

World War II Home Front

Tuskegee Airmen Defined by Excellence and Perseverance

Narrative Timeline of:

- Aviation History
- Tuskegee Airmen
- Women Airforce Service Pilots (WASP)

Grades 9 – 12



P-51C Mustang (Photo courtesy Kevin Hong)

Background Information and Learning Activities

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Narrative Timeline: Aviation History, the Tuskegee Airmen and the WASP

Snapshot of Aviation History

When Wilbur and Orville Wright conquered human flight on the shores of North Carolina on Dec 17, **1903**, interest in aviation exploded globally. The brothers' detailed study of birds and their work designing innovative bicycle parts in Dayton, Ohio helped them design their Wright Flyer. The plane is on display at Smithsonian's National Air and Space Museum in Washington DC.

Following the Wright Brothers into the air, many aviation companies and flight schools were founded in the United States and around the world to bring aviation to the public. France embraced aviation wholeheartedly. Begun in **1909**, an annual air show in Paris became a central focus for aviation enthusiasts and remains so today.

Adventuresome teenagers and adults on the ground in the early 20th century looked to the skies for their next challenge.

In **1911**, Harriet Quimby became the first woman to earn her pilot's license.

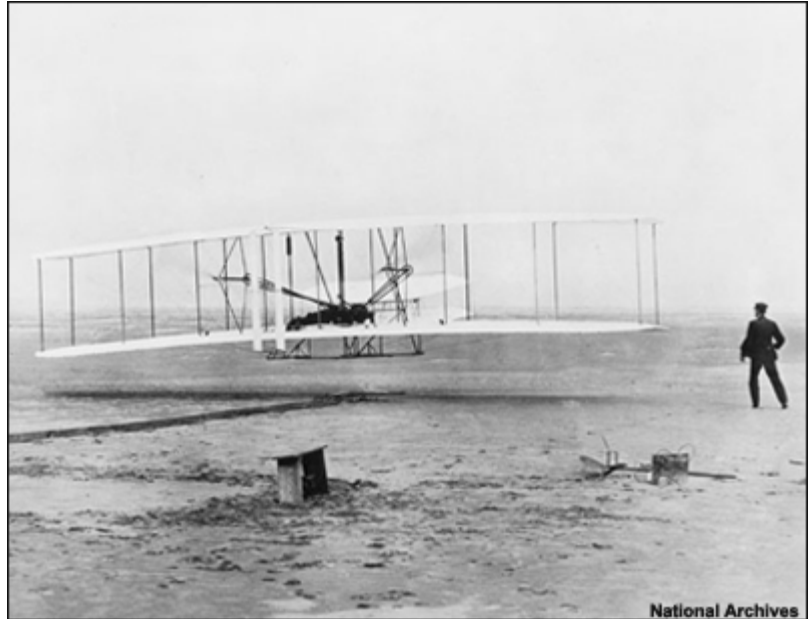
In **1914**, World War I began in Europe. Airplanes were used for the first time in war for reconnaissance and combat.

Two WWI ace pilots became famous: Manfred von Richthofen, the Red Baron, with the German Air Force, and Eddie Rickenbacker from the United States who was awarded the Medal of Honor.

In **1921**, Bessie Coleman became the first woman of African-American and Native American descent to earn her pilot's license. She couldn't find a flight school in the United States that would accept her so she went to France to attend flight school. She came back to Chicago and worked to provide opportunities for minorities to learn to fly. Tragically, she died in an airplane crash in 1926. She was 34.

In **1927**, Charles Lindbergh successfully flew solo across the Atlantic Ocean in his plane, the *Spirit of St. Louis*, which is on display at Smithsonian's National Air and Space Museum in Washington DC. He flew from New York to Paris in 33 hours.

In **1929**, an organization of women pilots was founded. At the time, there were 117 licensed women pilots. They were all invited to the first meeting at Curtiss Field on Long Island, New York. Ninety-nine women came so the organization called itself the "Ninety-Nines." In 1931, Amelia Earhart was



On Dec. 17, 1903 in North Carolina, Orville Wright is at the controls and Wilbur is watching. John T. Daniel of the U.S. Life-Saving Service snapped this picture when the Wright Flyer made its historic first flight. (Photo: National Archives)

elected its first president. [The Ninety-Nines](#) are still going strong today and just celebrated their 90th anniversary in 2019.

In **1932**, Amelia Earhart became the first woman to fly solo across the Atlantic Ocean as Lindbergh had done in 1927. Lindbergh and Earhart became glamorous celebrities, inspiring a new generation of pilots.

In **1937** as she was attempting to circumnavigate the globe, Earhart and Fred Noonan, her navigator, tragically crashed in the Pacific Ocean near Howland Island and have never been found.

Tuskegee Airmen and the Women Airforce Service Pilots (WASP)

As President Franklin D. Roosevelt was guiding the nation out of the Great Depression in the 1930s, he was also keeping an eye on events in Europe. He came to believe war in Europe was inevitable to stop the rise of Adolf Hitler.

If the United States went to war, it would need thousands of additional planes and pilots.

In **1939**, Congress approved the Civilian Pilot Training Program (CPTP). College students were provided 72 hours of instruction and 35-50 hours in the air at no cost to become pilots.

The CPTP provided the springboard for both the Tuskegee Airmen and the Women Airforce Service Pilots (WASP), two aviation training programs within the U.S. Army Air Corps whose name was later changed to the U.S. Army Air Forces. The U.S. Air Force as a separate branch of the military was established after World War II.

According to the National Museum of the U.S. Air Force, in 1939, the U.S. Army had 4,502 pilots and 982 new pilots. In 1940, there were about 8,000 new pilots and in 1941, more than 27,000 new pilots entered the U.S. Army Air Forces.

The CPTP was instrumental in permitting African Americans and women to become pilots and eventually, military pilots.

Tuskegee Airmen

African Americans had been prevented from learning how to fly in the U.S. Army because of a 1925 report by the War Department. The report was biased, not based on any scientific study. It said African Americans did not have the intelligence or physical capabilities to be pilots.

In **1938**, the Civil Aeronautics Authority was established by Congress to watch over the growing civilian aviation industry. With the effects of the Great Depression still affecting people's ability to afford flight schools, one member of the Authority suggested giving free flying lessons to college students. The federal government would pay the costs. The program became known as the Civilian Pilot Training Program (CPTP). Initially set up at 13 colleges as a trial, the program was so successful it expanded rapidly. Students attended 72 hours of ground school and then 35 to 50 hours in the air. Upon completion, students earned their private pilot licenses.

No African American students were allowed in the trial but when Congress had to approve funding for the expanded program, leaders in the African American community demanded black students be accepted. The Civilian Pilot Training Act of 1939 included a provision that students could not be refused admittance because of race, creed or color.

In **1940**, 33 colleges and six historically black colleges were selected to participate in CPTP. According to Dr. Leo Murphy, author of *Lost in Heaven* about Tuskegee Airman 1st Lt. James R. Polkinghorne, Jr., CPTP eventually expanded to 1,132 colleges and 1,460 flight schools. The program was responsible for training 435,165 pilots from 1939-1944, including about 2,000 black pilots and 2,500 women. (*Lost in Heaven*, p. 29)

At the same time as the CPTP was getting off the ground in 1939 and 1940, the U.S. Army Air Corps was also expanding. War in Europe was inevitable, many people thought. Increased funding was dedicated to building thousands of military planes, which meant the U.S. Army had to train thousands of pilots.

To meet the demand, the U.S. Army Air Forces built an air field near the Tuskegee Institute (now [Tuskegee University](#)) to train its black pilots. The pilots first attended ground school at Tuskegee Institute led by civilian instructors. After completion, students transitioned to flight school at the newly built Tuskegee Army Air Field (TAAF) located a few miles from the Tuskegee Institute.

The first class of black aviation cadets entered Tuskegee in summer **1941**, six months before the attack on Pearl Harbor and the United States entry into WWII. The class was designated 42-C because of their expected graduation date in March 1942. The months of the year began with “A” for January.

Capt. Benjamin O. Davis Jr., a graduate of West Point who would go on to lead the Tuskegee Airmen in World War II, was one of five cadets in class 42-C who earned their wings.

Because black students had been able to train as pilots within the CPTP, they were able to apply with experience to enter the U.S. Army Air Forces.

Eventually, 992 black pilots earned their wings at Tuskegee. And 355 of them were deployed overseas during World War II. They served with distinction earning many accolades and Distinguished Citations.

Assigned mainly as escorts for Allied bombers, Tuskegee Airmen also flew combat missions to take out vital infrastructure such as railroad tracks and locomotives. When a Tuskegee squadron painted the tails of their airplanes red, they became known as the Red Tails. Bombers welcomed the site of Red Tails because of the protection they offered. Bomber pilots even began calling them the Red-Tail Angels.

Tuskegee trained black pilots until 1946 and the air base closed in **1947**. On July 26, **1948**, President Harry Truman issued Executive Order Number 9981, which mandated the integration of the U.S. Armed Forces.

On March 29, **2007**, the Tuskegee Airmen were awarded the Congressional Gold Medal by President George W. Bush. The Congressional Gold Medal is the nation’s highest civilian honor. The ceremony was held at Statuary Hall at the U.S. Capitol with 300 Tuskegee Airmen in attendance. Ten Tuskegee Airmen survive as of June 1, 2020.



Smithsonian Institution

Women Airforce Service Pilots (WASP)

There are two names associated with the success of the WASP – women pilots who stepped up to serve when male pilots went off to war. They were Nancy Love and Jacqueline Cochran.

Born in 1914, Hannah Lincoln “Nancy” Harkness saw a barnstormer pilot at her home in Houghton, Michigan. At age 16, she told her parents she wanted to learn to fly. “Nice young ladies don’t do such things” her mother told her, according to *Nancy Love: WASP Pilot* by Sarah Byrn Rickman (p. 1).

As long as she stayed in school and did it well, her father allowed her to take flying lessons. She took off and earned her private pilot’s license at sixteen. The year was **1930**.

Born in 1906, Jacqueline “Jackie” Cochran earned her pilot’s license in **1932** after just three weeks of flying lessons, according to information from Smithsonian’s National Air and Space Museum. She soloed at the Roosevelt Flying School on Long Island in New York. She advanced rapidly earning her instrument rating and commercial and transport pilot licenses. By 1937, she was considered one of the best female pilots in the country after setting two speed records for women pilots. In 1938, she won the Bendix Trophy Race flying a P-35 pursuit plane.

In 1936, Nancy Harkness married Robert Love, owner of Inter City Aviation, based in Boston. Nancy entered a few air races but did not like the pace and nature of competing. But she continued logging hours in the air.

Hitler’s Nazi Germany invaded Poland on Sept. 1, **1939** to mark the start of World War II. More and more people in the United States came to believe war in Europe was inevitable.

In spring **1940**, Hitler continued his aggression by annexing Austria and then invading many sovereign countries in western Europe. France fell by June 1940. Smaller countries, such as the Netherlands, Belgium and Denmark, fell in days, not weeks.

In 1940, Nancy had an idea to solve a shortage of male pilots that was becoming a problem because of the increase in production of military aircraft. She suggested female pilots ferry planes for the U.S. Army Air Corps. Nancy created a list of 49 female pilots with the talent and experience to ferry planes. Her idea was considered but not acted upon by the Army.

In 1941, Jackie Cochran proposed the same idea to President Franklin D. Roosevelt (FDR). Cochran and Love were asked to meet to discuss working together. But the two had very different ideas of how to use female pilots within the U.S. Army. It remained just an idea.

The attack on Pearl Harbor on **Dec. 7, 1941** and America's entry into World War II escalated the need for more pilots. With thousands of aircraft being produced, pilots were needed to ferry them to destinations in the United States.

Within the U.S. Army Air Corps, Col. William Tunner was put in charge of the Ferrying Division. Nancy's husband was part of the U.S. Army Air Corps Reserve and knew him. Col. Tunner was looking for more pilots, he told Robert Love. He was surprised to learn Robert's wife was a pilot. Nancy told Col. Tunner she knew of 100 other qualified female pilots. So Col. Tunner proposed hiring female pilots as civilian employees of the U.S. Army to ferry planes. On Sept. 10, **1942**, Nancy was appointed leader of the new Women's Auxiliary Ferrying Squadron (WAFS). It made national news.

When Jackie heard the news about the formation of the WAFS, she lobbied the U.S. Army to set up a second program to train women pilots to ferry planes. The Women's Flying Training Detachment (WFTD) was established with Jackie in charge.

On **August 5, 1943**, the WAFS and the WFTD merged to form the WASP – Women Airforce Service Pilots. Jackie Cochran was put in charge of the WASP. Nancy remained the leader of the ferrying squadron. Jackie focused on training new pilots at Avenger Field in Sweetwater, Texas. The July 19, 1943 issue of LIFE magazine has a picture of a female pilot, in pigtails, sitting on her plane at Avenger Field during her WFTD training. The article contains a photo essay of life at Avenger Field for these trailblazers. The cover is now an iconic image of the WASP, a pilot in pigtails.

For their mascot, the WASP chose Fifinella, a Disney character that was based on *The Gremlins*, the first children's book written by Roald Dahl. Dahl was a Royal Air Force (RAF) pilot during WWII who was injured and on leave when he wrote the book, which was first published in 1943.



Life Magazine cover, July 19, 1943

Eventually, 1,074 women plus 28 “Originals” whom Nancy Love had recruited for the WAFS became WASP. From 25,000 women who applied, 1,102 earned their wings. They flew a total of 60 million miles ferrying planes. The WASP had a short life span as the unit was disbanded in December 1944 so male pilots returning from war would have jobs.

On **July 1, 2009** in the Oval Office, President Obama signed S.614 awarding the WASP the Congressional Gold Medal, the nation’s highest civilian honor. Elaine Danforth Harmon, a WASP, was there.



Smithsonian

On **July 2, 2009**, the U.S. Air Force published a story about the signing. Elaine is quoted in the story. The following is an excerpt:

“It’s really nice that all these women will be honored for their service. We didn’t join the WASP looking for recognition, but were just doing what was needed during the war,” Ms. Harmon said. “Most everyone else in the country worked hard too and did their part to contribute to the war effort.”

When young female pilots thank Ms. Harmon or call her a pioneer, she admitted to feeling slightly embarrassed and thoroughly impressed with today’s military women aviators.

“The women pilots in uniform today are truly exceptional,” Ms. Harmon said. “They are so competent, educated and knowledgeable about things far beyond what we ever dreamed of learning in home economics. They should know that all of the WASP are very proud of what they are accomplishing today.”

Nancy Love passed away in 1976 after a battle with cancer. She was 62. Jackie Cochran died in 1980. She was 74. Elaine Harmon died in 2015. She was 95.

References

1. [CAF Rise Above – Tuskegee Airmen and WASP](#)
2. *Lost in Heaven: the Story of 1st Lt. James R. Polkinghorne Jr., USAAF, Early Black Aviation History and the Tuskegee Airmen* by Dr. Leo F. Murphy
3. [Tuskegee Airmen, Inc. Media Kit](#)
4. [Tuskegee Airmen National Historic Site \(National Park Service\)](#)
5. [Women Airforce Service Pilots \(WASP\) – National Museum of the U.S. Air Force](#)
6. *Nancy Love: WASP Pilot* by Sarah Byrn Rickman (2019)
7. [The Ninety-Nines](#)
8. [Civilian Pilot Training Program \(CPTP\) – National Museum of the U.S. Air Force](#)

Additional Resources

[CAF RISE ABOVE® Women Airforce Service Pilots \(WASP\)](#)
[CAF RISE ABOVE® Tuskegee Airmen](#)

Recommended Reading

1. *Keep Your Airspeed Up: the Story of a Tuskegee Airman* by Harold H. Brown and Marsha S Bordner (2017)
2. *Lost in Heaven: the Story of 1st Lt. James R. Polkinghorne Jr., USAAF, Early Black Aviation History and the Tuskegee Airmen* by Dr. Leo F. Murphy (2018)
3. *Final Flight, Final Fight* by Erin Miller (2019)
4. *Nancy Love: WASP Pilot* by Sarah Byrn Rickman (2019)
5. *BJ Erickson: WASP Pilot* by Sarah Byrn Rickman (2018)
6. *The Wright Brothers* by David McCullough (2016)
7. *I Could Never Be So Lucky Again* by Gen. James “Jimmy” Doolittle with Carroll V. Glines (1991)

CAF RISE ABOVE Back-to-School Campaign

Learning Activities: Grades 9–12

Name: _____

1. US Population Data

During World War II, 16 million men enlisted or were drafted into military service. The following table contains U.S. population data from the decennial Census from 1900-2010.

Total Population

1. 1900: 76 million
2. 1910: 92 million
3. 1920: 106 million
4. 1930: 123 million
5. 1940: 132 million
6. 1950: 151 million
7. 1960: 179 million
8. 1970: 203 million
9. 1980: 227 million
10. 1990: 249 million
11. 2000: 281 million
12. 2010: 309 million

Year	Population

2. What is the current population of the United States? (Refer to the [US Census](#))

3. Plot the data on the attached graph and then answer the questions below.
4. From the data above, what can you conclude about the US population from 1900-2010?

5. During what decade did the US population have the largest increase? _____
6. During what decade did the US population have the smallest increase? _____

7. Using 1940 population data, what percent of the total population served in the military during World War II? _____
8. In quantitative terms (percent), express the growth of the U.S. population from:
 - a. 1900 to 1950 _____
 - b. 1900 to 2000 _____
9. As a group, discuss the table and your graph. Develop a plan to research the two decades with the largest and smallest increase in population. Assign tasks to each student, create a schedule to complete a report and then prepare a presentation for the entire class.

Urban vs. Rural Population data (US Census)

10. Create line graphs below using the following data:

Instructions:

(1) Using a colored pencil, plot with dots the Urban percent for each year, then draw a line to connect.

(2) Using a different color pencil, plot with dots the Rural percent for each year, then draw a line to connect.

Percent of Urban vs. Rural population in the Total population (1900-1950: US Census)*

(Note: Round to whole number to graph)

1900: Urban = 39.6 percent; Rural = 60.4 percent

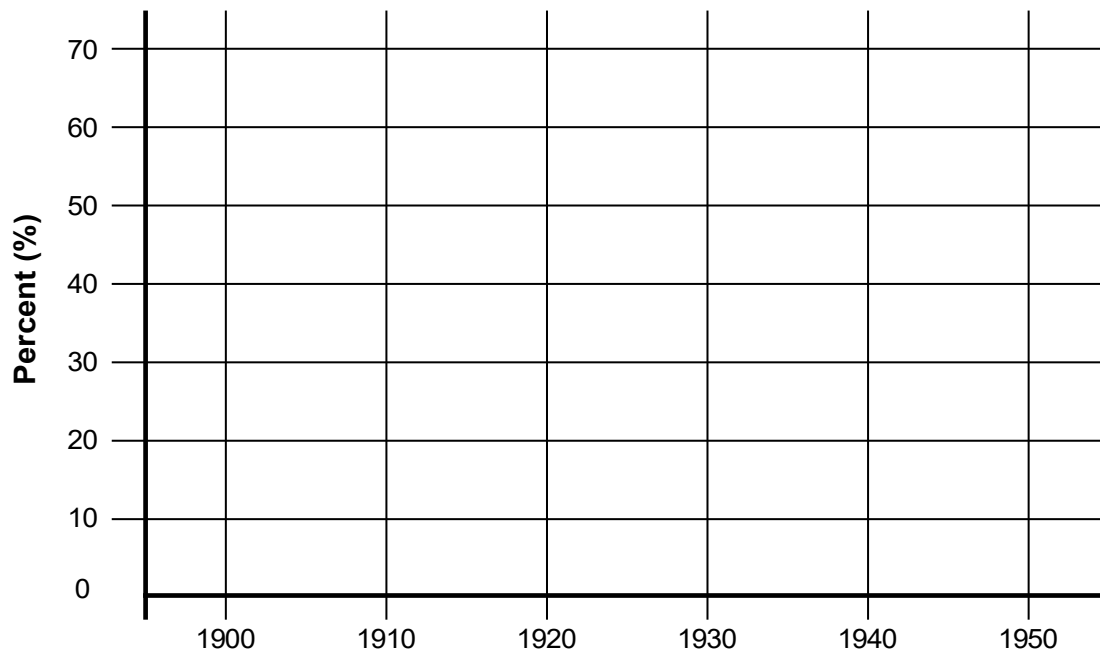
1910: Urban = 45.6 percent; Rural = 54.4 percent

1920: Urban = 51.2 percent; Rural = 48.8 percent

1930: Urban = 56.1 percent; Rural = 43.9 percent

1940: Urban = 56.5 percent; Rural = 43.5 percent

1950: Urban = 59.6 percent; Rural = 40.4 percent



From your graph, answer the following questions:

11. What decade saw the largest migration of population from rural to urban _____
12. Suggest one reason to explain the data on the line below. Research and then write a summary, citing evidence. Was your suggestion (hypothesis) supported by evidence?

13. What decade saw the smallest migration of people from rural to urban? _____
14. Propose a reason for this small shift from rural to urban. _____

15. Suggest one reason to explain the data on the line below. Then research your idea and write a summary, citing evidence. Was your suggestion (hypothesis) supported by evidence?

16. What can you say about the population shift from 1940 to 1950 during World War II? How did it compare to the shift from 1930 to 1940? Ask you parents and grandparents, if any of your relatives moved to a large city in the 1940s because of World War II.
 - If so, write a summary and share with the class.

Number of workers making airplane engines

Evidence supporting the urgent need to train pilots before and during World War II can be found in data on the increase in the number of workers at aircraft engine factories from 1938 to 1943. About 300,000 airplanes were made in America during World War II.

Workers at airplane engine factories*

- 1938: 7,000
- 1939: 8,000
- 1941: 59,000
- 1942: almost 177,000
- 1943: 361,000

*from *Miracle of World War II: How American Industry Made Victory Possible* by Francis Walton (1956), p. 287

17. **ACTIVITY:** Research Aircraft Engine Companies and answer the following.
 - a. Research one of the companies that was producing a large number of engines and identify.
 - b. Research where in the United States aircraft engines were being made during World War II.
 - c. Write a summary of that company and where their factories were located.
 - d. Is the company still in business today?
 - e. Do they make aircraft engines?

Population Center

Since the nation's founding in the 18th century, the population center has been shifting to the west. The [US Census defines population center](#) as:

“The concept of the center of population as used by the U.S. Census Bureau is that of a balance point. The center of population is the point at which an imaginary, weightless, rigid, and flat (no elevation effects) surface representation of the 50 states (or 48 conterminous states for calculations made prior to 1960) and the District of Columbia would balance if weights of identical size were placed on it so that each weight represented the location of one person.”

From *Miracle of World War II: How American Industry Made Victory Possible* by Francis Walton, published in 1956, the author states:

“Although the roads were jammed with the evidence and the rails were inordinately burdened with it, the true scope of the wartime migrations was not fully appreciated until five years after the war when the 1950 census disclosed some of the permanent effects for the first time. One of its many summaries revealed that the population center of the nation had moved forty-two (42) miles westward to a point eight (8) miles north-northwest of Olney, Illinois. The 1940 “center” of the nation’s population had been two (2) miles southeast of Carlisle, Indiana. It was the greatest shift since the decade of 1880-1890. The dispersal of World War II industry and the wartime industrial development of the Far West reflect the great surge westward in search for work; but the new focal point identified five years after the war gives the true result of the wartime population change.” (*Miracle of World War II*, p. 299)

18. Through the link above, what was the US population center according to the 2010 Census? And what was the population center of your state?

US: _____

Your state: _____

The following map (next page) from the US Census graphically highlights the shift westward. Examine the dates and magnitude of shift between them.

19. ACTIVITY: Research at least two wartime industries that established multiple large factories on the west coast that motivated people to move there. Write a summary.

Mean Center of Population for the United States: 1790 to 2010



Read the profiles of Harold Brown, a Tusgee Airman, and Elaine Harmon, a WASP. Read the narrative timeline of aviation history and the history of the Tusgee Airmen and the WASP.

20. ACTIVITY: Create a timeline, digital or print, from 1900 to 1950. Mark 10 key dates in the history of aviation, the history of the Tusgee Airmen and the history of the WASP. For each of the ten dates you chose, write a paragraph on why that date was important.
21. ACTIVITY: Compare and contrast the Tusgee Airmen program and the WASP program. Note key similarities and differences. Write a summary.

Tuskegee Airmen and Women Airforce Service Pilots (WASP)

Read the articles on Harold Brown, a Tuskegee Airman, and Elaine Danforth Harmon, a WASP.

Answer the following questions:

22. Why was the Civilian Pilot Training Program (CPTP) so important to both Harold and Elaine even though only Elaine went through the program?

23. Why was the CPTP so important to the United States military even though it was a civilian program?

24. What is the lasting impact of the CPTP?

25. Why do Harold and Elaine represent the hundreds of other Tuskegee Airmen and WASP respectively? What are their legacies? What is the legacy of the Tuskegee Airmen and the WASP?

26. On the attached map of the United States, mark the following cities with a circle:

- a. Minneapolis, Minnesota (1)
- b. Biloxi, Mississippi
- c. Tuskegee, Alabama
- d. Walterboro, South Carolina
- e. Hampton, Virginia.

27. Mark the circle on Minneapolis as number 1. Number all other circles to mirror the timeline of Harold’s training in the U.S. Army Air Forces before being deployed to Europe in 1944.

28. Write a brief description of what Harold’s training involved at the locations noted.

① _____

② _____

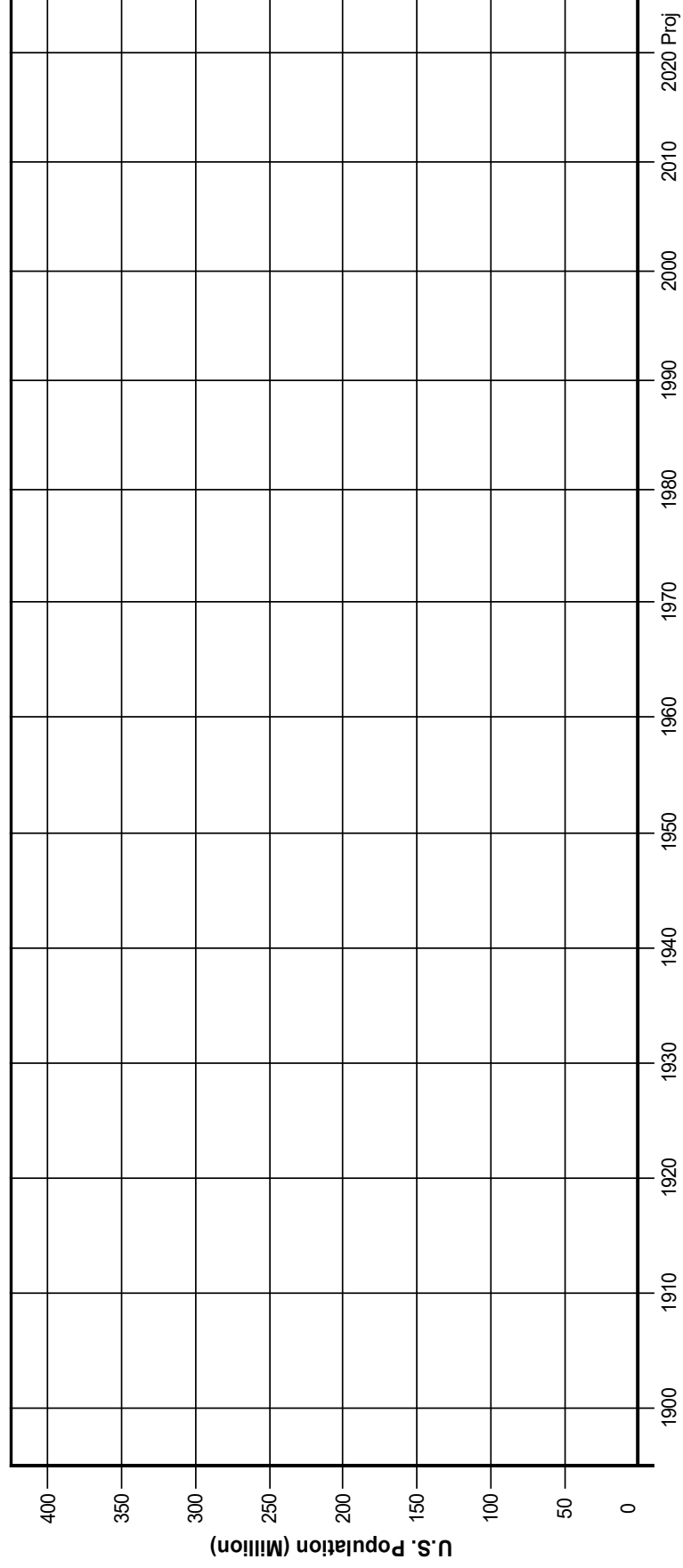
③ _____

④ _____

⑤ _____

29. What can you conclude about the expertise required to become a pilot?

Graph 1: U.S. Population



Plot U.S. population data (Census) from 1900-2010 and the projection for 2020. Draw a line to connect the dots.

