage assessment of German battery 1658.⁴²

The following day, Lts Barnaby and Culbert flew an aerial photographic mission of 26th Division artillery positions. Some 24 aerial photographs were obtained and deemed excellent for battery placement and planning. Culbert reported seeing German airplanes over Pont-a-Mousson to the east and over Apremont to the west. Extensive artillery adjustments were flown that day in support of Group McCain's American 240-mm howitzers in Battery 8. Lt Snyder served as primary aerial observer. Lts Garside, Colgan, Schaffler and Richards flew in the formation. Lts Richards and Snyder flew an artillery adjustment that evening against the German battery 0737. Some 300 rounds were fired at the battery.⁴³

A Bonding of Aviation Warriors

At 0900 hours on 19 May, three Nieuport 28s flew from Toul to St. Mihiel when enemy airplanes were observed over that sector.

Maj Huffer, 94th Aero Squadron commander, Maj Gervais Raoul Lufbery, America's leading ace at that time, and Lt Gude responded. At 1,500 meters, air-to-air combat ensued and Maj Lufbery's plane caught fire. As the plane careened towards earth, Lufbery's body was seen in a free fall. He died near Pont St. Vincent.

An hour later, four more Nieuport 28s left Toul for the eastern sector at Pont-a-Mousson. At an altitude of 5,000 meters, Lt Douglas Campbell attacked an LVG two-seater near Flirey. The aerial observer was shot and killed and Campbell's subsequent fire shot off part of the German airplane's upper wing. The LVG crashed southeast of Flirey.⁴⁴ Lt Culbert wrote to Professor Copeland on 21 May: "You've probably heard that Doug Campbell has gotten two *Boches* already. From every indication he's going to be one of the best men we'll ever have in that end of flying – just as he was one of the most genuine men who ever went through Cambridge."⁴⁵

After Maj Raoul Lufbery's death, Lt Culbert wrote Professor Copeland: "Perhaps you'd like to hear of Major Lufbery's [sic] funeral – you doubtless know that he was shot down, and fell from his burning plane into a courtyard. He had done a great deal in uniting the French and Americans – he was the greatest of our airmen and seventh on the list of French aces – he had all

the qualities of a soldier, audacity, utter fearlessness, persistency, and tremendous skill – in every way, sir, he was a valuable man. As we marched to his interment, the sun was just sinking behind the mountain that rises so abruptly in front of T[oul]; the sky was a faultless blue, and the air was heavy with the scent of the blossoms on the trees in the surrounding fields. An American [Maj Gen Edwards] and French [*Gen Passaga*] general led the procession, following close on to a band which played the funeral march and "Nearer, My God, to Thee" in so beautiful a way that I for one could hardly keep my eyes dry. Then followed the officers of his squadron and of my own – and after us [came] an assorted group of Frenchmen famous in the stories of this war, American officers of high rank, and two American companies of infantry, separated by a French one. How slowly we seemed to march as we went to his grave, passing before crowds of American nurses in their clean white uniforms, and a throng of patients and French civilians! He was given a full military burial; with the salutes of the firing squad, and the two repetitions of taps, one answering the other from the west. General E[dwards] made a brief address, one of the finest talks I have ever heard any man give – while throughout all the ceremony French and American planes circled the field. In all my life I have never heard taps blown so beautifully as on that afternoon – even some of the officers joined the women there in quietly dabbing at their eyes with white handkerchiefs. France and

▼ Below: At 0930 hours on 17 May 1918, a two-seater crew from Bavarian *Fliegerabteilung* 46 took this photo of 1st Aero Squadron airplanes at Ourches. Some 27 SPAD XI and A.R.1 airplanes were at the airfield. (via Bayerisches Hauptstaatsarchiv).



[the] United States had truly assembled to pay a last tribute to one of their soldiers. My only prayer is that somehow through some means I can do as much as he for my country before I too wander west – if in that direction I am to travel.”⁴⁶

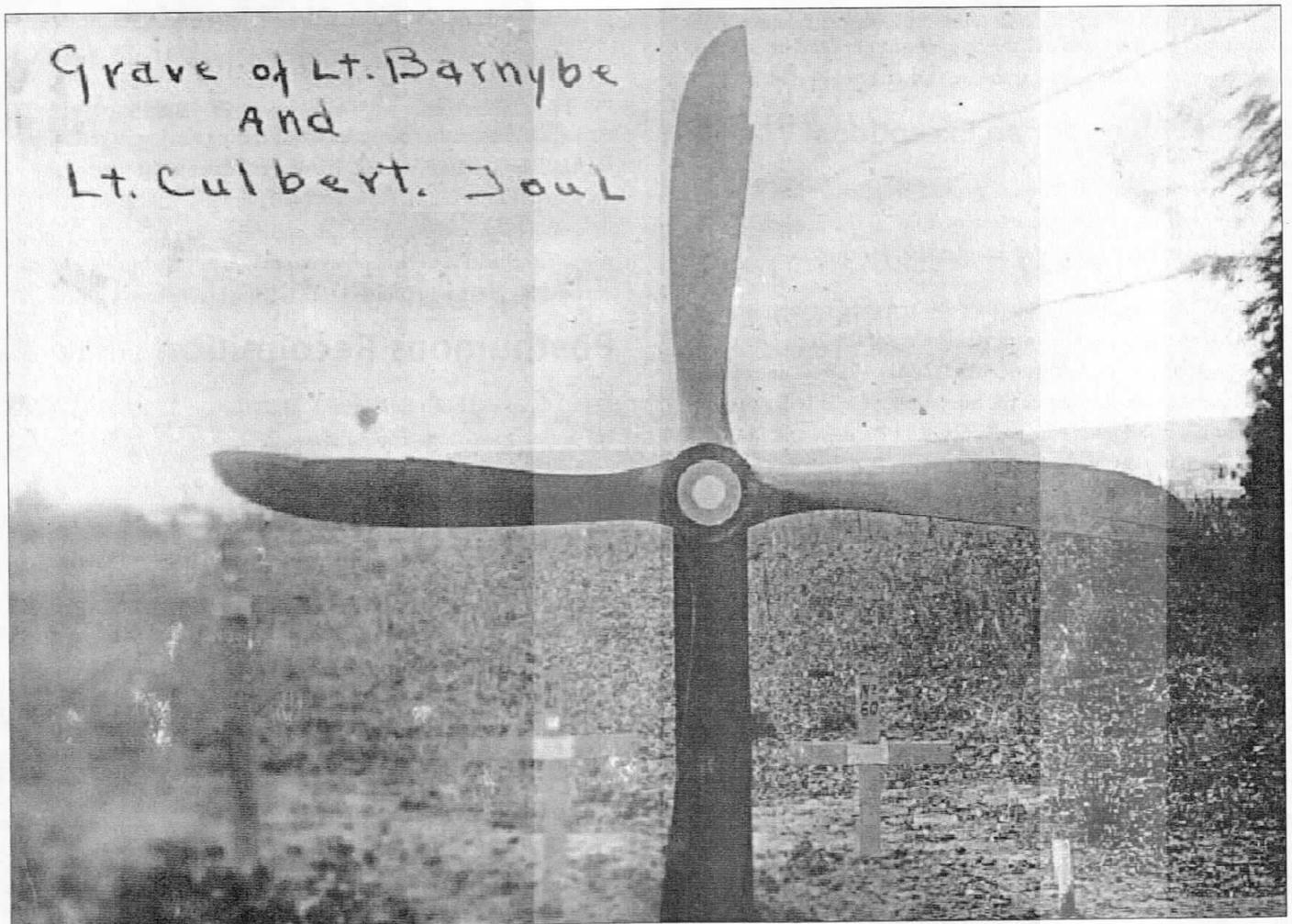
Lts Barnaby and Tabachnick flew over St. Mihiel and Bois-de Euvezin at noon on 20 May. They brought back 24 aerial photographs described in the report as “all good.” German anti-aircraft artillery fire was reported “active and accurate.” Two Nieuport 28s from 95th Aero Squadron provided protection. When they returned to Ourches by way of the Toul landing ground, Barnaby and Tabachnick took a few extra shots of the 94th Aero Squadron. Lts Schaffler and Meyers flew an artillery adjustment for Group McCain’s 240-mm howitzers targeting German artillery battery 5135. The visibility at 1,500 meters was fair to poor. When the first adjustments were fired, German anti-aircraft artillery became very active around Apremont. Schaffler’s SPAD XI was completely turned over by one close anti-aircraft artillery burst causing the airplane to fall some distance. Schaffler was able to recover and return safely to Ourches.⁴⁷

The 1st Aero Squadron had a noteworthy day on 21 May, when a SPAD XI sortie intercepted a German airplane flying over 26th

Division sectors at noon. Nothing came out of the pursuit. Three sorties for aerial photography were cancelled due to engine problems. A fourth sortie that afternoon provided artillery adjustment support to the 51st Field Artillery. Group McCain targeting support for the 103rd Field Artillery’s 8-inch howitzers (155-mm) was flown by Maj McNarney and Lt Perry. The German battery 3041 was targeted. Eight salvos Battery 8-bis totaling 16 rounds were fired for trial, followed by 12 rounds for amelioration and observation. McNarney and Perry observed two salvos fired for effect and reported the strikes as accurate. The 95th Aero Squadron flew protection for the sortie. Later that evening, Lts Meyers and Morse flew another sortie supporting Group McCain’s targets. At 2,000 meters with excellent visibility in the area, they observed fire on the German battery 5135 and observed 16 rounds from 155-mm howitzers fired for effect followed by 50 rounds fired to destroy the target. The aircrew witnessed direct hits on the German battery. Unique for aerial operations were two sorties that had intelligence officers serving as aerial observers.⁴⁸

Lt Culbert wrote his last letter to “Copey” on the night of 21 May: “Our sector is comparatively quiet, and life goes on as usual. My squadron is an observation one – we direct our artillery fire

▼ **Below:** The gravesite of Lts Barnaby and Culbert, commemorated by a four-bladed propeller from a British F.E.2d. (via San Diego Air & Space Museum archives)





▲ Above: 1st Aero Squadron members pose for a group photo shortly after Lts Barnaby and Culbert were killed. Lt Arthur Coyle, then 1st Aero Squadron commander, is in the first row at far right. (via Chuck Thomas)

(and I'm glad to tell you that our artillery has knocked the stuffings out of several *Boche* batteries); we work with the infantry, and photograph the enemy positions. It's useful work and quite interesting. Every man in the outfit is praying that the morrow will bring orders sending us up to the Somme for work in the new offensive which the Huns will doubtless begin in short order. But there's no place on earth like the army for rumors and unexpected happenings – so in the meantime we're doing our best here."⁴⁹

A Sad Ending for an Exceptional Warrior

Lt Culbert's last line to "Copey" proved prophetic: "Just now my lantern is warning me to blow her (or 'him,' as the English say) out so I reckon it'll have to be good night, sir – for this time."⁵⁰

The next day's aerial reconnaissance was required to support a French Senegalese *coup de main* [raid] west of the 26th Division. The 1st Aero Squadron history cited 22 May 1918 as "one of the saddest days in the history of the Squadron... On this day two of the best liked and most efficient officers, Lt Barneby and Lt Culbert started out on a photography mission. They had just taken off and reached an altitude of about one-hundred meters when their plane fell into a *vrille* (spin) and crashed. Both pilot and observer were seriously hurt and died during the night."⁵¹

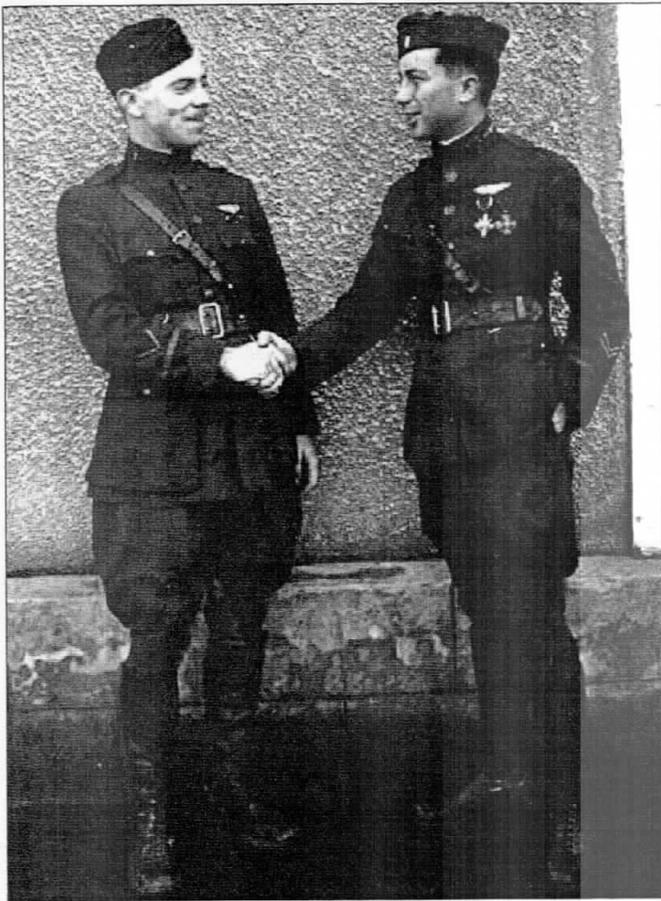
Sadly, the squadron history recalled: "Those [SPAD XI] machines gave very poor satisfaction, the trouble seemed to be mainly with the [engine]."⁵² Lt Culbert's close friend and Harvard classmate, Russell Fry, described the tragic deaths: Lt Barneby was "killed instantaneously and Culbert rendered unconscious. He was taken at once to the American hospital at Sebastopol Farm, just north of Toul, where he died at midnight without having regained consciousness. And there he was buried, his body being moved later to the American cemetery at Thiaucourt. His life had been spent in the great out-door world, leaving him as free from the affecta-

tions of conventionalized man as the great seas which shattered themselves against that Maine island, his summer home. His was an essentially elemental character – honest, upright, unafraid; quick to applaud another's accomplishments, equally quick to condemn his shortcomings. And as his life was fearless, vigorous, unselfish – so, too, was his death."⁵³

On the afternoon of 23 May 1918, a SPAD XI from 1st Aero Squadron and an A.R. 1 from the 12th Aero Squadron flew over American Evacuation Hospital No. 1 during the burial ceremony for Lts Barnaby and Culbert. It was a sad day for the men of the 1st Corps Observation Group.⁵⁴ Had Barnaby lived until 24 May, he would have celebrated his first anniversary as a 1st Aero Squadron aviator. Sadly, Lt Schaufler wrote home: "We buried him and covered his grave with flowers. He is lying just next to Lufbery."⁵⁵

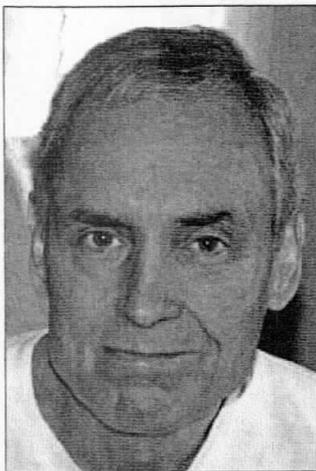
Posthumous Recognition

France honored both Lt Walter V. Barnaby and Lt Kenneth Pickens Culbert with a posthumous awarding of the *Croix de Guerre* with *Palme*. The General Order of the Army cited the following for Lt Culbert: *Jeune officier d'un grand cœur, animé du plus pur sentiment du devoir, ayant fait preuve au cours de plusieurs reconnaissances sur Vennemi de sang-froid, de courage, et de décision. Blessé mortellement le 22 Mai, 1918. [Young officer with a big heart, animated by the purest sense of duty, having demonstrated composure, courage, and determination during several reconnaissance missions against the enemy. Mortally wounded 22 May 1918.]*⁵⁶



▲ **Above:** The 1st Aero Squadron's illustrious roster includes Lt William Erwin (right), wearing one of his two Distinguished Service Crosses and a *Croix de Guerre*; he was credited with nine kills. One of the longest serving US aerial reconnaissance pilots, Capt Arthur "Judge" Coyle (left), remained squadron commander until the Armistice. Coyle, from New Hampshire, was one of the first US National Guard members to become a USAS pilot. (US NARA No. 111-SC-631392)

Meet the Author



Terrence J. Finnegan is a retired US Air Force colonel and senior civil servant whose career spans four decades of military service. His career as a military intelligence professional covered analysis, production and planning within the US Department of Defense. Finnegan is the author of *'A Delicate Affair' on the Western Front: America Learns How to Fight a Modern War in the Woëvre Trenches* (Spellmount, 2015).

He is also the author of *Shooting the Front: Allied Aerial Reconnaissance of the First World War* (Spellmount, 2011).

Endnotes

¹ Lieutenant Barnaby's last name is spelled Barneby in several sources. VIII Armée, *Compte-Rendu des Operations Aeriennes et des Renseignements*, 20 Avril 1918, SHD 22N 1758; Telephone message, Box 19, 26th Division, NARA RG 120; "Headquarters First Army Corps A.E.F. Office of Chief, Air Service, Report of Operations for April 20, 1918." *Gorrell Report*, NARA RG 120, Fold 3.

² 78 R.D., "Cherry Blossom" Operation Final Report, April 27, 1918, 24-27, NARA RG 165.

³ "Tactical Units," *Gorrell Report*, NARA, RG 120, Fold 3.

⁴ Telephone message, Box 19, 26th Division, RG 120, NARA; "Headquarters First Army A.E.F. Office of Chief, Air Service. 'Report of Operations for April 20, 1918.'" *Gorrell Report*, NARA, RG 120, Fold 3.

⁵ Lt Bright, 26 April 1918., Box 44, 102nd Infantry, RG 120, NARA; "American Squadron is Flying Near Toul," *New York Times*, 24 May 1918.

⁶ Sal.122 was assigned to the sector in March supporting *I^{re} Armée* and *Général Passaga's 32^e Corps d'Armée* flying out of Saizerais and Toul. *Sal 47* flew Salmson 2A2, Spad XVI, Caudron G6 and Letord aerial reconnaissance out of Belrain. They left for Mesnil-St Georges in late March to support the Allied counter attack against the Germans' "Operation Michael" and returned to Belrain in early April. VIII Armée Bulletin de Renseignements, N 169, du 20 au 21 Avril, 1918, SHD 14N.; *Les escadrilles de l'aeronautique militaire française*, Paris, pp. 284-285.

⁷ John W. Hyatt, Memorandum: For All Intelligence Officers, February 25, 1918, NARA RG 120, 26 Division, Box 12.

⁸ "The First Corps Observation Group in the Toul Sector, 'Tactical History of the Air Service,'" *Gorrell Report*, NARA, RG 120, Fold 3.

⁹ *Ibid.*

¹⁰ Terrence J. Finnegan, *Shooting the Front, Allied Aerial Reconnaissance in the First World War*, (Stroud, Gloucestershire, UK: The History Press, 2014), p. 175.

¹¹ Infantry contact patrols provided an overview of the situation at a given sector at a given time, especially during an attack. Observations included indications of fresh digging or newly taken positions. *Ibid*, p. 311.

¹² *Operation Projetee par les U.S., Fevrier 1918.*, SHD 14 N 1474.

¹³ Kenneth P. Culbert letter, November 21, 1917, the first of three letters to Professor Charles Townsend Copeland '82 of the Department of English, Harvard University. M.A. De Wolfe Howe,

Memoirs of the Harvard Dead in the War against Germany, Vol. 3 (Cambridge: Harvard UP, 1922), p. 85.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ William G. "Billy" Schauffler, Edited by Stanley Walsh, *First, Over the Front*, (Bloomington, IN: Authorhouse, 2011), p. 50.

¹⁷ Ibid.

¹⁸ "Air Service Activities with the French, British, and Italians; Histories of American Personnel who Served with the Lafayette Flying Corps, French Air Service, British Independent Air Forces, and Royal Air Forces." *Gorrell Report*, NARA, RG 120, Fold 3.

¹⁹ Ibid, pp. 91-92.

²⁰ Ibid, pp. 90-91.

²¹ Ibid, pp. 87-88.

²² Culbert letter, March 22, 1918, Howe, pp. 89-90.

²³ Howe, 84.

²⁴ "Squadron Histories, 1st and 8th Aero Squadrons," *Gorrell Report*, NARA, RG 120, Fold 3.

²⁵ "Tactical Units."

²⁶ Fred McKenna, Edited by. Battery -A- 103rd Field Artillery in France, Providence, R.I.: Livermore and Knight Co. 1919, p. 37.

²⁷ Artillery adjustment, also called artillery spotting, remained the priority for aerial observation. Active and inactive gun positions through observation of guns firing. The information passed helped identify and confirm destruction of enemy artillery battery emplacements "Early History of Air Service Commands at the Front (Chateau-Thierry Campaign)," *Gorrell Report*, NARA, RG 120, Fold 3.

²⁸ Ibid.

²⁹ "Early History of Air Service Commands at the Front (Chateau-Thierry Campaign)"

³⁰ Ibid.

³¹ "Early History of Air Service Commands at the Front (Chateau-Thierry Campaign)"

³² Ibid.

³³ Ibid.

³⁴ Ibid.

³⁵ "Early History of Air Service Commands at the Front (Cha-

teau-Thierry Campaign); "Squadron Histories, 1st and 8th Aero Squadrons."

³⁶ "Early History of Air Service Commands at the Front (Chateau-Thierry Campaign)."

³⁷ Culbert letter, May 21, 1918, Howe, p. 95.

³⁸ "Early History of Air Service Commands at the Front (Chateau-Thierry Campaign)."

³⁹ Ibid.

⁴⁰ *Mortier de 240 mm LT* ("long de tranchée") was a long barreled version used by the American Expeditionary Force capable of firing a 179 lb bomb 2,265 yards. Group McCain was named for the Adjutant General of the U.S. Army and uncle of the current senior US Senator from Arizona), *Ibid*.

⁴¹ Ibid.

⁴² "Early History of Air Service Commands at the Front (Chateau-Thierry Campaign)."

⁴³ Ibid.

⁴⁴ "Tactical Units."

⁴⁵ Culbert letter, May 21, 1918, Howe, p. 95

⁴⁶ Ibid, pp. 95-96.

⁴⁷ "Early History of Air Service Commands at the Front (Chateau-Thierry Campaign)."

⁴⁸ Ibid.

⁴⁹ Culbert letter, May 21, 1918, Howe, pp. 96-97.

⁵⁰ Ibid, p. 97.

⁵¹ "Squadron Histories, 1st and 8th Aero Squadrons."

⁵² "Squadron Histories, 1st and 8th Aero Squadrons."

⁵³ Russell Fry letter, Howe, p. 97.

⁵⁴ "Early History of Air Service Commands at the Front (Chateau-Thierry Campaign)."

⁵⁵ Schauffler, p. 127.

⁵⁶ Howe, p. 98.