

World War I Technology Impacts Ohio United States Army Signal Corps By Paul LaRue

Objective: Illustrate connections between technology, Ohio, and World War I, including the role of African Americans serving in the Signal Corps and the growth and development of aviation.

Essential or Compelling Question: How did changing technology impact World War I?

Grade Levels: Middle or high school **Content Area:** Social Studies

Connections to Ohio Model Curriculum Social Studies: High school American History

Content Statements: 2, 8, 10, 14, 15

Skills: Analyze artifacts (photographs), close reading, analyze primary documents, cause and effect of historical events

Vocabulary: U.S. Army Signal Corps, Camp Sherman, 325th Field Signal Battalion, Wilbur Wright Field, Huffman Prairie Flying Field, Delco and National Cash Register Company (NCR)

Teacher Tip: This lesson could be used for Black History Month or as a Blizzard Bag assignment.

Field Trip or to Visit:

- 1.) Hopewell Culture National Historical Park, Chillicothe, Ohio
 The Hopewell Culture National Historical Park is one of the nation's most important
 ancient American Indian sites, and covers more than 1,750 acres, much of which was
 occupied by Camp Sherman. For visitor information, visit:
 https://www.nps.gov/hocu/index.htm
- 2.) Huffman Prairie Flying Field National Historical Park
 The Huffman Prairie Flying Field is an important place in the history of the Wright
 Brothers and Wilbur Wright Field. For visitor information, visit:
 https://www.nps.gov/daav/learn/historyculture/huffman-prairie-flying-field.htm

Steps in Strategy

- 1.) Begin with warm up activity.
 - a.) Students study the photograph
 - b.) Students answer warm-up activity questions
 - c.) Introduce essential question: Technology and World War I
- 2.) Assign readings #1 and #2, and primary documents #1 and #2. These could be assigned the night before, or completed in class.
- 3.) Discuss readings #1 and #2, and primary documents #1 and #2. This could be done as a class, or divide the readings and documents into groups, and the groups can report out.
- 4.) Students complete the short quiz.
- 5.) Wrap up activity: Students review their answers from the warm-up activity and add any new World War I communication methods they've learned about.

Evaluation: Student Questions and Answers

- 1.) What was the 3rd largest World War I training facility in the U.S.? **Answer**: Camp Sherman
- 2.) What was necessary to be in the 325th Field Signal Battalion? **Answer**: Education (high school diploma, or a college degree)
- 3.) What was the original significance of Huffman Field? **Answer**: The Wright Brothers conducted test flights there in 1904-1905.
- 4.) What was the reality of being a World War I combat pilot? **Answer**: It was extremely dangerous.
- 5.) What group other than pilots were trained at Wilbur Wright Field? **Answer**: Airplane mechanics
- 6.) Discussion: During World War I, was technological advancement an advantage or disadvantage for the United States? List examples to support your answer. *Answers will vary.*

Answers might discuss how advances in communications (telephone, aircraft, etc.) helped the U.S. Army better track the German Army's movements, while on the other hand, these technologies were in their infancy, especially airplanes, resulting in high



risk environments and high flier casualties. Other new technologies include mustard gas and high explosive shells.

Extension Activities (for a student, or the entire class)

Additional information can be found on pages 17-18 of this lesson plan.

- 1.) Service and Sacrifice of African American WWI Soldiers: select one, or both, of the linked lesson plans on Ohio's African American WWI Soldiers.
 - a) African American Combat Troops: http://www.ohiohistoryhost.org/ohiomemory/wp-content/uploads/2016/10/Searching-for-Homer-Lawson-Lesson-Plan.pdf
 - b) African American Labor Regiments: http://www.ohiohistoryhost.org/ohiomemory/wpcontent/uploads/2017/01/African-Am-Labor-for-Victory-Lesson-Plan.pdf
- 2.) Ohio's Aces: Research the lives and World War I service of the U.S.'s #1 and #2 Ace fighter pilots, both Ohio natives: Captain Eddie Rickenbacker (Columbus) and Lt. Colonel Bill Lambert (Ironton).



Warm-Up Activity



Image: Company A, 325th Field Signal Battalion photograph, March 18, 1918

Source: Courtesy of the Ohio History Connection (State Archives Series 2728 AV). Via Ohio Memory. http://www.ohiomemory.org/cdm/ref/collection/p16007coll51/id/5553

Students study the image above and complete the following (answers can be found in "Setting the Stage" reading below):

- 1.) What do you see? What form of communication are these men using?
- 2.) **Brain teaser:** Use the 1916 Signal Book Field Guide (https://archive.org/details/SignalBook1916) to identify which numbers are being signaled. What is the relationship between the numbers and the soldiers in the photograph?



Setting the Stage

Technology seems to transform our society daily. Communications is one of the fastest changing areas. Students' use and understanding of communications and technology is limitless. Whether it be the latest device, newest app, or most popular social media platform, our students' ability to communicate is ever changing.

Technology is central to a society's ability to solve problems. Unfortunately new innovations often have unintended consequences (e.g. distracted driving caused by smart phones). S.T.E.M. develops paths forward for issues often plaguing society. One hundred years ago, technology transformed warfare. Communications in World War I was impacted by technology.

The U.S. Army Signal Corps dates to the Civil War, though military communication dates to ancient times. The role of the U.S. Army Signal Corps is to facilitate Army communications. World War I created opportunities and challenges for the Signal Corps. The Signal Corp's means of communication included telegraph, telephone, radio, aerial reconnaissance and aerial photography. They also relied on older traditional means of communication, such as flags, flares, carrier pigeons, and messengers. Ohio has several interesting World War I connections to the US Army Signal Corps.



Reading #1

Camp Sherman and the 325th Field Signal Battalion

Congress declared war on Germany on April 6, 1917, and immediately the nation began the process of getting troops ready for service overseas. Training camps were created to prepare men for military service. Camp Sherman, near Chillicothe, Ohio, was an example of such a facility, also called a cantonment. The land was leased by the United States on June 2, 1917, for the purpose of constructing a training camp. Construction began on June 28, 1917. The camp was named Camp Sherman after Civil War General William Tecumseh Sherman.

Camp Sherman spanned 9,700 acres divided among maneuver grounds, a main campsite, a rifle range, and an artillery range. The camp had over 2,000 buildings and nearly twenty miles of streets. The men who trained at Camp Sherman came primarily from Western Pennsylvania, West Virginia, and Ohio. Nearly 40,000 men could be at the main camp at one time. The camp not only housed men; 10,000 horses and mules were at the camp. Camp Sherman was the third largest such training center in the United States.

325th Field Signal Battalion

Four African American regiments and one African American Battalion were organized at Camp Sherman. A Battalion is a military unit, generally composed of 300-800 soldiers.

Battalions were smaller than regiments, which in World War I were generally between 2,500-3,000 soldiers. The 325th Field Signal Battalion was unique, as it was the only African American Field Signal Battalion in the U.S. Army. These men were selected based on their education. Most men had high school or college degrees, and many were recruited from



universities. The 325th was one of the best educated battalions in the Army. Men in the 325th were selected from many states, including Ohio.

The Battalion was organized at Camp Sherman in December 1917. These men were trained and sent to France in June of 1918, where the 325th was assigned to the 92nd Division. Once in France, the 325th served in the trenches and saw combat in the Argonne Forest in France. The 325th, like other Signal Corps battalions, manned and maintained switchboards, and set up and repaired telephone and telegraph wires, as enemy artillery constantly damaged and destroyed Allied communications. The 325th performed bravely and efficiently in combat. General Order #38, issued December 6, 1918, recognized the heroism of two members of the 325th: Sergeant Rufus Atwood and Private Charles Boykin (see Primary Document #1). The 325th was one of World War I's most unique and decorated battalions.

Primary Document #1

Headquarters Ninety-Second Division Army Post Office No. 766 American Expeditionary Forces

6th December, 1918

General Orders: No 38.1

I. Sergeant Rufus B. Atwood, 1974547, 325th Field Signal Battalion.

The Division Commander desires to call the attention of the entire command to the excellent work and meritorious conduct of Sergeant Rufus B. Atwood, 1974547, 325th Field Signal Battalion. On the morning of November 10, 1918, while returning to the switchboard in Pont-à-Mousson, a shell struck the house in which the switchboard was being operated, breaking all the lines. Sergeant Atwood rendered valuable assistance to the officer in charge in

¹ Emmet J. Scott, Scott's Official History of the American Negro in the World War (Chicago: Homewood Press, ca. 1919), 186.



reconstructing the switchboard and connecting new lines under heavy shell fire. When the ammunition dump began to explode in the same neighborhood, he remained on the job, tapping new connections. After repairs were made from the first explosion, there were two to follow which completely wrecked the switchboard room and tore out all the lines which were newly fixed. Sergeant Atwood was left alone, and he established a new switchboard and the same connection they had at first. The coolness with which he went about his work and the initiative he took in handling the situation justifies his being mentioned in orders.

II. Private Charles E. Boykin (Deceased), Co. "C" 325th Field Signal Bn.

The Division Commander desires to commend in orders the meritorious conduct of Private Charles E. Boykin, Company C, 325th Field Signal Battalion. On the afternoon of September 26, 1918, while the 368th Infantry was in action in the Argonne Forest, the Regimental Commander moved forward to establish a P. C. and came upon a number of Germans, who fled to the woods, which were found to be alive with machine guns. The Commanding Officer ordered the woods searched to the top of the hill, the officer in charge of the scouting called for volunteers, and Private Boykin, a telephone linesman, offered his services and set out with the rest of the detail. While trying to flank an enemy machine gun another opened fire, killing him instantly.

By command of Major General Martin:

(Signed) Allen J. Greer, Colonel, General Staff, Chief of Staff,

Official: EDW. J. Turgeon Major, Infantry, U.S.A., Adjutant



Reading #2

Wilbur Wright Field and the Army Signal Corps

Dayton, Ohio, was a growing center for technology at the start of the 20th Century. The National Cash Register Company (NCR) and Dayton Engineering Laboratories Co. (Delco) helped to establish Dayton's reputation as a leader in innovation and technology. Edward Deeds and Charles Kettering helped to shape Dayton's position in technology. Dayton's own Orville and Wilbur Wright also contributed to the growing technology and innovation of the Miami Valley.

Ohio's connections to aviation history are well documented. From the Wright Brothers to space pioneers John Glenn and Neil Armstrong, Ohioans have played an important role in advancing aviation technology. After returning from Kitty Hawk, North Carolina, the Wright Brothers needed a place to further test and refine their plane design. They wanted an affordable location closer to Dayton. Torrence Huffman allowed the Wright Brothers to use his pasture 8 miles northeast of Dayton rent free. Between 1904 and 1905, the Wright Brothers completed more than 150 test flights at Huffman's pasture. The pasture became known as the Huffman Prairie Flying Field. By 1910 the Wright Company had a factory in Dayton. The Army Signal Corps established an Aeronautical division in 1907, five years after the Wright Brothers' first flight.

In 1916, Europe entered the second year of World War I. The United States had not yet entered into the war, and much of its military force was involved in a campaign along the U.S. — Mexican Border. Although the Aeronautical Division of the Signal Corps did not perform well on the U.S.—Mexican border, the value of aviation was undeniable; Congress continued to fund aviation.



One year later in April 1917, the United States entered World War I. When the U.S. entered the war, they lagged behind the rest of the European powers in the number of planes and trained pilots. In an effort to close the gap, Congress pushed ahead with developing aviation. Edward Deeds lobbied for Dayton (specifically the Huffman Prairie Flying Field), and its surrounding area to be a United States flying school. In May 1917, the Signal Corps signed a lease for approximately 2,000 acres. The flight school was named Wilbur Wright Field in June 1917 and pilot training began in July.

Flight Training at Wilbur Wright Field

The allure of flying encouraged more than 38,000 to enlist for flight training between July 1917 and June 1918. Of those who enlisted, 18,000 did not meet the physical standards. Ultimately 2,171 would fly in Europe as pilots, observers or gunners, and of those, 516 would be killed or wounded in combat. The romance of flying did not match the reality of a casualty rate of nearly 24%.

During the 1917 flying season at Wilbur Wright Field, nearly 800 flying cadets trained between July and December. The May 1918 Annual Report of the Signal Corps Aviation School at Wilbur Wright Field describes each month of the 1917 flying season: ... During the month of August, sixteen flying officers and four civilian flight instructors were on duty at this station. Instruction of cadets continued throughout the month. The average number of planes in commission during the month was thirty three, seventeen being Curtiss JN4's and sixteen being standards. There were two serious wrecks resulting in the destruction of the planes during the month of August. One enlisted man was killed, by being hit by a propeller, during this month. The total time flown was six hundred and twenty-eight hours and twenty-



two minutes. One hundred and sixty nine cadets were instructed during the month. Of these, nine were graduated as Reserve Military Aviators, one was discharged and none were transferred. No cadets were killed during the month....²

Pilots were not the only resource in short supply. There were few airplane mechanics. Wilbur Wright Field also served as a training facility for airplane mechanics, graduating nearly 1,200 mechanics by April 1918. Wilbur Wright Field played an important role in supporting the U.S. war effort by training pilots and mechanics during World War I.

Primary Document #2

An Ohio Pilot's letter home³ [1918]

Sept. 4, 2:30

Dear Mother and All:

I have had two big days since my last letter to you. Monday we had a big fight with eleven boches. They jumped four of us quite a ways back in Germany and all we could do was trust to luck and fight them off the best we could 'till we got back of our own lines. Well, we did do a little. Saw one Boche go down in flames and another fall out of control. We all four got back but our machines were pretty badly shot up. One plane had 20 bullet holes; another had a wing shot up pretty bad, one got out without a hole and I gathered in five. We were all mighty lucky to get back. The thick of the fight happened quite a ways back of the lines. None of us knew who really got the boche but we all four took credit.

Yesterday was my day off so didn't do much. This morning five of us started out but only four were able to cross.

We were about 8 miles back of the German lines when three boche dived out of the clouds on us. One got under the tail of one of our machines which was flying to the side of me. He went into a dive, the boche after him. I turned and dived on the boche that was following him down. I saw my tracer bullets (which look like little balls of fire going through the air) entered his machine and in a few seconds down went Mr. boche to the ground. We were 16,000 or 17,000 feet up when the fight started and when it was over was about 7,000 feet up and just a little behind the lines. If they saw it from the trenches or one of the balloons saw the boche fall I will get credit for it, otherwise I won't. Here's hoping they saw it

³ Ohio State Register. Microfilm. Washington Courthouse, Ohio, 1918. From Carnegie Library, reel #61.



² Signal Corps Aviation School Wilbur Wright Field. Annual Report. Fairfield, Ohio, May 1918.

for it's no easy job to bring down one of those birds and credit from air service hdqs. means a lot, even though I know myself I got him.

I will be able to find out in two or three days. I don't think this is the first boche I have put a few bullet holes in but the first I am sure of. We lost one of our planes on this trip or at least the hasn't been heard of since and we have been back quite a few hours

Those were my two most exciting trips since I have been flying here but I don't want to go through the same thing very often. Don't think I could be so lucky again.

I guess this is about all for this time. Am O.K., and of course feeling fine over my victory.

Love to all.

Paul

Note: This letter appeared in local newspapers in Washington Courthouse, Ohio, the *Washington Herald* on September 23, 1918, and the *Ohio Register* on September 27, 1918. First Lieutenant Paul Hughey was killed in action near Tronville, France, on September 14, 1918. His body was returned to Washington Court House for burial in the Washington Cemetery in 1921. First Lieutenant Hughey was the recipient of the Croix de Guerre with palm. American Legion Post #25 in Washington Court House was named in First Lieutenant Hughey's honor.



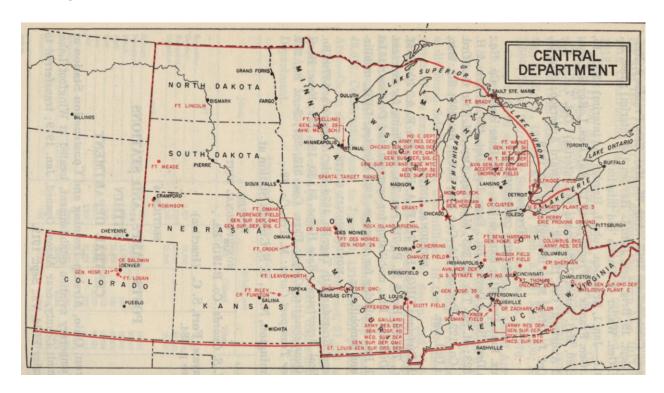


Image: World War I sites: Central Department

Source: Army War College, *Order of battle of the United States land forces in the world war* (Washington D.C.: Government Printing Office, 1931), 860.



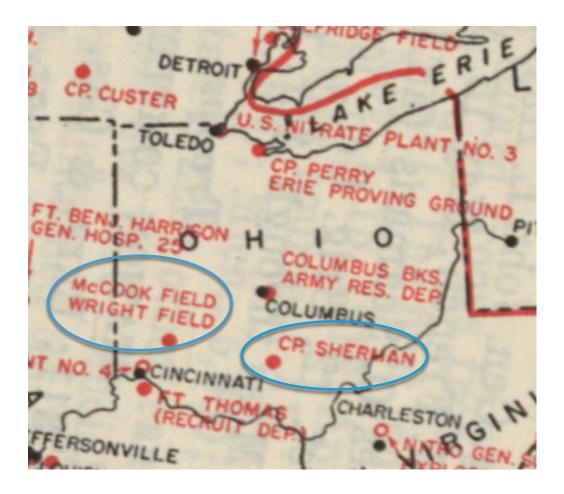


Image: Close-up of map 1 (Ohio)

Source: Army War College, *Order of battle of the United States land forces in the world war* (Washington D.C.: Government Printing Office, 1931), 860.

Note: Notice the locations of Camp Sherman and the Wilbur Wright Field.





Image: Field Signal Officers at Camp Sherman

Source: Courtesy of the Ohio History Connection (State Archives Series 2728 AV). Via Ohio Memory. http://www.ohiomemory.org/cdm/ref/collection/p16007coll51/id/836





Image: 1918 Wilbur Wright Field Testing Department photograph

Source: Courtesy of the National Museum of the United States Air Force. Via Ohio Memory. http://www.ohiomemory.org/cdm/ref/collection/p267401coll36/id/23823



Extension Activity #1: Ohio's African American WWI Soldiers

Research Ohio's African American WWI Soldiers using one of the lesson plans below.



Image: 802nd Pioneer Infantry Regiment at Camp Sherman, 1918

Source: Courtesy of the Ohio History Connection (State Archives Series 2728 AV). Via Ohio Memory. http://www.ohiomemory.org/cdm/ref/collection/p16007coll51/id/1123

1. African American Combat Troops

http://www.ohiohistoryhost.org/ohiomemory/wp-content/uploads/2016/10/Searching-for-Homer-Lawson-Lesson-Plan.pdf

2. African American Labor Regiments

http://www.ohiohistoryhost.org/ohiomemory/wp-content/uploads/2017/01/African-Am-Labor-for-Victory-Lesson-Plan.pdf



Extension Activity #2: Ohio's Aces

Research the lives and World War I service of Captain Eddie Rickenbacker (Columbus) and Lt. Colonel Bill Lambert (Ironton).



Image: Ohio native Eddie Rickenbacker, renowned World War I fighter pilot with the 94th Aero Squadron, in his uniform, ca. 1920-1939.

Source: Courtesy of the Ohio History Connection (Eddie V. Rickenbacker Photograph Collection, P 395). Via Ohio Memory.

http://www.ohiomemory.org/cdm/ref/collection/p16007coll51/id/3262



Additional Primary Sources

Want to learn more about Ohio aviation during World War I? View these primary sources on Ohio Memory!

- Panoramic photograph of U.S. Signal Corps aviation mechanics in training at Rankin Technical College in St. Louis. http://www.ohiomemory.org/cdm/ref/collection/p16007coll51/id/7895
- 2. Christmas Day menu for the 44th Aero Squadron at Wilbur Wright Field. http://www.ohiomemory.org/cdm/ref/collection/p16007coll51/id/7749
- 3. Aviation Weekly a newsletter written for the men training at Wilbur Wright Field during World War I, which includes articles about the units training there, updates on the war overseas, and advertisements for local businesses. http://www.ohiomemory.org/cdm/ref/collection/p16007coll51/id/7791
- 4. The Flier, a weekly newsletter for the men training at Wilbur Wright and McCook Fields, featuring upcoming social and entertainment opportunities at the camp and larger Dayton area, as well as articles about camp life and training tips. http://www.ohiomemory.org/cdm/ref/collection/p16007coll51/id/7883
- 5. Dayton-Wright Airplane Company photographs http://www.ohiomemory.org/cdm/search/collection/p16007coll51/searchterm/sc%205799/order/nosort

Sources

Books

Army War College, Order of battle of the United States land forces in the world war. Washington D.C.: Government Printing Office, 1931.

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Ward, Frank H. *Camp Sherman Souvenir*. Columbus, Ohio: Lambertson Publishing, 1918. Lambertson Publishing Co.

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"The Camp Sherman News." The Columbus Evening Dispatch. January 9, 1919.

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Government Documents

Emmett, Scott J. Scott's Official History of the American Negro in the World War. Chicago: Homewood Press, ca. 1919.

Websites

Hopewell Culture National Historical Park. "Camp Sherman." National Park Service. November 6, 2017. https://www.nps.gov/hocu/learn/historyculture/camp-sherman.htm

Dayton Aviation Heritage National Historical Park. "Huffman Prairie Flying Field." National Park Service. February 5, 2018. https://www.nps.gov/daav/learn/historyculture/huffman-prairie-flying-field.htm

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Additional Resources

United States World War One Centennial Commission: http://www.worldwar1centennial.org

Ohio World War I Centennial Committee:

https://www.worldwar1centennial.org/index.php/ohio-in-ww1-home-page.html

World War I in Ohio Collection on Ohio Memory: http://www.ohiomemory.org/cdm/wwi

World War I teacher resources on Ohio Memory:

http://www.ohiohistoryhost.org/ohiomemory/resources/for-teachers

Colonel Charles Young's Protest Ride for Equality and Country lesson plan, Charles Young Buffalo Solider National Monument, National Park Service:

https://www.nps.gov/subjects/teachingwithhistoricplaces/lightning-lesson-002_charles-young-house.htm

"Unsung African American World War I Soldiers," *Black History Bulletin 80*, No. 2 includes a lesson plan and resources for educators:

https://www.jstor.org/stable/10.5323/blachistbull.80.2.0016?seq=1#page_scan_tab_content s

This lesson plan was written by Paul LaRue, a retired thirty-year high school social studies teacher. Paul has received numerous state and national teaching awards. Paul serves as a member of the Ohio World War I Centennial Committee.

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